

LIST OF WITNESSES WRITTEN EVIDENCES

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

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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

- 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	\$206,044.25
		(73 HH)	(13 HH)
2	Western	\$8,254,350.61	\$3,392,717.83
		(1007 HH)	(305 HH)
3	Northern	\$9,644.286.00	\$3,301,254.00
		(1246 HH)	(275 HH)
	TOTAL	\$18,773,241.27	\$6,900,016.08
		(2326 HH)	(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.

In	addition, the Department has inst	talled 3 Hybrid Power Sys	stem in the last two years as follo
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

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 sideway 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?

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 5years & 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 5years & 20years National Development Plan and of the SDGs under your responsibility?

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 coordination mechanism that plans, monitor and evaluates the progress of the implementation of the National Development Plan and the SDGs under your responsibility?

<u>If yes</u>:

- 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.

<u>lf no</u>:

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

 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

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 ion 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

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.











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 supp for small commercial premises.		
"Green field"- means consumers that don't have any form of electricity supply.		
"Mini/Micro Grid S	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) gr		
"Settlements"-	means formal and, informal settlements in urban areas as well as settlements existing outside of the village boundary in rural settings.	

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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			
	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			

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

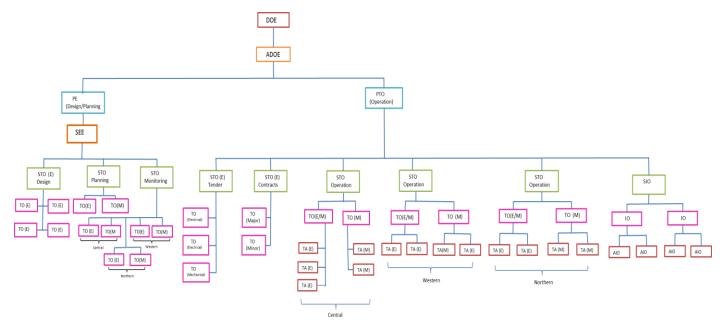
9.0 GENERAL

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 E – INSTITUTIONAL STRUCTURE

10.0 ELECTRIFICATION UNIT STRUCTURE

10.1 To address the increasing need for electrification, DOE will strategically decentralize its services to ensure timely service delivery. As such REU is now renamed to "Electrification Unit" and the following structure is proposed:



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 socioeconomic 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. <u>C</u>	ONTACT PERSON IN VILLAGE OR	<u>SETTLEMENT</u>
	Name Postal Address:	
	Telephone No/Email	
3. <u>V</u>	ILLAGE/SETTLEMENT DETAILS	
	Number of households Do you want electricity for anything Yes, please specify.	other than household lighting and a power point? If
4. <u>T</u>	YPE OF ELECTRIFICATION [please]	tick]
[b] D [c] H [d] E	blar lighting in a community center or chu iesel lighting scheme for each household ydro scheme for house lighting FL 24 hrs connection to each household ny other (please specify)	
Signa Date	ture of contact person:	
1. E	UIREMENTS: FOR OFFICIAL USE ON FL FORM 2. COPY OF T IRTH CERT 5. PASSPORT	ITLE/TNK LETTER 3. TIN LETTER

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 (24gauge) 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?

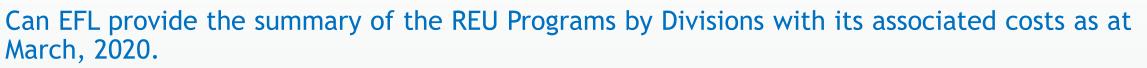
Response

- 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



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 Western Northern	18 32 21	34 61 32	25 43 30	6 18 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/department coordination 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?

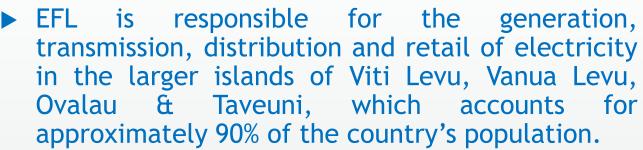
Electricity seems to have an overarching impact on most of the SDGs.



Directly Linked SDG



7 AFFORDABLE AND CLEAN ENERGY



- 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.



> National Development Plan Target - Electricity Access



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

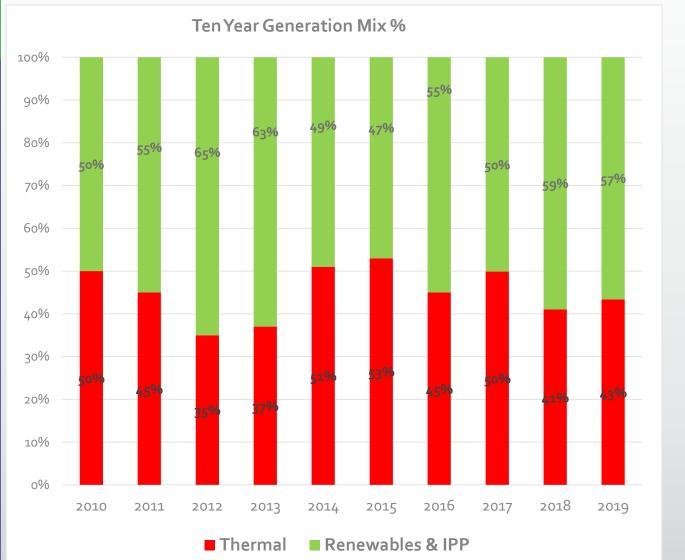
Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Customer Numbers	150,724	155,912	159,017	162,656	167,017	171,939	174,530	182,439	194,404	199,020
Annual Growth		3.44%	1.99%	2.29%	2.68%	2.95%	1.51%	4.53%	4.37%	4.53%

- 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.





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
- Wainiqeu 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



- 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 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.



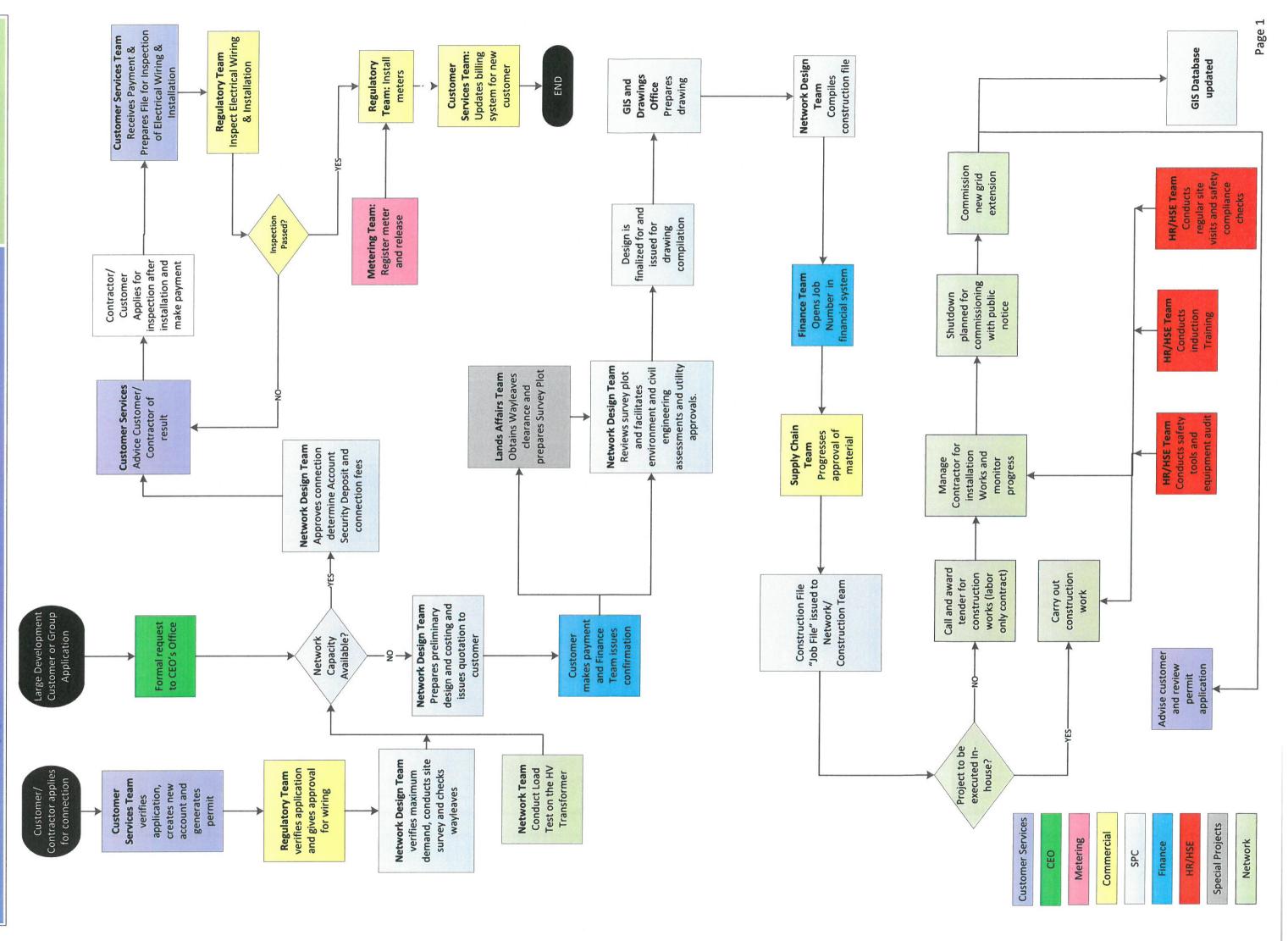


VINAKA

Hasmukh Patel Jitendra Kumar Karunesh Rao Energy Fiji Limited









MINISTRY OF FORESTRY

HEADQUARTERS

Takayawa Building, Toorak Road, Suva P. O. BOX 2218, Government Buildings Suva, FIJI

Ref: FO/G/5-12

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

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.

CRETAR G.P.N. Baleinabuli Permanent Secretary



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 A	ND BIOLOGICAL RESOURCE	S
1. Land Use	Ongoing – MOE	Partially implemented.	Could an update be	The Ministry of Forestry has, to-date, yet to develop a
Planning and	Strategic Planning unit	Ministry of Economy (MoE) Strategic	provided on the status	national land use plan as this requires inputs from
Forest	is responsible for	Planning unit has not finalised the	of the National Land Use	other agencies as well. However, the Ministry has,
Classification	consolidation, no	consolidation of the Land Use Plan.	Plan?	under the REDD+ Readiness Project, started to
	response of the	Ministry of Forestry (MoF) has		develop land use plans for the 20 districts identified
	timeline to finalize the	contributed through the Forest		under the Emission Reduction Program (2020 – 2025).
	Land Use Plan.	Function Map. The status of		
	Functions Map was	finalisation is not known as no		This work will be continued in collaboration with the
	submitted by the MOF	response received from MoE despite		iTaukei Land Trust Board (TLTB) and other relevant

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.		agencies. The 20 district land use plans will cover 451,360 hectares or 24.6% of Fiji's total land area. 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.
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.	Not Implemented. 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.	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? Are there incentives involved? Are there measurable	Evidence: Refer to PPT on the ERP sites. 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. 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.

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			targets in place to undertake this? Can the Ministry provide an update on the status of the Nature Fiji Mareqeti Viti and other stakeholders awareness?	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. 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 though the PAC committee. The Ministry has developed draft MOUs with NFMV, CI, WCS and IUCN which are ready for consultation
3. Forest Inventory	The Ministry responded that they will try creating a portal in its website to accommodate the NFI reports.	Not Implemented. The Ministry is yet to upload in to its website any of the three NFI reports for the 3 NFI conducted.	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	phase before submission to Cabinet. 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?	Evidence: Provide TOR for consultant.
4. Establishment of Procedures NFI procedures for gathering NFI data and storing them in the NFI	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	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. Evidence: copy of NFI SOP.
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.	NFI SOP.		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 though 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 FO	REST RESOURCE MANAGE	MENT		
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: 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) –	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
	AS PER OAG REPORT			
	park communities as		Park and other parks	
	the park is privately		including Sovi Basin?	
	owned and is			
	Undisturbed.		Do they take into	
			account the	
			requirements of the	
			Environment	Yes, all Management Plans adopt the provisions of the
			Management Act in	EMA 2005.
			their plans?	
			Has the Ministry	The Ministry had made its contribution through the
			finalised the Mangrove	submission of information and maps to the Mangrove
			Management Plan	Management Committee (MMC). The Ministry will
			(MMP) with the Ministry	follow up with the Ministry of Lands on the progress
			of Lands through the	of this MMP.
			Conservator of Forests?	
7. Strategic	Ministry responded	Partially Implemented	Given that under Table 2	The Ministry is already accommodating this by
Harvesting Plan	that licenses are given	Most licenses given were based on	of the report for the	verifying the volume of forest resource in a particular
	based on the areas to	Management Plan of the proposed	Forest Harvesting Plan	woodlot, which subsequently determines the duration
	be harvested provided	harvest areas. The duration of most	for woodlots submitted	of license issued.
	on the Management	woodlots harvesting management plan	to the Ministry has	
	Harvesting Plan. Most	are within 1 year or less. Therefore	indicated that most	The 1992 Forest Act (Section 11) has provisions for
	wood lots completed	road making activities are within the	harvesting activities are	duration of licenses to be determined based on the
	their harvest in less	harvesting timeframe and not	done within 2-12	forest resources available and the post- harvest land
	than six months and 2	exceeding it, as wood lots and land	months. Will there be	use. The duration can be up to 30 years.
	years are unrealistic	owners have other planting options.	any amendments to the	
	time frame. The CF has		requirements of the Fiji	Additionally, the Ministry of Forestry is working on
	the prerogative to give		Forest Policy as	creating a supportive forestry governance to enable
	licenses based on		mentioned above to	forest management, which includes the Strategic
	compliances to the		reduce the period	Harvesting Planning.
	FFHCOP and other		required for Strategic	
	forest legislation.		Harvesting Plans to be	

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			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.	Diameter Limit Table	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.
			How has the Ministry progressed in terms of the consultations with stakeholders regarding the review of the Diameter Limit Table?	The Ministry is currently consulting the industry on this revised version. The consultation work program is attached. <i>Evidence: Consultancy Work program</i>

ManagementPlanFPL has its own Forest Managementfurther clarified in itswill nowregularizingitsPlanregulatingitsplantationresponsetothisplantationareascompartment. Review of FPL currentrecommendation that ithasincludedtheof the remnant ofhad beenestablishedforthedevelopment of ForestFiji Pine Limitenaturalforests.protectionof remnant of naturalfaturalFiji Pine Limite	as collated the data as a first step and proceed towards developing the plans for both Taveuni and Colo-i-Suva.
ManagementPlanFPL has its own Forest Managementfurther clarified in itswill nowregularizingitsPlanregulatingitsplantationresponsetothisplantationareascompartment. Review of FPL currentrecommendation that itmanagementincluding the protectionmanagement plan noted no programshasincludedtheoftheremnantofhadbeenestablishedforthedevelopmentforestnaturalforests.protectionofremnantofnaturalFiji Pine Limit	proceed towards developing the
underway with FPL on management of remnant of natural forests.	ent Plans highlighted in the Operational -2020 are for Conservation/Protected Ainistry has started to develop the plans for Taveuni and Colo-i-Suva in relevant CSOs. The development of Il address the Permanent Forest Estate s that the Ministry is currently working OP 2019-2020) hy Industry Development Act 2010 f Schedule 2) states that: "unless the Council, no person shall on any intation land fell or extract timber other

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?	

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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)). Evidence: Fiji national forest certification
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.	logging areas from the Ministry of Environment. Can the Ministry provide evidences of the awareness done since	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>

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			Forest Harvesting Code of Practise (FFHCOP)? Who are the targeted audience?	 Forest Warden Code Awareness Training Course – 27 trained FTC 2016 August to July 2017 Annual Report – 26 trained FTC 2015 Annual Report - 224 trained
15. Non-Wood Forest Products	Ministry to work towards development of a management plan for non-wood products in Fiji. 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.	Not Implemented. The Ministry is still yet to develop a Non-Wood Management Plan, for non- wood species in the country	The audit noted that a management plan for non-wood product in the country is still yet to be developed. 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.	 Evidence: Training Reports Under the Ministry's research on wood and non-wood, it has completed 2 non-wood forest commodities which are bamboo and coconut The Ministry is currently developing a report on potential non-wood forest products through: a) Classification (e.g. food, medicine, fibres, biomass, resins & oils. b) Conservation c) Management d) Processing & Marketing e) Community involvement & Livelihood The more focussed work of the Ministry are planting of Calophyllum ("Dilo"), Candlenut ("Sikeci") and Sandalwood. Conservation areas are set aside for naturally grown sandalwood as well as other species for conservation and natural regeneration. The Ministry is about to
			incorporating the use of non-wood products in the Strategic	complete its Sandalwood inventory to gauge the varieties and distribution nationwide.

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			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.	Meetings were held and	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: 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: a. one shall represent the Native Land Trust Board; b. one shall be a member of the Land

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
				Conservation Board; c. being persons not holding any State Office of emolument, shall represent land owners, forest owners, forest users, forest industry and the public interest.
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?	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. <i>Evidence: OP,SDP & NFP</i>
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.	Has the Ministry followed up with the SGs office 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 why is the delay?	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

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
	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.	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. Evidence: Minister's latest consultation report.
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.	World Bank and the report is with the Attorney General's office and World	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.

SUBJECT	INITIAL RESPONSE (2019) –	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
21. Associations	AS PER OAG REPORT 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.	Why is the Ministry not considering the establishment of Resource Owners Association and the Forest Professional Association? What are the challenges of forming a Foresters' Association and a Farmers' Association?	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. 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. 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. The Ministry will consider the development of a Farmers' Association in future when the
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	 Reforestation/Afforestation Framework is in place. The Ministry of Forestry has formed: a) the REDD+ Steering Committee - Emission Reduction Program (2020-2025); b) the ITTO Steering Committee - Coastal Rehabilitation Program 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

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
	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>

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT Conversation offered at	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
	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?	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. 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.
			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?	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. 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.

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			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?	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. 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. 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.
			 4. Is your Department a part or member of an inter-agency or interministerial/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? If yes: How often does it meet? 	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).

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			What aspects of its function can it be improved? If no: Do you see the need for such a mechanism?	VNR. Suggested improvements: a) Improvement in the reporting template; b) Training & Awareness; and c) More regular meetings.
			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?	The Ministry of Forestry is redefining its core roles and re-organising the structure to address its core functions. 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.
			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?	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.

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			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	 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);

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			initiatives have been taken in this respect and what have been the results and or challenges so far?	harvesting and processing machines and equipment for the Gau, Cicia, Kadavu and Lakeba; (e) Sandalwood Development Program – establish 120 hectares spread throughout the 14 provinces including Rotuma
				Adequate level of funding has been the main challenge. The Ministry is pursuing alternative (external) funding sources, e.g. Green Climate Fund (GCF).
			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?	 The Ministry of Forestry engages: - (a) Civil Society Organizations - awareness raising campaigns, community consultations and education; (b) Scientific community – research, assessments and survey; (c) Private sector – tree planting (reforestation), nursery and seedling supply These partnership encourages these sectors to contribute towards the implementation, review and monitoring of the SDGs.
			10. Do you think there is an interest within your Department to learn more about other countries experiences, training, tools, partnership	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. Current MOUs that the Ministry has with other countries are China and Indonesia. Costa Rica is one of the countries that the Ministry of

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
				formulation of an MOU to create sustainable financing mechanisms such as the payments for forest

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.

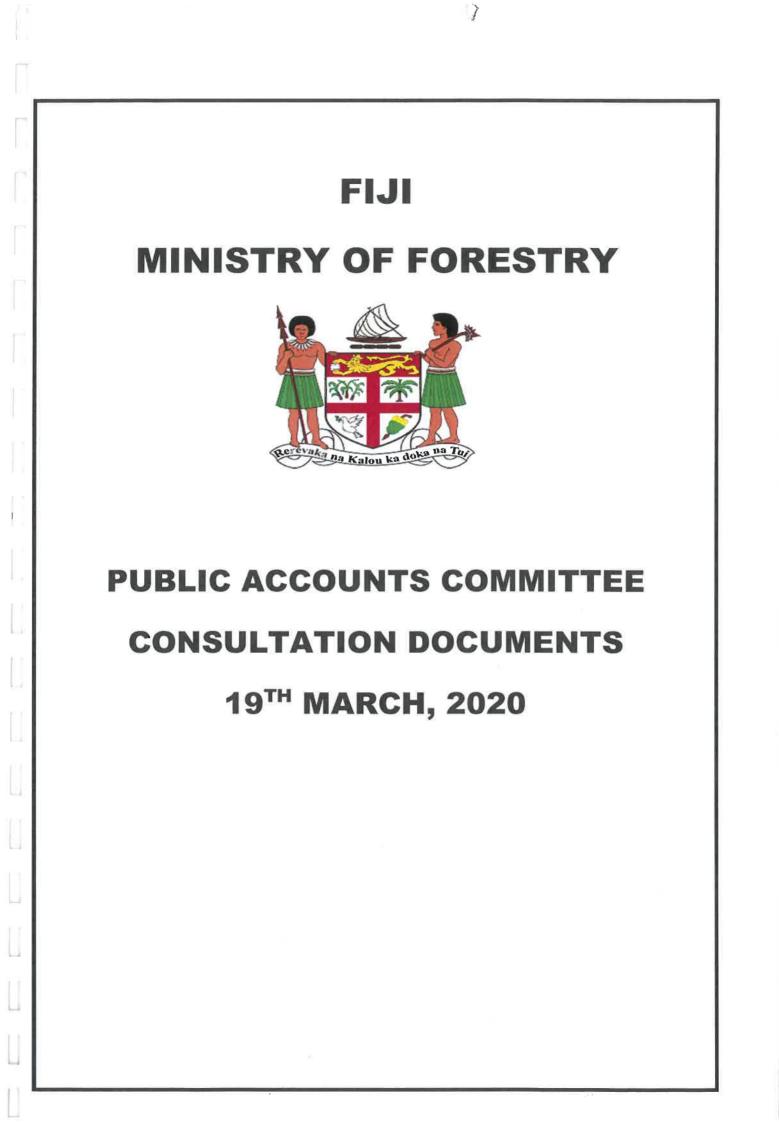
• The primary difference lies in the reason for preserving the land: National parks are protected due to their scenic, inspirational, education, and recreational value. National monuments have objects of historical, cultural, and/or scientific interest, so their content is quite varied. National Parks 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.



OVERVIEW

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- 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)

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- 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 initiatd 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

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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 commended 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 Ministry 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 communicities 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 durig the last NFI round and develop a report on behalf of the Minsitry 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.

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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 operaitng 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 caollected on a continuous basis to assess the target levels of precision and accuracy.

5.4 Report on NFI 2006 (D4)

The inventory Report relating the to 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	 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. 	 Involved in the National Forest Inventory. Forest Monitoring System Experience of working in the South Pacific region
Forest Biometrician	 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 	• Experience of working in the South Pacific region
Statistician	 Master Degree in statistics or related subject At least five years of experience working in the forestry sector 	 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	 At least Bachelor in Remote Sensing/ Geographical Information System Experience of working in the application of RS/GIS in the forestry sector 	 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 accompanyedby 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 multidisciplinary 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 <u>Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank B</u> <u>orrowers</u>, 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 proving 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: <u>reddplus.fj@gmail.com</u>



Fiji National Forest Inventory

2005-2007

STANDARD OPERATION PROCEDURES

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E

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.

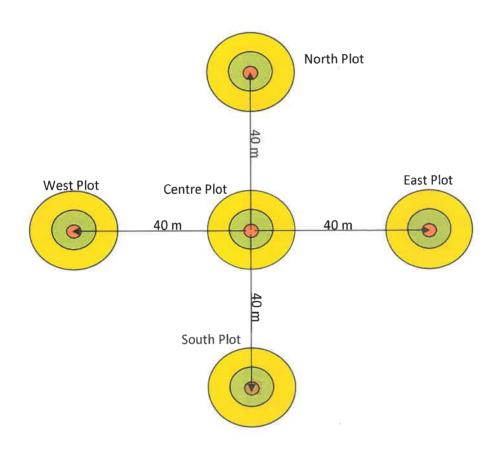
2.4 Plot Design

For fast and easy lay-out, a set of concentric circular sample plots of 400 m^2 , 100 m^2 and 10 m^2 are proposed. On the respective plots, the following parameters shall be recorded:

sample will consist of a clusters of 5 sub-plots

$10 \text{ m}^2 \text{ circle } (r = 1.78 \text{ m}):$	tree regeneration > 1.3 m high and dbh < 5.0 cm
100 m ² 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.

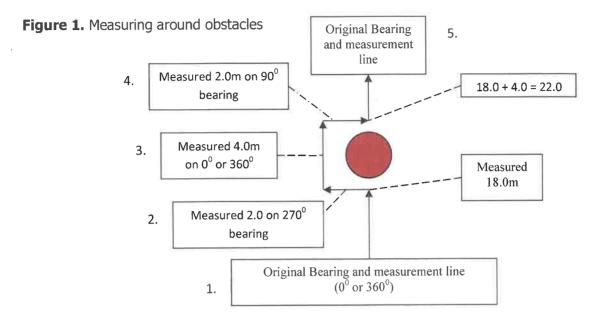
6.1 Establishment of Subplots

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 18.0m + 4.0m)

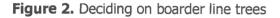


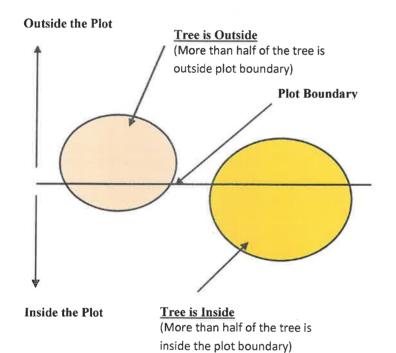
6.3 Deciding on Boarder Line Trees

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:

- 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 <u>not included</u> 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 <u>not included</u> in measurements (see Figure 6)





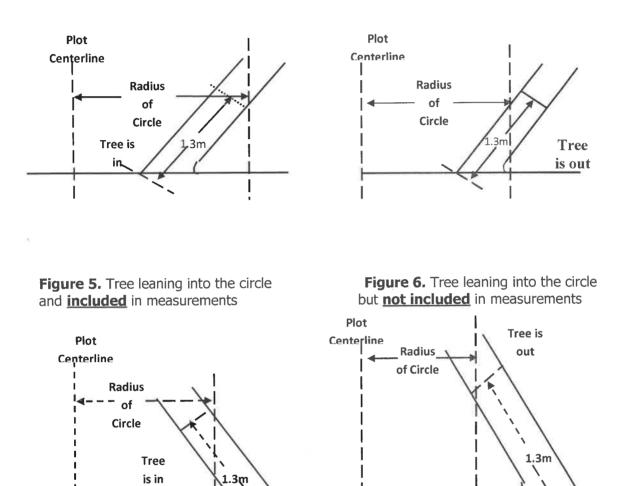


Figure 3. Tree leaning outside the circle Boundary but **included** in measurements

Figure 4. Tree leaning outside the circle boundary and <u>not included</u> in measurements

7.0 Selection of Sample trees

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

 $10m^2$ circle (radius = 1.78 m): Tree regeneration > 1.3 m high and DBH < 5.0 cm

 $100m^2$ circle (radius = 5.64 m):

Tree regeneration with DBH from 5.0 cm to < 20 cm, bamboo and indicator plants

 $400m^2$ circle (radius = 11.28 m): Trees with DBH 20 cm and above

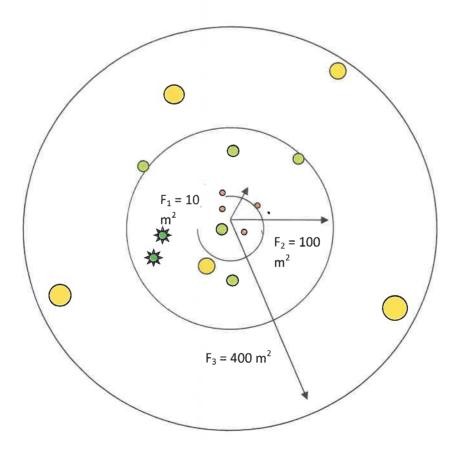
Therefore within the **first circle** (F_1 radius = 1.78m) all tree regeneration that is greater than 5cm at diameter at breast height (DBH) and taller than 1.3m is recorded (see Figure 8).

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 1^{st} circle(F_1), 2^{nd} circle (F_2) and 3^{rd} circle(F_3).



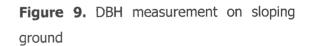
8.0 Measurement Protocol

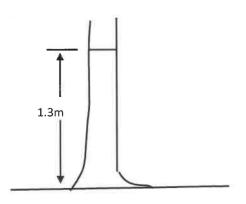
8.1 Measuring tree diameter

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 than 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 lose bark are to be removed from the measurement area before measuring.







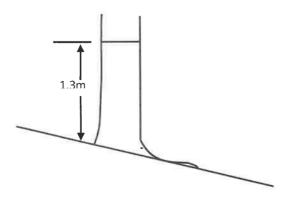
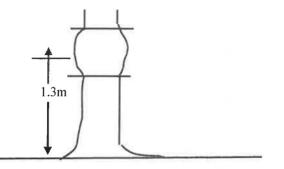
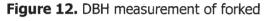


Figure 10. DBH measurement of abnormal tree

Figure 11. DBH measurement of forked tree above 1.3m





tree below 1.3m

10cm above end of buttress

1.3

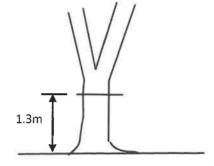
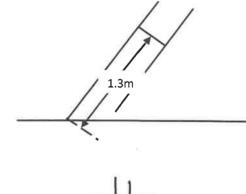
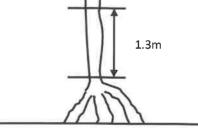


Figure 13. DBH measurement of a leaning tree







1.3m

Figure 15. DBH measurement of a tree with aerial roots

<u>Attention:</u> 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.

??m

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 <u>center</u> point of the <u>central plot</u>. 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 <u>subplot</u> 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.

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

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

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:	Matagali:
FMG East;South	Altitude(m):
Date:	Team Leader:

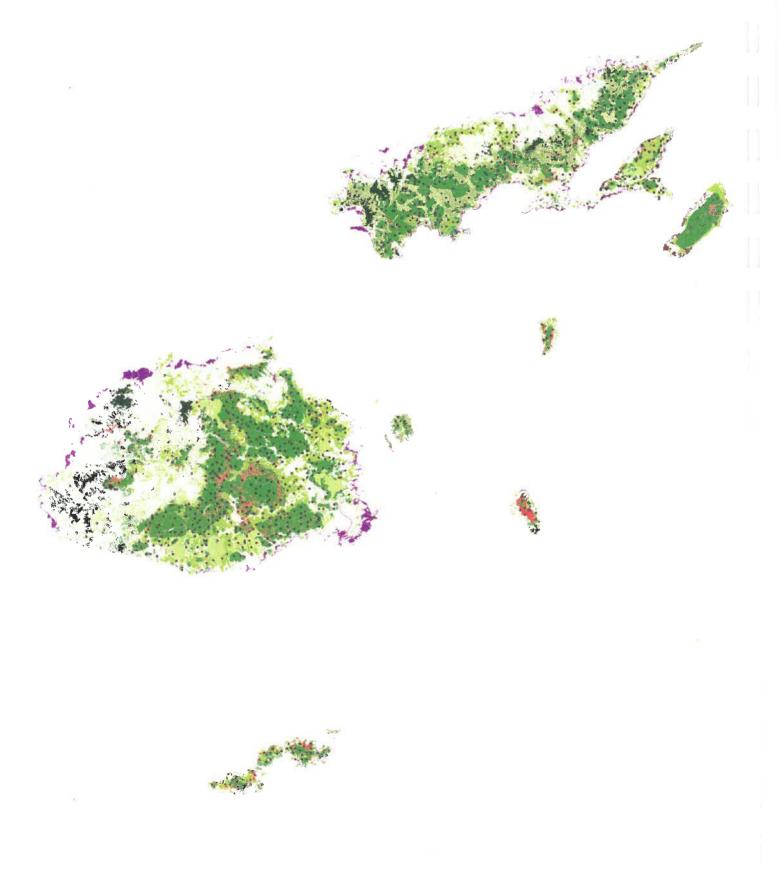
2. Plot Recordings	Plot Location(Circle):		N	
Slope facing: N S E W		w	С	E
Slope:degrees			S	

Species	Total Number	Species	Total Number	Species	Total Number

Free Species	Dbh[cm]	Tree Species	Dbh[cm]	Tree Species	Dbh[cm]

Tree	Dbh	Bole height	Lo	og1	Lo	g2
Species	[cm]	[meters]	0 to h ₁	Quality	h ₁ to h ₂	Quality
	-					
		-			1	





Appendix 3: Equipment List



Compass





Fibreglass 50m Tape



Diameter Tape



GPS



Aluminium Clip Board



Knife



Flat File



First Aid Kit



Pencil

1



Calculator



Aluminium Clip Board

Ill Ones

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

gA

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 subparagraph C below.

B. <u>Remuneration</u>

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 A. <u>Coordinator</u>

Administration

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. <u>Records and Accounts</u>

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.

- 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
 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 LanguageThe Contract shall be governed by the laws of Republic of Fiji, and the language of the Contract shall be English.
- 13. Dispute
ResolutionAny 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 Bankfinanced 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]



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

Signed by and Date [Consultant]

Address of Consultant:

50 Charles Court, Massea. Wew Zealand Lado

In the presence of: [Witness]

Address of Witness:

50 Charles Cot Haven Utago New Zealand. Diector,

Occupation:

[Departmental Witness]

[Signature of Consultant]

[Signature of Witness & Date]

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 reforesting 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

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** *July2020*. 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</i> 30% payment of consultancy value;	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</i> <i>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 <u>\$25,000 USD</u>

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CONTRACT CEILING: <u>\$25,000 USD</u>

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CONTRACT FOR CONSULTING SERVICES

THIS CONTRACT ("Contract") is entered into thisMarch 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	commo for fou	Consultant shall perform the Services during the period encing March, 2020 and continuing through June, 2020 or if later, r calendar months from the date of signing of this contract by both , or any other period as may be subsequently agreed by the parties ing.
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
			of PSP data analysis, draft report, growth models, all data sets,

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 A. <u>Coordinator</u>.

Administration

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. <u>Reports</u>.

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 Material of 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 The Contract shall be governed by the laws of *Fiji*, and the language of Contract and the Contract shall be English.Language
- 12. Dispute 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 or 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.
- (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.

16. Representation and Warranty

	(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 I 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, not 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.

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FOR THE CLIENT

FOR THE CONSULTANT

Signed by ______ Name: Pene N. Baleinabuli Permanent Secretary for Ministry for Forestry Signed by _____ Denis Alder 9 Stansfield Close Headington Oxford OX3 8TH, UK

Witness

Witness

Name:	Name:
Designation:	Designation:
Date:	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 \geq 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 \ge 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 \ge 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, 22012, 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 sigining 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	

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.



(1) Remuneration of Staff

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



Arnulfstr. 199, 80634 Munich Germany Phone: +49 89 121528-0 Fax: +49 89 121528-79 E-mail: <u>info@gaf.de</u> Website: <u>www.gaf.de</u>



World Forestry Leuschnerstrasse 91e D-21031 Hamburg Germany Tel: +49-40-73962100 E-mail: <u>michael.koehl@uni-hamburg.de</u> Website: <u>www.biologie.uni-hamburg.de/zentrumholzwirtschaft.html</u>

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- 1. Submission Letter
- 2. Presentation of the Project Team
 - 2.1 GAFAG
 - 2.2 University of Hamburg World Forestry
- 3. Letter of Association
- 4. Eligibility Criteria
 - 4.1 Registration Certificate
 - 4.2 TIN Number and Tax Compliance Certificate
 - 4.3 VAT Registration Certificate
 - 4.4 Certification of no Pending Legal Action Against Company
 - 4.5 Certification that Company is not Insolvent
 - 4.6 Remark

5. Selected References for the Project

6. Selected Staff with Experience Relevant to the Project

7. Annexes

Quality Management Certificate of GAF AG Brochure of University of Hamburg - World Forestry



1. SUBMISSION LETTER





Arnulfstr. 199 80634 Munich Germany Phone: +49 89 121528-0 Fax: +49 89 121528-79 E-mail: info@gaf.de www.gaf.de



GAF AG Arnulfstr. 199 * 80634 Munich * Germanv

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.

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

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Commerzbank SWIFT (BIC): COBADEFF 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, <u>www.gaf.de</u>.

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. 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

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): HYVEDEMMXXX IBAN: € DE06 7002 0270 3890 0903 61 US\$ DE14 7002 0270 0885 0270 16

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Commerzbank SWIFT (BIC): COBADEFF IBAN:



Amulfstr. 199 80634 Munich Germany Phone: +49 89 121528-0 Fax: +49 89 121528-79 E-mail: info@gaf.de www.daf.de



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

S0634 Munich Gormany Phona: +49 S9 121528-0 E-mail: infp@gaf.de www.ga%de

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Place of business: Murt.M HRS 140 500

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2. PRESENTATION OF THE PROJECT TEAM

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2.1. GAFAG

2.1.1 KEY FACTS

Company name: CEO: Supervisory Board:	GAF AG (AG stands for public limited company in German) Dr. Sebastian CARL 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:	ny Addresses: GAF AG (headquarters): Arnulfstrasse 199 80634 Munich, Germany Tel.: +49 89 121528-0, Fax: +49 89 121528-79 E-mail: info@gaf.de, <u>www.gaf.de</u>		
	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, enterprisewide 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/E0 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





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

TO WHOM IT MAY CONCERN

16.10.2019

Fakultät für Mathematik, Informatik und Naturwissenschaften

Fachbereich Biologie

Institut für Holwissenschaften-Weltforstwirtschaft

Prof. Dr. Michael Köhl

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,

Billant Cone

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

a) Firma: 2.

GAF AG

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

München Geschäftsanschrift: Amulfstr. 199, 80634 München

Zweignlederlassung/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 multidiziplinären 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

a) Aligemeine Vertretungsregelung: 4

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

Prokura: 5.

Gesamtprokura gemeinsam mit einem Vorstandsmitglied oder einem anderen Prokuristen: Barner, 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 Femerkundung 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



Telefax: 089 1252 - 7777 Haitestellen

Kaiharina-von-Bora-Str. 4 80333 München

Kreditinatitut Sundesbank München Bayerische Lendesbank

S-Bahn: Stachus U-Bahn: (U2) Königsplatz

Straßenbahn: (Linien 27, 28) Ottostrasse

MARKDEF 1700 BYLADEMM HYVEDEMM HvpoVereinsbank München

DE05 7000 0000 0070 0015 06 DE37 7005 0000 0000 0249 62 DE78 7002 0270 0000 0801 20

第-諸由前: poststelle-abteitunc3@famuc.bayern.de internet: www.finanzamt-muerchen.da



4.3 VAT Registration Certificate



POST-ANSCHRIFT

Bundessentralient für Steuern, 66736 Saarkouis Firma GAF AG Arnulfstr. 199 80634 München

HAUSANSCHRIFT	Abornweg 1-3, 66740 Saariouis
BEARGEITET VON	Servicegruppe Umsatzsteuer-Kontroliverlahren
	St II 701/St i 915
TEL	+49 (0) 228 405 1222
Fax	+49 (0) 228 406 3801
e-MAR.	kontakt-vergabe@bzst.bund.de
IN TELEVICE T	wasaw input in put da

BETREFF

OATUM

07.07.2014

Erteilung einer Umsatzsteuer-Identifikationsnummer 86.Z.G Hinweise zum Umsatzsteuer-Kontrollverfahren ANLAGEN S 7427-c DE129357512 St II 701/St | 915 G2 (bei Antwort bitte angeben)

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 Unterschritt gültig.

O15W2A04 12032014





4.4 Certification of no Pending Legal Action Against Company

Bundesamt für Justiz

Bundesamt fur Justiz, 53934 Bonn GAF AG Arnulfstr. 199 80634 München Bonn, den 10.09.2019

Name (Firma)/Business name/Raison sociale op denomination. GAF AG

Reshtsform/Type of business ownership/Porme jundique Aktiengesellschaft

Registergericht/Register court/Tribunal charge de la . tenue du registre:

Amtsgericht München

Registernummer/Register number/Numero d'immatriculation. HRB 140809

Sitz/Location of registered office/Siège social Arnulfstr. 199, 80634 München

Anschnif/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 grufen Ste die Angeben. Soliten Sie Unschligkeiten feststellen, teilen Sie diese bitte grufen Bundesamf für Justig noglichst anwerzuglich – ggt. telefonisch – mit. Bundesamf für Justig: Adenaueraties 99-103, 53113 Bönn – Telefon: 0226 99410 40, Telefer: 0220 99410 5050 Diese Auskunft wurde automatisten erstellt und ist ohne Unterschrift gültig.

4.5 Certification that Company is not Insolvent

AMTSGERICHT MÜNCHEN Insolvenzgericht

Amtegericht München • Insolvenzgericht • 80326 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 Amulfstr. 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.



Urkundsbeamter der Geschäftsstelle



Briefanschrift: Amtsgericht München + 60325 München Hausanschrift: Infantenest: 5 80/97 München Internet: www.justiz.bayern.de Wir haben gleitende Arbeitszeit. Am besten erreichen Sie uns während der Kernzeiten Ms. – Fr. 8.30 – 11.30 Uhr, Do. 13.00 – 14.30 Uhr. Sankvarbindung: Landesjustizkasse Bamberg Konto-Nr. 24919 BLZ 700 500 00 Bayerische Landesbank München Verkehrsanbindung: 20 U2 Haitest. Josephapisiz, anschl. Bus 53, Haltest. Infaniernestr hörd; Tram Linien 20 o. 21. Haitest. Lothstr



October 2019

4.5 Remark



MAT DE M. KARLE LARGE ENSTRUCTEUR HORZWISSENSCHAFTEN LEUSCHMERSTR. 91 + D. FIODI HAMBURG. 19.10.2019 Fakultät för Mathematik, Informatik und Naturwissenschaften

Fachbereich Biologie

Institut für Holwissenschaften-Weltforstwirtschaft Prof. Dr. Michael Köhl

Tel.:	040-73962-100
Fax:	040-73962-199
E-Mail:	michael.koehi@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,

rel

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	инн	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	инн	SFM approaches to foster FLEGT and REDD+ interactions (SAFARI)	Indonesia, Suriname/Guyana	09.2015- 12.2018
3	инн	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	инн	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 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	инн	HH Ensuring long-term productivity of lowland tropical rainforests of Guyana, Beliz the Caribbean Trinidad Tobago		2015-2018
10	GAF	EOWORLD2 – Support to REDD in Latin America Argentina, Chile		04.2014 - 02.2016
11			Central Afr. Rep.; Cameroon	10.2013 - 09.2014
12	GAF	AF Development of integrated monitoring systems for REDD+ in the SADC region		01.2012 - 11.2015
13	GAF	AF REDDAF - Stimulating Forest Monitoring Services REDD Cameroon; Republic		01.2011 - 12.2013
14	GAF	GMES Service Element Forest Monitoring for REDD+	Republic of Congo, Gabon	12.2009 - 07.2013
15				03.2003 - 05.2009
16		HH Sustainable land management in south-western Madagascar Madagasc		2011-2016
17	инн	Report State of European Forests		01.2017- 10.2020

Reference n°1 (UHH)

Assignment name:	Approx. value of the contract: EUR 710,000			
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				
Country: Fiji	Duration of assignment (months): 23			
Name of Client:	Total No of staff-months of the assignment:			
Ministry of Forestry, Fiji				
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 s	-			
 Situational analysis, data revision and final we Methodology Development for FRL 	ork plan development			
- FRL construction				
 Metodology development for NFMS and MRV 				
- Implementation of a test inventory				
- NFMS establishment				
 Database development Set of SOPs that cover all work accords of the 	consultance and include the OA/OC measures			
 Set of SOPs that cover all work aspects of the consultancy and include the QA / QC measures Capacity development 				
	uding 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:

- 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

- 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)

Approx. value of the contract: EUR 90,000
Duration of assignment (months): 12
Total No of staff-months of the assignment:
Approx. value of the services provided by your firm under the contract:
No of professional staff-months provided by associated Consultants:
Name of senior professional staff of your firm involved and functions performed: Prof. Dr. Michael Köhl Dr Prem Raj Neupane Dr Philip Mundhenk

roject:

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**

- 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

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:	Approx. value of the contract:	
Capacity for Copernicus REDD+ and For Monitoring Services (REDDCopernicus)	est 2,680,000 EUR equiv. to 2,961,390 US\$	
Country:	Duration of assignment (months):	
World	38.00	
Name of Client:	Total No of staff-months of the assignment: 260.00	
European Commission		
Address:	Approx. value of the services provided by your firm	
Research Executive Agency (REA)	under the contract:	
Monika Kacik	871,000 EUR equiv. to 1,150,000 US\$	
Place Rogier 16		
B-1049 Brussels		
Belgium		
Email: Monika.KACIK@ec.europa.gov		
Start date (month/year):	No of professional staff-months provided by	
01/2019	associated Consultants:	
Completion date (month/year):	173.00	
02/2022		
Name of associated Consultants, if any:	Name of senior professional staff of your firm	
JRC, SIRS, Wageningen University, VTT	involved and functions performed:	
	- Project Coordinator: T. Haeusler	
	- Task Manager: S. Gomez	

Narrative description of Project:

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:

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.

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	
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:

- 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 Completion date (month/year): 11/2019	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: - Project Coordinator: T. Haeusler - Technical Project Management: P. Navratil

Narrative description of Project:

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:

- 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 predefined tools for forest monitoring.

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

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:

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	Duration of assignment (months): 42.00
Location within country: Cameroon, Malawi, Gabon, Vietnam	
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:

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.

- 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 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.

- 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.

- 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:	Approx. value of the contract:
EOWORLD2 – SUPPORT TO REDD IN LATIN AMERICA	100,000 EUR equiv. to 132,000 US\$
Country:	Duration of assignment (months):
Argentina; Chile	22.50
Location within country:	
Chile: Isola de Chile; Argentina: Located within Gran	
Chaco at the border to Paraguay	
Name of Client:	Total No of staff-months of the assignment:
ESA ESRIN / World Bank	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):	No of professional staff-months provided by
04/2014	associated Consultants:
Completion date (month/year):	0.00
02/2016	
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:

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.

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:

- 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: For both regions (Argentina and Chile):

- 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:	Total No of staff-months of the assignment: 2.75
République du Congo et République Centrafricaine Address: KEY INFORMATIONProject 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 form 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+.

- 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:

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. The four main building blocks of the SADC project are:

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

- 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 Tuolouse (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 Ramminger (Head of the production team)

Narrative description of Project:

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.

The main activities proposed are:

Country specific user requirements to identify the needs of stakeholders in terms of instituting REDD projects; 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;

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.

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.

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

The main products of the services were deforestation and degradation products based on multi-temporal highresolution satellite data. The following products and services will be derived:

- 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 EObased 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	Approx. value of the services provided by your firm under the contract: 1,400,000 EUR equiv. to 1,946,000 US\$
Tel.: +39 06 94 180560 frank.martin.seifert@esa.int	
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:

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:

- 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:

The main products of the services are the deforestation and degradation products based on multi-temporal highresolution satellite data. The following products and services are provided:

- 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:	
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:

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:

- 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
 - Forest Information Up-date
 - Support to Environmental Monitoring
 - Detection and Post-monitoring of Natural and Human Induced Forest Disturbances
- At Local Scale
 - Support to Management and Reporting Obligations of LULUCF Clean Development Mechanism (CDM) Projects

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

 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: 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 	Mr Daniel Kübler Mr Konstantin Olschofsky

Narrative description of Project:

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.

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

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.



Reference n°17 (UHH)

Assignment name:	Approx. value of the contract:
Report State of European Forests	EUR 150,000
Country:	Duration of assignment (months): 24
27 European countries	
Location within country:	
Europe	
Name of Client:	Total No of staff-months of the assignment: 24
German Federal Ministry of Food and Agriculture UN-FAO/ECE	
Forestry Europe	
Address:	Approx. value of the services provided by your firm
Rochusstrasse 5	under the contract:
Bonn, Germany	EUR 100,000
Start date (month/year): 1.2017	No of professional staff-months provided by
Completion date (month/year): 10.2020	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:	
	ublished by the UNECE/FAO and Forestry Europe. It presents
	able 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.

- 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.	Company/ N	Yrs with	Specific experience	Countries experience
	1.0. (A.M.) (A.M.)		exp./yis	HOD	comp		
HAUSLER,	German	PhD Forestry	33	GAF AG	31	 REDD+ policy process, 	Cameroon, Malawi,
Inomas		Assessor of the Forest Service				 Development of regional and national forest monitoring strategies/systems in developing countries (REDD+MRV) 	Botswana, Tunisia, Pakistan, Tanzania,
(Team leader-		(State License for				 Institutional strengthening and capacity building, 	Zimbabwe, Ghana,
Forestry Expert	0	Administrative Tasks)				 Project planning and management 	INIAIAYSIA, INUUTICSIA, RSA, COMIFAC
		M.Sc. Forestry				 Remote sensing and GIS, 	Countries, SADC
						 Environment, forest- and land use/cover mapping 	Member States
						 Analysis of satellite data and aerial photo 	
						 Forest inventories, 	
						 Capacity assessment and development 	
						 Head of Forest and Climate Change Department at GAF 	
GOMEZ,	Sri Lankan	PhD Remote	23	GAF AG	13	REDD+ policy process,	South Africa,
Sharon		Sensing/GIS,				 Development of regional and national forest monitoring 	Cameroon, Republic of
		ecological				strategies/systems in developing countries (REDD+MRV)	Congo, Ethiopia,
(Forestry		surveying				 Climate Change and Resilience 	Gabon, Namibia,
Expert)		MLSC. Remole				 Project planning and management 	Mozambicue
		Use/Vegetation				 Remote sensing and GIS 	Botswana, Zambia,
		Mapping				 Environment, land use/cover mapping, analysis of satellite data 	Malawi, COMIFAC
						and aerial photo	Countries, SADC
						 Stakeholder assessment and capacity development 	Member States
ENSSLE, Fabian	German	M.Sc. Forestry	10	GAF AG	ო	 Climate Change mitigation and adaptation and the Reduction of Emissions from Definestation and Destradation (REDD+) in 	Fiji, Dem. Rep. Kongo, Cameroon Malawi
						developing countries	Ecuador, Columbia
(GIS/Remote						Earth Observation (EO) data processing and method development	
Sensing Expert)						 Coordination of technical developments within the Forestry Unit 	
						 Technical Assistance (TA) 	
						 Capacity building and training 	
						GIS applications	
						 Research and Development (R&D) 	
NAVRATIL,	German	M.Sc. Geography	15	GAF AG	4	 Establishment of FREL and FRL 	Fiji, Indonesia, Malawi,
reter						 Environmental Remote Sensing (Multispectral, RADAR, LiDAR) & 	Metham, Cambodia, Mvanmar Georgia
							Azerbaijan Uzhekistan
						 LU and LUC mapping 	

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

October 2019

German PhD Biology 15 GAF AG 1 M.Sc. Environmental Resource Management Dipl. Forestry 30 UHH; BhD Germany PhD Solociate associate as associate as a sociate	(GIS/Remote						Carbon monitoring & accounting	
Berlin PhD Biology 15 GAF A3 1 Forestry, forest mensuration, carbon accounting Information Environmental Environmental Environmental Environmental Environmental Environmental Environmental Environmental Environmental Resource Resource Remote sensing based upscaling of forest carbon inventory Dipl. Forestry 30 UHH; Environmental Remain Professor National Forest Monitoring System for RED+ Environtory Remain Construction of RL, FEL for RED+ Construction of RL, FEL for RED+ Environtory Remain	Sensing Expert)						Capacity building (Remote Sensing, Uncertainty assessment, GH(Emission Assessment)	
Imagement Assessment of forest AB with LIDAR Resounce that a contract and an inventory assessment and validation Imagement Management Accuracy assessment and validation Imagement Namagement Accuracy assessment and validation Imagement National Forest Inventory associate Remote sensing based toxecialing of forest carbon inventory Remote National Forest Inventory methods Immethods Immethods Remote National Forest Inventory National Forest Inventory Immethods Remote National Forest Inventory National Forest Inventory Immethods Remote National Forest Inventory System for REDP+ Construction of Report Remote National Forest Inventory System for REDP+ Construction of Record Inventory Remote National Forest Inventory System for RED+ Construction of Record Inventory Remote National Forest Inventory System for RED+ Construction of Record Inventory Remote National Forest Inventory System for RED+ Construction of Record Inventory Remote Remote Construction of Record Inventory Construction of Record Inventory Construction of Record Inventory Nep	BALLHORN, Uwe	German	PhD Biology M.Sc.	15	GAF AG	H	 Forestry, forest mensuration, carbon accounting Forest carbon inventory & statistical analysis 	Fiji, Indonesia, Malavsia. Liberia.
German Professor 30 UHH: Terrestrial inventory methods PhD Germany Survey statistics National Forest Inventory CA Survey statistics National Forest Inventory A National Forest Monitoring System for RED+ CA National Forest Monitoring System for RED+ CA National Forest Monitoring System for RED+ Construction of FNL/FREL for RED+ Construction of FNL/FREL for RED+ Construction of FNL/FREL for RED+ Construction of FNL/FREL for RED+ Nepalese PhD in Forestry 25 UHH: International forest resource monitoring Caernany Create accornowy and bioenergy Nepalese PhD in Forestry PhD in Forestry 25 UHH: International forest resource monitoring Caernany Create accornowy and bioenergy International forest resource monitoring Construction of the SPA - Forest Law Caernany Create accornowy and bioenergy Construction of the SPA - Forest Law Caernany Construction of forest notioning Construction of the SPA - Forest Law Caernan	(GIS/Remote Sensing Expert)		Environmental Resource Management Diol. Forestrv				 Assessment of forest AGB with LIDAR Remote sensing based upscaling of forest carbon inventory Accuracy assessment and validation 	Ethiopia, Georgia, Azerbaijan, Armenia, Kenya, Mozambique
PhD Germany (A) Survey statistics nd) 6 National Forest Inventory (a) National Forest Inventory (a) nd) 6 National Forest Inventory (a) National Forest Inventory (a) nd) 9 National Forest Inventory (a) National Forest Inventory (b) nd) 9 0 National Forest Inventory (a) nd) 0 0 0 nd) 0 0 <t< td=""><th>KOEHL,</th><td>German</td><td>Professor</td><td>30</td><td>UHH;</td><td></td><td>Terrestrial inventory methods</td><td>EU. USA. Fiii. Viet Nam.</td></t<>	KOEHL,	German	Professor	30	UHH;		Terrestrial inventory methods	EU. USA. Fiii. Viet Nam.
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October 2019

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

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					• • • • •	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	
MUNDHENK, Philipp (Statistician)	German	PhD in Forestry	13	UHH, Germany		 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 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		 NFMS for REDD+ Forest management: forest inventory, silviculture, forest harvesting International trade of wood products, timber market and valuechain Human resource development Forest product based entrepreneurship International work experience on forestry and forest planning sector 	Fiji, Viet Nam, New Zealand

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

October 2019

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



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



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:



(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.

QM 25 0110

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

Jürgen G. Kemer

Certification committee

Bernd Kentner Exped group



EQ ZERT is accredited by the German Association for Accreditation as a certification body for quality management systems in occardance with Certificate No. Dr2M112000100. The certificate is property of EQ ZERT, Karkstraße 3; D-BX0/23 Um.

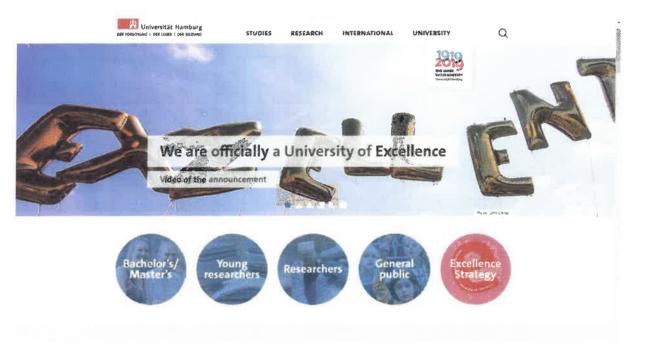




October 2019

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 CO_2 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: <u>https://www.biologie.uni-hamburg.de/en/forschung/oekologie-biologische-ressourcen/weltforstwirtschaft/forschungsbereiche.html</u>



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.fi/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
- o 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.fl/images/REDD/Guidance%20on%20the%20nesting%20of%20subnational%20MRV%20and%20FRL%20within%20national%20MRV%20and%20FRL.pdf
- o Capacity building, see at http://www.forestry.gov.fi/images/REDD/Capacity_development_plan_draft1.pdf
- Capacity development strategy for MRV, available at <u>http://www.forestry.gov.fj/images/REDD/Capacity_development_plan_draft1.pdf</u>

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	Namte of thraining	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	25 September- 9
	Setup and configuration of field Surveys'	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



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CONTRACT

Consultant's Services

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Consultant's Services

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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

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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 ReferenceAppendix B:Key ExpertsAppendix C:Breakdown of Contract Price

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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

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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 Subconsultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

- **3. Law Governing**
Contract3.1. 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
Fraudulent10.1. 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

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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 Services13.1. 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 Contract14.1. 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 19.1.3. The Consultant may terminate this Contract, by not Consultant 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.
 - If the Client fails to pay any money due to the Consultant (a) 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.
- **Cessation of** 19.1.4. Upon termination of this Contract pursuant to Clauses c. **Rights and** GCC 12 or GCC 19 hereof, or upon expiration of this Contract **Obligations** 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

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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** 19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b. Services 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.
 - 19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant: Termination
 - payment for Services satisfactorily performed prior to the (a) 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

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Standard of 8. Performance

Payment

upon

e.

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.

20.4. The Consultant shall perform the Services in accordance with b. Law Applicable to the Contract and the Applicable Law and shall take all practicable Services 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 21.1. The Consultant shall hold the Client's interests paramount. Interests without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

> The payment of the Consultant pursuant to GCC F 21.1.1 (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

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

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 Consultant23.1 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 Subconsultants 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 026.1 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** 27.1 Unless otherwise indicated in the SCC, all reports and of the Client in relevant data and information such as maps, diagrams, plans, **Reports and** databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the Records 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**.

28.1 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

28. Equipment, Vehicles and Materials

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 Experts29.1 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** 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 of 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 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

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Exemptions best efforts to:

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 Personnel36.1 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. Payment37.1 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.

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

41. Mode of Billing and
Payment41.1The 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 <u>Advance payment</u>: 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 <u>The Lump-Sum Installment Payments.</u> 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 <u>The Final Payment</u>. The final payment under this Clause shall be made only after the final report 1 have been submitted by the Consultant and approved as satisfactory by the

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40. Currency of Payment

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 Payments42.1 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. Amicable44.1 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;

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.

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.

- (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	The addresses are:
	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 Consultant : UNIQUE Forestry & Land Use Attention : Matthias Seebauer Facsimile : E-mail (where permitted) : Matthias.Seebauer@unique-landuse.de
8.1	The Lead Member on behalf of the JV is
	N/A
9.1	The Authorized Representatives are:
	For the Client: Mr Semi Dranibaka
	For the Consultant: Matthias Seebauer
12.1	Termination of Contract for Failure to Become Effective:
	The time period shall be 2 months
13.1	Commencement of Services:
	The first day of the consultancy shall be <i>insert date</i>

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	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

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23.1	No additional provisions.
24.1	The insurance coverage against the risks shall be as follows:
	Professional liability insurance, with a minimum coverage of US\$ 799,000.
38.1	The Contract price is: Two Hundred and Thirty-Eight thousand, Eigh hundred and ten dollars (USD), (USD\$ 238,810) inclusive of local direc taxes (15% withholding tax).
	"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."
39.1 and 39.2	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:
	(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:
	(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

	1	Consultant, S shall bear su regulations o to the Client	Sub-consult ch customs f the Client if they we	ties and taxes have been exempted, the ants or Experts, as the case may be, (a duties and taxes in conformity with the 's country, or (b) shall reimburse the ere paid by the Client at the time the brought into the Client's country.
41.2	The payme	nt schedule:		
	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
41.2.1	bank paymer	nt guarantee:		to the advance payment and the advanc vance payment.
41.2.4	The account	ts are:		
	for foreign of Account Nar IBAN /Acco BIC/SWIFT Address of B	ne : unt Number: CODE:	s foreign cu	rrency
45.1	Disputes sha provisions:	all be settled	by arbitra	tion in accordance with the following
	arbitrat	ion shall be	heard by a	Each dispute submitted by a Party to sole arbitrator or an arbitration panel tors pursuant to the provisions of the

2. <u>Miscellaneous</u> . In any arbitration proceeding hereund	2.	Miscellaneous.	In any arbitration	proceeding hereunder:
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- (a) proceedings shall, unless otherwise agreed by the Parties, be held in Suva, Fiji;
- (b) the English language shall be the official language for all purposes; and
- (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.

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 initiatd 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 commended 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 durig the last NFI round and develop a report on behalf of the Minsitry 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 operaitng 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

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. 	 Involved in the National Forest Inventory. Forest Monitoring System Experience of working in the South Pacific region
Forest Biometrician	 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 	6. Experience of working in the South Pacific region
Statistician	 Master's degree in statistics or related subject 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 	 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.

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 proving 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.

IV. Appendices

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N0°	Name	Expert's input (in pe 5)	erson/mon	th) per each]	input (in person/month) per each Deliverable (listed in TECH-	sted in TECH-		To	Total time-input	
		Position		• •	2.4			;	(in Months)	
		T USHIOH		D-I	D-2	D-3	D-4	Home	Field	Total
Key Experts										
	Matthias Seebaner	Team Leader-Forestry Evnert	Home	0.18	0.23	0.32	0.36	1.09		
K-I		HATCH CHONGE I MANAGE INA	Field	0.00	0.68	0.00	0.00		0.68	1.77
	Metodi Panev	Forest Biometrician	Home	0.36	0.91	0.91	0.73	2.91		
K-2			Field	0.00	0.45	0.55	0.23		1.23	4.14
C 11	Dr. Kvle Holland	Statistician	Home	0.09	0.18	0.00	0.18	0.45		
K-3			Field	0.00	0.00	0.00	0.00		0.00	0.45
	Prashant Kadgi	GIS/ Remote Sensing Exnert	Home	0.00	00.0	0.68	0.00	0.68		
K-4	2	0	Field	0.00	0.00	0.00	0.00		0.00	0.68
						Subtotal		5.14	1.91	7.05
Non-Key Experts	perts									
	Alexandar Pinkwart	Non-Key Exnert 1	Home	0.86	1.09	16.0		2.86		
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APPENDIX B - KEY EXPERTS NOTOD A TAC TEAM OF

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2.86 1.59 8.00 3.50 11								00.0	
8.00 3.50 11						Sub-total	2.86	1.59	4 45
8.00 3.50								1000	211
						Total	8.00	3.50	11 50

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APPENDIX C – BREAKDOWN OF CONTRACT PRICE

No.	Name	Position (as in TECH-6)	Person-month Remuneration ra	Person-month Remuneration rate	Time input in person month (from TECH-6)	OSN	FJD
Key Experts							
K-1	Matthias Seebauer	Team Leader-Forestry Expert	[Home]	20,900	1.09	37,050	80,610
			[Field]	20,900	0.68		1.
K-2	Metodi Panev	Forest Riometrician	[Home]	17,600	2.91	72,800	158,392
			[Field]	17,600	1.23	.11	
K-3	Dr. Kvle Holland	Statician	[Home]	20,900	0.45	9,500	20,669
		Dution	[Field]	20,900	0.00	1. 1.1	1 2.
K-4	- Prashant Kadoi	GIS/ Remote Sensing Evnert	[Home]	17,600	0.68	12,000	26,109
	0	HART SHIMAG MAHANI ATA	[Field]	17,600	0.00	11-11-	
Non-key experts	perts						
N-1			[Home]	13,200	2.86	58,800	127,932
	Alexandar Pinkwart	Non-Key Expert 1	[Field]	13,200	1.59	1.1	1. 10°
N-2	Pool of other Non-Key		[Home]	13,200	0.00	0	0
	Experts	Non-Key Expert 2	[Field]	13,200	0.00	1	
Total costs	ts					190.150	413 713

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°N	Type of reimbursable expenses	Unit	Unit Cost	Ouantity	nSD	EID
1	International per diem**	Day	180	42	7.560	16 448
5	Per diem national	Day	180	50	9.000	19 581
	International flights incl VISA and local travel	Trip	2,600	6	23,400	50.912
4	Local flight	Trip	0	0	0	0
5	In-country transport	Carrent vehicle	0	0	0	
9	Reporting & Printing	Lump sum	2,500	-	2.500	5.439
-	Workshop Organization	Lump sum	200	9	1,200	2.611
~	Contingencies	Lump sum	5,000	1	5,000	10,879
Total costs					48.660	105 871

SUMMARY OF COSTS

		Costs
	Proposed Costs in accordance with Clause 16.4 of the Data Sheet	Clause 16.4 of the Data Sheet
Item	USD	FJD
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

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	Footnote: Payments will be made in the currency(ies) expressed above (Reference to ITC 16.4).		
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IV. Appendices	⁻ ooti		
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Schnewlinstr. 10 D-79098 Freiburg, Germany Tel. +49 - 761 - 20 85 34 0 Fax +49 - 761 - 20 85 34 10 unique@unique-landuse.de www.unique-landuse.de

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

Ministry of Forests

REDD+ Unit

UNIQUE | Schnewlinstr. 10 | 79098 Freiburg | Germany

Dear Sirs,

To:

Fiji

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,

Tenniskent

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 timm.tennigkeit@unique-landuse.de

Commerzbank | BLZ 680 400 07 | Account 147 91 53 00 | IBAN DE35 6804 0007 0147 9153 00 | BIC/SWIFT-Code COBADEFF Deutsche Bank | BLZ 680 700 24 | Account 025 25 85 | IBAN DE72 6807 0024 0025 2585 00 | BIC/SWIFT-Code DEUTDEDBFRE

Commercial Registry B of the	Division B	Number of company:
local court of Freiburg i.Br.	Representation of the current	HRB 7584
	content of the registry	
	Retrieval 10.10.2019 07:53	
	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

- 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
- a) Legal form, commencement, company statures 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:

(the same who signs the Proposal)

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	K-H-ILVL	17/10/2018
Name of Expert	Signature	Date
Dr. Timm Tennigkeit	9: Tenniskent	17/10/2018
Name of authorized	Signature	Date
Representative of the Consultant		

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 multispectral 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 Remport, 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
Anthrotect 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	
Numerous Undisclosed Projects	ARC, VCS, CCB
Numerous Feasibility Studies (IFM and REDD), Africa, Americas and South Pac	

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	
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	
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	
Prairie Pothole IFM Project, North Dakota	Technical Reviewer, CCB

Development Experience

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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	
Bajo Calima y Bahía Málaga, Colombia	
Acapa – Bajo Mira y Frontera, Colombia	
Cajambre REDD+ Project, Colombia	VCS, CCB
Concosta REDD+ Project, Colombia	
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)Uni	versity of Minnesota, Twin Cities

Employment

2011 – present	Auditor, Det Norske Veritas
2010 – present	
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, Brazil	Lead 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,	Ph.D. Biometrics and Remote	2012
Berkley	Sensing	
University of California,	M.A. Statistics	2011
Berkley		
University of California,	M.S. Forest Biometrics	2009
Berkley		
University of Idaho, Moscow	M.S. Forest Engineering	2002
University of Minnesota,	B.S. Forest Resource	2000
Twin Cities	Management	

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	Ecological Carbon Offset Partners, LLC Managing Director Reference contact information: Greg Minnick, Chemonics, <u>minnick@chemonics.com</u> , +1-202- 955-3356 Joseph Garcia-Falmer, InfiniteEARTH, joseph@infinite- earth.com, +852-	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

Ufs EDRE

Ufs CF

RE: NFI Design Consultancy

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Sir,

(c)

The evaluation committee has met and evaluated the bids for the above consultancy.

(F) Approved. We must also encore to Hain staff to either kad ~ suffins the conduct of fortue NFTe.

1/15/11/19

S V 9		Committee Members		
\$ \$	1	Alfred Anothony		Fiji Procurement Office
/	1	Semi Dranibaka		Ministry of Forestry
at.	2	llaisa Tulele		REDD+ Unit
(B) (M) int	3	Viliame Rabici		REDD+ Unit
(B) (Fraluation has Evaluation has been undertaken to the Evaluation the D as per 15.	ry	Ministry of Industry and Trade did I representative.	not send a	
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been Evaluation	Uni Gei	ique Forestry & Land Use - rmany	1 4	They are - undertaki- nak in Ve-
the per	GA	FAG - Germany	2	undar taki
o pastik.	A Gre	en Owl Development - Germany	3	nare in var
the penal as per. Penal as fulls.	San	nuela Lagataki - Fiji	4	supporten.
when approv	ar			PCF
ray Juon 1	As p	per attached minutes of the m	eeting, the c	ommittee is recomme
the bas per provide raping your approvide tor your approved to the period of the perio	Uniq	ue Forestry & Land Use for the co	onsultancy.	
Not		to the contract of the second s		Aaa

Supplier	Rating
Unique Forestry & Land Use - Germany	1 4
GAF AG - Germany	2
Green Owl Development - Germany	3
Samuela Lagataki - Fiji	4

- They are no. undertaking NFI wat in Vanuatu Supported. KHI/19.

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.

> Date 5 11 14 10 2.3 0 Permanent Secretary's Office

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CE/ The consultancies for viliame Rabici Specific cleliverillies dent go Mrugh (REDD+NC)

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Technical Evaluation Committee Summary

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:

Rule	Name	Organization
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

-	Eligit	bility Criteria	1		
	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
-	Davalita	- Ouldania	-		and there are a sum of the second sec
t	Kankin	ng Criteria			
г			RANKING CRITERIA		
	S. No.	Criteria/Sub-criteria		Weight	Points
	No.	General Experiences			Points
	No.		ted	Weight 10%	Carlos and the second second
	No. 1 a	General Experiences	ted	10%	
	No. 1 a i.	General Experiences Number of Projects Comple	ted	10%	10
	No. 1 i. i. ii. iii.	General Experiences Number of Projects Comple 2 project completed 2 to 4 projects completed >4 projects completed		10% 40%	10 4
	No. 1 a i. ii. iii.	General Experiences Number of Projects Comple 2 project completed 2 to 4 projects completed		10% 40% 70%	10 4 7
	No. 1 a i. ii. iii. 2 a.	General Experiences Number of Projects Comple 2 project completed 2 to 4 projects completed >4 projects completed	xperiences eted in which design of	10% 40% 70% 100%	10 4 7 10

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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 invetory 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, Leadership Position - Masters Degree & Above	65% 23%	26 6
	Masters Degree in Forestry Science& Above (100%)	<u>na materia kananana manan</u>	
	Bachelors Degree in Forestry Science (30%)		
	Diploma in Forestry or Related Sciences (10%)		
. m.	GIS Remote Sensing Specialist	38%	10
	Part of Team (100%)		The second of th
	Absent (10%)		
Sal->	Forest Biometrician	38%	10
ar an a the second	Part of Team (100%)		
	Absent (10%)		
Ċ.	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
111.	0.04 to 0.06 million	40%	2
iv.	0.06 to 0.08 million	60%	2
V.	> 0.08 million	100%	4

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Total (1 + 2 + 3)

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. 01/11/19 llaisa Tulele Semi Dranibaka Yan **Alfred Anthony** 05/11/19.

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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"

						-	-	Av. 1		
	1. Senaral Experiences	Semi Oranibaka	Aifred Anthon-	Visiame Rabic)	llaisa Tulele			-		
	a.) Number of Projects Completed 2.5 pecific/Similar/Rolevant Experiences	10	10	10	10	40	10	1		
	2. a) Number of projects completed in which design of forest Inventory based on permanent sample plots were conducted.	10	10	10	30	60	-	1		
	2. b) Number of projucts completed in which biomass survey /	119	10			00	30			
	assessments were conducted a result reported. 2. <) Number of projects completed in which training (capacity	14	8	0	SD	42	10.5	1		
Green Owi	 Crawfiller Dipopets completes in which training (capacity building) of staff in Invetory methodology, mensuration, use of latest technology (GPS, GPS) & data entry conducted. 	10	30	10	10	40	10			
Developmen	t 2. d) Number of projects completed in which the generation of the	10	5	٥	5	20	5	66		
	3. Or inflational setup of the consulting firm 3. a Office set up and mana priation and stion of the firm						1	1		
	3. b) I) General qualifications and number of key staff; Leadership	10. 5	0	0 6		11 24	3	1		
	Position Masters Degree & Abroy: 3. b) iii General qualifications and number of key staff; GiS Remote	10	10	10	10	40	30	1		
	Sensin Specialist 3. b) iii) General qualifications and number of key staff; Forest	0	0	-1	1	2	0.5			
	Biometrician 3. c) Annual Turnovoria USD.(best TWD years of last THRCE years)	0	0	4	2	6	2			
	Total	80	59	51	25	265	66.25			
	1. General Experiences						(-		
	a. Number of Projects Completed. 2.Specific/Similar/Relevant Experiences	10	16	30	.30	40	10	1		
	2 a) Number of projects completed in which design of forest inventory based on permanent sample plats were conducted.	10	8	10	-10	38	9.5			
	2. b) Number of projects completed in which blomuss survey /					_	2.4			
	assessments were conducted & results reported. 2. c) Number of projects completed in which training (capacity	14	0'	20	20	54	13.5			
ique Forestri 2 Land Use	building) of staff in invetory methodology, mensuration, use of	10	10	10	10	40	10			
Germany	2. d) Number of two jests completed in which the iteneration of the	10	5	30	30	35	8.75	90.		
	3. Or parisational setup of the consultin firm 3. a) Office set up and managerial or anisation of the firm	10	10	10	10	48	20			
	3. b)) General quelifications and number of key staff; Leadership Position Masters De ree & Above	6	6	6	6	24	6			
	3. b) ii) General qualifications and number of key staff; GIS Remote Sensing Specialist	10	jo	10	10	40	10			
	1 II) III) General qualifications and number of key staff; Forest	30	10	20	10	40	10			
	iiiometrictan 3. c) Annual Turnover in USD (Inter TWO years of last THREE years)	4	0	4	4	12	3			
	Tezal	94	69	100	100	363	90.75			
	1. General Experiences	1	1	I	1					
	a. Number of Projects Com Meted 2.5 recific/Similar, Relevant Experiences	30	10	.10	10	40	30			
	2. a) Number of projects completed in which design of forest inventory based on permagent sample plats were conducted.	10	8	4	10	32	. 8			
	2. b) Number of projects completed in which biomass survey /				1.	52	-			
	assessments were conducted & results resorted. Z. c) Number of projects completed in which training (capacity	14	20	20	20	74	38.5			
	bullding) of staff in invetory methodology, mensuvation, use of latest technology (GPS, GIS) & data entry conducted.	10	4	10	TD	34:	8.5			
ermany	2 d) Number of projects completed in which the generation of the	10	5	10	10	35	8.75	87		
	3. Or anizational sets: of the consulting firm 3. a) Office set up and mana orial or anization of the firm	10.		*0	10		10			
	3. b) i) General qualifications and number of key staff; Lendership	10 ⁻	10 5	<u>10</u> 6	10	40	10 6			
	Position - Masters Degree & Above. 3. b) II) General qualifications and number of key staff; GIS Remote									
-	Sensing Specialist 3. b) III) General qualifications and number of key staff; Forest	30	10	10	10	40	10			
	Biometrician	5	10	1	1	17	4.25			
	3. c) Annual Turnover in USD. (best TWD years of fast THREE years)	4	0	4		12	3			
	Tetal	89	83	85	91	348	87	_		
	E. General Examinences a. Number of Printets Com Pletad	7	7	7	10	31.	7.75			
	LSpecific/Similar/Relevant Experiences				-		-			
	nventory based on permanent sample plots were conducted.	8 1	8	7	10	33	8.25			
	b) Number of projects campleted in which biomass survey /	0	0			3.6	4			
2	c) Number of projects completed in which training (capacity									
Samuela k	uilding) of staff in invetory methodology, mensuration, use of atest technology (GPS, GIS) & data entry conducted.	4	D	4	4	12	3			
	(d) Number of projects comfleted in which the generation of the	0	0	S	S	10	2.5	28.75		
3	. Or miniational seture of the consulting firm a) Office set up and managerial or minization of the firm	0	0	1	3.	2	3			
3.	b) iJ General qualifications and number of key staff; Leadership osition - Masters Degree & Above	2	0	2		-	1 24			
3.	b) ii) General qualifications and number of key staff; 'GIS Remote	Ø	0-	3	1	2	0.5			
3.	b) II) General qualitations and number of key staff; Forest ametrician	0	0	.1	r	2 [0.5			
	c) Annual Turnover in USD. (hest TWO years of fast THREE years)	0	0	0		2	1			
	tal	21	15	36	- 1		8.75			
N	ama of Evaluators									
1 83	isa Tulele, Program Leader, REDD+ Unit									
2114	lame Rabici, REDO+ National Coonfinator					•//••••		-		

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Evaluation Criteria for Expressions of Interest (EOI) for "Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI"

ligibil	ity Criteria					APPL	ICANTS	
S.No.	Eligibility Criteria	Requirement	Compliance	Remarks	Green Owl Development	Unique Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuel Lagataki
1	Registration certificate of the consulting firm/s	Mandatory	Yes/No	Pass/Fail		0		
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)				
	In case of Joint Veniure "Joint Venture, or intended joint venture of sub- contracting Agreement"	Mandatory	Yes/No	(Pass/Fail				
4	Conflict of Interest as par 1.9 paragraph of the World Bank's Guidelines for Selection and Employment of Consultants Jan 2011	Mandatory	Yes/No.	Pessifai			********	

B. Ranking Criteria

jili.	Criteria/Sub-criteria	Weight	Points	Green Owl Development	Unique Forestry & Land Use	GAFAG Germany	Mr. Samuel Lagataki
〕 	General Experiences	10%	10	1	Germany	-	
〕 	Number of Projects Completed			1	1		1
ti. jili.	2 project completed	40%	4	-	-	-	1
jii.	2 to 4 projects completed	70%	7	1	-	-	-
- compe	>4 projects completed	100%	10	IM	10	10	10
2	Specific/Similar/Relevant Experiences	50%	50.00	1.4	1.+	1.34	1
8.	Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.	255%	10				1
i	1 project completed	40%	4	1		1	-
	2 project completed	70%	7			-	-
	3 project sumpleted	80%	8			1.00	-
	4 project completed	100%	10	10	10	10	10
	Number of projects completed in which blomass survey / assessments were conducted & results reported.	40%	20.00	1.0	10		1
1. 1.	1 project commeted	40%	8	1		-	02
	2 projects completed	70%	14				3
	>2 Mojects completed	100%	20	n	30	20	
c. 1	Number of projects completed in which training (capacity building) of staff in invetory methodology, ministration, use of latest technology (GPS, GIS) & date entry.	20%	10	serti	de	ot a	
					-		11
	1-2 project completed	40%	4.00	2.00	15	100	light
N	>2 projects completed	100%	10.00	10	10	10	1
đ. đ	Number of projects completed in which the generation of the emission & removal factor data was conducted.	20%	10				
1. 1	1-2 project completed	50%	5	-		1.0	1
	>2. projects completed	100%	10	5	10	10	
	Organizational sultup of the consulting firm	40%	40		10	14	
	Hice set up and managerial organization of the lism	25%	10				
		4.0 %9	10,				
D	Fully fledged organization with Administration & Corporate Divisions (100%)			1	10	10	1
	Seneral tualifications and number of key staff	85%	26				
	estership Position - Vastars Direse & Above	23%	6				
	taste/s Degree in Forestry Science& Above (100%)			to	1	1	,
	achelors Degrae in Forestry Science (30%)			2	62	49	-1
	forma in Forestry or Related Sciences 10%)						
		18%	10				
n 14	ils Remote Sensing Specialist		10	25	12		
Pe	art of Team (100%)			10	10	10	1
At	bsent (10%)						
# F4	orest Biometrassia	38%	10	C			
Pa	art of Team (100%)				10		
1.41	bsent (10%)	1		/	. 1	1	1
Ar	nnual Turnover in USD (best TWO years of last THREE years)	10%	4				
0	0.015 million	0%	0			-	
and the second s	02 to 0.04 million	20%	1				-
. <(50%	2	3			
i. < 0 i. 10.0	04 to 0.06 million		3	~	.1	4	2
а. (< 0 а. (0,0 а. (0,0	04 to 0.08 million	80%					
н. ¹ 0.0 11. 0.0 v. 0.0		80%	4		Lafe 1	1	45

Evaluation Criterla for Expressions of Interest (EOI) for "Designing a National Forest inventory and Permanent Sample Plots and Conducting the NFI"

ligibi	lity Criteria				APPLICANTS				
S.No.	Eligibility Criteria	Requirément	Compliance	Remarks	Grean Owl Development	Unique Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuela Lagataki	
1	Registration certificate of the consulting firm/s	Mandatory	Yua/No	Pass/Fail					
5	Value Added Tak (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	Pasa/Fail				A A A A A A A A A A A A A A A A A A A	
4	Conflict of Interest as per 1.9 paragraph of the World Bank's Guidelines for Selection and Employment of Consultants -Jan 2011	Mańdatory	YesiNo	Passilai					

B. Ranking Criteria

	RANKING CRITERIA			-		LICANTS	
S. No.	Criteria/Sub-criteria	Weight	Points	Green Owi Development	Unique Forastry & Land Use Cormany	GAFAG, Germany	Mr. Samue Lagataki
1	General Experiences	10%	10		The second se		
. ä.	Number of Projects Completed						1
5. 4C	2 project completed	40%	4				100
ii.	2.to 4 projects completed	70%	7	1	200		-7
lii.	>4 projects completed	100%	10	10	10	10	1
2	Specific/Similar/Relevant Experiences	50%	50.00	1		1	
æ.	Number of projects completed in which design of forest inventory based on permanent sumple plots were conducted.	20%	10				
i.	I project completed	40%	4		1		1
£1,	2 project completed	70%	7		1		5
	3 project completed	80%	8		-	1	5
й.	4 project completed	100%	10	10	10	10	1
	Number of projects completed in which biomass survey / assessments were conducted & results reported.	40%	20.00				
i,	1 project completed	40%	8			10.0	1
	2 projects completed	70%	14	14	14	14	-
ië.	>2 proi=cts completed	100%	20	1		1 Sect	
G. 1	Number of projects completed in which training (capacity building) of staff in involvery methodology; mensuration, use of intest technology (GPS, GIS) & data entry	20%	10				
£, 1	-2 project completed	40%	4.00			1	e4
ii. [2	2 projecta completeri	100%	16.00	10	10	10	1
	lumber of projects completed in which the ganeralien of he emission & randval factor data was conducted.	20%	10				
1 1	-2 project completed	50% 1	5				
	2 projects completed	100%	10	10	10	10	
***	rganizational setup of the consulting firm	40%	40	1.5	1.10	10	-
	floe set up and managerial organization of the firm	25%	10	10	10	10	Hart
0	ully fledged organization with Administration & Corporate ivisions (100%)			1.			
	bsent (10%)				ind		1
	enaral qualifications and number of kay staff	65%	28	26	24	24	
	ademship Positios - Mastela Degree & Above	2.3%	0	6	6	6	
	asters Di gree in Forestry Science& Above (100%)	1				•	1
	achelors Devree in Forestly Science (30%)						2
	ploma in Forest v or Related Sciences (10%)				-0		
a G	B Remote Sensing Specialist	18%	10	10	10 1	10	
Pa	nt of Team (100%)						
A	sent (10%)						
4 40	test Barmancian	38%	10	Sum	10		selata.
	rt of Team (100%)		1			5	
1.4t	sent (10%)	1	1			2	
a Ar	roual Tournover in USO (best TWO years of linst THREE years)	10%	4	mara .		5	7.856P
	015 million	.0%	.0		1		
	2 to 0.04 million	20%5	1	1			and the second
i, 0.0	4 to 0.06 million	50%	2	1			
	6 to 0.08 million	80%	3			14	
) 08 million	100%	4		1fm	14	
Minimu cimum th	tal (1+2+3) m Pass Mark is 60 points ree consulting firms will be shortlisted on the merit pasis, aluator: SFmi V. PRAme XVD comi 30/10	100% 3 Arca 0 / 1 4	100				

Evaluation Criteria for Expressions of Interest (EOI) for "Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI"

Sligibi	lity Griteria				APPLICANTS				
5.No.		Requirement	Compliance	Remarks	Green Owi Development	Unique Forestry & Land Ose Germany	GAFAG. Germany	Mr. Samuri Lagataki	
1	Registration certificate of the consulting firm/s	Mandatory	YesiNo	Pass/Fau					
3	Value Added Tax (VAT) Registration	In case of international company, submit ar the time of signing contract		Poss/Fair (in case of National Company, VAT registration is mandatory)					
3	In dase of Joint Venture "Joint Venture, or intended joint venture of sub- contracting Agreement"	Mandatory	Yes/No	Pasa/Fail					
4	Conflict of Interest as per 1.9 paragraph of the World Bank's Guidelines for Selection and Employment of Consultants Jan 2011	Mandakory	Yes/No	Passitail			-		

B. Ranking Criteria

					Unique	LICANTS	1.
S. No.	Criteria/Sub-criteria	Weight	Points	Green Owi Development	Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuel Lagataki
1	General Experiences	10%	10	10	12	10	7
1.	Number of Projects Completers	1		10.	10.	10	
i.	2 project completed	40%	4	-	-		-
	2 to 4 projects completed	70%	Y	-	1		
	>4 projects completed	100%	10			1	1
	Specific/Similar/Relevant Experiences	50%	50.00			1	1
2.	Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.	20%	10	1			
	t project completed	#0%	4	10			
	2 project completed	70%	7	10	R	2	3
	3 project completed	80%	8	12	0.	0	
IV.	4 project com leted	100%	.10			1	1000
	Number of piciests completed in which blomass survey / assessments were conducted & results reported.	40%	20.00				
i. "1	1 project completed	40%	8	0		02	
Ji. (2	2 projects completed	70%	14	0		20	
äi. >	2 projects completed	100% [20				
C. 2	Number of projects completed in which training (capacity building) of staff in investory methodology: mensuration, use if latest technology (SPS, GIS) & data entry	20%-	10				
6 4	-2 project completed	40%	4.00	1.			
	2 projects completed	100%	10.00	10	10	4	
	lumber of projects completed in which the generation of he emission & removal factor data was conducted.	20%	10				
	-2 project completed	50%	5	5	2	5	
	2 relation leted	100% 1	10	>		-	
3 0	rganizational whip of the consulting firm.	\$6%	40				
	the setup and managerial arganization of the fam	25%	10		10	10	
Di	ully Reciged organization with Administration & Corporate (visions (100%)			·		<i>"</i> •	
	eneral qualifications and number of key staff	25%	293				
	actorship Position - Masters Degree & Above	23%	3				
	asters De rea in Forest / Science& Above (100%)	63-6	3	6	6	6	
	acters De trea in Porest V Sciences (30%)				10	P	
	ploma in Forestry or Related Sciences (10%)		-				
	S Renote Security of Related Sciences (10%)	36 % J.	10	100	10	10	-
		and the		10	10	10	
	er to Team (100%)		1				
	(%0f) these						1
	east Biomatrician	78%	10		10	10	
	nt of Team (190%)				1.00	10	
Aa	sent (10%)			1			
	must Turnings in USD (best TWO years of fast ThiftEE years)	10%	4			1	
	Að 15 million	0%	0				
	2 to 0.04 million	20%	1			1	
	4 to 9.05 million	50%	2				
	6 to 0.08 million	80% I	3			1	
	08 million	100%	4		1		
10	tal (1 + 2 + 3)	100%.	100				

ATTAN A.

Name of Evaluator: Signature: Date:

Evaluation Criteria for Expressions of Interest (EOI) for "Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI"

linibi	lity Criteria				1	APP	ICANTS	
S.No.	Eligibility Criteria	Requirement	Compliance	Rəmarks	Green Owl Development	Unique Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuela Lagataki
1	Registration carlificate of the consulting firms	Mandatory	Yes/No	Pess/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	Yestha	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	YesiNo	Pass/fait		0.0	\$	3

8. Ranking Criteria

	RANKING CRITERIA			APPLICANTS				
S. No.	Criteria/Sub-criteria	Weight	Points	Green Owl Development	Unique Forestry & Land Use Cormany	GAFAG, Germany	Mr. Samuel Lagataki	
1	General Experiences	10%	10		1.0941 (Dillar)			
a.	Number of Projects Completed							
i.	2 project completed	40%	4				1	
ii,	2 to 4 projects completed	70%	7		0	1 0	17	
10.	+4 projects completed	100%	10	10	10	10		
2	SpecificiSimilar/Relavant Experiences	50%	50.00			1	1	
a .	Number of projects completed in which design of forest investory based on permanent sample plots were conducted.	20%	10					
i	1 project completed	40%	4			14	1	
雜.	2 project completed	70%	2			-1	7	
all.	3 project completed	80%	8				1	
iv.	4 project completed	100%	10	10	10	1		
b.	Number of projects completed in which blomass survey / assessments were conducted & results reported.	40%	20.00					
4.	1 project completed	40%	8				6	
ij.	2 projects completed	70%	14	1			1	
iii.	>2 pinjects completed	100%	20		20	10		
с.	Number of projects completed in which trening (capacity building) of staff in invelory methodology, mensuration, use of latest technology (GPS, GIS) & data entry	20%	10					
8.	1-2 project completed	40%	4.00			-	4.	
	>2 projects completed	100%	10.00	10	10	10		
	Number of projects completed in which the generation of the mission & removal factor data was conducted.	20%	10					
1. 1	1-2 project com leted	50%	5		100		5	
	>2 projects completed	100%	10	1	10		-	
	Organizational setup of the consulting firm	40%	40			10		
	Office set up and managerial organization of the Itim	25%	10		-	10		
18	Fully fledged organization with Administration & Corporate Javisions (100%)				10	()		
i.	Absent (10%)				10	125	1	
	Seneral que fications and manber of loy staff	85%	26				-	
	egoatship Position - Masters Degree & Abovo	23%	Ő					
	Aasters Dispres in Foreiting Science& Abave 100%			. la	6	6	i mama mines	
	Jachelors Degree in Forestry Science (30%)					2	2	
	Diploma in Forestry of Related Sciences (10%).				-		100	
	IS Remote Sensing Specialist	38%	20					
1.				10	10	10		
	Part of Team (100%)			10	10	1-	1	
	bsent 10%	38%						
	erest Biometrician	40%	10					
	prt of Team (100%)	1	_	1	19	- 1	-+	
A	beent (10%) anost Turnover in USD (best TWO years of rast THREE years)	10%	4	- 1		- 1		
	0,015 million	0% 1	G				0	
	02 to 0.04 million	20%	Ť				- marken	
	04 to 0.06 million	50%	2					
	06 to 0.08 million	80%	3				~~~~	
	0 06 million	100%	4	ef -	71	End		

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 Total (1:+2:+3)

 The Minimum Pass Mark is 80 points

 Maximum inroe consulting firms will be shortlisted on the merit basis.

 Name of Evaluator:

 Signature:

 Date:

 30 / 10 / 19

12. Professional Experience Record (relevant Projects):

Date: from (m / y) to (m / y)	11/11 - 03/19
Location:	Germany
Company:	Green Owl Development UG and ARC-Greenlab Berlin
Position:	GIS and Remote Sensing Trainer
Description:	Training on Q-GIS, ArcGIS, gl-forest, waldkat, gl-forest, Erdas, iCognitionition, GPS (Garmin and Trimble) use in the field of forestry for different forest organisations. In Total more than 25 different training units (2-5 days) had been held for foresters and supervisors of several organisations. Example of Organisations: City of Stralsund; Contact: th.struwe@googlemail.com City Frankfurt; Contact: moeller.frank@arc-greenlab.de Agricultural Chamber of lower Saxony; Contact: Martin.Hillmann@lwk-niedersachsen.de Rheinmetall Defence; Contact: moeller.frank@arc-greenlab.de City of Güstrow; Contact: moeller.frank@arc-greenlab.de Nummrich und Grambole Kg; Contact: moeller.frank@arc-greenlab.de Dr. Rilling forest consulting; Contact: moeller.frank@arc-greenlab.de City of Treunebrietzen; Contact: moeller.frank@arc-greenlab.de
	City of Wittstock; Contact: moeller.frank@arc-greenlab.de
	and others

Date: from (m / y) to (m / y)	01/17 - 12/17
Location:	Germany
Company:	Green Owl Development UG
Position:	Teamleader
Description:	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

Date: from (m / y) to (m / y)	08/2016 - 03/2017
Location:	Germany
Company:	Agricultural Chamber of Lower Saxony
Position:	Project Coordinator
Description:	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

Date: from (m / y) to (m / y)	02/2015 to 03/2017
Location:	Germany
Company:	Agricultural Chamber of Lower Saxony
Position:	Head-GIS-Coordinator
Description:	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: <u>Martin.Hillmann@lwk-niedersachsen.de</u>

Date: from (m / y) to (m / y)	08/2016
Location:	Fiji
Company:	Green Owl Development UG
Position:	Consultant
Description:	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

Date: from (m / y) to (m / y)	03/2015 - 08/2015
Location:	Germany
Company:	Green Owl Development UG
Position:	Consultant
Description:	Forest inventory - 160 ha for Agricultural Chamber of Lower Saxony

Date: from (m / y) to (m / y)	10/14 - 11/14
Location:	Fiji
Company:	GIZ
Position:	Consultant
Description:	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: <u>lal.sanjana@gmail.com</u>

Date: from (m / y) to (m / y)	07/14 - 09/14	
Location:	Germany	
Company:	Forst Consulting	

Position:	Assistent
Description:	Forest inventory - 700 ha

Date: from (m / y) to (m / y)	04/14
Location:	Fiji
Company:	Ministry of Forests
Position:	Trainer
Description:	Workshop on opensource GIS-Software (Q-GIS) and GPS (Garmin Map64) use in modern Forestry Contact: <u>lal.sanjana@gmail.com</u>

Date: from (m / y) to (m / y)	11/13 - 05/14
Location:	Fiji
Company:	GIZ
Position:	Assistent
Description:	Preparation of the second logging rotation in the NFMPP Area, inventory and harvesting planning Contact: <u>daniel.plugge@giz.de</u>

Date: from (m / y) to (m / y)	08/12 - 11/13
Location:	Germany
Company:	ARC-GREENLAB
Position:	Consultant – geographical information systems and remote sensing
Description:	Developing of a GIS supported forest management tool, gl- forest and wald-kat web
	Contact: moeller.frank@arc-greenlab.de

Date: from (m / y) to (m / y)	04/12 - 08/12
Location:	Germany
Company:	LFE - Landeskompetenzzentrum Forst Brandenburg (Brandenburg Forest Authority)
Position:	Scientific Assistant – remote sensing
Description:	Project Pomerania, estimating forest biomass from high resolution satellite images in the Pomerania region

Date: from (m / y) to (m / y)	02/12 - 08/12
Location:	Germany
Company:	Berliner Forsten and University of Applied Science Eberswalde
Position:	Scientific Assistant - GIS
Description:	Forestgrazing on the sewagefarm Hobrechtsfelde GIS analysis and map preparation / Derivation of tree species composition using remote sensing data

Date: from (m / y) to (m / y)	10/09 - 05/10
Location:	Fiji
Company:	Silvicultural Research Division / Ministry of Fisheries and Forests
Position:	Intern
Description:	Research on tree regeneration on skidtracks in tropical rainforests, 20 years after logging Contact: <u>itauraga@gmail.com</u>

14. Publications:

(1) Biomass estimation for forests using remote sensing and modeling (co-authors: S. Kärgel, 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. (coauthors: 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-weted 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	- All for the second	<u>3 April 2019</u>
Name of expert	Signature	Date
	f. 7	
Dirk Frankenhauser Geschäftsführer		3 April 2019
Dirk Frankenhauser Geschäftsführer Name of authorised representative	Signature	<u>3 April 2019</u> Date
	Signature	



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

Language	Excellent	Good	Fair	Poor
English	Excellent			
Dutch	Mother tong	ue		
German	Exce	llent		
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

Name	Michael Mussong, Prof. Dr. Dr. h.c.
Address	Hinterstraße 6, D - 16225 Eberswalde, Germany
Telephone	Tel. +49 3334/657179
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

	finding/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-H	lartig Foundation, Germany	
GOPA	Gesellschaft für Organisation, Planung und Ausbildung, Germany	
Green Owl Deve	elopment UG, Berlin, Germany	
GTZ/GIZ	Deutsche Gesellschaft für Technische/Internationale Zusammenarbeit, Germany	
Hansestadt Rost	tock, Forestry administration, Germany	
HRK	Hochschulrektorenkonferenz, Germany	
Katie Paterson S	Studio, Berlin/Germany	
KfW	Kreditanstalt für Wiederaufbau, Germany	
Kiwi Roads Gmb	oH 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 initiates 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 nontimber 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/cooperation 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 Sh<u>aa</u>nxi 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 afforerstation 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 Foresty 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

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Michael Mussong

Prof. Dr. Dr. h.c. 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. (coauthors: 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. LAQERETABUA, 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.
- Umwandlung abgängiger Pappel-Reinbestände in Mischbestände verschiedener Baumarten. (coauthors: 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

- 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 Customaryowned 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-authorr: 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. (coauthor: 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 Sustanability-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 Pappelversuchsforstamtes 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, <u>mmussong@greenowldevelopment.de</u>
- 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 preharvest-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_manual_version_oct.13.pdf

Wageningen, Eberswalde, 11 October 2019



American Stro 80634 Munich Filoman Fil

GAFAG

GAF AG Arnulfsri, 199 • 80634 Munich • Germany

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 Eol by Email.

In case you have any questions, don't hesitate to contact us.

Yours sincerely,

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Peter Navratil Department Forestry & Climate Change

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Postation SWIFT (BIC: PBNKDGFT700) IBATE © DC24 PDT FORTI DEC HILLER IS 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 instutional 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 s 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.

Samuela Lagataki Phone: 9488066 Email: <u>samu.lagataki@gmail.com</u>

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 Scatterred Forests. It furthers 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 is 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. Liasion with local communicties 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 condut 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 or 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 condidence interval and precession was an integral component of the 1991 and 2006 NFIs.

Attachment A

gest ha istic,

A link you for your email, which I was asked to follow up. I must apologise i the University on what appears to be a stuff up somewhere in the buversity's system, as I note on your file a letter from the Registrar lated 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 cerificate be sent to you in Fiji. The computerised record for some reason shows 'Abandoned' sgainst 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.

angustas,

Mack Thus on

Dr Mick Tanton Convenor, Graduate Program in Resource Management and Environmental Science Cepartment of Porestry, The Australian Mational University. C berra, ACT 2200

Ph. (02) 6249 2553 International +61 2 6249 2583 Fax. (02) 6249 0746 International +61 2 6249 0746 Email. Mick.Tanton@anu.edu.au



Ministry of Forestry REDD+ Unit REQUEST FOR EXPRESSIONS OF INTEREST

Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI

CONSULTING SERVICES - FIRMS SELECTION

Country: FIJI Project Title: FCPF REDD+ Readiness Program Grant No.: Readiness Fund of the FCPF - Grant No TF019204 Assignment Title: Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI Reference No.: C.36/Fiji

The Government of Fiji has received the Forest Carbon Partnership Fund (FCPF) grant from the World Bank towards the cost of Fiji Reducing Emissions from Deforestation and Forest Degradation (REDD+) Readiness Preparation Program and intends to apply part of the proceeds for the following consulting service for: **Designing a National Forest Inventory and Permanent Sample Plots and conduct training of NFI field staff. The work should include QA/QC procedures.**

- 1. The objective of the assignment is to Design a National Forest Inventory and Permanent Sample Plots with parameters to be measured and carbon pools to be considered, training of NFI field staff with support during the implementation and data analysis. The assignment is intended for 8 months. 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. Please see the TOR for the details (<u>http://www.forestry.gov.fj/index.php/redd</u>).
- 2. The REDD+ Unit now invites eligible consulting firms and individuals to indicate their interest in providing consulting services for the above assignment. Interested consulting firms and individuals must provide information indicating that they are qualified to perform the services [profile, brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc. with supporting documents to substantiate the information provided in the EOI].
- A) Eligible Criteria are: a) Copy of Registration Certificate; b) Tax Identification Number (TIN) and Tax Compliance certificate; c) Copy of Vat registration certificate; d) No pending legal action against the company; e) Not insolvent or under bankruptcy proceedings; (for more details, please visit http://www.fpo. gov.fj/attachments/article/57/Expression_of_Interest_Guide_-_Reviewed_ February_2014.pdf (Section 5.2.2)
- B) The shortlisting criteria are:
- a) General Experiences: Number of Quality Similar Projects Completed Successfully
 b) Specific/Similar/Relevant Experiences (each completed project not less than value of USD 0.05 million): i) Number of completed projects related to Forestry;
 ii) Number of completed projects related to desinging and executing National Forestry Inventory; iii) Number of completed projects related to designing Permanent Sample Plots, and iv) Organizational setup of the consulting firm: office, technical and mangerial organization of the firm, general qualifications and number of key staff and annual turnover taken for the best two years from last three years. Please provide weblink to the completed projects.
- Selection will be according to the procedures set out in 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 (Consultant Guidelines) "Selection based on the Consultants' Qualifications (CQS)".
- 4. Consultants may associate to enhance their qualifications. The association/ consortium shall be in the form of a joint venture (JV) or intended JV or subcontracting, where all the JV members shall be jointly and severally liable for the entire assignment.
- 5. Expressions of Interest must be marked "Designing a National Forest Inventory for Fiji."
- Expressions of interest must be delivered in a written form to the address below (in person, or by mail or by e-mail) by 19th of October, 2019.

REDD+ Unit, Ministry of Forestry Attn: Villiame Rabici, National Coordinator Colo-i-Suva, Suva Fiji, Tel: +679-3320667 E-mail: reddplus.fi@gmail.com





Information Technology (IT) Risk Assessment and Audit

Background

The South Pacific Stock Exchange (SPX) and its wholly owned subsidiary, Central Share Registry (CSR) is currently seeking Expressions of Interest (EOI) from reputable companies to undertake an assessment of its IT environment, controls, policies and procedures to identify gaps and areas of risk, consider the suitability of existing software and the data backup processes and provide recommendations to ensure we remain up to date with overall IT functions and environment.

Scope of Work These are as follows:

- Review the SPX and CSR IT Systems/Software of its usage, capacity and internal controls and its effectiveness in delivering competent services;
- Conduct a visual review of various IT equipments and provide a brief assessment of its status with
 recommendations to improve, retain and/or replace;
- Review the data security environment including Disaster Recovery Plan (DRP) and Business Continuity Plan (BCP);
- Review existing IT policies and procedures and provide recommendations for improvements;
- Provide recommendations for the improvement of the IT systems based on meeting the business needs, enhancement or development requirements, security and future technological requirements; and
- Formulate an Action Plan for consideration by SPX over the immediate, medium and long-term.

Proposal & Fees

SPX requests you to submit your EOI with the following:

- Your organisations profile and experience with similar tasks undertaken for other companies;
- Relevant costs for the IT Risk Assessment and Audit Project; and
- Timeline required from planning/information gathering, execution to final reporting.

How to Submit EOI

Expressions of Interest can be either emailed to info@spse.com.fj or posted to GPO Box 11689, Suva, Fiji or hand delivered to Shop 1 & 11, Sabrina Building, Victoria Parade, Suva

Expressions of Interest must be received no later than 5pm on Tuesday, 22nd October 2019



Na iYau Bula kei Sovi Basin, Viti Levu (SBPA)

SALA NI KENA MAROROI 2013









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SOVI BASIN PROTECTED AREA (SBPA) MANAGEMENT PLAN 2013



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Cover Image: Conservation International

Acknowledgement

National Trust of Fiji is grateful to all the government departments, organisations, and individuals who contributed towards the writing of the Sovi Basin Protected Area (SBPA) Management Plan, in particular the SBPA Landowners Association, SBPA Steering Committee, Institute of Applied Sciences (USP), Conservation International, the Fiji National Protected Areas Committee and Environment Consultants Fiji.

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

Sovi Basin Protected Area

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 Headquaters , 3 Ma'afu Street, Suva

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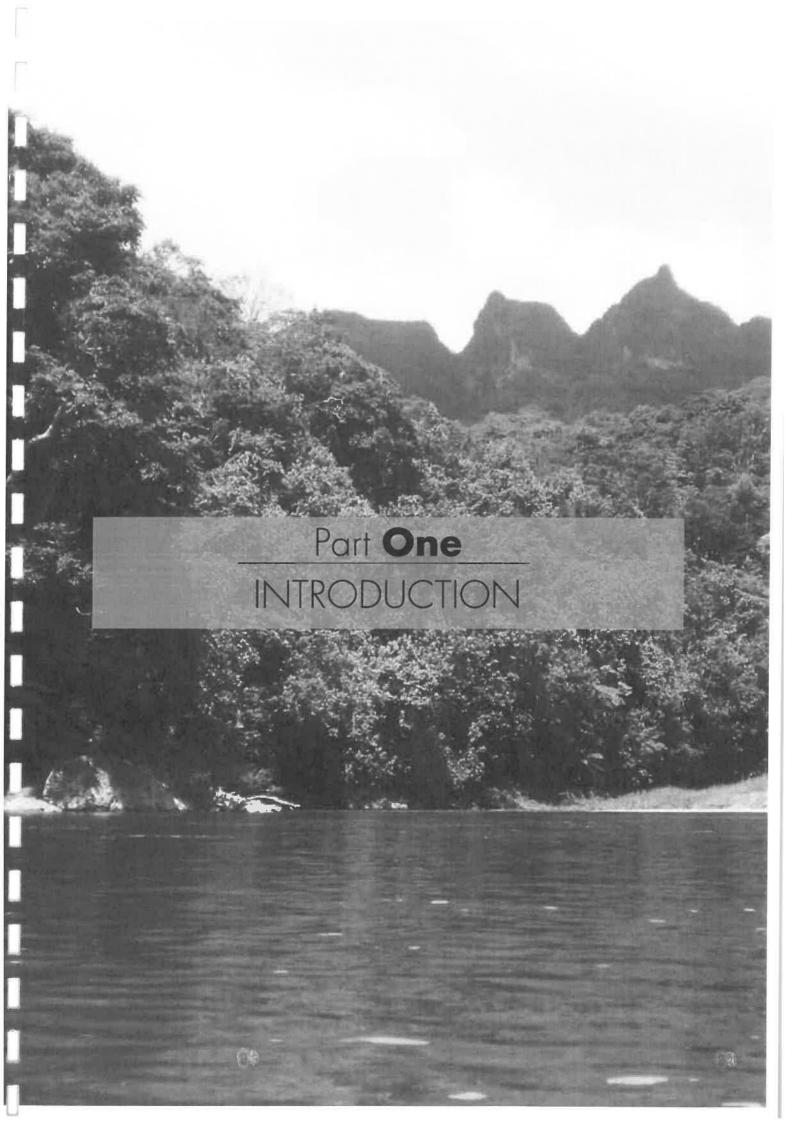
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List of Abbreviations & Acronyms

BIFP CCDT	BirdLife International Fiji Programme 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



BACKGROUND

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.

Lying between the Medrausucu, the Korobasabasaga and the Nakeva-Naitaradamu ranges 35km from Suva, the SBPA covers an area of 16,344 hectares owned by nine landowning units who reside in five separate villages within the province of Naitasiri and Namosi. 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 *Acmopyle sahniana*, (Drau tabua), both of which are globally listed as Critically Endangered (IUCN 2006).

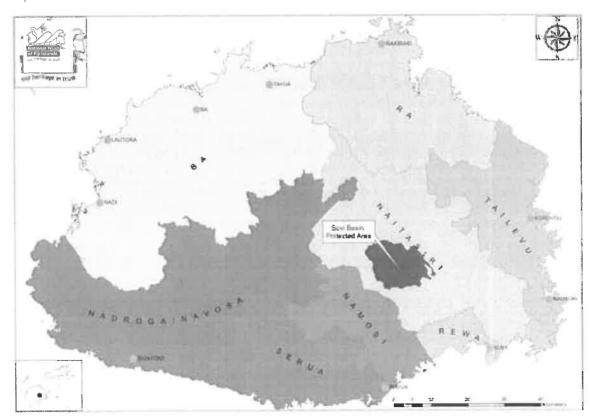


Figure 1: Location of the SBPA

The conservation potential of the SBPA was first recognised in the Native Land Trust Board (NLTB), Forestry Department (FD), Maruia 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, Maruiua 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

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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.

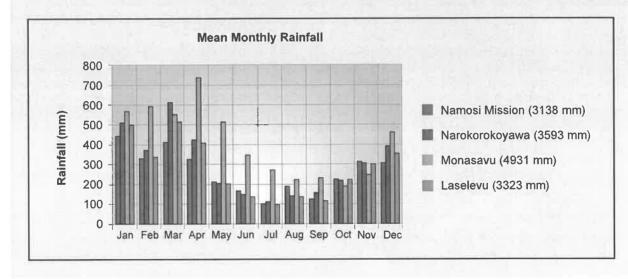


Figure 2: Average Monthly Rainfall for Four Sites close to the SBPA (source: Public Works Dept. except Monasavu – HEC Consulting 1999)

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, Acmopyle 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-BI-CI-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, Slendertoed 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 *Acmopyle 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	Schefflera costata	Endemic	Rare, Vulnerable		
2	Schefflera euthytricha	Endemic	Data deficient		
3	Clinostigma exorrhizum	Endemic	Rare		
4	Cleophyllum amblyphyllum	Endemic	Vulnerable		
5	Terminalia capitanea	Endemic	Rare		
6	Carruthersia macrantha	Endemic	Rare, Threatened		
7	Schoenus achaetus	Native	Rare		
8	Dennstaedtia flaccida	Native	Rare, Threatened		
9	Glochidion atalotrichum	Endemic	Threatened		
10	Hymenophyllum samoense	Native	Rare		
11	lycopodium serratum	Native	Rare, Threatened		
12	Angiopters opaca	Endemic	Rare		
13	Appendicula bracteosa	Native	Rare		
14	Bulbophyllum sessile	Native	Rare, Threatened		
15	Bulbophyllum samoanum	Native	Rare, Threatened		
16	Coelogyne lycastoides	Native	Rare, Threatened		
17	Flickingeria comata	Endemic	Rare, Threatened		
18	Glomera emarginata	Endemic	Rare, Threatened		
19	Malaxis lunata	Native	Rare		
20	Malaxis platychila	Endemic	Rare, Threatened		
21	Phreatia pachyphylla	Native	Rare		
22	Thrixspermum spp		Rare		
23	Freycinetia vitiensis		Rare		
24	Acmopyle sahniana	Endemic	Critically Endangered		
25	Podocarpus affinis	Endemic	Vulnerable		
26	Psilotum complanatum	Native	Rare		
27	Tmesipteris truncata	Native	Threatened		
28	Psychotria bullata	Endemic	Rare		
29	Psychotria parvula	Endemic	Rare		
30	Psychotria c.f scitula	Endemic	Rare		

31	Degeneria vitiensis			Vulnerable				
	FAUNA							
	English Name	Scientific Name	Origin	IUCN Status				
32	Fiji Tree Frog	Platymantis vitiensis	Endemic	Near Threatened				
33	Pacific Boa	Candoia bibroni	Native	Rare				
34	Friendly Ground Dove	Gallicolumba stairii	Regional Endemic	Vulnerable				
35	Masked Shining Parrot	Prosopeia personata	Endemic to Viti Levu	Near Threatened				
36	Fan Tailed Cuckoo	Cacomantis pyrrophanus	Native	Extinct/Extirpated				
37	Long legged Warbler	Trichocichla rufa	Endemic	Endangered.				
38	Black faced Shrikebill	Ciytorhynchus nigrogrularis	Endemic	Vulnerable				
39	Pink Billed Parrotfinch	Erythrura kleinschmidti	Endemic to Viti Levu	Vulnerable				
40	Samoan Flying	Pteropus samoensis		Near Threatened				
	NOT YET RECOR	EDED IN THE SO	VI BASIN, BUT CLOSE TO	ITS BOUNDARY				
41	Red Throated Lorikeet	Charmosyna amabilis	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 Vunitoroilau ridge immediately west of Mt Naitaradamu. There is Production Forest at its base and forest clearing for gardens on both sides of the watershed.

SOCIO-ECONOMIC SETTING

Historical and Pre-historical Context

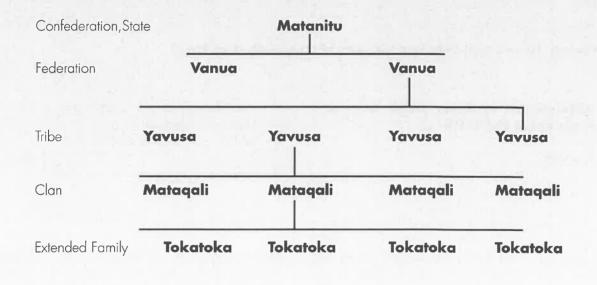
The history of the people surrounding the SBPA and the ownership of the Basin itself is long and complex, involving frequently shifting village sites, changing tribal allegiances, fighting and reconciliation between families, clans and tribes, gifting of land, and the merging and splitting of groups.

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.

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	d 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 De lailasikau 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.

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 (Naitauvoli)
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]]
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

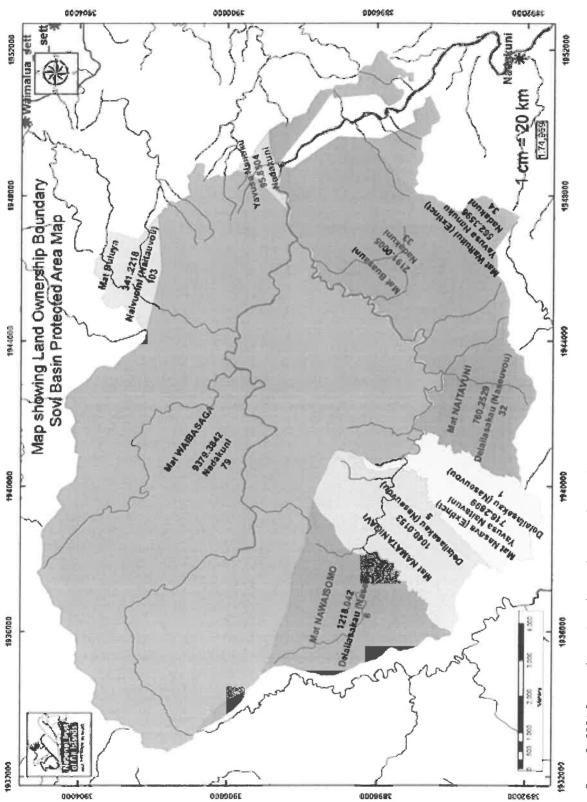
The majority of the SBPA landowners have very limited land available outside the Basin. Of the nine landowning mataqali of the SBPA only four have a significant proportion (>50%) of their landholdings outside the basin. The remaining landowners have more than 85% of the land within the basin and one 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 matagali, 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.



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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		between ages of			40% are 15 years and 52.8% and Females are
Occupation	Majority of the f in white collar jo	ive villagers are in obs are 17% and	nvolved in semi-s in blue collar jok	subsistence agricultu os, 20%.	ure. Population involved
Religion	Predominantly Catholic	Predominantly Methodist	Predominant- ly Methodist	Predominantly Catholic	Predominantly Methodist
Education	59.6% of the c school level edu vocational acac	cation. 12.3% of	of the 5 villag total population	es have attained p have attended a foi	primary and secondary rm of formal tertiary and
House construction		are now rare. Mo ructure 23.8% whi			52.3% or mix of timber
Energy	available. The t player 12.9% c	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 phones11.7%. All households still rely on firewood for cooking. This is supplemented with kerosene.			
Water & Sanitation		nouses in the five			washing and bathing. al and pit toilets are still
Access	Accessible by road	No road access; by river		All accessible b	y 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.

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Village Indicators	Naseuvou	Nukusere	Naivucini	Delailasakau	Nadakuni
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 Namosī 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.

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.

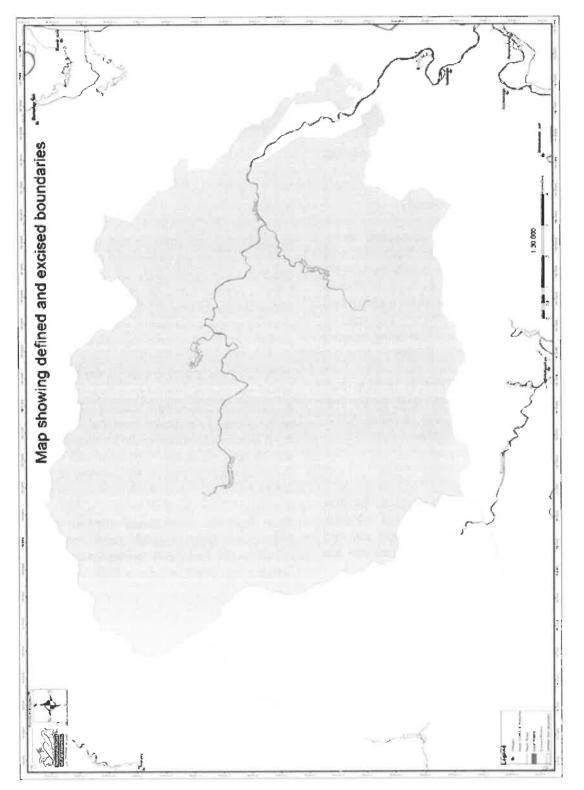
The forests of SBPA have received much interest for their timber resources. Merit Timber's 1980 concession over the Basin did not result in any logging inside SBPA and was tied up in litigation with TLTB from 1981. The case was finally resolved in favour of TLTB in November 1994. The landowners have 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.





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Part **Three** MANAGEMENT ARRANGEMENTS

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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 is 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 captialised 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.

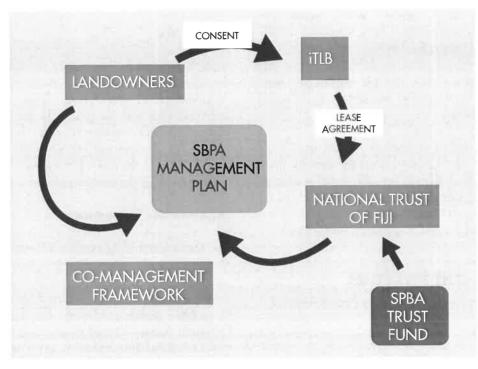


Figure 5: Elements of the SBPA Administrative Structure

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
- 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 SPBA 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.

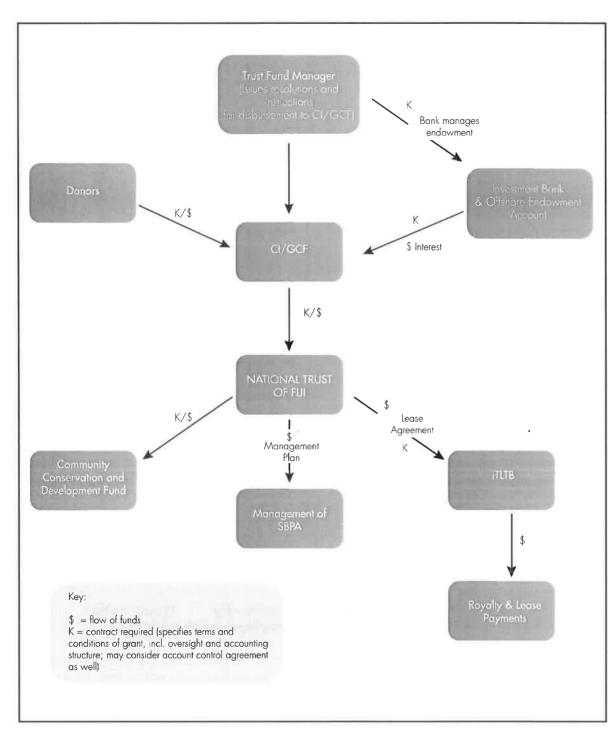


Figure 6: SBPA Trust Fund Structure Diagram

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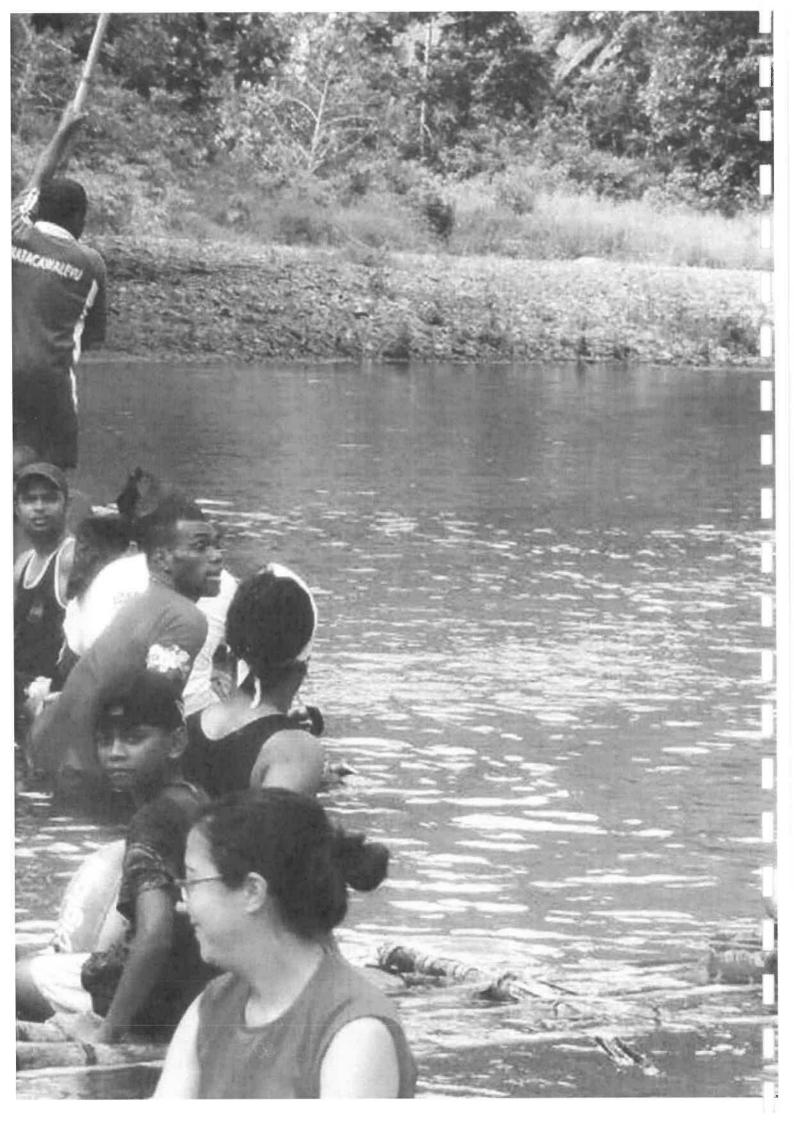
Management Budget for the SBPA

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

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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. Comanagement 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 freeflow 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.

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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	E s t a b l i s h communication/ information dissemination system/procedure(s) which is/are agreed to and documented. Landowner and other stake-holders should be able to determine their own system of communication & information exchange provided it conforms to basic requirements.	 Consult with landowners on SBPA LC as outlined in the Management Plan Key issues relate to existing communication, information dissemination modes with landowners and associated stakeholders, and the changes are required. This will include: 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; Training to keep minutes and records Manual/procedure to be prepared, translated, discussed, modified as required and agreed; Manual to be copied and widely distributed
	Raise understanding and awareness of the conservation objectives of the SBPA.	 Develop a programme with landowners and non-landowners in surrounding villages – including neighbouring communities; Tailor material for target groups – elders, women, children, religion, etc. Talks and displays in schools 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	 Identify opportunities for immediate employment (part time) - assisting visitors, researchers etc.; field monitoring etc. Identify courses that can be undertaken; first aid; wildlife identification; record keeping, camp organisation, hygiene etc Identify medium and longer term pathways and opportunities for landowners to join the management team 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	 Workshops with landowners and non-landowners in surrounding villages – including neighbouring communities; Presentations at Tikina meetings etc.
	Define agreement modes ie what constitutes an agreement ?	 Workshops with landowners and non-landowners in surrounding villages – including neighbouring communities; Presentations at Tikina meetings etc. Discussion and agreement with SBPA LC Draw up and. Translate into Fijian and ensure that it is disseminated
	Reach an agreement on a conflict resolution procedure	 Workshops with landowners and non-landowners in surrounding villages – including neighbouring communities Presentations at Tikina meetings etc. Discussion and agreement with SBPA LC Translate into Fijian and ensure that it is disseminated

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CUSTOMARY RIGHTS

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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

- NTF to take the lead role in advocating for the drafting of a national protected area legislation.
- 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.
- 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

- 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.
- 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.
- Survey and registration of landowing 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.

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

- 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 Acmopyle sahniana and the redthroated 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

- 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.

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
Mammails:	a frankted frank de nie fan de frankted frankted frankted frankted frankted frankted frankted frankted frankted	
Pacific sheathtail 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 Emoia 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:		
Acmopyle sahniana	Critically Endangered (IUCN)	Status – if present. One population currently known just outside boundary of SBPA.
Schefflera euthytricha	Data Deficient (IUCN)	Recorded – status required. Believed to be Critically Endangered

Table 6: Priority Threatened Species with Priority Study Requirements in the SBPA

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.
- 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

- 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) Red Throated Lorikeet (Charmosyna amabilis) Long-legged warbler (Trichocichla rufa) Gymnosperm (Acmopyle sahniana) 	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
responsi 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 vil- lage community based action plan during "bose 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

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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

- 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.
- 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

- Make the policy on mining and quarrying known to all landowners and the regulatory authorities.
- 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

- Encourage and/or commission research in accordance with the priorities listed in Table 8.
- 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
 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>Acmopyle 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. Acmopyle sahniana, 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

(40 Sovi Basin Protected Area

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Table 9: SBPA – Summary of Actions

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 Key to Headings:

 Priority = 1-3
 with 1 as highest priority

 Capability: Current staff's ability to undertake the task (1 – can do 1 now; 2 – could do with assistance; 3 – shauld be done by an expert).

 Responsibility: Agency tasked with assisting staff or undertaking the work INT – NTF, SBPA SC – SBPA Technical Advisary Committee; Dot – rorests Dept; TA – Technical Assistance; FM – Fiji Museum; Warkplan Category = category as used in preparing Annual Work Plans (see Attachment 3).

	Priorily	Staff Capability	Responsibility	Work Plan Category
National Palicy				
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]	2	SBPA SC	
Comanagement Pamewark				
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, comp organisation etc.)	2	2	SBPA SC	

Management Plan (41)

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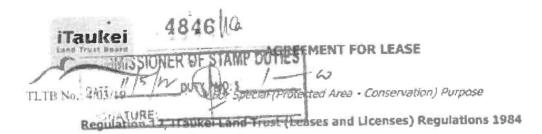
Part **Six** Attachments

1

ATTACHMENT 1:

SBPA LEASE

This is a copy of part of the Lease document for SBPA.



THIS AGREEMENT is made BETWEEN THE ITALIKEI LAND TRUST BOARD of 431 Victoria Parade Suva (hereinafter called "the lossor") all the the state wattonal trust of FIJI having its registered office at 3 Ma'alu 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:
 - IN CONSIDERATION of the rent and covenants on the part of the lessee hereinafter reserved and contained (and in consideration of the sum of \$00.00 (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	NLC LOT No.	SHEET REFERENCE	AREA (HECTARE)	KORO
Matagali Naltavuni	32	M/2,1;3/22,3;M/1,2;3/21,4	760.2529	Delallasakau(Naseuvou)
Yavusa Naltavuni	1	3/21,4	716.2899	Delallasakau(Naseuvou)
Mataqali Namatanigavi	5	3/21,2,4	1040.0153	Delailasaku(Naseuvou)
Matagali Nawaisomo	6	3/21,2,4	1218.0420	Delailasaku(Naseuvou)
Mataqali Walbasaga	79	J/22,1,3;J/21,2,4;J/16,4;J/1 7,3	9379.3842	Nadakuni
Matagali Buluya	103	3/17,3;3/22,1;3/16,4	341.2218	Nalvucini (Naitauvoli)
Yavusa Nanuku	5	3/22,2,4	95.8504	Nadakuni
Matagali Buasauni	33	3/22,1,3	2191.0005	Nadakuni
Yavusa Nanuku	34	3/22,1,3	562.3596	Nadakuni
n d'a é de de de de la reger a preserve conservententemente en d'a é des de de de la reger a preserve conservententemente		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 IN VITNESS 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.

10th

Signed by the parties hereto this

Signed on behalf of the Lessor

MAY , 2012 day of Lanner SAVENACA RALAGI Manager Central Esstern Central Esstern Region ITAUKELLAND TRUST BOARD Designation

-----litress Paula V

Senior Estate Officer Central Esstern Region T-UKEI 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



Masito Witness

ATTACHMENT 2: Consolidated Biodiversity Report for the Sovi Basin

This attachment inlcudes 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
Erythrura kleinschmidti	Pink-billed Parrotfinch	LE (Viti Levu)	VU
Prosopeia personata	Masked Shining Parrot	LE (Viti Levu)	
Ptilinopus luteovirens	Golden Dove	LE (Viti Levu)	
Accipiter rufitorques	Fiji Goshawk	E	
Artamus mentalis	Fiji Woodswallow	Е	
Cettia ruficapilla	Fiji Bush-warbler	E	
Ducula latrans	Barking Pigeon	Е	
Erythrura pealii	Fiji Parrotfinch	Е	
Erythrura pealii	Fiji Parrotfinch	E	
Gymnomyza viridis	Giant Forest Honeyeater	Е	
Mayrornis lessoni	Slaty Monarch	Е	
Myzomela jugularis	Orange-breasted Myzomela	Е	
Trichocichla rufa	Long-legged warbler	Е	EN
Zosterops explorator	Fiji White-eye	Е	
Anas superciliosa	Pacific Black Duck	N	
Aplonis tabuensis	Polynesian Starling	N	
Cacomantis flabelliformis	Fan-tailed Cuckoo	N	
Circus approximans	Pacific Harrier	Ν	
Clytorhynchus nigrogularis	Black-faced Shrikebill	N	VU
Clytorhynchus vitiensis	Lesser Shrikebill	N	
Collocalia spodiopygius	White-rumped Swiftlet	N	
Egretta scara	Eastern Reef Heron	Ν	
Foulehaio carunculata	Wattled Honeyeater	N	
Gallicolumba stairi	Friendly Ground Dove	N	VU
Lalage maculosa	Polynesian Triller	N	
Myiagra azureocapilla	Blue-crested Broadbill	N	
Myiagra vanikorensis	Vanikoro Broadbill	N	
Pachycephala pectoralis	Golden Whistler	Ν	
Petroica multicolor	Scarlet Robin	N	
Phigys solitarius	Collared Lory	Ν	
Rhipidura spilodera	Streaked Fantail	Ν	
Todiramphus chloris	White-collared Kingfisher	Ν	
Turdus poliocephalus	Island Thrush	N	
Zosterops lateralis	Silvereye	N	
Pycnonotus cafer	Red-vented Bulbul	I	

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Table 2. Freshwater fish species found in the Sovi Basin. E = Endemic, N = Native, I = Introduced

Species Name	Common Name	Status
Anguilla marmorata	Big mottled eel	N
Gymnothorax polyuranodon	Freshwater moray	N
Awaous guamensis	Goby	N
Awaous ocellaris	Goby	N
Glossogobius sp.	Goby	E
Schismatogobius vitiensis	Goby	Е
Sicyopterus lagocephalus	Goby	N
Sicyopus zosterophorum	Goby	N
Stiphodon rutilaureus	Goby	N
Belobranchus belobranchus	Throat-spine gudgeon	Ν
Giurus margaritacea	Gudgeon	N
Kuhlia marginata	Spotted flag tail	N
Kuhlia rupestris	Jungle perch	N
Oreochromis mossambicus	Tilapia	I

Table 3. Checklist of aquatic invertebrates in the Sovi Basin. N = Native, I = Introduced.

Species Name	Status
Caridina nudirostris	N
Macrobrachium aemulum	Ν
Macrobrachium caledonium	Ν
Macrobrachium lar	N
Macrobrachium latimanus	N
Macrobrachium lepidactyloides	N
Macrobrachium rosenbergii	I

Table 4. Checklist of Herpetofauna found in the Sovi Basin. E = Endemic, N = Native, I = Introduced.

Spectres Nation	Common Name	Status
Platymantis vitiensis	Fiji Tree Frog	E
Emoia concolor	Fiji Green Tree Skink	Е
E. parkeri	Fiji Copper-headed Skink	Е
E. cyanura	Brown-tailed Skink	N
Nactus pelagicus	Skink-toed Gecko	N
Candoia bibroni	Pacific Boa	N
Bufo marinus	Cane Toad	Ι

Table 5. Checklist of mammal species found in the Wabu Forest Reserve. N = Native, I =	= Introduced.
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Sectornatific neurose	Common English Name	Staticis	IUCN Status
Pteropus samoensis	Samoan Fruit bat	N	VU
Pteropus tonganus	Tongan Fruit bat	N	LR
Rattus rattus	Ship Rat	I	
Herpestes javanicus	Small Indian Mongoose	I	
Sus scrofa	Feral Pig	I	
Canis familaris	Feral Dogs	I	
Felis catus	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	Princely	Common name
Hymenoptera	Apocrita	Formicidae (66% E)	ants
			wasps
Lepidoptera	Macrolepidoptera		butterflies
	Macrolepidoptera		moths
Isoptera		Termitidae	termites
Tricoptera			caddis fly
Diptera			flies
Homoptera		Cicadidae	cicada
Hemiptera			true bugs
Coleoptera			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)		damselflies
	Anisoptera		dragonflies

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Ørsler	Sub-order	Parently	Сотвол ваше
Dermaptera			earwigs
Thysanuara			silverfish
Orthoptera	Ensifera	Tettigoniidae	katydid
		Gryllaerididae	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	Citronella vitiensis R. Howard	Ind
Acacinaceae	Medusanthera vitiensis Seem.	Ind
Acanthaceae	Blechum pyramidatum (Lam.) Urb.	Ind
Adiantaceae	Adiantum diaphanum Blume	Ind
Adiantaceae	Adiantum diaphanum Blume	Ind
Adiantaceae	Adiantum hispidulum Swartz	Ind
Adiantaceae	Pteris tripartite Swartz	Ind
Adiantaceae	Stenochalena palustris (Burm.) Bedd.	Ind
Adiantaceae	Syngramma spathulata (C. Christen.) Holtt	End
Agavaceae	Taenitis pinnata var. polypodioides (Baker) Holtt.	End
Alangiaceae	Cordyline fruticosa A.Chev.	Ind
Anacardiaceae	Alangium vitiense (A.Gray) baill. Ex Harms	End
Anacardiaceae	Buchanania attenuata A.C.Sm	End
Anacardiaceae	Rhus simaroubifolia A.Gray	Ind
Annonaceae	Semecarpus vitiensis (A.Gray) Engl.	Ind
Annonaceae	Cyathocalyx insularis A. C. Sm.	End
Annonaceae	Cyathocalyx insularis A.C.Sm	End
Annonaceae	Polyalthia vitiensis Seem	End
Annonaceae	Richella monosperma A. Gray	End
Annonaceae	Xylopia pacifica A. C. Sm.	End
Apocynaceae	Xylopia vitiensis A.C.Sm.	End
Apocynaceae	Alstonia montana Turrill	Ind
Apocynaceae	Alstonia pacifica (Seem.) A.C.Sm.	Ind
Apocynaceae	Alstonia vitiensis Seem.	End
Apocynaceae	Alyxia bracteolosa var. bracteolosa J. W. Parham	Ind
Apocynaceae	Alyxia stellata (Forst.) Roem. & Schult.	Ind
Аросупасеае	Carruthersia macrantha A.C.Sm.	Ind, rare
Apocynaceae	Cerbera manghas L.	Ind
Apocynaceae	Ervatamia obtusiuscula Markgraf	Ind

Facesty	Scientific Name	Distribution Status
Аросупасеае	Pagiantha thurstonii (Horne ex baker) A.C.Sm.	End
Aquifoliaceae	Ilex vitiensis A. Gray	Ind
Araliaceae	Schefflera costata A.C.Sm.	End, rare
Araliaceae	Plerandra grayi Seem.	End
Araliaceae	Plerandra insolita A.C.Sm.	End
Araliaceae	Plerandra pickeringii A.C.Sm	End
Araliaceae	Plerandra vitiensis (Seem.) Baill.	End
Araliaceae	Polyscias joskei Gibbs	End
Araliaceae	Polyscias multijuga (A.Gray) Harms	End
Araliaceae	Schefflera euthytricha A.C.Sm.	End, rare
Araliaceae	Schefflera seemanniana A.C.Sm.	End
Araliaceae	Schefflera vitiensis (A.Gray) Seem.	End
Araucariaceae	Agathis macrophylla (Lindley) Masters	Ind
Araceae	Alocasia macrorrhiza (L.) G. Don	Adv
Araceae	Colocasia esculenta (L.) Schott	Adv
Araceae	Epipremnum pinnatum (L.) Engl.	Ind
Arecaceae	Balaka longirostris Becc.	End
Arecaceae	Clinostigma exorrhizum (H.Wendel.) Becc.	End
Arecaceae	Veitchia joannis H.Wendel.	End
Arecaceae	Veitchia vitiensis (H.Wendel.) H.E.Moore	End
Aristolochiaceae	Aristolochia vitiense A.C.Sm.	End
Asclepiadaceae	Hoya australis R.Br	Ind
Asclepiadaceae	Hoya diptera Seem.	End
Asclepiadaceae	Hoya vitiensis Turrill	End
Aspidiaceae	Arachinoides aristata (Forst.) Tindale	Ind
Aspidiaceae	Didymochlaena truncatula (Sw.) J. Sm.	Ind
Aspidiaceae	Pleocnemia cumingiana Presl.	Ind
Aspidiaceae	Pleocnemia irregularis (Presl.) Holtt	Ind
Aspidiaceae	Tectaria crenata Cavanilles	Ind
Aspidiaceae	Tectaria decurrens (Presl.) Copel.	Ind
Aspidiaceae	Tectaria godeffroyi (Luerss.) Copel	End
Aspidiaceae	Tectaria latifolia (Forster) Copel.	Ind
Aspidiaceae	Tectaria vitiensis Brownlie	End
Aspleniaceae	Asplenium amboinense Willd.	Ind
Aspleniaceae	Asplenium australasicum Hook	Ind
Aspleniaceae	Asplenium bipinnatifidum Baker	Ind
Aspleniaceae	Asplenium cuneatum Lam.	Ind
Aspleniaceae	Asplenium polydon Forster	Ind
Asteraceae	Acmella uliginosa (Sw.) Cass.	Adv
Asteraceae	Ageratum conyzoides L.	Adv
Asteraceae	Bidens pilosa L.	Adv

Damily	Scientific Name	Distribution Statu
Asteraceae	Conyza bonariense (L.) Cronquist	Adv
Asteraceae	Crassocephalum crepidioides (Benth.) S. Moore	Adv
Asteraceae	Elephantopus mollis H. B. K.	Adv
Asteraceae	Eleutheranthera ruderalis (Sw.) Schultz-Bip	Ind
Asteraceae	Emilia sonchifolia (L.) DC.	Adv
Asteraceae	Erechtites valerianifolia (Wolf) DC.	Ind
Asteraceae	Mikania micrantha H. B. K.	Inv
Asteraceae	Synedrella nodiflora (L.) Gaertn.	Adv
Asteraceae	Vernonia cinerea (L.) Less.	Adv
Asteraceae	Youngia japonica (L.) DC.	Adv
Athyriaceae	Diplaziopsis javanica (Bl.) C.Christen.	Ind
Athyriaceae	Diplazium dilatatum Bl.	Ind
Athyriaceae	Diplazium echinatum C.Christen.	Ind
Athyriaceae	Diplazium esculentum (Ret.) Sw.	Ind
Athyriaceae	Diplazium harpeodes Moore	Ind
Athyriaceae	Diplazium proliferum (Lam) Thours	Ind
Barringtoniaceae	Barringtonia seaturae Guppy	End
Barringtoniaceae	Barringtonia edulis Seem.	End
Bignoniaceae	Spathodea campanulata Beauv.	Inv
Blechnaceae	Blechnum milnei (Carr.) C. Christen.	End
Blechnaceae	Blechnum orientale L.	Ind
Burseraceae	Canarium harveyi seem	Ind
Burseraceae	Canarium harveyi var. harveyi Leenh	End
Burseraceae	Canarium vanikoroense Leenh.	Ind
Burseraceae	Canariun vitiense A.Gray	Ind
Burseraceae	Haplolobus floribundus subsp salomonensis (C.T.White) Leenh.	Ind
Caesalpiniaceae	Cynometra insularis A.C.Sm.	End
Caesalpiniaceae	Maniltoa minor A.C.Sm.	End
Caesalpiniaceae	Storckiella vitiensis Seem.	End
Caesalpiniaceae	Kingiodendron platycarpum B.L.Burtt	End
Campanulaceae	Lobelia zeylanica L.	Adv
Casuarinaceae	Gymnostoma vitiense L.A.S. Johnson	End
Chrysobalanaceae	Atuna racemosa Raf.	Ind
Chrysobalanaceae	Parinari insularum A.Gray	Ind
Clusiaceae	Calophyllum amblyphyllum A.C.Sm	End
Clusiaceae	Calophyllum leptocladum A. C. Sm. & S. Darwin	End
Clusiaceae	Calophyllum neo-ebudicum Guillaumin	Ind
Clusiaceae	Calophyllum vitiense Turrill	End
Clusiaceae	Calophyllum cerasiferum Vesque	End
Clusiaceae	Garcinia adinantha A.C.Sm. & S.Darwin	End
Clusiaceae	Garcinia myrtifolia A.C.Sm.	Ind
Clusiaceae	Garcinia pseudoguttifera Seem.	Ind

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Faimily	Scientific Name	· Distribution Status
Clusiaceae	Garcinia sessilis (Forst f.) Seem.	Ind
Combrataceae	Terminallia sp.	Ind
Combretaceae	Terminalia capitanea A.C.Sm.	Ind
Combretaceae	Terminalia crebrifolia A.C.Sm.	End
Commellinaceae	Commelina diffusa Burm.	Ind
Connaraceae	Connarus pickeringii A.Gray	End
Connaraceae	Rourea minor (Gaertrn.) Alston	Ind
Convolvulaceae	Ipomoea indica (Burm.) Merr.	Ind
Convolvulaceae	Merremia peltata (L.) Merr.	Ind/Inv
Cunoniaceae	Geissois stipularis A.C.Sm.	End
Cunoniaceae	Geissois superba Gillespie	End
Cunoniaceae	Geissois ternate A.Gray	End
Cunoniaceae	Spiraeanthemum serratum Gillespie	End
Cunoniaceae	Spiraenthenum graeffei Seem.	Ind
Cunoniaceae	Weinmannia affinis A.Gray	End
Cunoniaceae	Weinmannia richii A.Gray	End
Cyatheaceae	Culcita straminea (Labilll.) Maxon	Ind
Cyatheaceae	Cyathea affinis (Forst.) Sw.	End
Cyatheaceae	Cyathea alata Copel.	Ind
Cyatheaceae	Cyathea decurrens (Hook.) Copel.	Ind
Cyatheaceae	Cyathea hornei (Baker) Copel.	Ind
Cyatheaceae	Cyathea lunalata (Forst) Copel.	Ind
Cyatheaceae	Cyathea propinqua Mett.	End
Cyatheaceae	Dicksonia brackenridgei Mett.	Ind
Cyperaceae	Carex graeffeana Boeck.	Ind
Cyperaceae	Cyperus haspan L.	Ind
Cyperaceae	Cyperus pilosus Vahl	Adv
Cyperaceae	Cyperus rotundus L.	Adv
Cyperaceae	Elaeocharis ochrostachys Steudel	Ind
Cyperaceae	Fimbristylis dichotoma (L.) Vahl	Adv
Cyperaceae	Gahnia vitiensis Rendle	End
Cyperaceae	Hypolytrum nemorum subsp. Vitiense (C.B.Clarke) T.Koyama	Ind
Cyperaceae	<i>Kyllinga polyphylla</i> Willd. Ex Kunth	Adv
Cyperaceae	Machaerina falcata (Nees) T. Koyama	Ind
Cyperaceae	Pycreus polystachyos (Rottb.) Beauv.	Nat
Cyperaceae	Rhynchospora corymbosa (L.) Britton	Ind
Cyperaceae	Schoenus achaetus (T. Koyama) T. Koyama	Ind, rare
Cyperaceae	Scleria polycarpa Boeck.	Ind
Cyperaceae	Scripodendron ghaeri (Gaertn.) Merr.	Ind
Davalliaceae	Arthropteris repens (Brack.) C.Chr.	Ind
Davalliaceae	Davallia fejeensis Hook	End
Davalliaceae	Davallia solida (Forst. f.) Sw.	Ind

Family	Scientific Name	Distribution Statu.
Davalliaceae	Humata polypodioides Brack.	Ind
Davalliaceae	Nephrolepis biserrata (Sw.) Schott	Ind
Davalliaceae	Nephrolepis saligna Carr.	End
Davalliaceae	Nephrolepis tuberosa (Bory ex Willd.) Presl.	Ind
Davalliaceae	Nephrolepis. hirsutula (Forst.) Presl.	Ind
Davalliaceae	Oleandra neriiformis Cav.	Ind
Davalliaceae	Oleandra sibbaldii Grev.	Ind
Degeneriaceae	Degeneria vitiensis I. W. Bailey & A. C. S	End
Degeneriaceae	Degeneria vitiensis I.W. Bailey & A.C.Smith	End
Dennstaedtiaceae	Orthiopteris ferulacea (Moore) Copeland	End
Dichapetalaceae	Dichapetalum vitiense (Seem.) Engl.	Ind
Dilleniaceae	Dillenia biflora (A.Gray) Martelli ex Dur. & Jacks.	End
Dilleniaceae	Hibbertia luccens Brongn. & Gris ex Sebert & Pancher	Ind
Dioscoreaceae	Dioscorea nummularia Lam.	Ind
Dioscoreaceae	Dioscorea bulbifera L.	Ind
Ebenaceae	Diospyros major (Forst. f.) Bakh	Ind
Elaeocarpaceae	Elaeocarpus chelonimorphus Gillespie	End
Elaeocarpaceae	Elaeocarpus milnei Seem. (E)	End
Elaeocarpaceae	Elaeocarpus storckii Seem. (E)	End
Elaeocarpaceae	Elaeocarpus subcapitatus Gillespie	End
Epacridaceae	Leucopogon septentrionalis Schlechter	Ind
Ericaceae P	Paphia vitiensis Seem.	End
Euphorbiaceae	Acalypha insulana Muell.	Ind
Euphorbiaceae A	Acalypha insulana Muell. var. insulana A. C. Sm.	Ind
Euphorbiaceae	Acalypha repanda Muell. var. denudata (Muell. Arg.) A. C. Sm.	End
Euphorbiaceae	Acalypha repanda Muell. var. repanda A. C. Sm.	Ind
Euphorbiaceae	Acalypha rivularis Seem.	End
Euphorbiaceae	Austrobuxus horneanus (A. C. Sm.) Airy Shaw	End
Euphorbiaceae	Baccaurea pulvinata A. C. Sm	End
Euphorbiaceae	Baccaurea seemannii (Muell.) Muell.	Ind
Euphorbiaceae	Baccaurea stylaris Muell. Arg.	End
Euphorbiaceae	Bischofia javanica Bl.	Ind
Euphorbiaceae	Claoxylon fallax Muell. Arg.	Ind
Euphorbiaceae	Codiaeum variegatum L.	Ind
Euphorbiaceae	Endospermum macrophylla (Muell. Arg.) Pax & Hoffm.	End
Euphorbiaceae	Glochidion anfractuosum Gibbs	End
Euphorbiaceae	Glochidion atalotrichum A. C. Sm.	End
Euphorbiaceae	Glochidion bracteatum Gillespie	Ind
Euphorbiaceae	Glochidion concolor Muell. Arg.	Ind
Euphorbiaceae	Glochidion cordatum Seem.	End
Euphorbiaceae	Glochidion ramiflorum Forst.	Ind
Euphorbiaceae	Glochidion seemannii Muell.	End

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Facentity	Scientific Name	Distribution Status
Euphorbiaceae	Glochidion vitiense (Muell.) Gillespie	End
Euphorbiaceae	Macaranga graeffeana Pax & Hoffm. var. graeffeana A. C. Sm.	End
Euphorbiaceae	Macaranga harveyana (Muell. Arg.) Muell. Arg.	Ind
Euphorbiaceae	Macaranga magna Turrill	End
Euphorbiaceae	Macaranga vitiensis Pax & Hoffm.	End
Euphorbiaceae	Omalanthus nutans (Forst. f.) Guillemin	Ind
Euphorbiaceae	Phyllanthus amarus Schumach. & Thonn.	Ind
Euphorbiaceae	Phyllanthus debilis Klein ex Willd	Ind
Fabaceae	Derris elliptica (Wall.) Benth.	Ind
Fabaceae	Derris trifoliata Lour.	Ind
Fabaceae	Desmodium incanum DC.	Ind
Fabaceae	Desmodium triflorum (L.) DC.	Nat
Fabaceae	Entada phaseoloides (L.) Merr.	Ind
Fabaceae	Inocarpus fagifer(Parkinson) Fosberg	Ind
Fabaceae	Macuna platyphylla A.Gray	Ind
Fabaceae	Pueraria lobata (Willd.) Ohwi	Ind
Flacourtiaceae	Caesaria richii A. Gray	End
Flacourtiaceae	Erythrospermum acuminatissimum (A.gray) A.C.Sm.	End
Flacourtiaceae	Homalium nitens Turrill	End
Flacourtiaceae	Homalium vitiense Benth	Ind
Flagellariaceae	Flagellaria gigantean Hook	Ind
Flagellariaceae	Flagellaria indica L	Ind
Flagellariaceae	Flagellaria neo-caledonica Schlechter	Ind
Gesneriaceae	Cyrtandra coleoides Seem.	End
Gesneriaceae	Cyrtandra anthropophagorum Seem.	End
Gesneriaceae	Cyrtandra cephalophora Gillespie	End
Gesneriaceae	Cyrtandra jugalis A. C. Sm.	End
Gesneriaceae	Cyrtandra leucantha A. C. Sm.	End
Gesneriaceae	Cyrtandra milnei Seem.	End
Gesneriaceae	Cyrtandra occulta A.C. Sm.	End
Gesneriaceae	Cyrtandra trichophylla A.C. Sm.	End
Gesneriaceae	Cyrtandra victoriae Gillespie	End
Gesneriaceae	Cyrtandra vitiensis Seem.	End

Family	Scientific Name	Distribution Statu
Gleicheniaceae	Dicranopteris caudata (Copel.) St. John	End
Gleicheniaceae	Dicranopteris linearis (Burm.) Underwood	Ind
Gleicheniaceae	Gleichenia longissima Bl.	Ind
Gleicheniaceae	Gleichenia oceanica Kuhn	Ind
Gnetaceae	Gnetum gnemon L.	End
Gnetaceae	Gnetum gnemon L.	End
Gonystylaceae	Gonystylus punctatus A.C.Sm.	End
Goodeniaceae	Scaevola floribunda A.Gray	End
Grammitidaceae	Ctenopteris contigua (Forst.) Holtt	Ind
Grammitidaceae	Ctenopteris seemannii (J.Sm.) Copel.	Ind
Polypodiaceae	Dipteris conjugate Reinw.	Ind
Grammitidaceae	Grammitis hookeri (Brack.) Copel.	Ind
Heliconiaceae	Heliconia paka A.C. Sm.	Ind
Hernandiaceae	Hernandia olivacea Gillespie	End
Hymneophyllaceae	Hymemophyllum samoense Baker	Ind, rare
Hymneophyllaceae	Hymenophyllum affine Brack.	End
Hymneophyllaceae	Hymenophyllum denticulatum Sw.	Ind
Hymneophyllaceae	Trichomanes aphlebioides Christ.	Ind
Hymneophyllaceae	Trichomanes apiifolium Presl.	Ind
Hymneophyllaceae	Trichomanes boryanum Kunze	Ind
Hymneophyllaceae	Trichomanes caudatum Brack.	Ind
Hymneophyllaceae	Trichomanes dentatum v.d.B	Ind
Hymneophyllaceae	Trichomanes endlicherianum Presl.	Ind
Hymneophyllaceae	Trichomanes humile Forst.	Ind
Hymneophyllaceae	Trichomanes intermedium v. d. B.	Ind
Hymneophyllaceae	Trichomanes tahitense Nadeau	Ind
Icacinaceae	Citronella vitiensis H.Howard	End
Icacinaceae	Medusanthera vitiensis Seem	End
Joinvilleaceae	Joinvillea plicata (Hook) Newell & Stone	Ind
Lamiaceae	Hyptis pectinata (L.) Poit.	Ind
Lamiaceae	Ocimum tenuiflorum L.	Ind
Lauraceae	Cryptocarya constricta Allen	End
Lauraceae	Cryptocarya fusca Gillespie	End
Lauraceae	Endiandra elaeocarpa Gillespie	Ind
Lauraceae	Endiandra gillespiei A.C.Sm.	End
Lauraceae	Endiandra reticulate Gillespie	End
Lauraceae	<i>Litsea magnifolia</i> Gillespie	End
Lauraceae	Litsea pickeringii (A.Gray ex Seem.) Benth. & Hook. ex Drake	End
Lauraceae	Litsea vitiana (Meisn.) Benth & Hook f. ex Drake	End
Leeaceae	Leea indica (Burm f.) Merr.	Ind
Liliaceae	Collospermum montanum (Seem.) Skottsb.	End

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Liliaceae	Rhuacophila javanica Bl.	Ind
Lindsaeaceae	Lindsaea harveyi Carr. Ex Seem.	Ind
Lindsaeaceae	Lindsaea pacifica Kramer	Ind
Lindsaeaceae	Lindsaea pulchra (Brack.) Carr. ex Seem	Ind
Loganiaceae	Fagraea berteroana A.Gray ex Benth.	Ind
Loganiaceae	Fagraea gracilipes A.Gray	Ind
Loganiaceae	Geniostoma macrophyllum Gillespie	End
Loganiaceae	Geniostoma rupestre J.R. & G.Forst.	Ind
Loganiaceae	Neuburgia alata (A.C.Sm) A.C.Sm.	End
Loganiaceae	Neuburgia corynocarpa (A.Gray) Leenh.	Ind
Loganiaceae	Neuburgia macrocrpa (A.C.Sm.) A.C.Sm.	End
Lomariopsidaceae	Bolbitis rivularis (Brack.)Ching	End
Lomariopsidaceae	Lomagramma cordipinna Holtt.	Ind
Lomariopsidaceae	Lomagramma polyphylla Brack	Ind
Loranthaceae	Decaisnina forsteriana (J. A. & J. H. Schult.) Barlow	Ind
Lycopodiaceae	Lycopodium carinatum Desvaux	Ind
Lycopodiaceae	Lycopodium cernuum L.	Ind
Lycopodiaceae	Lycopodium foliosum Copel.	End
Lycopodiaceae	Lycopodium magnificum Brownlie	End
Lycopodiaceae	Lycopodium parksii Copel.	End
Lycopodiaceae	Lycopodium serratum Thunb.	Ind, rare
Lycopodiaceae	Lycopodium squarrosum Forst.	Ind
Lycopodiaceae	Lycopodium subtrifoliatum Brownlie	Ind
Lycopodiaceae	Lycopodium trifoliatum Copel.	End
Lythraceae	Cuphea carthagenensis (Jacq.) Macbr.	Ind
Malvaceae	Hibiscus tiliaceus L.	End
Malvaceae	Sida rhombifolia L.	Adv
Malvaceae	Urena lobata L.	Adv
Marratiaceae	Angiopteris opaca Copel.	End, rare
Marattiaceae	Angiopteris evecta (Forst.) Hoffm.	Ind
Marattiaceae	Marattia smithii Mett.	End
Melastomataceae	Astronidium sp.	
Melastomataceae	Astronidium confertiflorum (A. Gray) Markgr.	End
Melastomataceae	Astronidium macranthum (A.C.Sm.) A.C.Sm.	End
Melastomataceae	Astronidium parviflorum A. Gray	End
Melastomataceae	Astronidium robustum (Seem.) A.C.Sm.	End
Melastomataceae	Astronidium storckii Seem.	End
Melastomataceae	Clidemia hirta (L.) D. Don	Nat
Melastomataceae	Medinilla archboldiana A.C.Sm.	End
Melastomataceae	Medinilla heterophylla A.Gray	End
Melastomataceae	Medinilla longicymosa Gibbs	End

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Permitty	Scientific Name	Distribution Status
Melastomataceae	Medinilla rhodochlaena A. Gray	End
Melastomataceae	Medinilla subviridis A.C.Sm	End
Melastomataceae	Melastoma denticulatum Labill	Ind
Meliaceae	Aglaia archboldiana A.C.Sm.	End
Meliaceae	Aglaia axillaries A.C.Sm.	End
Meliaceae	Aglaia elegans Gillespie	End
Meliaceae	Aglaia vitiensis A.C.Sm.	End
Meliaceae	Aglaia vitiensis var. minor A. C. Sm.	End
Meliaceae	Dysoxylum hornei Gillespie	End
Meliaceae	Dysoxylum lenticellare Gillespie	End
Meliaceae	Dysoxylum quercifolium (Seem.) A.C.Sm.	End
Meliaceae	Dysoxylum richii (A.Gray) C.DC.	End
Meliaceae	Dysoxylum seemannii Gillespie	End
Meliaceae	Vavaea amicorum Benth.	Ind
Meliaceae	Vavaea degeneri A. C. Sm.	End
Meliaceae	Vavaea harveyi Seem.	End
Mimosaceae	Entada phaseoloides (L.) Merr.	End
Mimosaceae	Mimosa pudica L. var. unijuga (Duchass. & Walp.) Griseb.	Adv
Mimosaceae	Serianthes melanesica Fosberg	End
Monimiaceae	Hedycarya dorstenioides A.Gray	Ind
Moraceae	Artocarpus altilis (Parkinson) Forsberg	Adv
Moraceae	Ficus bambusifolia Seem.	End
Moraceae	Ficus barclayana (Miq.) Summerh	End
Moraceae	Ficus fulvo-pilosa Summerh.	End
Moraceae	Ficus obliqua Forst.	Ind
Moraceae	Ficus pritchardii Seem.	End
Moraceae	Ficus smithii Horne var. robusta Corner	Ind
Moraceae	Ficus theophrastoides Seem.	Ind
Moraceae	Ficus vitiensis Seem.	End
Musaceae	Musa paradisiaca subspp. sapientum (L.) K. Schum.	Adv
Myristicaceae	Myristica castaneifolia A.Gray	End
Myristicaceae	<i>Myristica chartacea</i> Gillespie	End
Myristicaceae	Myristica gillespieana A.C.Sm	End
Myristicaceae	Myristica grandifolia A. DC	End
Myristicaceae	Myristica macrantha A.C.Sm	End
Myrsinaceae	Discocalyx fusca Gibbs	Ind
Myrsinaceae	Maesa Insularis Gillespie	End
Myrsinaceae	Maesa tabacifolia Mez.	Ind
Myrsinaceae	Tapeinosperma ampliflorum A.C.Sm.	End
Myrsinaceae	Tapeinosperma capitatum (A.Gray) Mez	End
Myrsinaceae	Tapeinosperma hornei Mez	Ind
Myrsinaceae	Tapeinosperma megaphyllum (Hemsl.) Mez	End

Family	Scientific Name	Distribution Status
Myrsinaceae	Tapeinosperma multiflorum Gillespie) A.C.Sm	End
Myrtaceae	Cleistocalyx decussatus A.C.Sm.	End
Myrtaceae	Cleistocalyx eugenioides Merr. & Perry	End
Myrtaceae	Cleistocalyx sp	Ind
Myrtaceae	Decaspermum vitiense (A.Gray) Niedenzu	End
Myrtaceae	Metrosideros collina (J.R. &G.Forst) A.Gray	Ind
Myrtaceae	Psidium guajava L.	Adv
Myrtaceae	Syzygium amicorum (A.Gray) C.Muell.	End
Myrtaceae	Syzygium amplifolium Perry	End
Myrtaceae	Syzygium brackenridgei (A. Gray) C. Muell.	Ind
Myrtaceae	Syzygium corynocarpum (A. Gray) C. Muell.,	Ind
Myrtaceae	Syzygium curvistylum (Gillespie) Merr. & Perry	Ind
Myrtaceae	Syzygium diffusum (Turrill) Merr. & Perry	End
Myrtaceae	Syzygium effusum (A.Gray) C. Muell.	Ind
Myrtaceae	Syzygium fijiense Perry	End
Myrtaceae	Syzygium gracilipes (A.Gray) Merr. & Perry	End
Myrtaceae	Syzygium grayi (Seem.) Merr. & Perry	End
Myrtaceae	Syzygium leucanthum Perry	End
Myrtaceae	Syzygium neurocalyx (A.Gray) Christophersen	Ind
Myrtaceae	Syzygium purpureum (Perry) A. C. Sm.	End
Myrtaceae	Syzygium quadrangulatum (A. Gray) Merr. & Perry	Ind
Myrtaceae	Syzygium rubescens (A.Gray) C.Muell.	End
Myrtaceae	Syzygium seemannianum Merr & Perry	End
Nyctaginaceaea	Pisonia umbellifera (J.R. & G.Forst) Seem.	Ind
Oleaceae	Jasminum simplicifolium Forst. F. Fl.	Ind
Onagraceae	Ludwigia hyssopifolia (G. Don) Exell	Adv
Onagraceae	Ludwigia octovalis subsp. sessiliflora (M. Micheli) Raven	Adv
Onagraceae	Ludwigia octovalis (Jacq.) Raven subsp. octovalis Raven	Adv
Ophioglossaceae	Ophioglossum pendulum L.	Ind
Orchidaceae	Acanthephippium papuanum Schlechter	Ind
Orchidaceae	Agrostophyllum aristatum Kores	End
Orchidaceae	Appendicula bracteosa Reichenb.	Ind, rare
Orchidaceae	Appendicula pendula Bl.	Ind
Orchidaceae	Appendicula reflexa Bl.	Ind
Orchidaceae	Arundina bambusifolia Roxb. Ex Lindl.	Adv
Orchidaceae	Bulbophyllum samoanum Schlechter	Ind, rare
Orchidaceae	Bulbophyllum sessile (Koen.) J. J. Sm.	Ind, rare
Orchidaceae	Bulbophyllum longiscapum Rolf.	Ind
Orchidaceae	Calanthe hololeuca Reichenb.	Ind
Orchidaceae	Calanthe triplicata (Willemet) Ames	Ind
Orchidaceae	Calanthe ventilabrum Reichenb.	Ind
Orchidaceae	Coelogyne lycastoides F. v. Muell. & Kraenzl.	Ind

Paunity	Scientific Name	Distribution State
Orchidaceae	Coelogyne macdonaldii F. v. Muell. & Kraenzl.	Ind
Orchidaceae	Cryptostylis arachnites (Bl.) Hassk.	Ind
Orchidaceae	Cynorkis fastigiata Thou.	Ind
Orchidaceae	Dendrobium biflorum (Forst. f.) Sw.	Ind
Orchidaceae	Dendrobium macrophyllum A. Rich.	Ind
Orchidaceae	Dendrobium masarangense Schlechter	Ind
Orchidaceae	Dendrobium mohlianum Reichenb.	Ind
Orchidaceae	Dendrobium platygastrium Reichenb.	Ind
Orchidaceae	Dendrobium purpureum Roxb.	Ind
Orchidaceae	Dendrobium tokai Reichenb. f. ex Seem.	Ind
Orchidaceae	Dendrobium trilobulatum Kores	End
Orchidaceae	Dendrobium vitiense Rolfe	End
Orchidaceae	Diplocaulobium tipuliferum (Reichenb. F.) Kraenzl.	End
Orchidaceae	Earina valida Reichenb.	Ind
Orchidaceae	Eria bulbophylloides C. Schweinf.	End
Orchidaceae	Eria rostriflora Reichenb.	Ind
Orchidaceae	Flickingeria comata (Bl.) A. Hawkes	Ind, rare
Orchidaceae	Glomera emarginata Kores	End, rare
Orchidaceae	Glossorhyncha macdonaldii Schlechter	Ind
Orchidaceae	Habenaria superflua Reichenb.	End
Orchidaceae	Liparis elegans Lindl.	Ind
Orchidaceae	Liparis elliptica Wight	Ind
Orchidaceae	Liparis gibbosa Finet	Ind
Orchidaceae	Malaxis platychila (Reichenb. f.) Kuntze	End, rare
Orchidaceae	Malaxis radicicola (Rolfe) L.O.Williams	End
Orchidaceae	Malaxis lunata (Schlechter) Ames	Ind, rare
Orchidaceae	Mediocolor paradoxum (Kraenzl.) Schlechter	Ind
Orchidaceae	Oberonia equitans (Forst. f.) Mutel	Ind
Orchidaceae	Oberonia heliophila Reichenb.	Ind
Orchidaceae	Peristylus maculifer (C. Schweinf.) Renz & Vodonaivalu	Ind
Orchidaceae	Phaius graeffei Reichenb	Ind
Orchidaceae	Phaius tankarvilleae (Banks ex L'Her.) Bl.	Ind
Orchidaceae	Phreatia micrantha (A. Rich.) Schlechter	End
Orchidaceae	Phreatia pachyphylla Schlechter	Ind, rare
Orchidaceae	Phreatia pentagona Kores	Ind
Orchidaceae	Pseuderia platyphylla L. O. Williams	Ind
Orchidaceae	Robiquetia bertholdii (Reichenb. f.) Schlecter	Ind
Orchidaceae	Sarcanthopsis nagarensis (Reichenb. f.) Garay	Ind
Orchidaceae	Schoenorchis micrantha Reinw. ex Bl.	Ind
Orchidaceae	Spathoglottis pacifica Reichenb.	Ind
Orchidaceae	Spathoglottis plicata Bl.	Ind

Family	Scientific Name	Distribution Status
Orchidaceae	Taeniophyllum gracile (Rolfe) Garay	Ind
Orchidaceae	Thrixspermum sp.	Ind
Orchidaceae	Tropidia effusa Reichenb.	Ind
Osmundaceae	Leptopteris wilkesiana (Brack.) Christ	Ind
Oxalidaceae	Oxalis corniculata L.	Ind
Pandanaceae	Fretcinetia urvilleana Hombron & jacquinot	Ind
Pandanaceae	Freycinetia caudata Hemsl.	End
Pandanaceae	Freycinetia hombronii Martelli	Ind
Pandanaceae	Freycinetia impavida (Hombron & Jacquinot) Stone	Ind
Pandanaceae	Freycinetia pritchardii Seem.	Ind
Pandanaceae	Freycinetia vitiensis Seem.	End, rare
Pandanaceae	Pandanus vitiensis Martelli	End
Peperomiaceae	Peperomia lasiostigma C. DC. var. lasiostigma J. W. Parham	End
Peperomiaceae	Peperomia purpurinodis J. W. Parham	End
Peperomiaceae	Peperomia subroseispica C. DC	End
Philesiaceae	Geitonoplesium cymosum (R.Br.) A. Cunn.	Ind
Pharmacies	Rhuacophola javanica Bl.	Ind
Piperaceae	Macropiper puberulum Benth. var. glabrum (C. DC.) A. C. Sm.	Ind
Piperaceae	Macropiper timothianum (A.C.Sm) A.C.Sm	End
Piperaceae	Macropiper vitiense (A.C.Sm.) A.C.Sm.	End
Piperaceae	Piper aduncum L.	Inv
Piperaceae	Piper betle L.	Ind
Piperaceae	Piper degeneri A.C.Sm.	End
Piperaceae	Piper insectifugum C. DC	End
Piperaceae	Piper stipulare A. C. Sm. & J. W. Parham	End
Pittosporaceae	Pittosporum arborescens Rich ex A.Gray	Ind
Pittosporaceae	Pittosporum rhytidocarpum A.Gray	End
Poaceae	Arundo donax L.	Ind
Poaceae	Axonopus compressus (Sw.) Beauv.	Ind
Poaceae	Bambusa vulgaris Schrader ex Wendel.	Ind
Poaceae	Brachiaria mutica (Forssk) Stapf	Ind
Poaceae	Centosteca lappacea (L.) Desv.	Ind
Poaceae	Chrysopogon aciculatus (Retz.) Trin.	Ind
Poaceae	Coix lacryma-jobi L.	Ind
Poaceae	Digitaria setigera Roth ex Roem. & Schult.	Ind
Poaceae	Echinochloa colona (L.) Link	Ind
Poaceae	Eleusine indica (L.) Gaertn.	Ind
Poaceae	Eragrostis tenella (L.) Beauv. Ex Roemer & Schultes	Ind
Poaceae	Eragrostis unioloides (Retz.) Nees ex Steudel	Ind
Poaceae	Imperata conferta (Presl.) Ohwi	Ind
Poaceae	Ischaemum indicum (Houtt.) Merr.	Ind
Poaceae	Miscanthus floridulus (Labill.) Warb. ex K. Schum. & Lauterb.	Ind

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Parnily	Scientific Name	Distribution Status
Poaceae	Oplimenus hirtellus (L,) Beauv.	Ind
Poaceae	Panicum maximum Jacq.	Adv
Poaceae	Paspalum conjugatum Bergius	Adv
Poaceae	Paspalum orbiculare Forst.	Ind
Poaceae	Pennisetum polystachyon (L.) J.A. & J.H. Schultes	Adv
Poaceae	Saccharum edule Hassk.	Adv
Poaceae	Sacciolepsis indica (L.) Chase	Ind
Poaceae	Schizostachyum glaucifolium (Rupr.) Munro	Ind
Poaceae	Setaria glauca (L.) Beauv.	Ind
Podocarpaceae	Acmopyle sahniana Buchh. & N.E. Gray	End, rare
Podocarpaceae	Dacrycarpus imbricatus de Laubenfels	Ind
Podocarpaceae	Dacrydium nidulum de Laubenfels	Ind
Podocarpaceae	Decussocarpus vitiensis (Seem.) de Laubenfels	Ind
Podocarpaceae	Podocarpus affinis Seem.	End, rare
Podocarpaceae	Podocarpus nerifolius D. Don	Ind
Podocarpaceae	Retrophyllum vitiense (Seem.) C. N. Page	Ind
Polygalaceae	Polygala paniculata L.	Adv
Polypodiaceae	Belvisia mucronata (Fee) Copel.	Ind
Polypodiaceae	Dictymia mckeei Tindale	Ind
Polypodiaceae	Dipteris conjugata Reinw	Ind
Polypodiaceae	Drynaria rigidula (Sw.) Bedd.	Ind
Polypodiaceae	Goniophlebium subauriculatum (Bl.) Pr	Ind
Polypodiaceae	Lemmaphyllum accedens (Bl.) Donk.	Ind
Polypodiaceae	Loxogramme parksii Copel.	Ind
Polypodiaceae	Microsorium alatum (Brack.) Copel.	End
Polypodiaceae	Selliguea feeoides Copel.	Ind
Pontederiaceae	Monochoria vaginalis (Burm. f.) Presl	Ind
Proteaceae	Turrillia ferruginea (A.C.Sm.) A.C.Sm.	End
Proteaceae	Turrillia vitiensis (Turrill) A.C.Sm.	End
Psilotaceae	Psilotum complanatum Sw.	Ind, rare
Psilotaceae	Psilotum nudum (L.) Palisot de Beauvois	Ind
Rhamnaceae	Alphitonia franguloides A.Gray	End
Rhamnaceae	Alphitonia zizyphoides (Spreng) A.Gray	Ind
Rhamnaceae	Emmenosperma micropetalum (A.C.Sm) M.Johnston	End
Rhamnaceae	Ventilago vitiensis A.Gray	Ind
Rhizophoraceae	Crossostylis harveyi Benth.	End
Rhizophoraceae	Crossostylis parksii (Gillespie) A.C.Sm	End
Rhizophoraceae	Crossostylis richii (A. Gray) A. C. Sm.	End
Rhizophoraceae	Crossostylis seemannii (A.Gray) Schimper	End
Rosaceae	Rubus moluccanus L. var. austropacificus van Royen	Ind
Rubiaceae	Airosperma trichotomum (Gillespie) A.C.Sm.	End

Pausarily	Scientific Name	Distribution Status
Rubiaceae	Antirhea smithii (Fosberg) Merr & Perry	End
Rubiaceae	Calycosia callithrix A.C.Sm.	End
Rubiaceae	Calycosia petiolata A.Gray	End
Rubiaceae	Dolicholobium Macgregorii Horne ex Baker	End
Rubiaceae	Dolicholobium oblongifolium A.Gray	End
Rubiaceae	Dolicholobium latifolium A.Gray	End
Rubiaceae	Gardenia hutchinsoniana Turrill	End
Rubiaceae	Gardenia storckii Oliver	End
Rubiaceae	Geophila repens (L.) I. M. Johnston	Ind
Rubiaceae	Gynochtodes epiphytica (Reichinger) A. C. Sm. & S. Darwin	Ind
Rubiaceae	Hydnophytum spp.	
Rubiaceae	Hynophytum longiflorum A.Gray	End
Rubiaceae	Ixora arestantha A.C.Sm.	End
Rubiaceae	Ixora carewii Horne ex baker	End
Rubiaceae	Ixora maxima Seem.	End
Rubiaceae	Mastixiodendron sp.	
Rubiaceae	Morinda bucidifolia A.Gray	End
Rubiaceae	Mussaenda raiateensis J.W.Moore	Ind
Rubiaceae	Neonauclea forsteri (Seem. Ex Havil.) Merr.	Ind
Rubiaceae	Ophiorrhiza laxa A.Gray	End
Rubiaceae	Ophiorrhiza leptantha A.Gray	Ind
Rubiaceae	Psychotria platycocca A.Gray	End
Rubiaceae	Psychotria amoena A.C.Sm.	End
Rubiaceae	Psychotria archboldiana Forsberg	End
Rubiaceae	Psychotria brackenridgei A.Gray	End
Rubiaceae	Psychotria brevicalyx Forsberg	End
Rubiaceae	Psychotria bullata Seem.	End, rare
Rubiaceae	Psychotria carnea (Forst. f.) A.C.Sm.	End
Rubiaceae	Psychotria cf. grieseifolia S.Moore	End
Rubiaceae	Psychotria cf. hypagyraea A.Gray	End
Rubiaceae	Psychotria confertiloba A.C.Sm	End
Rubiaceae	Psychotria crassiflora Fosberg	End
Rubiaceae	Psychotria gibbsiae S. Moore	End
Rubiaceae	Psychotria gillespieana A.C. Sm.	End
Rubiaceae	Psychotria glabra (Turill) Fosberg	End
Rubiaceae	Psychotria incompta A.C. Sm.	End
Rubiaceae	Psychotria leucocalyx A.C.Sm	End
Rubiaceae	Psychotria parvula A.Gray	End, rare
Rubiaceae	Psychotria pickeringii A. Gray	End
Rubiaceae	Psychotria scitula A.C.Sm.	End, rare
Rubiaceae	Psychotria st-johnii Fosberg	End

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Pannily	Scientific Name	Distribution Statu
Rubiaceae	Psychotria storckii Seem.	End
Rubiaceae	Psychotria tephrosantha A. Gray	End
Rubiaceae	Psychotria tetragonoides Fosberg	End
Rubiaceae	Psychotria turbinata A. Gray	End
Rubiaceae	Psychotria brevicalyx Forsberg	End
Rubiaceae	Psychotria bullata Seem.	End, rare
Rubiaceae	Psychotria carnea (Forst. f.) A.C.Sm.	End
Rubiaceae	Psychotria cf. grieseifolia S.Moore	End
Rubiaceae	Psychotria cf. hypagyraea A.Gray	End
Rubiaceae	Psychotria confertiloba A.C.Sm	End
Rubiaceae	Psychotria crassiflora Fosberg	End
Rubiaceae	Psychotria gibbsiae S. Moore	End
Rubiaceae	Psychotria gillespieana A.C. Sm.	End
Rubiaceae	Psychotria glabra (Turill) Fosberg	End
Rubiaceae	Psychotria incompta A.C. Sm.	End
Rubiaceae	Psychotria leucocalyx A.C.Sm	End
Rubiaceae	Psychotria parvula A.Gray	End, rare
Rubiaceae	Psychotria pickeringii A. Gray	End
Rubiaceae	Psychotria scitula A.C.Sm.	End, rare
Rubiaceae	Psychotria st-johnii Fosberg	End
Rubiaceae	Psychotria storckii Seem.	End
Rubiaceae	Psychotria tephrosantha A. Gray	End
Rubiaceae	Psychotria tetragonoides Fosberg	End
Rubiaceae	Psychotria turbinata A. Gray	End
Rubiaceae	Pyschotria broweri Seem.	End
Rubiaceae	Pyschotria confertiloba A. C. Sm.	End
Rubiaceae	Rapanea polyantha A.C. Sm.	End
Rubiaceae	Readea membranacea Gillespie	End
Rubiaceae	Spermacoce assurgens Ruiz & Pavon	Ind
Rubiaceae	Timonius affinis A. Gray var. affinis J. W. Parham	End
Rubiaceae	Xanthophytum calycinum (A.Gray) Benth. & Hook. F. ex Drake	Ind
Rutaceae	Citrus limon (L.) Burm.	Ind
Rutaceae	Melicope cucullata A.C.Sm	End
Rutaceae	Melicope vitiensis var vitiensis A.C.Sm.	End
Sapindaceae	Allophylus timoriensis (DC.) Bl	Ind
Sapindaceae	Elattostachys falcate (A.Gray) Radlk.	Ind
Sapindaceae	Pometia pinnata Forst.	Ind
Sapotaceae	Burckella fijiensis (Hemsl.) A. C. Sm. & S. Darwin	End
Sapotaceae	Burckella parvifolia A. C. Sm. & S. Darwin	End
Sapotaceae	Palaquium porphyreum A. C. Sm. & S. Darwin	End
Sapotaceae	Palaquium vitilevuense Gilly ex van Royen	End
Sapotaceae	Palaquium fidjiense Pierre ex Dubard	End

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Percently	Scientific Name	Distribution Status
Sapotaceae	Palaquium hornei Hartog ex Barker) Dubard	End
Sapotaceae	Planchonella garberi Christophersen	End
Sapotaceae	Planchonella umbonata (van Royen) A.C.Sm	End
Saurauiaceae	Saurauia rubicunda (A.Gray) Seem.	End
Schizaeaceae	Lygodium reticulatum Schkuhr	Ind
Schizaeaceae	Schizea dichotoma (L.) Sm.	Ind
Schizaeaceae	Schizea fistulosa d. Labill.	Ind
Selaginellaceae	Selaginella breynioides Baker	End
Selaginellaceae	Selaginella distans Warb.	End
Selaginellaceae	Selaginella firmula A. Br. ex Kuhn	Ind
Selaginellaceae	Selaginella laxa Spring	Ind
Selaginellaceae	Selaginella rechingeri Hieronymus ex Rechinger	Ind
Selaginellaceae	Selaginella viridangula Spring	End
Simaroubaceae	Amaroria soulameoides A.Gray	End
Smilacaceae	Smilax vitiensis (Seem.) C. DC	Ind
Solanaceae	Solanum americanum Mill.	Adv
Solanaceae	Solanum torvum Sw	Adv
Sterculiaceae	Commersonia bartramia (L.) Merr	Ind
Sterculiaceae	Firmania diversifolia A.Gray	End
Sterculiaceae	Heritiera ornithocephala Kostermans	Ind
Symplocaceae	Symplocos leptophylla (Brand) Turrill	Ind
Thelypteridaceae	Christella. Parasitica (L.) Lev.	Ind
Thelypteridaceae	Plesioneuron prenticei (Carr.) Holtt.	End
Thelypteridaceae	Plesioneuron rubrinerve (Mett.) Holtt	Ind
Thelypteridaceae	Sphaerostephanos invisus (Forst.) Holtt	Ind
Thelypteridaceae.	Christella harveyi (Mett) Holtt.	Ind
Thelypteridaceae.	Plesioneuron rubrinerve (Mett.) Holtt.	Ind
Thelypteridaceae.	Sphaerostephanos unitus (L.) Holtt.	Ind
Tiliaceae	Commersonia bartramia (L.) Merr	Ind
Tiliaceae	Grewia crenata (J.R. & G.Forst.) Schinz & Guillaumin	Ind
Tiliaceae	Microcos vitiensis A.C.Sm.	End
Tiliaceae	Trichospermum richii (A.Gray) Seem.	Ind
Tiliaceae	Trichospermum calyculatum (Seem.) Burret	End
Ulmaceae	Gironniera celtidifolia Gaud.	Ind
Ulmaceae	Parasponia andersonii (Planch.) Planch.	End
Ulmaceae	Tremna cannabina Lour.	Ind
Urticaceae	Boehmeria virgata (Forst. f.) Guillemin	Ind
Urticaceae	Dendrocnide harveyi (Seem.) Chew	Ind
Urticaceae	Elatostema australe (Wedd.) Hall.	End
Urticaceae	Elatostema filicoides (Seem.) Schoter	End
Urticaceae	Elatostema insulare A.C.Sm	End
Urticaceae	Elatostema nemorosum Seem.	End

Family	Scientific Name	Distribution Status
Urticaceae	Elatostema tenellum A.C.Sm	End
Urticaceae	Elatostema vitiense (Wedd.) A.C.Sm.	End
Urticaceae	Pipturus argennteus var. larnosus Skottsb.	Ind
Verbenaceae	Faradaya ovalifolia (A.Gray) Seem.	End
Verbenaceae	Gmelina vitiensis (Seem.) A.C.Sm.	End
Verbenaceae	Premna protusa A.C.Sm. & S.Darwin	End
Verbenaceae	Premna serrratifolia L.	End
Verbenaceae	Viticipremna vitilevuensis Munir	End
Violaceae	Agatea violaris A. Gray	Ind
Vitaceae	Tetrastigma vitiense (A.Gray) A.C.Sm.	End
Vittariaceae	Antrophyum alatum Brack.	Ind
Vittariaceae	Antrophyum semicostatum Bl.	Ind
Vittariaceae	Vaginularia angustissima (Brack.) Mett.	Ind
Vittariaceae	Vittaria elongata Sw	Ind
Vittariaceae	Vittaria scolopendrina (Bory) Thwaites	Ind
Zingiberaceae	Alpinia vitiensis Seem.	End
Zingiberaceae	Alpinia boia Seem.	End
Zingiberaceae	Alpinia macrocephala K.Schum.	End
Zingiberaceae	Alpinia parksii Gillespie) A.C.Sm.	End
Zingiberaceae	Zingiber zerumbet (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 I (T1) Upper Wainiyalau	Transect 2 (T2) Mid Wainivalau	Transect 3 (T3) Upper Sovi
Ageratum conyzoides	weed	Х	X	Х
Bambusa vulgaris	weed			Х
Alpinia sp.	weed		X	
Clidemia hirta*	invasive	X	X	Х
Cuphea carthagenensis	weed		Х	Х
Kyllinga polyphylla	weed	X	X	Х
Hyptis pectinata	weed		X	Х
Eichhornia crassipes*	invasive		X	
Ipomoea sp.	weed		X	
Ludwigia octovalvis	weed	Х	Х	Х
Merremia peltata	invasive		Х	X
Mikania micrantha*	invasive	X	X	X
Paspalum conjugatum	weed	Х	X	X
Piper aduncum*	Invasive	X	X	X
Psidium guajava	weed		Х	X
Solanum torvum	weed		X	
Spathodea campanulata*	invasive	X	X	X

70 Sovi Basin Protected Area

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ATTACHMENT 3:

WORKPLAN CATEGORIES

SOVI WORKPLAN PRIORITIES

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Work plans, budgets				
Annual plans budgets/ review				
Quarterly work plans/ budgets/ review.				
Activity work plans and budgets		Strategy 1.1		
Personnel management		Ensure accountability and trans parency to partners and the pub		
Job descriptions	lic.			
Development of staff management systems.	it of staff management			
Staff performance reviews		NTF activities to targeted stake holders and the public.		
Finance and accounting activities.	Output 1.1b			
lanagement Planning Management Planning		Operating management and financial procedures developed		
Preparation of draft material	Preparation of draft material	and followed.		
Staff input and stakeholder consulta- tion	Staff input and stakeholder consulta- tion			
Preparation of draft management plans	Preparation of draft management plans			
Preparation of final management plan	Preparation of final management plan			
Reporting		Strategy 1.3 Regular monitor the manage		
Monthly progress reports	· · · · · · · · · · · · · · · · · · ·	ment of all sites.		
Six month reports		Output 1.3 Activity on status of all heritage		
Annual reports		sites regularly reported.		
2.0 Community Participation				
Project co-ordination and advocacy	ect co-ordination and advocacy			
Conservation promotion meetings	Meetings/workshops with national and provincial agencies to promote conservation objectives	Collaborate and combine effort with relevant agencies workin with local communities Output 2.2 Community activities of the NT are integrated into the commu nity work plans of the Fijian Af fairs Board		
Conservation co-ordination meetings	Meetings with provincial/ tikina authorities to improve co-ordination, and address activities that may impact on Sovi			
Framework Development				

2.0 Community Participation			
 (etc. remaining headings to be determined e.g. Development of organisational capacity. Development of systems and rules. Study visits) Community Conservation & Development Trust Trust Meetings Applications Project Monitoring Reporting 		Strategy 2.3 Develop more interactive com- munity conservation pro- grammes Output 2.3 Increased community participa- tion in heritage site programmes and activities	
3.0 Capacity Building			
Training and meetings		Strategy 3.1	
Operational Management Training		NTF staff undertake relevant training and learning pro-	
Training courses	All staff training courses should be listed in the work plan under this heading	grammes Output 3.1a NTF staff trained in administra	
Workshops		tive and technical activities	
Study tours		Output 3.1b NTF staff with a greater familiar- ity 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 build - ings	Strategy 5.2 Promote and Market the NTI sites to specific target groups	
Electricity, water, toilets, telephone lines.	Installation/ completion of these services.		

5.0 Financial Sustainability	and the second sec		
Signs, fences, roads, parking areas.	Erection/construction of these facilities		
Maintenance/repair.	Includes maintenance to the outside of buildings and all other infrastruc- ture	Output 5.2 a Heritage sites and building made more attractive and inter-	
Landscaping.	Includes improvements to areas around buildings and tree planting.	esting	
6.0 Strengthened Partnerships			
SBPA Steering Committee		Strategy 6.1	
SBPA Steering Committee Meetings		Formalise relationship with ex ing local partners for implem- tation of specific activities	
		Output 6.1 Memorandums of Understand- ing (MoU) and Memorandum of Agreement (MoA) on activity implementation signed between local partners and NTF.	
Other Meetings		Strategy 6.2 Cultivate new relationships with relevant local and overseas enti- ties.	
		Output 6.2 New partnerships developed wi local and overseas organisation	
7.0 Sustainable Management of	Heritage Sites		
Communication	Radios/mobile phones (as deter- mined)		
Reference material, technical publica- tions.	Includes purchase of books, texts, reports	Strategy 7.1	
Field Monitoring		Develop and implement sustain- able management plans, includ-	
General patrolling/ ranging	Field inspections, visits for famil- iarisation, general monitoring, and awareness and enforcement purposes.	ing 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 manage- ment plans, including monitor- ing and evaluation procedures, developed and endorsed by stakeholders.	
Field monitoring records	Includes development of monitoring/ ranging rosters, and recording activi- ties; back to office reports		
Enforcement activity and signs	Participation in enforcement activity and making and erecting signs		
Maps & Photos	Copies of cadastral maps; Sovi sur- vey; aerial and sattelite 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









CAKAUDROVE PROVINCIAL OFFICE

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1.0 Introduction

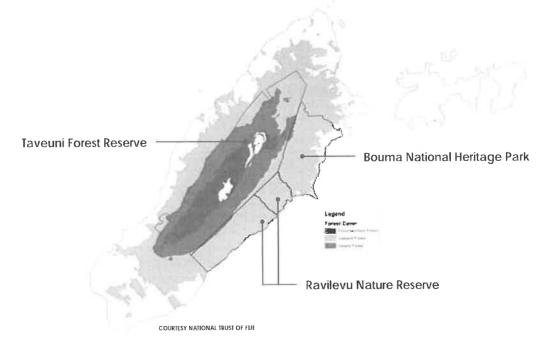
Located in the Province of Cakaudrove, the island of Taveuni is Fiji's third largest island. Since the 1980s, the National Trust and the Fiji Department of Forests have been advocating for the merger of the Ravilevu Nature Reserve, Taveuni Forest Reserve and the Bouma National Heritage Park to form the 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.



- 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

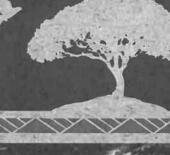
Taveuni's outstanding landscape qualities are derived mainly from its tropical forest cover. From all points around the Taveuni coastline, there are views of the undisturbed, densely forested uplands. Frequently cloud and mist-capped, the rugged central range dominates the landscape with characteristic 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*.









Alsmithia

longipes

is a recently

discovered

Alsmithia longipes

understorey forest palm with a bright

red emerging frond

Fiii Flying Fox

Mirimiri acrodonta

Named after the Bouma National Heritage Park, the Bouma Palm Hydriastele boumae was described in 2006.



cauda

Taveuni.

only found on

Orange Dove Chrysoenas victor Taveuni is famous amongst birders for its Orange Dove Chrysoenas victor.

Fiji Free-tailed Bat Chaeropon bregullae The Fiji Free-tailed Bat Chaeropon breguliae is more commonly encountered on Taveuni than on any other island.

Blue-tailed skink Emoia caeruleo-In Fiji the small Bluetailed skink Emola caeruleocauda is

Clinostigma exorrhizum

A palm of the cloud forest, Clinostiama exorrhizum is a characteristic emergent paim of Taveuni's uplands.



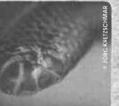
Red-throated Lorikeet Charmosyna amabilis Once found on

Taveuni, there have been no confirmed sightings of the Critically Endangered Red throated Lorikeet Charmosyna amabilis for nearly 20 years.



Silktail Lamprolia victoriae

The enigmatic Silktail Lamprolia victoriae is by no means uncommon in Taveum'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 Brachylophus bulabula The Viti Iguana Brachvlophus bulabula is not commonly seen on Taveuni and is potentially threatened by the newly arrived American Iquana Iquana 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-toreef 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-tomountaintop 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 ecoturism 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.

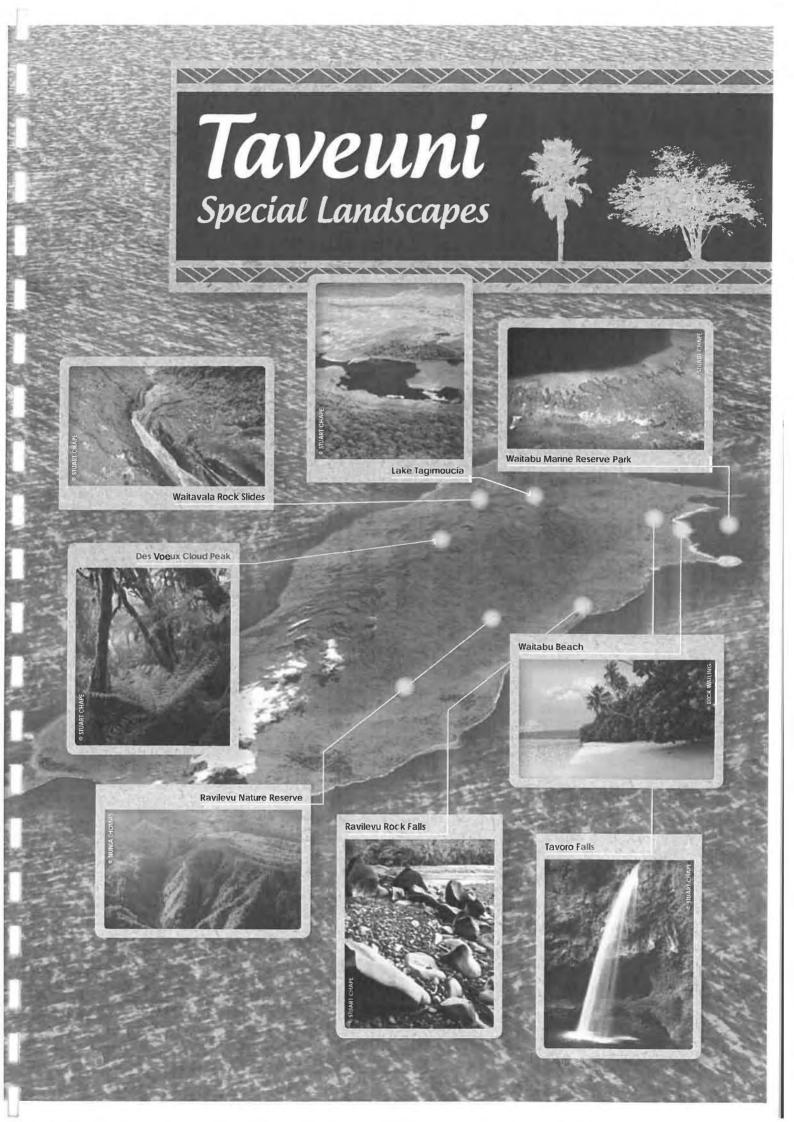
Forest Reserves – set up under the same outdated legislation for forestry-related purposes and not for conservation. However, the Taveuni FR which was declared in 1914 is maintained for conservation purposes and is leased from landowners. A recent FR set up for conservation purposes is Wabu FR (leased 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.



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 Sovi, 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

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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'.

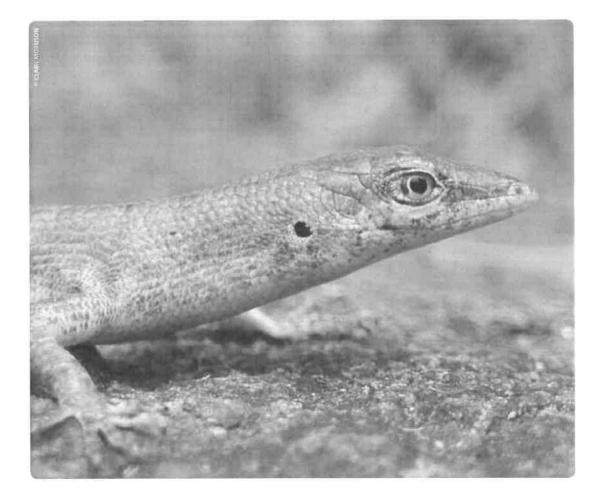
6.1 What is a World Heritage Site?

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 Rennel 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-MareqetiViti 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 matagali 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 iTLTB 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

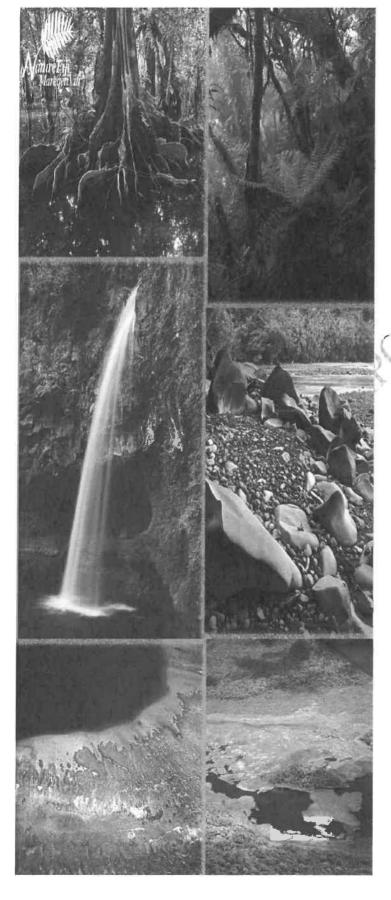
Purpose of the Trust Fund is to secure a large sum of money which is invested and the annual income is then used for the guaranteed, long-term financing for all components of the Sovi Basin PA. The Trust Fund itself is not touched and so, if properly managed continues to provide sufficient income forever, 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



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"A DISCUSSION PAPER"

PAPER FOR DISCUSSION PURPOSES ONLY

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Taveuni National Park: A Discussion Paper

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ABBREVIATIO	
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
JUCN	International Union of Conservation of Nature
NBSAP	National Biodiversity Strategy and Action Plan
NEMV	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.

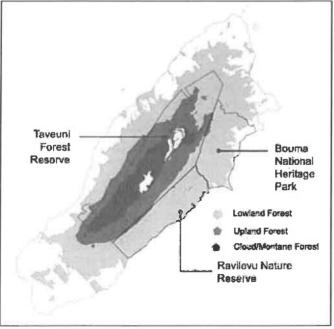


Figure 1: Taveuni illustrating the three Protected Areas which comprise the current Taveuni National Park Project

Taveuni NP Discussion Paper Draft ver3.docx

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 the 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 iTLTB.

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 it is 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 3^{rd} 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 Naptional 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."

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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 of 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).

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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.

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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

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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.

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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 <u>CONSULTATIONS</u>

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.

Date	Village	Mataqali	Attendance
08/05/2012	Lavena	Qali	60
		Matakuro	

Comments:

Majority of those in attendance were members of the Matakuro clan in comparison to the other matagali – 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 matagali.

A] Matagali 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?

Date	Village	Mataqali	Attendance
09/05/2012	Qeleni	Nacivaciva	30
	-	Nageru	

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 matagali?
- 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.

Date	Village	Matagali	Attendance
14/05/12	Korovou, Bouma	Vidawa	43
		Naituku	

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 matagalis 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.

Date	Village	Mataqali	Attendance
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 mataqli 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.

Date	Village	Matagali	Attendance
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 altogethers 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 matagali?
- 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 Matagali – 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.

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- 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 NP Discussion Paper Draft ver3.docx



Taveuni Landowners' Capacity Building Tour

Vanua Levu, Viti Levu

29th July – 14th August 2012

Summary of Participants' Reports

CRITICAL ECOSYSTEM utureFiji C MareqetiViti

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:

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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) matagali 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 29^{th 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.
- o 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.
- \circ $\;$ Not all landowners participate in the management of the cave.
- \circ $\;$ 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 Cl's project in Rakiraki. The groups were then briefed on Cl'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.
- \circ 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.
- o 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?
- o Landowners are fully involved in projects on Native Land rather Crown Land.
- \circ 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:

- o 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 whats 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 Coloi-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 matagali 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:

- i. 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.
- ii. 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.
- iii. Each mataqali within the island should know what they can offer to the TNP upon its establishment in terms of their resources.
- iv. 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.
- v. Clarification on the lease money currently being given for the two PA's in Taveuni. How is it being distributed?
- vi. Rightful owner of the Ravilevu Nature Reserve.
- vii. 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	Nageru
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	Navakacoa	Nageru
2	Lisco Radagadaga	Tavuki	Vusaratu
3	Mikaele W	Lavena	Matakuro
4	Semi Cagilaba	Somosomo	Valelevu
5	lowani 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	3:
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	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	Vidawa	Lekutu
41	Alifeo	Vidawa	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/ Drauniiivi trip?
- 3. List 5 things you did not like about the Fiji water/ Drauniiivi 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/ Drauniiivi trip?
- 3. List 5 things you did not like about the Fiji water/ Drauniiivi 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?

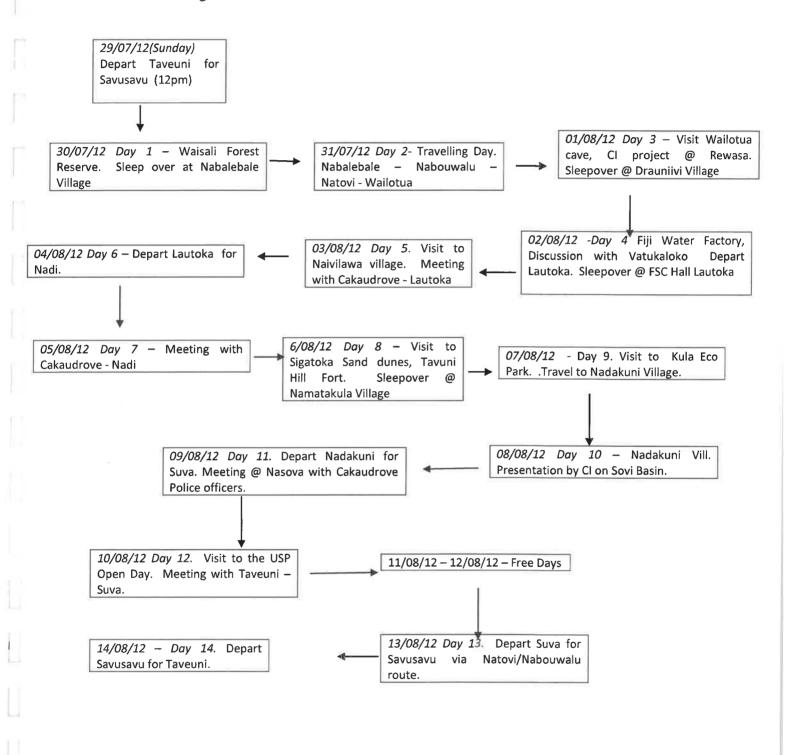


Kula Eco Park

- 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

Name	Mataqali	Koro	Tikina
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
losefo 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 Koroi	Valelvu	Tacilevu	Naweni
Makelesi Suraki	Valelevu	Tacilevu	Naweni
Pule Senilagakali	Benauwa	Wailevu	Tunuloa
lowane	Matakuro	Lavena	Wainikeli
Julia Maiwai	Valelevu	Naselesele	Wainikeli
Mateni	Waimakilu	Navakawau	Vuna
Maritina Siliwaliwali	Valelevu	Somosomo	Cakaudrove
Kalisito Kalougata	Naqeru	Qeleni	Wainikeli
lokimi 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	Ckaudrove
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	С
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	Savudrodro	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

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Time	Monday 16 th	Tuesday 17th	Wednesday 18 th	Thursday 19 th	Friday 20 th	
8.00 – 9.00	Meeting with DTUD and team		Travel to Nadi	First flight to Labasa	Return to Suva via first flight	
9.00 – 10.00		Meeting with CF to	to troduce the	Meeting with DFO North &		
10.00 – 11.00		introduce the team		team	Meeting MoF SET & SPC team	
11.00 12.00 12.00 1.00	Meeting with DO C.E and team	Meeting with Director OHS	Meeting with DFO West & team			
1.00 – 2.00		Lunch				
2.00 3.00 3.00 4.00 4.00 5.00	Meeting with Harvest monitoring team Meeting with sawmillers association	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		
.00 –	president					
			Overnight in Nadi	Overnight in Labasa		

& One



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	Stand	lards Committee	Fiji Forest Certification Working Group Committee		
	Name	Organisation/Company	Name	Organisation/Company	
	Manasa Naiyaga	Man Industries Ltd.	Ilaisa Tulele	Fiji Pine Group	
Economic	Adriu Nabora	Fiji Hardwood Corporation Ltd. Mark Sander		Fiji Hardwood Corporatio	
ouo	Naca Yalimaitoga	Fiji Pine Ltd.	Mark Sanderson	Ltd.	
Ш	Tavaga Tikomaimaleya	Serua Logging	Truman Bradley	Modern Furniture	
	Eminomi Ranacou	Vesi Consultants		Environmental Consultants (Fiji) Ltd. NatureFiji/MareqetiViti	
Environment	Marika Tuiwawa	South Pacific Regional Herbarium	Dick Watling		
Env	Francis Areki/ Kesaia Tabunakawai	Environment Non-Government Organisation representative	Suliana Siwatibau		
	Lai Cabenalevu	Toga Logging Ltd.	Aisake Saro	Fiji Mahogany Trust	
Social	Moape Serukalou	Building, Construction Timber & Allied Workers' Union	John Paul	Building, Construction Timber and Allied	
	Netava Bakaniceva	Native Land Trust Board		Workers' Union	
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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Fiji Forest Certification Standard - Final Draft - December 2008

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 nonwood 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.

	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	
	 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,	 Report from the Forestry Department on fulfilment of all binding agreements.

1.1 Forest and plantation management shall respect all national and local laws and administrative requirements.

^{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.	 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.	Field manualsLicence/Contract AgreementsField 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.	Conflict identification and assessment
1.4.2	All relevant stakeholders shall be involved to achieve resolution.	 Meeting minutes, reports or agreements
1.5	Forest and plantation management areas shall settlement and other unauthorized activities.	be protected from illegal harvesting,
	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.		 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:	List of permitted and prohibited activities in the contract/lease agreement
	 A list of prohibited activities shall be publicly posted in a language(s) that the community can understand. 	 Violation records – occurrence & disciplinary action. Monitoring reports by community
	 A Record of violations and the disciplinary actions taken shall be kept. 	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	 Bi-annual monitoring reports by community representative, the Forestry Department and Forest Manager.
1.6	Forest managers shall demonstrate a long-term Principles and Criteria.	commitment to adhere to the FSC
	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.		 The annual reports of interviews of fores stakeholders understand the long term commitment to FSC P&C. The Vision/Policy Statement available or 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.	 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
		 Copy of lease instrument that includes signed consent forms from resource owners always in possession of NLTB. Originals are kept with Licensee.
		Lease map
2.1.1 The FME shall provide documents and	Community Resource Inventory Map	
	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.	Refer to MOV for Criterion 2.1.1
2.2.2	There shall be access to natural resources as permitted by lease/concession agreement.	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, on- going, and yet to be resolved) shall be maintained.	Dispute resolution procedureRecords 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.	 Prerequisite of a Lease Consent Form shall be signed with majority consent from the resource owners
3.1.2	A Lease Consent Form shall be signed with the 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.
3.1.3	Records of consultations and discussions in the process of acquiring lease shall be documented. (date, place, participants)	 Records of consultations, discussions in the process of acquiring lease shall be documented (date, place, participants) Community Resource Inventory Map
		 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.		
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	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.	 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.	 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	 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.	EIAs summary translated and distributed to resource owners and local communities
3.3		, economic or religious significance to indigenous n co-operation with such peoples, and recognised
	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.	 Register & map of sites of special cultural, ecological, economic or religious significance to the resource
3.3.2	The FME, in consultation with the	owners and local communities
5.5.2	resource owners, shall develop protection measures for sites of special significance and include them in the management and harvest plans.	 Lease/contract agreements that provide for the protection of the special sites
		The special areas are clearly demarcated on the ground
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.	• EIA Report
3.3.4	Resource owners should clearly indicate to the contractor all reserved and protected sites	Community sites demarcated in the Harvesting Plan and Community Resource Inventory Map
3.4	knowledge regarding the use of for	ensated for the application of their traditional rest species or management systems in forest all be formally agreed upon with their free and erations 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.	 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 sha be signed by the majority of recognis indigenous resource owners, local communities' representatives & the forest manager.	

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.	 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	 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)	 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.	 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	 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	 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.	 Interviews with union representatives and workers Collective agreements Records of labour inspectorate 	
.3.2	The FME shall be compliant with the Employment Relations Act.	 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.	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.	 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.	 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.	 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.	 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.	 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".	 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.	 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.	 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.	 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.	• 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.	 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.	FME Annual Report
	Forest management should strive to avoiding dependence on a single for	strengthen and diversify the local economy, est product.
	Indicator	Means of Verification
5.4.1	The FME, in consultation with the local community, shall evaluate and document of for diversifying the local economy including potential production of non-timber forest pr within the management unit.	the FMF
5.4.2	The FME shall develop, document and imp an equitable and transparent procedure for establishing fair market value for forest pro purchased and contracted services.	 Report on evaluation of potential NTFPs in

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.	 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.	Documentary inspection and interview with local communityField 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.	Training materialField observation
5.5.4	Inspection of effects of the operation on forest services and resources shall be included in the monitoring and review processes.	Documentary inspection.Expert assessment.
5.6	The rate of harvest of forest products shall not experimently sustained.	xceed levels which can be
	Indicator	Means of Verification
5.6.1	The FME shall conduct a stratified forest resource inventory, appropriate to the scale of the operation.	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.	 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.	 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.	Harvesting report
5.6.5	Enrichment planting shall be implemented to ensure species replenishment when natural regeneration is not adequate.	 Management plan Field achievements – monthly report

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
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: Characterisation of ecosystems in the forest management area using biological and geo-physical information, Impact on: 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: Use and disposal of fuel, oil, chemicals, preservatives and non-organic waste. 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. 	• EIA Report of the areas involved with forest harvesting, processing operations (in the case of portable sawmills), areas surrounding the forest management unit (landscape) and any downstream ecosystems, such as river silting and/or coral reef silt smothering.
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	 EIA and monitoring reports
6.1.3	Field assessments shall be documented, translated into the common local language and made available to local resource owners.	

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).	 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.	 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	 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	 Record of offenders and follow-up actions.
6.2.5	The FME shall have an established policy for areas set aside for conservation purposes.	 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. 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 	• Documentation

- 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.	 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.	Environment Impact Assessment Report
6.3.3	Silviculture and management systems shall maintain forest composition, structure and dynamics, including:	
	 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. 	 Management Plan shows original forest composition, structure and dynamics are maintained.
	• 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).	
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.	 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.	 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.	 Identification and classification of degraded sites for restoration. Field observation. FME maps FME Management Plan Restoration Plan

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
6.4.1	 Forest managers shall retain representative samples of natural ecosystems. The size and configuration of the representative areas depend on the: 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). 	 Natural ecosystems identified The FME has identified its responsibilities in respector natural ecosystems and has a plan to implement these Areas identified for retention are demarcated in Harvesting Plan and on the ground & are an integration part of FME responsibility. Field and documented inspection of site
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	 The methodologies, as appropriate, are incorporated in the FME Plan which identifies its responsibilities in respect to natural ecosystems
6.4.3	Continuous corridors for fauna refuge shall be maintained in the management unit.	 Management Plans demonstrates connectivity/corridors for fauna for representative reserve areas.
6.5	Written guidelines shall be prepared an forest damage during harvesting, road disturbances; and protect water resour	nd implemented to: control erosion; minimize construction, and all other mechanical rces.

	Indicator	Means of Verification	
6.5.1	The FME shall be in full compliance with the Fiji Forest Harvesting Code of Practice	 Documentation of compliance to the Fiji Forest Harvesting Code of Practice. 	
6.5.2	The FME shall develop and utilise low- impact logging techniques	Low impact logging guidelines being usedLow impact logging techniques being used	

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.	 Components of silvicultural systems, integrated pest management, and vegetation control strategies may include: creation and maintenance of habitat that discourages pests creation and maintenance of habitat that encourages natural predators evaluation of pest populations and establishment of action thresholds diversification of species composition (see Glossary) and structure use of low-impact mechanical methods 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.	 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).	 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.	 Field observation of appropriate equipment, protective clothing, adequate training and recognised procedures for any chemical use. Records of all chemical use and incidents
6.6.7	A Field Manual on proper handling, storage and disposal of chemicals shall be developed and implemented.	 Records of all chemical use and incidents involving chemicals.

6.6.8	Chemicals used shall be narrowly targeted to the pest being controlled.	
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.	• Environmental impact studies and a positive register in Monitoring Reports.
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.	Register of approved non-organic wastes used.Field Manual on the identification, potential
6.7.2	All non-organic wastes (such as oil, tyres, containers etc) shall be minimised, including through reusing or recycling.	impacts, categorisation and appropriate disposal methods (including reusing/recycling) of non-organic waste products
		 Inventory of non-organic waste used on FME
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	• List of permitted and prohibited activities in the contract/lease agreement in 3 languages (English, Fijian & Hindi), where applicable.
		 Violation records – occurrence & disciplinary action.
6.7.4	Waste disposal procedures shall be developed and implemented.	 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, creaks) where fluids can leak into them.	Field observationDocumentation (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.	Field observationDocumentation (Field Manual)

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.	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.	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.	 Documentation: plans, monitoring records, log books 	
6.8.2	The international agreements and national standards on the storage, transportation and use of biological control agents shall be applied.	 Inspection of storage and transport facilities 	
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 breech the Quarantine Act nor the Biosecurity Act	 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,	Risk Assessment Report	

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.	• 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.	Field observationProcedures in the Management Plan
6.9.5	The management, control and monitoring of exotic species shall be documented.	 EIA of exotic species on native plants, animals and ecosystems, and especially invasiveness. Monitoring reports

6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:

a) entails a very limited portion of the forest management unit; and

b) does not occur on high conservation value forest areas; and

c) will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.

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 $6.10.2 - 6.10.3$.	Field observationEIA 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.	Field observationEIA 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
7.1.1	con	Management Plan and supporting documents, with sideration of scale and intensity of the operation, shall provide at the following:	
	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.	 Documentation (The Management Plan and supporting documents)
	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	

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.

2000	icarry 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.	 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).	 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.	 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	Documentation (The Management Plan)
7.2	The management plan shall be periodica monitoring or new scientific and technic changing environmental, social and eco	al information, as well as to respond to
-	Indicator	Means of Verification
7.2.1	The Management Plan shall be revised at least every 5 years and procedures shall be	Database with results of monitoring exercises.

	in place for incorporation of monitoring data into the management planning process	Revised Management Plan
7.2.2	FMEs support research in areas that are relevant to management planning	Research reportsInterviews
7.2.3	New information obtained by local experience and/or science, technical research or environmental assessment shall be incorporated into the management planning.	Revised Management Plan
7.2.4	Socio-economic information and research results shall be incorporated into management planning.	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.	 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.	
7.4	While respecting the confidentiality of in	
	including those listed in Criterion 7.1.	nary elements of the Management Plan,
		Means of Verification
7.4.1	including those listed in Criterion 7.1.	

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.	Documented monitoring program
8.1.2	Persons responsible for implementing and maintaining monitoring programs shall be identified.	 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.	 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: i. elements to be monitored including HCVFs as set out under Criterion 9.4; ii. monitoring indicator(s) for each element; iii. rationale for the selection of each element and monitoring Indicator(s); iv. consistent and replicable monitoring procedures; v. 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; vi. relevant baseline information. 	 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.	 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.	 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).	 Monitoring database(s)
8.1.8	An adequate mechanism shall be implemented for quality assurance and quality control of the monitoring program.	 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.	 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
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).	 Forest product inventory
	For example: Significant unanticipated removal of forest products (e.g. theft and poaching) is monitored and recorded.	
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. 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. 	 Forest biological survey and stock assessment reports that form the baseline and of which the variables are entered into the database.
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.	Forest monitoring report
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: 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). 	 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	 The environmental effects of site-disturbing activities shall be monitored (e.g., road construction and repair, harvesting, and site preparation). For example: 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. 	 Documents: Environment impact assessment and monitoring reports Field observation Interviews
8.2.6	Monitoring of environmental impact shall include waste management.	 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.	 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.	 Marks or labels on certified wood products in the yard. 	
8.3.2	 The FME shall develop and implement documented procedures to: i. identify FSC-certified products from the forest of origin to the forest gate, ii. record annual volumes of log shipments and by purchaser on a monthly basis; iii. provide information on transportation and invoice documentation that includes , FSC certification code number, shipper, date, volume, species, origin and destination; 	 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.	Monitoring reportField 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.
 • Revised Management Plan, policies and procedures.

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).	 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	
9.1.1	 Attributes and locations of High Conservation Value Forests (as defined in the Glossary) shall be determined by 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 	 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 	
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.	 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 	
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.	 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	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	
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).	HCVF Assessment report publicly availableInterviews	

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.	 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.	 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.	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.	 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.	 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)	 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.	 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. 9.4.2 The monitoring program is capable of alerting Documented HCVF monitoring program – the applicant to changes in the status of a Monitoring Plan. conservation attribute, and determining if the • Results of monitoring program - Monitoring conservation measures are effective in Report. maintaining or restoring the conservation attribute. The results of monitoring are • Field inspection assessed consistent with the monitoring Interviews

requirements of Indicator 8.1.1.
 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.
 Interviews
 Interviews
 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.	 Documentation (Management Plan) Field visit Interviews 	
0.1.2 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.	 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.	 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)	 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	 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.	Management PlanObservation
	Diversity in the composition of plantations is preferre ecological and social stability. Such diversity may inc distribution of management units within the landscap composition of species, age classes and structures.	lude the size and spatial

Indicator 10.3.1 The selection of species to be planted should:		Means of Verification	
i. Maintain production and re Management Unit	eserve areas within the Forest		
Enable the certificate hold changing market requirem markets	er to respond rapidly to ents, or supplies a diversity of	Documentation (Research Reports, Management Plans Monitoring Reports)	
iii. Use a diversity of genotyp	es	Field visits	
iv. Have a mix of age classes	and/or rotation lengths	Interviews	
v. Use a variety of silvicultura	al regimes		
vi. Demonstrate an understar	nding of future market trends		
vii. Take into account local ma	arkets/ processors		

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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.

Documentation (Research reports Management
plans, Monitoring Reports)Field visitsInterviews
 Documentation (Research reports Management plans, Monitoring Reports) Field visits Interviews
ement area, appropriate to the scale of the nal standards, shall be managed so as to

	Indicator	Means of Verification
10.5.1	The FME shall set aside areas for the conservation or restoration of natural vegetation cover2. This area shall be at least 10% of the total area leased for plantation.	 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.	 Documentation (Research reports Management plans, Monitoring Reports) Field visits Interviews
10.5.3	 The areas identified for restoration to natural forests must: i. meet the requirement within a timeframe less than the average rotation age of the plantations, ii. be identified on maps, and iii. be actively restored to natural conditions 	 Documentation (Research reports Management plans, Monitoring Reports) Field visits Interviews

 $^{^{2}\,}$ The minor management units are not compelled to comply with this Criterion.

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.	FME Soil MapsField 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.	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)	 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	EIA and Monitoring ReportsOperational 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: Contractors responsibilities for action Contact details for personnel Emergency procedures Equipment and training for fire suppression Maps that include: 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) 	 Documentation: Fire Plan and Procedures, Management Plan Maps Interviews

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10.7.2	The FME shall have a system for ensuring and documenting compliance with the laws and regulations pertaining to Fire	 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: 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	 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.	 Monitoring Reports & Management Plan Interviews Field Visits
10.7.5	The occurrence of forest pests and diseases shall be monitored to control potential epidemics.	 Monitoring Reports & Management Plan Interviews Field Visits
10.7.6	Integrated methods for the control of pests and disease shall be implemented.	 Monitoring Reports & Management Plan Interviews Field Visits
10.7.7	The application and dosages of pesticides shall be justified.	 Monitoring Reports & Management Plan Interviews Field Visits

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 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.

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.	 Documents (Management Plan & Monitoring Procedures). Interviews

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
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.	 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)	Timber statement form – paid to NLTB
% of Stumpage in plantations	• Schedule of areas logged , ownership of areas, volume logged, amount to be paid – paid to NLTB
Land rental & Premium	 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	 Invoice (RML4 & Timber Statement) & Receipt from the Dept Forestry
License fees for vehicles and machines used in harvesting & cartage operations.	Land Transport Authority receipt & sticker

⁴ RML: Removal License

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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								
Planting ^₄								
Manual	✓			√ ⁵				
Mechanised	\checkmark		\checkmark					√6
Weeding/Cleaning								
Smooth-edged tools	1			\checkmark		1		
Handsaw	✓			1				
Chain-saw	$\sqrt{7}$	\checkmark	1	√ ⁸	√	1	\checkmark	~
Brush-saw	✓							
- with metal blade	√	\checkmark	1	\checkmark	√	1	~	~
- with nylon filament	~	V .		×.		~		~
Rotating knife/flail	~		√	√				√6
Pesticide application		To comply w	ith those specified	for the particu	lar substance	and application	n technique	
Pruning*								
Hand tools	√9			✓	√ ¹⁰	1		
Felling ¹¹								
Hand tools	~		×	√ ¹²	~			
Chain-saw	√7	√	1	√ ⁸	√		~	~
Mechanised	~		1					
Debarking								
Manual	✓			\checkmark				
Mechanised	✓		1	\checkmark			\checkmark	√
Splitting								
Manual	1							
Mechanised	✓							
Extraction								
Manual	✓			√	√ ¹³			
Chute	1			1	√13			
Animal	√			1	√ ¹³			
Vechanised								
Skidder	1		✓	√14	1			√6
Forewarder	1		· · · · · · · · · · · · · · · · · · ·		· ✓			√ ⁶
Cable crane	√		· · · · · · · · · · · · · · · · · · ·	√ ¹⁴	· ·			√ ⁶
Helicopter	1		√ ¹⁵	√ ¹⁴	√ ¹⁶	1		✓ ✓
Stacking/loading	~		√ 	· √	✓			√ ⁶
Chipping	✓ V		· ✓	· ✓	· ✓		✓	√ ⁶
Tree Climbing ¹⁷							Ŧ	•
Jsing Chain-saw	√ ⁷	✓	√	√ ⁸	√ ¹⁸	~		✓
Not using Chain-saw	✓ ✓	•	•	•	*	•		•

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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.

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.

¹⁸ Climbing helmets are preferable: if they are not available, safety helmets with chin straps may be used.

¹ With integrated steel toe for medium or heavy loads.

¹⁷ For required tree-climbing equipment see Chapter 15 of the ILO Code of Practice: Safety and Health in Forestry Work

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

National Forest Inventory (Carbon trading, REDD plus, F^^ · · C,MAF · · · · ^AL)

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Advising on suitability for mining	Forest Resource Assessment by private Individuals					Printing of Forest Function Maps																						Timber Volume Assessment												Logging Plan	Management Services Division		LIST OF SERVICES	
FOC	UP based on the i.area ii.forest type iii.accuracy level required			Ч													ç	;																UP	į							OR FREE OF CHARGE(FOC)	USER PAY(UP)	
		LRD Report - per sheet	Photocopy Maps	LRD Map	Laminated	Unlaminated	2000 & over	1900-2000	1800-1899	1700-1799	1600-1699	1500-1599	1400-1499	1300-1399	1200-1299	1100-1199	1000-1099	666-006	668-008	700-799	600-699	500-599	400-499	300-399	200-299	100-199	36161.00	Area(HA)	1000 & over	666-006	668-008	700-799	600-699	500-599	400-499	300-399	200-299	100-199		Area (HA)		SPECIFICATIONS	ŞEE	
		\$16.41	\$4.81	\$7.22	\$52.51	\$38.29	Separately costed	\$100.43	\$97.48	\$94.52	\$91.57	\$88.61	\$85.66	\$75.32	\$72.37	\$69.41	\$66.46	\$63.71	\$57.60	\$54.65	\$51.69	\$48.74	\$45.09	\$42.06	\$37.67	\$34.71	\$29.54	LRD(\$)	Separately costed	\$315.32	\$288.74	\$272.28	\$254.00	\$232.62	\$221.54	\$186.83	\$175.75	\$116.53	\$105.45			& CHARGESFJD\$	CURRENT FEES	
		_					osted	\$88.61	\$88.40	\$84.18	\$81.97	\$79.75	\$77.54	\$67.94	\$67.94	\$65.73	\$63.51	\$61.30	\$53.91	\$51.69	\$48.74	\$45.53	\$39.88	\$37.67	\$35.45	\$33.24	\$31.01	FGID(\$)				-	1		1									
\$100 per request	\$20 per ha																																				costs	due to various admin	for all fees levied	10% across the board		& CHARGESFJD\$	PROPOSED FEES	
	covers operational cost for resource assessment				General Public	Principal Customers:																				resource owners	Logging contractors	Principal Customers:									proposed to be outsourced		resource owners	Logging contractors	Principal Customers:			



	Pairco M orderea
	Timber Grading
	Saw doctoring
201	Timber Machining
FOC	Timber Preservation
	Timber Drying
	Portable Sawmin Training
	Wood Processing Shortcourses;
201	Forest Management - remain with Dept
FOC	eldenisten & Awareness Training on Sustainable
	vii. Business Training - 1 Ceritficate
	vi.Supervision course - 1 Certificate
	v.Bridging Courses - 1 Certificate
	iv. Skills Test - 1 Certificate
	iii. Chainsaw mechanics - 3 Certificates
FOC	ii. Cross Cutting - 3 Certificates
	i. Felling - 3 Certificates
	Technical Skills Training;
	Trade Certificate in Applied Woodcraft Technology
	Certificate in Applied Woodcraft Technology
	tnemegeneM tertificate in Forest Management
	Forestry Training Services
& CHARGES FID\$	
CURRENT FEES	LIST OF SERVICES
LI FEES & CHARGES	507

(\$)stsoD	Seills Test Fees
00T	Dverhead cost
72	Instructors @ \$6/hr @ 2hrs per test
50	Stationery @ \$20/per person
S	Application Fees \$5per person
<u>ک</u>	tdgin/052@ 95n9tzizdu2 bna 5 x le9m/92@ le9M
ΟΖΤ	Travel @\$4/km & Equipment maintenance @ \$70/per
795	Total cost
82.7	Contingency @ 2%
12E	Total Cost
OT	Renewal of fees @ \$10 per person for a 3 year period

gnivesW oodmea

(\$)stsoD	Service Fees (Machine costs - TITC)
OST	Thicknesser @\$150/m ³ Dressed 4 sides
520	6-Sider Profiling @ \$250/m3
520	022¢@ ənihəsm gnibne2
0.25	Drilling @\$0.25/per cm depth
50	Ainishing @\$20/litre
02T	۶۳/۵۲۲۶ @ \$۲۲۵ Bringing
S	Sharpening of Knives @ \$5 per blade

(\$) stsoD	Service Fees (FTC)
S	Chainsaw repair @ \$5.00/hr
	Tree Surgeon
9T'S	Fuel cost @ \$2.58/litre for fuel & \$2.58/litre for oil
S'T	Transport cost @ \$1.50/km
64.11	Labour costs x 3 operator @\$3.83 per hr
52	Equipments & Parts @ \$25/hr
81/	Total (Tree extraction per hour)

Principal Customers: Sawmilling companies Timber merchants Resource owners	09°582'T\$-	۵t module وگ۵۵.۵۵ per module
Principal Customers: resource owners,commu	16'10 0 \$	9lubom ٦٩q 91.0₽¢@ səlubom 01
	89'886\$-	əlubom 19q £4.04\$@ səlubom 0S
Principal Customers: reso	00'TTL'LZ\$	Full Fee for 24 months @20 trainees @\$862.28 per module
Principal Customers: reso	¢73`822'60	۲ull Fee for 12 months @20 trainees @\$865.18 per module
Principal Customers: reso	08 [.] 982' 7 7\$	9lubom 19q04.043@ 299nis11 02@ 2dfnom 81 101 991 llu1
	The second second	& CHARGESFID\$
	NOITAJIAITSUL	PROPOSED FEE
	300-14 2	FOR THE FORESTRY SECTOR

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ource owners, public who meet the criteria by DOF ource owners, public who meet the criteria by DOF ource owners, logging companies, DOF officers

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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	ω
Lunch	9
Afternoon Tea	ω
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 TST course	219,487
Cost per module per person	49.43
Full Cost (all modules)	988.68

Total Number of Modules	22
	2
Duration all courses	89
Maximum number of participants per course	20
Accommodation per person	
Accommodation	20
Tea	
	9
Afternoon Tea	
Total Meals per person per day	
	44
Total Meals per person per week	9 308 308
Total Meals per person per week Total Meals & Accommodation - 68 weeks course Overhead cost	9 308 20944
Total Meals per person per week Total Meals & Accommodation - 68 weeks course Overhead cost Instructors	9 308 20944 20944
Total Meals per person per week Total Meals & Accommodation - 68 weeks course Overhead cost Instructors Allowance@\$10 per week for 68 weeks	9 308 20944 200,000 13,600
Total Meals per person per week Total Meals & Accommodation - 68 weeks course Overhead cost Overhead cost Instructors Allowance@\$10 per week for 68 weeks Allowance@\$10 per week for 68 weeks Stationery @ \$300/per person	9 9 20944 200,000 13,600 13,600
als per person per week als & Accommodation - 68 weeks course I cost rs e@ <u>\$10 per week for 68 weeks</u> y @ \$300/per person Equipment maintenance @ \$70/per person	9 308 20944 40,000 200,000 13,600 6000
Total Meals per person per week Total Meals & Accommodation - 68 weeks course Overhead cost Instructors Allowance@510 per week for 68 weeks Allowance@510 per week for 68 weeks Stationery @ \$300/per person Travel & Equipment maintenance @ \$70/per person Total 68 weeks course	4 2094 40,00 13,60 259,60
Total Meals per person per week Total Meals & Accommodation - 68 weeks course Overhead cost Instructors Allowance@510 per week for 68 weeks Allowance@510 per week for 68 weeks Stationery @ \$300/per person Travel & Equipment maintenance @ \$70/per person Total 68 weeks course Contingency @ 2%	9 9 20944 40,000 200,000 13,600 13,600 5192
Total Meals per person per week Total Meals & Accommodation - 68 weeks course Overhead cost Instructors Allowance@510_per week for 68 weeks Allowance@510_per person Stationery @ 5300/per person Travel & Equipment maintenance @ \$70/per person Total 68 weeks course Contingency @ 2% Total Cost of course	9 9 20944 40,000 200,000 13,600 13,600 13,600 5192 285,736
Total Meals per person per week Total Meals & Accommodation - 68 weeks course Overhead cost Instructors Allowance@510_per week for 68 weeks Stationery @ \$300/per person Travel & Equipment maintenance @ \$70/per person Total 68 weeks course Contingency @ 2% Total Cost of course Cost per module per person	20944 40,000 200,000 13,600 13,600 13,600 5192 285,736 649,40
Duration all courses Maximum number of participants per course Meal and Accommodation per person Accommodation Morning Tea Morning Tea Lunch Aftermoon Tea Dinner Dinner Total Meals per person per day	

1285.60	Full Cost (all modules)
128.56	Cost per module per person
128,560	Total Cost of course
2400	Contingency @ 2%
120,000	Total 20 weeks course
	Travel & Equipment maintenance @ \$70/per person
	Stationery @ \$20/per person
80,000	Instructors
40,000	Overhead cost
6160	Total Meals & Accommodation - 20 weeks course
308	Total Meals per person per week
44	Total Meals per person per day
9	Dinner
ω	Afternoon Tea
9	Lunch
з	Morning Tea
20	Accommodation
	Meal and Accommodation per person
100	Maximum number of participants per course
20	Duration all courses
10	Total Number of Modules
Costs	Wood Processing Training

401.91	Full Cost (all modules)
40.19	Cost per module per person
120,572	Total Cost course
2340	Contingency @ 2%
117,000	Total 4 weeks course
21,000	Travel & Allowance @ \$70/per person
6000	Stationery @ \$20/per person
50,000	Instructors
40,000	Overhead cost
1232	Total Meals & Accommodation - 4 weeks course
308	Total Meals per person per week
44	Total Meals per person per day
9	Dinner
ω	Afternoon Tea
9	Lunch
ω	Morning Tea
20	Accommodation
	Meal and Accommodation per person
300	Maximum number of participants per course
4	Duration all courses
10	Total Number of Modules
Costs	Community Forestry Education & Awareness

13,855.60	Full Cost (all modules)
865.98	Cost per module per person
277,112	Total Cost of course
5192	Contingency @ 2%
259,600	Total 40 weeks course
	Travel & Equipment maintenance @ \$70/per person
6000	Stationery @ \$300/per person
13,600	Allowance@\$10 per week for 32 weeks
200,000	Instructors
40,000	Overhead cost
12320	Total Meals & Accommodation - 40 weeks course
308	Total Meals per person per week
44	Total Meals per person per day
6	Dinner
З	Afternoon Tea
6	Lunch
ω	Morning Tea
20	Accommodation
	Meal and Accommodation per person
20	Maximum number of participants per course
40	Duration all courses
16	Total Number of Modules
Costs	1-yr Certificate in Woodcraft Technology

Overhead cost **Skills Test Fees** Costs(\$) 100

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10	Renewal of fees @ \$10 per person for a 3 year period
371	Total Cost
7.28	Contingency @ 2%
364	Total cost
170	Travel @\$4/km & Equipment maintenance @ \$70/per perso
57	Meal @\$9/meal x 3 and Subsistence @\$30/night
5	Application Fees \$5per person
20	Stationery @ \$20/per person
12	Instructors @ \$6/hr @ 2hrs per test

Service Fees (Machine costs - TITC)	Costs(\$)
Thicknesser @\$150/m ³ Dressed 4 sides	150
6-Sider Profiling @ \$250/m3	250
Sanding machine @\$220	220
Drilling @\$0.25/per cm depth	0.25
Finishing @\$20/litre	20
Ripping charge @ \$170/m3	170
Sharpening of Knives @ \$5 per blade	

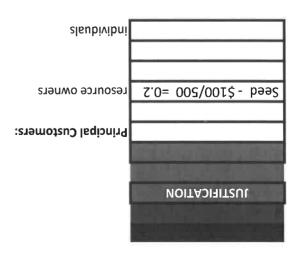
Service Fees (FTC)	Costs (\$)
Chainsaw repair @ \$5.00/hr	5
Tree Surgeon	
Fuel cost @ \$2.58/litre for fuel & \$2.58/litre for oil	5.16
Transport cost @ \$1.50/km	1.5
Labour costs x 3 operator @\$3.83 per hr	11.49
Equipments & Parts @ \$25/hr	25
Total (Tree extraction per hour)	48

2011 FEES & CHARGES FOR THE FORESTRY SECTOR

(41		
of Kaudamu seeds (per kg)	00.02\$20	00°5Z\$SU
ale of sandalwood seedlings (per seedling)	00'E\$	00'9\$
sale of mahogany seeds (per kg) - local		00.0012
seale of mahogany seeds (per kg) - overseas	00.02\$20	əwes
Silviculture Research	Sec. of the second	Ful all and any le
	& СНАВСЕЯ FID\$	& CHARGESFID\$
LIST OF SERVICES	совкеит геея	PROPOSED FEE

(γluo sbeet 50 seeds only)

Seed inspection Pest Risk Analysis Import/Export facilitation Pest/disease survey Consultation fee



		2011 FEES & CHARGES FOR THE FORESTRY SECTOR		
LIST OF SERVICES	CURRENT FEES	PROPOSED FEE	HISTIFICATION	
	& CHARGES FJD\$	& CHARGESFJD\$		
Timber Utilisation Division				
Sawmill License		\$150 pr hr	Cost based on unit cost for 1 annual inspertion for licensing ii Provision of license	countillors
Provisional approval for New Sawmill applications &		\$50 pr hr	Cost based on unit cost for i. annual site inspection ii. Provisional annroval	sawmillers
Treatment Plant Applications & Relocation				sawmillers
Treatment Plant License	FOC	\$110 pr hr	Cost based on unit cost for i. annual inspection for treatment plant	sawmillers
Export License (Commercial value)		\$100 pr hr	Cost based on unit cost for i. inspection per export consignment	sawmillers & timber merchants
Export Phyto-License (Non Commercial value)		\$10 per inspection	Cost includes; i. phytosanitary certificate	hardware companies
Import License		\$100 pr hr	Cost based on unit cost for i.inpsection per consignment ii. Provision of license	
Timber Analysis;				sawmillers
i. Batch analysis (10 or more samples)	\$18.40	\$20.20 pr sample	For all chemical anlayses undertaken	
ii. Single analysis	\$33.75			
Spot Test - Laboratory;				sawmillers
i. Batch testing (10 or more samples)	\$2.05	\$8.00 pr sample	For all chemical spot testing undertaken	
ii. Single analysis (single testing)	\$7.15			
Manufacture of Wood Products	As per Finance price	As per Finance price		general
	listing(revised every year	listing(revised every year		public
	with 7% increase)	with 10% increase)		
Wooden Artifacts	As per Finance price	As per Finance price		general
	listing(revised every year	listing(revised every year		public
	with 7% increase)	with 10% increase)		
Trade Assistance	None	\$10 pr hr		general nublic

roturno of portubie sammins in Fijr 39	I	Total no of static sawmills in Fili 27	total no of sammins in Fift 66	Total no effortunite in till	i otal no of unlicensea treatment plants in Fiji 8	Trade of the second sec	28 Iotai no of licensea treatment plants in Fiji	Tetal and firmer diamond in the second secon	i otal no of klin in Fiji 25			
25		7	32		δ τυ				G		S	
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	00.2\$	00 [.] T\$	Per Seedling (Other species)
			sgnilbəəs to ylqqu2;
			<u>noisivi</u> noisn s ta a
	& CHARGESFID\$	& CHARGES FID\$	
ΝΟΙΤΑϽΙΑΙΤΖΟΙ	PROPOSED FEE	CURRENT FEES	LIST OF SERVICES
			State of the second second
ΕΣΤΒΥ ΣΕСΤΟΒ	ябез ғоқ тне ғоқ	2011 FEES & CHAI	

00.02\$

00.9\$

\$57.00

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Per Tonne

Per Seedling (for Yasi)

Supply of firewood

Chainsaw – 1 hr x \$10/hr = \$10.00 Fuel & Oil - = \$9.70 Total cost 49.2

 $0\xi.6$ = $1 \log x 3.7 \xi x dal 1 - gainstand$

Labour - I x 3.75 = 33.75 Total Cost - Total Cost

Preventing Stellary	CHARGES FJD\$	05 15	PROPOSED FEE & CHARGESFID\$	And Early Version
Scaling tees; LAstive logs II. Plantation	\$5.00 par m3		\$5.00 per m3	1. Due to biodrivedity values II, 5 - 10 , N - 15 W- 3
Long Term License Application Fees for renewal of license verification	202		S10 per ha S10 per ha	 views ascariny interested for harvesting customer bases streams is by system and the based on volume harvested administration cost (license form, prinding etc)
NAnnual License Application Fees for renewal of license Verification	FOC		and Occ 810 810 - 005	usawo na win you ny una una romana na na orona you you wilinaation, tuat a masa lalawances baradi on win yoo of uurven to of loreness buand per division, lasued amualiy, administration cost (lucence form, printing aec)
ii) Casual License Application Fees for renewal of license Verficiation	FOC		\$10 \$20 per hr	edministration of the service of the Based on Stratistics costs (a Benne from Strandsky, Str.)
Forest Produce Zone 1 - All those lands on the island of Viki Levu				
Ciera 1 Amunu, Buabua, Dakua Makedre, Dakua Salusalu Damanu, Kuasi, Kaudamu, Kauvula, Mahogamy, Boanna Juci V-	(st. or)	00.55	\$5.00	
Cites 2 Bauvadi, Dabi, Kauceti, Kaunicina, Maveta, Navenewa, Sagali, Raintree, Rosarosa, Saeau Vachaver/Ank	\$37.00	\$5,00	\$3.00	
Class 3 Doi, Dogo, Laubu, Qumu, Sausaulra, Tiví, Yaxal-ni-večkau, Yasiyasi	\$12.00	\$5.00	\$5.00	
Cless 4 auge, U.G., Kota, Mako, Masiratu, Mcivi a, Sarosaro, Vuge, Vutu 'Au othewr not Included in Class1-3 exciduine Yasi	\$7.00	\$5.00	\$5.00	
Val. Tut- nl Yalic and Creations of Vanua Levu Zone 2 - All those lands on the Island of Vanua Levu (Refer to Forest Amendments Regueltions 2008 for ulternative	ve species nome & botonicol nom			
	. 545.00	\$5,00	\$5.00	
Cless 2 Bavudil, Dabi, Kauceti, Kaumicina, Mavosa, Neavanave, Sagali, Raintree, <i>Rosarcaa</i> , Sacau Wastiwaci/Anita	\$35.00	\$5,00	\$5.00	
tess 3 ol, Dogo, Laubu, Qumu, Sausauiro, Tivi, avoi-ni-veikau, Yoslyosti	\$12.00	\$5.00	\$5.00	
less 4 adga, Lidi, Koka, Mako, Masiratu, MolM 6, Srosaro Vuga, Vutu usa others not included in Class 1-3 excluding Yasi at Thine M YasirCasa C	\$7.00	\$5.00	\$3,00	
one 3 - All Islands of Fiji with the exception of Viel Levu & Va Refer to Forest Amendments Regualtions 2008 for atternative a	nua Levu species name & botan			
ana I muruu, Buabua, Dakua Makadre, Dakua Salusalu armenu, Kuasti, Kaudamu, Kauvula, Mahogarny, osawe, Vesi, Yaka	00.215	\$5.00	\$3.00	
Cless 2 Javurdi, Dabi, Kaucerti, Kaunicina, Mavota. Yawanawa, Sagali, Raintree, Rosarosa, Sacau MachweckAntha	\$27.00	\$5.00	\$5.00	
llass 3)oli, Dogo, Laubu, Qumu, Sausauira, Tivi, /avei-nì-veikau, Yasfyas!	\$10.00	\$5.00	\$5.00	
Cless 4 Kisiga, Lidu, Koka, Mako, Masiratu, Moivi Se, Sarcaaro, Vuga, Vutu Plus others not included in Class1-3 exclobuing Yasi Yasi Tubu ni Yasi/Ceruta Ceruti Yasi Tubu ni Yasi/Ceruta Ceruti	\$7.00	\$5.00	\$3.00	
Jood Energy, Posts/Poles, Pulplogs & Sawlags - per tonne fra Ine produce s weighed (too	from Industries & Private Pine Plantations in ALL ZONEs			
Posts/Poles, Pulpiogs & Sawlogs per cubic - Itation moduce for saw a savine	nette from Industries & Private Kunfingpol Manufilms av	EN AND AND AND AND AND AND AND AND AND AN	\$50.00 per	
measured (per cubic meter)		eu sad norne¢	ten ind germes	
irdwood plantation produce as weighed (per tonne) sits/Poles - per 100 linear meters - IN ALL ZONES - >=10-<=24rm sabua & Nawanawa	4cm diameter at base	\$50.00 per ha	330,00 per ha	
Any other species (except Bamboo) Closs 1 & 2		\$5.00	\$5.00	
CASES 3 Class 4 Puller mark 201111 filmmenter will be assessed at severing waters	\$7.50	\$5.00 \$5.00	\$5.00 \$1.00	
sintas (100 linear meter) meter (m3) debur (Scol	\$10.00 \$5.00	06.12	\$5,00 \$5,00	
annan in Att politik angrove wood stack per cubic meter		\$1.50	- 32.00 jiii r ke 55.00	Due to market demand
anye une word stade per cubic meter ative fuel wood stadk per cubic meter lantation fuel wood stadk per cubic meter	\$1.50	\$5.00 \$5.00	\$5,00 \$5,00 \$5,00	
nnual Licenset totuned by Division(native, mangrows,MFP Southern Northern Western	a 33 35 36			
Cassal Southern Northern Western				
Northern				

Northern Western Southern Northern Western Western

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	ςοςαίς;
00.1\$	Child
00.2\$	tlubA
	Tourists;
	Forest Park Entry Fees
	<u>noisivi</u> a noisn si tä
& CHARGES FID\$	
CURRENT FEES	LIST OF SERVICES
507	

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for a group tour(10-20pax)	00'0E\$
Lab cost – \$33/day, o/head 20% (20 visitor/day)	00'T\$
Lab cost – \$33/day, o/head 20% (20 visitor/day)	00'Z\$
Lab cost – \$33/day, o/head 20% (20 visitor/day)	00'T\$
Lab cost - \$33/day, o/head 20% (20 visitor/day)	00.01\$
	& CHARGESFID\$
NOITACIAITEUL	PROPOSED FEE
	FEES & CHARGES FOR THE FORESTRY SECTOR

ANNEX 2

Anticipated Revenue - Current revenue items Versus Proposed Revenue Items

Type of Fees Logging Plan Base maps Area	Curr	Current Fees	Revised Fees	Nev	New Fees	Revenue Outturn (current) Max of 15 maps
Area						Max of 15 maps
100-199	\$1	\$116.53	10% increase across	12	128.18	per year on
200-299	\$1	\$175.75	the board	19	193.32	average
300-399	\$1;	\$186.83		20	205.51	
400-499	\$2	\$221.54			243.69	1037.87
500-599	\$2	\$232.62		25	255.88	
600-699	\$2	\$254.00			279.40	
700-799	\$2	\$272.28		29	299.51	
668-008	\$2	\$288.74		31	317.61	
666-006	\$3	\$315.32		34	346.85	
1000 & over	Separat	Separately costed		10% i	10% increase	
Timber Volume Assessment	IDD/ći		10% increase across	100/01		Max of 15
Area(HA)		רטוט(א)	the board	LKD(\$)	FGID(\$)	LRD/15 FGID
36161.00	\$29.54	\$31.01		32.49	34.11	maps
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
400-499	\$45.09	\$39.88		49.60	54.56	Total – 1055.07
500-599	\$48.74	\$45.53		53.61	58.97	
600-699	\$51.69	\$48.74		56.86	62.55	
700-799	\$54.65	\$51.69		60.12	66.13	
900-899	\$57.60	\$53.91		63.36	69.70	
900-999	\$63.71	\$61.30		70.08	77.09	

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Wood processing Courses	Technical Skills Training	Advice for suitability of mining	UP based on the i. Area ii. forest type iii. accuracy level required	Forest Resource Assessment by private individuals	NFI reports	Photocopy (20/yr)	Laminated (2/yr)	Unlaminated (2/yr)	Forest Function Maps	2000 & over	1900-2000	1800-1899	1700-1799	1600-1699	1500-1599	1400-1499	1300-1399	1200-1299	1100-1199	1000-1099
F	T	T	F			4.	52	38		Separate	\$100.43	\$97.48	\$94.52	\$91.57	\$88.61	\$85.66	\$75.32	\$72.37	69.41	\$66.46
FOC	FOC	FOC	FOC		0	4.81	52.51	38.29		Separately costed	\$88.61	\$88.40	\$84.18	\$81.97	\$79.75	\$77.54	\$67.94	\$67.94	\$65.73	63.51
10 modules @\$49/module/	\$49.00 per module per person (20 modules with 222 trainees)		\$20/ha				the board	10% increase across											the board	10% increase across
10 modules @\$49/module/ person	\$49.00 per module per person modules with 222 trainees)	100/request (maximum of 3 requests/yr)	Maximum of 4 requests with an average ofha		20 a copy (100 copies/yr)	5.29	57.76	42.12			110.47	107.23	103.97	100.73	97.47	94.23	82.85	79.61	76.35	73.11
\$49/module/ on	module per person (20 s with 222 trainees)	quest } requests/yr)	equests with an ofha		0 copies/yr)	0	76	12			97.47	97.24	92.60	90.17	87.73	85.29	74.73	74.73	72.30	69.86
0	0	0			0	96.20	63.54	76.58												
49,000	217,560	300.00			2000.00	105.80	115.52	84.24												

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>7,000m°	>10,000m [°]	15,000m ³ >	International standard	Portable Mill	Sawmill License	Supply of Firewood (per Tonne)(10 tonnes)	Per Seedling (for Yasi) (200 seedlings annually)	Per Seedling (species other than native) 80 seedlings in a year	Tour guiding (1 per month)	CIS forest park fees – Locals	CIS Forest Park fees – Tourists	Skills Test Fees	Tree Surgeon		Chain Saw repair	Sharpening of Knives @ \$5 per blade	Ripping Charge @ \$170/m ³	Finishing @ \$20/liter	Drilling @ \$0.25/cm	Sanding Machine @ \$220/m ³	6-Sider Profiling @ \$250/m [°]	Thicknesser @ \$150/m ³ Dressed 4 sides	Service Fees (Use of machines at TITC)	
		FOC				27	\$3	\$1	Foc	\$1	\$5	FOC	Foc	FOC						FOC				
\$150.00	\$300.00	\$500.00		\$1,000.00	\$150.00	50	\$6	\$2	\$30 per group	\$2	\$10		\$25/hr		\$5/hr	σ	170	20	0.25	220	250	150		person
\$150.00	\$300.00	\$500.00		\$1,000.00	\$150.00	50	\$6	\$2	\$30 per group	\$2	\$10	\$371/ test	\$25/hr	(maximum of 4 requests/yr @ a maximum of 2hrs)	\$5/hr	5	170	20	0.25	220	250	150		
0	0	0	1	0	0	270	\$600	80	0	4,680	\$7800	0			0	0	0	0	0	0	0	0		
\$500,000 (Export &	\$1,000,000 (Export & Local value)	\$20,000,000 (Export & Local value)		1,000	13,950	500	\$1200	160	360	\$9360	15,600				40.00	126,250	255,000	40,000	10,000	110,000	500,000	75,000		

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3					Local value)
5,000m ⁻ and below		\$100.00	\$100.00	0	\$100,000 (Export
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		
Single	33.75			22624	22624
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	FOC	\$50/hr	\$50/hr	0	800
industry and general public).					
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	

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******This excludes revenue from the Trading & manufacturing Account (TMA)

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ANNEX 2

Anticipated Revenue - Current revenue items Versus Proposed Revenue Items

Type of Fees	Curre	Current Fees	Revised Fees	New	New Fees	Revenue Outturn	Revenue Outturn (proposed)
Logging Plan Base maps							
Area						Max of 15 maps	Max of 15 maps per
100-199	\$1:	\$116.53	10% increase across	12	128.18	per year on	year on average
200-299	\$17	\$175.75	the board	19	193.32	average	
300-399	\$18	\$186.83		20	205.51		2635.05
400-499	\$22	\$221.54		24	243.69	1037.87	
500-599	\$23	\$232.62		25	255.88		
600-699	\$25	\$254.00			279.40		
700-799	\$27	\$272.28		29	299.51		
800-899	\$28	\$288.74		31	317.61		
666-006	\$31	\$315.32		34	346.85		
1000 & over	Separat	Separately costed		10% ir	10% increase		
Timber Volume Assessment	I BR/61	roin/él	10% increase across			Max of 15	Max of 15 LRD/15
Area(HA)		רטוט(א)	the board	LRD(\$)	FGID(\$)	LRD/15 FGID	FGID maps
36161.00	\$29.54	\$31.01		32.49	34.11	maps	
100-199	\$34.71	\$33.24		38.18	42.00		LRD - 609.68
200-299	\$37.67	\$35.45		41.44	45.58	LRD – 539.93	FGID - 664.54
300-399	\$42.06	\$37.67		50.47	55.52	FGID – 515.14	Total – 1274.52
400-499	\$45.09	\$39.88		49.60	54.56	Total – 1055.07	
500-599	\$48.74	\$45.53		53.61	58.97		
600-699	\$51.69	\$48.74		56.86	62.55		
700-799	\$54.65	\$51.69		60.12	66.13		
800-899	\$57.60	\$53.91		63.36	69.70		
900-999	\$63.71	\$61.30		70.08	77.09		

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Wood processing Courses	Technical Skills Training	Advice for suitability of mining	UP based on the i. Area ii. forest type iii. accuracy level required	Forest Resource Assessment by private individuals	NFI reports	Photocopy (20/yr)	Laminated (2/yr)	Unlaminated (2/yr)	Forest Function Maps	2000 & over	1900-2000	1800-1899	1700-1799	1600-1699	1500-1599	1400-1499	1300-1399	1200-1299	1100-1199	1000-1099
	π					4	5)	38		Separat	\$100.43	\$97.48	\$94.52	\$91.57	\$88.61	\$85.66	\$75.32	\$72.37	69.41	\$66.46
FOC	FOC	FOC	FOC		0	4.81	52.51	38.29		Separately costed	\$88.61	\$88.40	\$84.18	\$81.97	\$79.75	\$77.54	\$67.94	\$67.94	\$65.73	63.51
10 modules @\$49/module/	\$49.00 per module per person (20 modules with 222 trainees)		\$20/ha				the board	10% increase across											the board	10% increase across
10 modules @\$49/module/ person	\$49.00 per module per person (20 modules with 222 trainees)	100/request (maximum of 3 requests/yr)	Maximum of 4 requests average ofha		20 a copy (10	5.29	57.76	42.12			110.47	107.23	103.97	100.73	97.47	94.23	82.85	79.61	76.35	73.11
\$49/module/ son	e per person (20 222 trainees)	quest 3 requests/yr)	of 4 requests with an erage ofha		20 a copy (100 copies/yr)		76	12			97.47	97.24	92.60	90.17	87.73	85.29	74.73	74.73	72.30	69.86
0	0	0			0	96.20	63.54	76.58												
49,000	217,560	300.00			2000.00	105.80	115.52	84.24												

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>/,UUUm	>10,000m	15,000m~>	International standard	Portable Mill	Sawmill License	Supply of Firewood (per Tonne)(10 tonnes)	Per Seedling (for Yasi) (200 seedlings annually)	Per Seedling (species other than native) 80 seedlings in a year	Tour guiding (1 per month)	CIS forest park fees – Locals	CIS Forest Park fees – Tourists	Skills Test Fees	Tree Surgeon	-	Chain Saw repair	Sharpening of Knives @ \$5 per blade	Ripping Charge @ \$170/m ³	Finishing @ \$20/liter	Drilling @ \$0.25/cm	Sanding Machine @ \$220/m [°]	6-Sider Protiling @ \$250/m	Thicknesser @ \$150/m [°] Dressed 4 sides	Service Fees (Use of machines at TITC)	
		FOC				27	\$3	\$1	FOC	\$1	\$5	Foc	FOC	FOC						FOC				
\$150.00	\$300.00	\$500.00		\$1,000.00	\$150.00	50	\$6	\$2	\$30 per group	\$2	\$10		\$25/hr		\$5/hr	G	170	20	0.25	220	250	150		person
\$150.00	\$300.00	\$500.00		\$1,000.00	\$150.00	50	\$6	\$2	\$30 per group	\$2	\$10	\$371/ test	\$25/hr	(maximum of 4 requests/yr @ a maximum of 2hrs)	55/hr	σ	170	20	0.25	220	250	150		
0	0	0	Contraction of the second	0	0	270	\$600	80	0	4,680	\$7800	0		c	0	0	0	0	0	0	0	0		
\$500,000 (Export &	\$1,000,000 (Export & Local value)	\$20,000,000 (Export & Local value)		1,000	13,950	500	\$1200	160	360	\$9360	15,600			TO SO	40 00	126,250	255,000	40,000	10,000	110,000	500,000	75,000		

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5,000m ³ and below		\$100.00	\$100.00	0	\$100,000 (Export
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		
Single	33.75			22624	22624
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			
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	

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Total	woodlot license FOC \$10/mth	woodiot License		Verification EDC 630 pp	Application Fees for renewal of license FOC \$10	FOC \$10 per ha	
	nth \$10		si ili ș50 per na			er ha \$10 per ha	
38,703.26			0		D	0	0
1,583,759.13							

******This excludes revenue from the Trading & manufacturing Account (TMA)

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No. 6 LOG SCALING RULES AND LOG DEFECT ALLOWANCE Quest (excluding plantation grown logs) METRIC EDITION 1977 Issued by Department of Forestry, Suve CONTENTS 10 Preamble Method of Log Measurement 2. (a) Length (b) Centre diameter 3. Assessment of Volume (a) Timber in the round (logs) (b) Converted timber (sawn) Allowances for Defects 4. Defective sections 5. 6. Butt-hcle, hollow or pipe, decaying heart, heavy shakes and termite galleries. 7. Side hole 8. Decay or rot pocket 2. Decayed sapwood Forked sections (forks) 10. 11. Shatter, splits, or end checks Full length flanges or fluting 12. Defective buttresses - Fluting 13. Crooked (bent) logs 140 15. Hidden defect 16. · Combined defects.

LOG SCALING RULES AND LOG DEFECT ALLOWANCE

ISSUED BY THE FORESTRY DEPARTMENT, SUVA, FIJI

(Metric Edition 1977).

PREAMBLE

10

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.

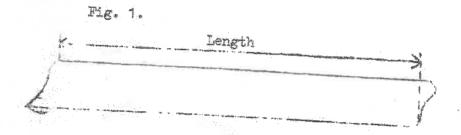
The method of assessing partially concealed defects is designed to give fair average allowances. A greater degree of accuracy in individual cases will certainly be obtained where defects can be assessed visually while a log is being converted and, if mutually convenient, it would be preferable to measure 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.

- METHOD OF LOG MEASUREMENT
 - (a) <u>LENGTH</u>
 - i)

The length measurement taken is the distance

at right angles & the plane of the longitudinal axis of the log to a similar point at the other end of the log.

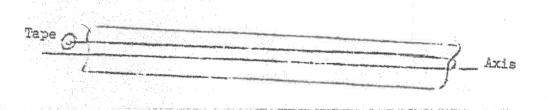


ii)

1.22

Fig. 2.

The measuring tape just lie in a plane parallel with the longitudinal axis of the log.



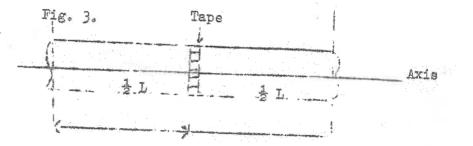
- 111) The measuring tape must be pulled tight and the Forest Officer must hold the tape container so that he alone holds the end of the tape which records the length of the log.
 - Logs may be of any length provided that any log shorter than 2.4 metres in length need not be removed nor measured and 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, 3.2, 3.5, in 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) <u>DIAMETER</u>

1)

- 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. <u>Caution</u>: 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 <u>sounded</u> measurement outside bark shall be taken and a deduction of 2.9 centimetres diameter shall be made as bark allowance. Where bark has been partially removed, the bark allowance should be propertionally reduced.
- v) The buyer shall have the right to debark any log at it's 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 cut 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.

 $\frac{(d)^2 \times \log(1/m)}{127324}$

3.

ASSESSMENT OF VOLUME FOR ROYALTY PATIENTS

TIMBER IN THE ROUND (a)

> The unit of measurement shall be the cubic metre and thousandths of a cubic metre (i.e. 3 decimal

Value 2

1i) 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).

Volume $(m^3) = \left(\frac{\text{diometer (om)}}{.2}\right)^2 x \text{ length (m) x 3.14}$

10000

In the absence of volume tables the formula for calculating volume is:

PTED TIMBER Volume (d) × lensth (m) × 3142 (b)

1)

40,000 1) The unit of measurement is still the cubic metre and thousand the of a cubic metre (i.e. 3 decimal

- 1.) 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.

27) 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 zerbs if necessary).

Example: Board length 7.2 metres

> Width 150 mm Thickness 25 mm

> > $150 \ge 25 \ge 7.2 = 27000$

Move the decimal point 6 places to the left

= 0.027000 cubic metres Rounded to B decimal places = 0.027 cubie metres No allowance for defects of any kind shall be made for sawn timber.

v)

4.

5.

6.

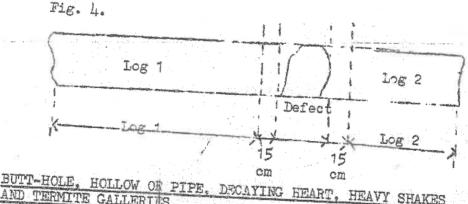
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ALLOWANCES FOR DEFECTS (ROUND TIMBER)

- (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 buttressess, Defective sections and Crocked (or
- (b) When assessing the defective content for a butt-hole, side-hole, hollor c= 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 metrcs. 10 cm

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.



AND TERMITE GALLERIUS HEAVY SHAKES

An allowance of 2.5 centimetres is made on all sides of (a)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 centipetres,-

Fig. 5. Cross sectional area of defect in square om is AB x CD

(b) The depth of the defect may be assessed in any one of the

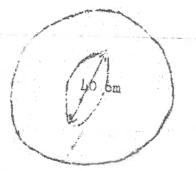
VISUAL INSPECTION - If signs of decay, hole or shake are visible at both ends of the log then it can be assumed that the depth of the defect is equal to total length of

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 10 cm

ASSESSMENT - If the defect is a hole and is surrounded by e 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 proclude 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

Where the greatest diameter of the defect is under 45 centimetres then multiply the greatest diemeter by 10

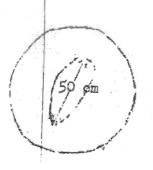
Pier 6.



Example: Greatest diemeter of defect = 40 cm Therefore assessed depth of defect along axis of log is 40 x 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

Fig. 7.



Example: Greatest diameter of defect = 50 cmTherefore assessed depth of defect along axis of log is 50 x 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).

1.4

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.

DECAY OR ROT POCKET - Whore these are visible on the side of the log they should be dealt with in the same manner as Sidehole. Where they are visible on the ends only their crosssectional area shall be measured as in Butt-holes and their length assessed by multiplying the greatest diameter by 4 (four).

DECAYED SAFWOOD - In dead or windfallen trees where heart-wood 9. 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.

FORKID 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. Brovided that where they are less than 2.4metres in length of 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. LOE NO 2 Defect Log NA 1 Log No **1**1

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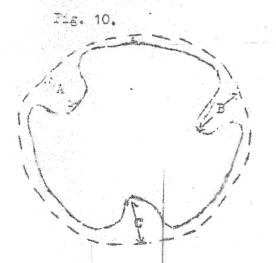
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8.

- 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. DEFECT

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.



Example:

Dotted line is measured with the diameter tape, giving a diameter reading of 58 cm. Depth of flutes:-

 $\begin{array}{r} A = 13 \text{ cm} \\ B = 15 \text{ cm} \\ C = 14 \text{ cm} \end{array}$

 $\frac{42 \text{ cm}}{42 \text{ cm}}$ Average depth 42/3 = 14 cm x 2 = 28 cm

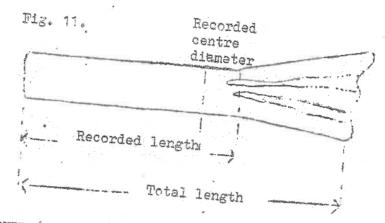
Recorded diameter 58 - 28 = 37 em.

DEFECTIVE BUTTRESSESS - FLUTING

- i) Assess the point on the log where the flutes or indentations between the buttressess 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.

13.

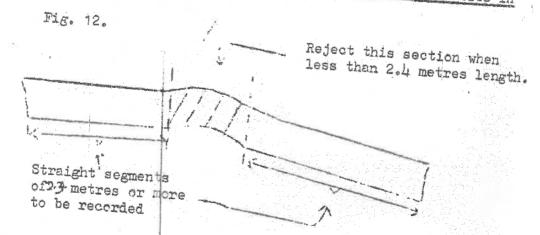
iii) Diameter is measured at the rid point of the length.



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 crocked 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.



Where the remaining sections of a crooked log are 9.4 metres or more in length, defoct allowances shall be made in accordance with paragraph (b) below.

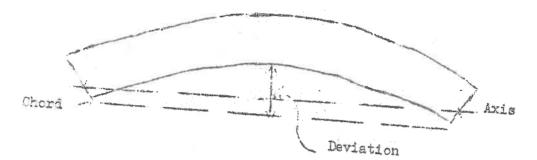
(b) Where a log has a centre diameter between 36 and 70 centimetres and where straight segments of 3.4 metres

ii)

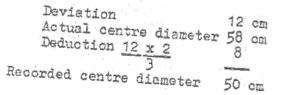
5.

16.

Salculate two-thirds of the deviation and subtract this from the measured centre diameter.



Example:-



(c) The following rule applies to logs which may be eligible for helf royalty i.e. logs measuring:

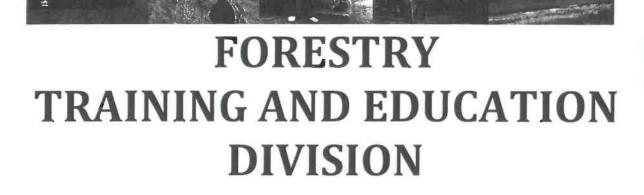
(a) less than 7.5 metres in length and not exceeding 36 centimetres centre diameter.

(b) not less than 7.5 metres in length and not exceeding 39 centimetres centre diameter.

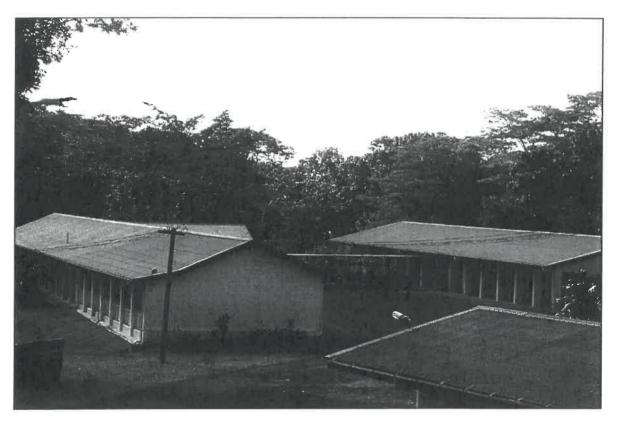
- i) Such logs or any part thereof may be rejected if the deviation exceeds 10 cm in 4 metres always providing that the tree length is cross cut (or mensured as if it had been cross cut) so as to minimise the effect of a bend, and
- ii) any such log may be rejected if the total assussed defects exceed 30% of the gross volume (see also regulation No. 16 below).

<u>HIDDEN DEFECT</u> - 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.

<u>COMBINED DEFECTS</u> - 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.



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2015 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 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 Cirikiwai	Administration	Carpenter
21	Jone Navuso	Administration	Watchman
22	Petero Rokoli	Administration	Watchman
23	Saimoni Ratumaiyale	Administration	Compoundman (Lololo

Training and Education Division Annual Report 2015 Page 5



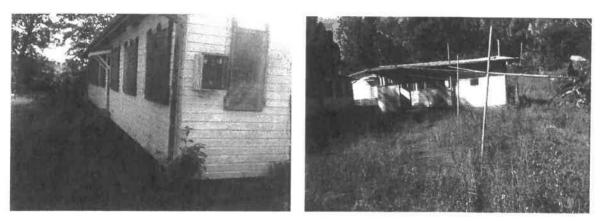
D. Assets

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





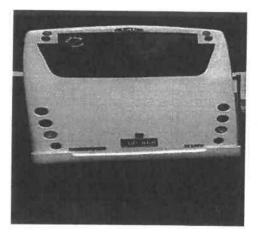
2.0 Assets - Vehicle

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 guality 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%

	2015 TE	CHNICAL SKILLS TRAI	NING	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	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

Table 1: 2015 Training summaries

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

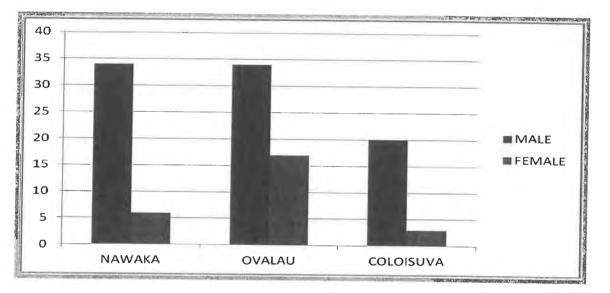
The focus of conducting training and awareness in Nadi is to address the recent flooding of Nadi town and the surrounding areas. Training was focused on Tikina Nawaka which includes Nawaka and Vatutu village.

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







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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

1

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

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

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

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

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

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

1

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).

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Appendix 1:

FOREST WARDEN COURSE PARTICIPANT

Appendix 2:

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COURSE PROGRAM

MODULE 2 INTRODUCTION TO FOREST CODES

ay/Time .30am –	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
10.00am	Opening of the Refresher Forest Warden Training	Introduction What is Code	Recap	Field Practical	(09/12/2010 Field Practica Analysis in report format
	General Administration				
10.15am –		Morni	ing Tea		
 pm	Forest Warden – Presentation on their Achievements and Challenges?	What is Fiji Forest Code of Practice 2013[Pine &Native]	Fiji Forest Code of Practice 2013 [Operational Component]	Field Practical	Field Practical Analysis Presentation
Lunch					
jpm – Spm	Presentation on their Achievements and Challenges?	Aims of Code	Fiji Forest Code of Practice 2013 Operational Component]	Field Practical	Course Evaluation
10	1	Afterno	on Tea		
3.15pm – .30pm	on their Achievements	Fiji Forest Code of Practice 2013	Fiji Forest Code of Practice 2013 Operational		End of program



Appendix 6: Forest Warden Participants

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N	ESTERN Division			
#	Names	Stations	Province	Comments
1	Semisi ketewai	Nadarivatu	Ва	Nadarivatu (FPT Nominee)
2	Laisenia Lobau	Ва	Ва	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
CE	NTRAL/EASTERN D	VISION		J
L	Maleli Rakula	Korovou	Tailevu	Dawasamu to Nakorotubu (FPT Nominee)
2	Malakai Sobanivalu	Lakeba	Lau	Lakeba Island
3	Alipate Mocevakaca	Lakeba	Lau	Matuku Island
-	Vili Valevatu	Lakeba	Lau	Cicia Island
;	Viliame Veidre	Sawaieke	Lomaiviti	Tikina Narocake

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6		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
No	orthern Division	August Start Start	nte metandelina en 1974 - 1973 Ne the metandelina en 1974 - 1973	
	Sairusi			
1	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		Savusavu-Saqani Area

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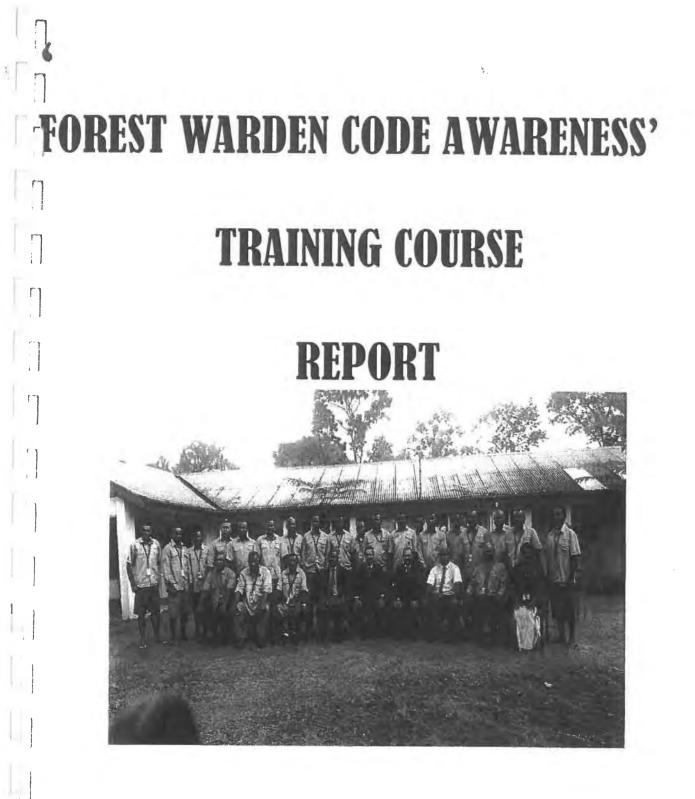
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Training and Education Division Annual Report 2016-2017



DATE: 4^{th} **FEB** – 8^{th} **FEB**, 2019

VENUE: FORESTE

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FORESTRY TRAINING CENTRE

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Introduction	1
Rationale for Training	лт Л
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Training Methodology	0 7
Conclusion	····· / o
Comments & Recommendations	••••••
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FOREST WARDEN COURSE PARTICIPANT	۶ ۵
Appendix 2:	🤊
COURSE PROGRAM	10

Acknowledgement

I acknowledge with great thanks the support and cooperation by the Director Training & Education and staff for the successful completion of the1st Code Awareness Refresher training course for the current Forest Wardens.

S.

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

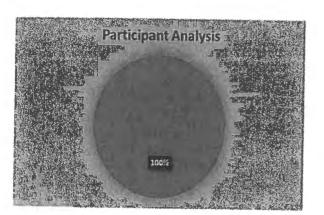
- i. Understand the 2013 FFCOHP
- ii. Effectively interpret the Code in a field situation.
- iii. From another perspective, it provided an opportunity for the wardens to fully understand the essential technical capability (based on the FFCOHP) and have it effectively translated at ground level. This 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

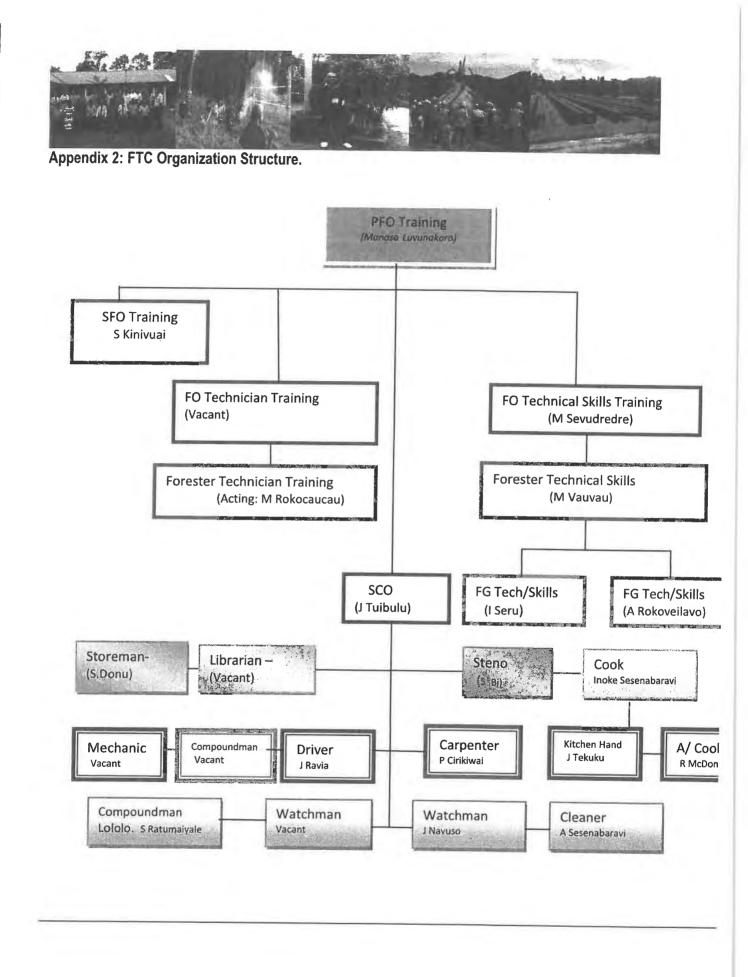
Group Exercise during Training at the Conference Room



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



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Appendix 3: 2016/2017 Leave Summary

	Names	Annual Leave	Sick Leave	Sick Without Sick Sheet	Bereavement Leave	Long Service Leave
EST	ABLISHED 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 Daγs
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	

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WAG	E EARNERS	annesin ann an t				
		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		

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Appendix 4: 2016 Assets

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			Buildin	Igs and a				
Station	Quarters	Dormitory	Kitchen/Dining Hall	Office	Classr oom	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 & V	ehicles	i ai	A share the		15 ¹⁰ 7
Skidder	Ford Tractor	Mini Bus Mazda (10 seater)	Toyota Hilux Dual Cab 4WD	Mazda Dual Cabs 4WD	Mini Bus 30 seater	Chainsaws	Mini Toy (12 se	ota
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

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Appendix 5: Staff Training

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NO	STAFF	TRAINING /WORKSHOP	DATES
1	Manasa	Module Descriptor Development- FTC	August –September 2016
	Luvunakoro	Capacity Building Study Tour-Queensland	October-2016
		APFNet TIF Training –Malaysia	December 2016
		2016 Seminar for senior public servants from Fiji	25th AUG – 14th SEPT 2016
		Third Meeting of the APFNet Council	10th October 2016
		MSG-PITAP Studies Workshop	July 2017
		SDP Workshop – Holiday Inn	July 2017
		FHEC Competency Based Assessor Training	27 June- 28 June 2017
		IAC (Industrial Advisory Committee) meeting	21 st July 2017
		APFNet project workshops	July 2017
		National Youth Policy Multi-Sector Coordination	July 2017
		Committee	501 y 201 y
2	Malakai	Curriculum Development - FTC	August – September 2016
	Sevudredre	Module Descriptor Development- FTC	August –September 2016
		Capacity Building Study Tour-Queensland	October 2016
		Discipline Guideline (Investigation Workshop)	May 2017
		Professional Supervisor Workshop	April 2017
			31/05 - 01/06/'17
3	Moape Lotawa	Fijian Civil Service Displinary	June 2017
		Curriculum Development - FTC	August –September 2016
		Module Descriptor Development- FTC	August –September 2016
		Capacity Building Study Tour-Queensland	October 2016
			0000001 2010
1	Mereoni Bativesi	Curriculum Development - FTC	August –September 2016
		Module Descriptor Development- FTC	August –September 2016
		Capacity Building Study Tour-Queensland	October-2016
		APFNet TIF Training –Malaysia	December 2016
		SDP Workshop – Holiday Inn	July 2017
	Meli Vauvau	OMRS	April 2017
		Professional Supervisor	31st May – 1st June 2017
		FHEC Competency Based Assessor Training	27/06-28/06/17
		Investigation Officer's Training	28/06 - 30/06/17
		Research Seminar on "Bat pollination of Dillenia	July 2017
		biflora	
.	Arieta Nailagovesi	Curriculum Development - FTC	August –September 2016
		Module Descriptor Development- FTC	August –September 2016
		Capacity Building Study Tour-Queensland	October 2016
		OHS Module III, IV	December 2016
	Isimeli Seru	Curriculum Development - FTC	August –September 2016
		Module Descriptor Development- FTC	August –September 2016
		Capacity Building Study Tour-Queensland	October 2016
		SDP Workshop – Holiday Inn	July 2017

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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		L	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

anasse be 'y ymai tal	M. A.		
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

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Fig 11: Forestry staff on Training

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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.



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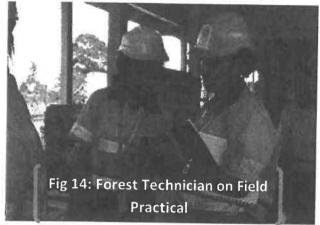
5.0 Forest Technician Program

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

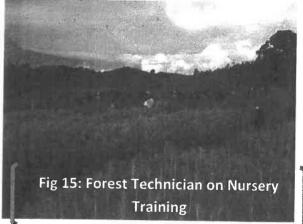


in the industries and within the divisions of the Ministry of Forests.

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.





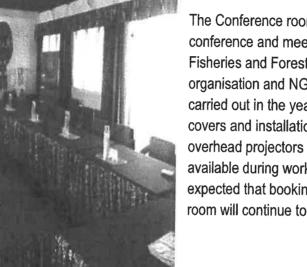


Fig 16&17: Conference room

The



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

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

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Allocation	Expenditure	Provision	Total	Balance
	Description		Expenditure	
		\$	\$	\$
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





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.

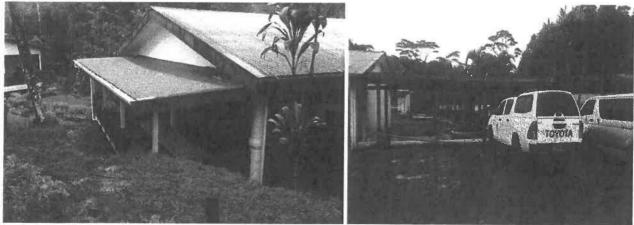


Fig 4&5: The Dining Hall extension and walkway



2.0 Assets - Vehicle

1

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)

Page 6



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:

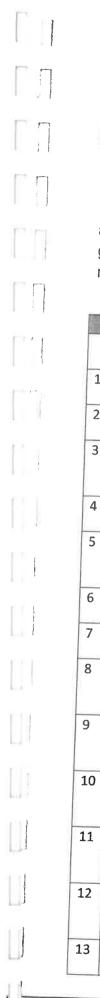
- a) Building the knowledge base over a short period of time: exposure to technologies, systems and processes that work in relation to the in-country situation;
- b) Providing an insight into the working relationships, partnerships and cooperation between the state (government), communities, non-government 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

				4
	DATE	TRAINING TYPE	VENUE	Number
1	08/08/2016 - 19/08/2016	НТМВ	FTC	25
2	22/08/2016 - 26/08/2016	Maintenance & Cross Cutting	Navuniivi, Navitilevu, Ra	31
3	19/09/2016 – 30/09/2016	НТМВ	Rewasau, Nabobuco, Naitasiri	32
4	01/11/2016 - 04/11/2016	НТМВ	Mataso, Nakorotubu, Ra	11
5	21/11/2016 – 02/12/2016	НТМВ	Lawai, Nokonoko, Nadroga	25
6	09/12/2016 - 21/12/2016	НТМВ	Nalotu, Yawe, Kadavu	15
7	16/01/2017 – 27/01/2017	НТМВ	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	НТМВ	Tropik Wood Industries Limited	29
10	13/03/2017 – 24/03/2017	НТМВ	Buca, Natewa, Cakaudrove	31
11	27/03/2017 – 07/04/2017	НТМВ	Bagata, Wailevu, Cakaudrove	49
12	10/04/2017 - 21/04/2017	НТМВ	Tacilevu, Naweni, Cakaudrove	30
13	08/05/2017 - 19/05/2017	НТМВ	Nabavatu, Dreketi,	35

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	Stand and Aller And			
			Macuata	
14	12/06/2017 – 16/06/2017	Cross Cutting	FSC, Lautoka	10

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

6

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

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Appendix 6: 2015 Condensed Forest Technician Intakes

i. e.	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	llimo 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 my 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

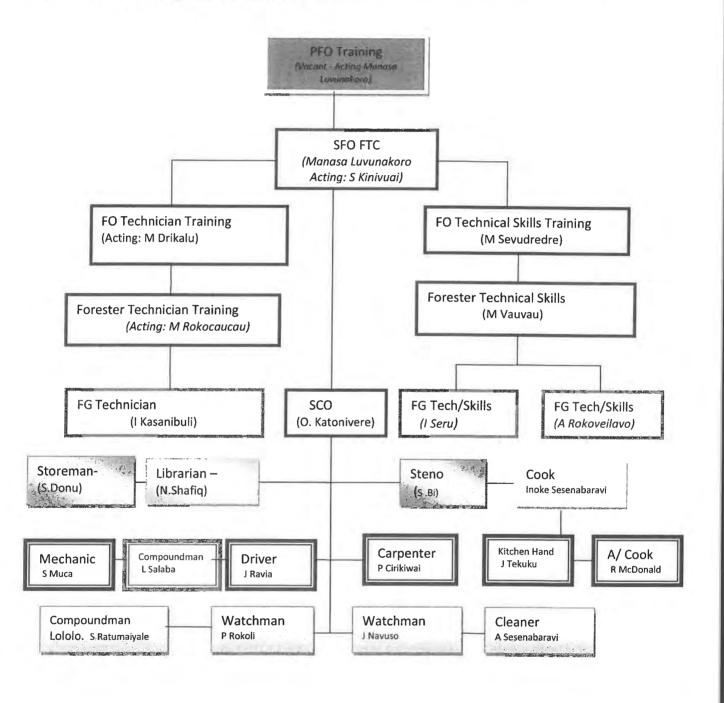
FTC has a total staff of 24 in the beginning of the year but the staff strength has moved downwards due to resignation, promotions and retirement. We however welcomed the appointment of Mr Josaia R Tuibulu as Clerical Officer replacing Mr Osea Katonivere who has retired. The recruitment process is continuing 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	Ósea 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	Kitione Mocelutu	Technical	Mechanic (Heavy)	FTC
24	Samisoni Qaqa	Technical	Skidder Operator	FTC

raining and Education Division Annual Report 2016-2017



Appendix 1: FTC Organisation Structure.



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Appendix 2: Expenditure

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Allocation	Expenditure Description	Provision	Total Expenditure	Balance
	Description	\$	\$	\$
L30A0391071020101	Wages	53,791.00	53,503.40	287.60
.30A0391071020602	Casuals	35,000.00	34,947.23	52.77
30A0391071030101	Travel	7,456.00	7,439.41	16.59
30A0391071030301	Subsistence	7,000.00	6,897.52	102.98
30A0391071030401	Telecom	4,669.00	4,652.09	16.91
30A0391071040401	Fuel & Oil	11,045.00	11,022.13	22.87
30A0391071040351	Equip/Vehicle/Maint.	26,500.00	26,427.69	72.31
30A0391071040203	Offices Suppliers	6,000.00	5,981.41	18.59
30A0391071059101	Stores & Ration	69,300.00	69,221.71	78.29
30A0391071059999	Stocks & Goods	6,000.00	5,988.20	11.80
30A0391071050499	Training	200,000.00	199,862.51	137.49



Appendix 3: 2015 Leave Summary

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	Names	Annual Leave	Sick Leave	Sick Without Sick Sheet	Bereavmnt Leave	Long Service Leave
EST	ABLISHED STAFF	a a a da d				
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 Kasanibuli	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	

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		Annual Leave	Sick Leave	Sick Without Sick Sheet	Bereavmnt	Long Service Leave
1	Joseva Ravia	-	4	-	0	18
2	Savenaca Muca	-	6	-	1	-
3	Saimoni Ratumaiyale	-	5	-	0	-
4	Peceli Cirikiwai	- 1	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	

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Appendix 4: 2015 Assets

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	A MART	and the second	Buildin	95	1-10/ 9	Carl Carl		
Station	Quarters	Dormitory	Kitchen/Dining Hall	Office	Classr oom	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
1			Machine & V	ehicles ** ·	125		-	
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

Registratio n Number	Mileage @ end of last Quarter	Fuel (Litres)	Lubricants (Litres)	Cost of fuel	Cost of Maintenance & Repairs	Remarks
	(km)					
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					
÷ 1.	N.	Vestern Division			
Nos	Names	Province			
1	Semisi Ketewai	Ва			
2	Livai Cavanasiga	Ва			
3	Naelesoni Navuase	Ra 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			
	Cent	ral 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 Naloa	Serua			
	iliame Namino Serua				
11					
	Rt Mosese Volavola	Rewa			
12		Rewa Rewa			
11 12 13 14	Rt Mosese Volavola				
12 13	Rt Mosese Volavola Sakiusa Mata	Rewa			

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1111 2	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	

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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	
Officers Trained(TOT Module 1-4)	8	
Officers Trained and Registered	2	
	Officers Trained(TOT Module 1-4)	Officers Trained(TOT Module 1-4) 8



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

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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			

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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	27/714/8	Supervisor Module 2	52	
9	15/8 - 1/10	Supervisor Module 3	54	
			610	

Training and Education Division Annual Report 2015 Page 18



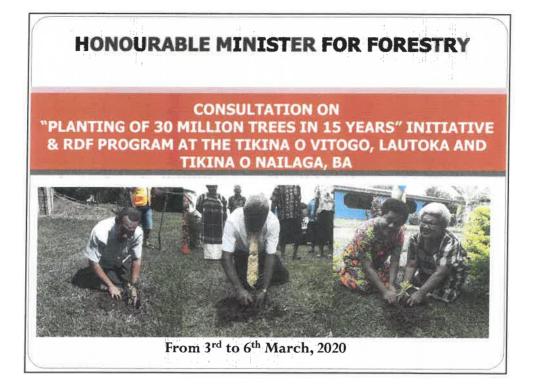
3.0 Technical Skills Training Achievements 2015

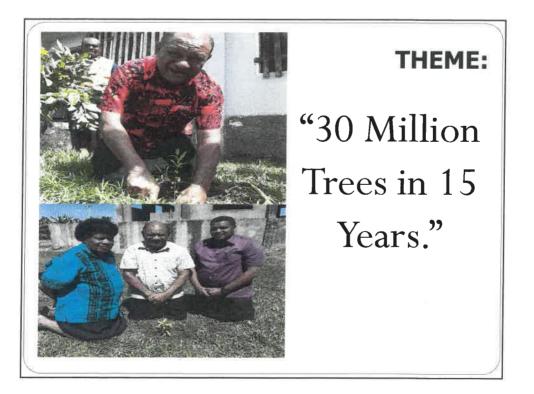
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No.	Date	Activity	Location	Division	No of PP
1	2/2/ - 13/2	НТМВ	Udu, Naitasiri	Central	31
2	16/10 - 26/2	FTMB	Coloisuva	Central	14
3	2/3 - 13/3	НТМВ	Moturiki	Eastern	23
4	23/3 - 2/4	нтмв	Lautoka	Western	14
5	7/4 – 17/4	НТМВ	Coloisuva	Central	16
6	20/4 - 24/4	C/Mechanic	Coloisuva	Central	16
7	4/5 - 15/5	НТМВ	Naqarawai	Central	26
8	1/6 - 12/6	FTMB	Coloisuva(FEA)	Central	20
9	29/6 - 10/7	НТМВ	Nakadrudru, Bua	North	60
10	6/7 – 17/7	нтмв	Nasarowaqa, Bua	North	48
11	13/7 – 24/7	нтмв	Dreketi, Macuata	North	49
12	20/7 - 31/7	нтмв	Naravuka, Seaqaqa	North	37
13	27/7 – 7/7	FTMB	Labasa(FEA)	North	15
14	22/10 – 29/10	НТМВ	Nakida	Central	18
15	16/11 – 27/11	НТМВ	Matuku Lau	Eastern	15
TOTAL					386

3/19/2020





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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.



h 1.	Mr. Rafaele Raboiliku	Director Operation Western
	Mr. Leveni Duvuduvukula	FG Extension
	Mr. Uwate Vuravakavonu	Timber Inspector [West]
	Ms. Mere Diligodrau	FG Lautoka
i.	Mr. Lekima Bose	FG Extension
	Mr. Mosese Vakatale	Messenger/Clearner
	Mr. Lawrence Chand	Driver West
	Mr. Marika Tuiwainunu	Driver
	Mr. Jonasa Igacake	Nursery Attendant
).	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	

	Day/Date	Time	Venue/Village
1.	Tuesday, 3 rd March, 2020	3.00pm	Team Suva left for Lautoka
2.	Wednesday, 4 th March, 2020	10.00am	Vitogo Village
		2.00pm	Naviago Village
3.	Thursday, 5 th March, 2020	10.00am	Vakabuli Village
		2.00pm	Namoli Village
4.	Friday, 6 th March, 2020	10.00am	Matawalu Village
		2.00pm	Nailaga Village
		5.30pm	Debriefing at the Village
5.	Saturday, 7 th March, 2020	8.00am	Team left for Suva

1.	Number of Staff	-	Western Team	Tota
	Number of Staff	5	10	1
2.	Accommodation	\$2,860.00	Included with Suva Budget	\$2,860.0
3.	Meal Allowances	\$2,400.00	Included with Suva Budget	\$2,400.0
4.	Sevusevu	\$1,910.00		\$1,910.0
5.	Bale of Cloth	-		
6.	Seedlings	-	-	
7.	Refreshments	\$1,500.00		\$1,500.0
	Total	\$8,035.00	\$320.00	\$8,670.0

	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

	Village Name/ Province	Ivi	Mango	Сосоа	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

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	Villages	No. of Indigenous Trees	No. of Fruit Trees	Total
	Vitogo Village	159	41	200
	Naviago Village	159	41	200
	Vakabuli Village	123	44	167
ŀ.	Namoli Village	123	29	152
i.	Matawalu Village	69	15	84
i.	Nailaga Village	69	15	84
	Koroqaqa Village	69	15	84
	Nasolo Village	69	15	84
	Total	840	215	1,055

	Name of Villages	Turaga ni Koro's Name	Phone Contact	Number of Yavusa / Village	Number of Matagali	Number of Tokatoka	Number * of Family	Number of Participants
					Цį, к			
1.	Vitogo Village	Napolioni Waqa	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	-	~	1	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

e' :	Village	Requests	Date Committed	Proposed Planting Area	Number of Seedlings Required	Remarks
1.	Vitogo Viilage	 Village Reforestation Plan Training Sandalwood Training Nursery Training TixK 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, Namoli and Nagaga [Abaca] 	 All training to be carried out on 24/03/2020 and 31/03/2020 as approved by the Hon. Minister 	 Proposal will be done during the training. 	• Yet to be confirme .d.	 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 Viilage	 Village Reforestation Plan Training Sandalwood Training Nursery Training. Women's Group has requested for a Nursery – Hon. Minister has also approved this request. 	 All training to be carried out on 14/104/2020 and 15/04/2020 as approved by the Hon. Minister 	 Proposal will be done during the training. 	Yet to be confirmed.	Lekima Bose, Saiasi Waqa & Merelsi Vatu to conduct training

	Village	Requests	Dates Committed	Proposed Planting Area	Number of Seedlings Required	Remarks
3.	Vakabuli Village	 Village Reforestation Pian Training Sandalwood Training Nursery Training Chainsaw Operator Training 	 All training to be conducted from 16/04/2020 and 17/07/2020 Chainsaw Operator Training to be carried out on <u>1* and 2*⁴ week of June, 2020</u> Both trainings was approved by the Hon. Minister 	 Proposal will be done during the training. 	Yet to be confirmed.	 Lekima Bose, Saiasi Waqa 8 Merelsi Vatu to conduct training. DOT – För your necessary action-please.
4.	Namoli Village	 Village Reforestation Plan Training Sandalwood Training Nursery Training Nursery Training Nursery Training Nursery Training Nursery Training Jone Baravila Jone Baravilal beside their seawall Jone Baravilal has requested for some yasi seedings. Joseva Torca 9020186 - has requested for an update from the Kinistry of Lands and TILTB - Status on the release of a portion of land from TLTB to the Matagai 	 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 <u>Friday.</u> 27/03/2020 DOW to supply the seedlings as approved by the Hon. Minister 	 Proposal will be done during the training. 	Yet to be confirmed.	 Lekima Bose, Saiasi Waqa & Mereisi Vatu to conduct training DOW & Team West – please attend to the mangrove free planting exercise. Referred to the Ministry of Lands and ITLTB. Roko Vatacegu, Viliame Seuseu – for your necessary action and advise as well please.

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	Villagn	Requests	Dates Committeed	Proposed Planting Area	Number of Seedlings Required	Romatiks
5.	Matawalu Village	 Village Reforestation Plan Training Sandalwood Training Nursery Training 	 All training to be conducted from 07/04/2020 and 08/04/2020 	 Proposal will be done during the training. 	Yet to be confirmed.	Lekima Bose, Salasi Waqa & Mereisi Vatu to conduct training.
6.	Nailaga Village	 Village Reforestation Plan Training Sandalwood Training Nursery Training Nursery Training for their clear fell licence to clear some raintrees – land to be used for planting sugarcane Matagali Korokoro, Tikina o Nallaga – a survey to be carried out in regards to their land boundaries 	 All training to be carried out on <u>04/05/2020 and</u> <u>05/05/2020</u> as approved by the Hon. Minister 	 Proposal will be done during the training. 	Yet to be confirmed.	 Lekima Bose, Saiasi Waqa & 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.

	Village	Pequeta	Dates Committed	Proposed Planting Area	Number of Seedlings Required	Remarks
7.	Koroqaqa Village	 Village Reforestation Plan Training Sandalwood Training Nursey Training Fiji Pine lease land - the villagers wishes to claim their land back from Fiji Pine Ltd 	 All training to be conducted from 28/04/2020 and 29/04/2020 	 Proposal will be done during the training. 	Yet to be confirmed	 Lekima Bose, Salasi Waqa 8 Mereisi Vatu to conduct training. DOW & Roko Vakacegu Wilame Seuscu - to follow up with Mr. Asseels Wata of Fiji Pine Ltd in regards to their request
8.	Nasoło Village	 Village Reforestation Plan Training Sandalwood Training Nursery Training Chainsaw Operator Training 	 All training to be carried out on <u>30(04/2020 and</u> 01/05/2020 Chainsaw Operator Training - <u>3rd and</u> 4th week of June, <u>2020</u> Both training was approved by the Hon. Minister 	 Proposal will be done during the training. 	Yet to be confirmed.	 Lekima Bose, Saiasi Waqa & 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 then 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.



SUBJECT	MINISTRY'S PREVIOUS RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			enactment of the revised Forest Act and why is the delay?	
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	How does the Ministry capture data or information regarding the road shows and actions taken to address concerns raised from	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.
		awareness programs of the Ministry as well as Commissioner's Office awareness tours with other government ministries.		Evidence: Minister's latest consultation report.
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	The current engagement with the World Bank includes Reducing Emission from Deforestation and Forest Degradation (REDD+) and is focused	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)
		General's office and World Bank office and is yet to be received by the MoF.	on reforestation and De- desertification of Talasiga areas and preservation of established natural	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.

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FIJI REDD+ STEERING COMMITTEE

QUARTERLY MEETING

Date: Tuesday 19 November, 2019 Time: 9.30am – 4.00pm Venue: Tanoa Plaza, Suva

Venue:	Tanoa Plaza, Suva	FIJI (111 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:

- Ms. Semi Dranibaka
 - Ms. Akosita Lewai
- Mr. Tevita Kunadei
- Mr. Apisai Rinamalo
 - Mr. Jale Tauraga
- Ms. Sovaia Lewanavanua
- Mr. Waisale Ramoce
 - **Ms. Reijeli Taylor**
- **Ms. Emma Christopher**
 - Ms. Susana Tuisese c
 - Marika Tuiwawa
 - Ms. Nunia Moko 2
- Ms. Finau Tabakaucoro <u>.</u>
 - Mr. Ilaitia Leitabu 4
- Mr. Maika Tabukovu Ω.
- Ms. Bernadette Masianini 0.
 - Mr. Daniel Pluyge 7.
- Ms. Loraini Kasainaseva
 - Ms. Mereseini Seniloli
 - Ms. Corey Nelson 20.18
 - Mr. Ulai Baya 2.
- Ms. Safaira Tagivuni
- Sele Tagivuni <u>۲</u> 223. 25. 25.
 - Mr. Seveci Taka
- Ms. Paulini Tuiteci
 - Mr. Peni Maisiri
- Ms. Waita Curuvale 27.
- Mr. Narendra Chand
 - Mr. Viliame Tupua 29.

Ministry of Forests (Acting Divisional Forestry Officer - Central Eastern) Drawa Block Forest Community Cooperative (Chairman) Ministry of Forests (Chief Forestry Development Officer) Manager Strategic Planning Policy Research Division Ministry of Forests (REDD+ Technical Advisor) Ministry of Mineral Resource (Scientific Officer) Ministry of Forests (Principal Forestry Officer) **Drawa Block Forest Community Cooperative** Vinistry of Forests (Principal Forestry Officer) Ministry of i-Taukei Affairs (Manager Policy) NBSAP - Grace Trifam Ministry (Director) Vadroga/Navosa (Reforest Program) Conservation International (Director) Vinistry of Forests (MRV Specialist) Ministry of Forests (Forestry Officer) SPC/GIZ (Communication Officer) VBSAP – Grace Trifam (Advisor) SSVM/CSO Platform (Chairman) Emalu Trust (Landowner Rep) SPC/GIZ (Technical Advisor) Vavosa (Forest Warden) LLEE (Project Manager) Integra (Consultant) ntegra (Consultant) Integra (Consultant) IAS/USP (Curator) NFMV (Director) FNU (Lecturer) SPC/GIZ

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) Ms. Reama Naco
 Mr. Leone Batigai
 Mr. Josaia Nayacakalou
 Ms. Marama Tuivuna
 Ms. Vilisi Naivalulevu

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Apologies:

- Ms. Loata Vakacegu Mr. Solomoni Nagaunavou Mr. Maika Daveta
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Ministry of Rural and Maritime (Deputy Secretary) Ministry of Agriculture (Senior) FAO (AAD National Project Coordinator)

		Abbreviations & Acronyms	Acronyms
AAD	Action Against Desertification	MOE	Ministry of Economy
cso	Civil Society Organisation	NFMS	National Forest Monitoring System
DoDD	Drivers of Deforestation & Forest Degradation	NF-MV	Nature Fiji-Mareqeti Viti
FAO	Food and Agriculture Organisation	NGO	Non-Government Organisation
FCPF	Forest Carbon Partnership Facility	REDD+	Reducing Emissions from Deforestation & Forest Degradation + Conservation, Sustainable Management
FGRM	Feedback and Grievance Redress Mechanism	RL	Reference Level
FNU	Fiji National University	RSC	REDD+ Steering Committee
FPIC	Free Prior and Informed Consent	SESA	Strategic Environmental and Social Assessment
FRL	Forest Reference Level	SPC	Secretariat of the Pacific Community
FSA	Fiji Sawmillers Association	SSVM	Soqosoqo Vaka Marama
GIZ	German International Development Cooperation	TEBTEBBA	Indigenous Peoples' International Centre for Policy Research and Education
LLEE	Live & Learn Environmental Education	TLTB	i-Taukei Lands Trust Board
MRV	Measuring Reporting and Verification	тот	Training of Trainers
MOA	Ministry of Agriculture	USP	University of the South Pacific

68.2%	ITEM	Discussions	Actions to be taken/ When Responsible 7
÷	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.	

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The agenda was confirmed by Ms. Tabakaucoro and seconded by Mr. Tuiwawa.

connirmation of minutes from last	The minutes of the last meeting was confirmed by the members and moved by Mr. Leitabu and seconded by Ms. Moko.		
	 The Secretariat informed the committee on the following action item; 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 	3.1. SESA consultancy termination letter to be submitted to USP	Ministry of Forests, REDD+ Secretariat, CSO Platform
	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 timoline to connote the SESA consultancy is from 6 to 10 months.	 3.3. Hiring of TOT consultant to carry out REDD+ TOT 	
	Exte ard i	3.4. Re-advertisement of co- ordinator position	
	3.3. The TOT cost estimate has been approved by wond bank will start with process of nining the consultant. 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.	3.5. Fast tracking of transfer from World Bank account to the lead agency, Ministry of Forests	
	 3.4. Successful co-ordinator position was disregarded by the Minister 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 3.6 Improvement in the financial stats of fund transfer 	 3.7. External party to review all SESA deliverables and revised deliverables 	
	3.7. The SESA consultance manyor subset of parts of an existence of the second parts of the second however it was still unsatisfactory. At the moment an external party is reviewing all the SESA deliverables and revised deliverables. 3.7. SESA Report submitted by consultancy was unsatisfactory.		
	 Update will be provided in the meeting as it is included in the agenda 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. 3.10. CSO National platform and Awareness on REDD+ scheduled for 05-09 February, 2018 will be carried out on 05-07 March, 2018		

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		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	3.8. TOT consultant to be hired	
		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. 3.12 ANSAB Proposal submitted by SSVM was rejected	3.9. FCPF suggests a NGO to submit the ANSAB proposal	
4	Update on UNFCCC meeting in	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	4.1. Follow up on the updates being highlighted and as	Ministry of Forests
	Bonn	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.	presented by Fiji 4.2. A unique Forestry Day to promote and showcase	Ministry of Economy, Ministry of Forests.
		4.2. Forestry day organise big show promote forest COP 24 Forestry Day.4.2. Organizing of a Forestry Day	forestry under COP 24	REDD+ Unit
ni and and a second	rur vauonan Programme Updates	 9.1. Mit. Citating presented on the Fij reaudual NEDCT programme updates. They include the hear future Organisation and consultation coordinator, DWG June 2018, Gender and FPIC guideline, Apply for TOT position. Apply for TOT position. Prepare REDD+ strategy 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 SESA, MRV due July 2018 Plan for next quarters; Financial utilisation 30% 3.8 35% 3.8m, add 2m How much paid 341,000 FJD, slightly overpaid SESA 	 A contract of an end of an end of an end of the capacity and capability of people involved and have a drawn timeline for all activities included therein lissues & Challenges All payments to be rectified Data analysis to be improved Tools used for assessment to be reviewed Leading agency - Ministry of Forestry to 	W>SS
		Processes way forward MoF A/PS not knowledge of REDD+, 5k below, Cf 10k, PAO 30k, spend to get more	detain all relevant data whilst other agencies to only	

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All dates to be revised processes and procedures that 6.1. Rectification of all findings involves REDD+ and any risks 6.2. Validation of FGRM to be barriers to potential strategies of DoDD Take challenges as for all activity data lessons/guidelines and deliverables Identification of 6..2. Improvement in the being highlighted held on June 15th support involved А A A Чe highlighted some of the findings to address and barriers to potential strategies of the drivers of The request for the revised dates was considered. It was reiterated the need to finalise the activity data are working on the land environment tribunal. Why should there be a REDD+ legislation. It was 90% native land will be REDD+. Not only forest but other land uses like agriculture where money is 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 She highlighted that from their findings there were 3 existing, potential REDD+ grievance 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 discussed that because this was a new product that is to sell carbon. The value of carbon stands at provided an overview of the consultancy and updated on how they reviewed and assessed existing mechanisms in Fiji. Critical takeaways included legislation, benefit sharing and a national land use All challenges noted to be regarded as a learning process which we can improve our 6.1. Ms. Corey introduced Integra and the team as well as the purpose of the consultancy. She FGRM systems in Fiji, conducted an institutional assessment together with a potential risk analysis. Tools being used for the analysis is it remote sensing tools change the tools use something Data forestry data Fiji's data should be held with the Ministry of Forests, regional like SOPAC 7.1. Mr. Baya as part of the DoDD consultancy team presented the update on the consultancy. coming in. Carbon ownership (who owns the carbon) and the risks that will be involved. 6.3. Members were requested to read the FGRM reports before the validation on June $15^{
m th}$ Take concern on our repetition, WB particular on the TOR. FD got a lot of learning ERPD to submit by end of this year summarise those study into it daily basis, policies in place to get historical and accurate data. should assist. Make concrete step on the same workshop to be carried out on 20-22 March, 2018. as it affects deliverables of the consultancies. Learn from our challenge and improve on it. procedures and processes from deforestation and degradation. plan for Fiji. A АА A (FGRM) report deforestation Validation of degradation consultancy Mechanism Analysis of and forest Update on drivers of Grievance Feedback Redress (DoDD) 2 <u>ن</u>

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8. Live & Learn Drawa Update	 8.1. Ms Christopher provided a project overview, project timeline (methodology and validation), March TLTB signed, biodiversity survey paroxtonomy update, perifarm, 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 	8.1. Follow up on the activities undertaken at Drawa and provide an update on the Nakau Methodology Framework8.2. Provide an	REDD+ Unit, Ministry of Forests
	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+	requested for the Drawa project and the hybrid approach8.3. A national	
	8.3. Chair thanked extensive presentation. LLEE/Drawa project. Suggest RSC to run a workshop to develop this framework, national one, Drawa	workshop to be contracted by RSC for the Drawa project	
	PAC also looking at this, good to do it now, cost of the venue Focus group to discuss the paper – Governance WG review paper; present to RSC		
	June – July discussion		
9. CSO Platform	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	9.1. Follow up on the activities to be undertaken	
	ANSAB REDD+ Project	REDD+ awareness to be	
	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.	conducted by mid- June	
	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.		
10. Update on REDD+ Emalu pilot site	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 Matagali 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	10.1. Monitoring and evaluation of the pilot sites to be strengthened	
	10.2. The Emalu landowner consultation, Matagali members were updated with the lease process and lease financial arrangement. Matagali members were updated on the lease process and lease	10.2. Lease process and financial arrangement to be confirmed	

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	financial arrangement during the Emalu landowner consultation		
	10.3. 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.	10.3. Activities to be undertaken at pilot sites to be reviewed before commencing	
	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 crassland area in the next 2 vears.		
11. Members' updates	Drawa LO rep. Thanked government for their support and especially USP's Marika and his team	Documentation of all activities, processes, agreements to be	
	Emalu Thank secretariat for the support, field work =, GIZ for the support. FGRM	proncient to avoid data deficiency	
	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 3 rd week of June retirement		
	Ridge to Reef (R2R) with Department of Environment for a special meeting to talk on the REDD+ component	A proposed new pilot site for	
	Mangrove when and where, blue carbon workshop by CI because of data deficiency	REDD+ to encompass the ridge to reef concept	
	Considered in the future new pilot site, include a coastal system include mangrove, beach		
12. Other Matters	World Bank mission, RSC special meeting	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 praver llaitia Leitabu at 4.50pm.		

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Certificate Number: RG 0071 Registration Number of the Institution: RGN 0055/14 Date of Issue: for the period from 07/12/2018 to 07/12/2023 as required by the Higher Education Act 2008 is registered with the Fiji Higher Education Commission as a FVT HIGHER EDUCATION COMMISSION Que **Certificate of Registration** Forestry Training Centre This is to certify that Vocational School Director Chairperson 07/12/2018 18/12/2018 Date Date 11/12/2018

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 <u>COSTA RICA</u>

- 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 <u>RECOMMENDATIONS</u>

- 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 Serves' (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 socioeconomic 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.

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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 Eliki 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

- 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.
- 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 eventhough 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 GEFPAS4 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 Mareqeti Viti (NFMV) and National Trust of Fiji (NTF) and also donated by individuals.
 - For sustainable financing on protected area the Sovi Basin provides an incountry 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
То	Mateo W Lagimiri – <u>mateo.lagimiri@parliament.gov.fj</u>
Сс	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 REPORTS

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

No.	Witnesses	Page No.
1.	Ministry of Infrastructure, Transport, Disaster Management and Meteorological Services Management of Rural Electrification Program	Will be made available in due course
2.	Energy Fiji Limited Management of Rural Electrification Program	Will be made available in due course
3.	Ministry of Forestry Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007	2

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

	Interv	viewee/Submittee: Mini	nistry of Forestry	
	<u>In Att</u>	endance:		
Conse	1) 2) 3) 4) 5) ervation	Mr. Pene Baleinabuli Ms. Sanjana Lal Mr. Semi Dranibaka Mr. Ilaisa Tulele Ms. Deborah Sue n	Permanent Secretary Conservator of Forest Director Research & Development Programme Team Leader Fiji REDD + Director Forest Resource Assessment and	
	 6) Mr. Mohammed Shorab 7) Ms. Olivia Vakaloloma Office of the Auditor-General 1) Mr. Kuruwara Tunisalevu 2) Mr. Lote Naicavu 			
			 Principal Economic Planning Officer Director 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 (iTLTB) 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 iTLTB. The iTLTB 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

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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

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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

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Follow-Up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007 Thursday, 19th March, 2020 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 welldetailed 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

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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 though 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 19 | Verbatim Notes – Ministry of Forestry **Follow-Up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007** Thursday, 19th March, 2020 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

21 | Verbatim Notes – Ministry of Forestry Follow-Up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007 Thursday, 19th March, 2020 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 24 | Verbatim Notes – Ministry of Forestry **Follow-Up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007** Thursday, 19th March, 2020

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 Radrodro 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 26 | Verbatim Notes – Ministry of Forestry

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

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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.

30 | Verbatim Notes – Ministry of Forestry Follow-Up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007 Thursday, 19th March, 2020 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 nonwood 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.

32 | Verbatim Notes – Ministry of Forestry Follow-Up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007 Thursday, 19th March, 2020 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?

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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.

35 | Verbatim Notes – Ministry of Forestry Follow-Up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007 Thursday, 19th March, 2020 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 37 | Verbatim Notes – Ministry of Forestry Follow-Up Audit on the Progress of Implementation of Policies and Strategies in the

Fiji Forest Policy Statement 2007 Thursday, 19th March, 2020 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. Then New You were the source of the section.

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.