



Prime Minister and Minister for Forestry Hon Voreqe Bainimarama with senior management and staff at the Ministry's first quarter review

## Forestry's 2021 – 2024 Economic Recovery plan to generate \$400m

2021 and indeed 2020 were extremely challenging years for the Fijian Government, the Ministry and the Fijian people. COVID-19 may have knocked us down but we're definitely not out as the Ministry of Forestry has a 3-year recovery plan that will focus on economic growth, improving incomes and food security, while also ensuring that our forest resources are managed sustainably, to be healthy for generations to come.

With tourists returning to our shores this month, 2022 will be our comeback!

According to the Prime Minister and Minister for Forestry "our Ministry is testament to this, as although we only have a budget of \$13.2 million, by working with the private sector, we have already generated about \$49million in export revenue in the first five months of this financial

year, which is 39.5% of our targeted income. Our forecast is to generate at least \$124million by July 2022 and \$400million by 2024."

This \$49 million was generated through the export of pine, mahogany and raintree. With continued support to the industries, export revenue is expected to meet or surpass the estimated target for 2021-2022.

### First Quarter Review

At the Ministry's first quarter review meeting on Wednesday 22 December, the Permanent Secretary for Forestry, Mr. Pene Baleinabuli acknowledged staff for their commitment to assisting the Fijian Government to contain the COVID-19 virus. He said, "the Ministry of Forestry had one of the highest (per capita) compared to other agencies to commit to the national containment measures by committing more than 60% of its resources."

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Despite the diversion of resources, the Ministry continued to operate efficiently at the various stations and from home to deliver and achieve 28% of the target work set out in the Ministry's costed operational plan for 2021-2022.

"This is an exceptional achievement against the benchmark of 25% for the 1st quarter", acknowledged Mr. Baleinabuli. He further urged the staff to continue to work together to bring to fruition the Ministry's 3 year economic recovery plan which was developed at the beginning of this financial year.

The Prime Minister and Minister for Forestry who was also present at the first quarter review meeting said "we need to continue the momentum of re-energising our economy and our on-going efforts to transition into a progressive and prosperous Nation".

#### **COP26 and 30MT15Y**

The Prime Minister and Minister for Forestry further added that "as the Ministry's work needs to be sustainable, one of the causes that I championed at COP26 is the Pacific's goal to keep the target of containing global temperature rise to within 1.5 degrees pre-industrial level.

In Fiji, our national goal of growing 30 Million Trees in 15 Years (30MT15Y) will help to combat the effects of Climate Change and also provide the opportunity for greater socio-economic development. The 8 million trees and mangroves planted across Fiji over the last 36 months greatly contributes to our commitment to end deforestation by 2030.

Tree planting also grows Fiji's forest carbon stocks, which is one of the objectives of our Forestry Emissions Reduction Program. Other parts of the program include developing a sustainable forestry sector and promoting conservation to perpetually support our basic needs for clean water and air, and thus enhance livelihoods for communities and all Fijians. We may be a small island developing state, but our local efforts all add up in the global fight against Climate Change."

#### **Sustainable Harvesting**

The Ministry's target to earn \$400million by 2024 will be done sustainably with tree planting being made a condition of Harvesting License renewals. This condition ensures that all contractors replant the same number of trees that they harvest. Sustainable harvesting is a win-win situation for the landowners, contractors and the environment as replanting means that this generation has the opportunity to earn from their

forest resources but also have peace of mind knowing that it's not a one-off payment as the future generation can also reap this same reward.

Contractors replant knowing this corporate social environment responsibility means that their Harvesting Licenses can be renewed and sustainable harvesting also contributes to the 30MT15Y tree planting revolution and the fight against Climate Change.



Forest inventory in Fiji



Trunk measurement for carbon estimates

Pictures: GIZ/JHHofmann



# Fiji's Forestry **Emission Reductions** Payment Agreement now Effective with the Climate Change Act 2021



Fighting for their future Source UNEP

The REDD+ (Reducing Emissions from Deforestation and Forest Degradation through sustainable management of native forests and the establishment or enhancement of forest carbon sinks) work in Fiji began in 2009, through the support of the German Government funded GIZ project and the Secretariat of the Pacific Community (SPC).

In 2011, the REDD+ Policy was launched to guide preparatory work towards emissions reduction with forests and other land-based sectors identified as the key development platform. Fiji became a participant country in the Forest Carbon Partnership Facility (FCPF) with the World Bank in 2013 and a year later in December 2014, the FCPF authorized a grant funding of US\$3.8 million to support preparations towards engaging in a future REDD+ performance-based system. The grant agreement for Fiji's Readiness-Preparation Proposal readiness fund was signed in May 2015. An additional \$2 million was provided in 2017. This additional funding was to assist the Fiji National REDD+ Program to carry out more awareness campaigns to stakeholders and to strengthen the capacity of existing institutions in the forestry and agriculture related sectors dealing with sustainable land management and sustainable forest management.

The grant has also supported the development and improvement of systems, processes and institutional arrangements that strengthen Fiji's governance, management, monitoring and reporting of changes in forest cover and land-based activities, whilst facilitating its preparedness to enter into carbon trade. The key areas of development include: the development of district-level integrated land use plans, the National Forest Inventory and biomass calculation, establishment of a safeguard information system and the enhancement of the Forest Management Information System.

## **First SIDS to enter into Forest Carbon Trade**

Fiji was included as 1 of 19 countries considered under the FCPF Carbon Fund (FCPF – CF) funding portfolio for carbon trade after presenting its national Emission Reduction Program (ER-Program) on July 10, 2019. The Attorney-General and Minister for Economy, Honourable Aiyaz Sayed-Khaiyum, on behalf of the Fiji Government and its people, signed the landmark agreement – the Emission Reductions Payment Agreement (ERPA) with the FCPF-CF of the World Bank on January 28, 2021, making Fiji the first Pacific Island Country and Small Island Developing State in the

World to enter into an ERPA with the FCPF Carbon Fund.

The five-year agreement, which is backdated to July 11, 2019 until December 31, 2024, basically means that Fiji will implement and improve its forest and land based activities and management regimes in order to reduce deforestation and the incidences of degradation, whilst dedicating forests as carbon sinks to sequester 2.5 million tons of carbon dioxide and other greenhouse gases. The FCPF Carbon Fund will make result-based payments of USD 12.5 million, equivalent to F\$26 million, upon verification.

## **Empowered by the Fiji Climate Change Act**

With the enactment of the historical Climate Change Act 2021, Fiji's ERPA has fulfilled both conditions of effectiveness and can now move forward in carbon trade agreement. This was confirmed by the World Bank's Country Director Papua New Guinea & Pacific Islands East Asia and Pacific Region, Mr Stephen Ndegwa, in his letter on 8 October, 2021 to the Attorney-General and Minister for Economy and Climate Change.

At the passing of the Climate Change Act, the Prime Minister and Minister

for Forestry, Honourable Voreqe Bainimarama stated that the Act legally binds Fiji to its commitment of net-zero carbon emissions by 2050. The Act further provides a legal framework for a carbon-neutral and climate-resilient Fiji by committing to the 100% sustainable management of Fiji's ocean and climate mitigation and adaptation through nature-based solutions, with provisions that allow the transfer of a "title" to Emission Reduction (ER) to facilitate carbon trade; a title in this context is the lease issued over an area of land dedicated for the purpose of the ER-Program and on which REDD+ activities will be implemented to establish and/or enhance forest carbon sinks.

Fiji's Forestry ER program covers 90 percent of Fiji's landmass, focusing on the islands of Viti Levu, Vanua Levu and Taveuni, in which 86 percent of the population live. The program aims to reduce forest carbon emissions by 2.5 million tonnes over five years and will also contribute to the restoration of ecosystem services essential for increasing resilience to climate change, such as soil retention and flood regulation.

### Benefit Sharing Plan

According to REDD+ Program Team leader, Mr. Ilaisa Tulele, the other condition of effectiveness met under the ERPA is the development of an advanced draft Benefit Sharing Plan (BSP) that is expected to guide the fair and equitable distribution of carbon

benefits generated as a result of the ER-Program.

The advanced draft Plan, developed through an extensive iterative stakeholder consultation process, has drawn from the existing models of benefit sharing mechanisms that are supported by laws and policies; ensuring equitable, transparent and the respect of the rights of the resource owners.

"The Ministry of Forestry has in previous years attempted, with great difficulty, to champion and firmly ground the concepts of Sustainable Forest Management (SFM) and Sustainable Land Management (SLM) in the management of Fiji's natural landscape. The slow uptake of these concepts has been due to the lack of alternative arrangements, sources and forms of income to match or surpass revenue generated from forest extraction activities, such as mining, harvesting and/or gravel extraction and supporting community-based development projects, which are the main underlying cause to widespread deforestation and forest and land degradation," he said.

### Carbon as an Alternative Income

Mr Tulele said the ER-Program (and the ERPA) has now provided an alternative form of income as an incentive through the result-based payment, to practice sustainable and sound husbandry practices in the management and development of forests and land.

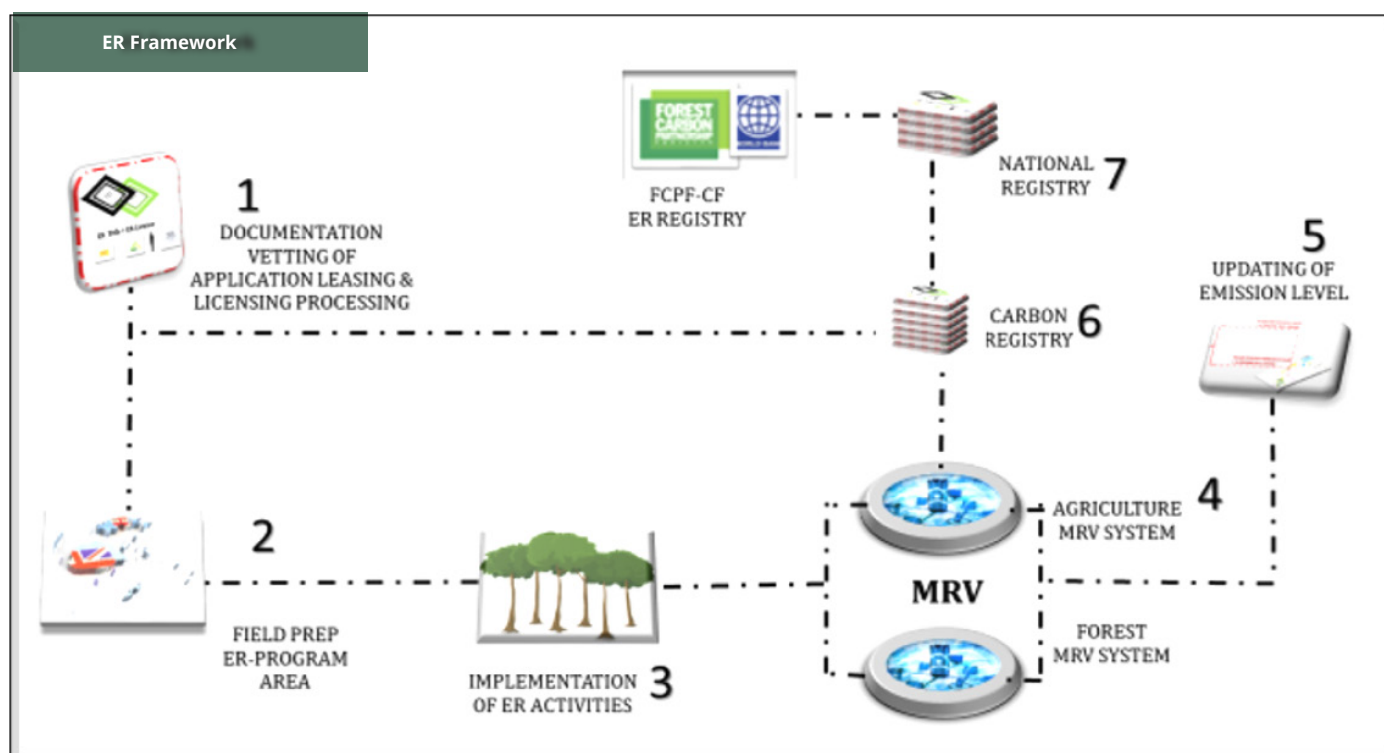
"All participants in the ER-Program will be rewarded and receive an equitable share of the carbon payments based on their level of participation and performance, and is anticipated to change behaviour towards the permanent inculcation of sound management habits and practices."

The program will address the main drivers of deforestation and forest degradation through integrated land use planning, native forest conservation, and sustainable pine and mahogany plantations. Other aspects will focus on community-driven afforestation, climate-smart agroforestry, and alternative livelihoods initiatives. These efforts are designed to provide job opportunities and improve livelihoods for local communities.

There will also be training and agricultural extension services conducted to establish community plantations and woodlots as well as improving kava and vanilla agroforestry systems. These sustainable land-use techniques help to boost incomes while also reducing pressure on forests.

### Halving Carbon Emissions by 2030

Prime Minister Bainimarama continues to emphasise in international forums, including at the recent COP26, the need to reduce global carbon emissions, and importantly to develop national adaptation plans to help communities who are facing the full





brunt of the effects of climate change.

"Much of this COP for Fiji is about securing plans that halve global carbon emissions by 2030 -- which we know is necessary to keep 1.5 alive. But today's discussion isn't about "1.5" but rather "1.2" -- the fast-approaching threshold of warming that is already devastating so many of our communities.

"We see its consequences in the barren reefs, burning forests, and parched farmlands that have come to define the climate crisis. We, humankind have done this through our reckless levels of carbon emissions. And we are suffering for it alongside every organism on the Earth -- including the very food we eat. Our food systems are buckling under the strain of storms, floods, droughts, erratic weather and the rising seas. If we fail to fortify them, widespread food shortages will feed the forces of chaos. The mass starvation that ensues will lead to mass migration and mass unrest that will render entire societies ungovernable."

Mr Bainimarama said through a comprehensive and integrated legal framework food security has been included into Fiji's three year-old National Adaptation Plan to ensure that Fijians can continue to put locally-grown, nutritious produce on the table—even when storms intensify, droughts prolong, and the seas rise. Food security is also one of the adaptation targets in Fiji's National Determined Contributions (NDCs).

#### National Action Plan

"Our National Action Plan on Combatting Desertification -- launched in 2007 -- is at work today combating degradation. Eight million seedlings have already gone into the soil since 2019 as part of our commitment to plant 30 million trees in 15 years. Through an Agriculture Rural Land Use Policy, we have adopted sustainable landmanagement technologies with the goal of having no net land degradation by 2050."

For communities' participation in Fiji's Emission Reductions Program, the next step is sitting down to discussing and understanding the impacts of reducing emissions from deforestation and forest degradation, and understanding the solutions through sustainable forest management and sustainable land management.

If communities want to participate in Fiji's forest ER Program, a formal report from a meeting of their landowning unit endorsing the commitment, with minutes from the meeting, must be submitted to the Ministry of Forestry. Then the community must work with the Ministry and other relevant agencies to identify land that could be leased and committed to appropriate activities under the ER Program.

Small holder farmers with a lease land title or freehold land may wish to write an expression of interest to the Ministry of Forestry.

## Yasawa and Mamanuca Islands focus on Forest and Landscape Restoration



Beekeeping training

With support from the German Government through the International Climate Initiative (IKI), the Yasawa (Naviti district) and Mamanuca (Malolo district) Islands will be used as pilot sites for the Forest and Landscape Restoration (FLR) project. The sites were chosen as a result of the Ministry

of Forestry's efforts to protect and restore dry forest ecosystems in Fiji.

Tropical dry forests are among the most endangered forests in the Pacific region and the world where most of these forests have long ago been converted to 'talasiga' savannas

through dry season burning and anthropogenic activities. Of the few remnants and endangered patches of dry forests in Fiji, some are found in the Mamanuca and Yasawa group of islands. These remnant patches have endemic species but continue to be threatened by anthropogenic





Soil testing with communities

disturbances due to a lack of knowledge and awareness on the importance of Tropical Dry Forest at the community level, through competing land use priorities, unsustainable land management and a lack of conservation management and action plans. Furthermore, natural disturbances from cyclones and natural disasters cause invasive species like *Leucaena leucocephala* to encroach on and later dominate these forest areas.

Prior to the launch of the FLR project in the two districts, collaborating partners including the Food and Agriculture Organisation (FAO), representatives from the Ministry of Forestry, Ministry of Agriculture, Ministry of Fisheries, Ministry of Lands and Mineral Resources, Conservation International, Commissioners Office – West, Nadroga and Ba Provincial Office, iTaukei Lands Trust Board (TLTB), Vinaka Fiji and Mamanuca Environment Society were engaged in collating baseline information, conducting training for seed collection and propagation and bee keeping, and awareness and community consultation at the 13 project sites. The baseline assessment is important as it provides information on current status of the project sites prior to project implementation and thus sets the basis and indicators to be measured as part of measuring project impacts. The three weeks activity was also an opportunity to meet with communities and report back preliminary findings from the baseline assessment.

The baseline assessment resulted in the delivery of various outputs including, current land use and proposed land use map/plan, proposed sites for restoration identified by the communities, draft Integrated Village Development plans with respective restoration management plans, status of ground water and recommendations for conservation and protection, status of fish and coral populations and seed collection, seed collection and seed propagation training to 71 community members from Malolo and Naviti Districts, 56 of whom are females and 15 are males.

Apiary (Beekeeping) training was also conducted for selected youths from the 13 communities. 28 youths were trained of which 8 were females and 20 males.

#### Paris Agreement in Action

Speaking at the launch of the two sites in mid-December, Executive Director Operations and Services, Manasa Luvunakoro said “the IKI FLR Project is an implementation of the Paris Agreement in Action – Upscaling Forest and Landscape Restoration to achieving the National Determined Contributions (NDCs) and ties in well with the Fijian Government’s 30 Million Trees in 15 Years (30MT15Y) Initiative which aims to reforest degraded areas, increase forest cover and mitigate climate change impacts”.

He further acknowledged the endorsement and support of the communities in taking ownership of the project which was evident during

the launch and also the support of the two project partners, Mamanuca Environment Society looking after the Mamanucas and Vinaka Fiji looking after the Yasawas.

To mark the occasion, native and fruit trees were planted in Solevu village, Marou village and at the Ratu Lalabalavu School compound (Solevu, Malolo) where the launching events were held.

In order to ensure that the restoration is sustainable in the long term, socio-economic activities such as bee-keeping, value adding of staple crops and vegetables, wood and handicraft and floriculture training (orchids and flowers) linked to restored land will be developed. Farming tools and beehives were distributed to the villagers to support these livelihood initiatives in the communities.

With COVID-19 affecting the tourism sector, many people had returned to their villages to start agricultural or other economic ventures. While supporting livelihood initiatives, it is also important to plan appropriately to ensure that new agricultural and other economic activities have a minimal impact on the environment and that they also contribute to the sustainable management of existing natural resources.

Village headmen representing both districts acknowledged the consideration and efforts of the Fijian government and the two partners in selecting their districts as project sites



for FLR as this will help the communities in their socio-economic livelihoods whilst also mitigating the impacts of climate change.

### **Building resilience to Climate Change**

For the Naviti District, the launch of the IKI Project in Marou village was done together with the Pacific Island Forest Restoration Initiatives (PIFRI) project, a US Government funded project supported also by the Ministry

of Forestry. The role of PIFRI is to enhance the capacity of developing Pacific Island countries to plan, implement, and monitor restoration initiatives for the continual provision of ecosystems goods and services from forested ecosystems, improved carbon sequestration, and strengthened resilience to climate change. PIFRI project sites are in Soso and Muaira villages.

Collectively, the IKI FLR project sites in the Yasawa and Mamanuca Islands will be implemented over two years and aims to restore 400 hectares of degraded land, which will definitely improve the resilience of these island communities to Climate Change.

## **Fiji Pine restocks record breaking 4 million pine trees**



Orisi uses the Clinometer to capture accurate range, height and angle measurements

August 2021, the Fiji Pine Limited embarked on implementing Forest Management activities such as thinning and pruning as part of its operational silvicultural practice. This was done to ensure a steady supply of the diverse products that were needed in the local and overseas markets.

### **Thinning Operations**

In a normal plantation forest, trees often compete for growing space, sunlight, and nutrients. Thinning allows for the natural development process of a forest. At Fiji Pine Limited, thinning

provides an outlet for improving tree yields and growth. Within its 6 forest stations Fiji wide, teams of 10 - 12 individuals from the landowning units were deployed to carry out thinning on 4year old plantations as well as pruning of 6year old plantations, and slashing of pre-existing vegetation. Pre-commercial thinning is a labour-intensive and high-cost operation. Its application is usually confined to naturally reseeded areas, where there are too many stems per acre to allow good early growth. Thinning is done by cutting, chopping, and slashing,

an exercise that requires intense planning and where necessary station heads have had to revise plans to accommodate the thinning, pruning, and slashing activities within its operational schedules.

For the respective Fiji Pine forest stations, this means;

1. Procured forest growth and rate
2. Increased landowner participation in forest management practices
3. Heightened awareness of resource



management amongst Land Owning Units (LOUs) to protect their forests

4. Proactive approach towards good public relations
5. Increased forest sustainability

According to Mr. Vimlesh Kumar, Fiji Pine Chief Executive Officer “the thinning operation provides the opportunity for landowners to understand how forestry works by engaging them in the work culture. It also allows the Pine Group to elevate the socio-economic aspect of landowner livelihoods within the remote rural areas of Fiji Pine leased areas in both Viti Levu and Vanua Levu”.

Operating within COVID-19 restrictions, Fiji Pine decentralised forestry

operations like thinning in order to ensure the successful execution of its forest management plans. This was no easy feat, as careful consideration of COVID protocols were observed / implemented from recruitment to the operational phase.

### Restocking Drive

Planting operations for 2021 stands at a record breaking 4,213.40 hectares. This is a momentous achievement, not only for Fiji Pine Limited but for the landowning units as well as the partnership for restocking equates to the planting of 4,680,643 million pine trees. The restocking is testament to the Pine Groups commitment to ensuring that forest sustainability is executed with proper planning and strict adherence to the vision and goals set by the company.

### Restocking Statistics

Year	# of Pine Trees Planted	Area Planted
2020	2,048,426	1843.74ha
2021	4,680,643	4,213.40

Heading into 2022, Fiji Pine is aiming high and is optimistic of reaching its restocking target of 7,300ha. Teamwork, resilience, and good camaraderie is what will drive the Fiji Pine Limited team to achieving this target. The company will invest close to \$8million for the restocking campaign.





# Fiji Pine **Connects** Rural Schools and Villages to the World



Ratu Saimoni Raseru Memorial School Computer donation

A passion for improving the quality of life for landowners is the driving force behind the community initiatives that the Fiji Pine Group of Companies engages in.

The Group is now prioritising its investment on quality education for pine landowners where rural based schools that are situated within the pine leased areas are given the opportunity to have improved school facilities and internet access.

According to Fiji Pine Chief Executive Officer, Vimlesh Kumar "this has not been an easy feat since it involved working in collaboration with internet suppliers, establishing electricity for those villages that needed it to be set up before internet could be supplied and having to identify a site to build the internet towers."

This year, Fiji Pine has invested a total of \$365,000 in education assistance. This assistance includes paying fees for tertiary students, providing laptops to facilitate their online/distance learning programmes, upgrade of schools facilities and provision of study equipment for rural based schools.

Recently, Nasesevia Secondary School,

a rural school situated in the interior of Nadi and where school children of the landowners of Uto, Nawaqadamu, Vunamoli and Vagadra attend was assisted by Fiji Pine with facilities that will enhance and uplift the standard of their learning through a donation of desktop computers, printers, student desks and chairs. The company also assisted in the setup of a satellite internet connectivity that will guarantee a reliable and stable internet connection to the school for students and teachers.

The company has recently extended its assistance to landowners to include the setup of internet connectivity in remote leased areas. Previously, villagers had to walk more than 2-4 kilometres to access connectivity but now they have this in the comfort of their schools and homes.

Mr Kumar further added that "we view this initiative as one of our important commitments towards digitization and access to unlimited opportunities for our landowners - opportunities in education for their children, access to online resources, access to untapped markets for their agricultural produce, access to Government's online portal where most of the government services are now delivered, linking up with

families, friends in Fiji and abroad.

Bridging this gap has been heart-warming and rewarding for Fiji Pine team as we witness first-hand the smiles, happiness and heartfelt gratitude for this unexpected assistance."

Villages who have been assisted through the satellite connectivity include:

1. Nalotawa Village in the Tikina Nalotawa which is situated in the interior of Ba Province.
2. Nasovotava Village in the Tikina of Waicoba situated in the interior of Sigatoka Valley.
3. Vunamoli Village in the Tikina of Rukuruku situated in the highlands of Nadi
4. Agadra Village in the Tikina of Nasesevia situated in the interior of Nadi.

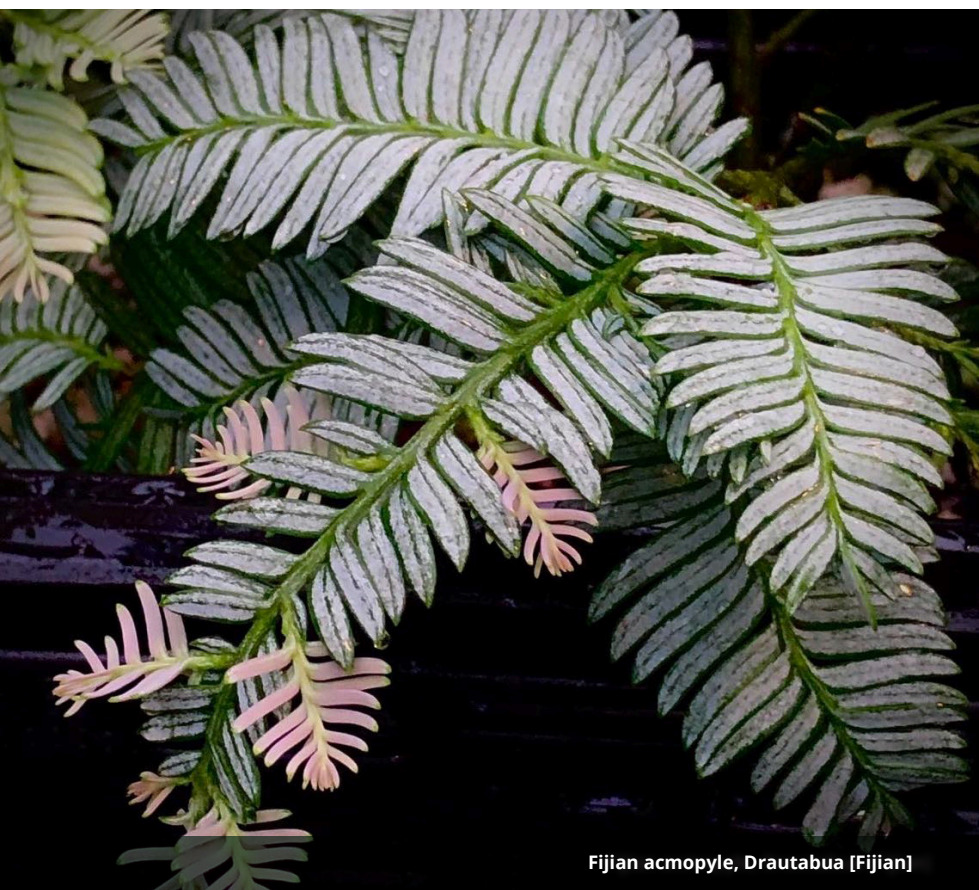


Not only has the Company contributed to the construction and execution of capital projects for its landowning units, but more importantly it has improved the standard of quality education and village connectivity to the World Wide Web.

The Fiji Pine Commission came into being as a body on the 1st of July 1976 under the provision of the Fiji Pine Commission Act (Cap 151). The primary function of the Commission was to establish a viable forestry industry based on planted forests. Much of the plantation development is on i-Taukei land and the duty of the Commission (now Fiji Pine Limited) includes involving landowners in its commercial activities on terms that aim to ensure the continuing viability of the industry. The areas for pine planting were mostly degraded grassland which was not suited for other activities.



## **Drautabua**, a rare tree in Fiji's Upland Rainforests - Fiji's living fossil



Fijian acmopyle, Drautabua [Fijian]

Fiji is home to many species of endangered/ endemic flora and fauna. This week we highlight the (*Acmopyle sahniana*) or Drautabua, as is it commonly known in Fiji. The Drautabua has been previously successfully artificially propagated at the Atlantic Botanic Gardens and was first successfully artificially propagated in Fiji by the Ministry of Forestry at its Colo-i-Suva nursery.

### **Natural History**

Drautabua is one of the Earth's most primitive plants. Fossil records show that it existed on the ancient Gondwanaland before it broke apart 100 million years ago into Antarctica, South America, and Australia. That was an extremely long time before humans entered the fossil record only 0.25 million years ago. There is nothing on Earth like Fiji's *Acmopyle*. Its closest relative lives in New Caledonia (which is also a Gondwanaland relic), but even that one looks very different. Collected as early as 1877 and identified as early as 1920, the Drautabua was not formally described until 1947 (Buchholz and Gray 1947).

### **Description**

The Drautabua has a straight tree trunk, up to 14cm in diameter, and can grow to 8-12m



high in the untouched forest. However, in disturbed areas, they only grow up to 4m. Drautabua, the only name recorded for the tree originates from the shape of its leaflets which are like that of a tooth of a whale or tabua. Drautabua trees have few branches and most of them are on the top half of the tree. The leaves are dark green (features as the logo for NatureFiji-MareketiViti) and have a waxy appearance on the upper surface, and a dry, whitish appearance on the bottom surface. The leaves form two rows on the stem, which rises from the tree trunk. The leaves only grow up to 2.4cm in length, unlike the longer needle-shaped leaves of pine trees. The young leaves are reddish purple in colour. The reproductive structure of the Acropyle, like other members of its family, is a coneshaped pollen cone. The female cones are fleshy. The seeds have green coloured fleshy receptacles when mature.

### Distribution

Today, the Drautabua is just managing to survive, it is known from six small populations on isolated mountain ranges of Viti Levu. The population on Koroyanitu is feared extinct as searches by experienced botanists in the 1990s failed to find it. It is feared that the cyclones of the 1970's and 80's which battered Koroyanitu mercilessly were too much for Drautabua there. Another population, perhaps the largest known, is right in the middle of the prospective Namosi opencast copper

mine. The original population recorded from Vakarokosiu in Namosi in 1927 continues to survive today.

### Habitat Ecology and Behaviour

The Drautabua has a very specific habitat and has only been found in the Upland Rainforest of Viti Levu, at high elevations, along the top of very steep, narrow ridges. Populations have been found at sites located just below the elevation required for Montane Cloud Forests in Fiji. These parts of the forest are usually enveloped by cloud and exposed to strong winds. The Drautabua can survive on soils of low fertility, even on just a small cliffside patch of soil, but are unable to do so at lower elevations.

The tree can mature at around 5-10 years, at a height of 1m. At this age and height, the plant may be able to reproduce if the conditions are favourable. The reproductive cycle of Drautabua is unknown. Studies on this species have revealed that it is a unique member of the Pine family in that it is monoecious, meaning that both male and female cones come from the same tree. In contrast, many members of the same family are dioecious, where male and female cones come from different trees.

However, it has been observed that the two sexes do not occur on the same plant at the same time. They alternate between reproductive seasons. Until the reproductive behaviour of this

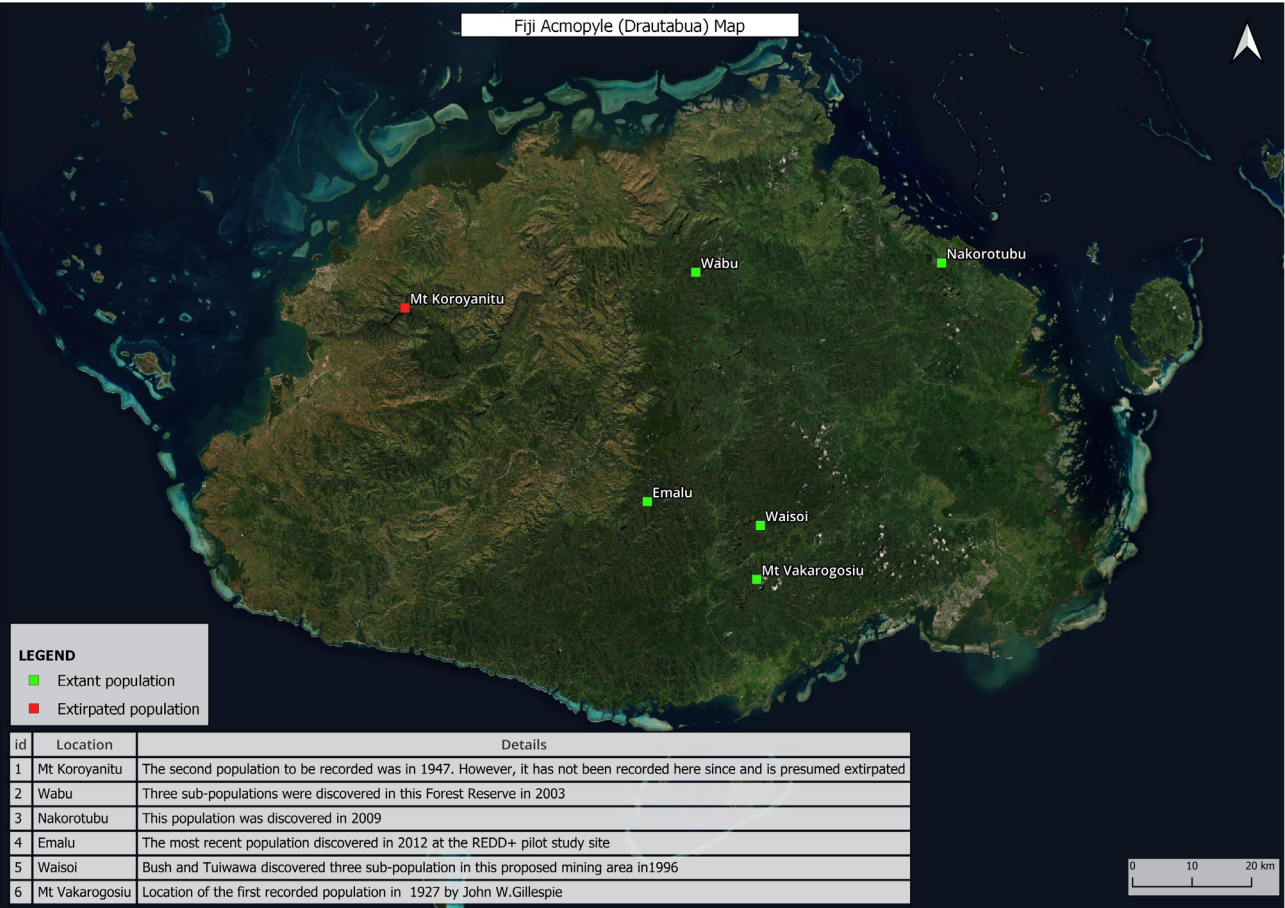
plant is more intensively studied, we can only assume that it reproduces like other members of the Pine family whereby the pollen is transferred from the male cones to females via the wind. This mechanism of wind pollination probably accounts for the preference of this species to grow on the breezy ridgetops of Viti Levu. While the pollination process has never been observed, the fact that the seeds have a fleshy green receptacle suggests that native frugivorous birds and bats feed on the fruit, thus aiding in the dispersal of this plant to other ridges and other parts of Viti Levu.

### Threats

Drautabua may occur in other little researched montane forest areas in Fiji, but its current distribution of just three widely dispersed populations (in six localities) gives us little assurance of its future survival. It is not known if it previously had a wider population distribution on Viti Levu, but the apparent loss of the Mt. Koroyanitu population last recorded in 1947 is indicative of a long-term decline. If a long-term decline is involved, Acropyle sahniana may be extremely vulnerable to climate change induced changes to the upland microhabitat to which it is currently confined.

### Conservation Status

The Drautabua is critically endangered because of its small, declining population and has been



listed as such by the IUCN (2013). Preliminary efforts have been made to search for other populations and to conserve the known populations, as well as try to grow seedlings at lower elevations. No significant success was achieved.

In 2003, just when it seemed that the world's only viable populations were in the Korobasabasaga range and threatened by the Namosi copper mine development, another three reproducing populations were discovered in the Wabu Forest Reserve during a biodiversity study of the area by the members of the South Pacific

Regional Herbarium of the Institute of Applied Sciences of the University of the South Pacific and other environmental non-governmental organisations (NGOs). Since 2003, new populations have been discovered in the Nakorotubu Range forest (2009) and Emalu Forest (2012). The Wabu and Nakorotubu forest sites were within the destructive path of TC Winston in 2016.

These surveys initiated considerable conservation interest, and it is this interest amongst local biologists, NGOs, landowners and government agencies that may result in the eventual conservation action to protect this little-

known species. From 2014 to 2016, NatureFijiMareqetiViti and the Ministry of Forests embarked on a campaign to raise the national profile of this species and produced the species recovery plan which recommends the urgent actions needed to save Fiji's living fossil – the Drautabua.

In recognition of the need to promote its conservation, a Drautabua seedling was planted by the United Nations Secretary-General Antonio Guterres at the Boron House in Suva during his historic visit in 2019.





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## **In Memoriam**

### **Former Ministry of Forestry**

### **Late Hon Osea Naiqamu**

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2 August 1961 - 23 January 2022

#### **Career Highlights**

**June 2021:** *Member of Parliament*

**April 2017- 31 May 2021 :** *Minister for Forestry*

**September 2014 - April 2017 :** *Minister for Fisheries and Forestry*

**1999 – 2014 :** *Chief Executive Officer – Fiji Pine Trust*

**1997–1998 :** *Secretary of Fiji Pine Trust and Landowners, Business Development Trust Fund*

**1993 – 1994 :** *Pine Landowners Business Development Assistant*

**1988 – 1989 :** *Accounts Clerk, Fiji Pine Commission*

**1985 – 1987 :** *Recorder, Fiji Pine Commission*

**1983 – 1985 :** *Labourer, Fiji Pine Commission*

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Koro: Uto Village | Tikina: Rukuruku

Mataqali: Reiwaqa | Tokatoka: Uru

Yavusa: Reiwaqa | Yasana: Ba