

# Nursery visits for Fiji kava farmers

TECHNICAL REPORT

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Nursery visits for Fiji kava farmers

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# Acronym List

Acronym	Description
BAF	Biosecurity Authority of Fiji
GDP	Gross Domestic Product
MoA	Ministry of Agriculture
PHAMA	Pacific Horticultural and Agricultural Market Access Program
TTM	Taiwan Technical Mission

# Executive Summary

This report highlights the observations and lessons learned by three farmer groups in Fiji that were selected for study tours of established nurseries around Viti Levu. It also includes accounts of the progress made by the groups in establishing nurseries in their villages.

The selected farmer groups from the provinces of Lomaiviti, Naitasiri and Ra visited the Sigatoka Research Station, Taiwan Technical Mission in the Sigatoka Valley, and Bula Agro Ltd and Nature's Way Cooperative Ltd in Nadi during the tour. They also received financial literacy training.

Following the study tour, each group submitted a report detailing their experiences on the tour.

Nursery management expert, Sant Kumar, who is also a member of the Fiji Market Access Working Group, hosted the groups at his nursery – Bula Agro Ltd – where he trained them on preparation of potting media including the sterilisation of soil and raising seedlings. Kumar later visited the groups in their villages to follow-up on their progress after the tour.

The idea behind the establishment of these nurseries was that the farmers should not only focus on yaqona as an income-generating activity but should also include fruit trees and vegetables that could be included in the diet of families and also add to family income.

This report concludes that the concept of establishing and managing nurseries should be expanded to the other 11 provinces in Fiji to create a green revolution in agriculture.

# Report of Young Farmers Nursery Establishment & Management Training

## Introduction

In June 2017, three farmer groups and local Ministry of Agriculture officers from the provinces of Lomaiviti, Naitasiri and Ra were supported to visit the Central and Western divisions for a study tour of established nurseries, including the Sigatoka Research Station, the Taiwan Technical Mission, Bula Agro Ltd and Nature's Way Cooperative Ltd.

At Bula Agro nursery, they studied in detail the construction of nurseries, preparation of potting media including the sterilisation of soil and raising seedlings. It was clear after the tour that the farmers needed to return to their respective villages and apply what they had learnt. In addition, the nursery expert would carry out a follow-up visit to the villages after six months.

## Follow-up visits to the villages

### 1. Veivueti Youth Group, Tokou Village, Ovalau, Lomaiviti

The nursery expert visited the group on Monday, 6 November 2017, to determine the progress made so far and give any advice needed. After receiving the sarlon cloth from the Ministry of Youth & Sports, the group constructed a nursery 20m x 4m with local bamboo. They also constructed 2 benches made of bamboo and mesh wire.



*Veivueti Youth Club nursery at Tokou Village on Ovalau, Lomaiviti*



*Inside view of the Veivueti Youth Club nursery at Tokou Village on Ovalau, Lomaiviti*

The group used plastic planter bags (PBS) and local potting media to germinate 500 yaqona cuttings which have been transplanted in the field. They also raised cabbage and capsicum which was harvested and sold in the village. They also transplanted 50 Taiwan variety of guavas within the village grounds.

The group planned that in January 2018, they would plant 2,000 yaqona cuttings in the nursery which would then be transferred to the members own farms. The group also planned to plant more fruit trees, forest trees and vegetables for their own use and for sale to other farmers.

The group has made a good start and with the necessary support from the Ministry of Agriculture (MoA), the nurseries could become a model for nursery development and the overall development of agriculture on the island and in the province.

### **Shining individual - Ms. Vani Naucukidi**

One of the tour group members, female farmer Vani Naucukidi of Lovoni Village, decided to build her own nursery and start her own yaqona nursery. She has sold 300 seedlings at \$10 each to other farmers, including farmers in Suva. She has already purchased 1,000 PB5 potting bags and planned to expand the size of the nursery in the new year.





*Above Female yaqona farmer Vani Naucukidi in her nursery at Lovoni, Ovalau, Lomaiviti and with nursery expert Sant Kumar.*

## **2. Nabukenivatu Farmers Group, Naitasiri**

Nursery expert Sant Kumar visited this group on Tuesday, 7 November 2017 with Principal Agriculture Officer (Central Division) Tepola Seniloli. They have received some sarlon shade cloth and were advised to use local building materials such as bamboo to construct the nursery. However, the group has not made much progress.

### **Shining individual, Emosi Ganilau**

One of the tour group members, Emosi Ganilau, who's also a middleman dealing in yaqona, has already purchased the materials to construct his own nursery. He is very interested in handling the whole value chain, from establishing seedlings, growing them (besides the seven varieties he already has), buying green yaqona, drying it and selling at the market. At his own expense, he made a return trip to Bula Agro nurseries with his wife to go through the training again and provide the opportunity for his wife to see and learn what the group had learnt earlier in the year.



*Yaqona middleman Emosi Ganilau weighs yaqona.*



*Yaqona middleman Emosi Ganilau with freshly harvested yaqona.*

### **3. Nakorotubu & Saivou Farmers Group, Ra**

The farmers from the two villages of Maniyava and Balekinaga were visited on Tuesday 21 and Wednesday, 22 November 2017. Along the Kings Highway, the first group has constructed a nursery 15m x 4m using pine posts and other local material. However, this nursery is without benches and all potted seedlings are placed on the ground.

The group had received some yaqona planting material from the province of Serua via the Ministry of Agriculture and these had been germinated under the cool shade of a bamboo tree. About half of the stems planted died and the remainder are shown in the photo below. The farmers were advised to place the seedlings in the nursery so that they could harden and then be transplanted in the field.



*Yaqona seedlings under the bamboo trees*



*Yaqona seedlings brought out to harden in the nursery*

The group is keen to produce more seedlings but are having problems with obtaining more yaqona stems. The group in Saivou has received some sarlon shade cloth from the Ministry of Agriculture but has yet to begin construction.

## Conclusions and recommendations [by Mr Kumar](#)

1. Extension officers of the Ministry of Agriculture play a crucial role in the success of these farmer groups. In Ra, the knowledge gap between the group and the extension officer is quite big and so the group cannot be guided or taught by the officer.
2. The idea behind the establishment of these nurseries was that the farmers should not only focus on yaqona as an income-generating activity but should also include fruit trees and vegetables that could be included in the diet of families and also add to family income.
3. The concept of establishing and managing nurseries should be expanded to the other 11 provinces in order to create a green revolution in agriculture.
4. I strongly believe that many individuals will go into this sort of nursery venture in the future and they should be given technical advice and support.

# Veivueti Youth Group & Lovoni Farmers Field Trip Report

By Ms. Losana Nakato

## Report from the Ministry of Agriculture Locality Officer

Date	Activity	Remarks
21/06/17	<ul style="list-style-type: none"> <li>Left Ovalau at 0300hrs</li> <li>Arrived at Nausori at 0630hrs</li> <li>Participated in the opening Ceremony of the Central Agriculture Show at 0900hrs</li> <li>Attend Financial Literacy Training at 1100hrs</li> <li>Met Mrs. Losalini Leweniqila in the conference room at Ratu Cakobau House for farmers interviews and the farmers field trip logistic at 1600hrs</li> <li>Check in at Southern Cross Hotel at 1800hrs</li> <li>Debrief of day's activities</li> </ul>	14 farmers 5 technical staff from Levuka Extension office 1 Biosecurity officer
22/06/17	<ul style="list-style-type: none"> <li>Breakfast at the hotel at 0600hrs</li> <li>Checked out of the hotel at 0630hrs</li> <li>Departure for Sigatoka at 0700hrs</li> <li>Arrived at Sigatoka Research Station at 0930hrs</li> <li>Visited the TTM station at 1100hrs</li> <li>Visited the Tian Farm at 1200hrs</li> <li>Lunch in Sigatoka Town at 1300hrs</li> <li>Left Sigatoka Town for Nadi at 1430hrs</li> <li>Arrived at Divesh Nursey farm in Nadi at 1530hrs</li> <li>Checked in at Tanoa International Hotel at 1700hrs</li> <li>Debrief of day's activities</li> </ul>	14 farmers 5 technical staff from Levuka extension office 1 Biosecurity officer
23/06/17	<ul style="list-style-type: none"> <li>Breakfast at the hotel at 0600hrs</li> <li>Left the hotel at 0700hrs</li> <li>Arrived at Bula Agro, Votualevu, Nadi at 0800hrs</li> <li>Departed for Nature's Way, Votualevu, Nadi at 1200hrs</li> <li>Lunch in Nadi Town at 1330hrs</li> <li>Departure for Suva at 1400hrs</li> <li>Checked in at Southern Cross in Suva at 1800hrs</li> <li>Debrief of day's activities</li> </ul>	14 farmers 5 technical staff from Levuka Extension office 1 Biosecurity officer 1 PHAMA resource personnel
24/06/17	<ul style="list-style-type: none"> <li>Breakfast in the hotel at 0700hrs</li> <li>Farmers shopping in Suva City at 0900hrs</li> <li>Boarded Searoads bus from the hotel at 1230hrs</li> <li>Arrived at Natovi jetty at 1500hrs</li> <li>Arrived at Ovalau at 1800hrs</li> <li>Debrief at Tokou Village at 1900hrs</li> </ul>	14 farmers 5 technical staff from Levuka Extension office 1 Biosecurity officer

**DAY 1:**



*Financial Literacy Training at Ratu Cakobau House conference room*

**Day 2:**



*Farmers at Sigatoka Research Station*

**Day 3:**



***Farmers participate in the soil sterilisation process***



***Soil prepared for fumigation by Vani Naucukidi of Nasaumatua Village***

## Mr Kumar's General comments

I would like to thank the senior management of the Ministry of Agriculture for the provision of funds on this field trip and also PHAMA for the accommodation, per diems and organising visitation to selected sites.

I'm confident the farmers learnt a lot from the four-day field trip, especially the soil sterilisation process. They really appreciated visiting those sites and witnessing the processes with their own eyes after hearing about it from the media. They loved the involvement in the grafting and marcotting processes at Nacocolevu Research Station. The impact showed a few days after their return to the island as they started to collect soil and poultry manure for soil fumigation.

We look forward to more capacity-building for our farmers in Lomaiviti Province. This will assist farmers to better utilise their land and establish nursery farms in the province and also contribute a bit more to the national GDP.

### Names of participants

Participants			
1	Josua Kabulevu	Veivueti Youth Group	Male
2	Isake Bogileka	Veivueti Youth Group	Male
3	Iosefo Tui	Veivueti Youth Group	Male
4	Josefa Donu	Veivueti Youth Group	Male
5	Dick Tawake	Veivueti Youth Group	Male
6	Keith Soli	Veivueti Youth Group	Male
7	Iowane Kivi	Veivueti Youth Group	Male
8	Waisea Duanivalu	Veivueti Youth Group	Male
9	Serevi Makeola	Veivueti Youth Group	Male
10	Vere Kabulevu	Veivueti Youth Group	Female
11	Rosalia Naimatau	Veivueti Youth Group	Female
12	Leone Naimatau	Veivueti Youth Group	Female
13	Sitiveni Kabulevu	Advisor (Veivueti Turaga-ni-Mataqali)	Male
14	Vani Naucukidi	Lovoni farmer	Female
16	Losana Nakato	MoA	Female
17	Timoci Toga	MoA	Male
18	Kuini Moce	MoA	Female
19	Silina Marama	MoA	Female
20	Samu Novo	MoA	Male
21	Francis Wise	BAF	Male
22	Losalini Leweniqila	PHAMA	Female

# Nabukenivatu Farmers Field Trip Report

## Acknowledgement

We thank the Ministry of Agriculture, especially the Principal Agriculture Officer (Central) Ms Tepola Seniloli, PHAMA rep (Ms Losalini Leweniqila), Senior Agriculture Officer (Naitasiri) Mr Adriano Tabualevu and Locality Officer Mr Sele.Balaicikobia for selecting farmers from Nabukenivatu Village in Naitasiri to take part in a field trip to the Western Division to develop our understanding of vegetable nurseries and crop husbandry.

## Introduction

The Nabukenivatu Farmers Group consists of 22 farmers from the village and neighbouring villages. It was formed with the vision of upgrading our farming standards, stopping the urban drift of our young people and reducing poverty in our area by utilising vacant land that belongs to our mataqali.

Yaqona and dalo are our major source of income while other crops that we grow are for consumption at home. Our group has been a supplier of yaqona cuttings to areas around Viti Levu and Koro Island over the past few months. One of our farmer members recently had a yaqona demo planting with six varieties. His farm has been visited by the Senior Agriculture Officer (Naitasiri) and the Locality Officer.

We have agreed to set up a yaqona nursery and the members have also agreed to maintain their planting targets.

## Site Visits

### A. Sigatoka Research Station

We were briefed at the Sigatoka Research Station by senior staff on the importance of crop maintenance and proper husbandry management practices.





## B. Nature's Way Cooperative

The management greeted us and briefed us on their roles and the processes and procedures they follow along with the system used by the farmers to supply crops and the actual crops they provide.



### C. Bula Agro

A former Ministry of Agriculture staff member, 79-year-old Sant Kumar, owns Bula Agro nursery. He briefed us on nursery husbandry requirements and soil sterilisation, and the importance of maintaining a storage shed, especially during the cyclone season.



## Other photos taken during the field trip



## Conclusion

During our visit we discussed the possibility of establishing a nursery for yaqona and other crops In Nabukenivatu to develop our yaqona yields and improve our plantations in the years to come.

We look forward to other farmers' groups in Naitasiri Province being given the opportunity to be part of future field trips such as this.

Vinaka vakalevu.

May God bless us all.

## Names of participants

No.	Farmers Name	Location	Gender
1	Maro Vakatawabai	Nabukunivatu	F
2	Jermaia Roko	Nabukunivatu	M
3	Iowane ILisavani Vualiku	Nabukunivatu	M
4	Samuela Vakatawabai	Nabukunivatu	M
5	Eroni Tauyavu	Nabukunivatu	M
6	Rupeni Obaobaivalu	Nabukunivatu	M
7	Esala Batiyalo	Nabukunivatu	M
8	Simione Caginivalu 2	Nabukunivatu	M
9	Iowane Cagilele	Nabukunivatu	M
10	Setareki Yavala	Nabukunivatu	M
11	Tepola Seniloli	MoA	F
12	Adriano Tabualevu	MoA	M
13	Apenisa Rarasea	MoA	M
14	Asenaca Small	MoA	F

# Ra Yaqona Farmers – Nursery Tour Report



## Introduction

The farmers in this program were representatives of Ra yaqona farmers who currently cultivate yaqona as their main source of income on a long-term basis. The group consisted of farmers from Nakorotubu and Saivou districts in the province of Ra.

The main objective of the tour was to enable the farmers to visit nurseries in Nadi and Sigatoka, and familiarise themselves with the management of the nurseries.

For the Ministry of Agriculture, this year there would be two nurseries for yaqona constructed in the two districts, and in order for the nurseries to be successful and running, the farmers who would be involved needed to undergo training on nursery management. The tour was beneficial not only for the farmers but also for Ministry staff as they would assist in the capacity-building of the major stakeholders – the farmers.

## Soil sterilisation

Soil sterilisation is one of the main processes of raising seedlings but it is also one of the practices that is not carried out at subsistence level. The farmers raise their seedlings without carrying out this process. In doing this practically, the farmers are now aware of the advantages and benefits of sterilising soils before being used for raising seeds.



*Sant Kumar explains the steps of soil sterilisation to farmers. Source: MoA*



**Picture 3: All materials are in place and ready for sterilisation. Source: MoA**



**Picture 4: Soil is sieved and collected for soil sterilisation. Source: MoA**

The day ended with a tour of the nursery and more discussions.

## Grafting

This is one of the activities that the research department is carrying out in order to have planting materials readily available. Most of the grafting work is done on citrus and mango, some varieties that are new and those that slowly fading away. Research officers use this technique to produce more planting materials and it also takes a shorter time for the trees to bear fruit.



**Picture 4: Farmers look at grafting work done by the Ministry's research department. Source: MoA**



**Picture 5: Seru, the main man behind grafting at SRS, explains the steps to the farmers. Source: MoA**

## Tour

The farmers were also taken through to the Taiwan Technical Mission farm. They learnt new farming technologies, varieties and the 'smart farming techniques'. They were able to see Taiwan guavas growing here in Fiji, dragon fruit intercropped with cabbages and zucchini and also other husbandry management of vegetables like staking, mulching using black plastic and pruning done on capsicum and tomatoes.



**Picture 6: Dragon fruit intercropped with pak choy cabbage.**

**Picture 7: TTM farm assistant showing farmers the Taiwan guava variety**

The day ended with farmers having a run through the Sigatoka Valley to witness how farmers there carry out vegetable farming in the Salad Bowl. They also visited a commercial farm in Barara, Nadroga. They returned to their villages after the tour.

### Names of participants

No	Participants	Tikina	Location	Gender
1	Sailosi Nasaba	Nakorotubu	Balekinaga	M
2	Isireli Bete		Balekinaga	M
3	Sevanaia Tavuto		Balekinaga	M
4	Nasoni Mara		Balekinaga	M
5	Maniela Seru		Balekinaga	M
6	Avenai Rakula		Balekinaga	M
7	Vilikesa Nawa		Balekinaga	M
8	Navau Koro		Balekinaga	M
9	Manueli Mara		Balekinaga	M
10	Adi Laite Nasaba		Balekinaga	F
11	Sainimere Tinai		Balekinaga	F
12	Waisake Raikadroka	Saivou	Maniyava	M
13	Pita Avu		Maniyava	M
14	Jese Baro		Maniyava	M
15	John Qatalau		Maniyava	M
16	Aporosa Latinara		Maniyava	M
17	Waisake Nabaru		Maniyava	M
18	Sitiveni Turaga		Maniyava	M
19	Sailasa Nateyawa		Maniyava	M
20	Merewalesi Liku		Maniyava	F
21	Kolora Driu		Maniyava	M
22	Taniela Navuku	Ra	Rakiraki office	M
23	Meciusea Tikoi	Ra	Matuku office	M
24	Asenaca Tivitivi	Ra	Nanukuloa office	F
25	Sairusi Wara	Ra	DRS	M