Sugar Research Institute of Fiji
2014 Annual Report

PARLIAMENT OF FIJI
PARLIAMENTARY PAPER NO. 51 OF 2018

MISSION STATEMENT

To advance the industry by excellence in technology transfer emanating from research results through science that supports innovative activities in sugar related industries and to make the Fiji Sugar Industry productive and sustainable.

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Mr. Manasa Vaniqi
Mr. Sundresh Chetty
Mr. Sanjay Prakash (Secretary)

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Mr. Abdul Khan (Interim Chairman)
Mr. Manasa Vaniqi
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Mr. Sanjay Prakash (Secretary)

Cover page: *A first in Fiji and a first in the history of the Sugar Industry of Fiji that two new varieties, locally bred by the Sugar Research Institute of Fiji was released in 2014 for farmers to adopt. Continuing the tradition of naming varieties after islands in Fiji, the names Qamea & Viwa were respectively adopted for LF94-694 & LF04-448 cane varieties.*

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FORWARD

The release of 2 new varieties during 2014 was the major event for the Institute and it was the first time ever when 2 varieties were released at the same time. The varieties released are Qamea an early to mid-season maturing and Viwa a mid to late maturing variety. A total of 589 crosses were set in 2014 and 304 packets fuzz was imported from West Indies. Some crosses were made with the Erianthus species during the crossing season and seedlings from previous years Erianthus crosses were DNA tested but none of them were positive. The import of varieties continued during the year for expansion of the gene base that is used in developing new varieties. A total of 52 varieties were imported that came from Australia, Vietnam and Mauritius. A total of 1123 packets of fuzz was sown but there was very poor germination and this continues to be a major challenge for the plant breeding team. The evaluation of clones continued in the different stages of the plant breeding program. 549 clones were advanced to stage 2 from the 13,000 stage 1 seedlings, 111 varieties progressed from stage 2 to stage 3 and 13 clones were advanced to stage 4 multi-location adaptation trials. The analytical laboratory provides a vital link with the Grower Advisory Services. Fertilizer recommendations are provided to the farmers to get optimum yields. In 2014, 956 soil samples from grower's fields were analysed for planting of sugarcane. Sugarcane samples from Research trials are analyzed routinely and the data is used to identify promising varieties. 3030 cane samples were analysed using the Spectracane.

The production of hot water treatment seedcane continued during the year. 1019 tonnes of seedcane was produced from which 611 tonnes was taken up by the farmers. The availability of quality seedcane for planting remains a major challenge due to the extended planting season and events of climate change. Irrigation facilities has to be seriously looked into if good quality seedcane is to be made available for planting in the extended season. A preliminary experiment was carried out to study the effects of combining organic fertilizer with conventional fertilizers on cane yield. Significant increase in yield was achieved by combining the fertilizers. The sugar industry strategic plan that was prepared in 2012 identified technology transfer as a medium for disseminating scientific findings to growers. During the year 23 grower demonstration trials were conducted and 510 growers participated in the demonstration trials. The training of selected farmers classified as leader farmers continued in 2014. A total of 94 new clones were screened for Fiji leaf gall disease out of which 72 were resistant and 10 susceptible. Special thanks are due to all staff for their continuous dedication and hard work. I convey my hearty thanks to all staff for their tireless efforts during the release of the two new varieties.

Chief executive officer

PLANT BREEDING

PLANT BREEDING

PROJECT 1: ACP PROJECT – A COMPARATIVE STUDY OF FAMILY AND INDIVIDUAL MASS SELECTION METHODS AS EARLY SELECTION CRITERIA

A total of 304 packets of fuzz (sugarcane seed) have been imported from West Indies of which 23 and 50 crosses are being evaluated in 2012 and 2013 trials respectively. Two trials were underway under this project – 2012 and 2013 series having seedlings from Fiji and West Indies crosses. The 2012 series was sampled and weighed whereas 2013 series seedlings were established and planted from West Indies crosses. The selection in 2012 series will be done in 1st ratoon in 2015 as well as evaluation of 2013 trial plant crop. The project funding by ACP-SRP has been extended till 2015 after which SRIF will continue with the trials. 2014 trials has not been planted due to poor germination from SRIF crosses as well as unavailability of fuzz from bi-parental cross at WISCBS and SRA which routinely carry out controlled bi-parental crosses.

PROJECT 2: ACP PROJECT - NOBILIZATION OF ERIANTHUS

The following tables give a summary of crosses made since inception of this project.

Table 1: Erianthus cross made from 2010 -2013

Year	Cross made with		Total
	Commercials	Officinarum	
2010	71	2	73
2011	39	18	57
2012	48	8	56
2013	52	5	57
2014	65	12	77
Total	**275**	**45**	**320**

Table 2: Erianthus crosses fuzz sown 2010-2013

Year	Commercial		Officinarum		Total	
	Sown	Germinated	Sown	Germinated	Sown	Germinated
2010	85	55	1	0	86	55
2011	18	3	5	1	23	4
2012	28	18	-	-	28	18
2013	22	15	17	7	39	22
2014	81	7	13	-	94	7
Total	**234**	**98**	**36**	**8**	**270**	**106**

A total of 52 varieties (including 14 Erianthus have been imported from Australia, Mauritius and Vietnam under this project. More varieties are anticipated to be imported from China and also Reunion Islands in 2015.

To date, none of the hybrids produced have tested positive for *Erianthus* and tests are being continued with seedlings from last year's seedlings

PROJECT 3: GERMPLASM/ BREEDING PLOTS

The maintenance of re-planted core collection at Drasa continued in 2014. All the breeding materials from farmers field was successfully transferred to SRIF's new crossing facility at Dobuilevu. No other major work was recorded in this project.

PROJECT 4: SUGARCANE CROSSING

A total of 589 crosses comprised of 524 genetic combinations were set at Dobuilevu Cane Breeding facility from May-July 2014. The details of the crosses are summarized in the following table.

Table 3: 2014 crosses summary

Type				No. Of crosses	%	# genetic combinations	%
Commercial	commercial hybrids	Poly	Lantern	65	15%	64	17%
			Field	21		21	
			Poly shed	3		3	
		Bi-parental	Lantern	298	51%	269	51%
Experimental	Erianthus	Bi-parental	Lantern	56	13%	37	10%
			Poly shed	1		1	
			Field	20		17	
	Officinarum	Bi-parental	Lantern	30	6%	18	5%
			Field	5		5	
			Poly shed	2		2	
	Ij/ik hybrids	Poly	Field	1	15%	1	17%
			Lantern	55		55	
			Field	29		29	
			Poly shed	3		2	
Total				**589**		**524**	

Germinating sugarcane seedling from fuzz

PROJECT 5: FUZZ SOWING

A total of 1123 packets were sown from 30/6/2014 till 19/8/2014. The germination chamber was used for fuzz germination and very poor germination was recorded as outlined in the table below.

Table 4: 2014 fuzz sowing

Year	Packs			Genetic Combinations		
	Sown	Germ	%	Sown	Germ	%
2004	16	0	0%	15	0	0%
2005	16	0	0%	16	0	0%
2009	218	29	13%	172	28	16%
2010	83	18	22%	78	17	22%
2011	562	158	28%	454	149	33%
2012	40	3	8%	35	6	17%
2013	28	0	0%	25	0	0%
2014	160	5	3%	116	4	3%
TOTAL	**1123**	**213**	**19%**	**911**	**204**	**22%**

The poor germination is attributed to the following:

1. Drying of germinated fuzz in the germination chamber. The germinated trays were transferred to temporary shade houses since greenhouse was not ready to prevent further effect. The reason for this is unknown and needs to be discussed with an expert or alternatively staff sent for training to similar facilities in Australia.
2. The recent crosses (2012-2014) recorded very poor germination as seen in the table. It is anticipated that crosses in the lanterns at the cane breeding facility did not give viable seed. The results were also same in fuzz sowing in 2013. Germination tests had given zero seedlings and experiments need to be done to ascertain cause of poor germination whether result of poor cross management or poor fuzz handling, storage and sowing however poor cross management and lack of staff expertise with lantern crosses is strongly suspected. It is strongly recommended that a consultant be brought from Australia who has worked with lantern crosses or staff attached briefly for study and management of lantern crosses.
3. The fuzz may not have dried well in the de-humidification facility. The drying/ dehumidifying period in the new de-humidification facility may have to be extended. It was seen that some germination was noted in crosses that were dried for longer. Few experiments were done with same crosses dried outside and dried inside the chamber which confirm this however more vigilant experiments would be done in 2015 whereby weekly germination tests would be done to ascertain this.

PROJECT 6: STAGE 1

A total of 549 selections were done from approx. 13000 seedlings in LF2013 Stage 1 trial. The seedlings were selected using brix and visual characteristics in comparison to commercials planted as standards in this trial. Approximately 8600 seedlings were planted for LF2014 Stage 1.

PROJECT 7: STAGE 2

LF2012 Stage 2 trial got partially burnt in August after which 111 clones were sampled and 7 clones that were selected were propagated in the greenhouse as single eye-sett. The remaining clones were sampled in September and 80 clones selected were planted as LF2012 Stage 3 in Rarawai Field 6. The selections were based on the biochemical results and comparison with standard and field grading. LF2013 Stage 2 was planted progressively from 20-25 November, 2014 in Rarawai Field 5 and Field 6 using 549 selections from LF2013 Stage 1.

PROJECT 8: STAGE 3

A total of 13 varieties were selected from LF2011 Stage 3 and are being propagated in Rarawai and Labasa for Stage 4 planting at all mills in April-May next year. The seedcane from this trial have also been sent for FLG screening at Drasa facility. The details of the selections are presented in the table below. All the selected varieties had %pocs more than the average for the standards (Mana, Naidiri and Kiuva) whereas only 1 variety had low %fibre (LF11-182) however had been selected for good sugar and good appeal in the field. The appeal was based on the variety stand (gaps), lodging (heavy, slightly), trash (clinging or free trashing), stalk height/ thickness, vigour and disease symptoms/ stress. A total of 80 varieties has been planted as LF2012 Stage 3 using selections from LF2012 Stage 2 whereas 5 more varieties that were selected from the burnt portion will be planted in December.

Table 5: LF2011 Stage 3 selections for Stage 4

Variety	Std	Rep	Trt	Brix	Pol	Purity	%Fibre	%Pocs	APPEAL
LF11-182	BRD	1	95	23.55	22.02	93.47	9.67	17.90	A
LF11-293	BRD	2	62	24.37	21.71	89.08	11.31	16.81	C+
LF11-266	BRD	1	57	23.80	21.25	89.28	10.22	16.70	C+
LF11-229	BRD	1	93	23.24	20.74	89.25	11.88	15.97	C+
LF11-096	BRD	1	91	22.51	19.79	87.88	10.16	15.40	C+
LF11-118	BRD	1	90	22.31	19.84	88.93	11.03	15.40	C+
LF11-192	BRD	1	1	23.55	20.37	86.49	12.01	15.35	C+
LF11-021	BRD	1	78	22.58	19.68	87.17	10.01	15.27	C+
LF11-268	BRD	1	92	21.42	19.50	91.03	11.57	15.25	C+
LF11-129	BRD	1	36	23.44	20.23	86.34	12.30	15.17	C+
LF11-232	BRD	2	73	23.28	19.87	85.36	11.55	14.93	C+
LF11-200	BRD	1	33	22.59	19.68	87.12	11.89	14.92	C+
LF11-233	BRD	1	58	22.31	19.08	85.52	11.27	14.40	C+

Table 5 Cont'd

Variety	Std	Rep	Trt	Brix	Pol	Purity	%Fibre	%Pocs	APPEAL
STDS									
MANA	STD	2	9	20.26	17.10	84.40	9.44	13.08	
MANA	STD	3	9	20.87	18.50	88.63	9.21	14.64	
MANA	STD	4	9	20.69	17.79	85.96	8.86	13.86	
MANA AVG								**13.86**	
NAIDIRI	STD	2	30	22.67	19.96	88.06	11.64	15.29	
NAIDIRI	STD	3	30	22.75	19.90	87.47	11.90	15.13	
NAIDIRI	STD	4	30	22.10	19.99	90.44	11.34	15.62	
NAIDIRI AVG								**15.34**	
KIUVA	STD	1	53	22.21	19.76	88.95	10.83	15.38	

PROJECT 9: STAGE 4

The LF2010 series was planted at all mills however trials at Lautoka and Penang was abandoned due to poor germination and lack of seed cane material for supply (fill in the gaps). LF2009 series plant crop, LF2008 series 1st ratoon crop and LF2007 series second ratoon crop was evaluated.

New variety (Viwa) being dumped at Rarawai Mill for Large Mill testing (2013)

PROJECT 10: NEW VARIETIES RELEASED

The year 2014 will go down in the history books as this was the first time that the Research division released two new varieties at the same time. The two varieties are LF94-694 and LF04-448 that have been given the names "Qamea" and "Viwa" respectively. Brief details of the varieties are outlined below and more can be found on our website: www.srif.net.fj

Variety 1: QAMEA (LF94-694)

Table 6: Profile of variety QAMEA

Variety name	Qamea (LF94-694)
Parentage	Mana x LF58-6023
Seedling number	LF94-694
Year released	2014
Appearance	Internodes are of uniform length, medium thickness, and purplish in color when unexposed and becomes dark purple when exposed. The stalks of LF94-694 generally are long and heavy
Germination	Germinates in 10^{+} days
Tillering	Profuse and produces high number of stalks per stool under normal growing conditions
Growth	Vigorous early-mid stage and slightly slow during late growing phase
Trashing	Free – loosely clinging easily removed
Flowering	Moderately
Soil type suitability	Poor/ medium and rich land
Seasonal sugar	Early – mid maturing
Cane yield	High – capable of producing 120^{+} tc/ha on fertile soils under rain fed conditions
Sugar yield	High
Resistance to extreme Events	Water logging – moderate Cyclones – lodges but tolerates moderate wind speeds
Lodging	Lodges easily due to high stool population. Recommend deep furrow for planting and hilling up after fertilization
Fiji Leaf Gall Disease	Highly resistant
Downy mildew	Moderately resistant
Borer damage	Moderately resistant

Table 7: Recommended harvesting period based on maturity for Qamea

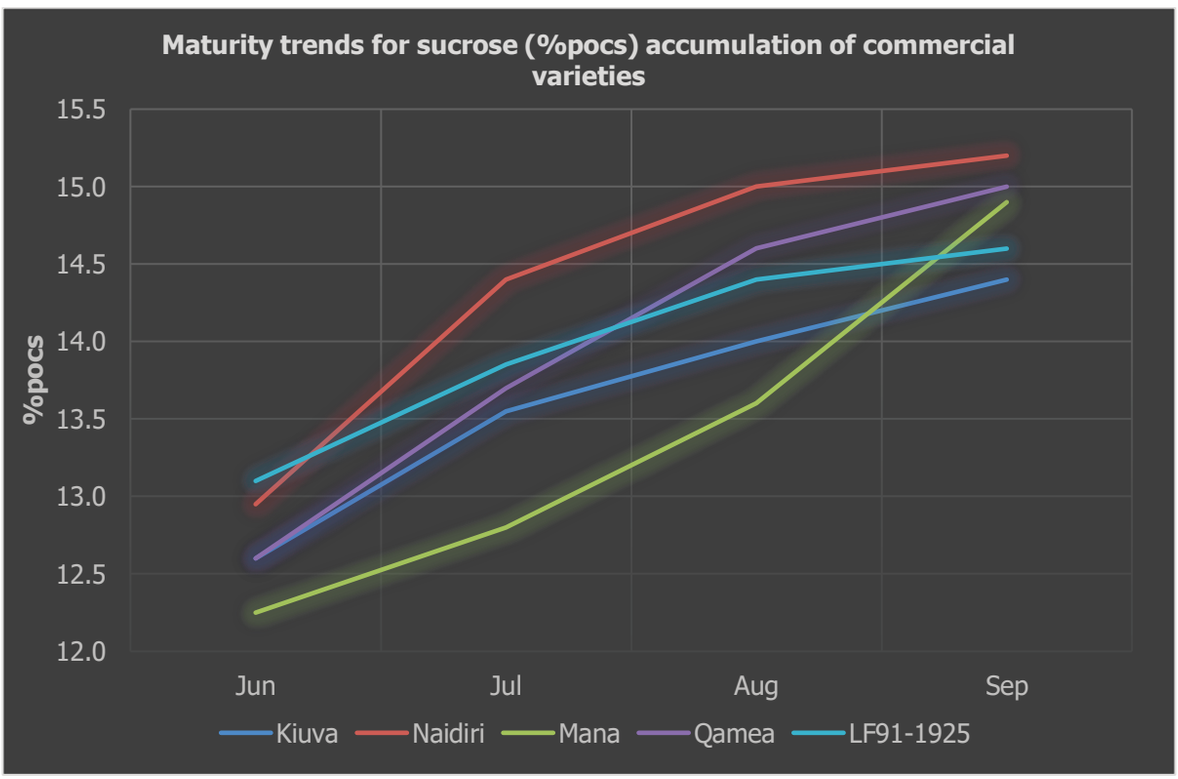
Jun	Jul	Aug	Sep	Oct	Nov	Dec

Maturity trend for Qamea

The sugarcane starts maturing with the onset of the dry season and in cooler months from mid-May. Understanding the maturity of sugarcane is important in planning the harvesting schedule.

Varieties that have relatively high sucrose content at the beginning of the season are often said to mature early in the season, although their peak sucrose content occurs at the same time as other varieties. The crushing season should start with more early maturing cane for 6-8 weeks up till the end of July before the mid to late maturing cane can be harvested and crushed.

Qamea is an early maturing variety and can be harvested from beginning of crushing season in June.



Graph 1: Maturity trends for sucrose (%pocs) accumulation of commercial varieties

Distinguishing Features

Crumpled leaf at base of leaf blade and top portion of leaf sheath. Outer leaf sheath is purplish in color.


Bud


Trashing


Crumped leaf

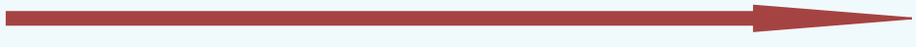

Purplish sheath

Variety 2: VIWA (LF04-448)

Table 9: Profile of variety VIWA	
Variety name	Viwa (LF04-448)
Parentage	LF97-29 x LF70-6101
Seedling number	LF04-448
Year released	2014
Appearance	Internodes are of uniform length, thin -medium thickness, and yellowish green in colour when unexposed and becomes yellowish when exposed. The stalks of Viwa are generally very tall.
Germination	Germinates in 10^{+} days
Tillering	Moderate and produces 6-7 stalks per stool under normal growing conditions
Growth	Rapid elongation after tillering stage
Trash	Loosely clinging and can be easily trashed
Flowering	Does not flower
Soil type suitability	Poor/ medium
Seasonal sugar	Mid to late maturing
Cane yield	Capable of producing 70^{+} tc/ha on poor-medium soils under rain fed conditions
Sugar yield	High
Tolerance	Water logging - moderate Drought - moderate
Lodging	Does not lodge easily
Fiji Leaf Gall Disease	Highly resistant
Downy mildew	Not screened
Pest infestation	Mild to rodent attack
Borer damage	Moderately resistant

Table 10: Recommended harvesting period based on maturity for Viwa

Jun	Jul	Aug	Sep	Oct	Nov	Dec

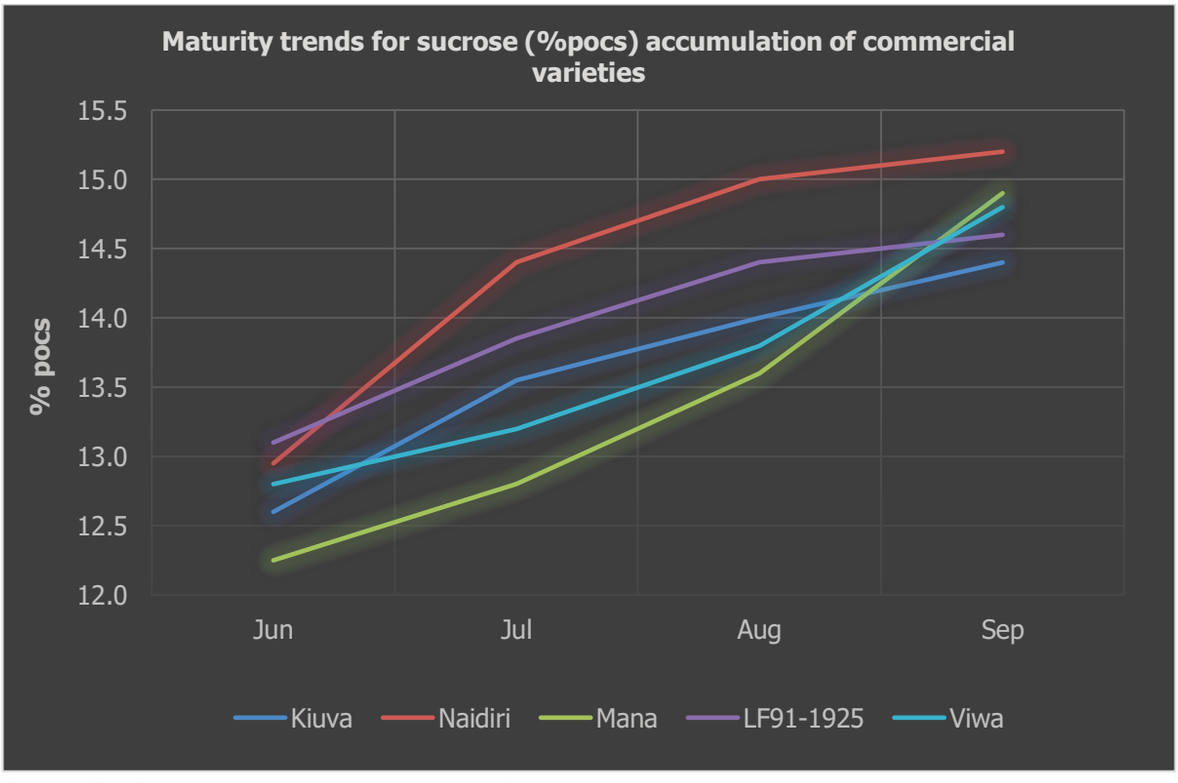


Maturity trend for Viwa

The sugarcane starts maturing with the onset of the dry season and in cooler months from mid-May. Understanding the maturity of sugarcane is important in planning the harvesting schedule.

Varieties that have relatively high sucrose content at the beginning of the season are often said to mature early in the season, although their peak sucrose content occurs at the same time as other varieties. The crushing season should start with more early maturing cane for 6-8 weeks up till the end of July before the mid to late maturing cane can be harvested and crushed.

Viwa is a mid-late maturing variety and its sugar content continues to rise during the harvesting season and can be harvested from late July onwards.



Graph 2: Maturity trends for sucrose (%pocs) accumulation of commercial varieties

Distinguishing Features

Viwa has tall stalks of medium thickness and erect stand. It is a high fibre variety that does not lodge easily and is suited for mechanical harvesting. This variety is also tolerant to drought conditions.

ANALYTICAL LABORATORY & METEOROLOGY

ANALYTICAL LABORATORY SERVICES

The analytical laboratory acts as a link between the growers and the industry by providing analytical services for advisory and research programs. This service is essential due to the rising cost of fertilizers and to maintain optimum production in the future. Analytical services provided at SRIF analytical laboratory include soil, foliar and cane analysis. Soil and leaf samples are received from all sugar cane district including Penang, Rarawai, Lautoka and Labasa for fertilizer recommendation.

SOIL ANALYSIS

A total of nine hundred and fifty six soil samples were analyzed of which there were one hundred and eighteen research soil samples and eight hundred and thirty three advisory soil samples. It must be noted that the number of samples sent to for fertilizer advisory services has decreased over the years. The extension services are failing to make full use of the available facilities. A training session was held for FSC extension staffs to demonstrate soil and leaf sampling. Procedures for sampling were explained to the extension officers and proper sample handling methods were taught. Training was also held by Mr. Brian Daly, a consultant from New Zealand, for laboratory staffs on operation of Flow Injection Analysis and Quality assurance to improve efficiency in the laboratory. The laboratory is now able to produce Fertilizer recommendation sheets at SRIF.

The laboratory also actively participated in training held for farmers in coordination with Fair trade and European Union. Staffs conducted presentations and field demonstrations for framers in various sectors. The farmers were asked to make better use of the services available to them by taking initiatives in conducting soil and leaf sampling by growers.

Table 1: Summary of soil samples for 2014

District	Advisory	Research
Lautoka	380	109
Rarawai	113	-
Penang	3	9
Labasa	342	-
Total	**838**	**118**

The analytical laboratory took part in ASPAC proficiency programs and received certificates for Electrical conductivity and analysis of magnesium in soil. The laboratory continues to adhere to quality control checks in every analysis.

BIOCHEMICAL ANALYSIS

The small mill aims to provide necessary information on cane such as %pol, brix, %fiber and %POCS to respective personnel in the institute regarding various plant breeding, agronomy and disease trials. It is a vital aspect for selection of varieties from breeding plots. A total of 3030 cane samples were crushed for the year. This consisted of samples for Germplasm,

Stage 4 (LF-2007 and LF-2008, LF-2009) trials, Stage 3 (LF-2011, LF-2012) trials and Agronomy trials (Stand Up, potassium, time of harvest), Pest & Disease and Variety trials.

Table 2: Summary of cane samples for 2014

Department	Trial name	No of samples	Total
Variety	Germplasm	1484	1484
	LF2007 – Stg 4	368	
	LF 2008 – Stg 4	93	
	LF-2009 – Stg 4	208	
	LF 2011- Stg 3	120	
	LF 2012 – Stg 3	360	
	Family selection - 2012	85	
Agronomy	SumaGrow	24	84
	Potassium trial	24	
	Time of Harvest	36	
Disease	Pest & Disease	100	100
Grand Total			**3030**

METEOROLOGY

Rainfall

The annual rainfall for all the 4 mills was below average when compared to the 44 years average. For Lautoka, all the months recorded below average rainfall except for the months of April, May and December which recorded close or above average rainfall when compared to the 44 years average rainfall. For Rarawai, May recorded above average rainfall and the rest of the month recorded below average rainfall. For Penang, January, March, April, June, July, August, September and November experienced above rainfall while the other months received less rain compared to the 44 years average. For Labasa, January, March to October received above average rainfall while the other months had little rain.

El Nino Southern Oscillation (ENSO)

El Niño Southern Oscillation (ENSO) is an irregular cycle of persistent warming and cooling of sea surface temperatures in the tropical Pacific Ocean. The warm extreme is known as El Niño and cold extreme, La Niña. The term El Niño is given to a local warming of the ocean near the Peruvian coast in South America that appears around Christmas. Scientists now refer to an El Niño event as sustained warming over a large part of central and eastern equatorial Pacific Ocean. This warming is usually accompanied by persistent negative values of Southern Oscillation Index (SOI), a decrease in the strength or reversal of the trade winds and a reduction in rainfall over most of Fiji (not immediate effect as there is a lag period) which can, especially during moderate to strong event, lead to drought.

La Niña

La Niña is sustained cooling of the central and eastern equatorial Pacific Ocean. The cooling is usually accompanied by persistent positive values of SOI, an increase in strength of the equatorial trade winds and higher than normal rainfall for most of the Fiji (not immediate

effects as there is a lag period), with frequent and sometimes severe flooding, especially during the wet season (November to April).

Relative Humidity

The relative humidity calculated at 0900 hours was above average for the months of January, February, May, June and July while the rest of the months was below average when compared to the 44 years average.

Earth Thermometers

The earth thermometer at the depth of 5ch was slightly below the long-time average for the months of February, May and July whereas at the depth of 10cm was the same or slightly below average for the months of July, August, November and December. There were no readings recorded for the 20cm earth thermometer because it was being damaged.

Air Temperatures

The daytime air temperatures are very close to and above average or normal to above normal for Lautoka Mill during January to December 2014. The highest maximum temperature recorded was 34.4 for the month of February and the lowest minimum temperature recorded was 14.0 for the month of July.

Table 3: Rainfall (mm) for all mills 2014

Mills	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Lautoka Mill													
Monthly Rainfall	310	300	196	194	203	10	7	0	30	53	37	201	1541
No. of rain days	15	18	11	8	5	4	4	0	3	10	8	12	98
44 yrs. Avg. (1971-2014)	376	318	324	192	93	72	53	70	79	100	141	192	2008
% of Average	83	95	61	101	219	14	13	0	37	53	27	105	77
Rarawai Mill													
Monthly Rainfall	322	256	186	85	145	4	5	0	6	46	57	138	1250
No. of rain days	12	21	15	10	3	3	3	0	4	12	8	11	102
44 yrs. Avg. (1971-2014)	388	354	368	195	97	81	42	65	77	109	158	234	2167
% of Average	83	72	51	44	149	5	13	0	7	42	36	59	58
Penang Mill													
Monthly Rainfall	354	483	242	124	207	42	24	16	0	99	65	520	2174
No. of rain days	21	23	21	11	15	8	6	10	1	12	9	20	157
44 yrs. Avg. (1971-2014)	432	350	371	259	155	98	52	70	89	11	155	261	2303
% of Average	82	138	65	48	133	43	45	23	0	921	42	199	94
Labasa Mill													
Monthly Rainfall	293	405	183	125	88	14	18	2	6	275	116	154	1679
No. of rain days	22	20	25	9	8	2	5	2	1	19	12	16	141
44 yrs. Avg. (1971-2014)	408	363	370	237	110	78	52	51	77	124	187	259	2316
% of Average	72	111	49	53	80	18	34	5	8	221	62	60	73

Table 4: Rainfall Data (mm) for Lautoka Mill 2014

Sectors	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Drasa	320	264	237	189	173	2	0	0	27	63	31	284	1590
No. of rain days	13	11	12	6	4	1	0	0	3	7	4	7	68
Saweni	355	228	163	238	201	0	0	0	20	46	86	237	1575
No. of rain days	14	9	9	4	3	1	0	0	2	5	8	8	63
Natova	446	241	200	122	157	2	4	0	10	48	124	124	1478
No. of rain days	16	12	13	4	5	2	2	0	3	6	7	10	80
Legalega	437	303	80	124	144	0	10	0	6	48	105	66	1323
No. of rain days	14	9	4	4	3	0	2	0	1	4	9	13	63
Meigunyah	418	305	99	114	131	0	10	0	6	26	103	54	1264
No. of rain days	15	9	4	4	3	0	2	0	1	4	9	2	53
Malolo	438	280	144	207	176	0	8	0	11	87	134	88	1571
No. of rain days	12	12	7	5	3	0	4	0	1	5	5	6	60
Nawaicoba	318	335	212	200	127	0	13	0	15	17	174	37	1448
No. of rain days	15	12	15	6	4	0	4	0	1	4	6	2	69
Yako	220	253	81	267	114	0	0	0	15	40	54	280	1324
No. of rain days	8	9	5	4	2	0	0	0	1	6	3	9	47
Lomawai	433	257	150	116	123	0	10	0	28	70	146	37	1369
No. of rain days	15	14	15	5	7	0	1	0	1	4	4	2	68
Cuvu	312	288	210	127	183	4	14	9	22	51	150	38	1407
No. of rain days	14	12	14	5	6	1	1	2	3	7	9	3	77
Olosara	330	310	296	145	71	0	0	0	20	48	122	22	1363
No. of rain days	12	10	16	6	5	0	0	0	2	2	5	1	59

Table 5: Rainfall Data (mm) for Rarawai Mill 2014

Sectors	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Varoko	270	203	182	160	159	0	0	0	4	42	50	86	1156
No. of rain days	10	9	3	5	1	0	0	0	1	6	1	3	39
Mota	356	262	115	61	92	0	0	0	0	28	30	163	1107
No. of rain days	12	15	10	4	3	0	0	0	0	5	2	9	60
Koronubu	331	275	147	107	157	0	0	0	4	60	26	118	1225
No. of rain days	9	14	8	7	3	0	0	0	1	8	2	8	60
Rarawai	417	234	152	166	130	0	0	0	6	41	51	137	1333
No. of rain days	14	15	8	10	2	0	0	0	3	9	7	10	78
Veisaru	228	166	140	115	121	0	0	0	9	51	33	55	918
No. of rain days	9	7	5	5	1	0	0	0	1	6	3	4	41
Varavu	303	138	60	178	185	0	0	0	0	32	10	36	942
No. of rain days	9	6	5	4	1	0	0	0	0	5	2	4	36
Naloto	525	265	176	74	115	0	0	0	3	38	37	164	1397
No. of rain days	13	14	10	4	3	0	0	0	1	6	2	9	62
Tagitagi	164	216	111	240	264	0	0	0	0	29	24	92	1140
No. of rain days	5	10	6	5	2	0	0	0	0	3	1	5	37
Drumasi	203	312	190	180	189	0	0	0	0	40	36	128	1278
No. of rain days	4	10	7	5	2	0	0	0	0	3	2	7	40
Yaladro	143	279	157	186	179	0	0	0	0	36	49	85	1114
No. of rain days	4	9	7	5	2	0	0	0	0	3	2	6	38

Table 6: Rainfall Data (mm) for Penang Mill 2014

Sectors	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Ellington 1	187	141	98	28	184	26	24	9	8	114	N/R	N/R	819
No. of rain days	5	18	18	7	11	6	9	9	7	16	N/R	N/R	106
Malau	354	483	242	124	207	42	24	16	0	99	65	520	2174
No. of rain days	21	23	21	11	15	8	6	10	1	12	9	20	157
Nanuku	297	384	90	128	168	0	14	2	0	36	45	149	1312
No. of rain days	9	17	8	7	2	0	2	1	0	5	2	4	57
Ellington 11	289	256	285	63	274	21	14	47	2	174	62	381	1866
No. of rain days	13	14	18	8	6	2	2	3	2	12	9	16	105

Table 7: Rainfall Data (mm) for Labasa Mill 2014

Sectors	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Waiqele	518	520	281	116	84	13	4	0	4	143	82	120	1886
No. of rain days	22	21	20	7	5	2	1	0	1	15	7	14	115
Wailevu	319	475	318	76	88	11	5	2	3	217	137	241	1890
No. of rain days	22	20	25	8	9	6	3	2	1	17	15	23	151
Vunimoli	382	612	311	73	138	31	20	6	6	170	260	124	2133
No. of rain days	17	19	18	8	4	2	3	1	2	13	9	11	107
Korowiri (Labasa)	600	457	279	50	168	8	14	4	2	201	180	152	2115
No. of rain days	25	23	24	9	8	1	3	2	2	14	14	18	143
Nagigi (Bucaisau)	314	480	385	79	147	8	33	0	2	126	106	256	1936
No. of rain days	17	21	18	8	5	2	5	0	1	10	6	12	105
Wainikoro	223	404	172	65	183	14	12	1	13	93	156	147	1481
No. of rain days	17	20	15	8	6	3	1	1	2	9	9	13	104
Natua (Seaqaqa)	284	567	285	121	131	11	4	34	14	224	169	305	2148
No. of rain days	21	19	21	13	6	2	2	3	3	15	11	18	134

Table 8: Meteorological data for Sugar Research Institute of Fiji, Lautoka 2014

Measurements	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Relative Humidity	69	78	74	71	75	73	70	62	63	65	61	67
45 yrs Avg. (1970-2014)	75	77	77	75	74	72	69	68	69	66	70	72
Air Temperature (°C)												
Mean maximum	32	31	32	30	29	29	28	29	30	30	31	31
Mean Max 45 yrs Avg. (1970-2014)	32	31	31	31	30	28	28	28	29	31	31	31
mean Minimum	23	24	24	22	22	21	18	19	21	22	22	23
Mean Min 45yrs Avg. (1970-2014)	24	24	24	24	22	20	20	20	21	26	23	23
Mean	28	28	28	28	26	24	24	24	25	29	27	27
Highest Maximum	34	34	33	32	32	31	32	32	33	33	33	34
Lowest Minimum	22	20	22	20	18	16	14	14	19	18	18	22
Evaporation												
Raised pan	203	150	175	147	136	124	121	183	198	197	204	166
Raised pan: 45 yrs Avg. (1970-2014)												
P:E ratio												
Earth Thermometers												
5cm	29	28	29	27	24	24	23	-	-	-	-	-
10cm	29	28	28	27	24	24	23	24	28	27	28	28
45yrs Avg. (1970-2014)) 5cm	29	29	29	27	26	-	24	24	-	-	-	-
45yrs Avg. (1970-2014) 10cm	-	-	-	-	-	-	24	24	26	-	29	29

Phosphorous project

The chemistry laboratory has been involved in a collaborative project among Fiji, Jamaica & Mauritius conducted under EU funded Sugar Research Program, which is titled **REGULATING PHOSPHORUS IN SUGAR CANE TO DECREASE PRODUCTION COSTS AND TO PROTECT FRESH WATER RESOURCES IN ACP STATES.**

The objective of this project is to identify high P soils, determine the sugarcane farms vulnerability to erosion and runoff and to develop the P index, which will combine the factors of source and vulnerability to transport to identify sources of P movement within a watershed. The expected outcome is to predict soil test P in both agronomic status and environmental status of sugarcane soils, to enlarge scope of current soil P test to indicate environmental status of sugarcane soil and to determine an environmental threshold. The project officially commenced in April 2011 whereby the rainfall simulator had to be calibrated initially after which the field simulation commenced. Simulated rainfall was applied on 20 sites having 3 slopes each with different rainfall intensities with different soil test phosphorous levels. Runoff was collected in it's entirely for 30 minutes analyzed for total P and dissolved reactive phosphorous. Soil samples were collected from 0-15cm and 15-30cm depths.

The analysis of all 20 sites has been completed. Results have been dispatched to MSIRI for verification. Analysis completed have shown the positive result of soil P test of calcium chloride P against troug P since the correlation values for all tests relies on r=0.67 to r=0.87. The points plotted in the graph were all in one trend following troug Moreover it was also found out that during higher rainfall intensities with steep slopes more sediment loss is experienced.

Table 9: Study sites

Site	Location	Farm no.	location	Sector
1	Vitogo	1175	Lautoka	Lovu
2	Wairabetia		Lautoka	Lovu
5	Sabeto_ 2	14496	Nadi	Natova
6	Sabeto_3	14690	Nadi	Natova
7	Sabeto_4		Nadi	Natova
8	Solovi_1	23054	Nadi	Meiguniyah
9	Solovi_2	23064	Nadi	Meiguniyah
10	Solovi_3	10771	Nadi	Meiguniyah
11	Solovi_4	23065	Nadi	Meiguniyah
12	Drasa	14126	Lautoka	Drasa
13	Nawaicoba	3938	Nadi	Nawaicoba
14	Sonaisali	3900	Nadi	Nawaicoba
15	Drasa lomolomo	14064	Lautoka	Drasa
16	Drasa lomolomo 2	14063	Lautoka	Drasa
17	Masimasi	14640	Nadi	Natova
19	Maro	5119	Sigatoka	Lomowai
20	Nukuloa	32092	Ba	Naloto

Table 10 : Collection of samples

Study Site	Slope and rainfall intensity	Number of sample collected		
		Runoff	Bedload	Soil
1. Vitogo	3 slopes by 3 rainfall intensities	18	-	2
2. Wairabetia	1 slope by 3 rainfall intensities	6	-	2
3. Rarawai	1 slope by 3 rainfall intensities	5	-	2
4. Sabeto_1	2 slope by 3 rainfall intensities	49	5	2
5. Sabeto_ 2	1 slope by 3 rainfall intensities	25	6	2
6. Sabeto_3	2 slope by 3 rainfall intensities	66	12	3
7. Sabeto_4	2 slope by 3 rainfall intensities	49	12	3
8. Solovi_1	3 slope by 3 rainfall intensities	107	18	4
9. Solovi_2	2 slope by 3 rainfall intensities	70	12	3
10. Solovi_3	3 slope by 3 rainfall intensités	81	18	4
11. Solovi_4	3 slope by 3 rainfall intensities	96	18	4
12. Drasa	3 slope by 3 rainfall intensities	78	18	10
13. Nawaicoba	3 slope by 3 rainfall intensities	70	16	8
14. Sonaisali	3 slope by 3 rainfall intensities	74	16	13
15. Drasa lomolomo	3 slope by 3 rainfall intensities	74	12	12
16. Drasa lomolomo 2	3 slope by 3 rainfall intensities	74	12	12
17. Masimasi Sabeto	3 slope by 3 rainfall intensities	50	9	12
18. Kambisi Sigatoka	3 slope by 3 rainfall intensities	82	12	12
19. MARO Sigatoka	3 slope by 3 rainfall intensities	76	14	12
20. Nukuloa	3 slope by 3 rainfall intensities	70	12	12

Discarded sites- Rarawai, Naiwaicoba1, Nawaicoba 2 and Meiguniyah due to spectrophotometer malfunction. The results for 20 sites has been dispatched to Mauritius for data analysis and development of P index which later is going to be used for generating fertilizer recommendation for fertilizer advisory service to the growers.

Suspended load

Determination of the Suspended load in runoff samples is estimating sediment loss during runoff events. Data collection of this analysis is collected for future prediction, control and management of suspended load transport as a natural process.

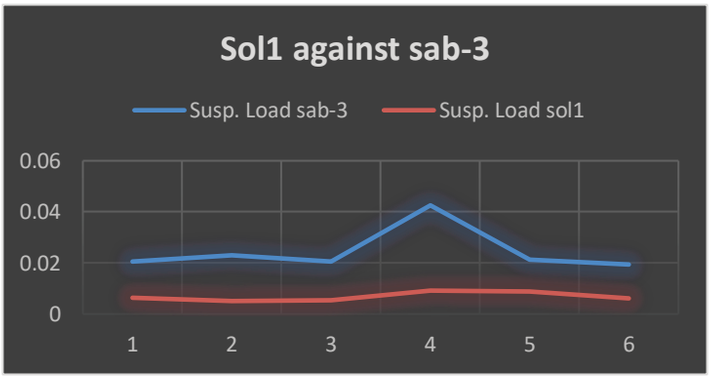
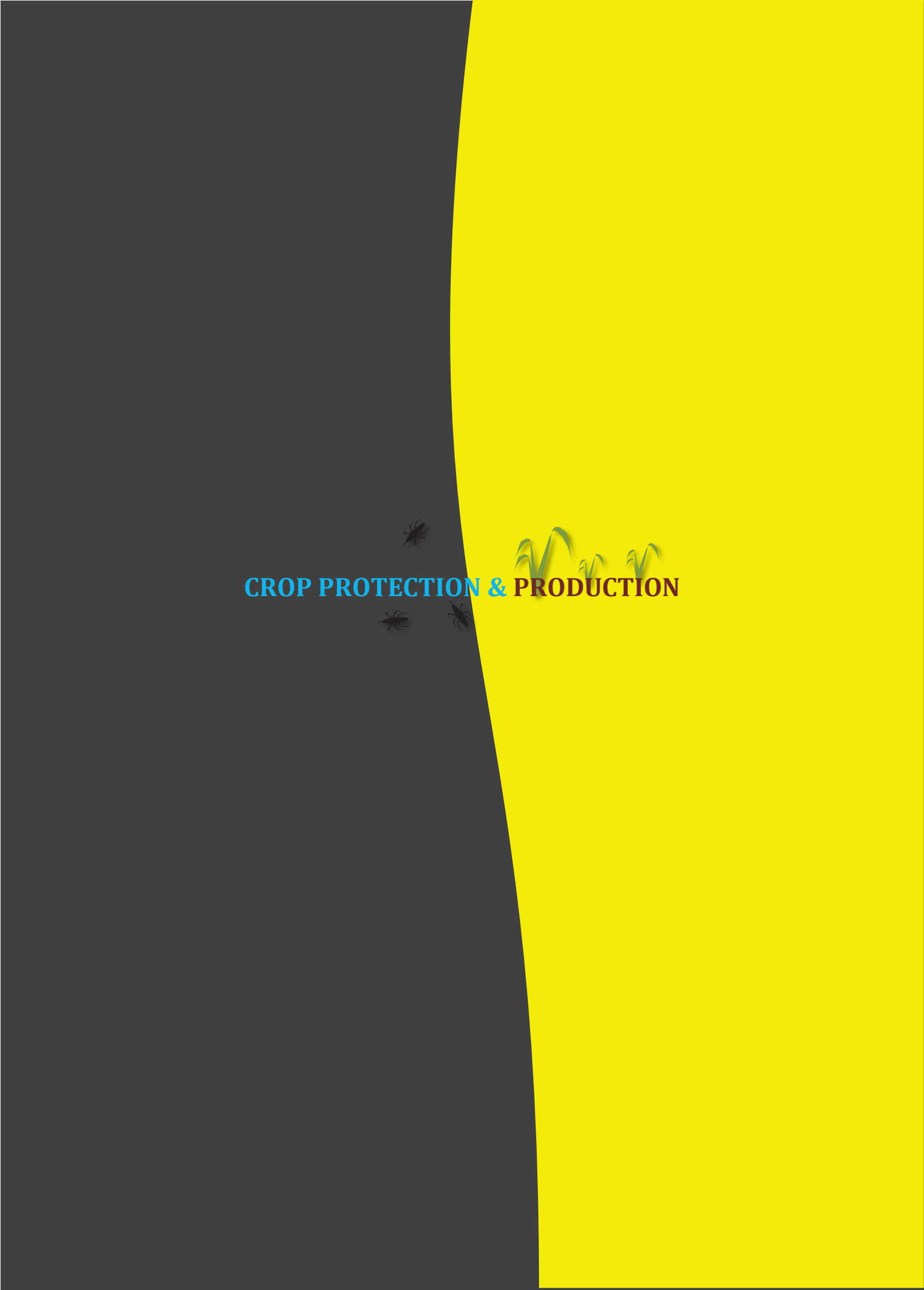


Table 11: Rainfall intensity

Sol-1	146.9mm/h
Sab-3	59mm/h


CROP PROTECTION & PRODUCTION

CROP PROTECTION

Fiji Leaf Gall Disease (FLGD)

Screening new varieties for Fiji disease resistance continued again this year. The 2011 series was tested for resistance. A total of 94 varieties were tested for the resistance to Fiji disease. A trial was conducted during the year 2014. The linear equation is y=-5.9523x+102.35 resistance to FDV. Some of the varieties released for commercial cultivation over the years show differences in the field reaction to the Fiji disease. Example: The variety Mana is highly resistance to Fiji disease and has rating of 1. Under field conditions this variety shows intermediate resistance for Fiji disease. The varieties which have been given resistance ratings probably are not resistant. They may only tolerant to the disease and act a carrier of the virus.

Table 1: Number of clones screened for Fiji leaf gall disease

Series screened	Clone Resistance (Ratings)		
LF 2011	Resistance (1-3)	Moderate (4-6)	Susceptible (7-9)
	72	12	10

Table 2: LF2011 rating list

Screened Ratings	No. of clones
1	70
2	0
3	2
4	5
5	3
6	4
7	1
8	7
9	2

Figure 1: Screening LF2011 clones for FLG

Disease control unit

The disease control team covered an area of 5,485 ha during their crop inspection of tis total 1,487ha were plant crops and 4,998 ha were ratoon crops.

Table 3: Summary of roguing inspections in 2014

Mill District	No. of Farms Inspected	Area Rouged (Ha)		No. of FLGD stools Rouged
		Plant	Ratoon	
Lautoka	250	26.86	535.33	0
Nadi	277	132.16	892.59	184
Labasa	716	1040.48	2792.46	0
Sigatoka	268	177.64	380.26	88
Ba/Tavua	293	110.27	397.1	24
Total	**1,804**	**1,487**	**4,998**	**296**

CROP PRODUCTION

Technology Transfer 2014

The Sugar Industry Strategic Plan (SAP) that was developed in late 2012 identified technology transfer as a critical function in delivering research outcomes to the farmers and millers. A new approach to technology transfer was recommended in SAP wherein SRIF was tasked to adopt, to better meet the needs of its customers. Two key elements of the refined approach were developed. Firstly, a process for identification and assessment of the subject material of the initiative, which entailed inclusion of all stakeholders in planning the technology transfer initiative. Secondly, the implementation of this strategy, which involved an outreach that included interactive farmer workshops and grower demonstration trials.

The subject material for the initiative concerned the industry's principal problem of declining cane production with low yields, which results in substantive direct and indirect losses annually. Successful technology transfer interventions start by involving all stakeholders that participate in determining the content and style of the proposed interaction and the content of the intervention has to be varied to cater for particular requirements of the different categories. Technology transfer in itself is a simple concept, but it requires a huge investment in resources, both in the planning and post-implementation phases, in order to achieve a reasonable measure of success.

Traditionally, technology transfer was viewed as the responsibility of the Extension Officer (EO) who was based in each of the sectors. With the support of the mill general managers and farm advisory manager and farmer "perceived" needs, the EO drew up the local program of work to address the problems. Some of the major reasons for the lack of adoption of the recommendations from research were

- Farmer's lack of awareness of own problems
- Long-term economics not clearly presented – need to show long-term benefit
- Apathy and complacency – "just have to live with it" syndrome
- Lack of 'user-friendly' information pack

The direction of flow of information in addressing a problem would traditionally have started at the institute, where the knowledge from the specialists would have been transformed into a recommendation in the form of a publication (booklet, information sheet) or hands on approach of demonstration that focuses on the sugarcane farmer as the end-user of the information.

Grower Demonstration Trials

The table below summaries the grower demonstration trials that were carried out from late 2013 to 2014. In summary:

- 23 Trials Conducted
- 510 growers attended grower demonstration trial field days

Table 4: Summary of grower demonstration trials

No	Location/Sector	District	Demonstration topics	Comments
1	Qalitu/Lovu Nand Kishore	Lautoka	Weed control	Cane was burnt before info day could be held
2	Lomolomo/Saweni Jagdish Singh F No 721	Lautoka	Weed control	30 growers attended information day
3	Nawaicoba/F No10586 Jainendra Kumar	Nadi	Varieties/weed control Ragnar/Naidiri/Beqa/Aiwa	Cane was burnt before info day could be held
4	Uciwai/Yako Log Nadan F/No 4003	Nadi	Varieties/weed control Ragnar/Naidiri/Beqa/Aiwa	Field affected by water logging and cane died
5	Raviravi/Drasa	Lautoka	Weed control/varieties	Field affected by water logging and cane died
6	Varoka F No 8726 Ujjagar Singh	Ba	Weed control/varieties LF94-694	80 growers attended information day
7	Mota Arun Sharma 9673060	Ba	Weed control	100 growers attended information day hosted by FSC
8	Drumasi F No 3928 Ajay Kumar	Tavua	Varieties/weed control Ragnar/Naidiri/Beqa/Aiwa	Cane was burnt before info day could be held
9	Tagitagi Mun Samy 34166	Tavua	Weed control/varieties LF94-694	75 growers attended information day
10	Malau Est of Abdul Gani	Penang	Varieties Ragnar/Naidiri/Beqa	Poor germination
11	Malau Ram Bhajan	Penang	Variety/Weed controls Aiwa	80 growers attended information day
12	Nanuku F/No 880 Kaliyan Prasad	Penang	Weed control	Cane was burnt before info day could be held
13	Malolo F No 2561 Mohammed Jameer	Nadi	Variety/Weed control Beqa	70 growers attended information day hosted by Fairtrade
14	Lomawai F No 5116 Anand Prakash	Sigatoka	New variety/weed control	Information day planned for 2015
15	Lomawai F No 11604 Vinay Prasad	Sigatoka	weed control	No information day held due to dry weather
16	Lomawai F No 11085 Est of Mohd Yunus	Sigatoka	Weed control	No information day held due to dry weather
17	Marika Ratoto	Mota	Varietal spread (2ha)	Information day planned for 2015
18	Marika Morawa	Nasolo	Varietal spread (4.5ha)	For seedcane
19	Elenoa Tawai	Nasolo	Varietal spread committed Not planted	For seedcane
20	Sivo Naqesa	Nasolo	Varietal spread committed Not planted,	For seedcane
21	Aisea Ratoto	Nasolo	Varietal spread committed Not planted,	For seedcane
22	Ratu Jone Kedraika	Nawaicoba	Seedcane Naidiri (2.4ha)	For seedcane
23	Gyan Singh	Veisaru	Weed control/varieties LF94-694	75 growers attended information day

Lead Farmer training

The table below summaries the lead farmer training that was carried out for the period 2013 – 2014.

Summary:

- Each LEAD FARMER chosen to attend this training represents 10 growers from his locality
- 2860 growers were represented by 286 Lead Farmers

Table 5: Lead farmer training summary (TT – Technology Transfer)

No	Sectors	Dates	No of Farmers
	LAUTOKA MILL AREA TRAININGS		
1	Drasa	05/08 - 09/08 2013	17
2	Lovu/Lautoka	19/08 - 23/08 2013	15
3	Saweni/Natova	02/09 - 06/09 2013	13
4	Legalega/Meiguniyah	16/09 - 20/09 2013	15
5	Qeleloa Malolo	30/09 - 04/10 2013	23
6	Lomawai	11/11 – 15/11 2013	22
7	Yako/Nawaicoba	25/11 – 29/11 2013	16
8	Cuvu/Olosara	23 – 27 / 06 2014	16
	Subtotal		137
	RARAWAI MILL AREA TRAININGS		
18	Koronubu	14 – 18 July 2014	21
19	Varoko Rarawai	28 July – 1 August 2014	19
20	Veisaru Varavu	11 – 15 August 2014	20
21	Mota/Naloto	16 – 20 Feb 2015	22
22	Drumasi	23 – 27 Feb 2015	16
23	Yaladro	02 – 06 March 2015	18
	Subtotal		116
	PENANG MILL AREA TRAININGS		
24	Nanuku/Malau	17-21 Nov. 2014	17
25	Ellington 1 & II	08-12 Dec. 2014	16
	Subtotal		33
	Grand total		**286**

Weed booklet (*this project has been placed on hold pending administrative directives.)*

Compilation of 1st Draft of Weed Booklet for:

- Weed identification
- Weed control

Booklet write up in progress

- 60 % Completed
- Editing, Verification, Design and Artwork in progress

Visiting Grower demonstration trials & Conducting Lead farmer training

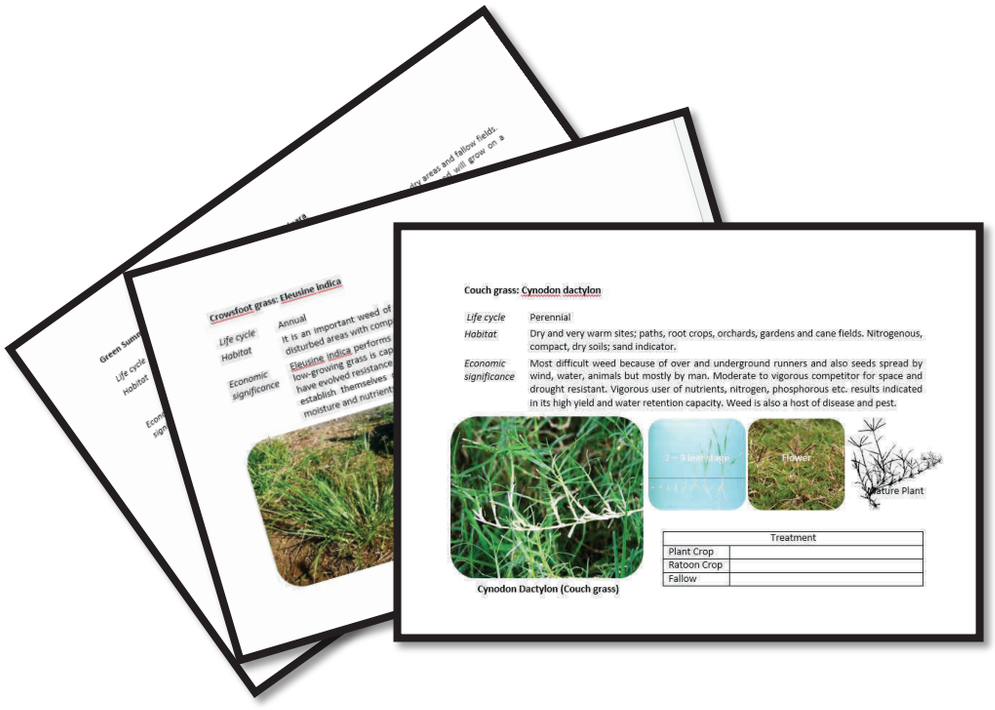


Figure 2: Sample pages from the weed booklet

Seed cane nursery program

Heat treatment of seed cane before planting is used to eliminate bacterial disease such as Ratoon Stunting Disease and some minor fungal diseases prior to the establishment of seed cane nurseries. A long hot-water treatment of 50° C for 2-3 hours temperature/ time range used in Fiji after experimentations of varietal heat tolerance.

Heat treatment for seed cane production continued in the 2014 season. The uptake of seed cane from the estates in 2014has improved gradually as a result of farmers realizing the benefits of planting seed cane from approved plots and the availability of the government grant of F$8.4M for land preparation.

Table 6: Uptake trend of seed cane from Approved seed plots

Year	Total seed cane available	Total seed cane taken	% uptake to date
2010	4368	176.45	4.0
2011	3776.2	237.46	6.3
2012	2268	177.31	7.8
2013	490.8	217.8	44.4
2014	1019	611.4	60

The amount of seed cane that was available for planting in 2014 was 1019 tonnes in Mother plots in Drasa and Rarawai Estates that if all is taken via Extension will cover an estimated area of 203.8ha. The uptake of seed cane from our nurseries increased in 2014 to about 60% of the total seed available on our estates. This has contributed to the increased planting during the year as a result of the Fiji government grant of F$8.4M for planting.

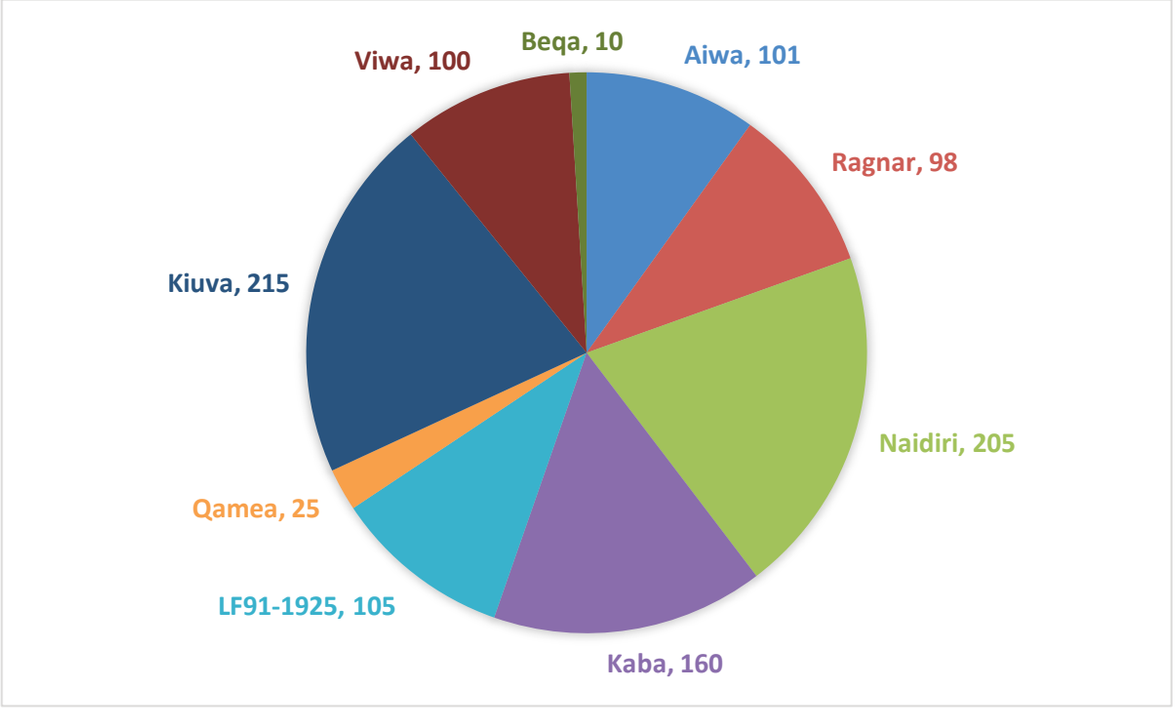


Chart 1: Seed cane available from heat treated plots (tonnage)

The greenhouse was completed in June and planting under the greenhouse protocol proceeded with a total 0.7ha transferred to the field with five different varieties. Figures 4 – 10 shows the sequence of events carried out for treated seedcane.

Figure 3: Greenhouse facility at Drasa

Figure 4: Filling potting mix into the 32-hole trays

Figure 5: Germinating seedlings in the greenhouse

Figure 6: Irrigation in the green house

Figure 7: Greenhouse seedlings ready to be transferred

Figure 8: Seedlings trimmed for hardening before transplanting

Figure 9: Transfer of seedlings into the field

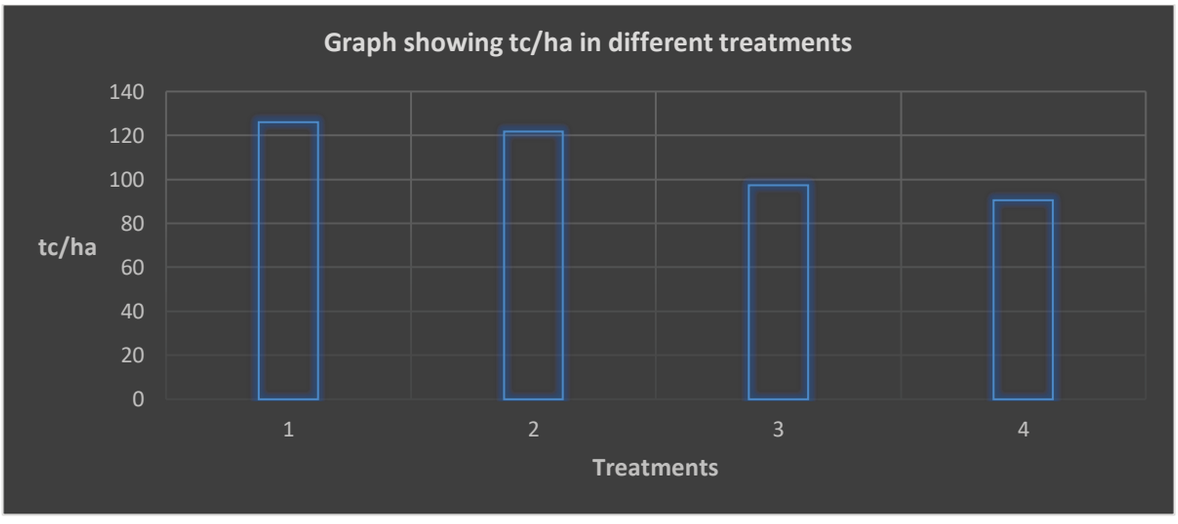
Figure 10: Planting seedlings in the field

An inspection of the hot water treated seed bed was done and found only minor leaf diseases present. Samples taken for RSD incidence are yet to be analyzed by SRIF Pathology lab.

HWT seed cane sold from the estates totaled 611.4t which was taken by farmers directly including FSC Nursery Officers. A good amount of seed cane was given freely through the SRIF Technology Transfer demonstration plots for "weed control" and "varietal spread" in farmers' fields.

Effect of Farm Organic on Cane and Sugar Yields in Comparison with Recommended rates of chemical fertilization

A trial was planted to study the effect of organic fertilizer (SumaGrow) on cane and sugar yields in comparison with recommended rates of chemical fertilizer**.** The treatments included; 100% chemical fertilizer, 50% chemical fertilizer and 50% organic fertilizer, 100% organic fertilizer, seedcane dipped in 2.5% organic fertilizer. Based on the calculated yield the trial showed (graph 1) that by applying organic fertilizer (SumaGrow) in combination with commercial fertilizers can increase cane and sugar yield significantly. Organic fertilizer (SumaGrow) is capable of producing good tonnage, producing 90 - 97 tons per hectare (treatment 3 and treatment 4) of cane when used alone. However, the effect is enhanced when used in combination with commercial fertilizer producing 121 tons per hectare of cane (treatment 2). The effects of SumaGrow need to be studied on plant and ratoon stages of sugarcane on different soil types and different sugarcane varieties to be able to recommend SumaGrow for sugarcane.



Graph 1: tc/ha in different treatments

Effects of potassium fertilization on plant cane and successive ratoons.

Second ratoon was harvested and data was evaluated. The treatment fertilizer used was Muriate of Potash (50%) a three different rates; 80, 125, and 200 K kg/ha. The cane was supplied with top dressing of ammonium sulphate at 120 kg/ha 6 weeks after harvesting. Amine 2, 4 D and Valper were applied as post emergence at 4 kg/ha after emergence of weeds. A pre-harvest sampling of cane was carried out from each treatment to determine %brix, %pol, %pocs %fiber. The cane from each plot was weighed to determine cane and sugar yields obtained from each treatment. From the data obtained for the trial, it is evident there is no significant effect of potassium on cane yield. The trial will be continued to third ratoon for evaluation.

The effects of time of harvest on sugarcane yield in Fiji.

Three commercial varieties of sugarcane Kiuva, Naidiri and Mana were planted to evaluate optimum harvesting time for different varieties. The trial was harvested thrice in the harvesting season, early harvesting (July), mid harvesting (August) and late harvesting (September) and weighed manually. Six stalks were randomly selected from each treatment to determine %brix, %pol and %fibre and %pocs. The tons of sugar obtained per hectare were found to be significantly different within all three harvesting seasons. Yield of sugar was found to be higher in late harvesting season. The percent brix for Kiuva and Naidiri are higher than more commonly planted variety Mana in all harvesting season including early harvesting season.

Nitrogen trial

Nitrogen is one of the main building blocks of protein. It is responsible for growth and expansion of green leaves and is essential for photosynthesis and sugar production. Application rates of nitrogen in the field are determined by leaf and soil analysis done in the lab. Three nitrogen trials have been established in Seaqaqa to study the effect of different rates of nitrogen fertilizer on cane growth and yield in the field. The data from these trials shows that 150 Kg N per hectare gave higher plant population with tallest plants, which was

followed by 120 Kg N per hectare. Even though 150 Kg N per hectare recorded higher plant growth and population 120 Kg N per hectare gave economic growth and yield which is desirable for profit in the field.

Phytotoxic effect of Diuron

Diuron is the most commonly used herbicide in sugarcane fields of Fiji. Four different varieties were planted at different locations with two different rates of Diuron applied which were 4 kg/ha and 6kg/ha. Phytotoxic effect of this chemical on cane plant was evaluated. Application of Diuron at 6kg per hectare hindered the sugar cane plant growth. This resulted in lower cane sugar yield. Hence it can be said that applying 6kg of Diuron per hectare causes phytotoxic effect in sugar cane plant. Farmers should apply the recommended rate in their farm to obtain optimum yield, where as if applied in excess can cause yield loss.

Legume trial

Planting of legume crops with sugarcane tends to fix nitrogen in the soil and also becomes a source of cash income for the farmers. Ragnar variety was planted at two different locations with legume treatments which were peanut, urd and cowpea. These three legumes were sprayed at three different stages which were before flowering, after flowering and after fruiting. The result showed that cowpea at after flowering gave better plant growth and yield. Also the nitrogen content of the plant was highest at flowering stage which concludes that planting legume and spraying it out at flowering stage will add maximum amount of nitrogen back in the soil.

Effect of lime on soil properties and sugarcane yield in Fiji.

Fiji soils are acidic in nature which may be one of the reasons attributed to the declining productivity of sugarcane. There are various reasons of increased pH such as:

- Continuous mono-culturing of sugarcane on Fiji soils
- Soil erosion
- Continuous use of ammonia based fertilizers on sugarcane cultivated soils

To verify this problem, two lime trials have been established in Seaqaqa and one in Drasa to study the effect of lime on soil pH and cane sugar yield. Lime addition in the soil reduces soil pH which is desirable for cane growth. Naidiri and LF91- 1925 variety has been planted at two different location in Seaqaqa and Aiwa in Drasa with different quantities of lime treatment which were 0 t/ha, 1.3 t/ha, 2.6 t/ha and 3.9 t/ha. Lime was applied in the furrows during the time of planting. There was no significant difference in plant growth, stalk population and the tiller production between the treatments. Lime is a slow reacting component and the effect of it will take time, therefor the result of significance may be noticed in the ratoon. The yield of both trials showed similar trends as with growth attributes.

MEDIA & PUBLICATION

A media & publication studio was established and now SRIF has its own edit suite for editing video/footage and also camera kits and equipment for shooting events and activities carried by researches and officers and adding on SRIF has projection on video production of 2-3 video/short film on weed control and management, land production and planting and varieties and seed cane production are the major project.

FACP APPENDICES

Appendix 1: Main features of 2014 season compared with 2013

	Lautoka		Rarawai		Labasa		Penang		All mills	
	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Total registrations (Numbers)	5281	5327	5143	5206	3958	4011	1694	1693	16076	16237
Total farm basic allotments (tonnes)	912182	923991	909103	929885	874558	891325	249846	255612	2945689	3000813
Total registered area (hectares)	22446	22569	21569	21767	18488	19459	7727	7711	70230	71505
Total area cultivated (hectares)	13405	11702	15357	14022	13613	13337	4217	5353	46592	44414
Total area harvested (hectares)	10969	11018	12248	11973	11652	12079	3291	3358	38160	38427
Total farm harvest Quotas (tonnes)										
Sugar make actual (tonnes)	40313	71869	58850	66742	62026	67338	18681	20910	179870	226858
Tonnes 94 N.T sugar	41874	76456	60039	682277	63423	69647	19258	21684	184624	236065
Yield tonnes 94 N.T.sugar per hectare	3.8	6.9	4.7	5.6	5.3	5.6	5.8	6.5	4.9	6.1
Tonnes cane per tonnes sugar 94 N.T.	10.1	7.7	8.5	8.3	8.8	8.1	9.6	8.3	9.3	8.1
%POCS	11.60	13	11.54	12	11.24	12	10.64	12	11.3	12
Cane purity average for season	81.7	83	82.6	82	82.4	84	81.3	81	82	83
Tonnes cane harvested	405652	520264	498881	596350	546156	544353	159720	171214	1610409	1832181
Tonnes cane crushed	405653	554224	509090	553014	546156	544353	184773	180571	1645672	1832162

Appendix 2: Monthly rainfall(mm) for 2014 compared with long term average

Mills	No. of years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Lautoka	2014 actual	310	300	196	194	203	10	7	0	30	53	37	201	1541
	106 yrs avg. to 2014	309	323	323	184	99	66	51	68	74	91	127	190	1904
Rarawai	2014 actual	322	256	186	85	145	4	5	0	6	46	57	138	1250
	129 yrs avg. to 2014	358	359	362	286	81	38	29	96	103	145	222	238	2316
Labasa	2014 actual	293	405	183	125	88	14	18	2	6	275	116	154	1679
	126 yrs avg. to 2014	366	362	381	233	110	65	47	51	103	103	205	253	2280
Penang	2014 actual	354	483	242	124	207	42	24	16	0	99	65	520	2176
	117 yrs avg. to 2014	439	355	405	380	124	70	52	90	86	145	154	245	2545

Appendix 3: Crop production details

	Lautoka		Rarawai		Labasa		Penang		All mills	
	2013	2014	2013	2014	2013	2014	2013		2013	2014
Areas harvested (hectares)										
Plant	566	681	833	803	1598	1035	318	260	3315	2780
First ratoon	245	577	646	863	572	1700	143	262	1606	3401
2nd ratoon	1009	237	1232	639	1593	582	452	127	4286	1584
Other ratoons	9148	9523	9537	9667	7889	8762	2376	2709	28950	30662
Total	10969	11018	12248	11973	11652	12079	3291	3358	38160	38427
Cane harvested										
Plant	28993	40769	47120	49438	94898	60413	13003	15713	184014	166333
First ratoon	11622	33012	34020	51957	33040	97645	6823	14320	85505	196934
2nd ratoon	38069	12340	54533	34407	76774	28940	2589	6313	171965	82000
Other ratoons	326968	434143	363208	460548	341444	357355	119306	134868	1150926	1386914
Total	405652	520264	498881	596350	546156	544353	159720	171214	1520409	1832181
Yield tonnes cane per hectare (tch)										
Plant	51.2	60	56.6	62	59.4	58	40.8	60	52	60
First ratoon	47.4	53	52.7	60	57.7	57	47.8	55	51.4	58
2nd ratoon	37.7	52	44.3	54	48.2	50	45.5	50	43.9	52
Other ratoons	35.7	46	38.1	48	43.3	41	50.2	50	41.8	45
Avg. yield/ha	37.0	47	40.7	50	46.9	45	48.5	51	43.3	48
Varieties crushed (% of total cane harvested)										
Ragnar	0.4	0.6	0.2	0.5	21.5	23.9	0.00	0.1	5.5	7.5
Aiwa	0.4	0.4	0.2	0.3	0.2	0.2	0.10		0.2	0.3
Beqa	0.0	0.3		0.0	0.1	0.0	nil	0.1		0.1
Galoa	0.0	0.1		0.0	5.9	6.2	nil		1.5	1.9
Kaba	2.2	2.3	5.2	5.0	0.4	0.4	0.30	0.3	2.0	2.6
Mali		0.1		0.0	11.9	10.3	0.30	0.1	3.1	3.1
Mana	94.0	91.8	92.4	90.9			95.20	95.4	70.4	64.3
Naidiri	1.1	1.7	0.7	0.9	33.3	33.8	2.80	3.4	9.5	11.2
Vatu		0.0		0.0	17.5	16.6	0.02	0.0	4.4	4.9
Waya		0.0	0.3	0.4	7.7	6.7	0.00	0.1	2	2.1
LF91-1925	0.8	1.0	0.1	0.3	0.9	0.9	0.17	0.1	0.5	0.6
Kiuva	0.9	1.3	0.3	1.1	0.7	0.8	1.07	0.3	0.75	1.0
Expt./Others	0.3	0.1	0.6	0.6	0.0	0.1	0.03		0.2	0.3
Total	100	100	100	100	100	100	100	100	100	100

Appendix 4: Rainfall (mm) at mill centres

Mill	For 12 months ended 31st December					For 12 months ended 30th September				
	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014
Lautoka	1299	3115	3563	2438	1541	899	2422	3384	1570	1250
Rarawai	1655	2779	2640	2268	1250	1101	3029	2351	1469	1009
Labasa	2275	2814	2679	2752	1679	1568	3087	2322	2066	1134
Penang	1643	3246	3000	2342	2179	1342	3335	2793	1850	1490

Appendix 5: Rainfall distribution affecting 2014 crop(mm)

Month	Period	Lautoka	Rarawai	Labasa	Penang
Jul-13	Early	1.3	0	19.2	48.8
	Mid	7.7	7.9	12.8	6.5
	Late	0.7	0	0.9	11.4
Aug-13	Early	5.1	6.7	19.2	6
	Mid	0	0	18.4	1.3
	Late	13.2	23.9	54.9	12.1
Sep-13	Early	2.5	1	57.4	23.8
	Mid	0	1.2	14.1	6.4
	Late	71.3	28.4	67.9	18.5
Oct-13	Early	18.3	0	74.6	4
	Mid	23.7	39.4	91.1	37.4
	Late	20.2	50.3	68.1	80.5
Nov-13	Early	30.6	42.8	10.8	11
	Mid	179	106.1	45.8	95
	Late	71.9	88.2	108.7	10.1
Dec-13	Early	283.6	198	70.4	95.1
	Mid	154.2	193.8	56.3	126.1
	Late	17.6	17.4	104.9	31.9
Jan-14	Early	29	44.2	121.3	20.4
	Mid	42.8	72.7	190.2	53.9
	Late	239.5	299.6	288.2	279.4
Feb-14	Early	20.6	15.4	129.7	176
	Mid	84.9	183.2	173.5	183.2
	Late	49.1	35.8	153.7	123.4
Mar-14	Early	11.5	6.7	132.5	118.5
	Mid	67.2	99.7	56.2	92.2
	Late	22.4	45.3	90.3	31
Apr-14	Early	22.9	33	22.4	23.2
	Mid	0	16.4	0	0
	Late	11.8	116.3	28	100.3
May-14	Early	9.9	0	55.5	8.6
	Mid	130.7	129.6	112.3	193
	Late	0	0	0	5.5
Jun-14	Early	7.9	0	8	10.8
	Mid	4.9	0	0	0.4
	Late	1	0	0	31

Early - 1st to 10th of the month Mid - 11th to 20th of the month Late - 21st to end of the month

Appendix 6 : hectares harvested

Mills	Crop	Average for period of five seasons					Last four seasons individually			
		1986/ 1990	1991/ 1995	1996/ 2000	2001/ 2005	2006/ 2010	2011	2012	2013	2014
Lautoka	P	4007	3634	2944	1042	788	1344	279	566	681
	R	19743	20580	19701	19730	14614	10610	11925	10403	10337
	Total	23750	24214	22645	20772	15402	11954	12204	10969	11018
Rarawai	P	3574	2899	3164	1055	1127	1370	665	833	803
	R	14805	17360	14613	17585	14553	11291	12206	11415	11170
	Total	18379	20259	17777	18640	15680	12661	12871	12248	11973
Labasa	P	2512	3120	2597	1269	1116	2065	559	1598	1035
	R	17181	19604	18348	15911	14039	12389	12799	10054	11044
	Total	19693	22724	20945	17180	15155	14454	13358	11652	12079
Penang	P	1396	1386	1120	542	339	522	158	318	260
	R	5029	4958	4674	4568	3991	3265	3367	2973	3098
	Total	6425	6344	5794	5110	4330	3787	3525	3291	3358
All mills	P	11489	11039	9825	3908	3369	5300	1661	3315	2780
	R	56758	62502	57336	57794	47197	37556	40298	34845	35647
	Total	68247	73541	67161	61702	50567	42856	41959	38160	38427

Appendix 7: Tonnes of cane harvested

Mills	Average for period of five seasons					Last four seasons individually			
	1986/ 1990	1991/ 1995	1996/ 2000	2001/ 2005	2006/ 2010	2011	2012	2013	2014
Lautoka	1048942	1283569	1216597	971454	763321	652333	481483	405652	520264
Rarawai	1006366	1017374	957507	878509	738316	663774	508638	498881	596350
Labasa	1015166	1166055	1017061	840388	695728	570468	413285	546156	544353
Penang	332592	291206	309205	239044	213253	208860	143568	159720	171214
All mills	3403066	3758204	3500370	2929395	2410619	2095435	1546974	1610409	1832181

Appendix 8 : Tonnes of cane per hectare harvested

Mills	Crop	Average for period of five seasons					Last four seasons individually			
		1986/ 1990	1991/ 1995	1996/ 2000	2001/ 2005	2006/ 2010	2011	2012	2013	2014
Lautoka	P	65.4	64.7	64.2	63.9	67.2	68.1	53.9	51.2	59.8
	R	54.2	51.2	51.4	45.9	47.6	52.9	39.1	36.2	46.4
	Total	55.5	52.4	53.7	46.8	49.1	54.6	39.5	37.0	47.2
Rarawai	P	64.3	61.2	62.1	59.6	58.8	62.6	53.1	56.6	61.6
	R	52.0	48.1	52.9	46.4	44.8	51.2	38.8	39.6	49.0
	Total	54.2	50.1	53.9	47.1	46.5	52.4	39.5	40.7	49.8
Labasa	P	58.9	59.3	56.5	59.7	56.7	46.7	43.9	59.4	58.3
	R	51.5	50.4	47.4	47.6	43.5	38.3	30.4	44.8	43.8
	Total	51.5	51.3	48.6	48.9	45.8	39.5	30.9	46.9	45.1
Penang	P	63.1	57.2	62.6	54.2	56.3	53.3	46.4	40.8	60.4
	R	48.6	43.1	51.2	46.4	48.3	55.5	40.5	49.3	50.2
	Total	51.1	46.0	53.3	46.8	49.1	55.2	40.7	48.5	51.0
All Mills	P	62.6	61.2	61.8	58.3	59.5	56.9	49.5	55.5	59.8
	R	55.8	48.1	50.0	46.0	45.8	47.8	36.3	40.9	46.7
	Total	53.3	50.2	52.1	47.5	47.3	48.9	36.9	42.2	47.7

Appendix 9 : Hectares harvested in relation to registered area and cultivated area (ha)

Mills	Area (ha)			% of registered and cultivated area harvested	
	Registered	Cultivated	Harvested	Registered	Cultivated
Lautoka	22272	14570	12204	54.8	83.8
Rarawai	21569	19829	12871	59.7	64.9
Labasa	18385	15438	13358	72.7	86.5
Penang	7824	4054	3525	45.1	87.0
Total	70049	53891	41958	59.9	77.9

Appendix 10 : Plant cane harvested as percentage of total cane harvested

Mills	Average for period of five seasons					Last four seasons individually			
	1986/ 1990	1991/ 1995	1996/ 2000	2001/ 2005	2006/ 2010	2011	2012	2013	2014
Lautoka	17	15	13	5	5.5	14	3.1	7.1	7.8
Rarawai	19	14	18	6	8.2	12.9	6.9	9.4	8.3
Labasa	13	14	12	7	8.2	16.9	5.9	17.4	11.1
Penang	22	23	19	11	8.2	13.3	5.1	8.1	9.2
All mills	17	16	15	7	7.4	14.4	5.3	10.5	9.1

Appendix 11: Plant, ratoon yields and percentage of total area harvested - 2014 Crop

Mills	Plant			First ratoon			Other ratoons			All cane	
	tch	Area ha	% of Area	tch	Area ha	% of Area	tch	Area ha	% of Area	tch	Area ha
Lautoka	59.8	681.2	6.2	57.3	576.6	5.2	45.7	9523.4	86.4	47.2	11017.9
Rarawai	61.6	803.2	6.7	60.2	862.9	7.2	48.0	9667.4	80.7	49.8	11972.5
Labasa	58.3	1035.4	8.6	57.4	1700	14.1	41.3	8762.1	72.5	45.1	12079
Penang	60.4	260.3	7.8	54.6	262.2	7.8	49.8	2706.8	80.7	51.0	3358.2
All Mills	59.8	2780	7.2	57.9	3401	8.9	45.6	30662	79.8	47.7	38427

Appendix 12 : Seasonal %POCS in cane

Mills	Rough average for period of five seasons					Last four seasons individually			
	1986/ 1990	1991/ 1995	1996/ 2000	2001/ 2005	2006/ 2010	2011	2012	2013	2014
Lautoka	12.0	12.5	11.4	11.5	10.8	9.6	10.66	11.60	13
Rarawai	12.1	12.9	11.4	11.9	10.9	9.8	10.65	11.54	12
Labasa	12.4	12.1	11.1	11.5	10.7	10.0	11.64	11.24	12.31
Penang	12.2	12.6	11.1	11.9	11.1	9.6	11.53	10.64	11.9
All Mill Avg.	12.3	12.5	11.2	11.7	11.0	9.8	11.12	11.26	12.3

Appendix 13: Weekly POCS in cane 2014 season					
Week no.	**Week ending**	**Lautoka**	**Rarawai**	**Labasa**	**Penang**
1	23-Jun-14	11	10	11.2	11
2	30-Jun-14	11.2	10.3	11.2	11.1
3	7-Jul-14	11.6	10.3	11.5	10.8
4	14-Jul-14	11.9	10.5	11.5	11.1
5	21-Jul-14	12.2	10.8	11.6	11.2
6	28-Jul-14	12.5	11.8	11.5	11.1
7	4-Aug-14	12.8	12.1	11.9	11.4
8	11-Aug-14	12.8	12.4	12	11.6
9	18-Aug-14	13.5	12.8	12.8	12.2
10	25-Aug-14	13.5	13	12.4	12.2
11	1-Sep-14	13.8	13.1	12.4	12.8
12	8-Sep-14	13.7	12.8	12.2	12.8
13	15-Sep-14	14	12.7	12.6	12.9
14	22-Sep-14	13.6	13.2	12.1	12.6
15	29-Sep-14	13.4	13.3	12	12.6
16	6-Oct-14	13.5	11.9	12.1	12.7
17	13-Oct-14	13.4	11.6	12.2	
18	20-Oct-14	13	12.2		
19	27-Oct-14	12.7	12.7		
20	3-Nov-14		12.6		
21	10-Nov-14		12.5		
22	17-Nov-14		12.2		
23	24-Nov-14		11.9		
Season average		12.90	11.90	12.00	11.90

Appendix 14 : Sugar produced (tonnes 94 N.T. equivalent)									
Mills	**Tonnes sugar 94 N.T equivalent**								
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Lautoka	96875	75656	77311	53313	43384	50306	48129	41874	76456
Rarawai	106781	78786	63954	42222	31580	61028	45732	60039	68277
Labasa	83970	68255	53160	57548	40943	45146	45398	63423	69647
Penang	30937	21858	23231	22818	18530	16838	19908	19258	21684
All mills	318563	244555	217656	175901	134436	173318	159166	184594	236065

Appendix 15 : Sugar tonnes 94 N.T equivalent per hectare (tsh)										
Mills	**Average for period of five seasons**					**Last five seasons individually**				
	1986/ 1990	**1991/ 1995**	**1996/ 2000**	**2001/ 2005**	**2006/ 2010**	**2009**	**2011**	**2012**	**2013**	**2014**
Lautoka	6.55	6.15	5.61	4.92	4.42	3.69	4.21	3.8	3.8	6.9
Rarawai	6.36	6.29	5.61	5.38	4.02	2.79	4.82	3.8	4.7	5.6
Labasa	6.20	6.00	4.95	4.97	3.98	3.80	3.05	3.4	5.3	5.6
Penang	5.70	5.47	5.42	4.65	5.41	5.35	4.45	5.6	5.9	6.5
Average	6.28	6.05	5.39	5.06	4.25	3.59	4.04	4.2	4.9	6.1

Appendix 16 : Length of season (weeks) - Start and finish of crushing (date)

Mills	Average length of season (5 yearly)					Last four seasons individually			
	1986/ 1990	1991/ 1995	1996/ 2000	2001/ 2005	2006/ 2010	2011	2012	2013	2014
Lautoka	28.8	28.0	29.7	27.6	27.0		24.2 26/06/12 to 04/12/12	19.0 02/06/13 To 03/11/13	19 01/07/14 To 08/11/14
Rarawai	26.2	25.3	26.5	24.2	28.0	26.6 21/06/11 to 24/12/11	22.8 10/07/12 to 17/12/12	20 26/06/13 To 13/11/13	21.54 19/06/14 To 17/11/14
Labasa	26.6	29.4	30.7	24.1	25.9	22.7 14/07/11 to 20/12/11	16.1 26/06/12 to 16/10/12	19 27/06/13 To 09/11/13	16.5 17/06/14 To 11/10/14
Penang	25.5	21.5	26.2	20.4	22.5	24.6 28/06/11 to 28/11/11	16.3 26/06/12 to 18/10/12	17 25/06/13 To 20/10/13	16.9 27/06/14 To 11/10/14
All mills	26.8	26.1	28.2	24.1	25.9		19.9	18.7	

Appendix 17 : Varieties Percent of hectares harvested

Varieties	Lautoka		Rarawai		Labasa		Penang		All Mills	
	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Ragnar	0.4	0.6	0.2	0.5	21.5	23.9	0	0.1	6.7	7.5
Waya	0	0.0	0.3	0.4	7.7	6.7	0	0.1	2.6	2.1
Mali	0	0.1	0	0	11.9	10.3	0.3	0.1	3.6	3.1
Galoa	0	0.1	0	0	5.9	6.2	0	0.1	1.8	1.9
Aiwa	0.4	0.4	0.2	0.3	0.2	0.2	0.1	0	0.2	0.3
Kiuva	0.9	1.3	0.3	1.1	0.7	0.8	1.07	0.3	0.5	1.0
Mana	94	91.8	92.4	90.9	0	0	95.2	95.4	67.4	64.3
LF91-1925	0.8	1.0	0.1	0.3	0.9	0.9	0.17	0.1	0.4	0.6
Kaba	2.2	2.3	5.2	5.0	0.4	0.4	0.3	0.3	2.2	2.6
Vatu	0	0.0	0	0	17.5	16.6	0.02	0	4.6	4.9
Beqa	0	0.3	0	0	0.1	0	0	0		0.1
Naidiri	1.1	1.7	0.7	0.9	33.3	33.8	2.8	3.4	10.4	11.2
Exp.	0	0	0	0	0	0	0	0	0.2	0
Other var.	0.3	0.1	0.6	0.6	0	0.1	0.03	0	nil	0.3

Appendix 18: Area planted in hectares as % of registered and cultivated areas

Mills	Hectares planted		Hectares planted as % of registered area		Hectares planted as % of cultivated area	
	2013	2014	2013	2014	2013	2014
Lautoka	741.2	1116.7	3.3	4.9	5.5	9.5
Rarawai	944.1	1276.6	44.6	5.9	61.9	9.1
Labasa	1157.3	1979.2	6.3	10.2	8.5	14.8
Penang	285.3	509	3.7	6.6	5.5	9.5
Total	3127.9	4881.5	14.5	6.8	20.35	11

Appendix 19: Percentage of total area planted by different varieties over three years

Year	Varieties	Lautoka		Rarawai		Labasa		Penang		All mills	
		%	Area ha	%	Area ha	%	Area ha	%	Area ha	%	Area ha
2012		1.2	625	0.7	904	17.6	1845	nil		9.1	3718
2013	Ragnar	3.8		2.3		27.2		nil			
2014		0.6	61.6	0.5	55.2	23.9	2790	0.1	3.9	7.5	2910.7
2012		nil		0.1	904	9.4	1845	39.1	344	8.3	3718
2013	Waya	nil		0.6		5.0		nil			
2014		0.0	2.5	0.4	48.3	6.7	979.5	0.1	2.6	2.1	1032.9
2012		76.0	625	79.2	904			51.0	344	36.8	3718
2013	Mana	69.0		63				64.6			
2014		91.8	10193.8	90.9	10883.7			95.4	3207	64.3	24284.5
2012		0.1	625	nil		6.5	1845	nil		3.2	3718
2013	Galoa	1.0		nil		6.3		nil			
2014		0.1	8.4	0	0	6.2	799.5	0.1	4.2	1.9	812.1
2012				nil		18.5	1845	0.2	344	9.2	3718
2013	Vatu			nil		13		0.4			
2014		0	0.3	0	0	16.6	2026.3	0	0.6	4.9	2027.2
2012			625	nil		10.7	1845	0.2	344	5.3	3718
2013	Mali	0.1		nil		8.5		nil			
2014		0.1	18.4	0	0.3	10.3	1277.2	0.1	5.4	3.1	1301.3
2012		1.3	625	0.2	904	0.1	1845	0.3	344	0.3	3718
2013	Aiwa	1.4		1.2		0.1		nil			
2014		0.4	43	0.3	40.4	0.2	25	0	0	0.3	108.4
2012		0.4	625	nil		nil		0.3	344	0.1	3718
2013	Beqa	0.4		nil		nil		nil			
2014		0.3	27.9	0	0	0	4.9	0	0	0.1	32.8
2012		5.7	625	10.5	904	0.4	1845	1.6	344	3.9	3718
2013	Kaba	5.3		11.4		0.5		0.3			
2014		2.3	252.3	5	598.8	0.4	68.8	0.3	14.1	2.6	934
2012		4.4	625	1.4	904	32.7	1845	7.3	344	18.0	3718
2013	Naidiri	8.8		2.8		34.7		0.3			
2014		1.7	160.5	0.9	104.2	33.8	3922.9	3.4	106.8	11.2	4294.4
2012		8.3				2.6		nil			
2013	Kiuva	5.1				2.0		nil			
2014		1.3	129.4	1.1	132.4	0.8	82.4	0.3	10.7	1.0	354.9
2012		2.5				1.0		nil			
2013	LF91-1925	4.6				2.4		nil			
2014		1.0	57.5	0.3	34.2	0.9	93.2	0.1	2.8	0.6	187.7
2012	Experiment	0.5	297	0.7	746	12.2	772	1.0		5.0	2023
2013	Other	0.2		0.2		nil		nil			
2014	Varieties	0.1	10.9	0.6	75	0.1	9.1			0.3	95

Appendix 20 : Cane transport in Fiji (tonnes of cane harvested and actual method of delivery)

Mills	Year	Delivered portable line		Winch trailer or lorry to mainline		Lorry direct to mill carrier		Total	
		Tonnes	% of Total	Tonnes	% of Total	Tonnes	% of Total	Tonnes	% of Total
Lautoka	2007	13652	2	158002	21	569577	77	741231	100
	2008	15915	2	179905	24	574754	74	770567	100
	2009	12464	2	168852	23	544730	75	726046	100
	2010	3964	1	129410	25	394094	75	527468	100
	2011	9491	1.5	144569	22.2	498273	76.4	652333	100
	2012	2065	0.4	113819	23.6	365599	75.9	481483	100
	2013	12464	1.7	168852	23.3	544730	75.0	726046	100
	2014	1436	0.3	116328	22.4	402500	77.4	520264	100
Rarawai	2007	32927	5	184605	25	520946	70	738478	100
	2008	38797	5	184094	25	509470	70	732165	100
	2009	23827	4	164490	25	471034	71	659351	100
	2010	25106	5	126450	24	370460	71	522016	100
	2011	23586	3.6	332792	50.1	307396	46.3	663774	100
	2012	14772	3.6	106393	24.9	387485	71.4	508650	100
	2013	22054	6.3	104779	30.2	220584	64	347417	100
	2014	14006	2.2	113691	18	468653	79.8	596350	100
Labasa	2007	2910		233371	31	532847	69	769138	100
	2008	1275		179815	30	423224	70	604314	100
	2009			230735	34	448849	66	679584	100
	2010			171042	34	383485	66	554527	100
	2011	nil	nil	162856	29	407610	71	570466	100
	2012	840	0.2	117543	28.4	294902	71.4	413285	100
	2013	nil	nil	137018	25.1	409138	75	546156	100
	2014	0	0	149353	27.4	395000	72.6	544353	100
Penang	2007	3010	1	55450	24	171378	75	229838	100
	2008	3026	1	48285	23	163261	76	214572	100
	2009	11145	6	30977	17	139528	77	181650	100
	2010			44447	25	131254	75	175701	100
	2011	nil	nil	55422	26.5	153438	73.5	208860	100
	2012	nil	nil	38712	27	104856	73	143568	100
	2013	nil	nil	40797	26	118923	75	159720	100
	2014	0	0	36454	21.3	134760	78.7	171214	100
All mills	2007	52509	2	128061	16	2298115	82	2478685	100
	2008	59013	3	592099	26	1670704	72	2321620	100
	2009	47436	2	595054	26	1604141	71	2246631	100
	2010	29070	1.6	471349	26.5	1279293	72	1779712	100
	2011	33077	1.6	695639	33.2	1366717	65.2	2095433	100
	2012	17677	1.1	376467	24.3	1152842	74.5	1546986	100
	2013	8630	2	451446	26.2	1293375	74.1	1779339	100
	2014	15442	0.8	415826	22.7	1400913	76.5	1832181	100

Appendix 21: Percentage burnt cane of total tonnes crushed

Year	Lautoka		Rarawai		Labasa		Penang		Average	
	%	Total	%	Total	%	Total	%	Total	%	Total
1976	12.9	917428	28.0	731865	4.9	445798	15.1	154116	15.2	2,249,027
1977	17.7	1044468	28.9	825628	6.9	606154	11.8	198116	16.3	2,674,366
1978	19.1	1043064	25.3	799497	9.6	756793	8.2	250168	15.6	2,849,522
1979	14.9	1699234	25.9	1123509	9.6	940636	15.0	294605	16.4	4.057,984
1980	21.5	1348039	27.4	958414	16.0	782742	18.0	271096	20.7	3,360,291
1981	17.6	1444504	21.2	1248910	19.4	930265	17.0	307753	18.8	3,931,432
1982	23.2	1507831	24.8	1100133	13.6	1140552	13.2	326348	18.7	4,074,864
1983	18.3	639823	18.4	561774	18.0	761454	12.0	239482	16.7	2,202,533
1984	25.1	1731580	8.2	1146140	12.9	1136737	10.0	382030	14.1	4,396,487
1985	28.6	947593	25.2	864264	22.4	934166	16.2	296418	23.1	3,042,441
1986	29.5	1526648	15.1	1204661	15.1	1017372	11.3	360284	17.8	4,108,965
1987	23.8	1090111	34.2	685994	20.9	877652	19.0	306706	24.5	2,960,463
1988	37.7	1116916	15.2	742128	16.0	1034788	19.2	291440	22.0	3,185,272
1989	20.6	1537337	13.6	1250977	12.7	974201	10.0	336418	14.2	4,098,933
1990	24.3	1347531	30.4	1148070	13.7	1171817	14.6	348110	20.8	4,015,528
1991	42.5	1112957	46.4	961961	32.0	1029223	27.6	276261	37.1	3,380,402
1992	52.5	1109778	52.1	962936	44.4	1162108	41.1	297818	47.5	3,532,640
1993	35.6	1341537	33.4	1013627	29.2	1124357	19.4	224383	29.4	3,703,904
1994	39.0	1337977	36.0	1104246	27.0	1298285	19.8	323743	30.5	4,064,251
1995	43.4	1515880	42.5	1044098	37.6	1216290	28.7	333790	38.1	4,110,058
1996	54.8	1561446	48.1	1229978	39.9	1238443	33.2	349348	44.0	4,379,215
1997	50.7	1160879	49.1	906495	33.5	910137	34.8	302095	42.0	3,279,606
1998	67.0	625763	67.7	406811	54.5	832622	44.6	232825	58.5	2,098,021
1999	41.6	1433143	39.8	992968	17.0	1192735	26.3	339292	32.4	3,958,138
2000	56.1	1301752	54.6	1251282	37.8	911370	49.0	322475	50.6	3,786,879
2001	56.7	906743	50.3	844411	18.9	845444	49.5	208183	42.9	2,804,781
2002	46.8	1137123	41.8	1071579	21.4	938450	33.9	275431	37.1	3,422,583
2003	40.1	890499	32.8	836728	29.3	638851	22.0	243602	33.4	2,609,680
2004	42.7	1032127	39.5	878121	18.3	848533	35.5	242408	34.3	3,001,189
2005	44.4	890779	38.4	761704	25.0	910663	34.9	225594	35.7	2,788,740
2006	60.5	1051097	58.5	1039474	34.4	871031	46.5	264498	51.7	3,226,100
2007	39.0	741231	40.5	738478	39.1	769138	53.5	229844	40.8	2,478,691
2008	50.9	770569	53.6	732165	49.1	604314	48.5	214572	51.1	2,321,620
2009	43.5	726046	33.3	659351	18.6	679584	28.8	181650	31.8	2,246,631
2010	30.4	527663	33.6	522114	18.6	554575	16.3	175701	25.0	1,780,053
2011	28.5	652333	28.2	663774	17.9	570468	26.6	208860	25.3	2,095,435
2012	43.8	481483	44.7	508638	18.7	413285	28.3	143568	35.9	1,546,974
2013	77.8	726046	31.9	347417	14.2	546156	27.0	159720	37.7	1,779,339
2014	50.7	520264	49.9	596350	22	544353	28	171214	39.9	1,832,181

APPROVED VARIETIES

APPROVED VARIETIES

The list of sugarcane varieties approved for planting during 2013 has been revised to include maturity trend. Varieties that are no longer planted have been removed from the approved varieties list. The varieties are recommended to growers on their soil type. The growers have a choice of at least three varieties to plant on their farms as laid down in the Master Award.

Mill/Sectors	Soil types	Varieties recommended on maturity trends	
		Early – mid maturing	Mid – late maturing
Lautoka/Olosara	Rich alluvial soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Lautoka/Cuvu	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Sandy soils	LF91-1925	Kaba, Mana, Viwa
Lautoka/Lomawai	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Sandy soils	LF91-1925	Kaba, Mana, Galoa
Lautoka/Yako	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Sandy soils	LF91-1925	Kaba, Mana, Galoa
Lautoka/Nawaicoba	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Sandy soils	LF91-1925	Kaba, Mana, Galoa
Lautoka/Malolo	Flat Fertile soil	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Lautoka/Qeleloa	Rich alluvial soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Lautoka/Meigunyah	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Lautoka/Legalega	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Lautoka/Natova	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Sandy soils	LF91-1925	Kaba, Mana, Galoa
Lautoka/Lautoka	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Lautoka/Saweni	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa

Mill/Sectors	Soil types	Varieties recommended on maturity trends	
		Early – mid maturing	Mid – late maturing
Lautoka/Saweni	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Sandy soils	LF91-1925	Kaba, Mana, Galoa
Lautoka/Lovu	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Lautoka/Drasa	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Sandy soils	LF91-1925	Kaba, Mana, Galoa
Rarawai/Varoko	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Rarawai/Mota	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Rarawai/Naloto	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Rarawai/Koronubu	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Rarawai/Veisaru	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Rarawai/Rarawai	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Rarawai/Varavu	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Rarawai/Tagitagi	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Mana, Kaba, Vatu, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Saline areas	Naidiri, LF91-1925	Kaba, Mana, Galoa
Rarawai/Yaladro	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
Rarawai/Drumasi	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Mana, Kaba, Vatu, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Saline areas	Naidiri, LF91-1925	Kaba, Mana, Galoa
Labasa/Waiqele	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	Naidiri, LF91-1925, Qamea	Kaba, Mali, Viwa

Mill/Sectors	Soil types	Varieties recommended on maturity trends	
		Early – mid maturing	Mid – late maturing
Labasa/Wailevu	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	Naidiri, LF91-1925, Qamea	Kaba, Mali, Viwa
	Saline soils	Naidiri, LF91-1925	Galoa, Vatu
Labasa/Vunimoli	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	Naidiri, LF91-1925, Qamea	Kaba, Mali, Viwa
Labasa/Labasa	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	Naidiri, LF91-1925, Qamea	Kaba, Mali, Viwa
	Saline soils	Naidiri, LF91-1925	Galoa, Vatu, Mali
Labasa/Bucaisau	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Waya, Viwa
	Poor soils	Naidiri, LF91-1925, Qamea	Kaba, Waya, Mali, Viwa
	Saline soils	Naidiri, LF91-1925	Galoa, Vatu, Mali
Labasa/Wainikoro	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Waya, Viwa
	Poor soils	Naidiri, LF91-1925, Qamea	Kaba, Waya, Mali, Viwa
	Saline soils	Naidiri, LF91-1925	Galoa, Vatu, Mali
Labasa/Daku	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Waya, Viwa
	Poor soils	Naidiri, LF91-1925, Qamea	Kaba, Waya, Mali, Viwa
Labasa/Natua	Poor soils	Aiwa, Naidiri, LF91-1925, Qamea	Ragnar, Kaba, Mali, Viwa
Labasa/Solove	Poor soils	Aiwa, Naidiri, LF91-1925, Qamea	Ragnar, Kaba, Mali, Viwa
Labasa/Bulivou	Poor soils	Aiwa, Naidiri, LF91-1925, Qamea	Ragnar, Kaba, Mali, Viwa
Penang/Nanuku	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Salt affected areas	Naidiri, LF91-1925	Galoa
	Viti Vanua area	Naidiri, LF91-1925, Qamea	Mana, Kaba, Kiuva, Mali, Viwa
Penang/Malau	Rich alluvial soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Mali, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Salt affected areas	Naidiri, LF91-1925	Galoa
Penang/Ellington	Flat Fertile soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Kiuva, Viwa
	Medium soils	Aiwa, Beqa, Naidiri, LF91-1925	Ragnar, Kaba, Vatu, Kiuva, Mali, Viwa
	Poor soils	LF91-1925, Qamea	Kaba, Mana, Viwa
	Salt affected areas	Naidiri, LF91-1925	Galoa

Sugar Research Institute of Fiji

Financial Statements

For the year ended 31 December 2014

Sugar Research Institute of Fiji

Contents

Sugar Research Institute of Fiji
Directors' report

Board report
In accordance with a resolution of the Board of Directors, the directors herewith submit the statement of financial position of Sugar Research Institute of Fiji (the "Institute") as at 31 December 2014 and the related statement of profit or loss and other comprehensive income and statement of cash flows for the year ended on that date and report as follows:

Directors
The Intitute did not have a Board present for the period 30 September 2012 to 4 May 2014. An interim board was appointed by the Ministry of Sugar on 4 May 2014 and the Board details were as follows:

Mr Abdul Khan (appointed on 4 May 2014)
Mr Manasa Tagicakibau (appointed on 4 May 2014)
Mr Sundresh Chetty (appointed on 4 May 2014)

The new Board was appointed on 1 March 2015. The Directors in office and up to the date of this report are:

Professor Rajesh Chandra - Chairman (appointed 1 March 2015)
Mr Abdul Khan (appointed on 1 March 2015)
Mr Daniel Elisha (appointed 1 March 2015)
Mr Manasa Tagicakibau (appointed on 1 March 2015 and resigned on 18 July 2017)
Professor Paras Nath (appointed 1 March 2015)
Mr Sundresh Chetty (appointed on 1 March 2015)
Dr K. Shanmudha Sundaram (appointed 1 March 2015)
Mr Graham Clark (appointed 18 July 2017)
Ms Reshmi Kumari (appointed 18 July 2017)

The current Chairman and members of the Board were not responsible for the affairs of the Institute in 2014. The Board has taken all necessary steps to have the accounts prepared properly with external input and has insured that the external auditors have unfetted access to all documents and information sought by them with the shared aim to ensure that the final accounts represent the true state of affairs of the Institute in 2014, including any liabilities.

State of affairs
In the opinion of the Board the accompanying statement of financial position gives a true and fair view of the state of affairs of the Institute as at 31 December 2014 and the accompanying statement of profit or loss and other comprehensive income and statement of cash flows give a true and fair view of the results and cash flows of the Institute for the year then ended.

Principal activity
The functions of the Institute are outlined under the Sugar Research Institute of Fiji Act No 14 of 2005, which includes promoting by means of research and investigation, the technical advancement, efficiency and productivity of the sugar industry, and to provide its functions, powers, administration and finance and for related matters.

Current assets
The directors took reasonable steps before the Institute's financial statements were made out to ascertain that the current assets of the Institute were shown in the accounting records at a value equal to or below the value that would be expected to be realised in the ordinary course of business.

At the date of this report, the directors are not aware of any circumstances which would render the values attributable to the current assets in the financial statements to be misleading.

Receivables
The directors took reasonable steps before the Institute's financial statements were made out to ascertain that all known bad debts were written off and adequate allowance was made for impairment losses.

At the date of this report, the directors are not aware of any circumstances which would render the above assessment inadequate to any substantial extent.

Related party transactions
All related party transactions have been adequately recorded in the financial statements.

Other circumstances
At the date of this report, the directors are not aware of any circumstances not otherwise dealt with in this report or financial statements which would render any amounts stated in the accounts to be misleading.

Unusual circumstances
The results of the Institute's operations during the financial year have not in the opinion of the directors been substantially affected by any item, transaction or event of a material and unusual nature other than those disclosed in the financial statements.

Going concern
The Institute's ability to continue to operate on a going concern basis is dependent on it receiving ongoing financial support from the Government, stakeholders in the Sugar Industry and other Donor Agencies. The Board Members consider the application of the going concern principle to be appropriate in the preparation of these financial statements as the Institute will continue to receive ongoing support from the Government and stakeholders in the Sugar Industry, which will enable the Institute to meet its funding requirements for operations and to meet its obligations as and when they fall due. The Institute receives funds from The Government, Fiji Sugar Corporation, and Growers through Sugar Cane Gowers Council.

Accordingly, these financial statements have been prepared on a going concern basis and do not include any adjustments relating to the recoverability and classification of recorded asset amounts or to the amounts and classification of liabilities that may be necessary should the Institute be unable to continue as a going concern.

Events subsequent to balance date
There is a draft Sugar Industry Bill before the parliment that is proposing major changes in the functioning of Sugar Research Industry of Fiji and until this bill is passed, the Board cannot give assurance about the future of Sugar Research Institute of Fiji in its present form.

Apart from the above, there has not arisen in the interval between the end of the year and the date of this report any item, transaction or event of a material and unusual nature likely, in the opinion of the Directors, to affect significantly the operations of the Institute, the results of those operations or the state of affairs of the Institute in subsequent financial years.

Dated at Lautoka this 01 day of NOVEMBER 2017.

Signed in accordance with a resolution of the Board.

Rajesh Chandra

Chairman

Board member

KPMG

Honourable Commodore Josaia Voreqe Bainimarama
Minister responsible for the Sugar Industry
PO Box 2212
Government Buildings
Suva

Dear Minister,

INDEPENDENT AUDITOR'S REPORT TO THE BOARD MEMBERS OF SUGAR RESEARCH INSTITUTE OF FIJI

Report on the Financial Statements

We have audited the accompanying financial statements of Sugar Research Institute of Fiji, which comprise the statement of financial position as at 31 December 2014, and the statement of profit or loss and other comprehensive income, and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory notes as set out in notes 1 to 19.

Directors' and Management's Responsibility for the Financial Statements

Directors and management are responsible for the preparation of financial statements that give a true and fair view in accordance with International Financial Reporting Standards and for such internal control as the directors and management determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of financial statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

KPMG

INDEPENDENT AUDITOR'S REPORT TO THE BOARD MEMBERS OF SUGAR RESEARCH INSTITUTE OF FIJI (continued)

Basis for qualification

VAT payable

The financial statements show an amount of VAT payable to the Fiji Government of $281,073. The VAT status of the Institute is currently being determined with FRCA and it is not presently known what the outcome of this will be. The impact on the amount recorded in the financial statements is currently incapable of determination, and accordingly, we are not able to determine what adjustments, if any, might be necessary to the amounts recorded in the financial statements.

Expenses

The Institute recorded $1,094,237 in Administrative expenses in the statement of profit or loss and other comprehensive income for the year ended 31 December 2014. The Institute did not provide appropriate supporting documents totalling $7,607 for the year ended 31 December 2014 for audit verification. As a result, we were unable to determine whether any adjustments might have been necessary in respect of the Institute's administrative expenses for the year ended 31 December 2014, and the elements making up the statement of financial position, and cash flows.

Qualified Opinion

In our opinion, except for the possible effects of the matters noted in the Basis for Qualification Opinion paragraphs, the financial statements give a true and fair view of the financial position of Sugar Research Institute of Fiji as at 31 December 2014 and of its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards.

Report on Other Legal and Regulatory Requirements

We have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purposes of our audit.

In our opinion:

i) proper books of account have been kept by the Institute, so far as it appears from our examination of those books;

ii) the financial statements are in agreement with the books of account; and

iii) to the best of our information and according to the explanations given to us the financial statements give the information required by the Sugar Research Institute of Fiji Act, 2005 in the manner so required.

KPMG.

1 November, 2017
Nadi, Fiji

KPMG
Chartered Accountants

Sugar Research Institute of Fiji
Statement of profit or loss and other comprehensive income
For the year ended 31 December 2014

	Note	2014 $	2013 $
Contributions and grants	6	2,380,353	2,443,763
Estate income		226,279	503,412
Other income	7	108,546	-
Total income		2,715,178	2,947,175
Cost of operations	8	(1,640,513)	(1,466,940)
Administrative expenses	9 (a)	(1,094,237)	(1,499,843)
Deficit from operations		(19,572)	(19,608)
Finance income		19,572	19,608
Deficit before tax		-	-
Income tax benefit	10	-	-
Deficit for the year		-	-

The notes on pages 8 to 18 are an integral part of these financial statements.

Sugar Research Institute of Fiji
Statement of financial position
For the year ended 31 December 2014

	Note	2014 $	2013 $
Assets			
Current assets			
Cash and cash equivalents	12	2,674,107	2,510,839
Inventories		-	1,311
Receivables and prepayments	13	2,750	60,562
Receivable from related parties	17 (b)	5,924,999	5,401,276
Total current assets		8,601,856	7,973,988
Non-current assets			
Property, plant and equipment	11	4,225,307	3,981,197
Total non-current assets		4,225,307	3,981,197
Total assets		12,827,163	11,955,185
Liabilities			
Current liabilities			
Bank overdraft	12	16,836	-
Deferred income	14	10,083,526	7,840,186
Payable to related parties	17 (c)	2,254,407	3,595,739
Employee benefits	15	45,933	45,933
Trade and other payables	16	426,461	473,327
Total current liabilities		12,827,163	11,955,185
Total liabilities		12,827,163	11,955,185

Signed on behalf of the board

Chairman **Board Member**

The notes on pages 8 to 18 are an integral part of these financial statements.

Sugar Research Institute of Fiji
Statement of cash flows
For the year ended 31 December 2014

	Note	2014	2013
		$	$
Operating Activities			
Receipts from stakeholders and donors		3,093,462	2,779,071
Payment to suppliers and employees		(2,365,975)	(2,933,285)
Interest received		19,572	19,608
Cash flows provided by / (used in) Operating Activities		747,059	(134,606)
Investing Activities			
Acquisition of property, plant and equipment	11	(583,791)	(563,739)
Cash flows used in Investing Activities		(583,791)	(563,739)
Net increase / (decrease) in cash and cash equivalents		163,268	(698,345)
Cash and cash equivalents at the beginning of the year		2,510,839	3,209,184
Cash and cash equivalents at 31 December	12	2,674,107	2,510,839

The notes on pages 8 to 18 are an integral part of these financial statements.

Sugar Research Institute of Fiji
Notes to the financial statements
For the year ended 31 December 2014

1. Reporting entity

Sugar Research Institute of Fiji (the "Institute") is a body corporate domiciled in Fiji, established under the Sugar Research Institute of Fiji Act 2005. The address of the Institute's registered office is Drasa, Lautoka, Fiji.

The functions of the Institute are outlined under Sugar Research Institute of Fiji Act No 14 of 2005, which includes promoting by means of research and investigation, the technical advancement, efficiency and productivity of the sugar industry, and to provide its functions, powers, administration and finance and for related matters.

2. Basis of preparation

(a) Statement of compliance

The financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the International Accounting Standards Board (IASB).

The financial statements were authorised for issue by the Board of Directors on _____.

(b) Going concern

The Institute's ability to continue to operate on a going concern basis is dependent on it receiving ongoing financial support from the Government, stakeholders in the Sugar Industry and other Donor Agencies. The Board Members consider the application of the going concern principle to be appropriate in the preparation of these financial statements as the Institute will continue to receive ongoing support from the Government and stakeholders in the Sugar Industry, which will enable the Institute to meet its funding requirements for operations and to meet its obligations as and when they fall due. The Institute receives funds from The Government, Fiji Sugar Corporation, and Growers through Sugar Cane Gowers Council.

Accordingly, these financial statements have been prepared on a going concern basis and do not include any adjustments relating to the recoverability and classification of recorded asset amounts or to the amounts and classification of liabilities that may be necessary should the Institute be unable to continue as a going concern.

(c) Basis of measurement

The financial statements have been prepared on the historical cost basis except where stated.

(d) Functional and presentation currency

The financial statements are presented in Fiji dollars, rounded to the nearest dollar, which is the Institute's functional currency.

(e) Use of estimates and judgments

The preparation of financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amount of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised and in any future period affected.

3. Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these financial statement.

(a) Foreign currency transactions

Transactions in foreign currencies are translated to Fiji dollars at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to Fiji dollars at the exchange rate at that date. The foreign currency gains or losses on translation are recognised in profit or loss.

(b) Property, plant and equipment

Recognition and measurement

Items of property, plant and equipment are measured at cost less accumulated depreciation and impairment losses. Costs includes expenditure that is directly attributable to the acquisition of the asset. Any gain or loss on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment, and is recognised in profit or loss.

Subsequent costs

The cost of replacing part of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefit embodied within the part will flow to the Institute and its cost can be measured reliably. The cost of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

Depreciation

Depreciation is calculated to write off the costs of items of property, plant and equipment less their estimated residual values using the straight-line method over their estimated useful lives, and is recognised in profit or loss. The estimated useful lives of property, plant and equipment for current and comparative periods are as follows:

Building and land	80 years
Computers	5 years
Fixtures and fittings	10 years
Motor vehicles	6.67 years
Plant and equipment	6.67 - 10 years

Depreciation methods, useful lives and residual values are reassessed at reporting date and adjusted if appropriate.

3. Significant accounting policies (continued)

(c) Financial instruments

(i) Non-derivative financial assets

The Institute initially recognises receivables on the date that they originate. All other financial assets are recognised initially on the trade date at which the Institute becomes a party to the contractual provisions of the instrument.

The Institute derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows on the financial asset in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred. Any interest in transferred financial assets that is created or retained by the Institute is recognised as a separate asset or liability.

Financial assets and liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Institute has a legal right to offset the amounts and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously.

The Institute classifies non-derivative financial assets into loans and receivables.

Receivables

Receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Such assets are recognised initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition receivables are measured at amortised cost using the effective interest method, less any impairment losses.

Receivables comprise receivables from related party receivables, prepayments, deposits and other receivables.

Cash and cash equivalents

Cash and cash equivalents comprises cash at bank, cash on hand and bank overdraft.

(ii) Non-derivative financial liabilities

Financial liabilities are initially recognised on the trade date when the Institute becomes a party to the contractual provisions of the instrument. The institute derecognises a financial liability when its contractual obligations are discharged or cancelled or expire. Financial liabilities are initially measured at fair value less any directly attributable transaction costs. Subsequent to initial recognisition these liabilities are measured at amortised cost using the effective interest method.

The institute has the following non-derivate financial liabilities: trade and other payables and payable to related parties.

Trade and other payables and payable to related party are stated at amortised cost.

3. Significant accounting policies (continued)

(d) Inventories

Inventories are measured at the lower of cost and net realisable value. The cost of inventories is based on the first-in first-out principle, and includes expenditure incurred in acquiring the inventories, production or conversion costs and other costs incurred in bringing them to their existing location and condition.

Net realisable value is the estimated selling price in the ordinary course of business, less the estimated selling expenses.

(e) Impairment

(i) Non-derivative financial assets

A financial asset not carried at fair value through profit or loss is assessed at each reporting date to determine whether there is objective evidence that it is impaired. A financial asset is impaired if objective evidence indicates that a loss event has occurred after the initial recognition of the asset, and that the loss event had a negative effect on the estimated future cash flows of that asset that can be estimated reliably.

Objective evidence that financial assets are impaired includes default or delinquency by a debtor, restructuring of an amount due to the Institute on terms that the Institute would not consider otherwise indications that a debtor or issuer will enter bankruptcy or the disappearance of an active market for a security because of financial difficulties.

(ii) Non-financial assets

At each reporting date non financial assets are reviewed to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. If estimated recoverable amount is lower, the carrying amount is reduced to its estimated recoverable amount, and an impairment loss is recognised immediately in profit or loss.

(f) Revenue

Grant income

Grants are recognised in the statement of financial position initially as deferred income when there is reasonable assurance that it will be received and that the Institute will comply with the conditions associated with the grant. It is then recognised in the profit or loss as grant income on a systematic basis as the Institute recognises expenses by achieving the relevant conditions of the grant.

Grants that relate to the acquisition of an asset are recognised in profit or loss as the asset is depreciated or amortised. The Institute chooses to present grant income on a gross method that is, recognising entire grant income and than offsetting against expenses.

(g) Employee benefits

Superannuation

Obligations for contributions to a defined contribution plan are recognised as an expense in profit or loss when they are due.

Employee entitlements

Liability for annual leave is recognised and measured as the amount unpaid at the reporting date at current pay rates in respect of employee services up to that date.

3. Significant accounting policies (continued)

(g) Employee benefits (continued)

Short-term benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed in the profit or loss as the related service is provided.

A liability is recognised for the amount to be paid under short-term benefit if the Institute has a present or constructive obligation to pay this amount as a result of past services provided by the employee and the obligation can be measured reliably.

(h) Income tax

The Institute is not subject to income tax.

(i) Receivable from related parties

The amounts receivable from related parties are recognised when there is a contractual receivable or a right to receive.

4. Financial risk management

The financial statements do not disclose information relating to the nature and extent of risks arising from financial instuments to which the Institute is exposed at year end, since credit risk, liquidity risk and market fluctuatuions are not material to the Institute.

5. Standards Issued but not yet adopted

A number of new standards, amendments to standards and interpretations are effective for annual periods beginning after 1 January 2014, and have not been applied in preparing these financial statements. None of these are expected to have a significant effect on the financial statements of the Company.

6. Contributions and grants

Contributions from stakeholders and grants that compensate the Institute for revenue and capital expenditure are recognised from deferred income as follows:

	2014	2013
	$	$
African Caribbean and Pacific Group of States (ACP)	-	26,885
Contribution from the Fiji Government	815,135	732,621
European Union	-	325,147
Fiji Sugar Corporation (FSC)	782,609	558,004
Sugar Cane Growers	782,609	746,041
Mauritius Sugar Research Institute (MISRI)	-	13,463
Fiji Sugar Tribunal	-	41,602
	2,380,353	2,443,763

7. Other income

Sundry income	108,546	-

8. Cost of operations

Advertising	4,105	1,620
Bank charges	5,928	3,702
Depreciation	339,681	334,267
Electricity	40,649	44,475
EU Cost	130,774	123,151
General supplies	-	207
Communication expenses	15,861	14,754
Material costs	90,776	67,939
Motor vehicle running expenses	271,605	239,482
Postage	-	1,054
RAF costs	2,196	4,300
Repair and maintenance	14,376	13,430
Subcontract expenses	298,224	178,541
Travel	35,149	59,567
Wages and salaries (refer note 9(b))	391,189	373,451
	1,640,513	1,459,940

Sugar Research Institute of Fiji
Notes to the financial statements
For the year ended 31 December 2014

	2014 $	2013 $
9 (a) Administrative expenses		
Auditors remuneration - audit	4,423	8,085
- other services	7,000	11,110
Accomodation and meals	24,783	8,265
ACP cost	49,709	26,885
Bad debts	12,992	-
CEO security	-	4,895
Electricity	9,208	9,058
Fiji National Provident Fund contributions	77,204	70,727
FSC costs	-	12,585
General expenses	95,941	42,113
Hire of services	88,972	563,297
ICT consumables	15,477	14,535
ICT license	2,283	2,327
Communications expenses	-	8,208
Insurance	14,251	15,020
Inventory write off	1,311	-
Legal fees	1,250	5,515
Medical expense	2,149	17,049
Media and publications	2,255	10,885
Freight	31,873	22,092
Postage	978	-
Rent	40,991	75,567
Repair and maintenance	1,838	8,116
Stationery	5,233	2,485
Subscriptions	-	340
Training	3,915	5,734
Training and Productivity Authority of Fiji	9,074	9,082
Travel	427	8,688
Visa permit	2,608	5,432
Water	1,309	3,967
Wages and salaries (refer note 9(b))	586,783	534,781
	1,094,237	1,506,843
(b) Personnel expenses		
Fiji National Provident Fund contributions	77,204	70,727
Training and Productivity Authority of Fiji	9,074	9,082
Key management compensation - short term benefits	124,427	147,206
Wages and salaries	853,545	761,026
	1,064,250	988,041

10. Income tax

In 2012 the Fiji Revenue and Customs Authority confirmed that the entity is not subject to income tax.

Sugar Research Institute of Fiji
Notes to the financial statements
For the year ended 31 December 2014

11. Property, plant and equipment

	Land & Building	Fixtures & fittings	Plant & equipment	Motor vehicles	Computers	Work in progress	Total
	$	$	$	$	$	$	$
Cost							
Balance at 1 January 2013	2,302,450	43,932	1,265,038	1,051,735	243,157	139,917	5,046,229
Acquisitions	47,780	-	239,629	86,739	11,365	178,226	563,739
Transferred during the year	139,917	-	-	-	-	(139,917)	-
Balance as at 31 December 2013	2,490,147	43,932	1,504,667	1,138,474	254,522	178,226	5,609,968
Acquisitions	140,759	-	320,674	65,435	56,923	-	583,791
Transferred during the year	178,226	-	-	-	-	(178,226)	-
Balance as at 31 December 2014	2,809,132	43,932	1,825,341	1,203,909	311,445	-	6,193,759
Depreciation							
Balance at 1 January 2013	45,723	14,982	298,733	728,336	206,730	-	1,294,504
Depreciation charge	27,360	4,393	137,663	142,419	22,432	-	334,267
Balance at 31 December 2013	73,083	19,375	436,396	870,755	229,162	-	1,628,771
Depreciation charge	28,707	4,393	160,830	124,138	21,613	-	339,681
Balance at 31 December 2014	101,790	23,768	597,226	994,893	250,775	-	1,968,452
Carrying amount							
At 1 January 2013	2,256,727	28,950	966,305	323,399	36,427	139,917	3,751,725
At 31 December 2013	2,417,064	24,557	1,068,271	267,719	25,360	178,226	3,981,197
At 31 December 2014	2,707,342	20,164	1,228,115	209,016	60,670	-	4,225,307

	2014	2013
	$	$
12. Cash and cash equivalents		
Cash at bank	2,674,097	2,510,829
Cash on hand	10	10
Cash and cash equivalents in the statement of financial position	2,674,107	2,510,839
Bank overdraft	(16,836)	-
Cash and cash equivalents in the statement of cash flows	2,657,271	2,510,839
13. Receivables and prepayments		
Other receivables	-	12,992
Prepayments	-	44,820
Deposits	2,750	2,750
	2,750	60,562

14. Deferred income

The Institute's Deferred income comprises of the receipt of grant income from stakeholders, European Union, African Carribbean and Pacific Group of States, Mauritius Sugar Research Institute and Fiji Sugar Tribunal. Each grant received has its specific conditions that the Institute needs to comply with. The movement in Deferred income is as follows:

	2014	2013
	$	$
Balance at the beginning of the year	7,840,186	7,708,571
Funds received or receivable during the period	4,978,090	2,443,763
Utilised during the period	(2,734,750)	(2,312,148)
Balance at 31 December	10,083,526	7,840,186
This is comprised as follows:		
Contribution from stakeholders	5,020,491	4,572,334
European Union grant	3,328,749	2,179,980
African Caribbean and Pacific Group of States (ACP)	1,456,126	754,050
Mauritius Sugar Research Instititue (MISRI)	94,558	108,020
Fiji Sugar Tribunal	183,602	225,802
	10,083,526	7,840,186
15. Employee benefits		
Balance at 1 January	45,933	43,023
Provision during the year	-	29,022
Provision utilised during the year	-	(26,112)
Balance at 31 December	45,933	45,933
16. Trade and other payables		
Trade payables	78,480	49,250
Other payables	66,908	68,112
VAT payable	281,073	355,965
	426,461	473,327

17. Related parties

Related parties of the Institute include key stakeholders in the Fiji Sugar Industry, namely, the Government of Fiji, Fiji Sugar Corporation, South Pacific Fertilizers Limited, Sugar Cane Growers Fund and Sugar Cane Growers Council.

Transactions with these parties and outstanding balances at year end are disclosed below.

(a) Board members

The Intitute did not have a Board present for the period 30 September 2012 to 4 May 2014. An interim board was appointed by the Ministry of Sugar on 4 May 2014 and the Board details were as follows:

Mr Abdul Khan (appointed on 4 May 2014)
Mr Manasa Tagicakibau (appointed on 4 May 2014)
Mr Sundresh Chetty (appointed on 4 May 2014)

The new Board was appointed on 1 March 2015. The Directors in office and up to the date of this report are:

Professor Rajesh Chandra - Chairman (appointed 1 March 2015)
Mr Abdul Khan (appointed on 1 March 2015)
Mr Daniel Elisha (appointed 1 March 2015)
Mr Manasa Tagicakibau (appointed on 1 March 2015 and resigned on 18 July 2017)
Professor Paras Nath (appointed 1 March 2015)
Mr Sundresh Chetty (appointed on 1 March 2015)
Dr K. Shanmudha Sundaram (appointed 1 March 2015)
Mr Graham Clark (appointed 18 July 2017)
Ms Reshmi Kumari (appointed 18 July 2017)

	2014	2013
	$	$
(b) Amounts receivable from related parties		
Fiji Sugar Corporation	4,124,999	4,501,276
Sugar Cane Growers	1,800,000	900,000
	5,924,999	5,401,276

Receivable from related parties are interest free and receivable as and when required.

(c) Amounts payable to related parties		
Fiji Sugar Corporation	2,254,407	3,595,739
	2,254,407	3,595,739

Payable to related parties are interest free and payable on demand.

17. Related parties (continued)

	2014	2013
	$	$
(d) Transactions with related parties		
Revenue		
Grant income - Fiji Sugar Corporation	782,609	558,004
Grant income - Fiji Government	815,135	732,621
Grant income - Sugar Cane Growers	782,609	746,041
Estate income - Fiji Sugar Corporation	226,279	503,412
	2,606,632	2,540,078
Expenses		
Fiji Sugar Corporation costs	-	12,585

(e) Key management personnel

Key management personnel include the chief executive officer and finance and administration manager of the Institute.

Transactions with key management personnel are no favourable than those available, or which might be reasonably be expected to be available, on similar transactions to third parties on an arm's length.

Key management personnel compensation is comprised as below:

	2014	2013
	$	$
Short-term employee benefits	124,427	147,206

18. Capital commitments and contingencies

Capital commitments and contingent liabilities as at 31 December 2014 amounted to $Nil (2013: $Nil).

19. Events subsequent to balance date

There is a draft Sugar Industry Bill before the parliment that is proposing major changes in the functioning of Sugar Research Industry of Fiji and until this bill is passed, the Board cannot give assurance about the future of Sugar Research Institute of Fiji in its present form.

Apart from the above, there has not arisen in the interval between the end of the year and the date of this report any item, transaction or event of a material and unusual nature likely, in the opinion of the Directors, to affect significantly the operations of the Institute, the results of those operations or the state of affairs of the Institute in subsequent financial years.

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