FIJI METEOROLOGICAL SERVICE
Private Mail Bag (NAP0351)
Nadi Airport, Fiji

Ph: +679 6724888,
Fax: +679 6720430
Email: climate@met.gov.fj
See online version at
http://www.met.gov.fj

Fiji Sugar Cane Rainfall Outlook from August 2018

Late Harvesting And Crushing Season

Volume: 14 **Issue: 4** **October 25, 2018**

Introduction

This outlook contains the rainfall predictions for the three-month period beginning November 2018, and the following three months (February to April 2019), for the Fiji sugar cane "belt". The chances of ***below normal***, ***normal*** and ***above normal*** predictions are given as probabilities and presented in tables on pages 2 to 4. The Fiji Meteorological Service (FMS) currently uses a statistical climate prediction model known as the Seasonal Climate Outlook for Pacific Island Countries (SCOPIC) for seasonal rainfall guidance**.** For the Fiji region, the model uses recent monthly anomalies of sea surface temperature from parts of the Pacific Ocean (central - eastern equatorial Pacific regions) as predictors of Fiji's rainfall.

Summary Statement

- Rainfall outlooks for the November 2018 to January 2019 period favours *normal* to *below normal* rainfall across the sugarcane belts. The confidence in the predictions are generally *high* to *exceptional*;
- The outlooks for the February to April 2019 favours *normal* or *below normal* rainfall across the sugarcane belts. The confidence in the predictions are generally *moderate* to *high*;
- *Above normal* air temperatures are favoured over the Fiji Group during the next three months;
- The above predictions are generally consistent with the increasing chances of El Niño event that's currently being monitored;
- Onset of an El Niño event later in the year, could result in the slow onset of the wet season later in the year;
- Farmers and other industry stakeholders are advised to adhere to the weather forecasts when making plans for harvesting and transportation of cane to the mill;
- The tropical cyclone season begins on the 1st November 2018 and ends on 30th April 2019. As per historical trend during El Nino events, please always remain alert as cyclones have also formed outside the cyclone season.

Statement from the Sugar Research Institute of Fiji - Advice to Farmers

The sugarcane growing areas have received *below average* rainfall during the past 3 months and *normal* to *below normal* rainfall is predicted for the next 3 months. The predicted weather may favour rapid weed growth and growers must go for **"zero tolerance to weeds"** by adopting integrated weed management that includes manual weeding followed by weedicides application to control the weeds. The crushing season at all the mills will finish by mid-December and fertilizers must be applied before the end of the year for all plant and ratoon cane so that it can be taken up by the plants progressively. The field and main drains in and around the farms should be cleaned to allow easy drainage of excess water from the fields in order to avoid water logging conditions.

Source: Sugar Research Institute of Fiji (Lautoka Office)

Three Month November 2018 to January 2019 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	47	322	40	608	13
Cuvu	44	323	37	624	19
Lomawai	48	376	32	680	20

Below normal rainfall favoured across Sigatoka District. Outlook confidence: *high* to exceptional.

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	44	443	36	754	20
Lovu	44	411	41	725	15
Drasa	47	478	37	803	16

Normal or *below normal* rainfall favoured across the Lautoka District. Outlook confidence: very *high to exceptional.*

Nadi District	Dry	33%	Normal	67%	Wet
Nadi Airport	44	426	40	751	16
Malolo	44	413	46	658	10
Navo	45	399	43	648	12
Meigunyah	45	447	37	729	18
Natova	45	490	38	774	17

Normal or below *normal* rainfall favoured across the Nadi District. Outlook confidence: *very high to exceptional.*

Ba District	Dry	33%	Normal	67%	Wet
Rarawai Mill	45	526	34	961	21
Koronubu	44	562	38	893	18
Mota	47	603	34	912	19
Navatu	47	462	42	741	11

Normal or *below normal* rainfall favoured across the Ba District. Outlook confidence: *very high to exceptional.*

Tavua District	Dry	33%	Normal	67%	Wet
Tavua	43	329	38	693	19
Tagitagi	46	354	40	732	14
Vatukoula	46	506	39	905	15

Below normal or *normal* rainfall favoured across the Tavua District. Outlook confidence: *very high to exceptional.*

Three Month November 2018 to January 2019 Rainfall Outlooks

Rakiraki District	Dry	33%	Normal	67%	Wet
Penang Mill	42	579	39	926	19
Dobuilevu	42	644	36	963	22

Below normal or *normal* rainfall favoured favoured for Rakiraki. Outlook confidence: *high.*

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa	40	707	36	955	24
Waiqele	45	620	40	981	15
Vunimoli	44	707	44	1066	12
Labasa Mill	44	685	41	993	15
Vunivutu	40	545	41	1059	19
Wainikoro	45	590	44	821	11

Below normal or *normal* rainfall favoured for the Labasa District. Outlook confidence: *high to exceptional.*

Following Three Month February to April 2019 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	39	509	37	766	24
Cuvu	40	552	37	739	23
Lomawai	41	561	35	783	24

Normal or *below normal* rainfall favoured across the Sigatoka District. Outlook confidence: *good.*

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	38	736	33	953	29
Lovu	39	741	37	938	24
Drasa	37	769	36	964	27

Normal or *below normal* rainfall favoured across the Lautoka District. Outlook confidence: *moderate.*

Nadi District	Dry	33%	Normal	67%	Wet
Nadi Airport	40	681	38	950	22
Malolo	36	605	35	871	29
Navo	41	667	37	865	22
Meiguynah	39	636	29	946	32
Natova	39	692	32	999	29

Normal or *below normal* rainfall favoured across the Nadi District. Outlook confidence: *moderate to good.*

Ba District	Dry	33%	Normal	67%	Wet
Rarawai Mill	39	786	37	1070	24
Koronubu	41	908	33	1147	26
Mota	40	922	35	1204	25
Navatu	41	765	35	970	24

Normal or *below normal* rainfall favoured across the Ba District. Outlook confidence: *good* .

Following Three Month November 2018 to January 2019 Rainfall Outlooks

Tavua District	Dry	33%	Normal	67%	Wet
Tavua	38	696	33	960	29
Tagitagi	40	648	38	904	22
Vatukoula	41	858	37	1110	22

Normal or *below normal* rainfall favoured across the Tavua District. Outlook confidence: *moderate* to *good.*

Rakiraki District	Dry	33%	Normal	67%	Wet
Penang Mill	42	833	35	1132	23
Dobuilevu	35	33	32	1078	32

Normal or *below normal* rainfall favoured for the Rakiraki District. Outlook confidence: *very low* to *good.*

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa	36	909	35	1163	29
Waiqele	41	973	36	1169	23
Vunimoli	41	872	33	1251	26
Labasa Mill	42	863	33	1147	25
Vunivutu	38	809	35	1296	27
Wainikoro	40	807	33	1114	27

Normal or *below normal* rainfall favoured for the Labasa District. Outlook confidence: *low* to *good.*

Explanatory Notes - El Niño and La Niña

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 equatorial 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.

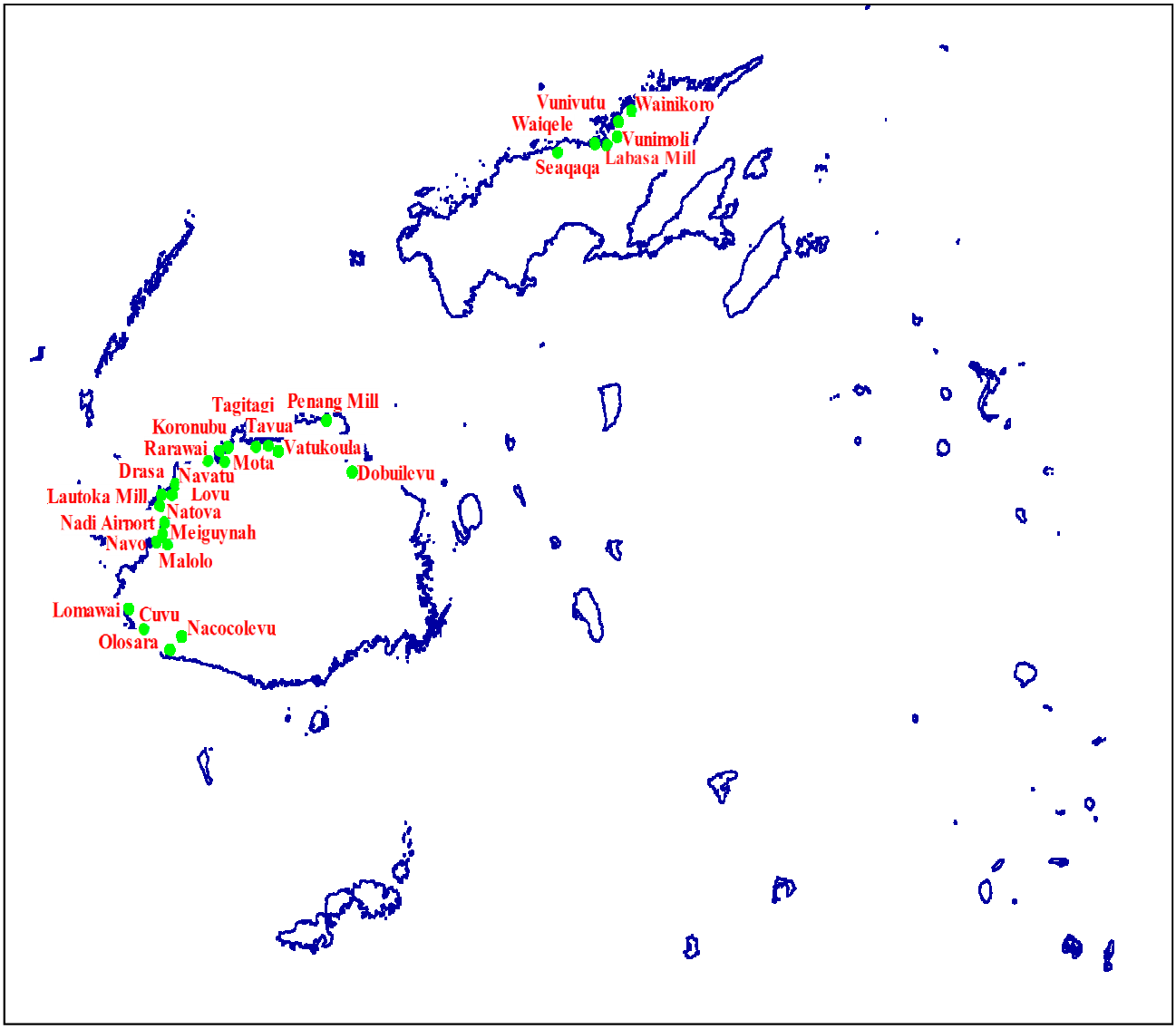
La Niña is sustained cooling of the central and eastern equatorial Pacific Ocean. The cooling is usually accompanied by persistent positive values of SOI, an increase in strength of the equatorial trade winds and higher than *normal* rainfall for most of the Fiji (not immediate effects as there is a lag period), with frequent and sometimes severe flooding, especially during the wet season (November to April).

Rainfall Outlook: Rainfall Probabilities - 'dry', 'wet' and 'normal' conditions

The rainfall outlook probability presents three monthly rainfall in three different categories. The ***below normal*** range is one where rainfall is less than the 33rd percentile. That is, rainfall for the period (in this case three months) which is in the lowest one third of occurrences. Here, three-month rainfall is arranged for a particular period from the highest on record to lowest on record. Rainfall below the one-third point would be considered ***below normal***. Rainfall in the middle third would be considered ***normal*** and upper third ***above normal***. A rainfall prediction of 48:31:21, for example, has the highest probability of rainfall in the ***below normal*** category (48%). This means that rainfall is most likely to be ***below normal*** for the on-coming three months. However, there is still a 31% chance of ***normal*** rainfall and 21% chance of ***above normal*** rainfall. Similarly, with a prediction of 20:40:40, means ***normal*** to ***above normal*** rainfall would be expected. In the case of 33:33:34 there are ***equal chances*** of receiving ***below normal, normal*** or ***above normal*** rainfall (climatology).

The success or hit rate of the predictions is highest during the *wet season* and lowest during the *dry season* and *transition* months (dry to wet and wet to dry). The success rate is also high during ***El Niño*** and ***La Niña*** events. Predictions during neutral periods, especially during the *dry season* and *transition* months, are the least successful.

Rainfall Stations in the Sugar Cane "Belt"



The seasonal forecast outlook confidence are generated by using the LEPs scores , which also be referred to as the skill scores. The X LEPS % scores, which are used to categorize the confidence of the outlook are as follows:

Very Low: $X < 0.0$ ***Low***: $0 \leq X < 5$ ***Moderate***: $5 \leq X < 10$ ***Good***: $10 \leq X < 15$
High: $15 \leq X < 25$ ***Very High***: $25 \leq X < 35$ ***Exceptional***: $X \geq 35$

Disclaimer: *The seasonal rainfall predictions provided in this document is presented for the sugar sector and should be used as a guide only. While FMS takes all measures to provide accurate information and data, it does not guarantee 100% accuracy of the forecast presented in this summary. The department should be sought for expert advice, clarifications and additional information as and when necessary. The user assumes all risk resulting directly or indirectly from the use of the rainfall prediction information.*