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Fiji Sugar Cane Rainfall Outlook from May 2017

Planting & Harvesting Season

Volume: 13 **Issue: 2** **April 26, 2017**

Introduction

This outlook contains the rainfall projections for the three-month period beginning May 2017, and the following three months (August to October 2017), 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

- The Tropical Pacific is currently in a neutral El Niño-Southern Oscillation (ENSO) state (neither El Niño nor La Niña);
- ENSO neutral conditions are favoured to persist through the April to June 2017 period , with the likelihood of El Niño conditions developing during the second half of 2017;
- Drier than *normal* conditions were experienced in January, while wetter than *normal* conditions were experienced from February to March 2017 across the sugarcane belt areas;
- Generally, equal chances of *below normal, normal and above normal* rainfall is predicted across the sugarcane belts for the May to July and the August to October 2017 periods; The confidence in predictions are generally *moderate*;
- Equal chances of *below normal, normal* and *above normal* probabilities mean that there is reduced chances of extreme events happening;
- The country is now heading towards the Dry Season. As such, there will be significant reduction in rainfall activity over the period May to October in comparison to the rainfall which have been received during the past Wet Season;
- The 2016/17 tropical cyclone season officially ends on 30th April and all communities should prepare for the upcoming dry season. As El Nino is expected to develop later in the year, rainfall is anticipated to be highly variable from one month to another, thus possibility of dry spell especially in the dry zone of the country could result as a likely scenario. Therefore, all communities are advised remain alert, updated with latest weather forecasts and take appropriate precautionary measures when alerts and warnings are issued. Use water wisely during this dry season.

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

Most parts of the sugarcane belts experienced drier than normal conditions in January while wetter than normal conditions were experienced in the last two months. A forecast of below normal, normal and above normal rainfall has been predicted for the May to July and the August to October periods.

Land preparation has commenced and planting will take place from late April and continue into May. Majority of the areas under the sugarcane belt will experience significant reduction in rainfall and growers must be aware of this if they are planting. Growers need to adhere to the weather forecast in making plans for land preparation and planting.

Source: Sugar Research Institute of Fiji

Three Month May to July 2017 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	28	217	38	301	34
Cuvu	24	204	40	280	36
Lomawai	30	161	36	282	34

Equal chances of *below normal, normal* and *above normal* rainfall favoured at most of the stations in the Sigatoka District. Outlook confidence: *moderate.*

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	27	152	38	235	35
Lovu	27	135	37	233	36
Drasa	27	151	37	226	36

Normal or *above normal* rainfall favoured across the Lautoka District. Outlook confidence: *high.*

Nadi District	Dry	33%	Normal	67%	Wet
Nadi Airport	29	141	36	245	35
Malolo	30	123	35	213	35
Navo	31	134	35	250	34
Meigunyah	27	133	37	231	36
Natova	26	143	37	240	37

Equal chances of *below normal, normal* and *above normal* rainfall favoured at most of the stations in the Nadi District. Outlook confidence: *moderate.*

Ba District	Dry	33%	Normal	67%	Wet
Rarawai Mill	30	150	36	256	34
Koronubu	29	159	36	242	35
Mota	30	159	36	257	34
Navatu	31	122	35	209	34

Equal chances of *below normal, normal* and *above normal* rainfall favoured across the Ba District. Outlook confidence: *moderate.*

Tavua District	Dry	33%	Normal	67%	Wet
Tavua	30	126	36	227	34
Tagitagi	23	124	40	233	37
Vatukoula	30	149	35	248	35

Equal chances of *below normal, normal* and *above normal* rainfall favoured at most of the stations in the Tavua District. Outlook confidence: *moderate.*

Three Month May to July 2017 Rainfall Outlooks

Rakiraki District	Dry	33%	Normal	67%	Wet
Penang Mill	29	179	36	297	35
Dobuilevu	29	246	36	365	35

Equal chances of *below normal, normal* and *above normal* rainfall favoured for the Rakiraki District. Outlook confidence: *moderate.*

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa	27	158	38	278	35
Waiqele	29	166	36	289	35
Vunimoli	27	160	36	272	37
Labasa Mill	27	179	38	253	35
Vunivutu	27	187	37	348	36
Wainikoro	26	174	38	292	36

Normal or *above normal* rainfall favoured at majority of the stations in the Labasa District. Outlook confidence: moderate to *good.*

Following Three Month August to October 2017 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	29	212	36	317	35
Cuvu	29	209	37	315	34
Lomawai	29	161	36	249	35

Equal chances of *below normal, normal* and *above normal* rainfall favoured across the Sigatoka District. Outlook confidence: *moderate.*

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	31	165	35	259	34
Lovu	32	140	35	233	33
Drasa	30	159	36	276	34

Equal chances of *below normal, normal* and *above normal* rainfall favoured across the Lautoka District. Outlook confidence: *moderate.*

Nadi District	Dry	33%	Normal	67%	Wet
Nadi Airport	30	173	36	291	34
Malolo	28	175	36	283	36
Navo	30	171	37	265	33
Meiguynah	29	167	39	251	32
Natova	30	182	36	266	34

Equal chances of *below normal, normal* and *above normal* rainfall favoured for the Nadi District. Outlook confidence: *moderate.*

Ba District	Dry	33%	Normal	67%	Wet
Rarawai Mill	31	173	35	280	34
Koronubu	27	174	37	295	36
Mota	28	196	37	298	35
Navatu	29	154	39	258	32

Equal chances of *below normal, normal* and *above normal* rainfall favoured at majority of the sites in the Ba District. Outlook confidence: *moderate.*

Following Three Month August to October 2017 Rainfall Outlooks

Tavua District	Dry	33%	Normal	67%	Wet
Tavua	29	134	36	230	35
Tagitagi	30	141	36	232	34
Vatukoula	29	163	37	269	34

Equal chances of *below normal, normal* and *above normal* favoured across the Tavua District. Outlook confidence: *moderate.*

Rakiraki District	Dry	33%	Normal	67%	Wet
Penang Mill	32	178	34	275	34
Dobuilevu	32	272	34	388	34

Equal chances of *below normal, normal* and *above normal* rainfall favoured for the Rakiraki District. Outlook confidence: *very low* to *low.*

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa	30	186	35	292	35
Waiqele	30	197	35	287	35
Vunimoli	30	184	35	285	35
Labasa Mill	30	174	36	246	34
Vunivutu	34	173	33	344	33
Wainikoro	30	152	35	251	35

Equal Chances of *below normal, normal* and *above normal* rainfall favoured across the Labasa District. Outlook confidence: *low to moderate.*

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.

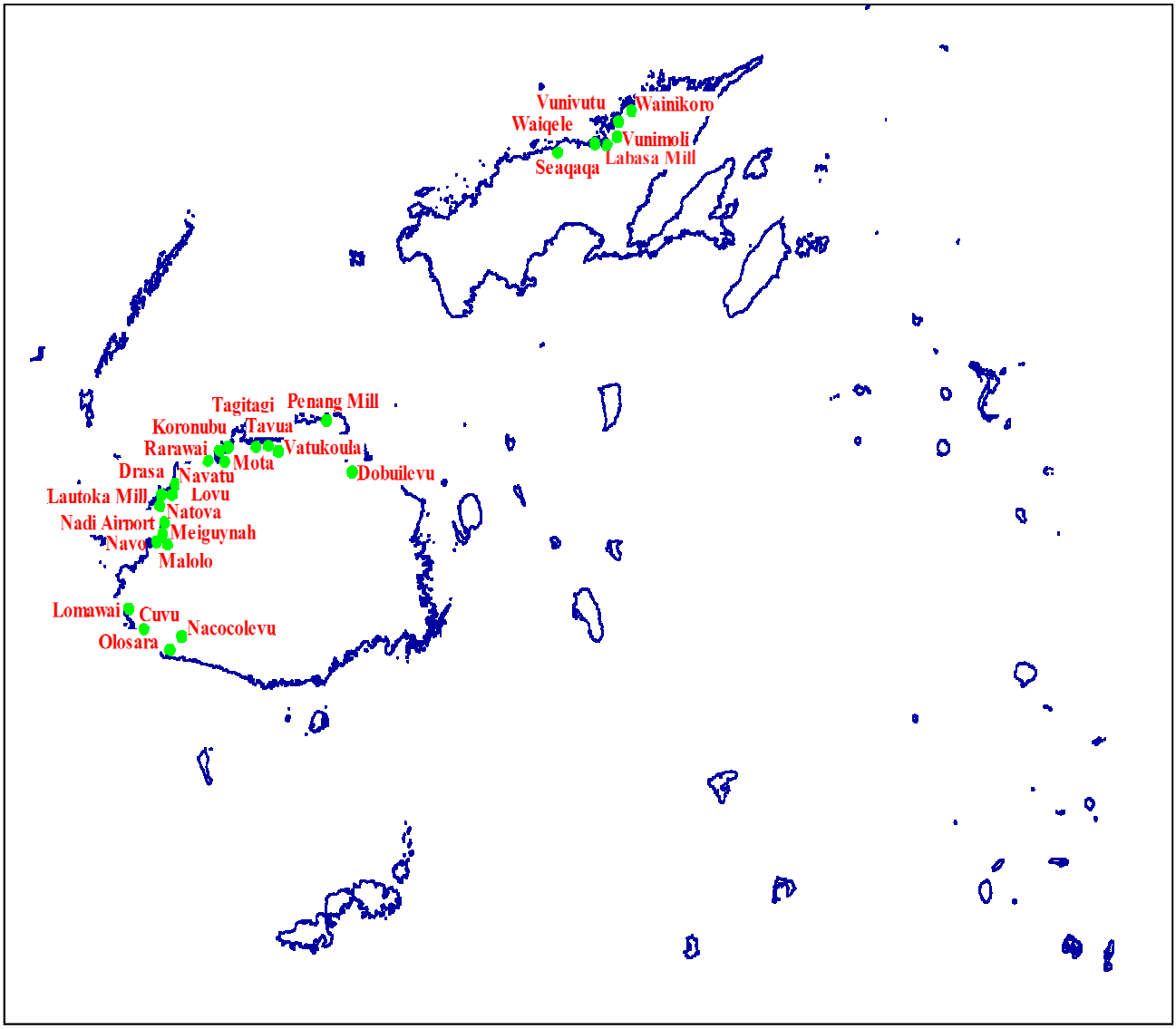
La Niña is sustained cooling of the central and eastern equatorial Pacific Ocean. The cooling is usually accompanied by persistent positive values of SOI, an increase in strength of the equatorial trade winds and higher than *normal* rainfall for most of the Fiji (not immediate effects as there is a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