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Fiji Islands Sugar Cane Rainfall Outlook from November 2008

Late Harvesting and Crushing Season

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Introduction

This document contains three and the following three month rainfall outlooks for the Fiji Islands sugar cane “belt”. The chances of *below normal*, *normal* and *above normal* conditions are given as probabilities and presented in tables on pages 2 to 5. The Fiji Meteorological Service currently uses a statistical climate prediction model known as SCOPIC (Seasonal Climate Outlook for Pacific Island Countries) 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 and South - Western Pacific regions) as predictors of Fiji Islands rainfall.

Summary Statement

- *Below normal* rainfall and *normal to above normal* air temperatures were experienced in the sugar cane “belt” from July to September period;
- *Neutral* ENSO conditions exist in the tropical Pacific and ENSO models predict similar conditions to continue for the rest of 2008 and into early 2009;
- For the November 2008 to January 2009 period, *normal or above normal* rainfall is favoured in the sugar cane “belt”. The confidence level of this prediction is *generally moderate*. Global models generally favour *above normal* rainfall in the Fiji region.
- For the February to April 2009 period, *below normal or normal rainfall* is favoured in the Labasa, Tavua and Rakiraki districts, elsewhere *equal chances of below normal, normal or above normal rainfall* is favoured. The confidence level of this prediction is *low*.
- Air temperatures over the coming 3-month and the following 3-month periods are favoured to be *above normal*. The confidence in these predictions are *moderate*;
- *Average* numbers or *two to three* tropical cyclones are predicted to pass through Fiji’s Waters in the coming season with at least one directly affecting the land areas.

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

“Generally normal to above normal rainfall is forecasted for November 2008 to January 2009 period. Most harvesting should be completed as soon as possible. Sugar Cane in areas that are not easily accessible should be harvested first as the country is heading into the wet season. Measures should be taken to control weed and maintain drainage system in the fields. In case of low rainfall, water can be conserved through keeping trash in the field and store water for drinking and irrigating cash crops. Farmers who wish to plant cane need to plan their work in order to get good germination.”

Source: Sugar Research Institute of Fiji.

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 appeared around Christmas. Scientists now refer to an **El Niño event** as sustained warming over a large part of central and eastern tropical Pacific Ocean. These events occur on a three to seven year basis and are characterized by shifts in normal weather and climate patterns.

La Niña is sustained cooling of the central and equatorial tropical 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 Islands (not immediate effects as there is a lag period).

La Niña events are usually associated with the South Pacific Convergence Zone (SPCZ) being more active than normal and displacement to the southwest of normal position resulting in *above average* amounts of rainfall, with frequent and sometimes severe flooding. The Southeast trade winds become more easterly than normal bringing moist and warm equatorial wind flow over the country and wet season thunderstorm activity is more pronounced.

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** events and **La Niña** events. Predictions during neutral period especially during the *dry season* and *transition* are the least successful.

Three Month November 2008 to January 2009 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	32	323.5	39	596.4	29
Cuvu	32	345.5	37	627.7	31
Lomawai	34	382.0	37	655.2	29

Normal rainfall is favoured across most of the Sigatoka district. Moderate confidence.

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	31	457.2	30	687.0	39
Lovu	31	419.3	28	672.7	41
Drasa	30	497.1	28	700.2	42

Above normal rainfall is favoured in the Lautoka district. Moderate confidence.

Three Month November 2008 to January 2009 Rainfall Outlooks

Nadi District	Dry	33%	Normal	67%	Wet
Nadi Airport	29	429.8	31	735.2	39
Malolo	28	331.0	41	651.0	31
Navo	36	418.4	36	636.7	27
Meiguynah	37	458.0	32	703.0	31
Natova	30	490.2	33	752.2	37

Normal or above normal rainfall is favoured across most of the Nadi district. Moderate confidence.

Ba District	Dry	3%	Normal	67%	Wet
Rarawai Mill	26	541.6	32	805.7	42
Koronubu	27	582.0	33	907.8	38
Mota	31	604.0	34	909.7	35
Navatu	22	435.0	38	740.5	40

Normal or above normal rainfall is favoured in the Ba district. Moderate confidence.

Tavua District	Dry	33%	Normal	67%	Wet
Tavua	29	341.4	29	699.7	42
Tagitagi	32	378.4	32	733.6	36
Vatukoula	29	511.7	34	905.8	37

Near normal or above normal rainfall is favoured in the Tavua district. Moderate confidence.

Rakiraki District	Dry	33%	Normal	67%	Wet
Penang Mill	34	550.0	22	815.1	44
Dobuilevu	42	660.2	30	978.6	28

Equal chances of below normal, normal or above normal rainfall are favoured in the Rakiraki district. Low to moderate confidence.

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa	28	718.6	32	991.4	40
Waiqeke	26	616.0	40	964.4	34
Vunimoli	43	696.6	24	1066.4	33
Labasa Mill	24	615.0	42	907.8	35
Vunivutu	28	566.0	36	1068.4	36
Wainikoro	28	579.2	40	817.3	32

Normal or above normal rainfall is favoured across most of the Labasa district. Moderate confidence.

Following Three Month February to April 2009 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	48	537.8	21	759.0	31
Cuvu	39	567.6	24	767.3	37
Lomawai	40	571.7	37	823.4	23

Equal chances of below normal, normal or above normal rainfall are favoured for Olosara and Cuvu while below normal or normal conditions are favoured at Lomawai. Low confidence.

Nadi District	Dry	33%	Normal	67%	Wet
Nadi Airport	35	667.0	34	903.5	31
Malolo	33	600.3	37	824.0	30
Navo	35	642.7	41	815.1	24
Meiguynah	41	638.8	23	925.0	36
Natova	28	691.7	36	979.0	36

Equal chances of below normal, normal or above normal rainfall are favoured in the Nadi district. Low confidence.

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	26	718.4	42	918.8	32
Lovu	34	742.1	29	920.0	37
Drasa	35	748.7	29	934.5	36

Equal chances of below normal, normal or above normal rainfall are favoured in the Lautoka district. Low confidence.

Ba District	Dry	3%	Normal	67%	Wet
Rarawai Mill	32	824.0	30	1086.1	38
Koronubu	31	908.2	32	1155.0	37
Mota	34	949.0	32	1200.0	34
Navatu	40	761.6	36	967.2	24

Equal chances of below normal, normal or above normal rainfall are favoured in the Ba region except at Navatu where below normal or normal rainfall is favoured. Low confidence.

Tavua District	Dry	33%	Normal	67%	Wet
Tavua	32	672.0	38	936.0	30
Tagitagi	39	680.7	34	898.0	27
Vatukoula	38	860.9	46	1133.0	16

Below normal or normal rainfall is favoured in the Tavua district. Moderate confidence.

Rakiraki District	Dry	33%	Normal	67%	Wet
Penang Mill	34	828.2	41	1091.7	25
Dobuilevu	42	875.0	33	1100.1	25

Below normal or normal rainfall is favoured in the Rakiraki district. Low to moderate confidence.

Following Three Month February to April 2009 Rainfall Outlooks

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa	37	909.0	31	1162.7	32
Waiqele	36	764.1	33	1166.0	31
Vunimoli	39	824.2	30	1250.7	31
Labasa Mill	40	844.2	32	1113.8	38
Vunivutu	41	924.2	27	1364.5	30
Wainikoro	34	807.3	33	1114.1	33

Below normal or normal rainfall is favoured across most of the Labasa District. Low to moderate confidence.

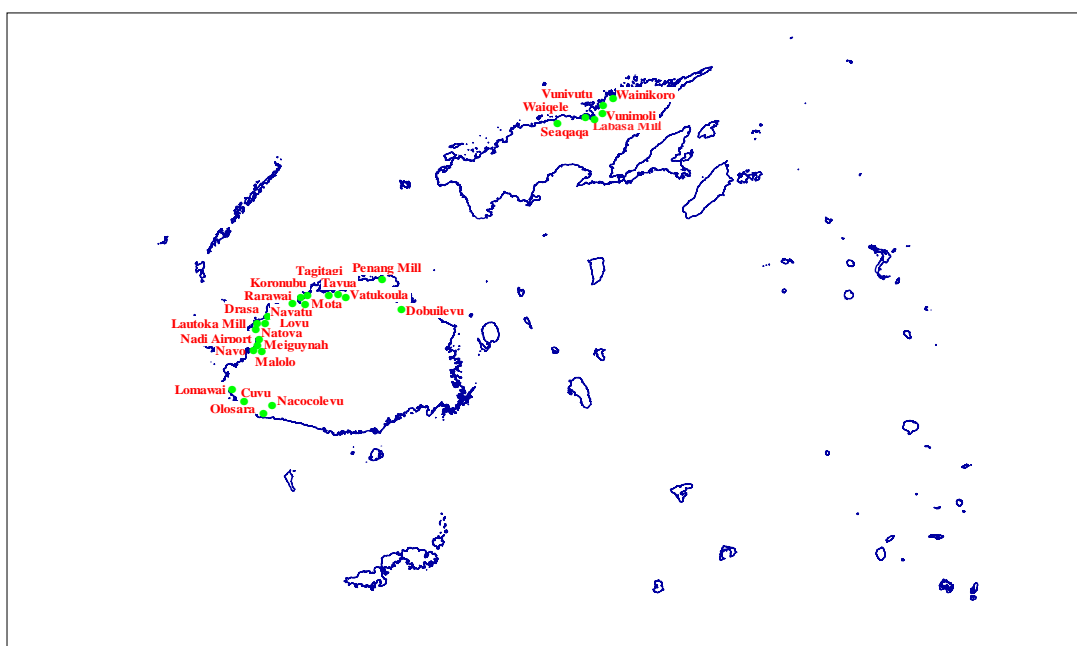
Upcoming Tropical Cyclone Season 2008/09

The 2008/09 Tropical Cyclone Season (November 1 to April 30, 2009) is to commence under “Neutral” conditions. Near average cyclone activity is likely for most tropical South Pacific countries including Fiji. This means that 2 or 3 cyclones are predicted to pass through Fiji’s Waters this season with at least one directly affecting land areas. Though a TC can also develop outside this period, such occurrence is rare under *Neutral* conditions. In seasons similar to the upcoming one, 2 to 3 cyclones on average pass through each of the Vanuatu, New Caledonia, Fiji and Tonga regions. The majority of cyclones pass through the Vanuatu and New Caledonia region.

Rainfall across most of the country is favoured to be average or above average at least until the end of January 2009, therefore the chances of flooding associated with tropical disturbances e.g depressions and cyclones is higher than usual.

Immediate preparation is required for the on-coming cyclone season. This includes checking buildings for structural weaknesses, clearing loose objects/materials that could be blown around during high winds, trimming overgrown trees, clearing drains and streams, preparing an emergency kit etc.

Rainfall Stations in the Sugar Cane “Belt”



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.