

**FJI METEOROLOGICAL  
SERVICE**

Private Mail Bag (NAP0351)  
Nadi Airport, Fiji Islands

Ph: +679 6724888,

Fax: +679 6736047

Email: [climate@met.gov.fj](mailto:climate@met.gov.fj)

See online version at

<http://www.met.gov.fj>

# Fiji Islands Sugar Cane Rainfall Outlook from May 2009 Planting and Harvesting 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

- The El Niño Southern Oscillation (ENSO) state is almost *Neutral*. A majority of ENSO models predict *Neutral* conditions until mid winter;
- Rainfall during January to March 2009 period was generally *above average* across the sugar cane “belt” with most of the sites receiving *well above average* rainfall during the month of January and *average* or *above average* rainfall during February and March;
- Mean monthly maximum air temperatures (day-time) and mean monthly minimum air temperatures (night-time) were generally *average* or *above average* across the country for the January to March 2009 period;
- For the May to July and August to October 2009 period, *average* or *above average* rainfall is favoured in the sugar cane ‘belt’ with *moderate* to *good* confidence for the first three months (May to July) and *moderate* confidence for the following three months (August to October);
- Air temperatures for the May to July and August to September periods are favoured to be *above average*. The confidence in these predictions are generally *moderate* to *good*;
- Eight tropical cyclones have developed in the Southwest Pacific in 2008/09 Tropical Cyclone season to date.

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

“Cool and dry weather conditions are expected to slowly settle in during the transition period (April-May). Farmers need to prepare for harvesting season and ensure that the cane access roads are in good conditions. Field assessments need to be carried out also to ease harvesting. The soil moisture status for the last few months was ample to moderate. Farmers need to adhere to daily weather forecast if they plan to plant cane during the remaining planting season (March-May) and assess soil moisture by feel. While average to above average rainfall is forecasted for the coming months, precautionary measures should be taken. Maintain drainage system to avoid water logging in the fields as well.”

*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

### Three Month May 2009 to July 2009 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	32	218.9	28	300.7	40
Cuvu	18	220.0	44	280.0	38
Lomawai	35	164.0	8	282.0	57

*Normal or above normal* rainfall favoured across the Sigatoka District. *Good* confidence.

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	14	152.3	39	233.9	47
Lovu	6	135.0	57	234.0	37
Drasa	16	152.9	29	235.0	55

*Normal or Above normal* rainfall is favoured across the Lautoka District. *Good* confidence.

## Three Month May 2009 to July 2009 Rainfall Outlooks

<b>Nadi District</b>	<b>Dry</b>	<b>33%</b>	<b>Normal</b>	<b>67%</b>	<b>Wet</b>
<b>Nadi Airport</b>	15	141.3	36	239.7	49
<b>Malolo</b>	19	122.9	21	213.0	60
<b>Navo</b>	24	134.3	21	248.4	55
<b>Meiguynah</b>	14	132.5	42	231.4	44
<b>Natova</b>	13	143.7	38	240.7	49

*Above normal rainfall is favoured across the Nadi District. Moderate to good confidence.*

<b>Ba District</b>	<b>Dry</b>	<b>3%</b>	<b>Normal</b>	<b>67%</b>	<b>Wet</b>
<b>Rarawai Mill</b>	25	154.4	22	256.4	53
<b>Koronubu</b>	36	163.1	19	260.7	45
<b>Mota</b>	17	163.5	33	260.3	50
<b>Navatu</b>	27	121.9	36	209.4	37

*Above normal rainfall is favoured across the Ba District. Moderate confidence.*

<b>Tavua District</b>	<b>Dry</b>	<b>33%</b>	<b>Normal</b>	<b>67%</b>	<b>Wet</b>
<b>Tavua</b>	31	126.0	18	226.5	51
<b>Tagitagi</b>	24	125.1	26	231.8	50
<b>Vatukoula</b>	19	149.4	20	249.4	61

*Above normal rainfall is favoured across the Tavua District. Low to good confidence.*

<b>Rakiraki District</b>	<b>Dry</b>	<b>33%</b>	<b>Normal</b>	<b>67%</b>	<b>Wet</b>
<b>Penang Mill</b>	25	178.8	22	296.1	53
<b>Dobuilevu</b>	16	242.0	58	367.3	26

*Normal or above normal rainfall is favoured in the Rakiraki District. Moderate confidence.*

<b>Labasa District</b>	<b>Dry</b>	<b>33%</b>	<b>Normal</b>	<b>67%</b>	<b>Wet</b>
<b>Seaqaqa</b>	21	159.9	43	278.9	36
<b>Waiqele</b>	10	168.3	39	279.3	51
<b>Vunimoli</b>	14	159.5	24	260.3	62
<b>Labasa Mill</b>	23	179.0	23	252.2	54
<b>Vunivutu</b>	11	225.2	15	364.4	74
<b>Wainikoro</b>	10	173.1	36	301.8	54

*Normal or above normal rainfall is favoured across the Labasa District. Moderate to good confidence.*

## Following Three Month August to October 2009 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	19	214.3	29	313.8	52
Cuvu	18	209.3	29	314.5	53
Lomawai	34	160.1	40	247.3	26

Normal or above normal rainfall is favoured for Sigatoka District. *Moderate to good* confidence.

Nadi District	Dry	33%	Normal	67%	Wet
Nadi Airport	25	174.5	39	284.2	36
Malolo	15	159.7	34	258.7	51
Navo	17	170.0	34	263.7	49
Meiguynah	20	167.7	43	250.3	37
Natova	27	182.0	41	263.7	32

Normal or above normal rainfall is favoured across the Nadi District. *Moderate to good* confidence.

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	13	167.9	51	256.6	36
Lovu	16	139.9	34	231.5	50
Drasa	27	159.0	31	266.0	42

Normal or above normal rainfall is favoured across the Lautoka district. *Moderate* confidence.

Ba District	Dry	3%	Normal	67%	Wet
Rarawai Mill	31	172.5	20	289.1	49
Koronubu	16	177.3	24	300.0	60
Mota	32	193.0	28	297.4	40
Navatu	27	152.7	46	258.7	27

Normal or Above normal rainfall is favoured for the Ba district. *Moderate to good* confidence.

Tavua District	Dry	33%	Normal	67%	Wet
Tavua	38	134.0	15	230.0	47
Tagitagi	23	141.9	30	237.9	47
Vatukoula	20	162.8	28	269.2	52

Above normal rainfall is favoured in the Tavua district. *Moderate to good* confidence.

Rakiraki District	Dry	33%	Normal	67%	Wet
Penang Mill	21	177.5	39	273.1	40
Dobuilevu	21	271.8	33	389.0	46

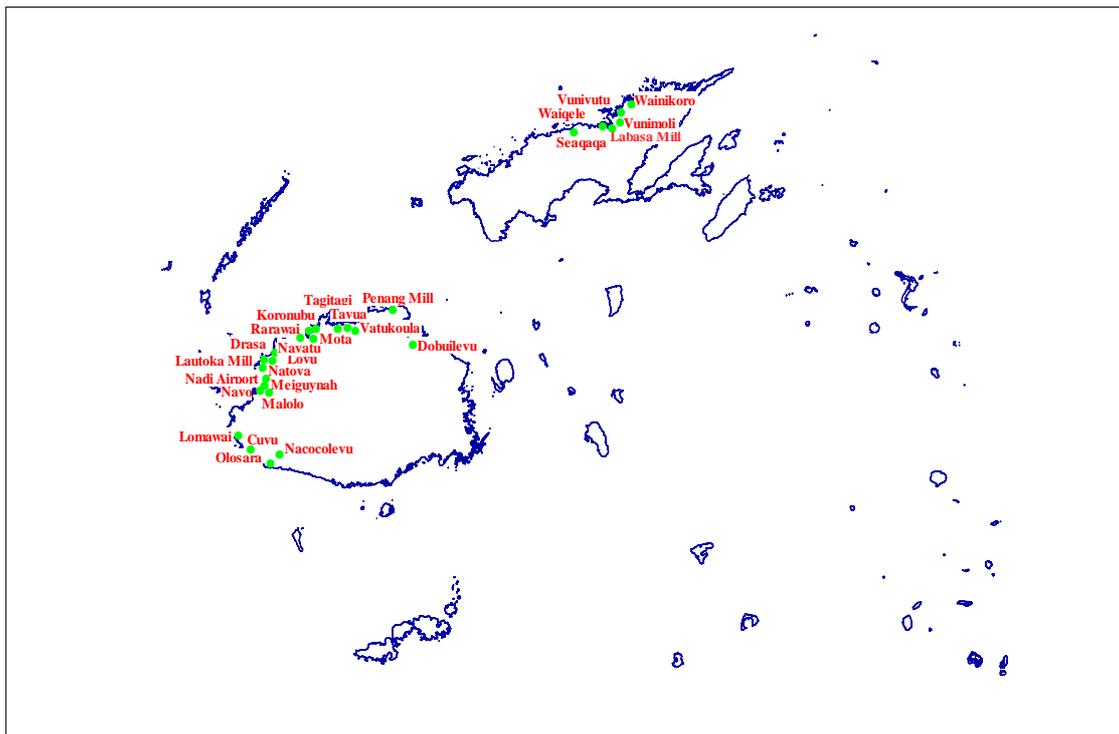
Normal or above normal rainfall favoured across the Rakiraki district. *Low to moderate* confidence.

## Following Three Month August to October 2009 Rainfall Outlooks

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa	21	173.8	56	291.9	23
Waiqele	14	196.8	34	286.0	52
Vunimoli	13	184.0	45	274.1	42
Labasa Mill	25	171.2	43	245.2	32
Vunivutu	43	172.5	26	343.6	31
Wainikoro	25	150.8	26	243.5	49

Normal or above normal rainfall favored across the Labasa District except at Vunivutu where below normal rainfall is favoured .Very low to good confidence.

## 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.