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

Ph: +679 6724888,
Fax: +679 6736047
Email: climate@met.gov.fj
See online version at
http://www.met.gov.fj

Fiji Islands Sugar Cane Rainfall Outlook from February 2009

Planting Season

Volume : 5 Issue : 1 January : 2009

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

- Many parts of the country experienced severe flooding from January 9 to 11, 2009. Flooding in the Ba and Nadi districts was the most severe in more than half a century. Other districts on Viti Levu were also severely affected. Flooding in the Vanua Levu sugar cane "belt" was less severe compared to flooding experienced during and immediately after the passage of tropical cyclone "*Ami*" in January 2003.
- Rainfall varied from *below average* to *above average* across the sugarcane "belt" during the October to December period. *Below average* being experienced in the northern Vanua Levu while *above average* rainfall was recorded in the western Viti Levu except at Lautoka where rainfall was *average.*
- The El Niño Southern Oscillation (ENSO) phase has shifted recently from ENSO *Neutral* to *La Niña* with *La Niña* conditions predicted to continue through March 2009;
- For the February to April and May to July 2009 periods, *normal or above normal* rainfall is favored in the sugar cane "belt" with *moderate to high* confidence for the first three months and *moderate* confidence for the second three months*;*
- Air temperatures for the February to April and May to July periods are favoured to be *normal to above normal.* The confidence level of this prediction is *moderate;*
- *Average* (2-3) numbers of Tropical Cyclones are predicted to pass through Fiji EEZ in the 2008/09 season with one or two predicted to affect land areas.

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

"The formation of a slow moving depression and heavy downpour resulted in major flooding of many cane farms in month of January. Growers need to clear debris scattered in the cane fields due to flooding, to reduce the possible infestation of army-worm. The stagnant water should be removed quickly by making field drains as prolonged water logging may result in young cane dying or reduce growth in well established cane. The flooding and draining of the water would have resulted in leaching of the fertilizer hence split application of fertilizer and cultivation of silted fields is recommended in the affected areas. The combination of manual and chemical (weather permitting) weed control is recommended also."

Source: Sugar Research Institute of Fiji.

Explanatory Notes - El Niño and La Nina

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 Nina 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 February to April 2009 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	14	537.8	22	759.0	64
Cuvu	11	567.6	30	767.3	59
Lomawai	7	571.7	35	823.4	58

Above normal rainfall is favoured across Sigatoka district. Moderate to good confidence.

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	8	718.4	41	918.8	51
Lovu	8	742.1	25	920.0	67
Drasa	9	748.7	23	934.5	68

Above normal rainfall is favoured across the Lautoka district. Good confidence.

Three Month February to April 2009 Rainfall Outlooks

Nadi District	Dry	33%	Normal	67%	Wet
Nadi Airport	9	667.0	29	903.5	62
Malolo	14	600.3	26	824.0	60
Navo	6	642.7	27	813.1	67
Meiguynah	8	638.8	36	925.0	56
Natova	5	691.7	35	979.0	60

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

Ba District	Dry	3%	Normal	67%	Wet
Rarawai Mill	7	824.0	33	1086.1	60
Koronubu	7	909.1	36	1152.4	57
Mota	7	922.5	35	1199.8	58
Navatu	7	763.3	30	970.1	63

Above normal rainfall is favoured across the Ba district. Good confidence.

Tavua District	Dry	33%	Normal	67%	Wet
Tavua	6	679.3	27	949.4	67
Tagitagi	12	682.6	22	904.0	66
Vatukoula	6	860.9	19	1132.0	75

Above normal rainfall is favoured across the Tavua district. Good confidence.

Rakiraki District	Dry	33%	Normal	67%	Wet
Penang Mill	11	828.2	44	1091.7	45
Dobuilevu	27	875.0	30	1100.1	43

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

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa	17	909.0	32	1162.7	51
Waiqele	9	973.0	28	1148.5	63
Vunimoli	8	845.2	30	1250.0	62
Labasa Mill	12	844.2	25	1113.8	63
Vunivutu	18	924.2	26	1364.5	56
Wainikoro	8	824.6	30	1109.2	62

Above normal rainfall is favoured across the Labasa district. Low to moderate confidence.

Following Three Month May to July 2009 Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara	20	218.9	29	300.7	51
Cuvu	4	220.0	51	280.0	45
Lomawai	14	164.0	33	282.0	53

Normal to above normal rainfall is favoured across the Sigatoka district. Moderate confidence.

Nadi District	Dry	33%	Normal	67%	Wet
Nadi Airport	20	141.3	36	239.7	44
Malolo	27	122.9	35	213.0	38
Navo	23	134.3	22	248.4	55
Meiguynah	10	132.5	47	231.4	43
Natova	16	143.7	40	240.7	44

Normal to above normal rainfall is favoured across the Nadi district. Low confidence.

Lautoka District	Dry	33%	Normal	67%	Wet
Lautoka Mill	14	153.6	38	235.8	48
Lovu	8	135.0	54	234.0	38
Drasa	12	152.9	39	235.0	49

Normal or above normal rainfall is favoured across the Lautoka district. Low to moderate confidence.

Ba District	Dry	3%	Normal	67%	Wet
Rarawai Mill	22	154.4	24	256.4	54
Koronubu	24	163.1	33	260.7	43
Mota	27	163.5	30	260.3	43
Navatu	15	121.9	26	209.4	59

Above normal rainfall is favoured across the Ba district. Low confidence.

Tavua District	Dry	33%	Normal	67%	Wet
Tavua	16	126.0	30	226.5	54
Tagitagi	8	125.1	29	231.8	63
Vatukoula	20	149.4	21	249.4	59

Above normal rainfall is favoured across the Tavua district. Moderate confidence.

Rakiraki District	Dry	33%	Normal	67%	Wet
Penang Mill	14	178.8	32	296.1	54
Dobuilevu	17	242.0	30	367.3	53

Above normal rainfall is favoured across the Rakiraki district. Low to moderate confidence.

Following Three Month May to July 2009 Rainfall Outlooks

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa	8	159.9	36	278.9	56
Waiqele	8	168.3	52	279.3	40
Vunimoli	9	159.5	59	260.3	32
Labasa Mill	17	177.6	24	250.5	59
Vunivutu	4	255.2	51	364.5	45
Wainikoro	4	173.1	35	301.8	61

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

Tropical Cyclone Season 2008/09

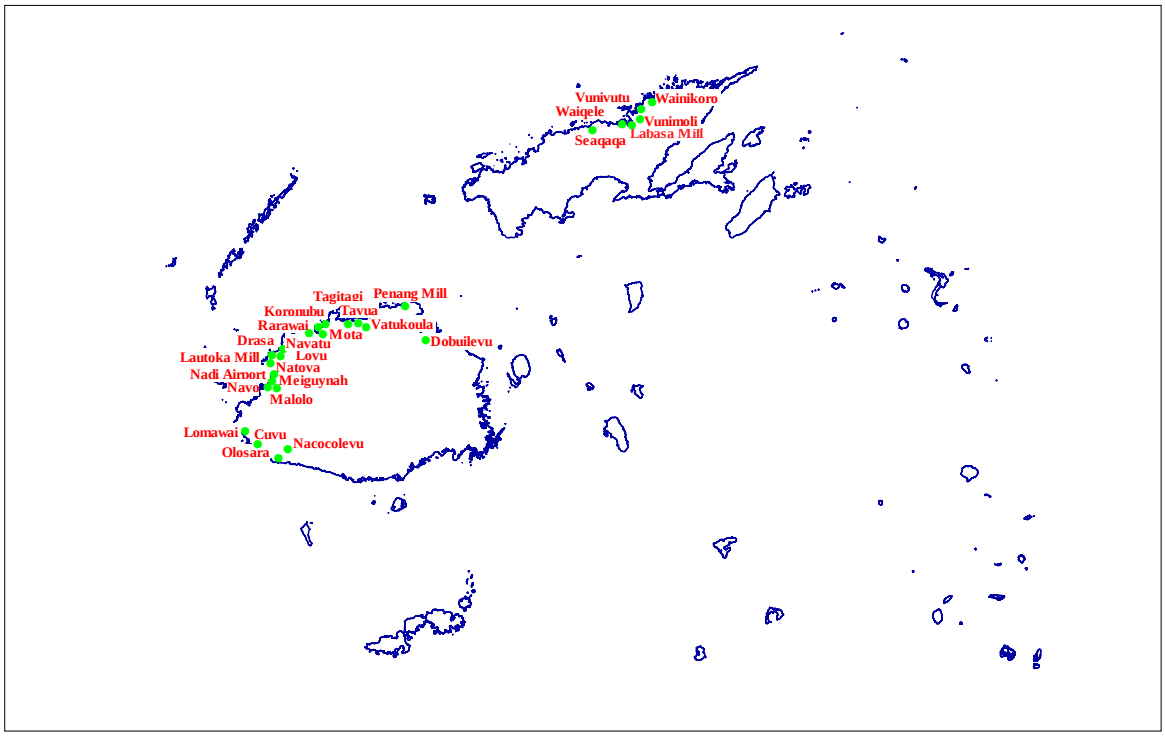
The 2008/09 Southwest Pacific tropical cyclone season commenced on November 1, 2008 and will continue until April 30, 2009. Occasionally tropical cyclones occur in October and May. La Niña conditions developed in December and these conditions are likely to alter tropical cyclone activity in the South Pacific for the remainder of the season.

On *average*, nine tropical cyclones occur in the entire Southwest Pacific region during a season. With the current weak La Niña conditions below average numbers of tropical cyclones are expected. January to March is the peak period of tropical cyclone season and a surge in tropical cyclone activity is likely in the coming three months.

For Fiji, *average* (2-3) numbers of Tropical Cyclones are predicted to pass through Fiji EEZ in the 2008/09 season with one or two predicted to affect land areas. There is a good chance of one or more cyclones affecting Fiji between January and March.

.

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.*