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Fiji Islands Sugar Cane Rainfall Outlook *from* FEBRUARY 2008

Planting Season

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Introduction

This document contains a three-month rainfall outlook for the Fiji Islands sugar cane 'belt'. The chances of ***below normal***, ***normal*** and ***above normal*** rainfall are given in probabilities and presented in pie charts. The Fiji Meteorological Service currently uses a statistical climate prediction model: 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

- Heavy rainfall and flooding was experienced in parts of the Northern Division during the passage of Tropical cyclone *Daman* between 5-9 December 2007;
- Many parts of the country experienced strong and gusty winds, heavy rainfall and flooding with the passage of tropical cyclone *Funa* and *Gene* during the second half of January 2008;
- *Above average* rainfall was received in most parts of Fiji from October to December 2007;
- Air temperatures were generally *average to above average* across the country in the last three months;
- The La Nina event further strengthened in December and now well established in the Tropical Pacific Ocean. It is expected to continue through April;
- Generally ***normal to wetter than normal*** conditions are expected in the sugar cane 'belt' in the coming three to six month periods. The confidence in this prediction is ***moderate***;
- Air temperatures are expected to be ***near or below normal*** over the coming three months and ***near normal*** over coming six month period. The confidence in these predictions are also ***moderate***;
- The chances of tropical cyclones affecting Fiji between now and the end of April 2008 is moderate to high. There is greater risk in the western and southern parts of the country due to the current La Niña conditions.

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

*"Most of the cane belt areas have received **average to above average** rainfall in the past four months. There is a similar forecast is for the coming months. This weather is conducive for rapid weed growth. The farmers need to carry out weed control regularly. Mechanical weed control is not practical in this weather. The combination of manual and chemical (weather permitting) is recommended .In many low lying flats, excess water is seen on the surface as ponds or water tables. This excess water needs to be removed quickly by good drainage. If this excess water is not removed, in many cases the young cane will die. Where cane does not die the growth will be retarded and yields will be greatly reduced. The excess water leaving the field will carry with it some fertilizer. Spot fertilizer application is recommended in the affected areas".*

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 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 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.

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 (Feb to April 08) and Six Month (Feb to Jul 08) Rainfall Outlooks

Sigatoka District	Dry	33%	Normal	67%	Wet
Olosara (3-months)	29	541.4	26	772.0	45
Olosara (6-months)	20	799.9	41	1017.9	39
Cuvu (3-months)	27	574.4	25	774.6	48
Cuvu (6-months)	16	809.6	33	1040.1	51
Lomawai (3-months)	20	570.6	43	794.9	36
Lomawai (6-months)	12	776.9	44	1078.4	44

Near normal to wetter than normal conditions are likely in the Sigatoka region over the coming ***3 to 6 month*** periods. Moderate confidence.

Three Month (Feb to April 08) and Six Month (Feb to Jul 08) Rainfall Outlooks

Nadi District	Dry	33%	Normal	67%	Wet
Airport (3-months)	24	662.9	30	901.0	46
Airport (6-months)	29	838.7	22	1120.3	50
Malolo (3-months)	24	598.9	38	807.9	38
Malolo (6-months)	14	765.8	40	957.7	45
Navo (3-months)	21	641.2	41	809.8	37
Navo (6-months)	20	796.8	36	1062.0	44
Meiguynah (3-mths)	29	637.7	29	918.3	42
Meiguynah (3-mths)	30	838.3	23	1109.9	48
Natova (3-months)	17	691.3	45	968.8	38
Natova (6-months)	20	882.9	33	1199.7	47

Normal to wetter than normal conditions are expected in the Nadi region over the coming ***3 months***. Moderate confidence.
Wetter than normal conditions are likely to occur over the coming ***6 months*** period. Moderate to low confidence.

Lautoka District	Dry	33%	Normal	67%	Wet
Mill (3-months)	21	718.4	36	929.3	43
Mill (6-months)	18	899.0	33	1204.4	49
Lovu (3-months)	26	741.2	34	916.0	40
Lovu (6-months)	12	899.3	41	1129.8	46
Drasa (3-months)	26	745.1	28	933.5	46
Drasa (6-months)	21	920.2	31	1158.2	48

Wetter than normal conditions are likely to occur in the Lautoka region in the ***3 to 6 month*** periods. Moderate to low confidence.

Rarawai District	Dry	3%	Normal	67%	Wet
Mill (3-months)	24	798.3	34	1058.0	43
Mill (6-months)	14	989.6	40	1348.3	46
Koronubu (3-mths)	18	908.2	39	1155.0	43
Koronubu (6-mths)	19	1086.5	40	1440.0	41
Mota (3-months)	22	949.0	35	1200.5	43
Mota (6-months)	19	1186.5	38	1455.4	44
Navatu (3-months)	29	761.6	28	967.2	43
Navatu (6-months)	27	896.1	30	1213.2	43

Normal conditions are likely in the coming ***3 months*** and ***wetter than normal*** conditions are expected over the ***6 month*** period. Moderate confidence.

Tavua District	Dry	33%	Normal	67%	Wet
Tavua (3-months)	26	672.0	34	936.0	40
Tavua (6-months)	14	868.1	49	1134.0	37
Tagitagi (3-months)	22	680.1	34	898.0	44
Tagitagi (6-months)	18	858.0	40	1138.0	42
Vatukoula (3-mths)	23	860.9	34	1132.0	43
Vatukoula (6-mths)	19	1082.5	27	1433.6	54

Near normal to wetter than normal conditions are likely to occur in the Tavua region over the ***3 to 6 month*** periods. Moderate to high confidence.

Three Month (Feb to April 08) and Six Month (Feb to Jul 08) Rainfall Outlooks

Penang District	Dry	33%	Normal	67%	Wet
Mill (3-months)	25	827.9	39	1131.4	36
Mill (6-months)	21	1137.7	30	1388.6	48
Dobuilevu (3-months)	36	888.5	37	1113.1	28
Dobuilevu (6-months)	16	1172.6	41	1434.1	43

Near normal rainfall is likely in the Rakiraki region over the coming ***3 month*** period. Moderate to low confidence.
Over the coming ***6 months***, rainfall in the region is likely to be ***normal***. Moderate confidence.

Labasa District	Dry	33%	Normal	67%	Wet
Seaqaqa (3-months)	20	892.8	38	1180.1	42
Seaqaqa (6-months)	18	1116.2	40	1428.5	41
Waiqele (3-months)	18	964.1	37	1166.0	45
Waiqele (6-months)	14	1111.0	41	1481.1	45
Vunimoli (3-months)	15	824.2	38	1250.7	47
Vunimoli (6-months)	11	1084.6	48	1448.7	41
Mill (3-months)	18	870.1	37	1179.2	45
Mill (6-months)	16	1096.3	33	1471.6	50
Vunivutu (3-months)	26	924.2	22	1364.5	52
Vunivutu (6-months)	16	1127.9	32	1726.6	53
Wainikoro (3-months)	18	807.3	30	1114.1	52
Wainikoro (6-months)	11	1093.0	39	1382.4	51

Wetter than normal conditions are most likely to occur in the Labasa region over the coming ***3 and 6 month*** periods. Moderate confidence.