



# SEASONAL RAINFALL FORECAST

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## **ABOVE-NORMAL CONDITIONS EXPECTED FOR SEASON** **OCTOBER - NOVEMBER - DECEMBER (OND 2004)**

Statistical Regression model output using, May-June-July (MJJ) Sea-Surface-Temperature (SST) as the major predictor over the period 1975 to 2002 was used to evaluate the rainfall outlook for the OND 2004. Twenty eight years of rainfall data from rainfall stations across Mahe Island was used in the analysis. Indication of above-normal condition is anticipated over Mahe and inner islands. The probabilistic approach used for the seasonal forecast can be difficult to interpret. Normal condition here simply means a range about the average rainfall amount measured over the 28 year period.

Using average rainfall for the following stations the rainfall amount expected by the model forecast can be categorized as follows:

*Table 1. Categorical and Exceedance Probability for OND 2004*

Category	Probability/%	Stations	
		La Misere (high altitude)	Airport (low altitude)
Above-normal	45	>1025.6 mm	>752.5 mm
Normal	35	782.8-1025.6 mm	526.3-752.5 mm
Below-normal	20	<782.8 mm	<526.5 mm

*Table 2. Climatological Value of OND base on data from years 1972 to 2002*

*Source: Seychelles Climate Centre, Meteorological Services*

Stations	Highest on record/mm	Lowest on record/mm	Total Amount Expected (First estimate)/mm
La Misere	1408.1 (1978)	410.1 (1990)	~ 1189.8
Airport	1229.4 (1974)	310.1 (1998)	~ 945.7

Note: This type of forecasting account for the accumulative total amount of rainfall expected for the three month period (October to December). Month to month variation may occur.

### **INTERPRETATION OF THE PROBABILITY FORECAST**

There are two ways of interpreting probability forecasts;

- Relative frequency interpretation = The present meteorological conditions observed over a large number of occasions would give rise to above-normal condition on 45% of the time, normal condition on 35% of the time and below-normal condition on 20% of the time

- Subjective interpretation = The odds against below-normal condition is 80 to 20, odds against normal condition is 65 to 35 and odds against above-normal condition is 55 to 45 thus the smallest (odds) value is the most likely to occur

This suggests that there is a chance that the category with lowest probability in Table 1 may occur but the likelihood of it happening is small.

## **DISCUSSION**

Overall sea surface temperature conditions in tropical Pacific are currently indicative of a weak El Nino, but the atmosphere is not yet engaged (IRI August 2004). That is atmospheric circulation pattern is not indicating the normal El Nino pattern as of mid August 2004. Based on latest observation and forecast it is 50% likely than weak condition will prevail during October 2004 and slowly decreasing to 40% likelihood into the early part of 2005. This weak El Nino type conditions is likely to enhance rainfall over the Seychelles Island *thought not to the extent of the 1997 events*. Due to the late development of the current conditions it is not expected to have a major effect.

Locally, warming of ocean surface to our immediate north/ northwest has started indicating a significant change as the coastal Somali area has been relatively cooler than normal throughout the June to August period, which was one of the leading factors in forcing the dry conditions we have experienced to prevail.

The transition phase between the rainfall season and the dry season is expected during the beginning of this period. This has the effect of changing the weather systems that affects us, predominantly the wind shift from the northern hemisphere leading to convergence of the two trade winds over our latitude as the sun moves south.

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