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Experimental Climate Monitoring and Prediction

(Prepared for the Water Management Secretariat of the Mahaweli Authority)

by: Madhura Weerasekera, Sewwandhi Chandrasekara, Sanjaya Ratnayake, Zeenas Yahiya, Lareef Zubair and Michael Bell (FECT and IRI¹)

23 February 2012

FECT BLOG

Past reports available at

Summary² Monitoring

Weekly Monitoring: During the previous week $(15^{th} - 20^{th}$ February) rainfall ranged between 0-40 mm. On the 15th of February 0mm-10mm rainfall was experienced for the Mahaweli Basin and the Eastern regions. During 16th-17th of February Western, North Western, South Western and Southern regions received rainfall ranged up to a maximum of 40mm. There was no significant rainfall for the entire island during the latter part of the week i.e. from 18th-20th.

Monthly Monitoring: During January above average rainfall was experienced particularly in the districts of Gampaha, Colombo, Kalutara and Galle.

Predictions

7 Day Prediction: For the coming week, the NCEP Global Forecast System predicts an accumulated rainfall ranging between 15 mm-45 mm for the entire island except Northern Parts.

IMD WRF Model Forecast & IRI forecast: WRF model predicts dry conditions during next two days for the entire island while NOAA NCEP CFS predictions (delivered via IRI map tool) predict a total of 20mm rainfall during 21-26th February.

1 Month Prediction (23rd Feb-23rd March): A rapid increase of rainfall shall be expected till the 25th of February. It shall decrease gradually till the 04th of March followed by quite steady conditions till the 11th of March. Again it shall increase gradually till the 23rd of March. Overall high rainfall shall not be expected during this period. *Western Slopes*- Nearly the same pattern shall be observed, but with an increased rainfall. Quite High Rainfall shall be expected during 24th -27th. Thenafter It shall show a decraseing trend with few fluctuations till the 11th of March. Again it shall tend to increase gradually till the 23rd of March. *Eastern Slopes*- There Shall be no significant rainfall till the 13th March. Thenafter it shall tend to increase rapily till the 23rd of March. *Northen Region*- There shall be no significant rainfall till during this period.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for March 2012 to May2012, issued in February 2012, there is 60%-70% probability for temperature to be below normal for entire Sri Lanka, while precipitation to be climatological.

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 - b. IMD WRF Model Forecast
 - c. Weekly precipitation forecast (IRI)
 - d. 1 month experimental predictions by Paul Roundy and L. Zubair
 - e. Seasonal Predictions from IRI

International Research Institute for Climate and Society.

² These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL. Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

http://fectsl.blogspot.com/

http://fectsl.wordpress.com/

FECT WEBSITE

http://www.climate.lk

and <u>http://www.tropicalclimate.org/</u>

ENSO Update 16 February 2012

A majority of the ENSD prediction models call for weak La Nina conditions during the February-March period, transitioning to neutral conditions during the March-May period with the most likely time of dissipation occurring in early April.

(IRI)

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1. Monitoring

a) Daily Satellite Derived Rainfall Estimate Maps: 15th –20th February, 2012 (Left-Right, Top-Bottom)





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b) Monthly Satellite Derived Rain fall Estimates for January 2012 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (01-10 Feb. & 11-20 Feb. 2012)



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d) Weekly Average SST Anomalies

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Weekly Average SST Anomalies (^oC), 15th February, 2012 Data Source: NCEP Global Sea Surface Temperature Analysis (Climatology 1979-1995)

2. Predictions



a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.

During next week, an accumulated rainfall of 15 mm-45 mm is predicted for the entire Sri Lanka except Northern Parts.



Source – NOAA Climate Prediction Center

b) WRF Model Forecast (Regional Meteorological Center, Chennai, Indian Meteorological Department)



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\ based on 00 UTC of 22-02-2012 valid for 03 UTC of 25-02-2012



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c) Weekly Precipitation Forecast for 21-26 Feb 2012(Precipitation Forecast in Context Map Tool, IRI)



d) 1 month experimental predictions by Paul Roundy and L. Zubair Predictions based on observed cloud cover and atmospheric waves. Issued 23rd February, 2012

All Sri Lanka (Rainfall Scale from 0-20 mm/day)



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Western Slopes (Rainfall Scale from 0-20 mm/day)



Eastern Slopes (Rainfall Scale- from 0-20 mm/day)



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Northern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

