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Experimental Climate Monitoring and Prediction

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

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1 December 2011

FECT BLOG

Monitoring

Summary²

Follow news at our website at http://www.climate.lk.

Tropical Cyclone 5 (TC 5)



The active phase is still in the Indian ocean, but the focus of the convection has moved to the east and south of the Maldives, as the current infrared satellite image shows. TC 5 is still kicking around the northern Arabian sea, hanging on for dear life against strong vertical wind shear.

(Source: http://maddenjulianconversation.blogsp ot.com/)

ENSO Update

17 November 2011

Weak La Niña conditions reemerged in August after a brief period of ENSO-neutral conditions following the ending of the significant 2010-11 La Niña. The current event has slowly strengthened and is currently of weak to moderate strength.

(Text Courtesy IRI)

Weekly Monitoring: During the previous week (23rd November to 29th November, 2011) rainfall ranged between 0-150 mm. In the first half of the week (23rd-25th) and on the 27th entire island experienced heavy rains and here Northern, North eastern, Eastern and South eastern regions received heavy rainfall up to a maximum of about 150mm. 20mm or below rainfall was experienced for the rest.

Monthly Monitoring: During October, above average rainfall was experienced particularly for the upper part of the Mahaweli basin and eastern part of the Island while the Western, North Western and South Western regions are below average.

Predictions

7 Day Prediction: For the coming week, the NCEP Global Forecast System predicts an accumulated rainfall of 5 mm to 85 mm particularly for Northern, North eastern, Eastern and South eastern and Southern Regions of the Island.

IMD WRF Model Forecast & IRI forecast: WRF model predicts up to about 65mm rainfall for the southern half of the island Paticularly for Eastern, Southern and Western regions during $3^{rd} - 4^{th}$ December. NOAA NCEP CFS model predictions (delivered via IRI map tool) predict 25mm- over 120mm rainfall from 29^{th} Nov – 04^{th} December for the entire island.

1 Month Prediction: Overall, The wet conditions shall continute till the 10th December followed by a gradual decrease with some fluctuation till the end of December. High rainfall shall be expected during 1st week of the December. For the western slopes the existing wet conditions further countinue and high rainfall shall recive till the 13th December. Then it shall decrease till the 16th December followed by a bimodal fluctuation till the end of December. For the eastern slopes a rapid increase of rainfall shall be observed till the 2nd December. Then after it shall rapidly decrease till the 14th December. There shall be no rains from 21st -30th December. For the Eastern coast it shall show a decreasing trend with frequent fluctuations till the 15th December. There shall be no rainfall after the 15th. In the Northern region quite high rainfall shall prevail till the 5th December. Then after it shall decrease gradually till the 23rd. There shall be no rainfall after 23rd up to the end of December.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for December 2011 to February 2012, issued in November 2011, there is 70% probability for temperature to be normal for entire Sri Lanka, while the precipitation is likely to be climatological.

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 - a. NCEP GFS Ensemble 1-7 day predictions, NOAA, CPC, USA
 - b. IMD WRF Model Forecast
 - c. Weekly Precipitation Forecast (IRI)
 - d. 1 month experimental predictions by Paul Roundy and L. Zubair
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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. Foundation for Environment Climate and Technology

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5.6°N

29 Nov 2011

79.2°E 79.6°E 80°E 80.4°E 80.8°E 81.2°E 81.6°E 82.0°E 82.4°E Longitude E-mail climate@sltnet.lk

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1. Monitoring

a) Daily Satellite Derived Rainfall Estimate Maps: 23rd November – 29th November, 2011 (Left-Right, Top-Bottom)



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b) Monthly Satellite Derived Rain fall Estimates for October 2011 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (November 1 -10, 2011 and 11-20 November, 2011)



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d) Weekly Average SST Anomalies



Weekly Average SST Anomalies (⁰C), 16th November, 2011 Data Source: NCEP Global Sea Surface Temperature Analysis (Climatology 1979-1995)

2. Predictions





During next week, an accumulated rainfall of 5 mm to over 85 mm is predicted for the entire Island.

Source – NOAA Climate Prediction Center



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







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c) Weekly Precipitation Forecast for 29 Nov-04 Dec, 2011. (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 01st December, 2011

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



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



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



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



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

e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Temperature for December-January-February 2012, Issued November 2011

