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Experimental Climate Monitoring and Prediction

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

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26 April 2012

FECT BLOG

Past reports available at

http://fectsl.blogspot.com/

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ENSO Update

19 April 2012

Many of the ENSO prediction

models predict neutral ENSO

conditions from the April-

June period through the remainder of 2012,

implying an end to the 2011-12

La Nina. However, approximately 40% of models predict El Nino conditions

developing by the July-

September season and

continuing through 2012.

(IRI)

Summary² Monitoring

Weekly Monitoring: During last week (18th -23rd April) rainfall ranged between 0-140mm. Most Parts of the country received rainfall throughout the week. On the 20th and 21st, South Western parts received rainfall up to a maximum of 50mm. Almost whole island experienced the wet conditions during 22nd -23rd April. Particularly Northern, North Central and North Western regions received more rainfall and highest amount recorded from the Trincomalee district.

Monthly Monitoring: During March most Parts of the island have shown a below average rainfall while above average in the some parts of the Ampara, Badulla, Nuwara Eliya, Ratnapura, Moneragala, Mullativu, Kilinochchi, Vauniya and Batticaloa districts.

Predictions

7 Day Prediction: For the coming week, the NCEP Global Forecast System predicts an accumulated rainfall of 5mm– 115 mm particularly throughout the island while South Western tip getting an accumulation up to 115mm.

IMD WRF Model Forecast & IRI forecast: WRF Model Predicts 1mm-36mm rainfall except for the South Eastern and some parts of the North Central and Central regions on the 26th. But it predicts dry conditions in the most parts of the country on the 28th while predicting 1mm-65mm rainfall for the Northern, North western and South Western regions and lower parts of the western region. NOAA NCEP CFS model (delivered via IRI map tool) predicts 50mm of total rainfall for the entirety of the island during 24th – 29th of April.

1 Month Prediction: Overall, a rapid increase of rainfall shall be expected till the 28th April followed by a gradual decrease till the 05th of May. Thereafter it shall show quite steady conditions till the 11th of May. After 12th May it shall again increase dramatically till the 24th of May and hence wet conditions shall be experienced after the 16th of May. *Western Slopes*- Nearly the same pattern shall be expected with an increased rainfall. A rapid increase of rainfall shall be expected till the 28th of May. Overall, the western slopes shall experience wet conditions during the coming moth of period. *Eastern Slopes*- A significant amount of rainfall is not predicted till the 19th of May followed by a rapid increase till the 24th of May. and wet conditions shall be expected after the 15th of May. Northern Region- A rapid increase of rainfall shall be observed till the 28th of April followed by a rapid decrease till the 03rd of May. Northern Region- A rapid increase gradually till the 24th of May.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for May 2012 to July 2012, issued in April 2012, there is a 40%-45% probability for temperature to be below normal particularly in the northern half of the country while 40% probability for it is to be normal in the southern half. There is 40% probability for rainfall to be climatological.

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- c. Weekly precipitation forecast (IRI)
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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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1. Monitoring

a) Daily Satellite Derived Rainfall Estimate Maps: 18th April –23rd April, 2012 (Left-Right, Top-Bottom)







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 20 Apr 2012







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 23 Apr 2012





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



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (1-10 April & 11-20 April, 2012)



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2. Predictions



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

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During next week, an accumulated rainfall of 5mm–115 mm is predicted throughout the island.

Source – NOAA Climate Prediction Center

Map: Predicted accumulation of rainfall. (24th Apr– 30th Apr, 2012 week)

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





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c) Weekly Precipitation Forecast for 24 Apr - 29 Apr 2012 (Precipitation Forecast in Context Map Tool, IRI)



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d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 25th April, 2012

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)



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



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e) Seasonal Rainfall and Temperature Predictions from IRI







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