

Experimental Climate Monitoring and Prediction

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3 April 2014

FECT BLOG

Past reports available at
<http://fectsl.blogspot.com/> and

<http://fectsl.wordpress.com/>

FECT WEBSITES

<http://www.climate.lk> and
<http://www.tropicalclimate.org/>

20 March, 2014 PACIFIC SEAS STATE

During February through mid-March the observed ENSO conditions varied from cool-neutral to the borderline of weak La Niña. However, many of the ENSO prediction models indicate a warming trend, with neutral ENSO during northern spring 2014 and a fairly likely development of weak El Niño conditions by the end of northern summer..

(Text Courtesy IRI)

INDIAN OCEAN STATE

The seas around Sri Lanka showed neutral sea surface temperature during 23rd-29th March 2014.

MJO STATE

MJO is in phase 3 (in the Indian Ocean) and shall influence the rainfall in Sri Lanka.

Highlights

Monitoring and Predictions:

Very dry conditions were observed in Sri Lanka during the last month except for some slight amounts of rainfall received particularly in areas towards the western slopes of the country. However less than average rainfall was observed in all parts of the country. Base on IRI and NOAA predictions for the next two weeks, rainfall is expected to increase. MJO is in the 3rd phase which shall influence rainfall in Sri Lanka.

Summary

Monitoring

Weekly Monitoring: During 25th- 31st of March No rainfall was observed in any part of Sri Lanka except on the 27th, where up to 20 mm of rainfall was observed in Kegalle district.

Monthly Monitoring: Region towards west to south-west of the central mountains of Sri Lanka received upto 1 mm average rainfall during the month of March 2014. But except for north and north central provinces the rest of the island received a below average rainfall.

Predictions

14 day prediction: During the next two weeks up to 90 mm of rainfall is predicted for the southern half of the island.

IMD WRF & IRI Model Forecast: on the 5th of April, rainfall is expected in all of Sri Lanka except in the north. Areas around Colombo and Ratnapura shall have rainfall up to 35 mm. On the 6th Rainfall shall increase where the predicted rainfall around Colombo is up to 65 mm. and the Western slopes will also have rainfall up to 35 mm. No rainfall is observed in Northern areas of the country on this day as well. The IRI model predicts upto 200 mm of rainfall for the southern half of the country and this rainfall shall diminish towards northern parts of the country.

30 Days Prediction: Overall- During 30 day period starting from 2nd of April 2014, rainfall is expected to be constant around 3 mm per day. **Western Slopes-** Up to 10 mm of rainfall is expected around 8th of April and it shall decrease afterwards. **Western Coast-** Almost constant amount around 5 mm of rainfall is expected in this region. **Eastern Slopes-** A fluctuating pattern of rainfall shall be observed around 2 mm. **Eastern Coast-** Very less amount (below 4 mm) of rainfall is expected in this region **Northern-** Rainfall is expected to reach around 4 mm on 3th of April and shall decrease gradually thereafter. **Southern Region-** Existing rainfall shall decrease until 13th of April and thereafter no rainfall is expected until around 27th.

Seasonal Prediction: As per IRI Multi Model Probability Forecast issued on March 2014; for April 2014 to June 2014, there is a 40-45% probability for temperature to be above normal in the country while the rainfall is to be climatological.

Inside this Issue

1. Monitoring

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- Weekly Average SST Anomalies

2. Predictions

- NCEP GFS Ensemble 1-14 day predictions
- WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

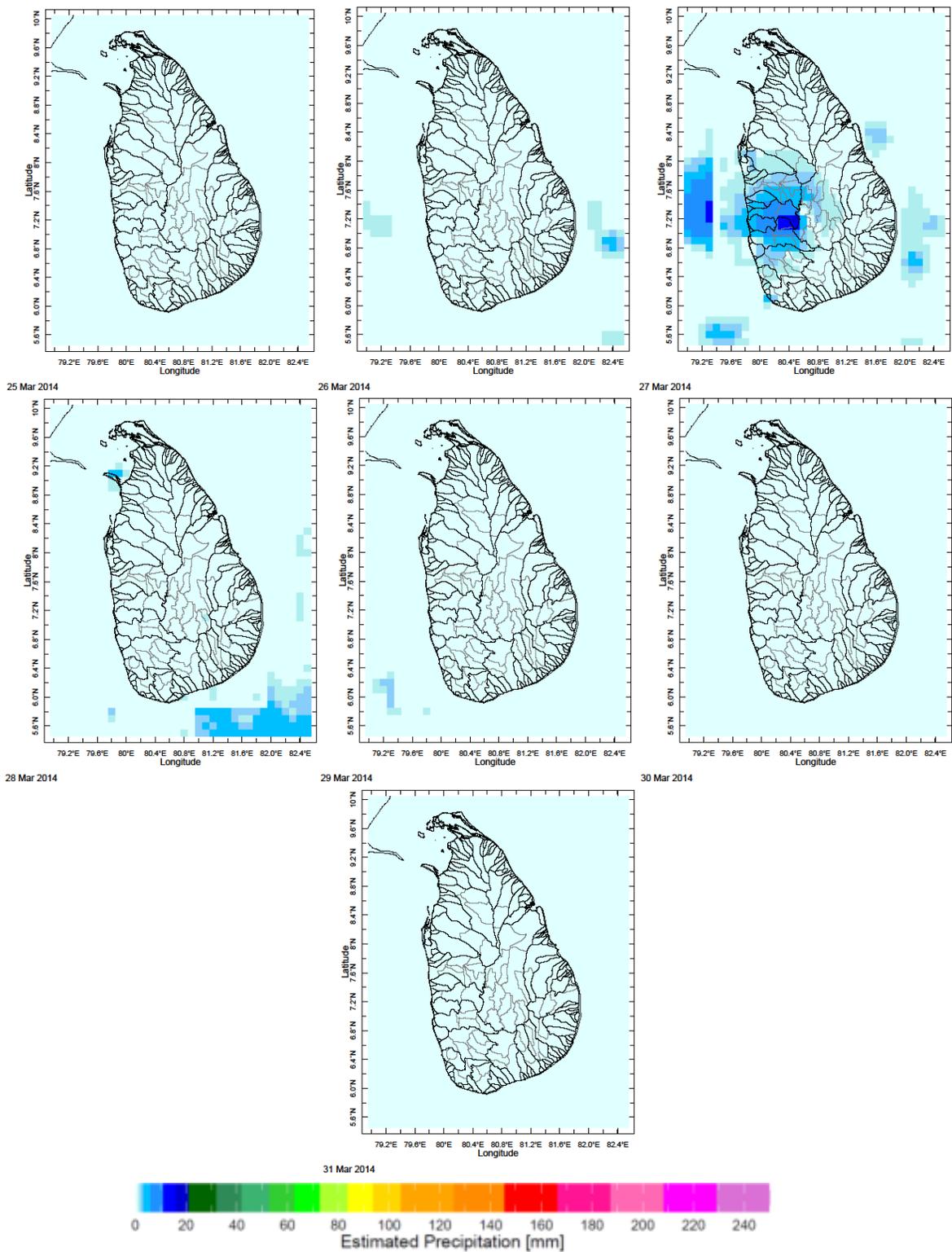
¹ International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

² These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

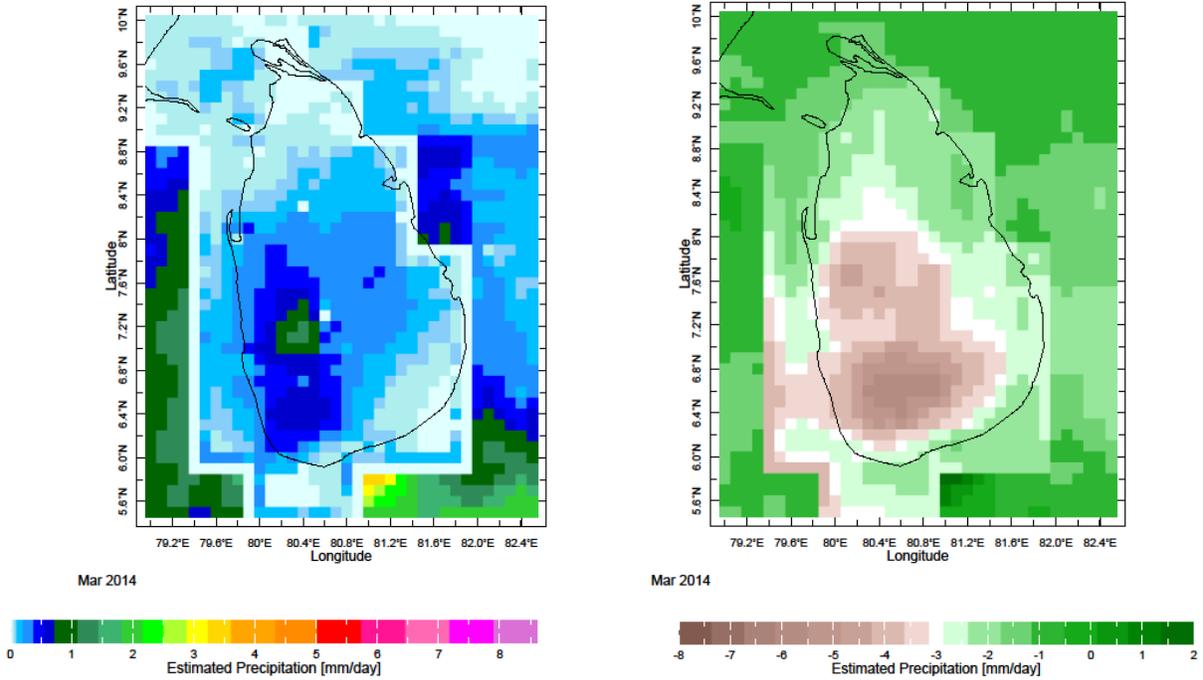
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

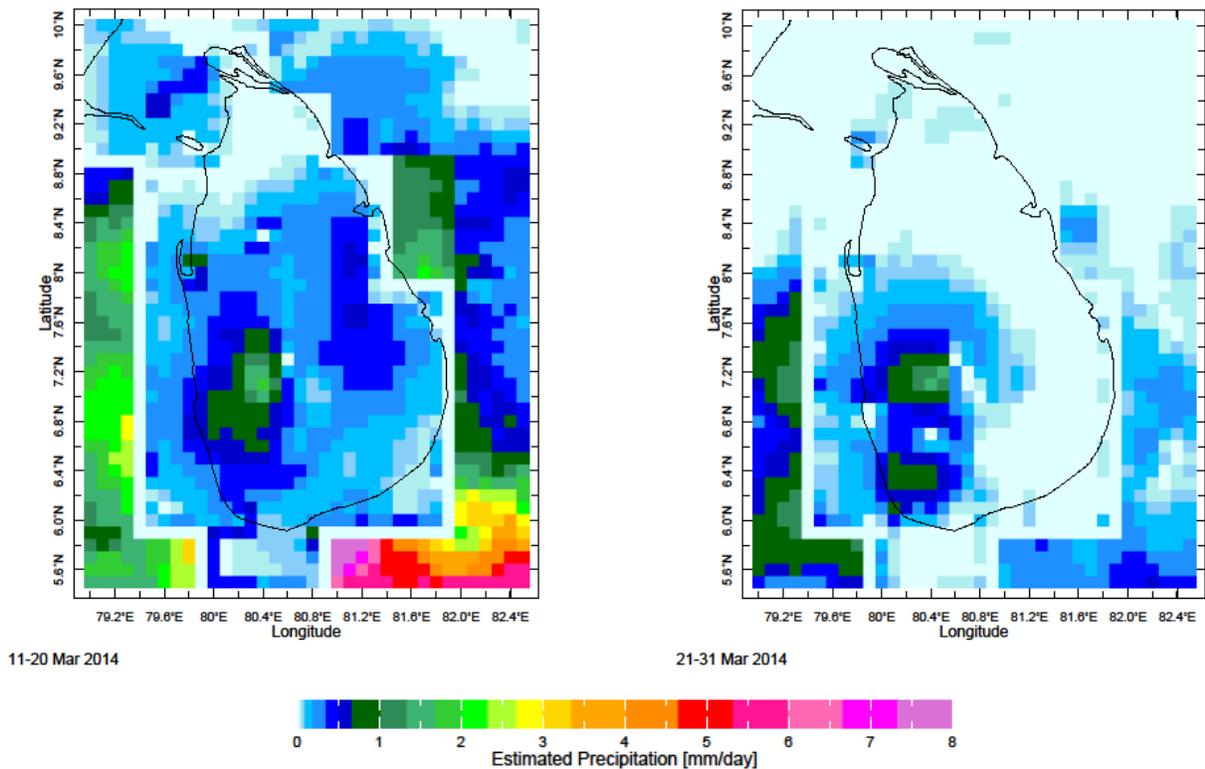
a) Daily Satellite Derived Rainfall Estimate Maps: 25th-31st March 2014 (Left-Right, Top-Bottom)



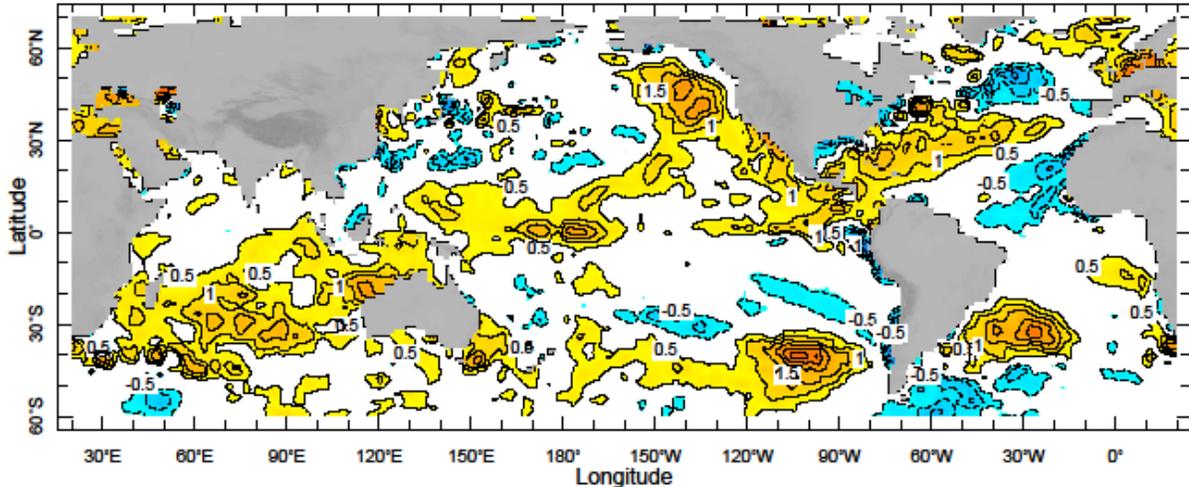
b) Monthly Satellite Derived Rainfall Estimates for March 2014 (Average – Left and Anomaly - Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 March & 21-31 March, 2014)



d) Weekly Average SST Anomalies



23-29 Mar 2014



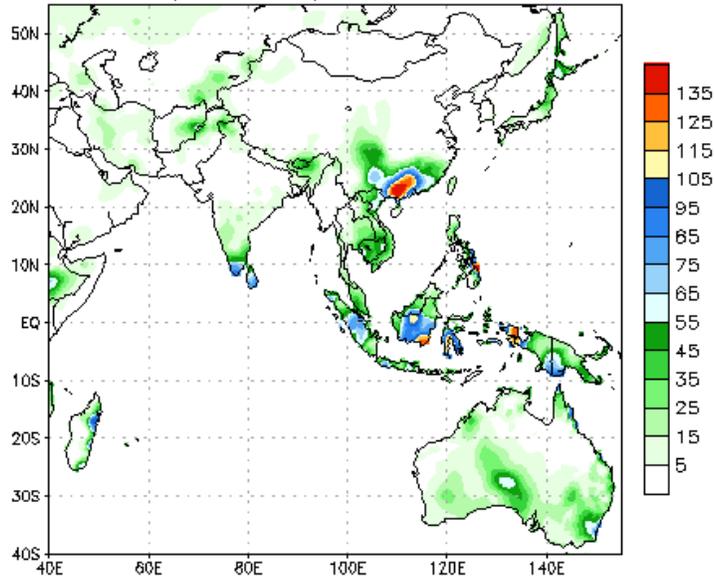
Weekly Average SST Anomalies (°C), 23rd-29th March, 2014

Data Source: NCEP Environmental monitoring center (Climatology 1971-2000)

2. Predictions

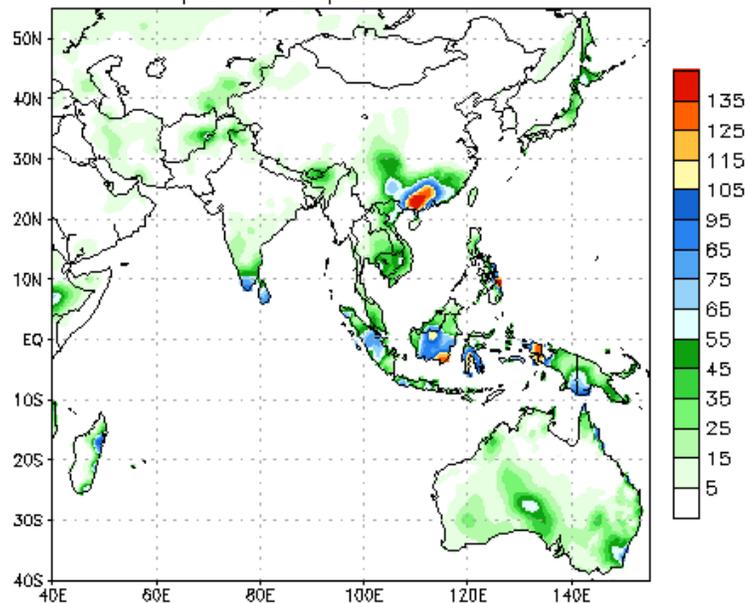
a) NCEP GFS Ensemble 1-14 day predictions, NOAA, Climate Prediction Centre, USA.

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 02Apr2014
02Apr2014-08Apr2014 Accumulation



Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 02Apr2014
02Apr2014-08Apr2014 Accumulation

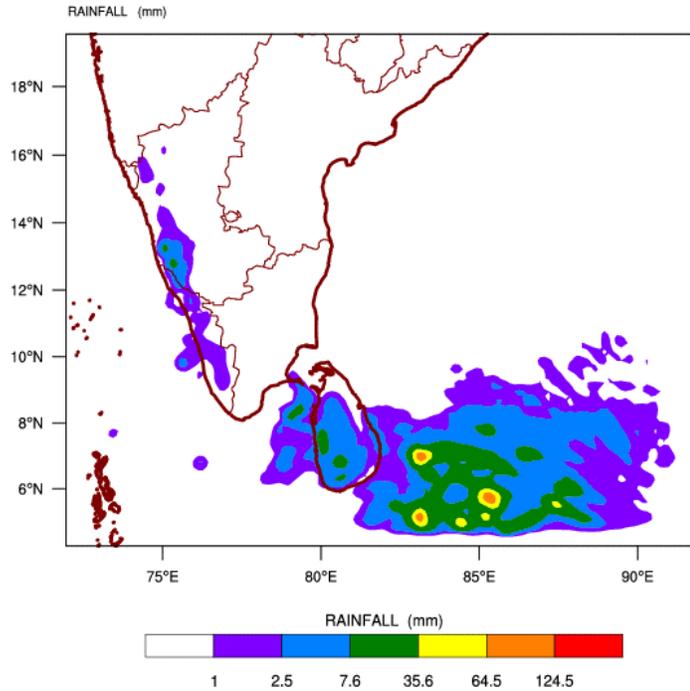


Bias correction based on last 30-day forecast error

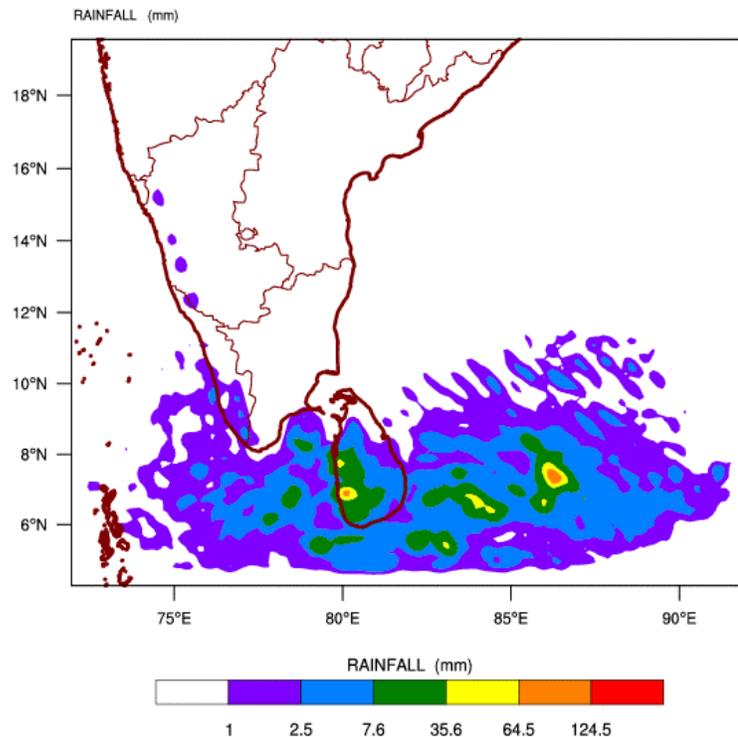
Source – NOAA Climate Prediction Center

b) WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 03-04-2014 valid for 03 UTC of 05-04-2014

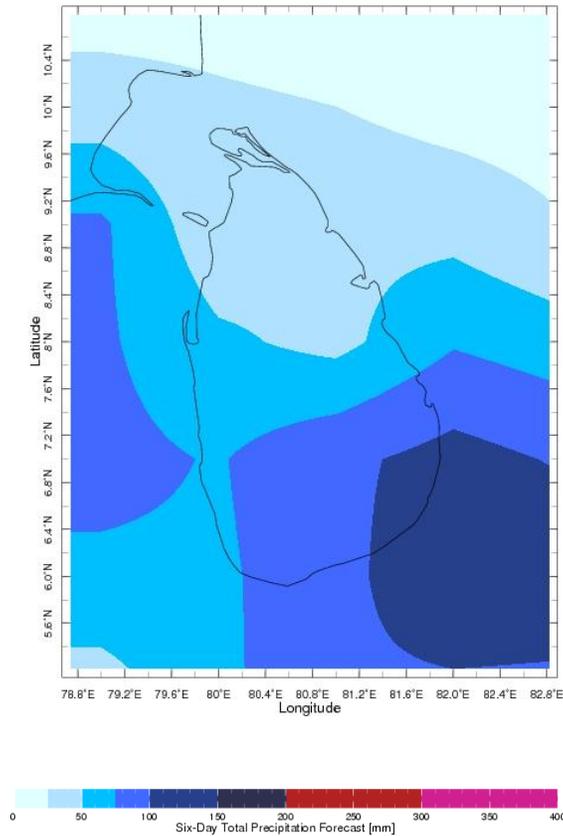


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 03-04-2014 valid for 03 UTC of 06-04-2014



c) Weekly Precipitation Forecast for 2nd-7th April 2014 (Precipitation Forecast in Context Map Tool, IRI)

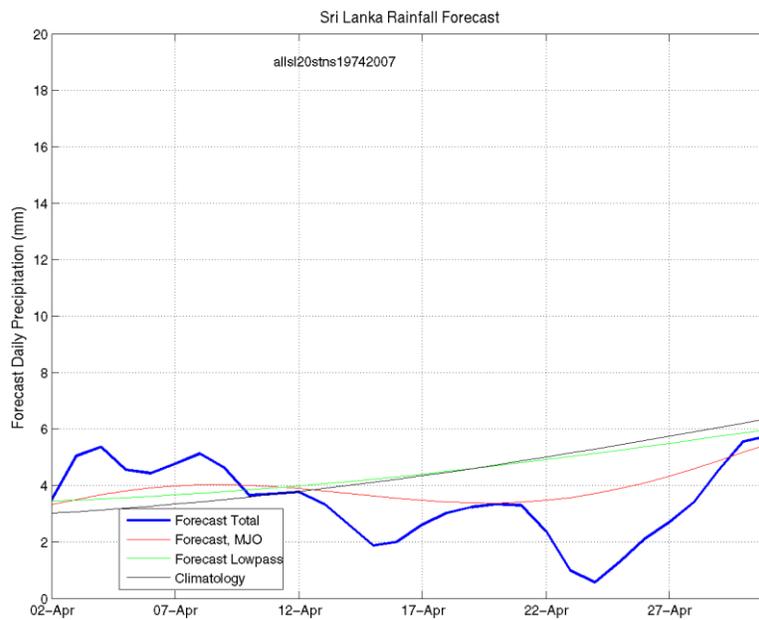
Forecast for 2-7 Apr 2014 Issued 0000 2 Apr 2014



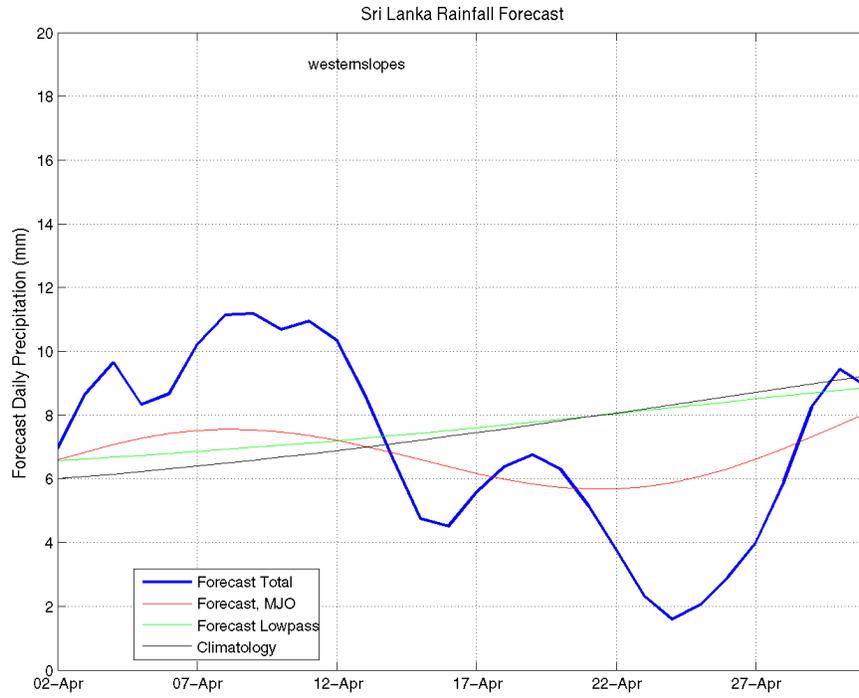
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 3rd April, 2014

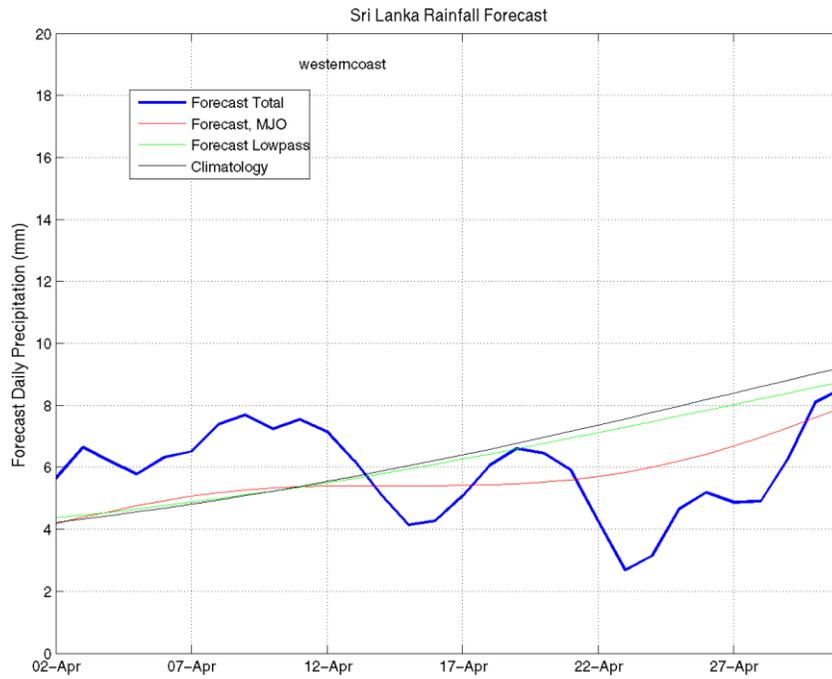
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



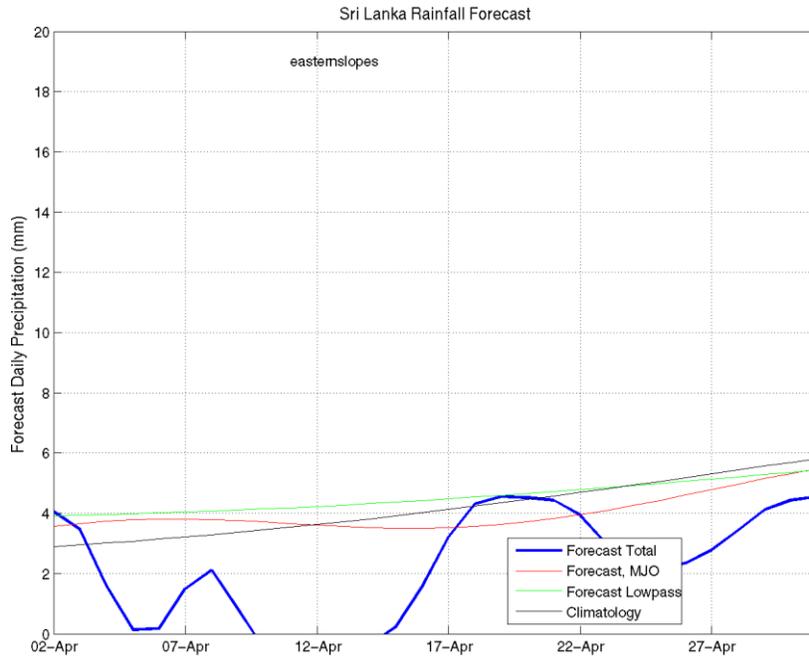
Western Slopes (Rainfall Scale from 0-20 mm/day)



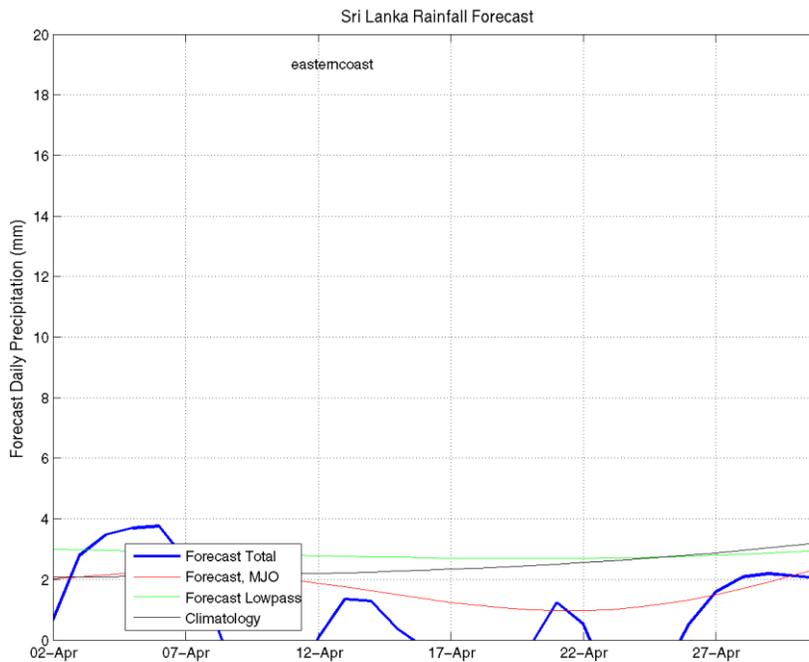
Western Coast (Rainfall Scale from 0-20 mm/day)



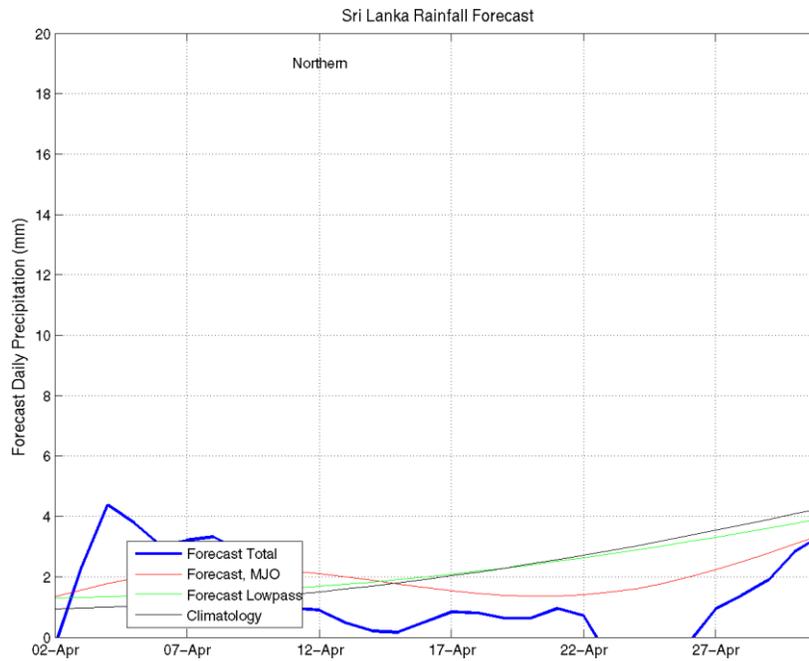
Eastern Slopes (Rainfall Scale- from 0-20 mm/day)



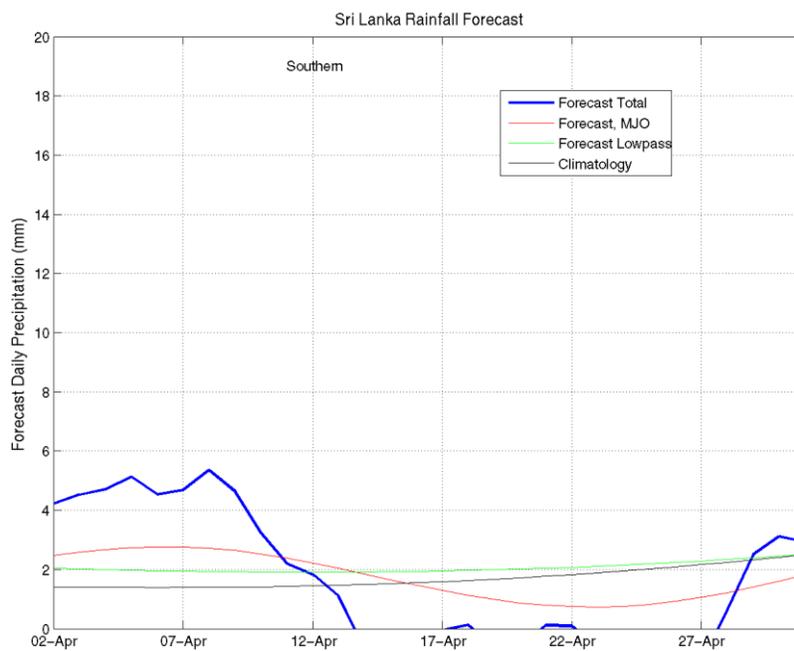
Eastern Coast (Rainfall Scale- from 0-20 mm/day)



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

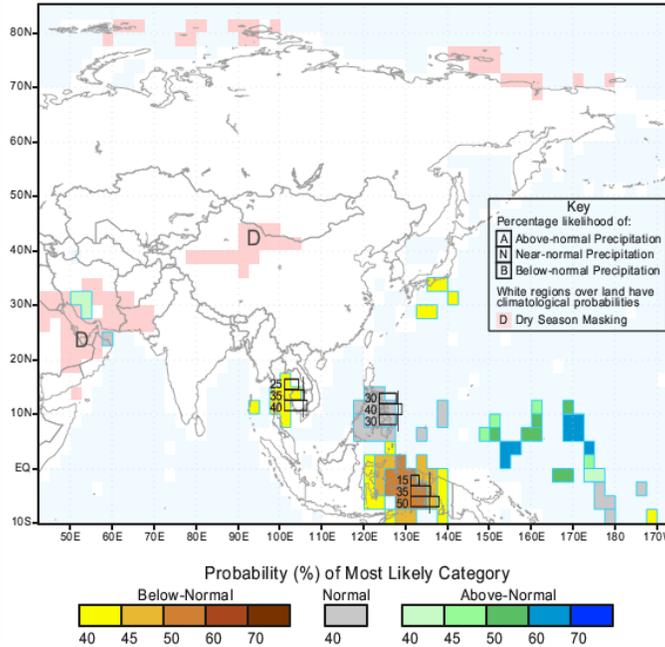


Southern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation
for April-May-June 2014, Issued March 2014



IRI Multi-Model Probability Forecast for Temperature
for April-May-June 2014, Issued March 2014

