

Experimental Climate Monitoring and Prediction

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14 April 2016

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April 14, 2016 PACIFIC SEAS STATE

During early April 2016 the tropical Pacific SST anomaly was weakening, and becoming a moderate rather than strong El Niño. All atmospheric variables continue to support the El Niño pattern, but at a somewhat weakened strength. This includes weakened trade winds and excess rainfall in the east-central tropical Pacific, extending eastward more weakly than last month. Most ENSO prediction models indicate continued weakening El Niño conditions during the northern spring season, returning to neutral by late spring or early summer 2016, with a chance for La Niña development by fall.

(Text Courtesy IRI)

INDIAN OCEAN STATE

1°C above average sea surface temperature was observed around Sri Lanka.

MJO STATE

MJO is weak and therefore it shall not affect the rainfall.

Highlights

Up to 100 mm heavy rainfall was seen in most of south western, western, north western and southern regions of the country during the previous week. Very less rainfall was seen in western districts of the country and the Jaffna Peninsula. NOAA NCEP and WRF models predict a continuation in heavy rainfall in the south western region. MJO is weak so there shall be no effect on rainfall by the MJO. El Niño condition is weakening and neutral conditions are expected by June, July which shall enhance rainfall marginally.

Summary

Monitoring

Weekly Monitoring: There was heavy rainfall in almost the entire country during the week 6th – 12th April 2016. On the 6th, Ratnapura, Galle, Matara and Kalutara districts received up to 100 mm of rainfall while the surrounding districts and the sea received up to 70 mm. On the 7th Gampaha, Puttalam, Kurunegala and Anuradhapura districts received up to 100 mm rainfall. Then on the 8th a significant reduction in rainfall was seen throughout the country. Only Colombo and Kaluthara districts received rainfall up to 40 mm. On the 9th about 40 mm rain was seen in Gampaha, Kurunegala, Matale and Anuradhapura districts but the sea west of Puttalam received up to 100 mm rainfall. The next two days (10th & 11th) the entire country was mostly dry. Then once again heavy rainfall was seen in Ratnapura, Monaragala and Badulla districts on the 12th where up to 100 mm rainfall was seen.

Monthly Monitoring: During March 2016 most regions of the country received below average rainfall. Rainfall received by Ratnapura, Kaluthara and southern and western parts of Puttalam was about 10 mm/day less than the historical average for this month. Above average rainfall was only seen in Kegalle, Kandy, Matale districts and the southern region of Kurunegala district.

Predictions

14-day prediction: NOAA NCEP models predict up to 45 mm rainfall in each week, during 14th – 20th April and 21st – 27th April in the south western region of the country.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, up to 65 mm rainfall is expected close to Ratnapura and Anuradhapura on 16th and 17th of April. The rest of the country shall receive up to 35 mm rainfall in these 2 days. IRI CFS model predict up to 50 mm total rainfall around Badulla during 13th – 18th April.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for April to June, the total 3-month precipitation shall be climatological. The 3-month temperature has more than 70-80% likelihood in the entire country of being in the above-normal tercile during this period.

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- Seasonal Predictions from IRI

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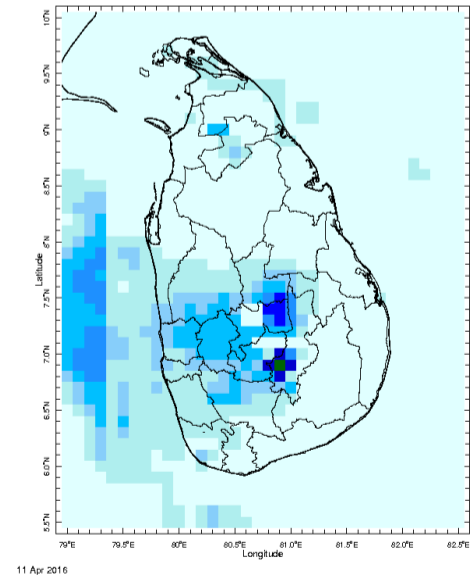
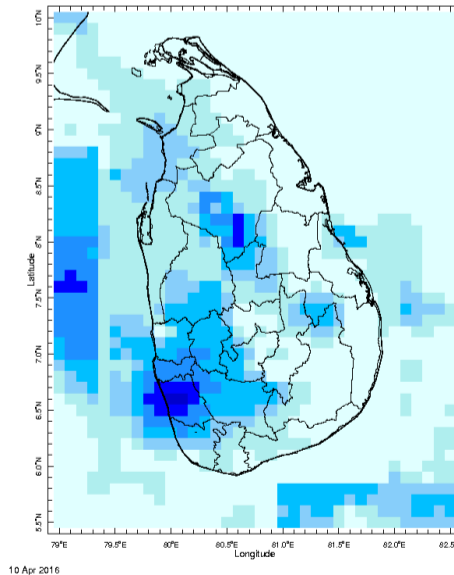
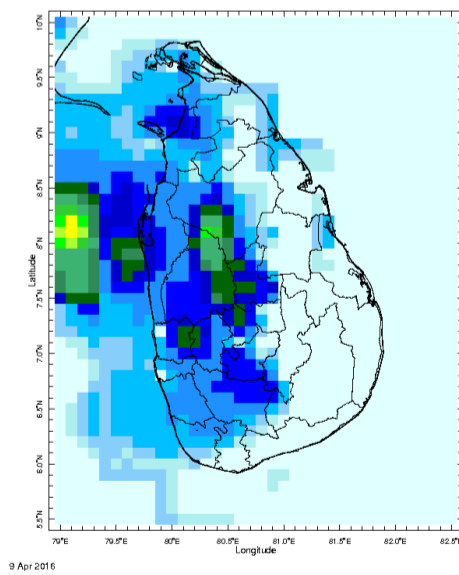
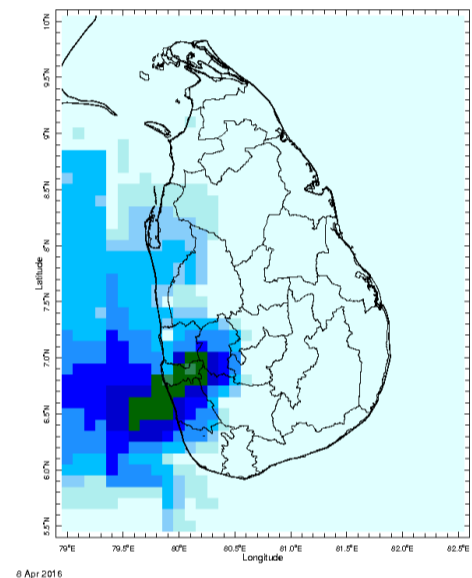
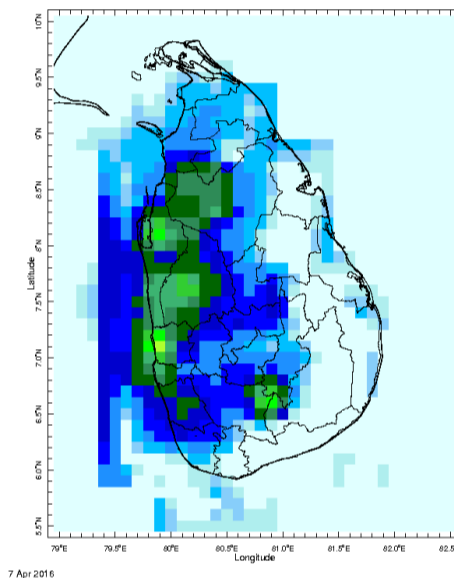
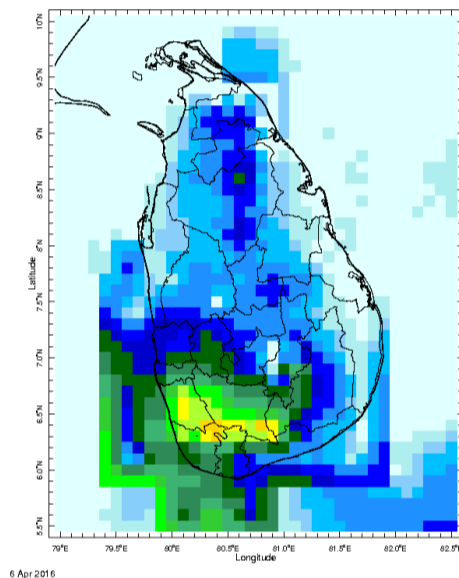
Weekly Hydro- Meteorological Report for Sri Lanka

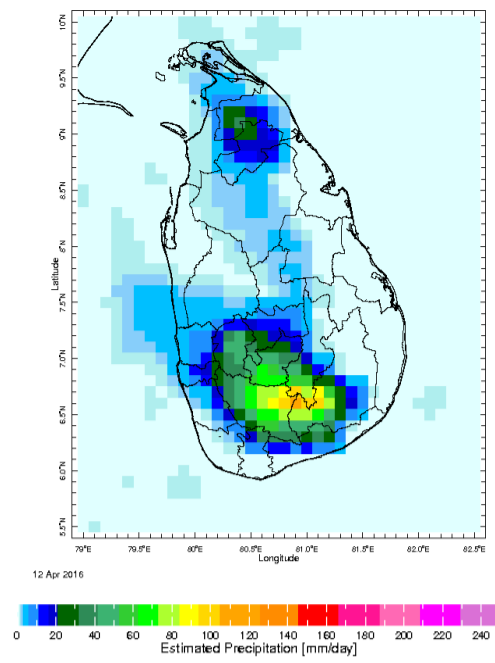
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Daily Rainfall Monitoring

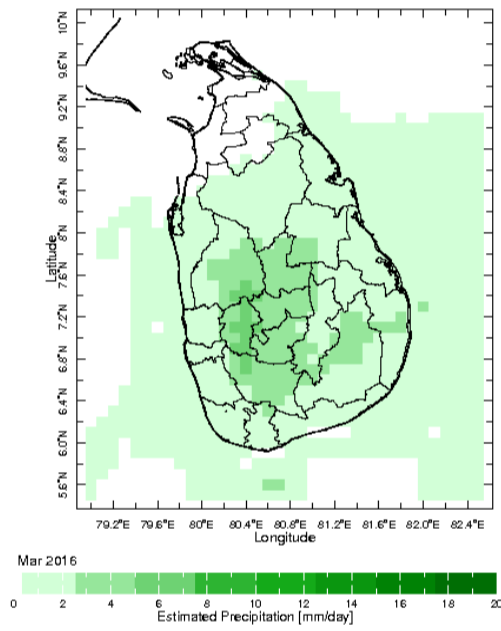
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



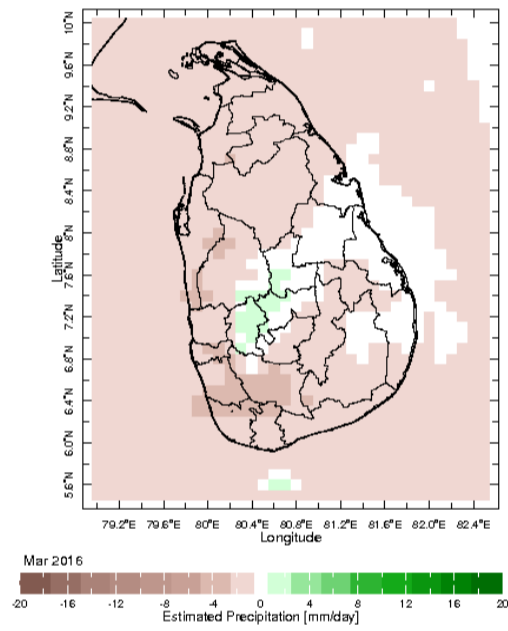


Monthly Rainfall Monitoring

The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall

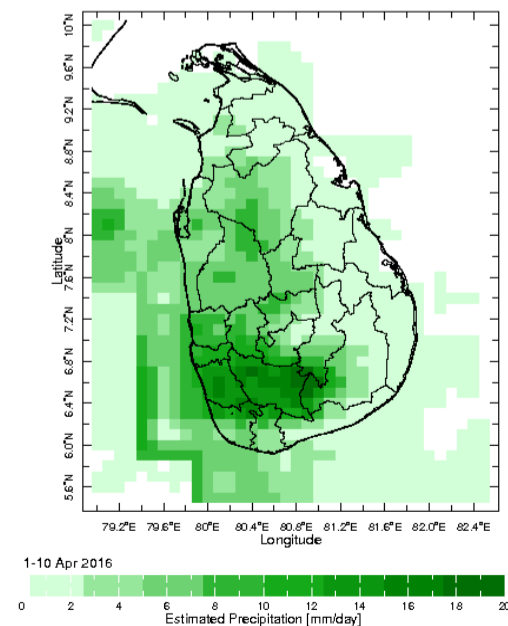
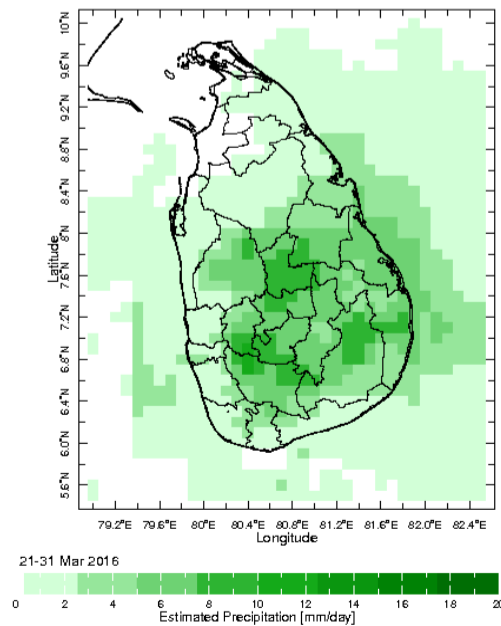


Monthly Average

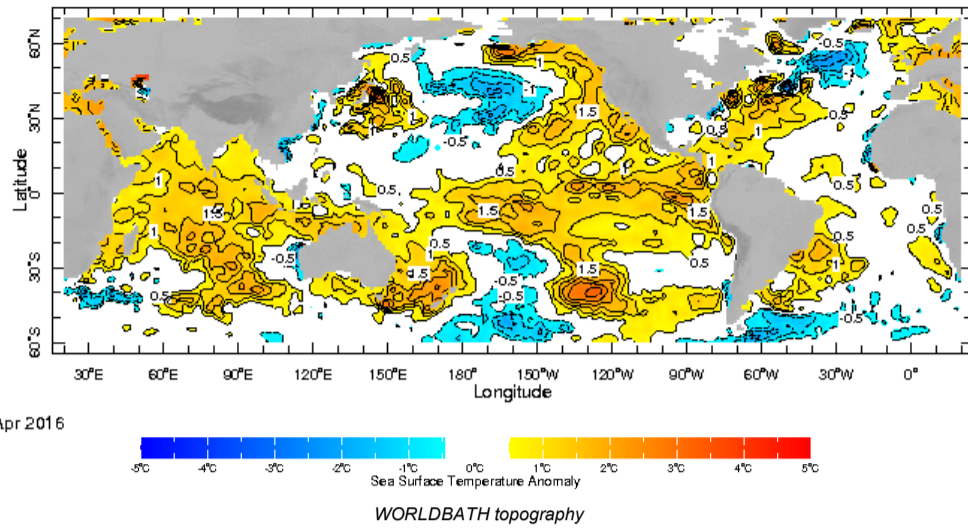


Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

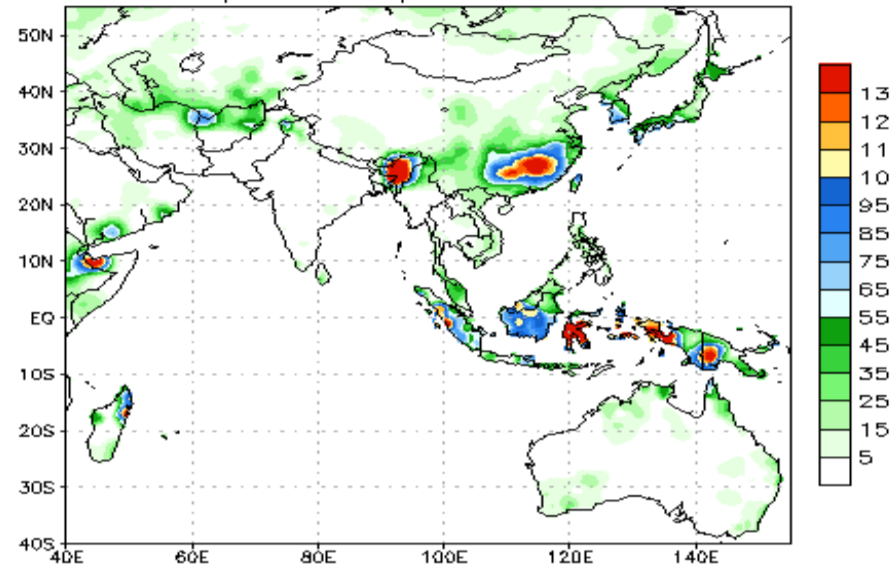


Weekly Average SST Anomalies

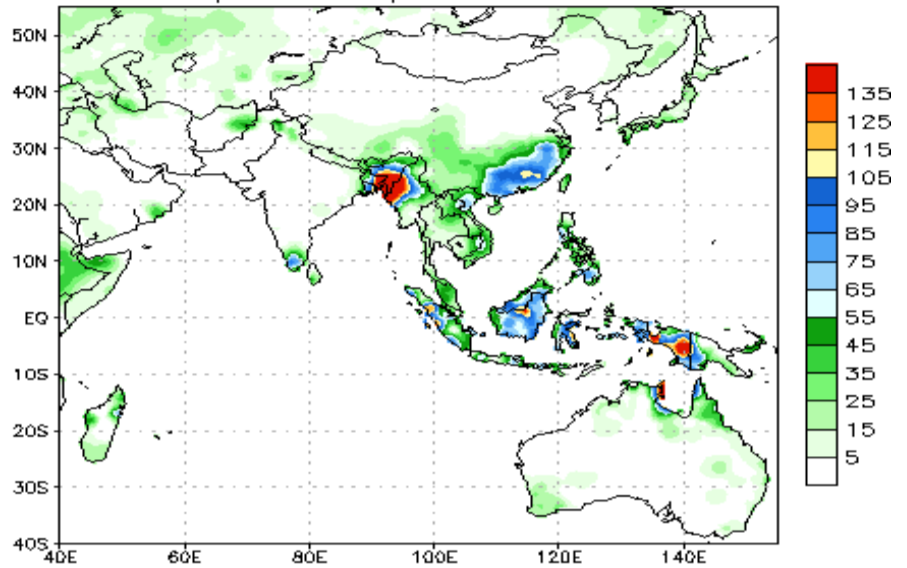


NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)
from: 14Apr2016
14Apr2016–20Apr2016 Accumulation



NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)
from: 14Apr2016
21Apr2016–27Apr2016 Accumulation

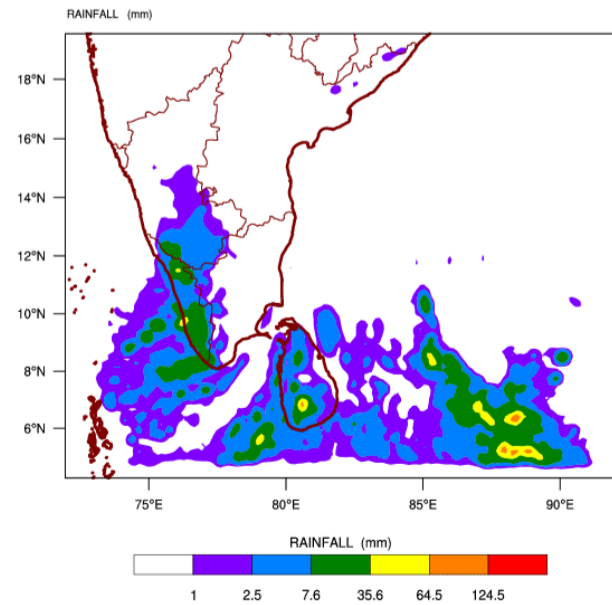


Bias correction based on last 30-day forecast error

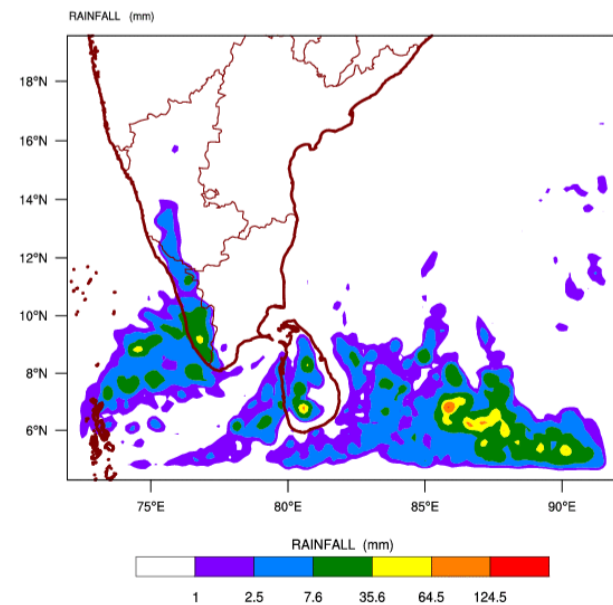
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 14-04-2016 valid for 03 UTC of 16-04-2016

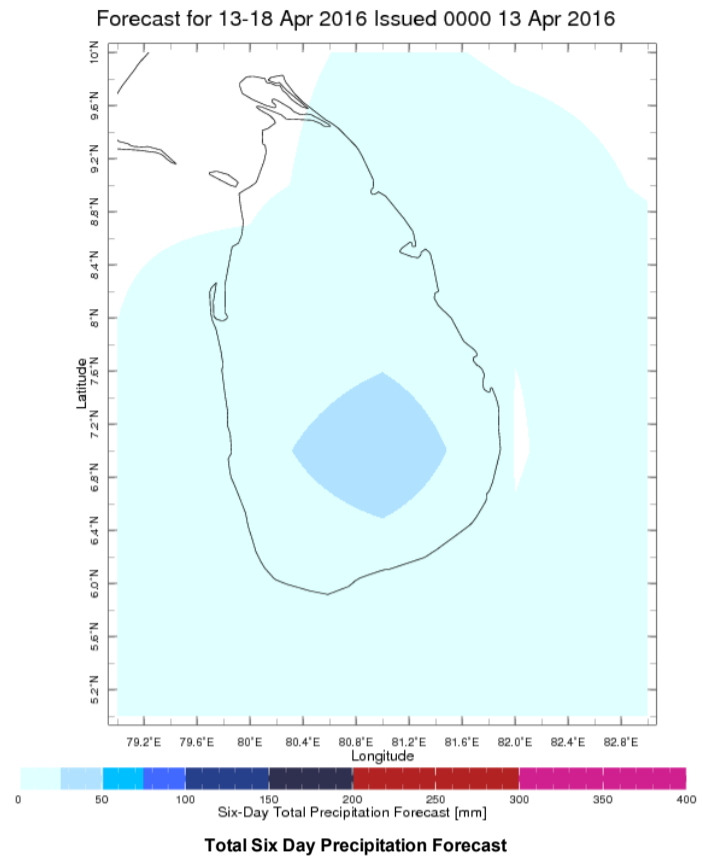
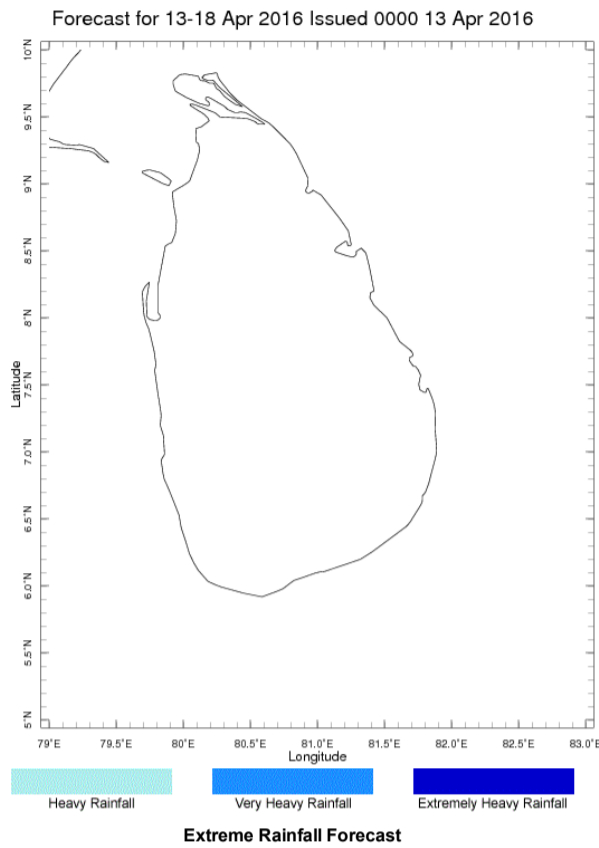


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 14-04-2016 valid for 03 UTC of 17-04-2016



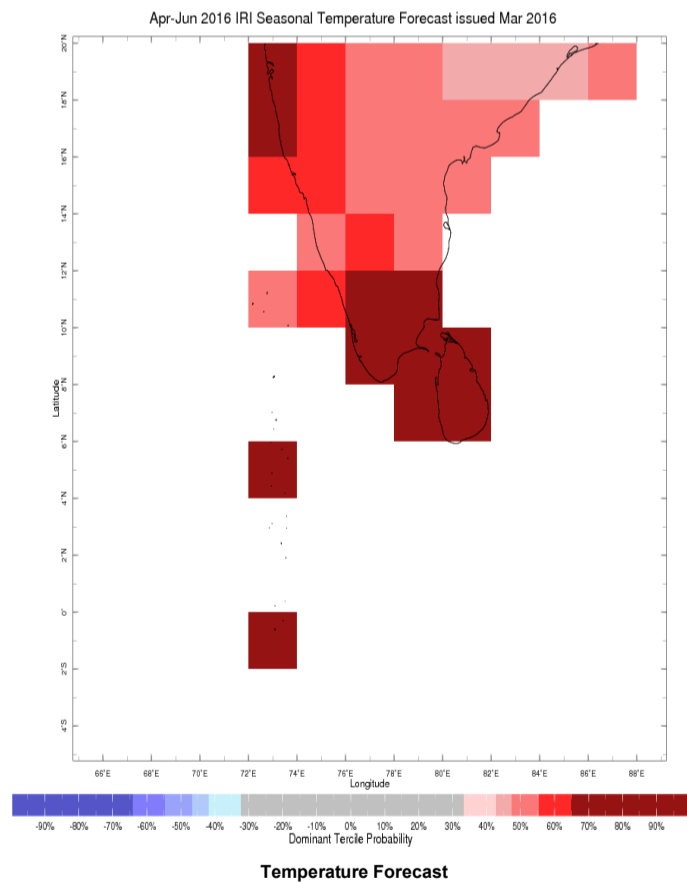
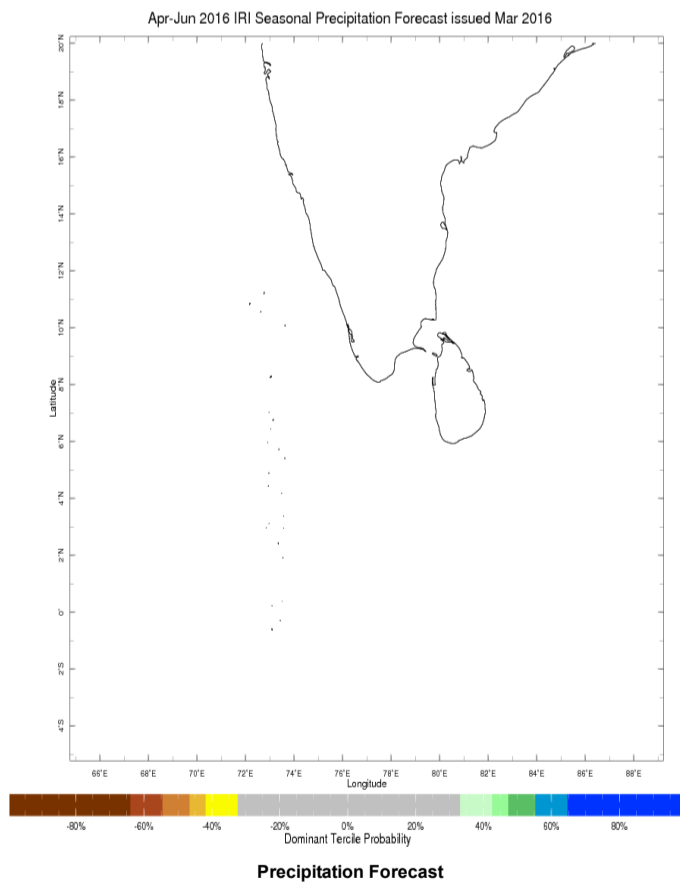
Weekly Rainfall Forecast

Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.



Seasonal Rainfall and Temperature Forecast

Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile – that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile probability levels. The upper side of the color bar shows the colors used for increasingly strong probabilities when the dominant tercile is the above-normal tercile, while the lower side shows likewise for the below-normal tercile. The gray color indicates an enhanced probability for the near-normal tercile (nearly always limited to 40%).



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