

Experimental Climate Monitoring and Prediction

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21 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

Rainfall received in central, southern, western and south western regions of the country during 13th-19th April. Highest rainfall of 70 mm was seen in Moratuwa and near Kurunegala town on 19th April and very less rainfall received in northern and eastern regions of the country during the previous week. NOAA NCEP models predict up to 45 mm total rainfall in south western region of the country while IRI CFS model predicts up to 50 mm total rainfall around Badulla during 20th-26th April. MJO is weak so there shall be no effect on rainfall by the MJO.

Summary

Monitoring

Weekly Monitoring: Rainfall received in central, southern, western and south western regions of country during 14th - 19th April and no rainfall was seen on 13th April. On the 14th, southern region of Kegalle, Katugastota, northern region of Kalutara and Ratnapura received up to 20 mm rainfall. Up to 60 mm rainfall was seen in Nittambuwa on the 15th, while Balangoda and southern region of Nuwara Eliya received rainfall up to 50 mm. On the 16th, Ratnapura town, Kurunegala town, Gampaha and surrounding regions received up to 30 mm rainfall. Central region of Ratnapura received rainfall up to 60 mm while Balangoda, central region of Gampaha and southern sea of the country received up to 30 mm rainfall on 17th. Only light rainfall was seen on 18th April throughout the country but up to 20 mm rainfall was seen the sea west of Puttalam, south of Matara and Hambantota. On the 19th, up to 70 mm rainfall was seen close to Kurunegala town and Moratuwa while up to 50 mm rainfall in Colombo, western regions of Kegalle and Kalutara, eastern region of Gampaha, northern region of Ratnapura, Kurunegala districts and the western sea region of the country.

Monthly Monitoring: During March 2016 most regions of the country received below average rainfall. Rainfall received by Ratnapura, Kalutara, northern regions of Colombo and Galle, western and southern regions 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 south eastern region of Kurunegala district.

Predictions

14-day prediction: NOAA NCEP models predict up to 45 mm total rainfall in the south western region of the country during 20th - 26th April and 27th April - 3rd May.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, up to 35 mm rainfall is expected near Vavuniya and Anuradhapura on 22nd of April while the rest of the country shall receive a slight rainfall. The models predict up to 35 mm rainfall close to Ratnapura on 23rd April. IRI CFS model predicts up to 50 mm total rainfall around Badulla during 20th - 25th April.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for May to July, 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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- Weekly precipitation forecast (IRI)
- Seasonal Predictions from IRI

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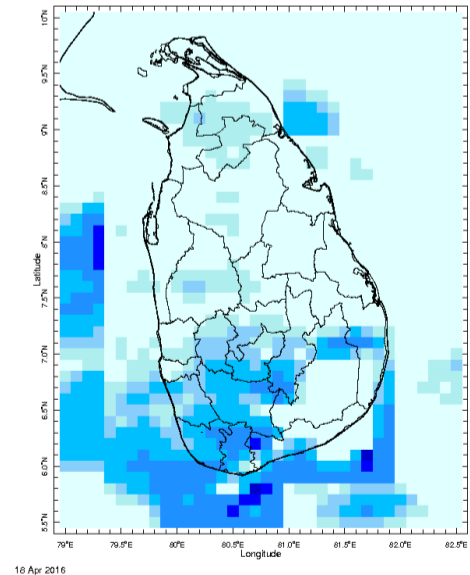
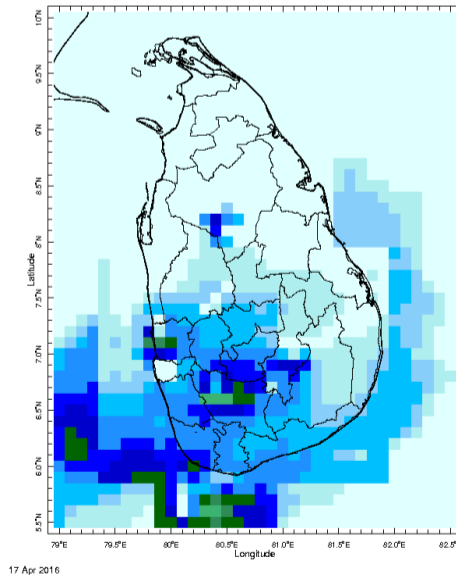
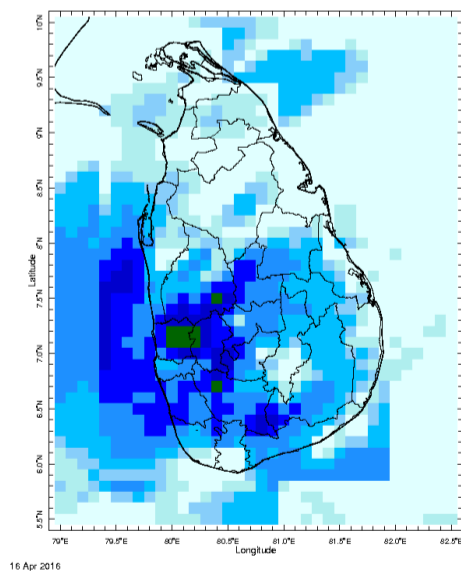
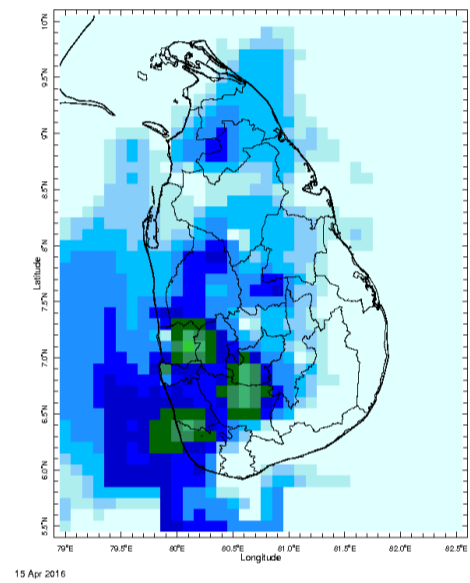
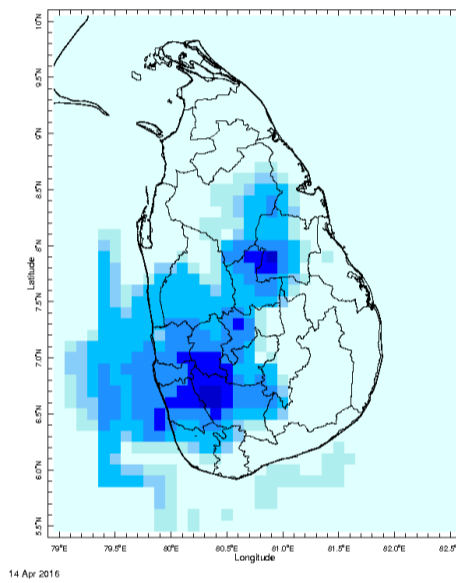
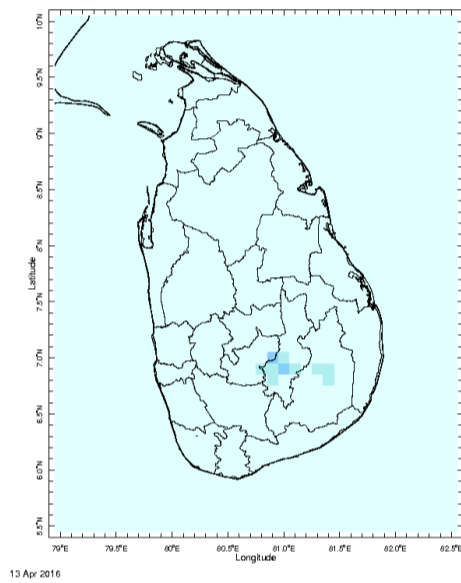
Weekly Hydro- Meteorological Report for Sri Lanka

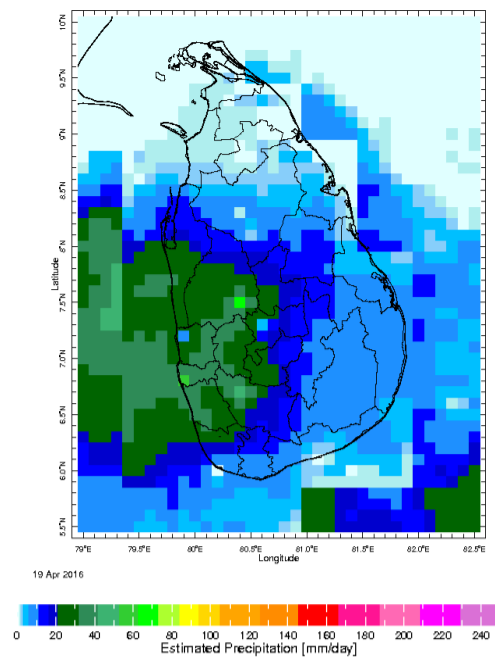
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Daily Rainfall Monitoring

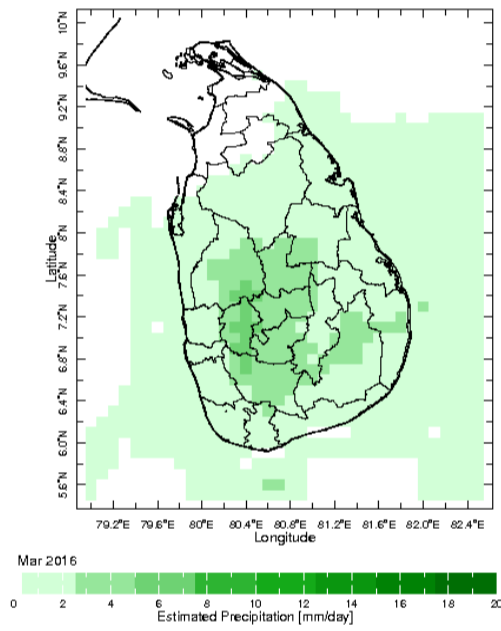
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



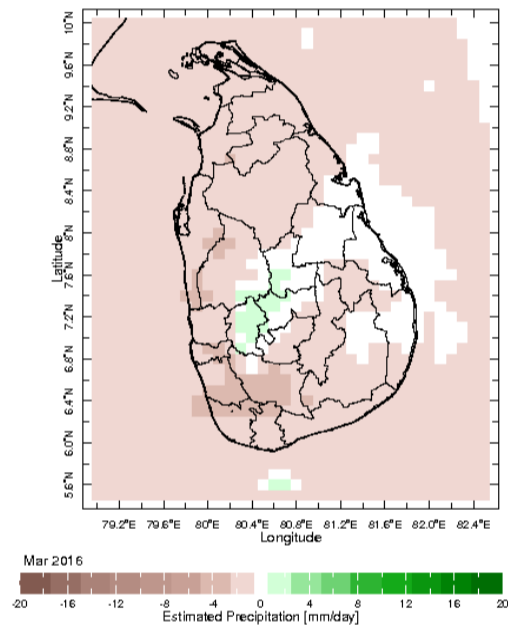


Monthly Rainfall Monitoring

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

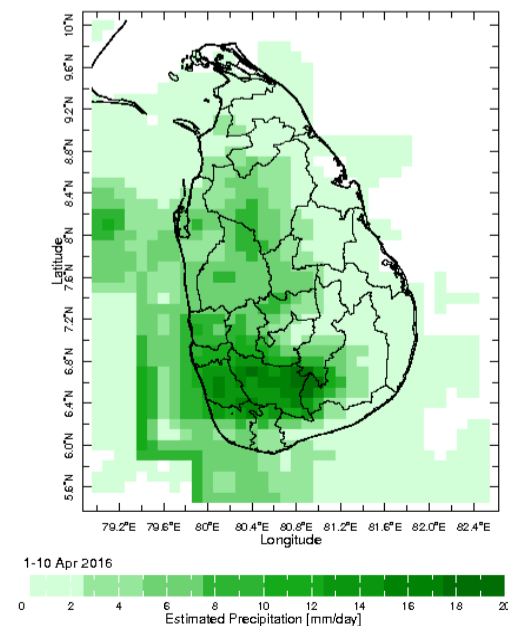
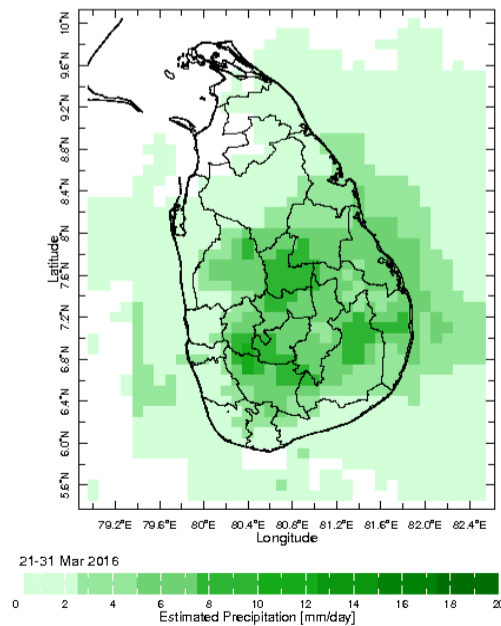


Monthly Average

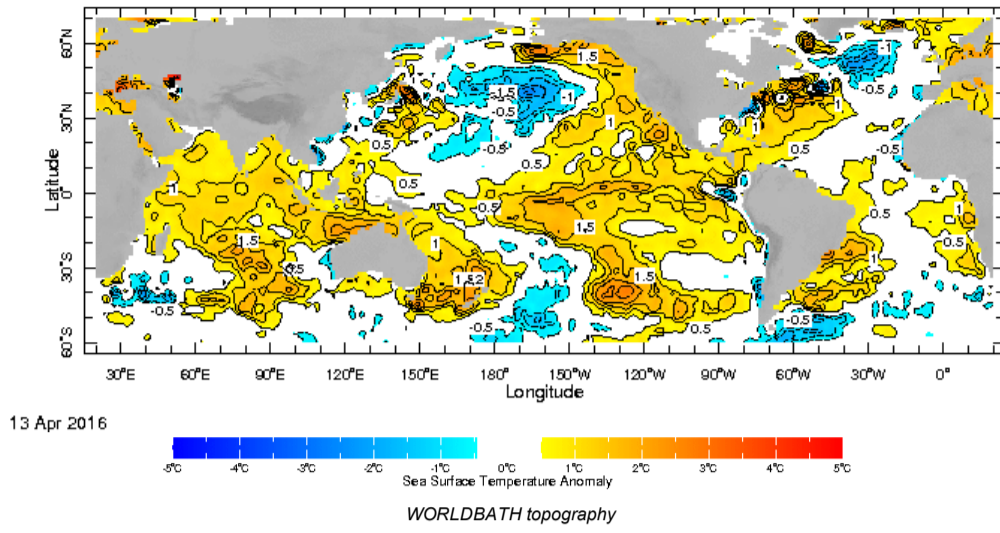


Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

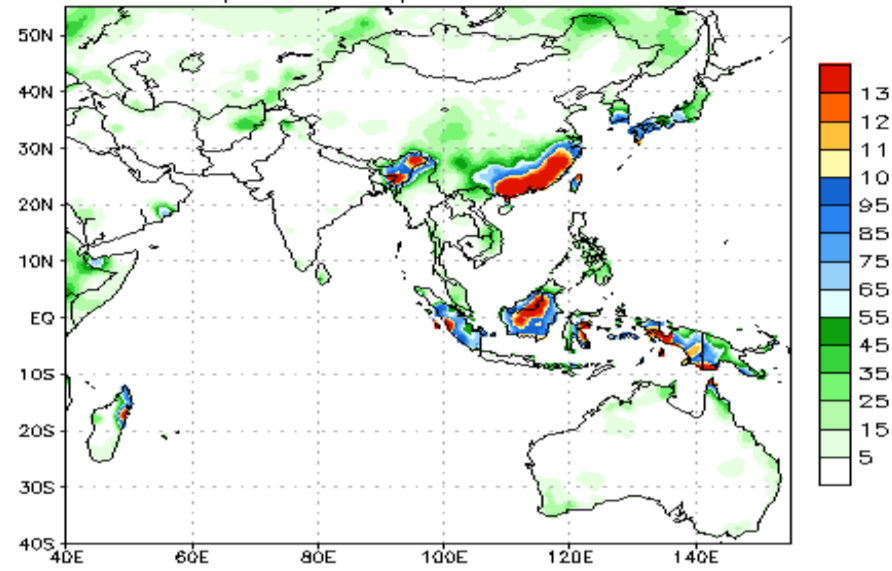


Weekly Average SST Anomalies

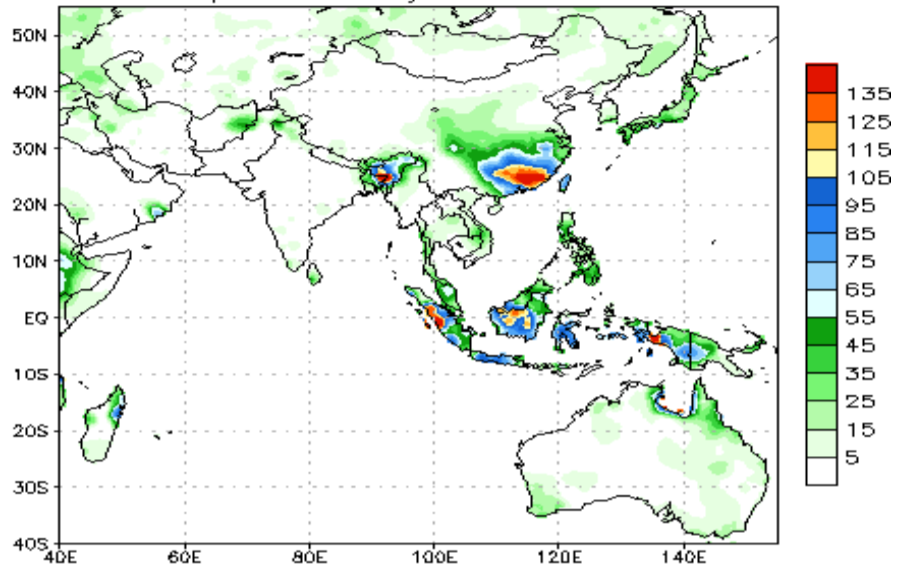


NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)
from: 20Apr2016
20Apr2016–26Apr2016 Accumulation



NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)
from: 20Apr2016
27Apr2016–03May2016 Accumulation

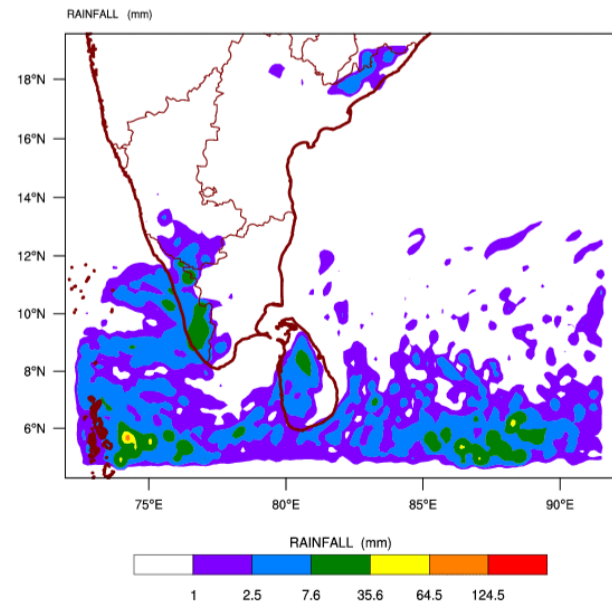


Bias correction based on last 30-day forecast error

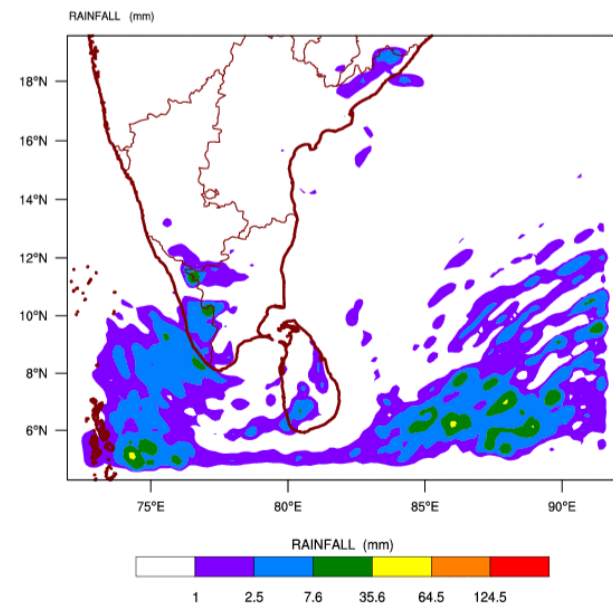
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 20-04-2016 valid for 03 UTC of 22-04-2016

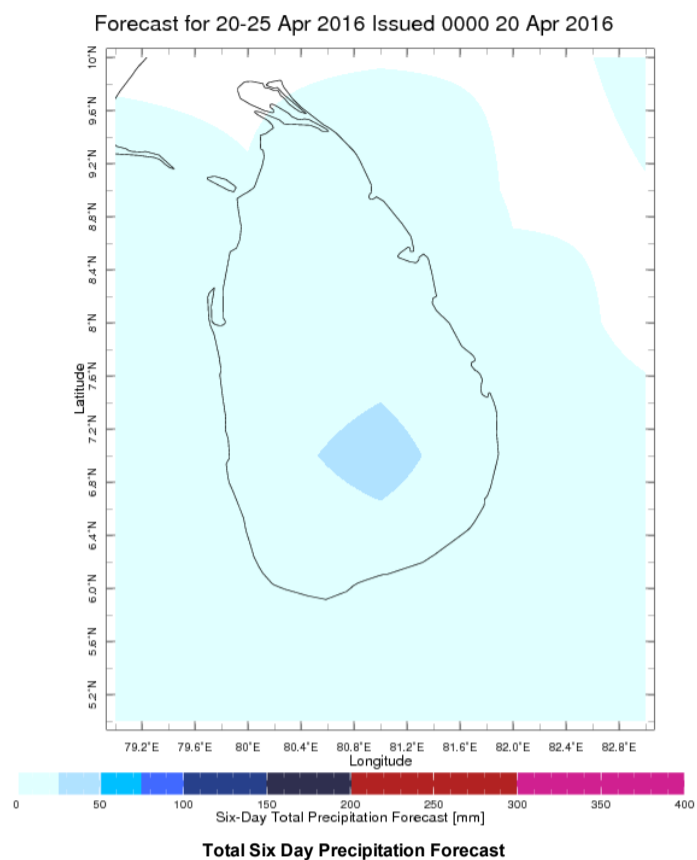
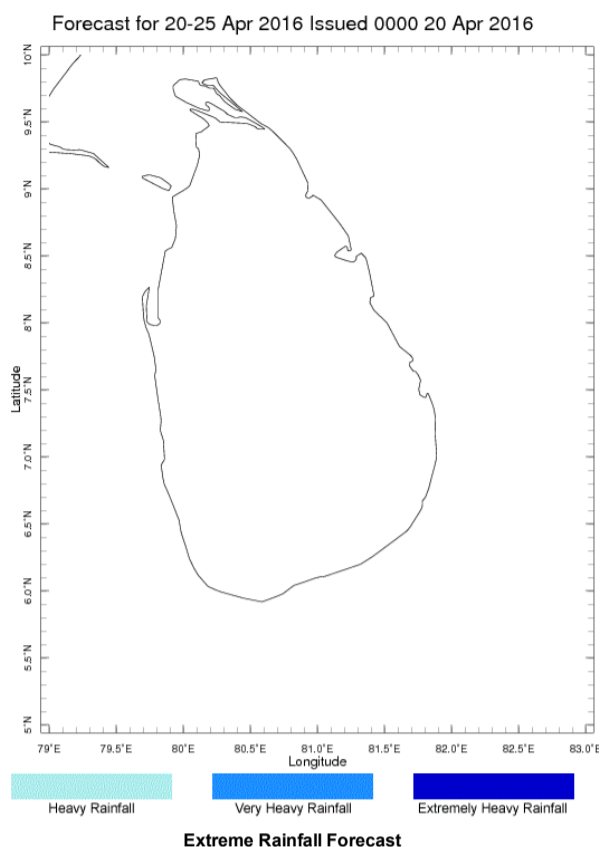


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 20-04-2016 valid for 03 UTC of 23-04-2016



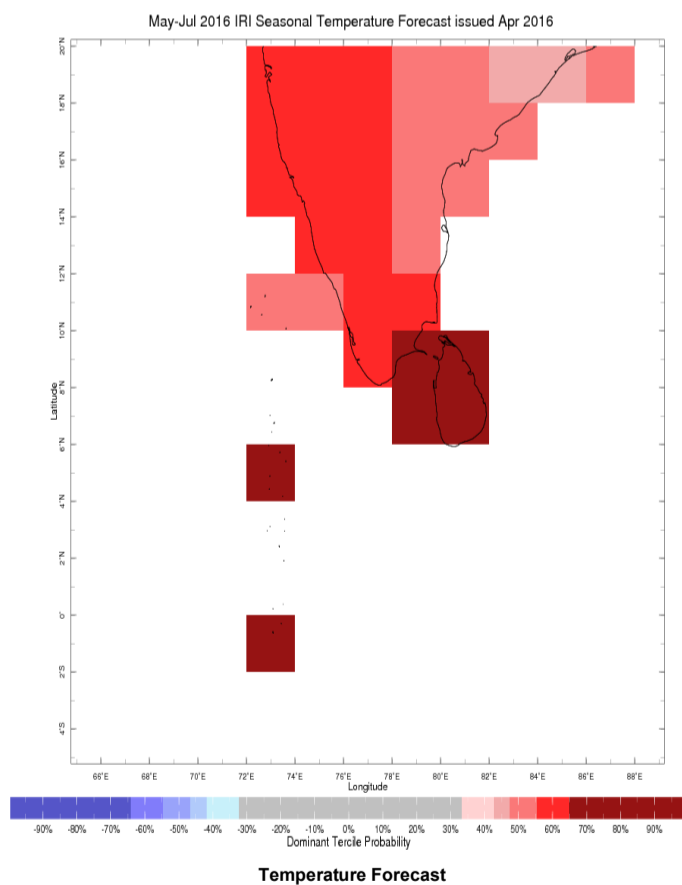
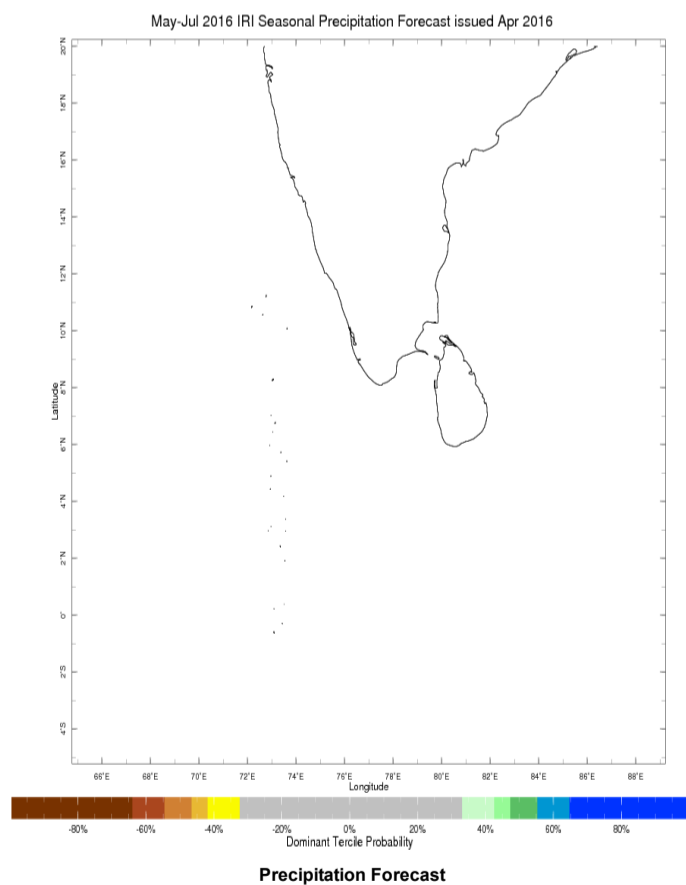
Weekly Rainfall Forecast

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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