

Experimental Climate Monitoring and Prediction

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March 10, 2016 PACIFIC SEAS STATE

During mid-March 2016 the tropical Pacific SST was weakening, but still at a strong El Niño level. All atmospheric variables continue to support the El Niño pattern, including weakened trade winds and excess rainfall in the east-central tropical Pacific. Most ENSO prediction models indicate continued weakening El Niño conditions over the coming several months, returning to neutral by late spring or early summer 2016, and 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 phase is in 4 therefore shall slightly enhance rainfall in Sri Lanka.

Highlights

During the week 9th – 15th March, dry weather conditions continued in the entire country where only north western and western regions of the country received rainfall. Highest rainfall of 60 mm was observed on 9th March around Rambukkana and southern region of Kurunegala and on 14th March around southern region of Kegalle. On 11th March rainfall up to 50 mm was observed in Matugama. NOAA NCEP model predicts dry weather conditions for the entire country during next fortnight. MJO is in phase 4 and shall slightly enhance rainfall in Sri Lanka.

Summary

Monitoring

Weekly Monitoring: During 9th – 15th March, only north western and western regions received rainfall while dry weather conditions were observed in the entire country. On 9th March southern region of Kurunegala and Rambukkana received rainfall up to 60 mm while western region of Matale and north western region of Kandy received rainfall up to 40 mm. On 10th March no significant rainfall was observed in the entire country. Matugama received rainfall up to 50 mm on 11th March. No significant rainfall was observed in the entire country on 12th and 13th March. Southern region of Kegalle received rainfall up to 60 mm on 14th March while Ohiya received rainfall up to 20 mm on 15th March.

Monthly Monitoring: During February 2016 most regions of the country observed below average rainfall; and above average rainfall was observed in the northern region of Ratnapura, western region of Gampaha, Colombo, Kalutara, Galle, Matara and the sea around western, south eastern and south western regions of the country.

Predictions

14 day prediction: NOAA NCEP models predict no rainfall in the entire country during 16th – 22nd March. Same dry weather conditions are expected during 23rd – 29th March to be continued in the entire country.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, rainfall up to 35 mm is expected in the western sea and Galle on 18th March. Slight amounts of rainfall is expected around the south western region of the country and rest of the country shall observe dry weather conditions on the same day. On 19th March the entire country is expected to observe dry weather conditions where only south western sea shall receive rainfall up to 35 mm. IRI CFS models predict up to 25 mm total precipitation in southern and western sea, central, western, southern and south eastern regions of the country during 16th – 21st March.

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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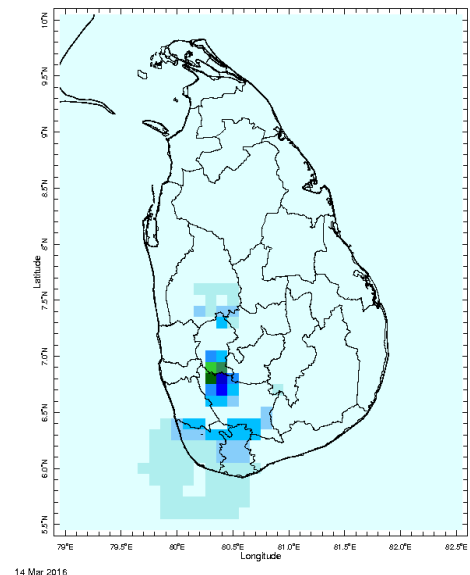
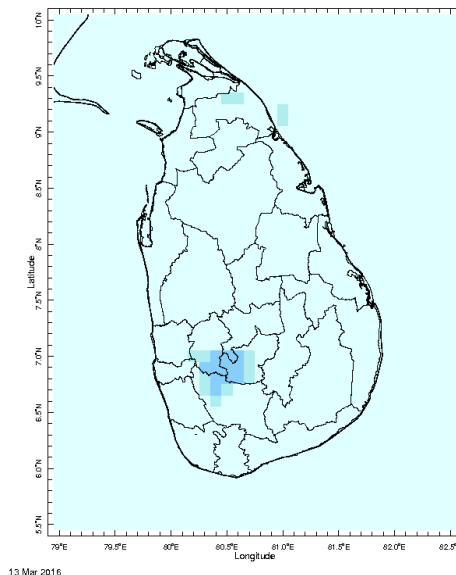
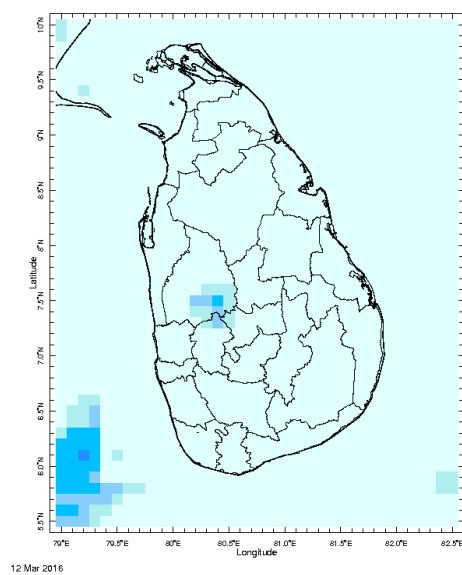
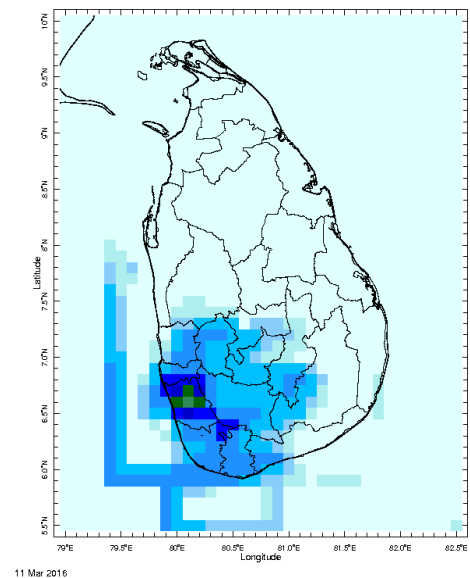
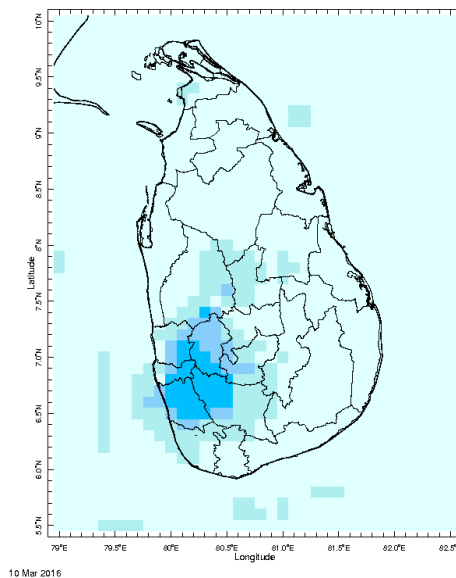
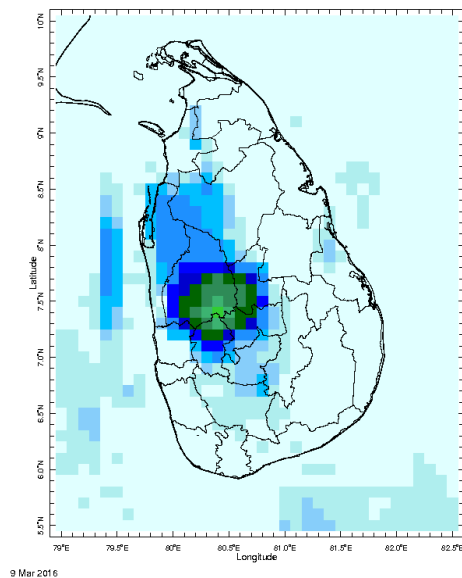
Weekly Hydro- Meteorological Report for Sri Lanka

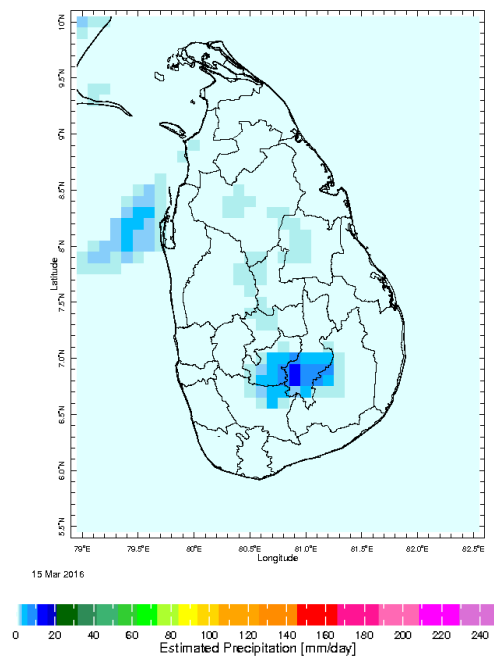
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Daily Rainfall Monitoring

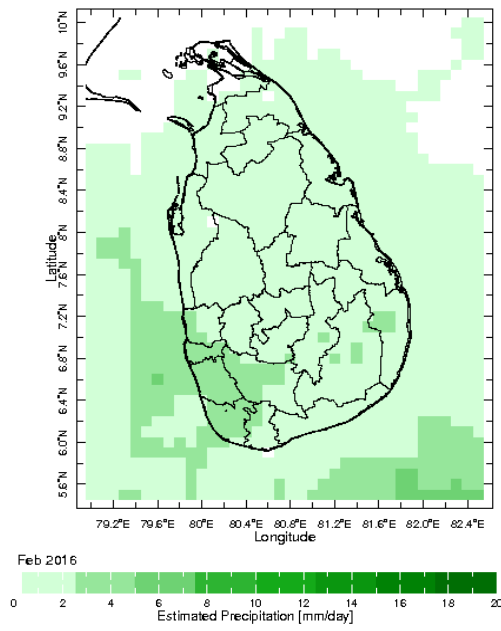
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



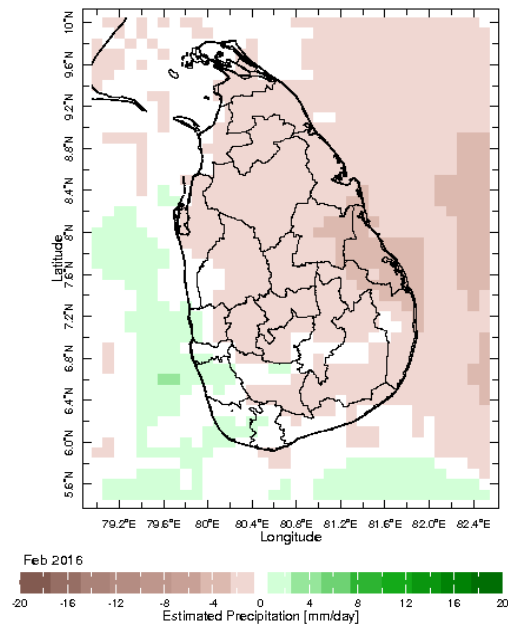


Monthly Rainfall Monitoring

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

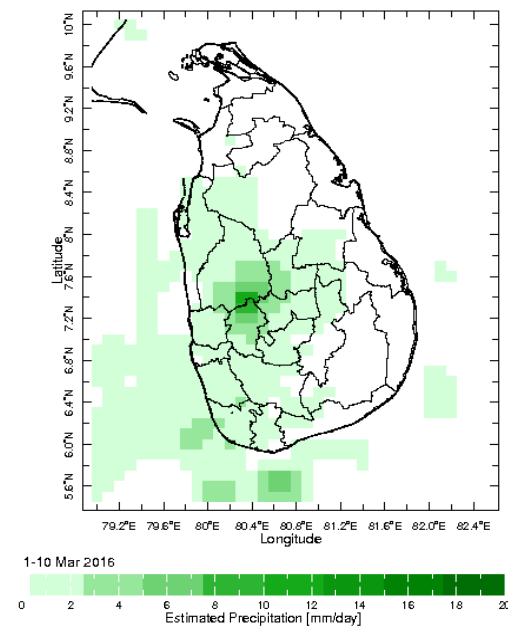
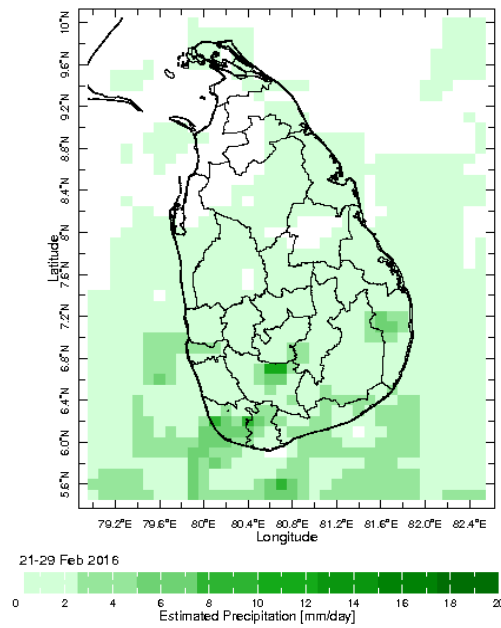


Monthly Average

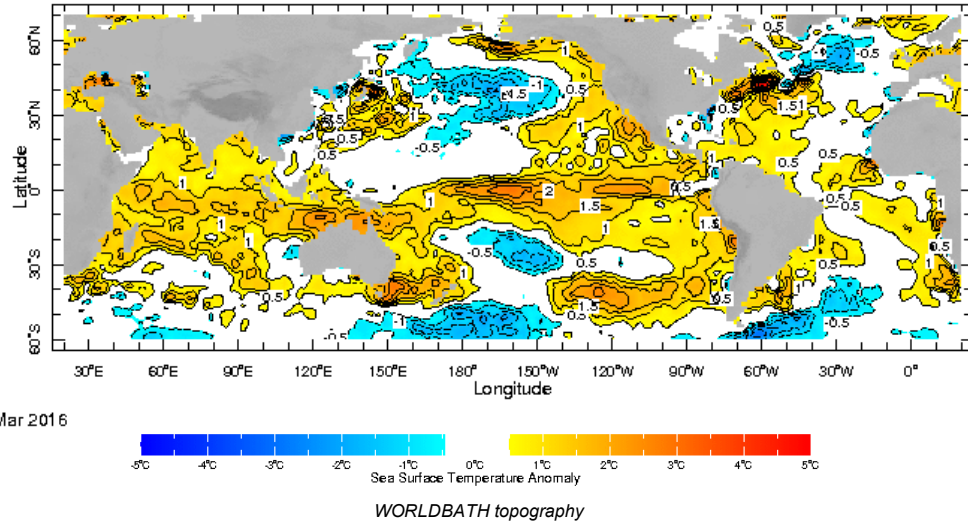


Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

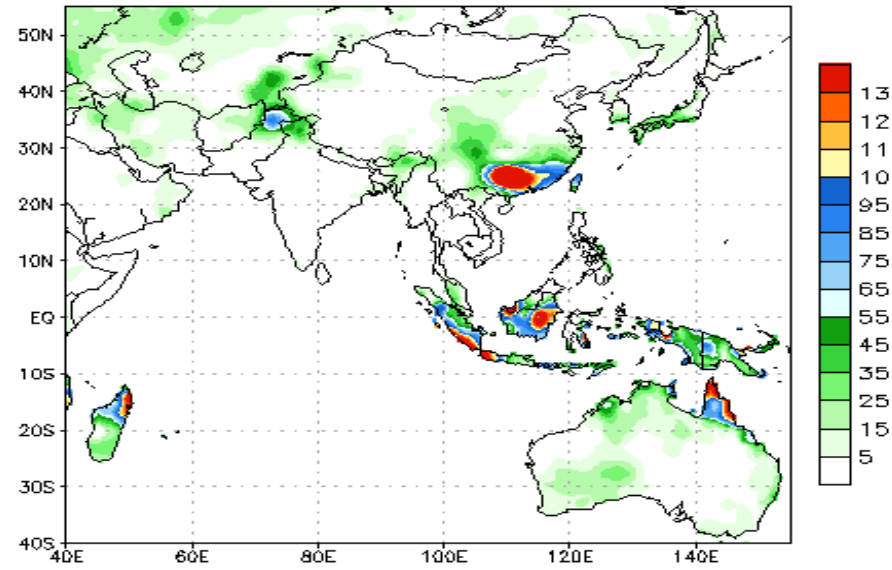


Weekly Average SST Anomalies

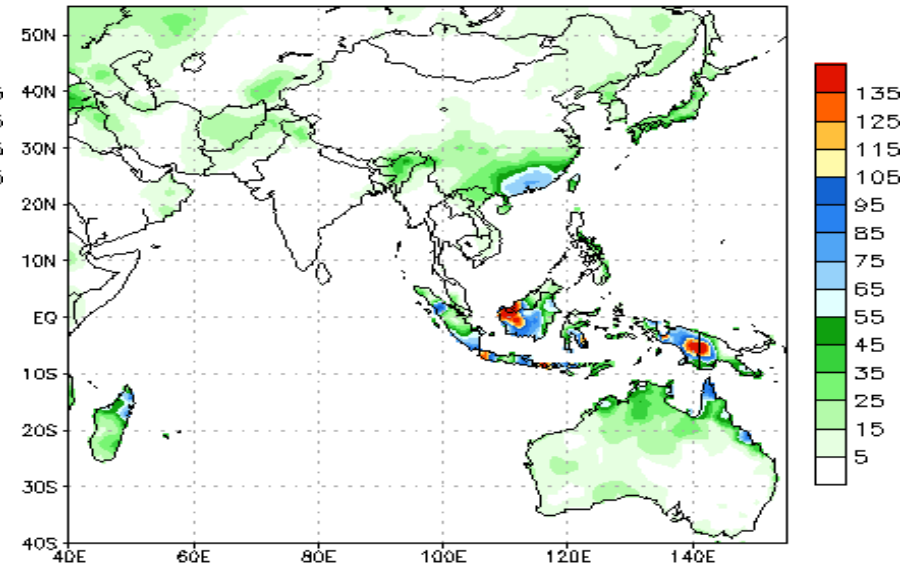


NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 16Mar2016
16Mar2016-22Mar2016 Accumulation



NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 16Mar2016
23Mar2016-29Mar2016 Accumulation

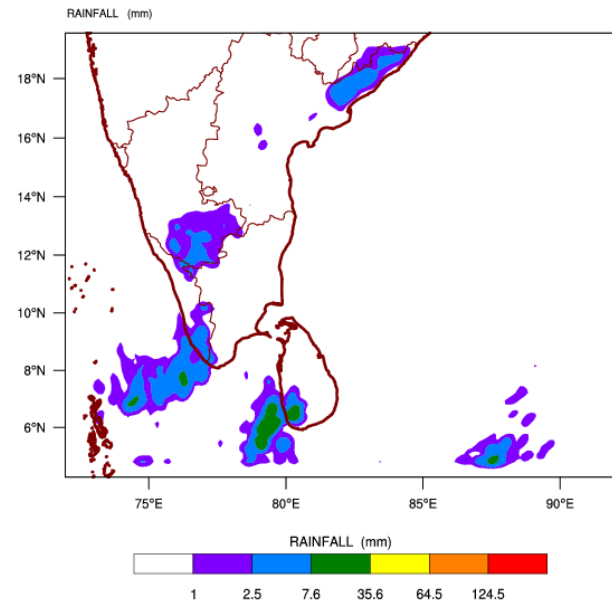


Bias correction based on last 30-day forecast error

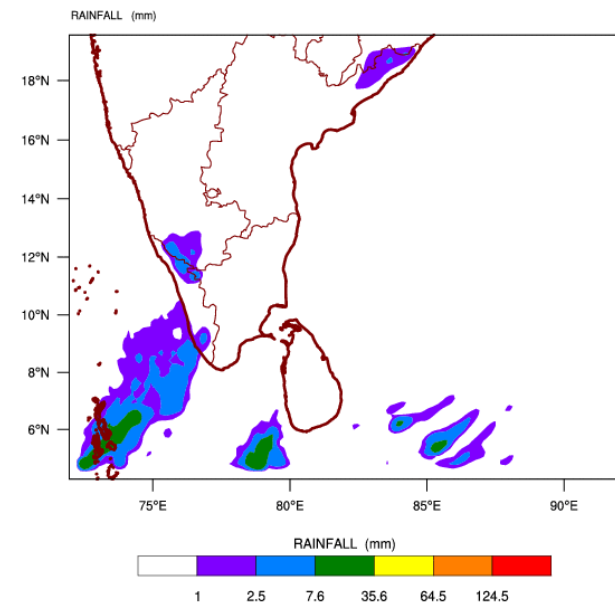
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 16-03-2016 valid for 03 UTC of 18-03-2016

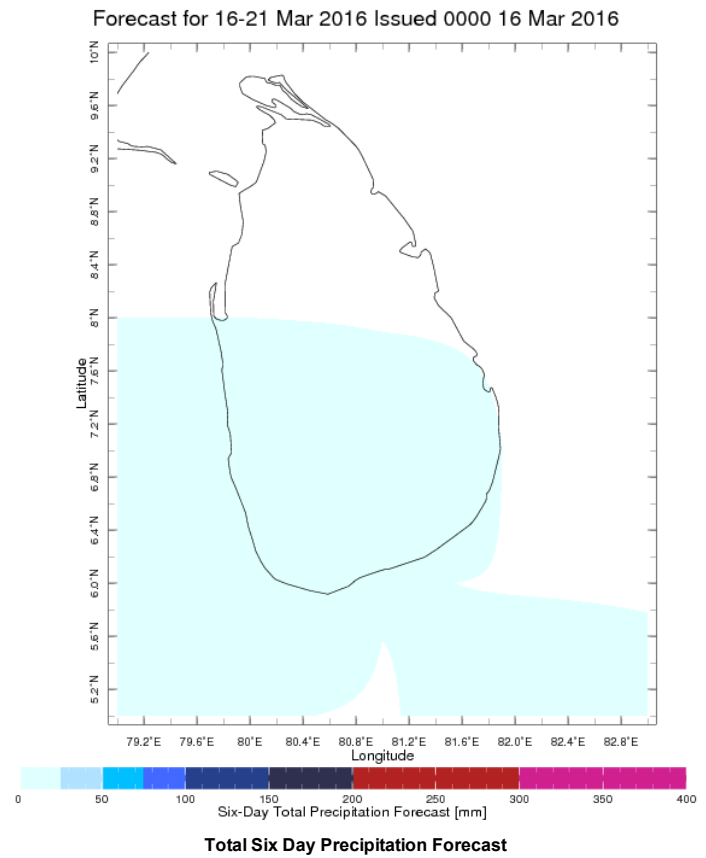
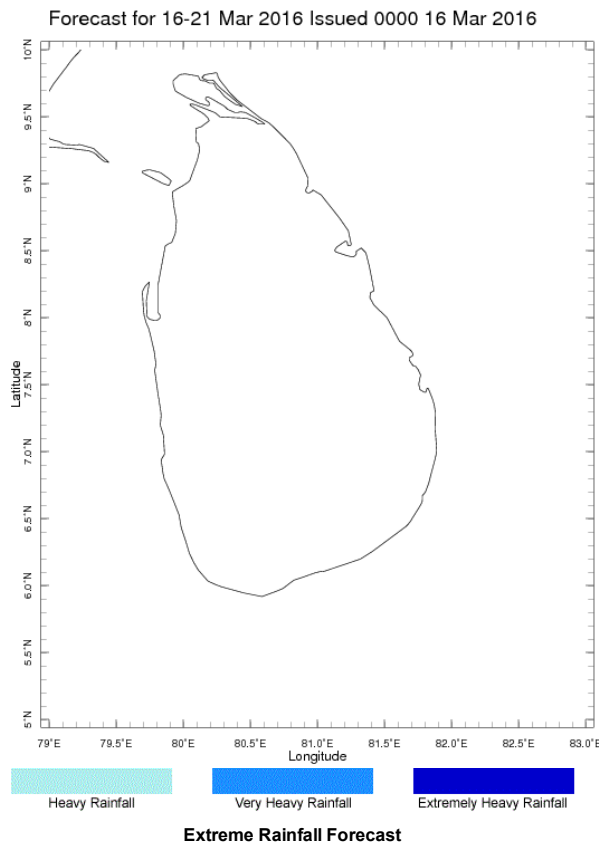


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 16-03-2016 valid for 03 UTC of 19-03-2016



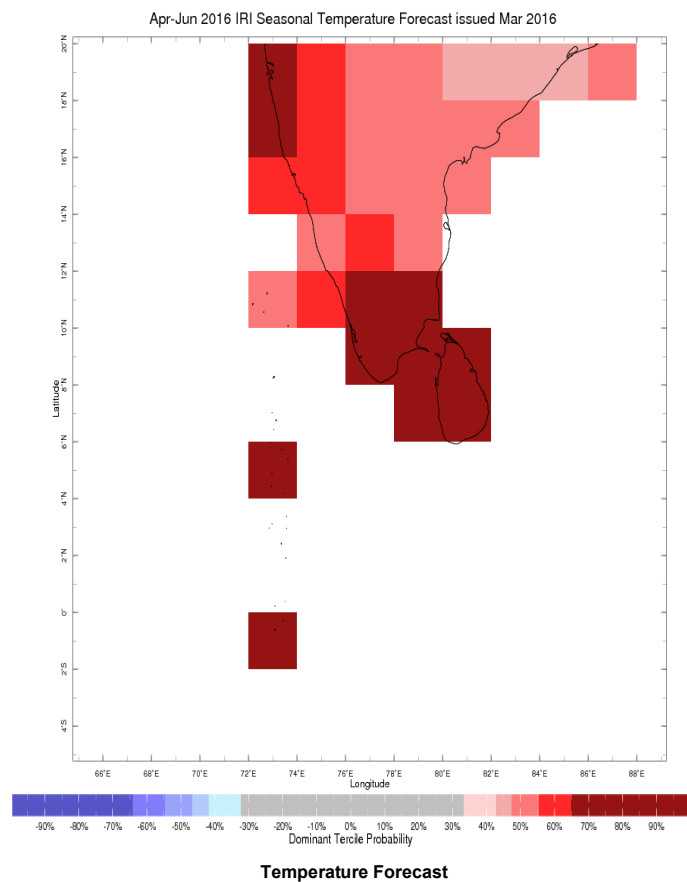
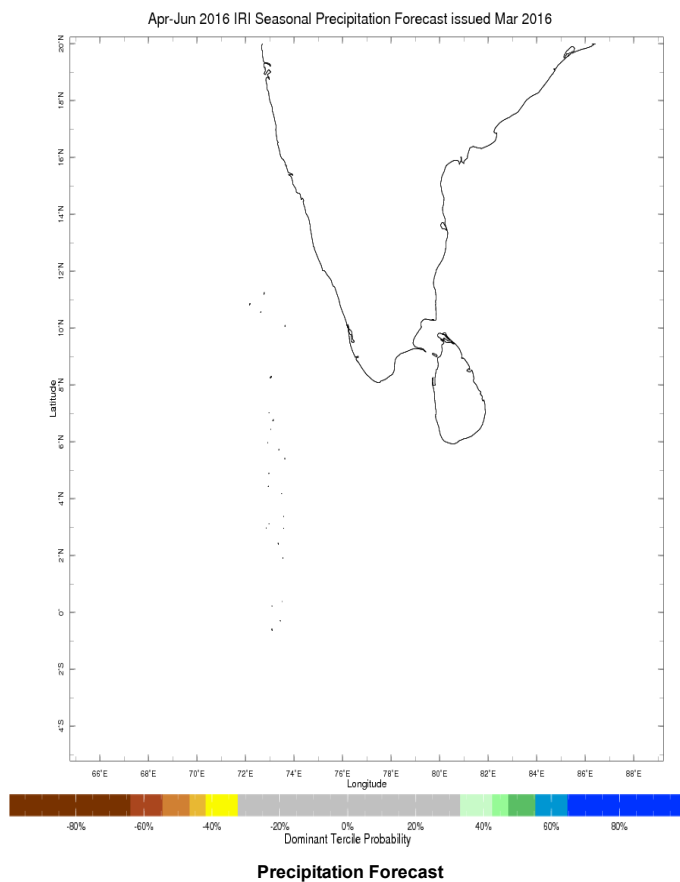
Weekly Rainfall Forecast

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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