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Experimental Climate Monitoring and Prediction

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10 March 2016

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February 18, 2016

PACIFIC SEAS STATE

During mid-February 2016 the tropical Pacific SST was still at a very strong El Niño level, having peaked in November and December. 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 slowly weakening El Niño conditions over the coming several months, returning to neutral by late spring or early summer 2016, with a chance for La Niña development during fall.

(Text Courtesy IRI)

INDIAN OCEAN STATE

1.5^{0}C above average sea surface temperature was observed around Sri Lanka.

MJO STATE

MJO is weak and therefore shall not have a significant impact on the rainfall in Sri Lanka.

Highlights

Dry weather conditions continued in most regions of the country during the week 2nd – 8th March while only south western and central regions of the country received rainfall. Highest rainfall of 70 mm was observed on 7th March around the sea near Matara. Mawathagama received rainfall up to 60 mm on 8th March. NOAA NCEP model predicts dry weather conditions for the entire country during next fortnight. MJO is weak and shall not have significant impact on rainfall in Sri Lanka.

Summary

Monitoring

***Weekly Monitoring*:** During the period 2nd – 8th March, only south western and central regions of the country received rainfall. No significant amounts of rainfall was observed during 2nd – 5th March throughout the country. On 6th March rainfall up to 20 mm was observed in the sea near Galle, north western region of Hambantota and around the district border of Galle and Matara. Sea near Matara received rainfall up to 70 mm on 7th March while northern region of Galle, Ambalangoda and sea near Galle received rainfall up to 30 mm. On 8th March, rainfall up to 60 mm was observed around Mawathagama and up to 30 mm rainfall was observed around the northern regions of Kegalle.

***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 9th – 15th March. Same dry weather conditions are expected to be continued in the entire country during 16th – 22nd March.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, the south eastern sea is expected to receive rainfall up to 35 mm on 11th March while coastal regions of Puttalam, Gampaha, Colombo and Ampara shall receive slight amounts of rainfall and rest of the country shall observe dry weather conditions. On 12th March, north western region of Kegalle is expected to receive rainfall up to 125 mm and north western region of Galle shall receive rainfall up to 65 mm. The entire country except northern and eastern regions shall receive slight amounts of rainfall. IRI CFS models predict up to 50 mm total precipitation in southern sea, Kegalle, Nuwara Eliya, Kandy and Badulla during 9th – 14th March.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for March to May, the total 3 month precipitation has 40% likelihood of being below average. 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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[1] International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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Weekly Hydro- Meteorological Report for Sri Lanka

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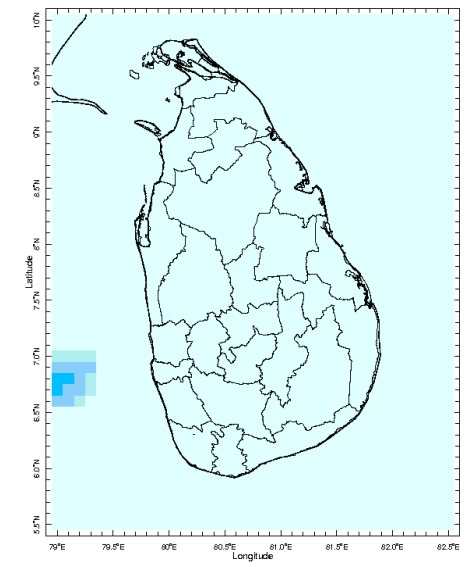
Daily Rainfall Monitoring

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



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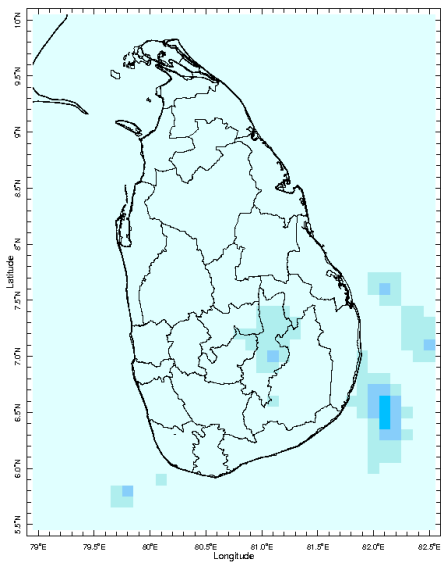

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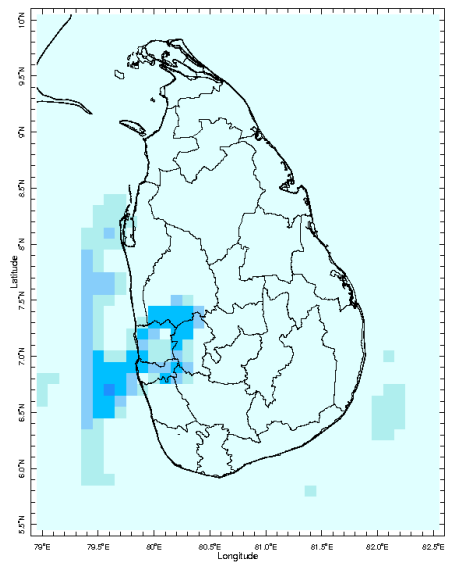

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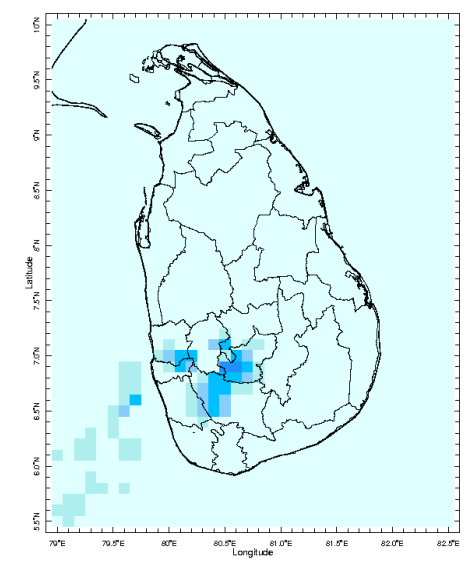

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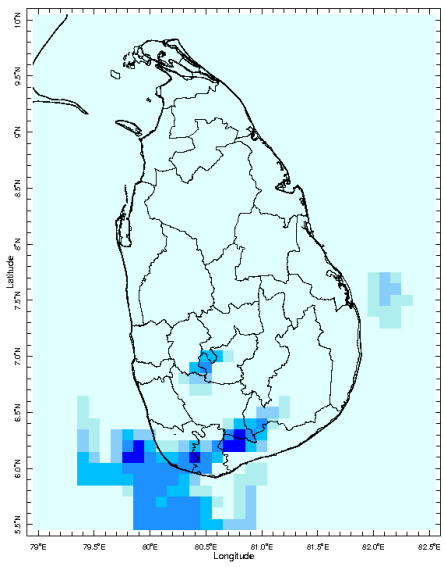
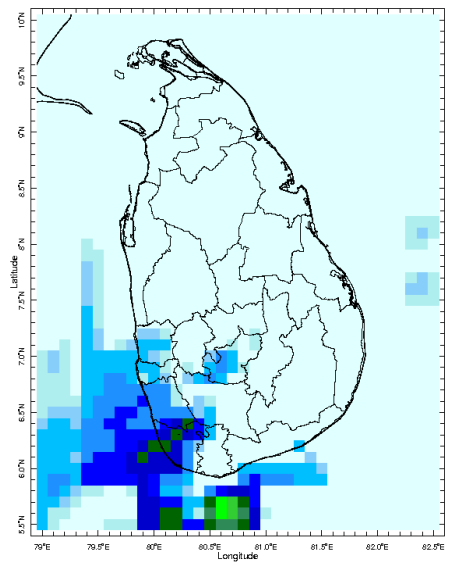


6 Mar 2016



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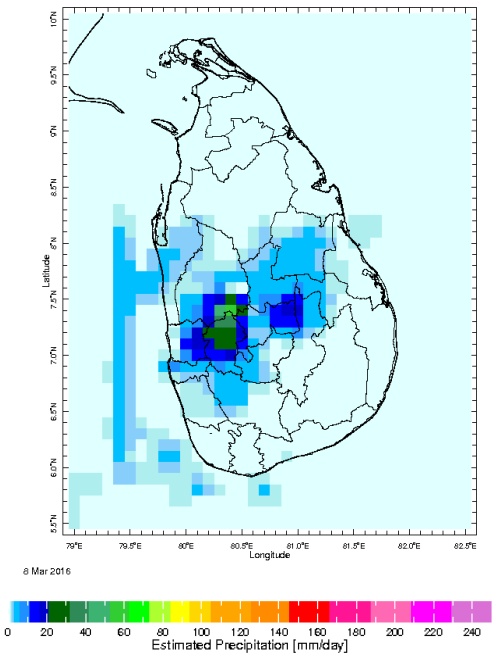
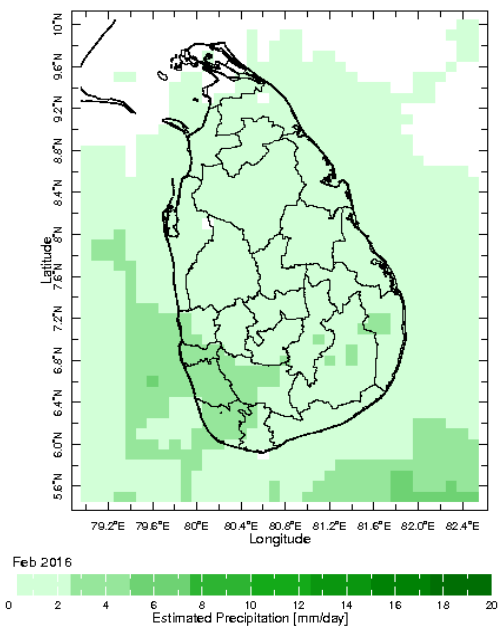
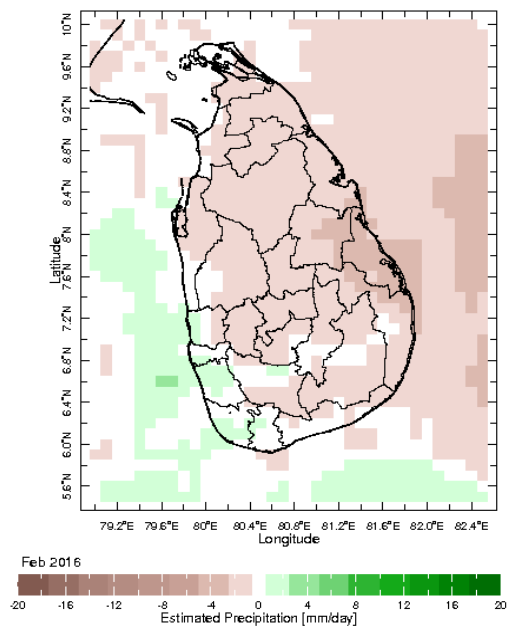


Monthly Rainfall Monitoring

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

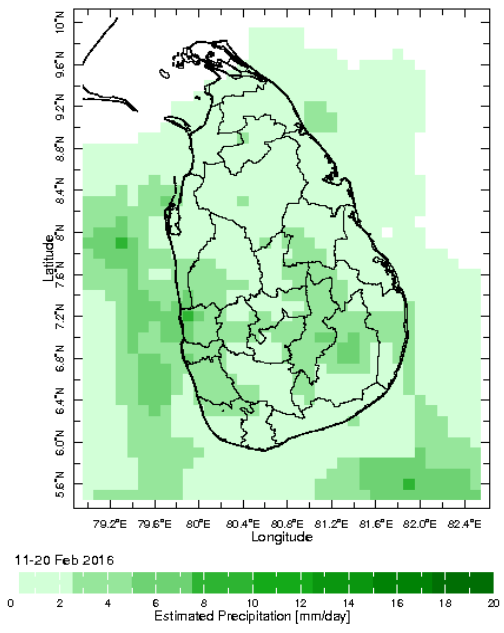


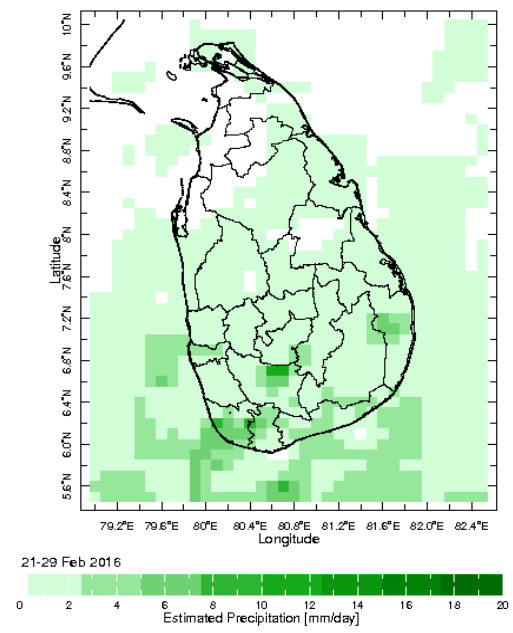
Monthly Average



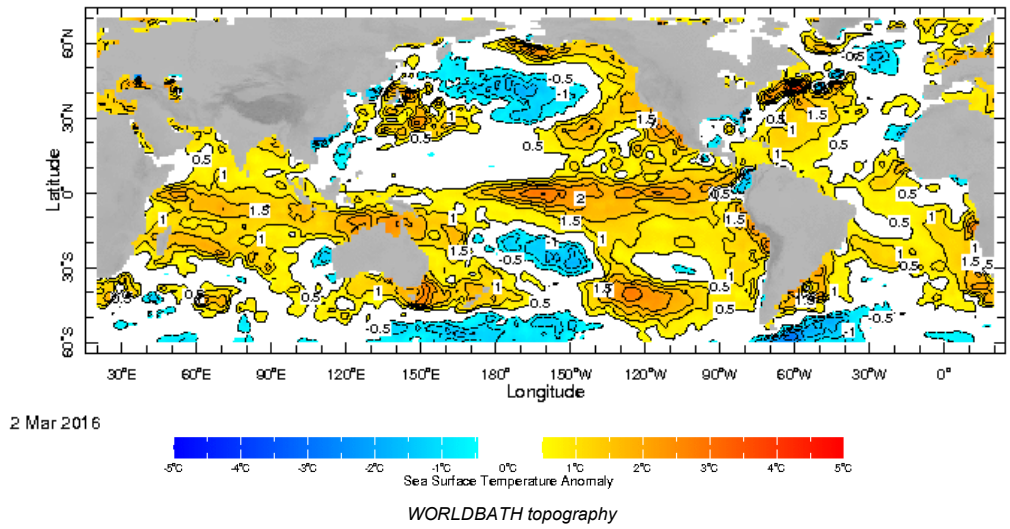
Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

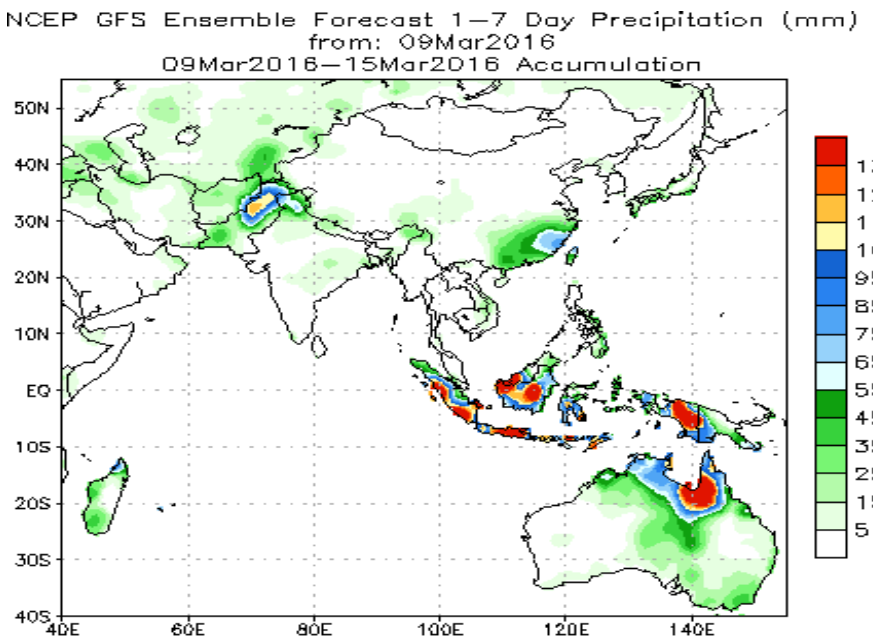


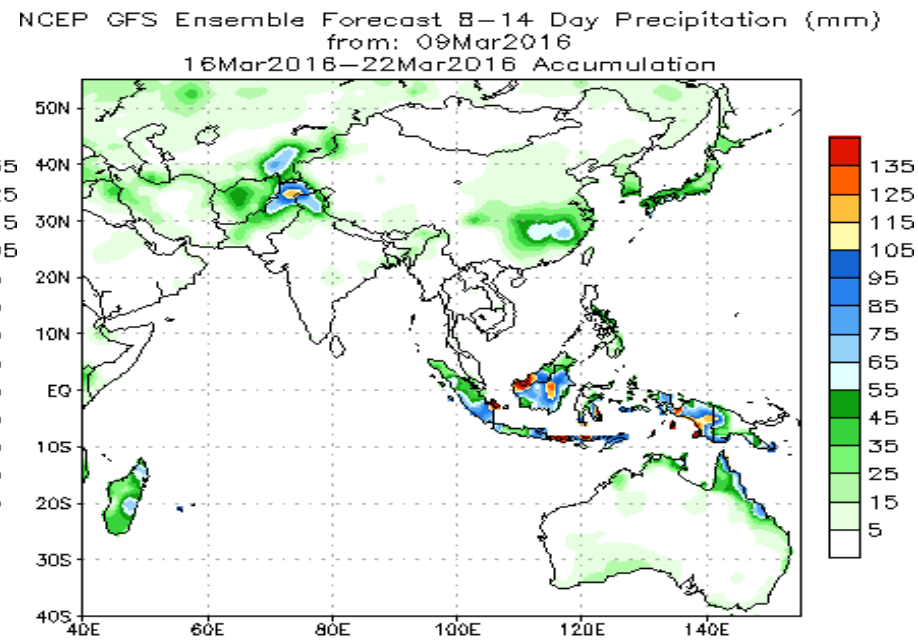


Weekly Average SST Anomalies

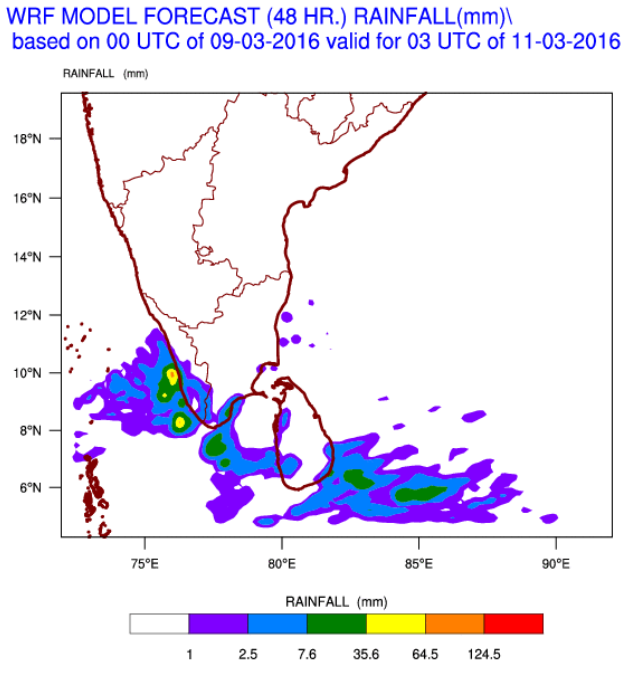


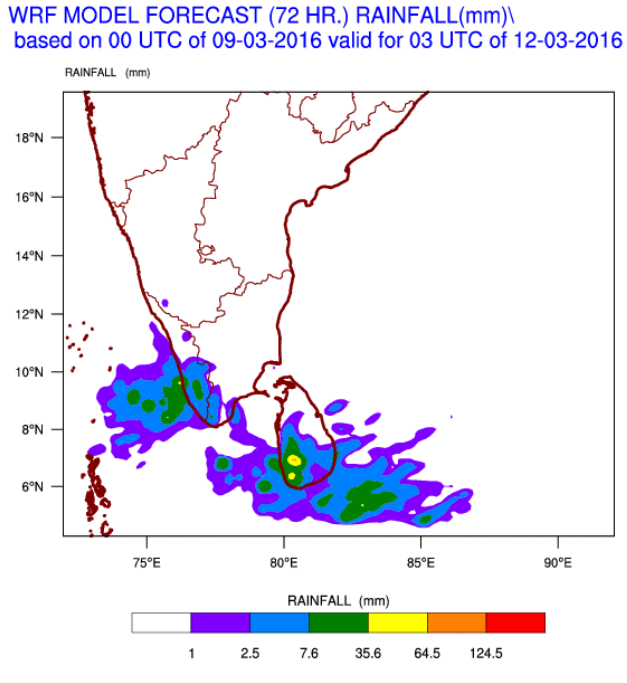
NCEP GFS 1- 14 Day prediction





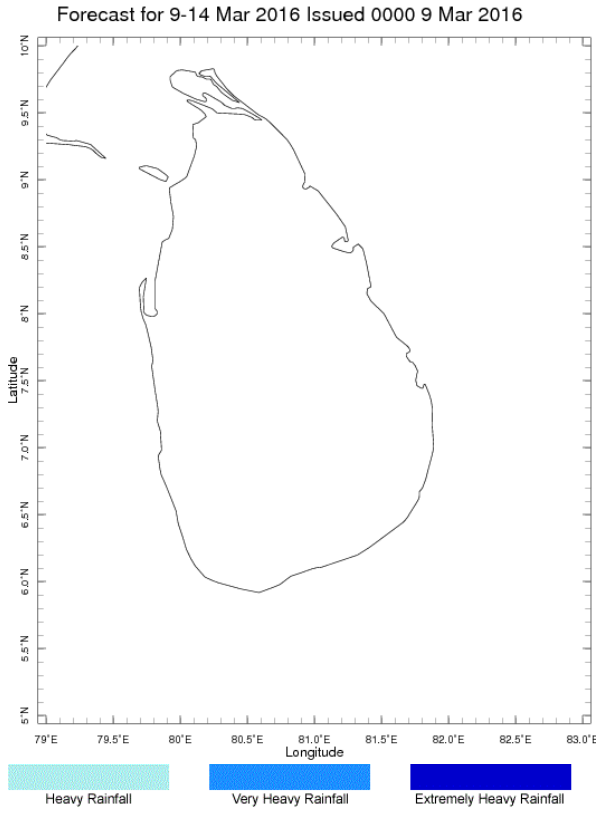
WRF Model Forecast (from IMD Chennai)



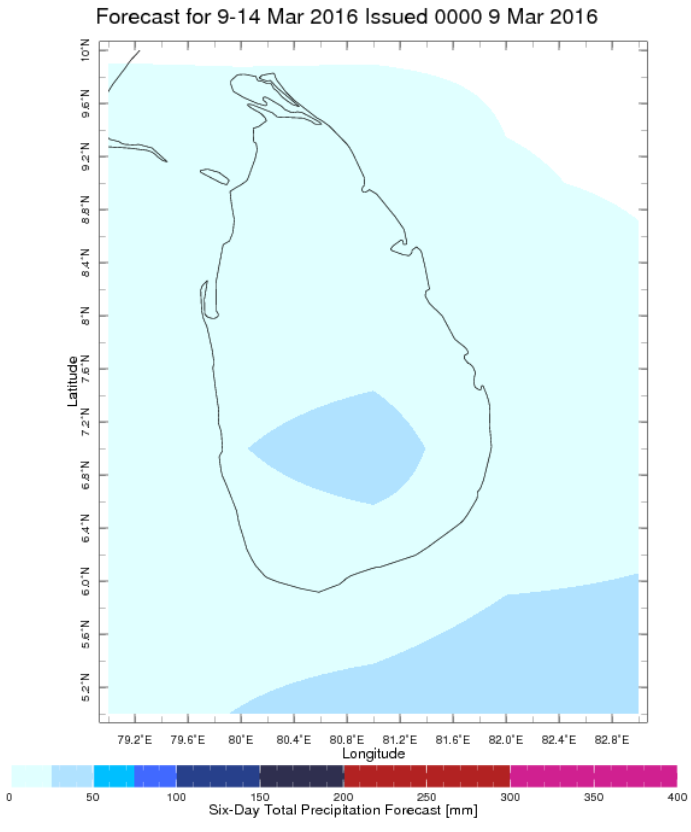


Weekly Rainfall Forecast

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.



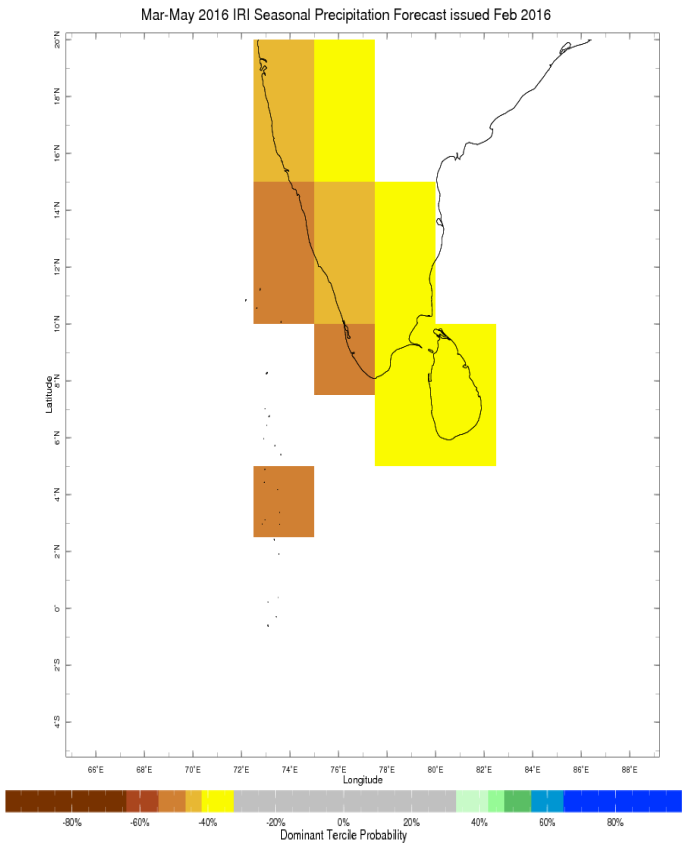
Extreme Rainfall Forecast



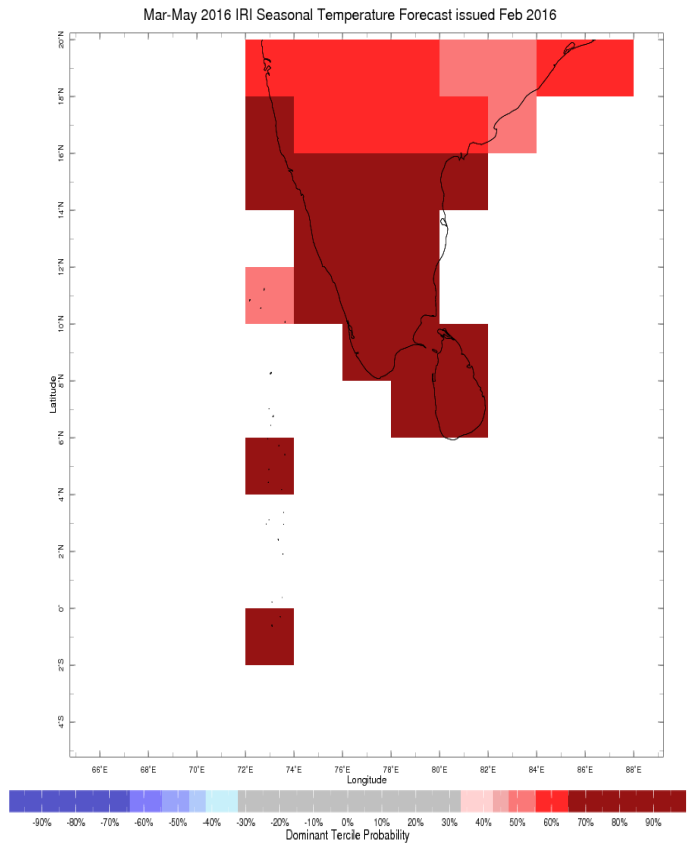
Total Six Day Precipitation Forecast

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%).



Precipitation Forecast



Temperature Forecast

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