

Experimental Climate Monitoring and Prediction

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18 February 2016

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February 11, 2016 PACIFIC SEAS STATE

During early 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. The consensus of ENSO prediction models indicate gradually weakening El Niño conditions over the coming several months, but not returning to neutral until late spring or early summer 2016.

(Text Courtesy IRI)

INDIAN OCEAN STATE

Neutral sea surface temperature was observed around Sri Lanka.

MJO STATE

MJO phase is in 6 therefore shall not have a significant impact on the rainfall in Sri Lanka.

Highlights

The entire country observed dry weather conditions during the week 9th – 15th February where only south east, south west and western ocean received rainfall. Rainfall up to 90 mm was observed in the ocean around Chilaw on 15th February and western, south western and south eastern ocean also received rainfall in the same day. NOAA NCEP model predict relatively high rainfall in south western region of the country in next fortnight and the rest of the country also expected to receive rainfall. MJO is in phase 6 therefore shall not have a significant impact on rainfall.

Summary

Monitoring

Weekly Monitoring: During the week 9th – 15th February, only the south east ocean and ocean around western region of the country received rainfall. Sinharaja forest reserve received rainfall up to 20 mm on 9th February. Dry weather conditions were observed throughout the rest of the week in the entire country. On 14th February the south east ocean received rainfall up to 30 mm. Ocean around Chilaw received rainfall up to 90 mm on 15th February while ocean around Kalutara to Galle received rainfall up to 40 mm and south east ocean received rainfall up to 30 mm.

Monthly Monitoring: In January 2016 dry conditions were seen throughout the country. Below average rainfall was observed in the entire country except in Batticaloa district and some parts in Polonnaruwa, Trincomalee and Ratnapura districts where up to 4 mm/day rainfall was observed.

Predictions

14 day prediction: NOAA NCEP models predict relatively high rainfall in south western region of the country. Up to 55 mm rainfall is expected to receive during 17th – 23rd February where the rest of the country shall receive rainfall up to 35 mm. Same weather conditions are expected to continue during the week 24th February – 1st March.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, eastern coastal region and southern coastal region is expected receive rainfall up to 35 mm on 19th February where northern, central and southern regions shall receive slight amounts of rainfall. On 20th February, the eastern coastal region shall receive rainfall up to 35 mm and the rest of the country except southern and north western regions of the country are expected to receive slight amounts of rainfall. IRI CFS models predict up to 150 mm rainfall in the sea east of Kalmunai, up to 75 mm total rainfall in eastern and western coastal regions during 17th – 22nd February.

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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- Seasonal Predictions from IRI

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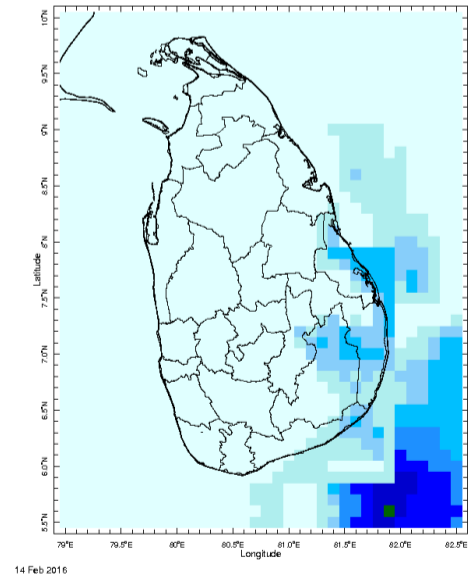
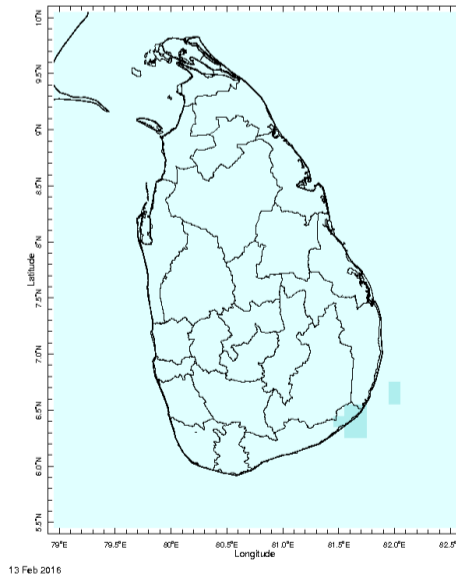
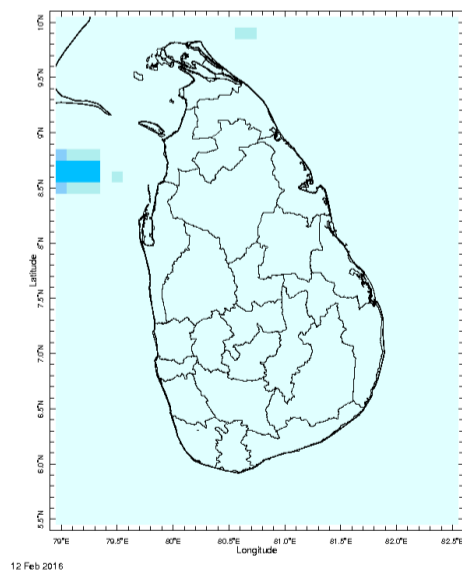
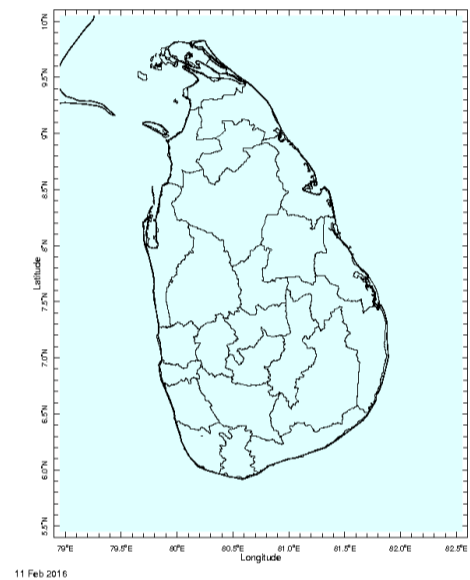
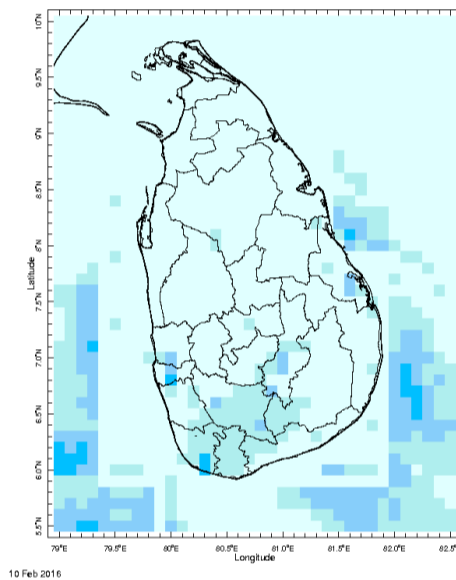
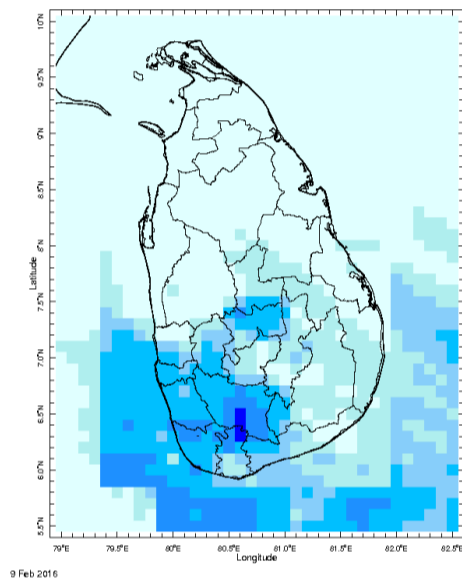
Weekly Hydro- Meteorological Report for Sri Lanka

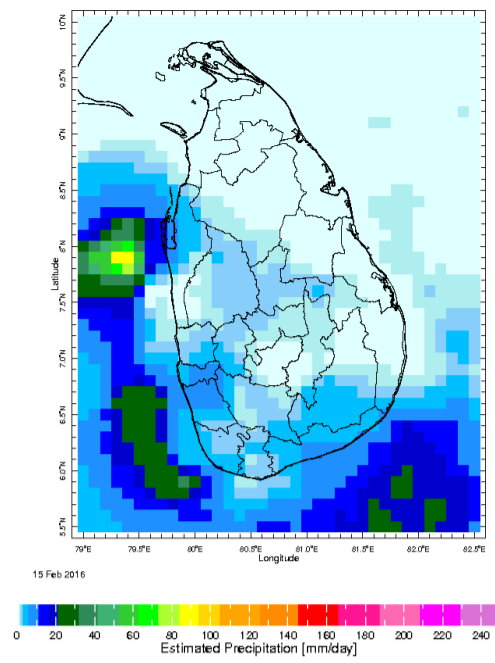
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Daily Rainfall Monitoring

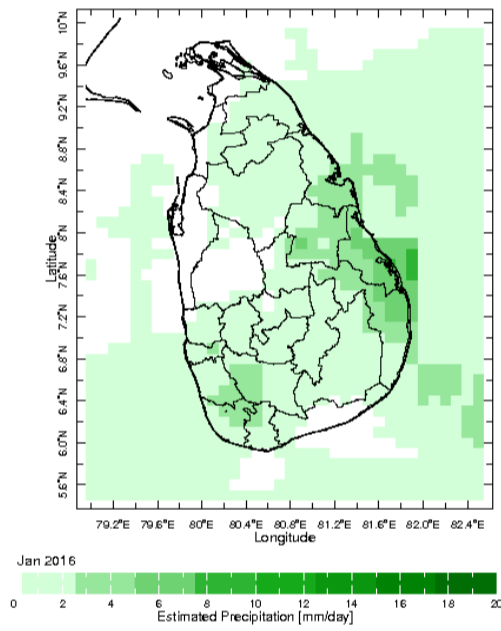
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



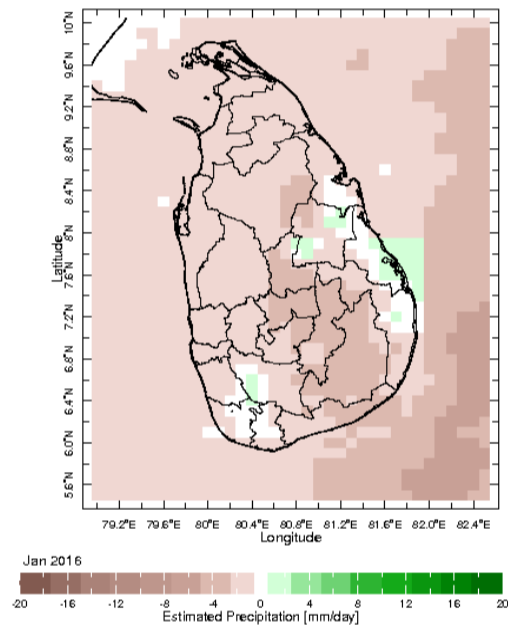


Monthly Rainfall Monitoring

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

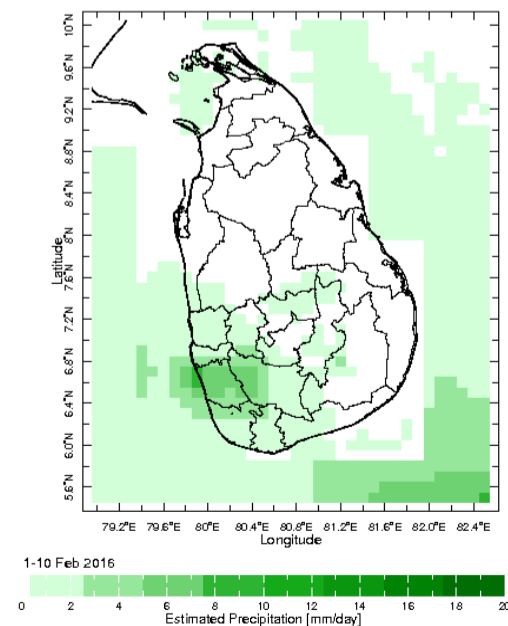
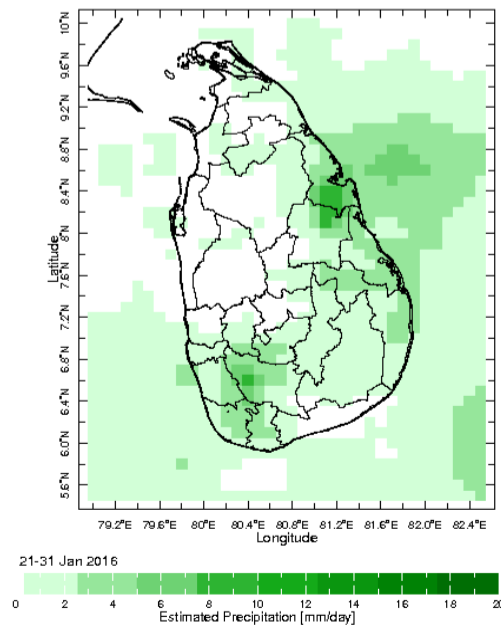


Monthly Average

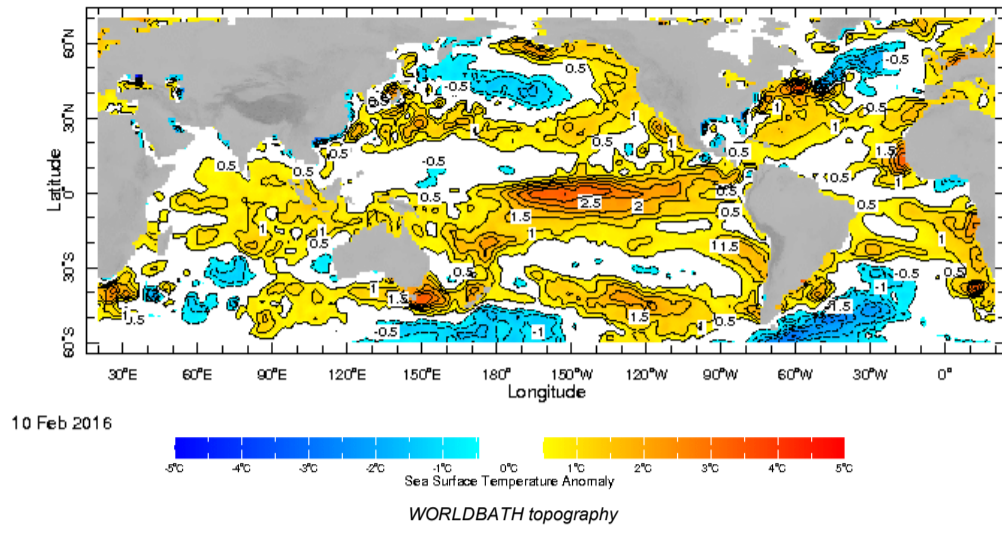


Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

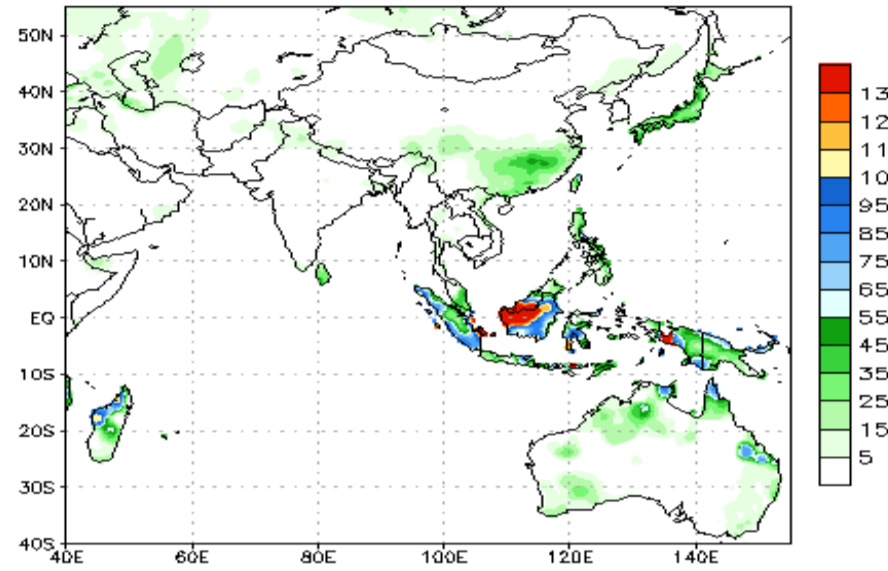


Weekly Average SST Anomalies



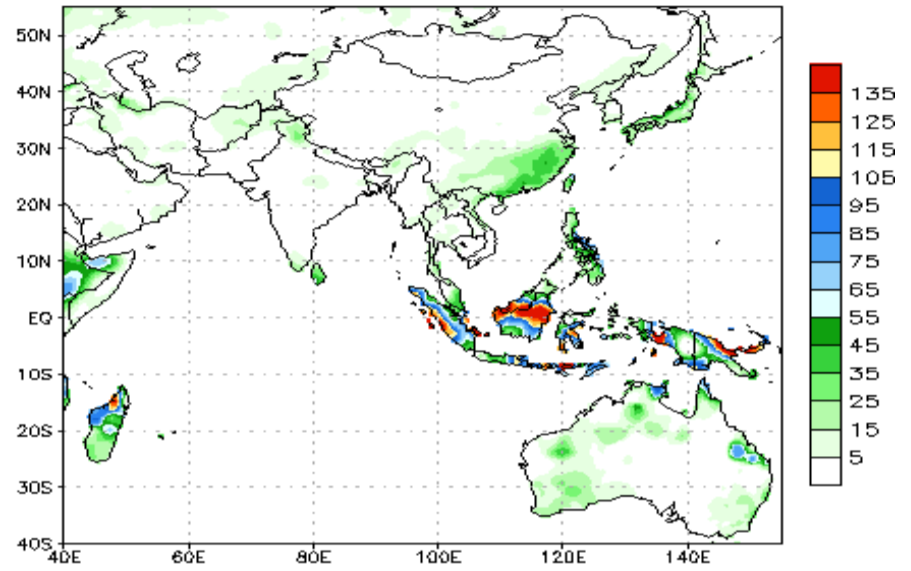
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)
from: 17Feb2016
17Feb2016–23Feb2016 Accumulation



Bias correction based on last 30-day forecast error

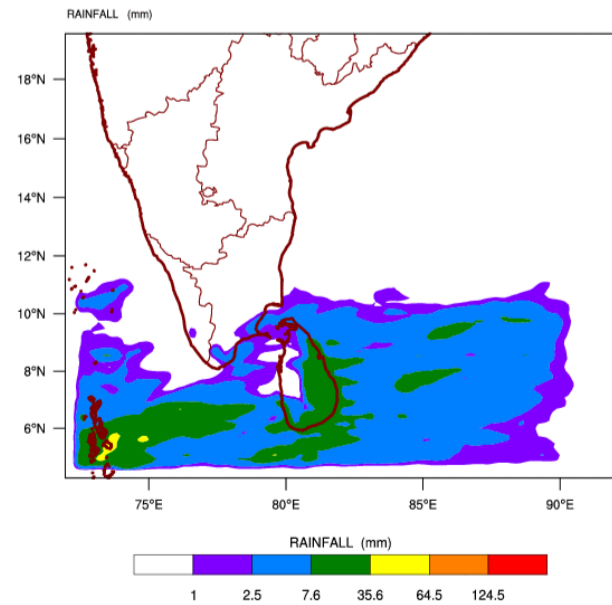
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)
from: 17Feb2016
24Feb2016–01Mar2016 Accumulation



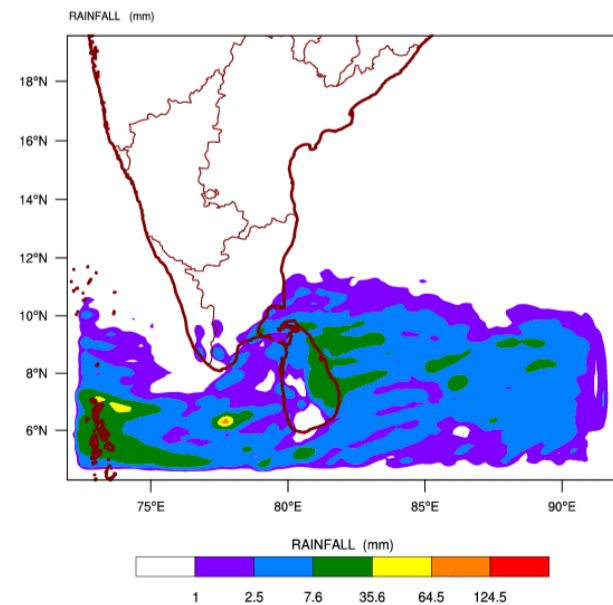
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 17-02-2016 valid for 03 UTC of 19-02-2016

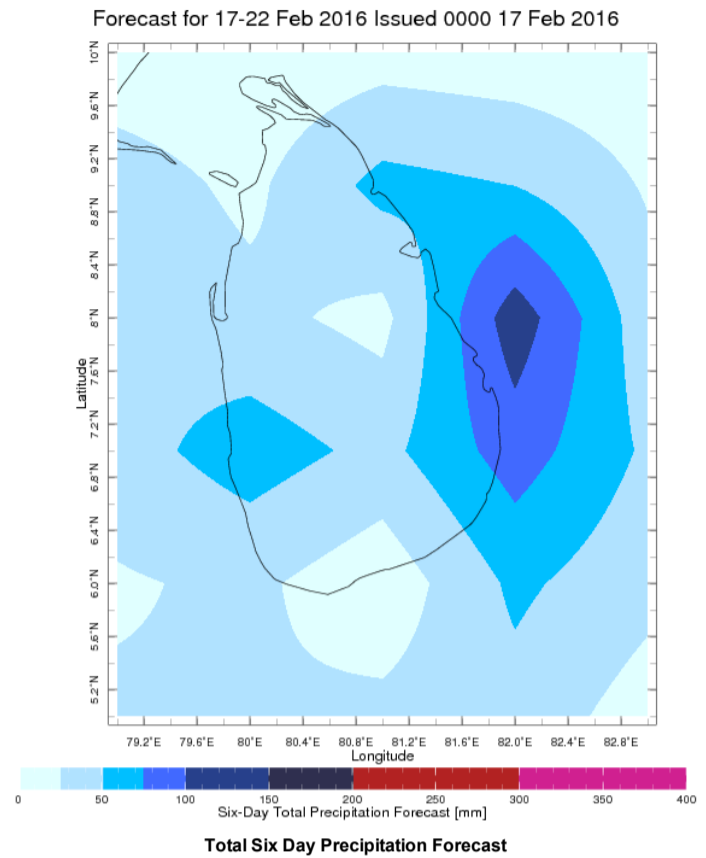
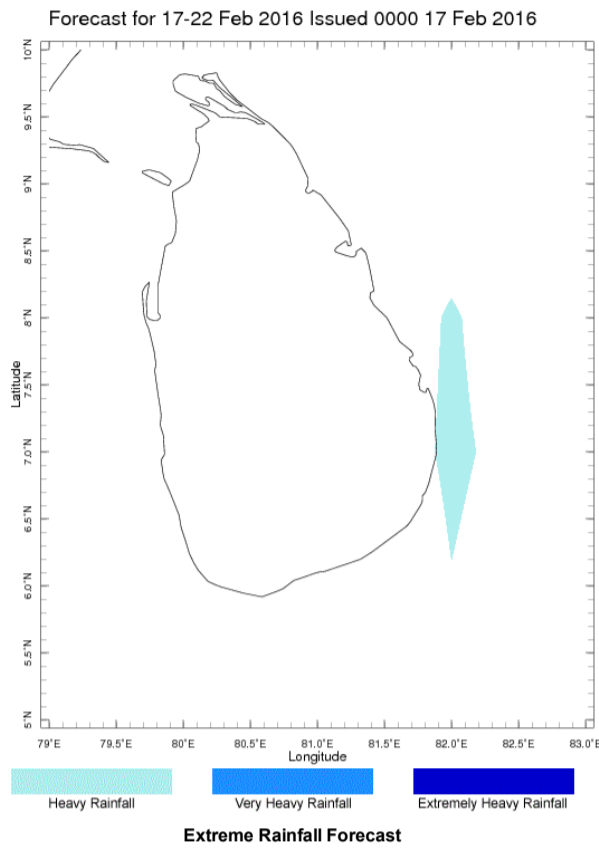


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 17-02-2016 valid for 03 UTC of 20-02-2016



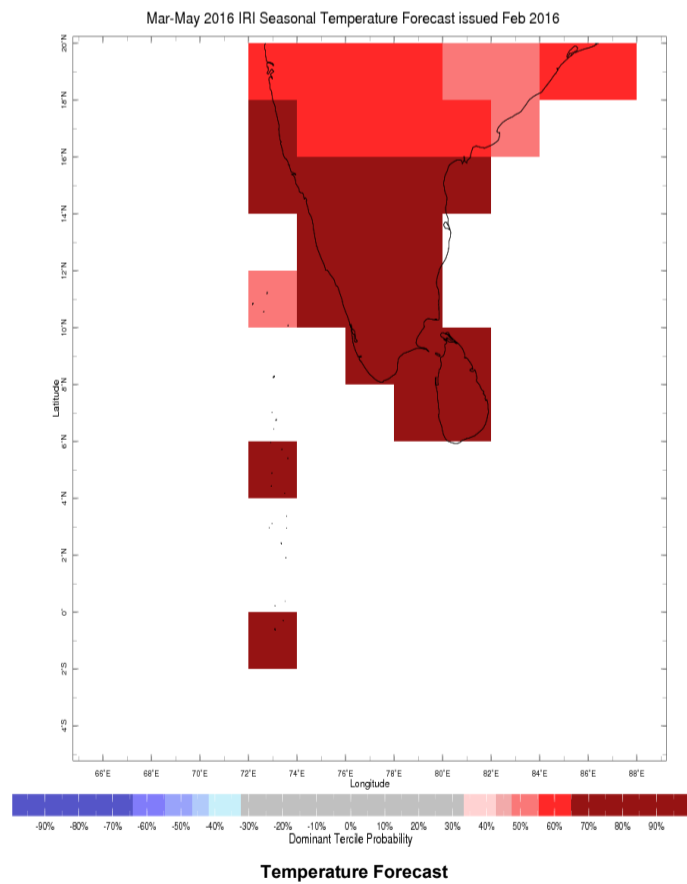
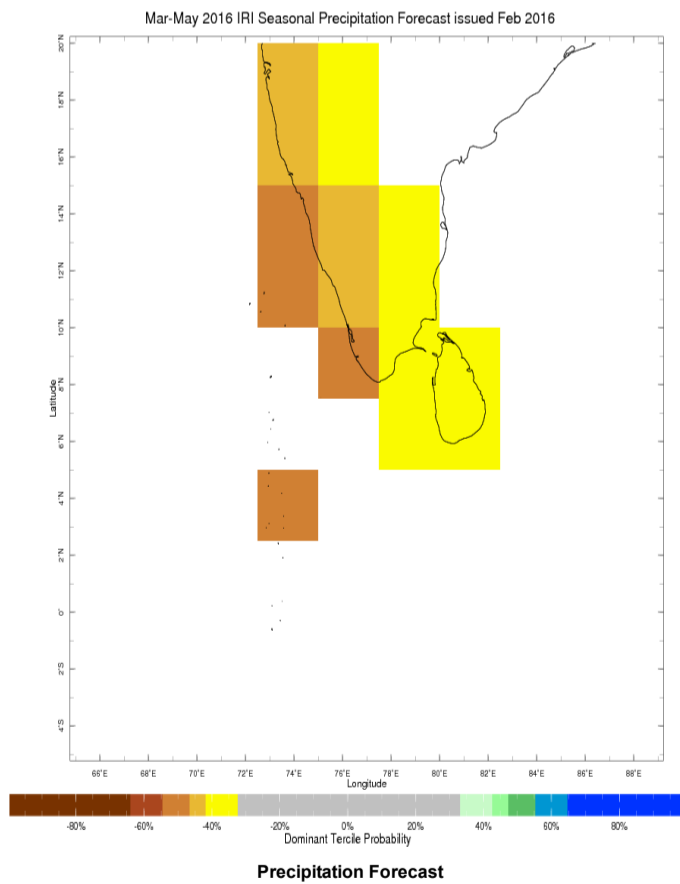
Weekly Rainfall Forecast

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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