

Experimental Climate Monitoring and Prediction

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11 February 2016

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January 21, 2016 PACIFIC SEAS STATE

During mid-January 2016 the tropical Pacific SST was at a strong El Niño level, having peaked in November and December. All atmospheric variables strongly 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 continuation of strong El Niño conditions during the January-March 2016 season in progress. The beginning of a gradual weakening of the SST anomaly is underway, with the event dissipating to neutral conditions by late spring or early summer 2016.

(Text Courtesy IRI)

INDIAN OCEAN STATE

Neutral sea surface temperature was observed around Sri Lanka.

MJO STATE

MJO shall be in phase 4 therefore shall slightly enhance rainfall in Sri Lanka.

Highlights

Dry weather conditions continued throughout the country during the week 3rd – 9th February where only ocean around Kalutara received rainfall up to 80 mm on 7th February. Western region of Kalutara received rainfall up to 70 mm and few regions in Colombo, Ratnapura and Galle received rainfall in the same day. NOAA NCEP model predict rainfall in eastern, north western and south western regions in next week.

Summary

Monitoring

Weekly Monitoring: During the week 3rd – 9th February, only Kalutara, Ratnapura, Colombo and Galle received significant amount of rainfall. On 3rd, 4th and 5th February, no rainfall was observed in the entire country and the south eastern ocean received rainfall up to 20 mm on 4th and 5th February. No rainfall was observed in any part of the country on 6th February. On the 7th ocean near Kalutara received rainfall up to 80 mm while western region of Kalutara received rainfall up to 70 mm. Southern region of Colombo, northern region of Galle and western region of Ratnapura also received rainfall up to 40 mm on this day. On 8th February, no rainfall was observed in any part of the country. Sinharaja forest reserve and the eastern region of Kandy received rainfall up to 20 mm on 9th February.

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 rainfall up to 75 mm in Batticaloa and up to 55 mm in north western region during 10th – 16th February. South western region is expected to receive rainfall up to 45 mm on this period. Eastern region is expected to receive slight amounts of rainfall up to 25 mm and no rainfall is expected in the rest of the country during the following week 17th – 23rd February.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, no rainfall is expected in the entire country during 12th and 13th February 2016. Ocean around eastern and southern regions are expected to receive slight amounts of rainfall. IRI CFS models predict up to 50 mm rainfall in eastern region of the country during 10th- 15th February. The sea east of Kalmunai and south eastern ocean is expected to receive rainfall up to 75 mm during this week.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for February to April, the total 3 month precipitation has 50% 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

¹ International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

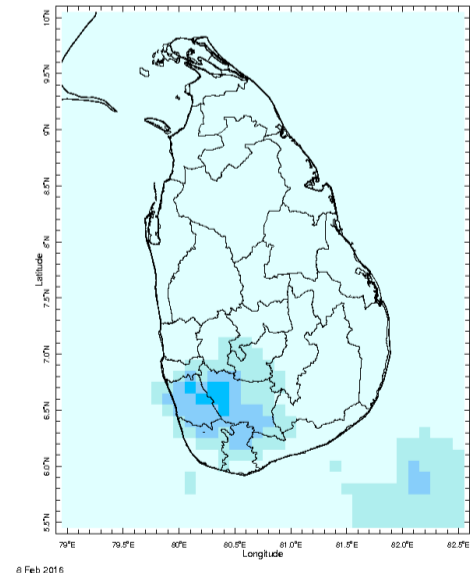
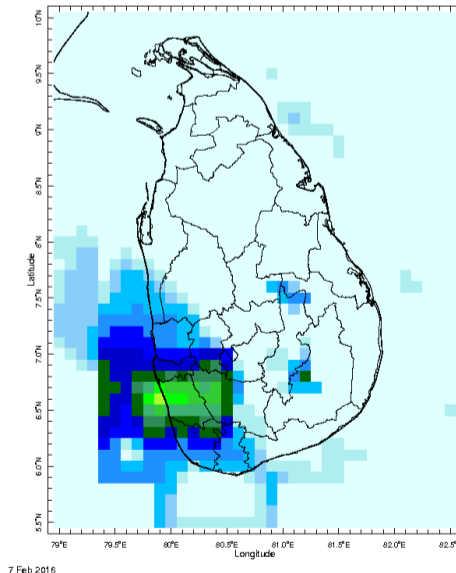
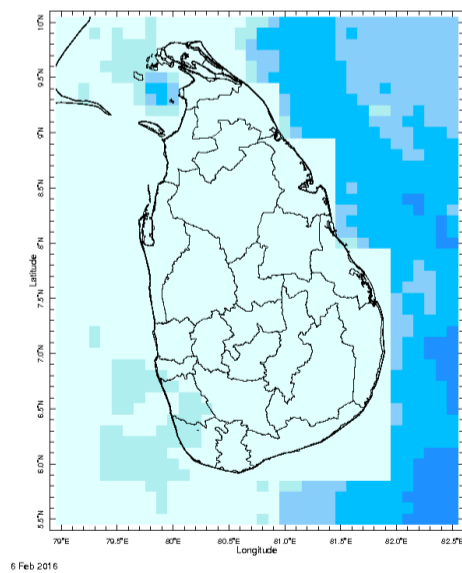
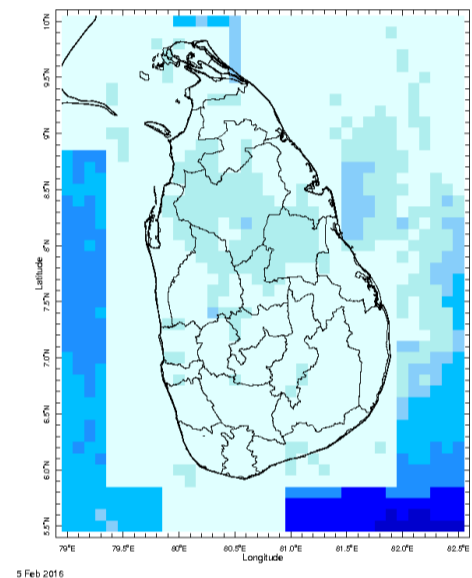
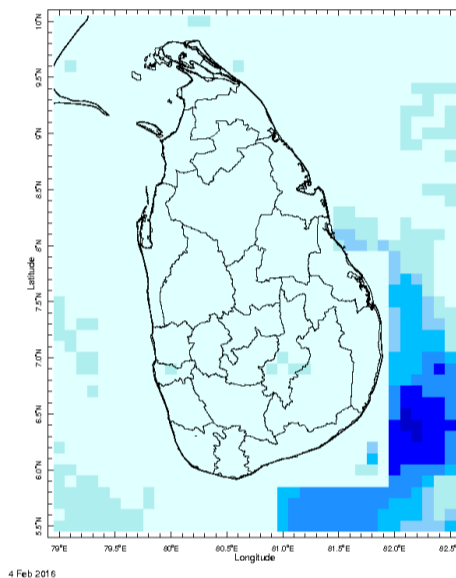
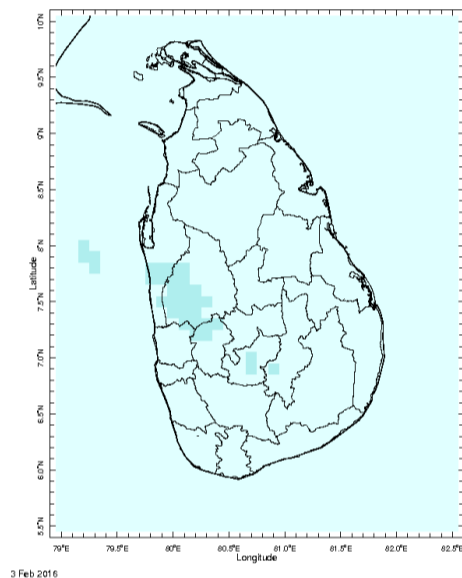
Weekly Hydro- Meteorological Report for Sri Lanka

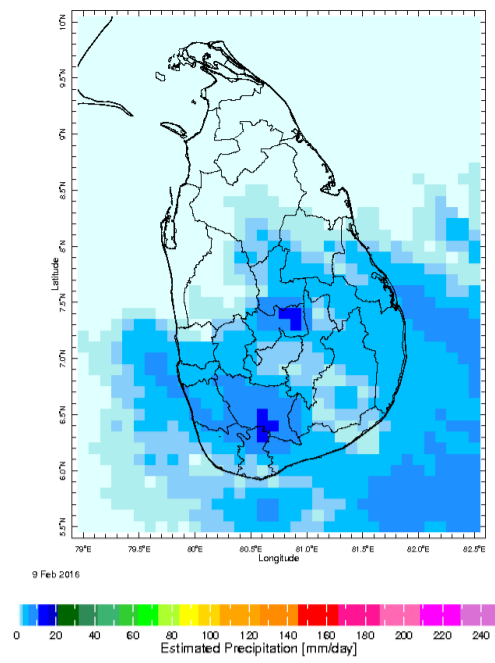
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Daily Rainfall Monitoring

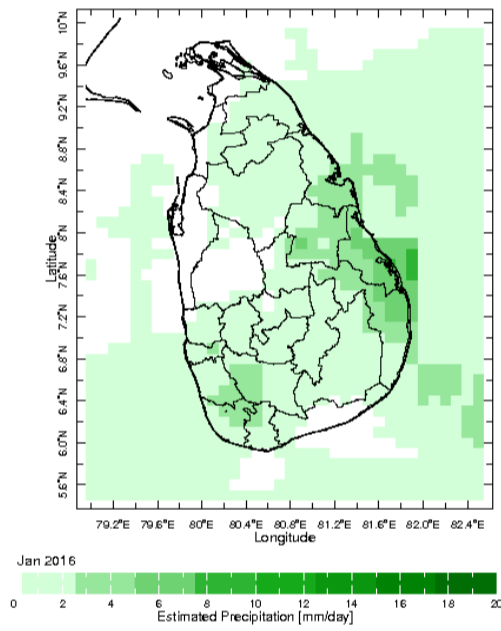
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



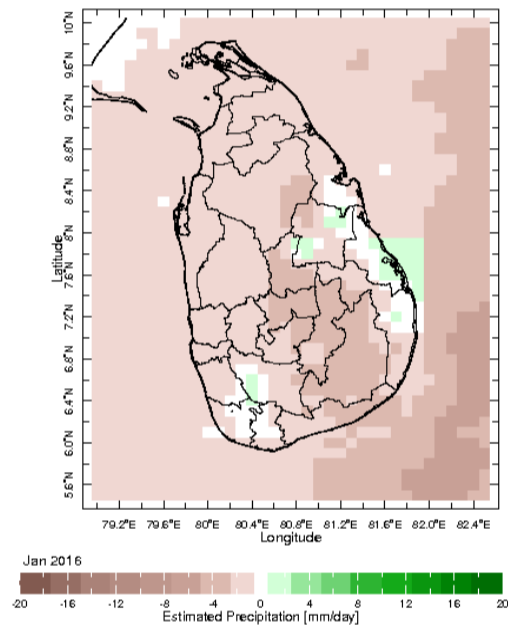


Monthly Rainfall Monitoring

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

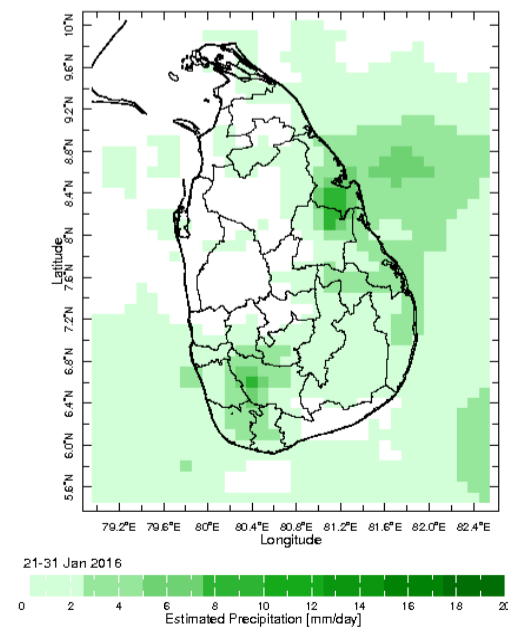
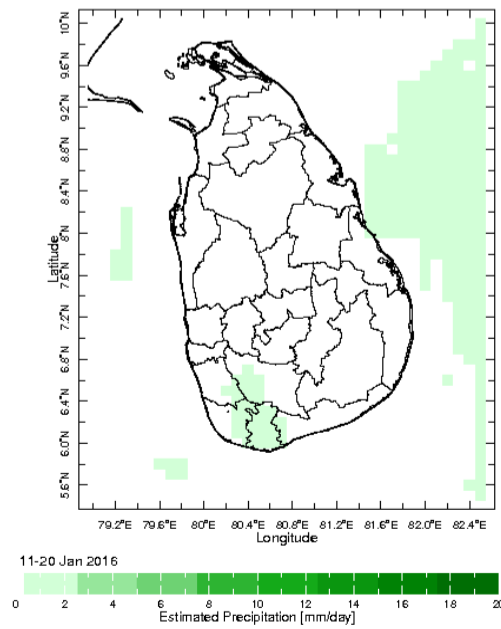


Monthly Average

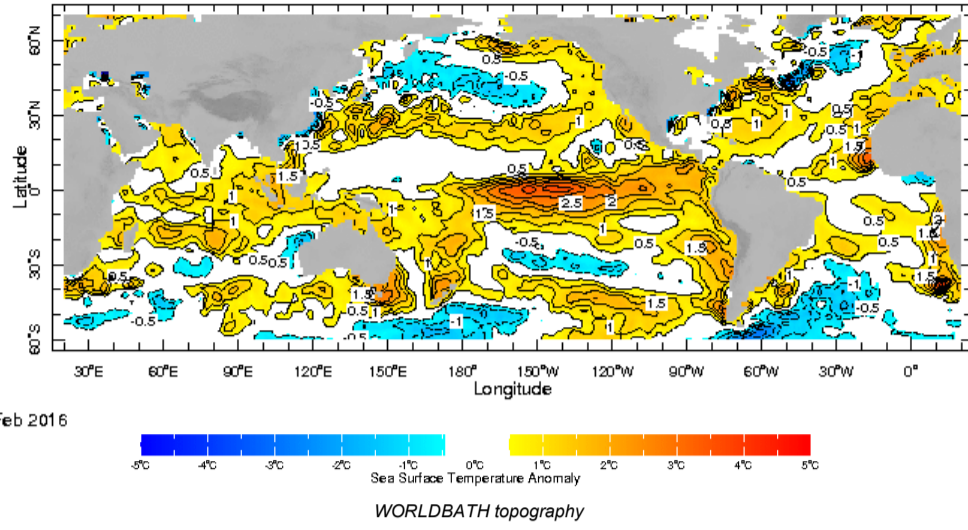


Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

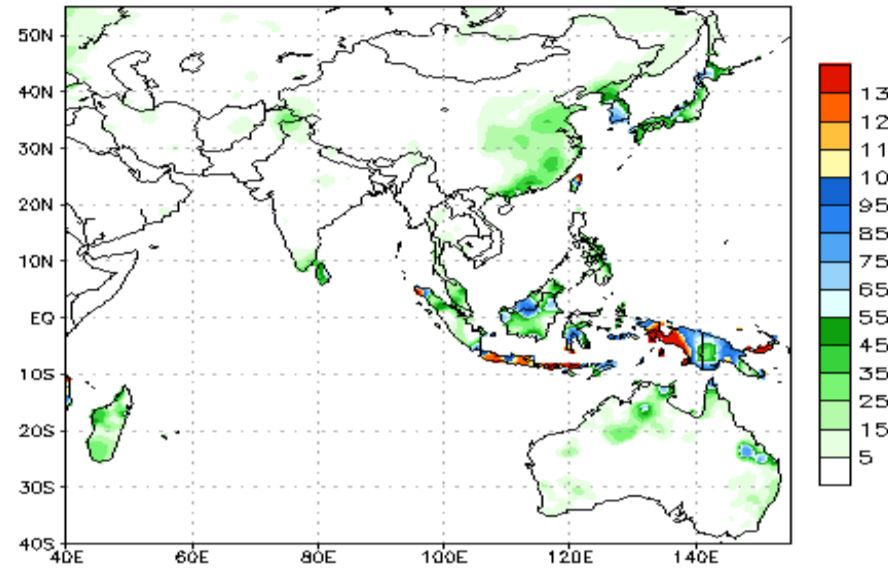


Weekly Average SST Anomalies

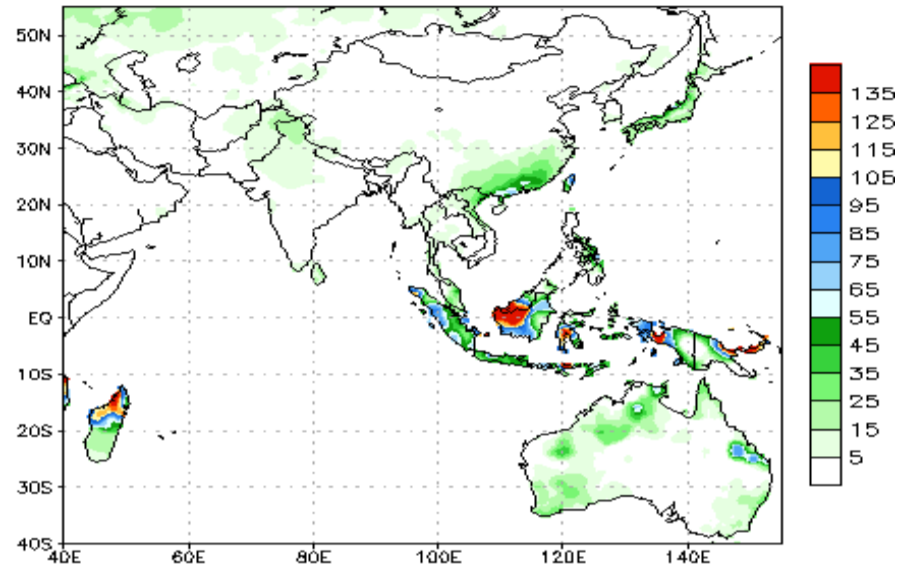


NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)
from: 10Feb2016
10Feb2016–16Feb2016 Accumulation



NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)
from: 10Feb2016
17Feb2016–23Feb2016 Accumulation

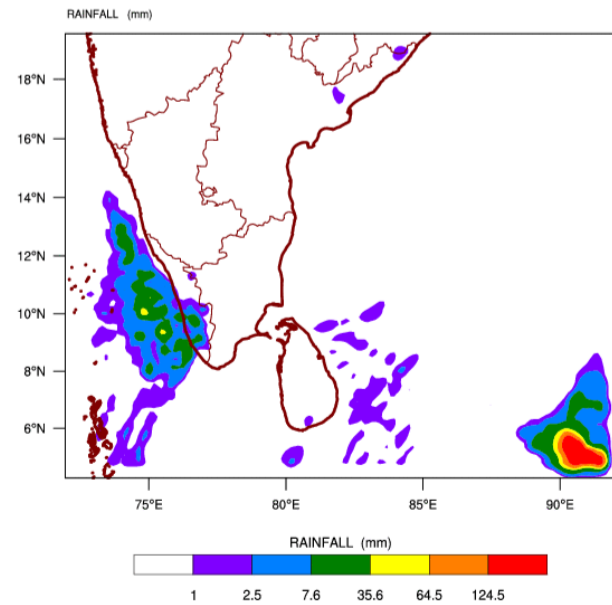


Bias correction based on last 30-day forecast error

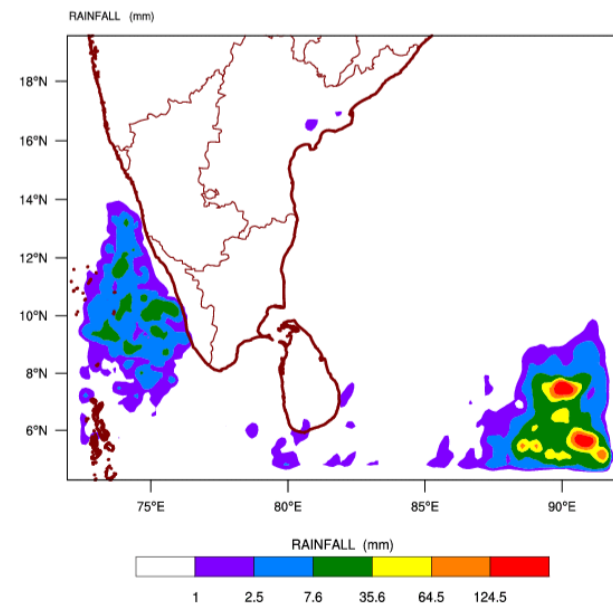
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 10-02-2016 valid for 03 UTC of 12-02-2016

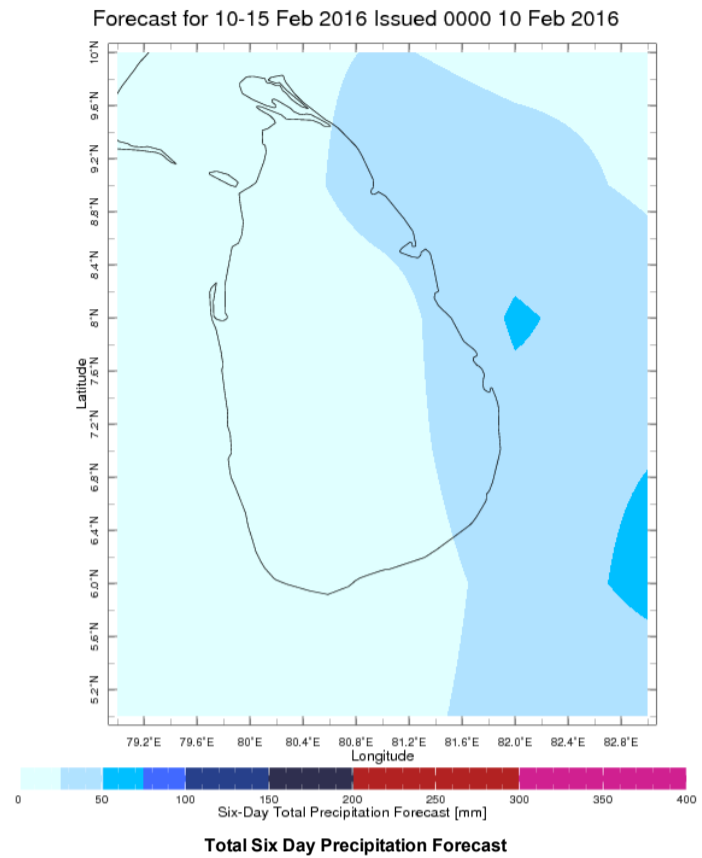
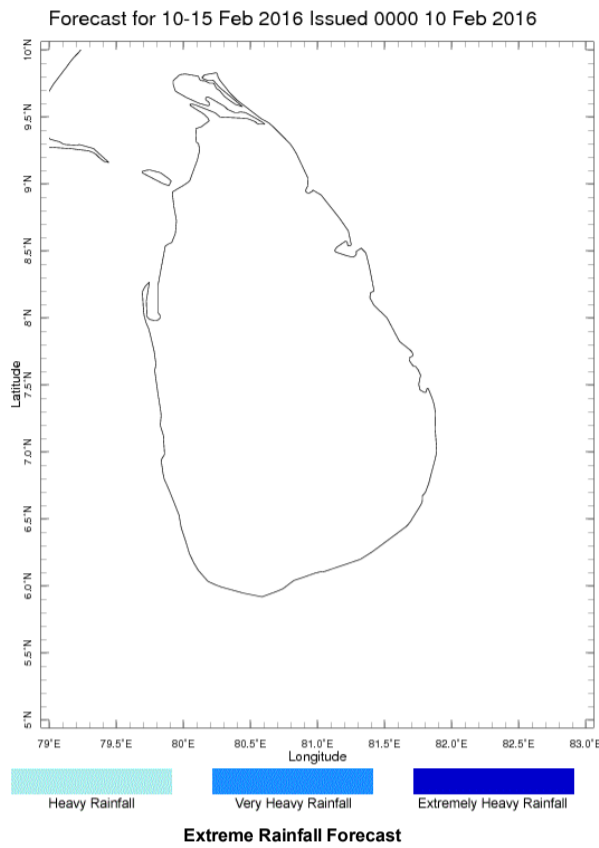


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 10-02-2016 valid for 03 UTC of 13-02-2016



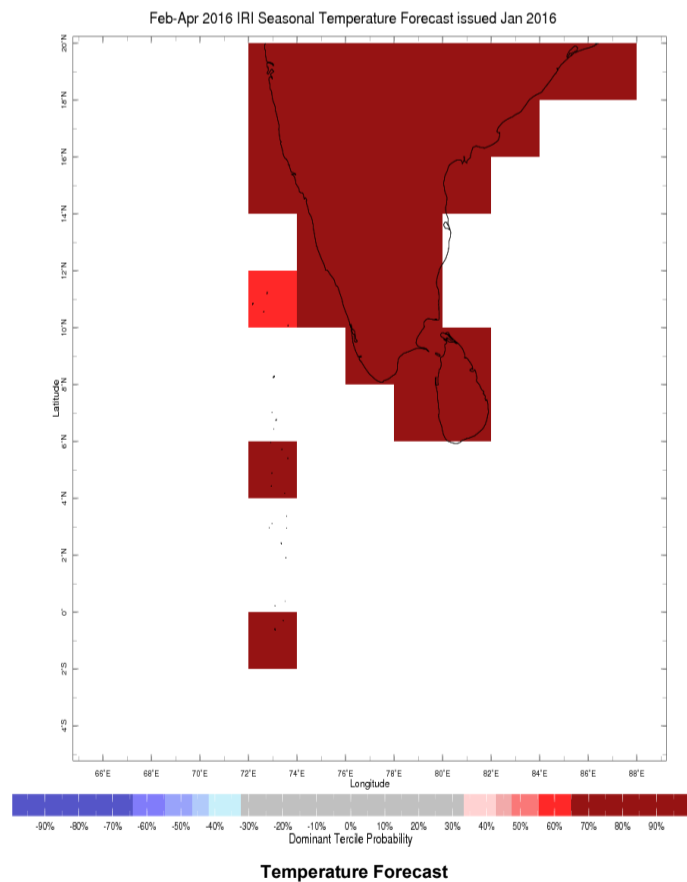
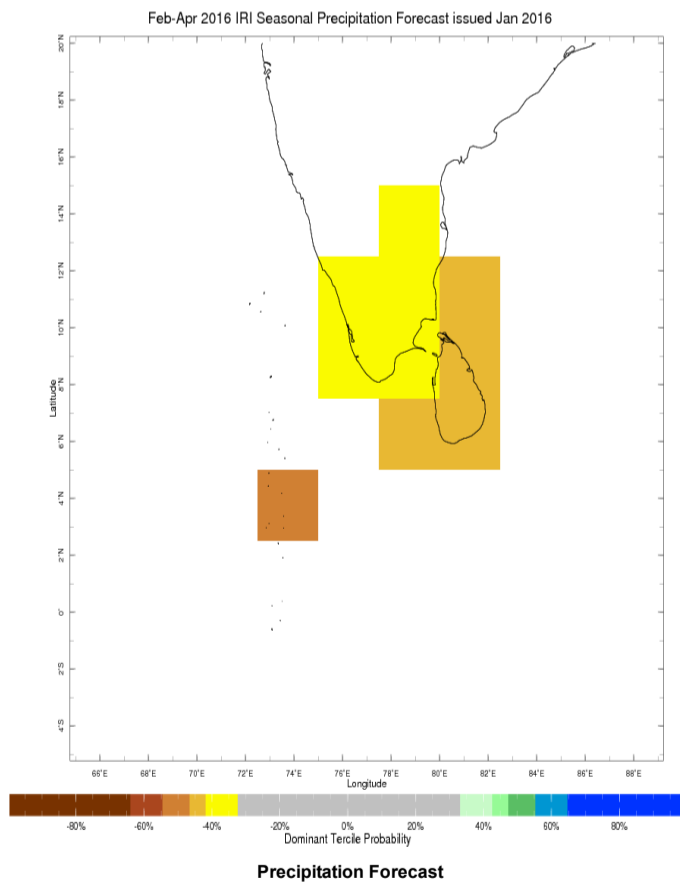
Weekly Rainfall Forecast

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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