

**Week of
5 - 12 Feb
2021**

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

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HIGHLIGHTS

Rainfall Prediction



• Heavy rainfall of 95 mm expected in Eastern province during 4th - 10th Feb. The drop in rainfall over the rest of the country.

Monitored Rainfalls



• Dangerously Heavy rainfall was experienced in Eastern & Sabaragamuwa provinces. Up to 218mm max in Batticaloa on 28th

Monitored Wind



• From 27th Jan- 2nd Feb: up to 8 km/h Easterly to Northeasterly winds were experienced by the entire island.

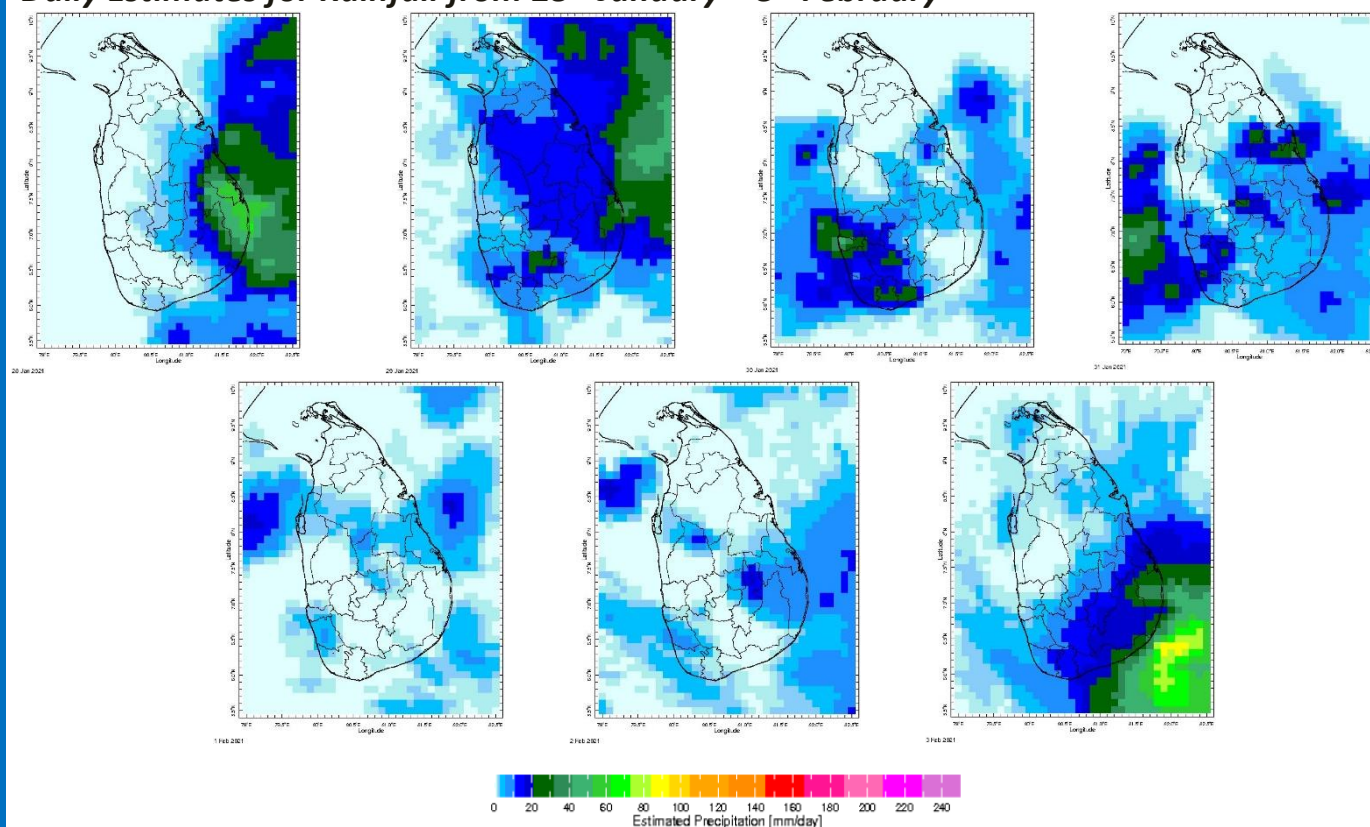
Monitored Sea Surface



• Sea surface temperature was observed near-neutral all along around Sri Lanka.

Monitoring Rainfall

Daily Estimates for Rainfall from 28th January – 3rd February





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Total Rainfall for the Past Week

The RFE 2.0 tool shows 7-day total Cumulative rainfall by Districts:

Rainfall	Districts
100 – 150 mm	Batticaloa, Ampara
75 – 100 mm	Moneragala
50 – 75 mm	Polonnaruwa, Badulla, Trincomalee, Kandy, Ratnapura, Kalutara, Colombo, Galle
25 – 50 mm	Hambantota, Matara, Gampaha, Kegalle, Nuwara Eliya, Matale, Anuradhapura, Kurunegala
10 – 25 mm	Puttalam, Mannar, Vavuniya, Mullaitivu
2 – 5 mm	Kilinochchi, Jaffna

Weekly Rainfall Anomalies by Districts:

Rainfall Excess

Rainfall	Districts
100 – 200 mm	Ampara
50 – 100 mm	Batticaloa, Moneragala
25 – 50 mm	Badulla, Hambantota, Matara, Galle, Kalutara, Colombo, Kandy, Ratnapura
10 – 25 mm	Matale, Nuwara Eliya, Polonnaruwa, Kegalle, Gampaha

Rainfall Deficit

Rainfall	Districts
10 – 25 mm	Puttalam, Kurunegala, Trincomalee, Anuradhapura, Mannar, Vavuniya, Mullaitivu, Kilinochchi, Jaffna

Monthly Monitoring

During January, Dekadal Rainfall (mm/day) by Districts:

11th – 20th January:

Rainfall	Districts
18 mm	Galle, Matara, Kalutara, Ratnapura
16 mm	Vavuniya
14 mm	Batticaloa, Mullaitivu, Kurunegala, Kegalle, Colombo, Moneragala
12 mm	Kilinochchi, Hambantota, Ampara, Badulla, Polonnaruwa, Nuwara Eliya, Mannar, Jaffna, Trincomalee
10 mm	Puttalam, Gampaha, Kandy, Matale, Anuradhapura



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21st – 31st January:

Rainfall	Districts
12 mm	Ampara
10 mm	Batticaloa
6 mm	Moneragala, Polonnaruwa, Ratnapura
4 mm	Hambantota, Matara, Galle, Kalutara, Colombo, Gampaha, Kegalle, Nuwara Eliya, Kandy, Matale, Badulla, Anuradhapura, Trincomalee
2 mm	Puttalam, Kurunegala, Mannar, Vavuniya, Mullaitivu, Kilinochchi, Jaffna

Ocean State *(Text Courtesy IRI)*

Pacific sea state: January 27, 2021

Equatorial Eastern Pacific SST reached La Niña threshold in late-January, and the atmospheric variables were either ENSO-neutral or indicative of weak La Niña conditions.

Indian Ocean State

Sea surface temperature was observed near-neutral all along around Sri Lanka.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 4th – 10th February:

Total rainfall by Provinces:

Rainfall	Provinces
95 mm	Eastern
35 mm	Northern, Southern
25 mm	Sabaragamuwa, Uva
15 mm	North-central, Central, Western

From 11th – 17th February:

Total rainfall by Provinces:

Rainfall	Provinces
105 mm	Eastern
55 mm	Northern
45 mm	North-central
35 mm	Southern, Sabaragamuwa, Uva
25 mm	North-western, Western, Central



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MJO based OLR predictions

For the next 15 days:

MJO shall significantly suppress the rainfall during 3rd – 17th Feb.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been high rainfall over the following provinces: Eastern, Sabaragamuwa, Southern and Western.

Wind: As is typical for January the Northeasterly winds prevailed in the sea area and around the island.

Temperatures: Cooled from November – still the temperature anomalies were slightly above normal for the Western & Sabaragamuwa provinces the last – driven by the warm SST's

Predictions

Rainfall: During the next week (4th Jan – 10th Feb), heavy rainfall is predicted for the Eastern coastal region. A drop in rainfall is predicted over the rest of the country.

Temperatures: The temperature remains slightly above normal for February. During 5th–11th Feb, the temperature remains high especially the Western and Southern coast.

Teleconnections:

- MJO shall significantly suppress the rainfall during 3rd – 17th Feb.
- La Nina - The SST forecast is for La Nina conditions to continue through April weakening through June. So, the La Niña is expected to be moderate to strong in coming seasons.

Tropical Climate Guarantee, Federation of Environment, Climate and Technology, Columbia University Water Center, ¹ International Research Institute for Climate and Society, , Earth Institute at Columbia University, New York.



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Weekly Climate Bulletin for Sri Lanka

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2. Predictions

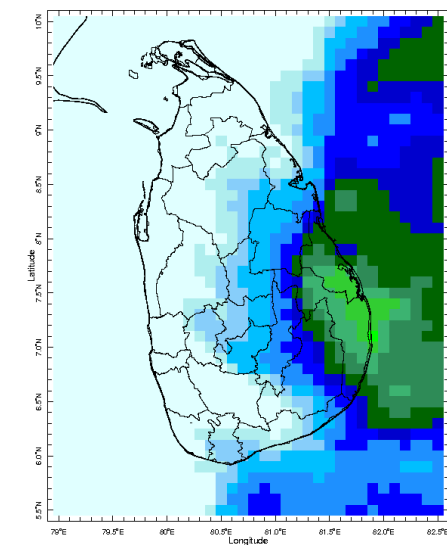
- NCEP GFS Ensemble 1-14 day Rainfall Predictions
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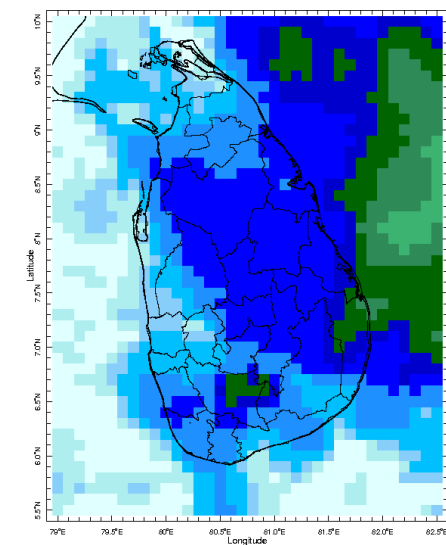
MONITORING

Daily Rainfall Monitoring

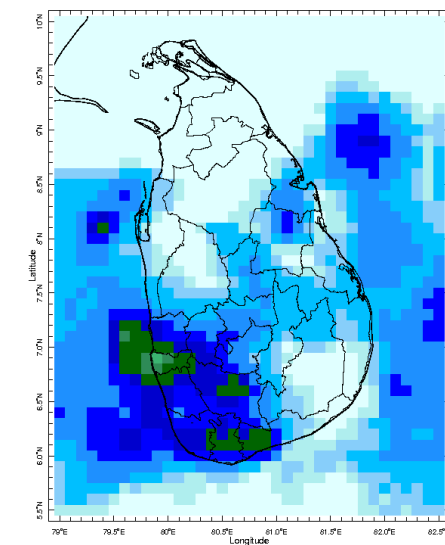
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



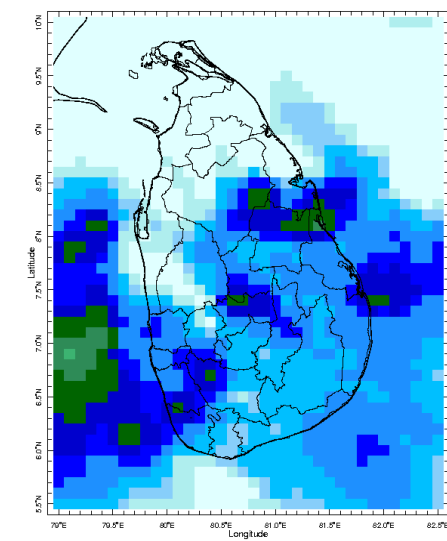
28 Jan 2021



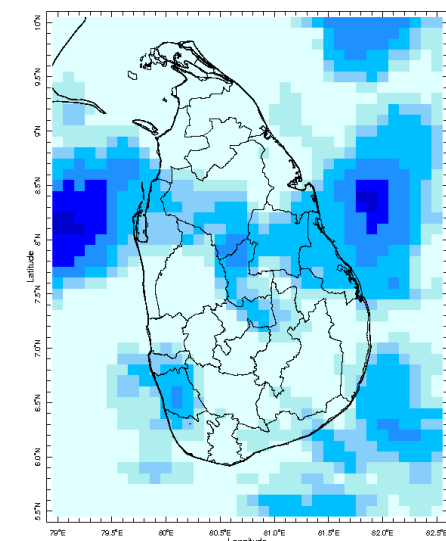
29 Jan 2021



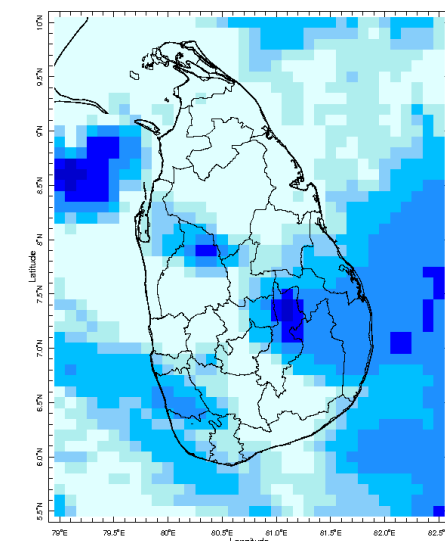
30 Jan 2021



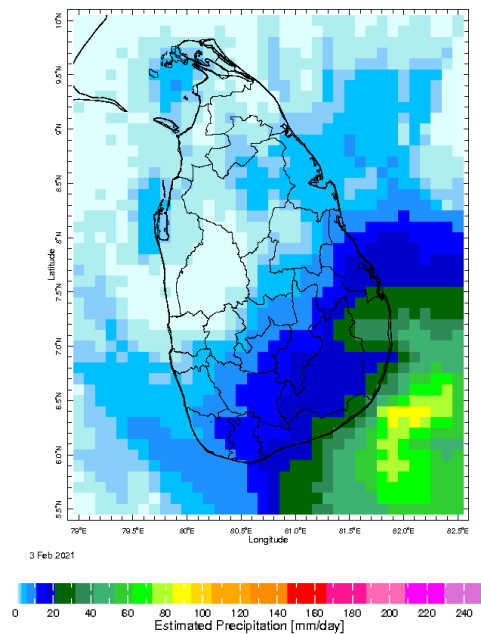
31 Jan 2021



1 Feb 2021

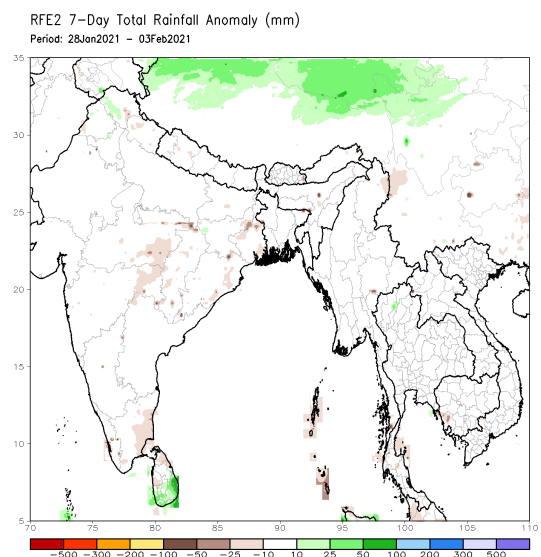
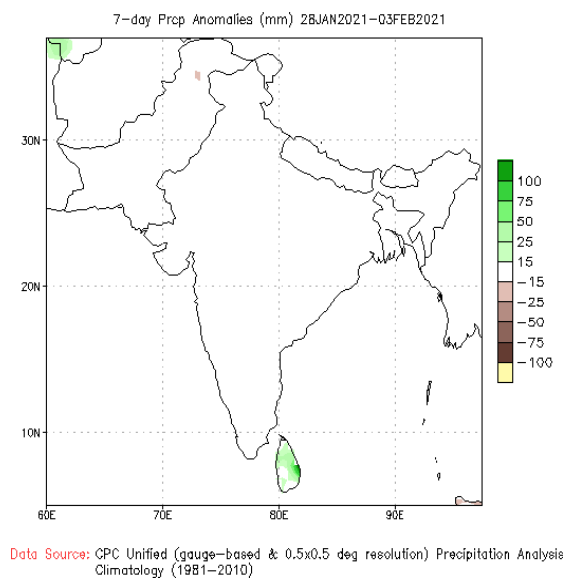
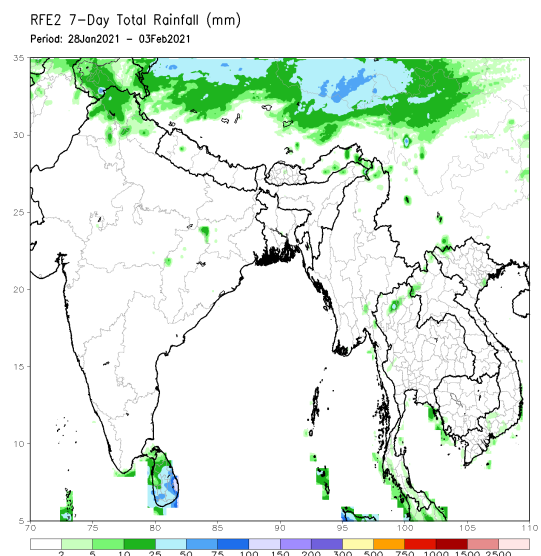
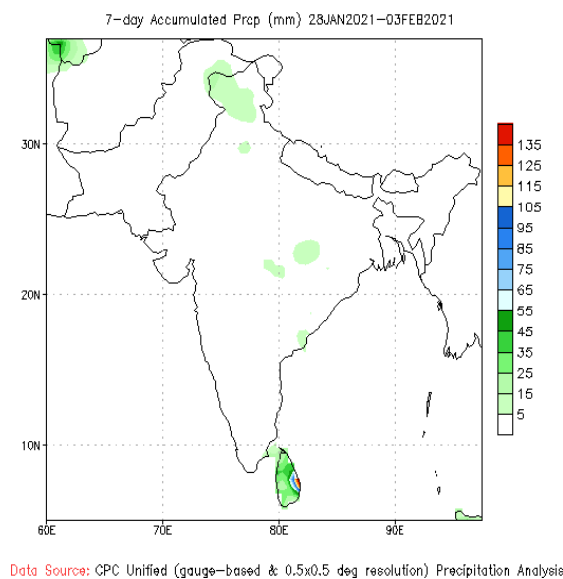


2 Feb 2021



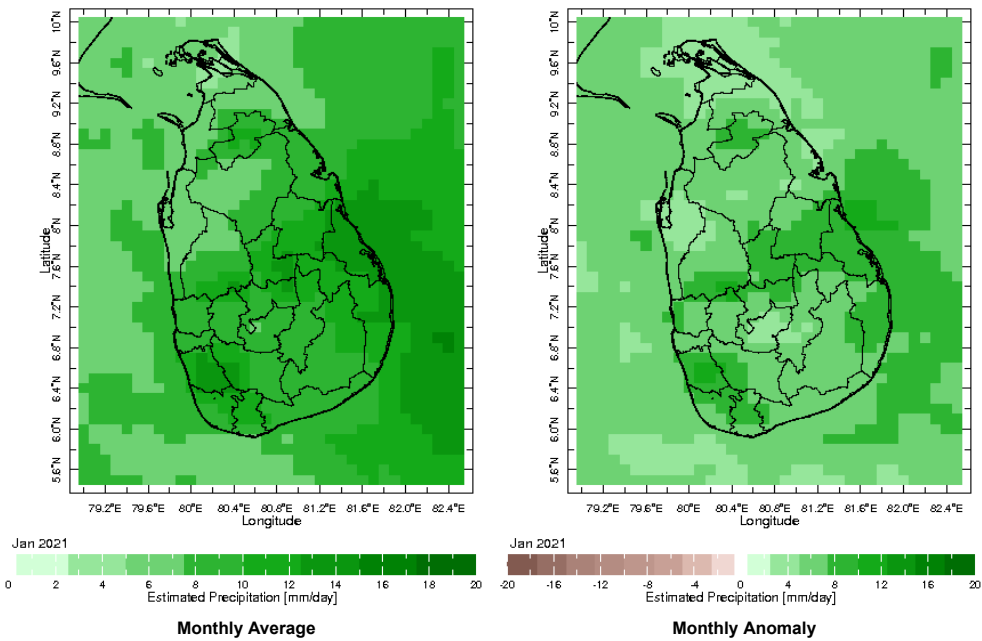
Weekly Rainfall Monitoring

The following figures show the total satellite observed rainfall in the last week in Sri Lanka. The figure in the left is the total 7-day rainfall from NOAA Climate Prediction Center (CPC) Unified Precipitation Analysis and the figure in the right is the total 7-day rainfall from CPC RFE 2.0 Satellite Rainfall Estimates. The bottom two figures are the respective anomalies.

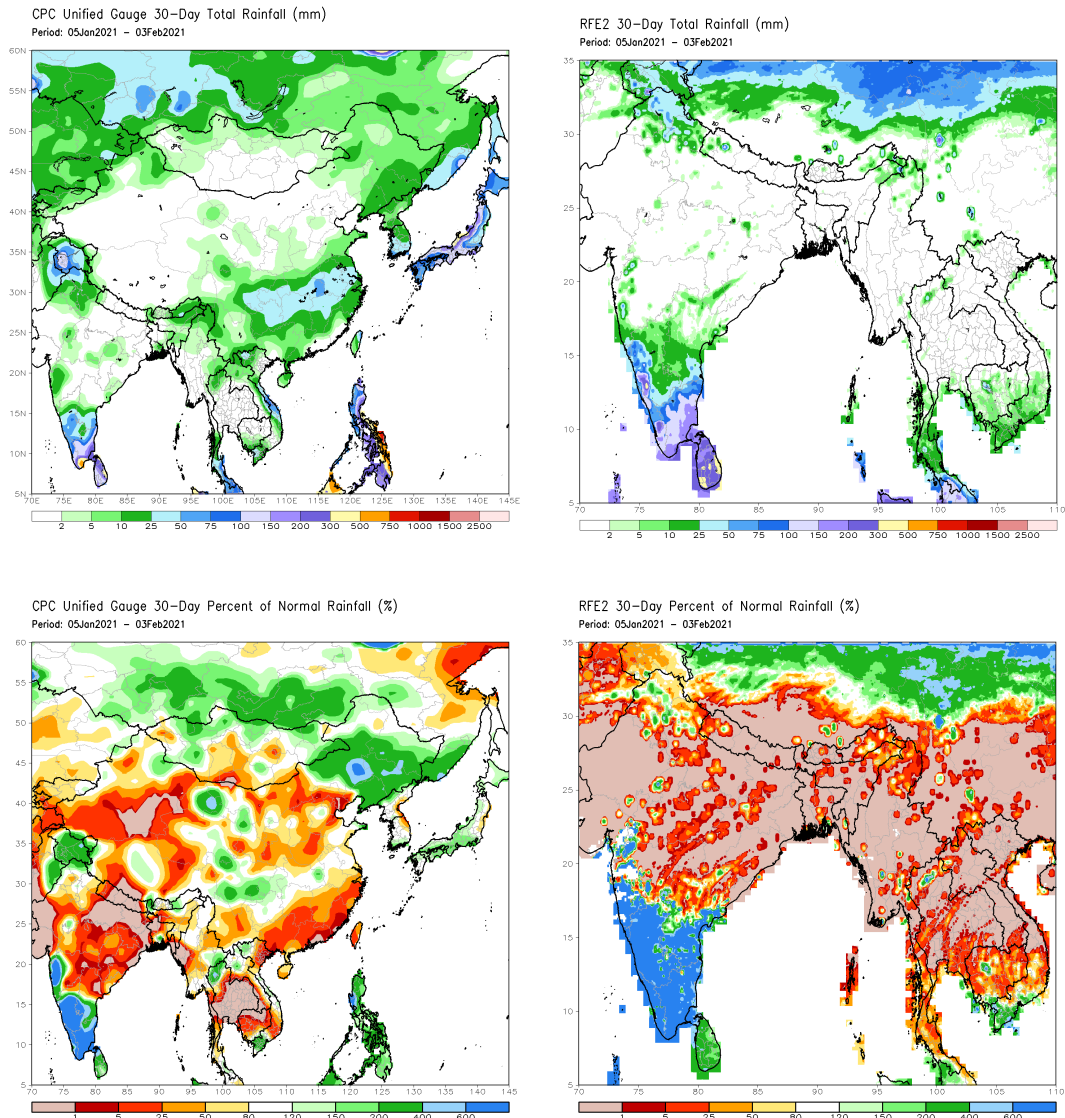


Monthly Rainfall Monitoring

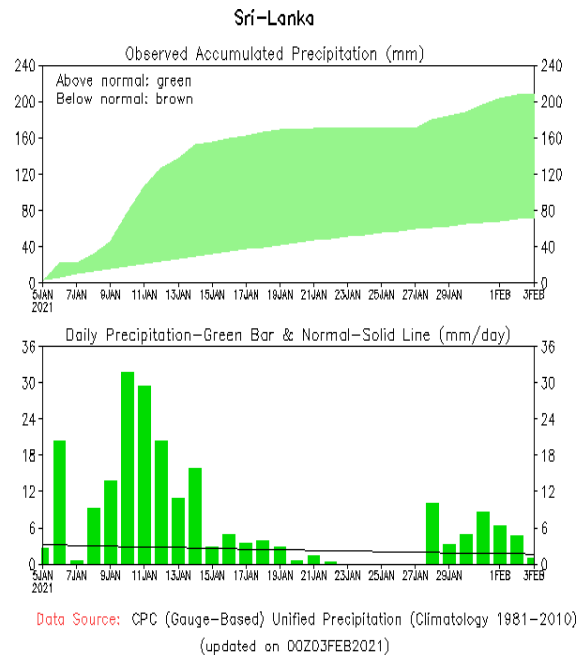
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall



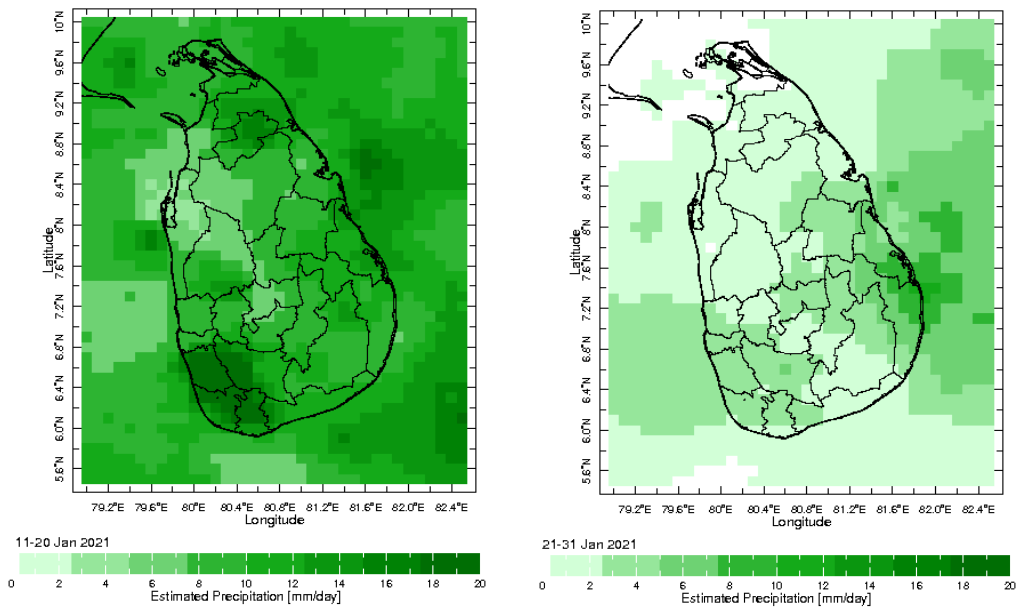
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in the past 30 days compared to normal rainfall in this period.



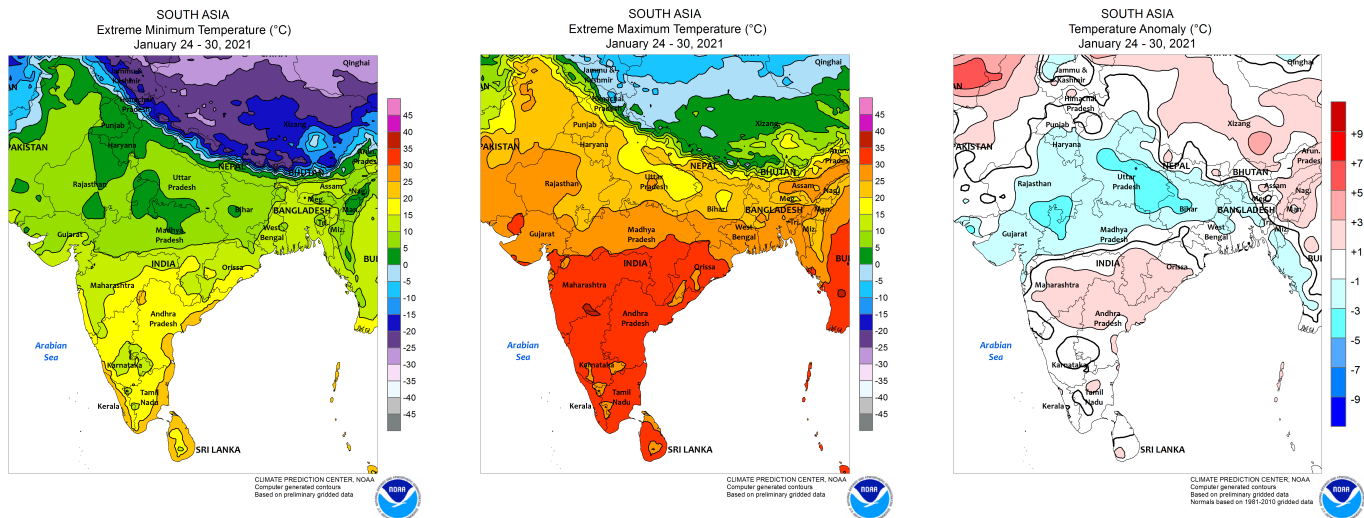
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

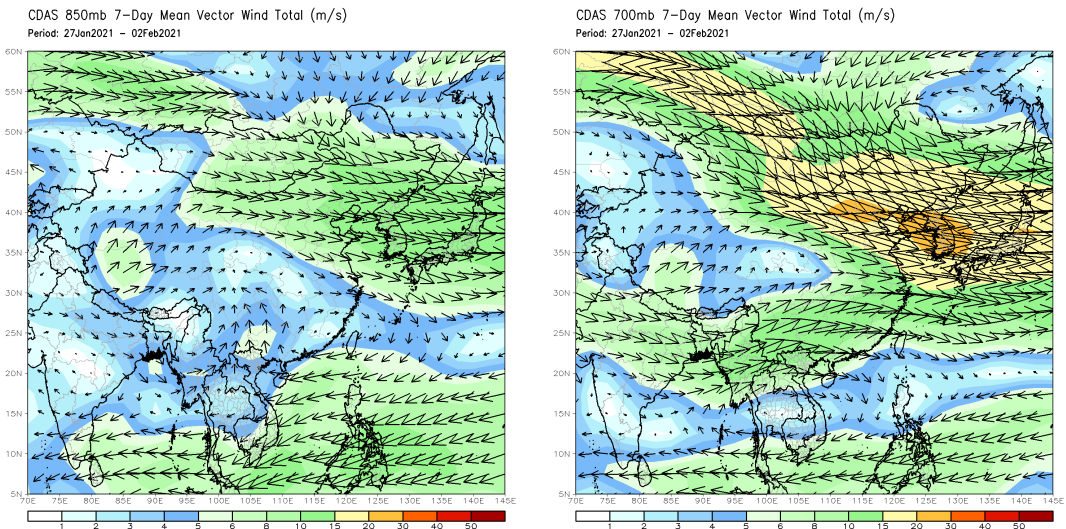


Weekly Temperature Monitoring



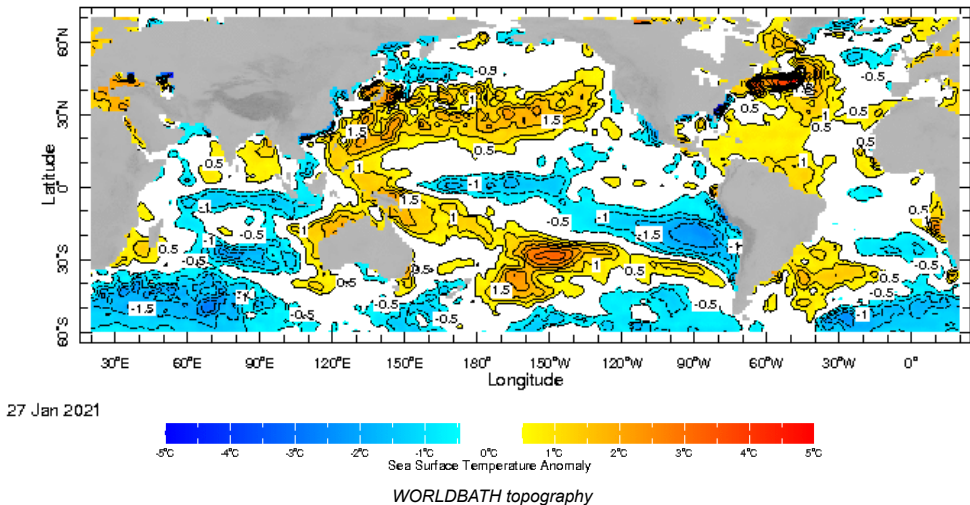
Weekly Wind Monitoring

The following figures show the mean vector wind total of the past 7 days near Sri Lanka at two levels. The figure on the left shows 850 mb (~1500 m) level and the figure on the right shows 700 mb (~3000 m) level.

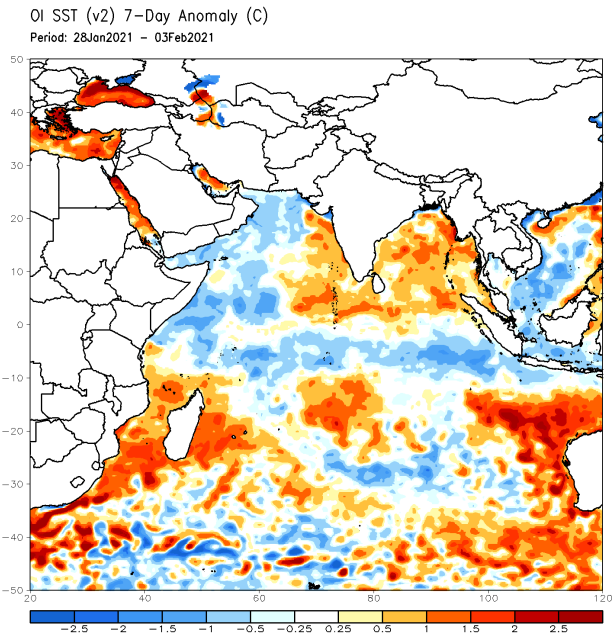


Weekly Average SST Anomalies

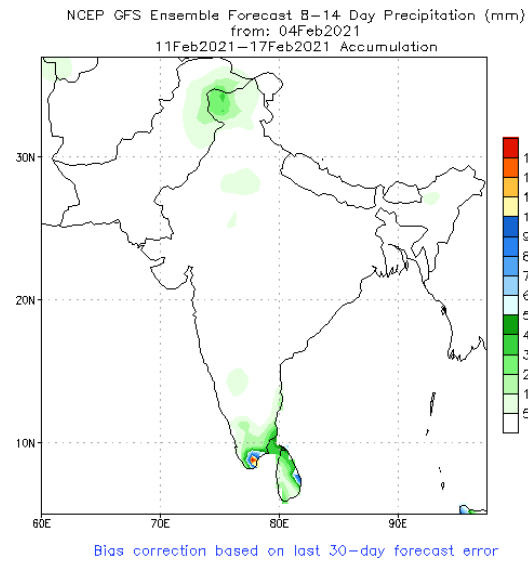
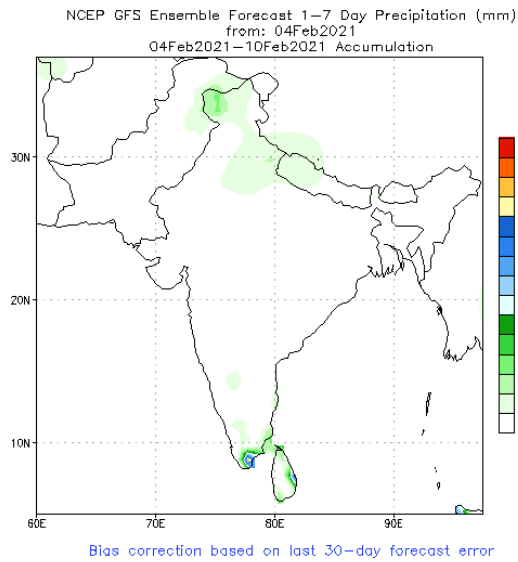
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP



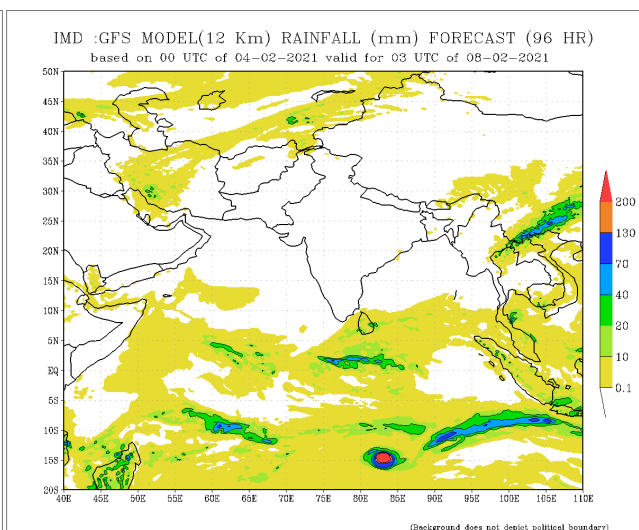
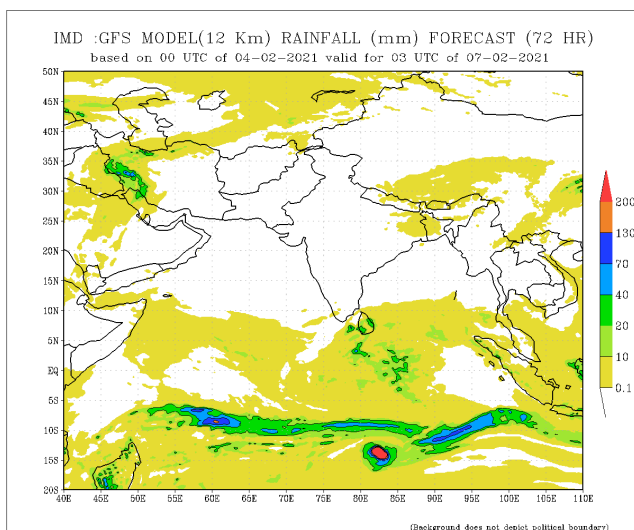
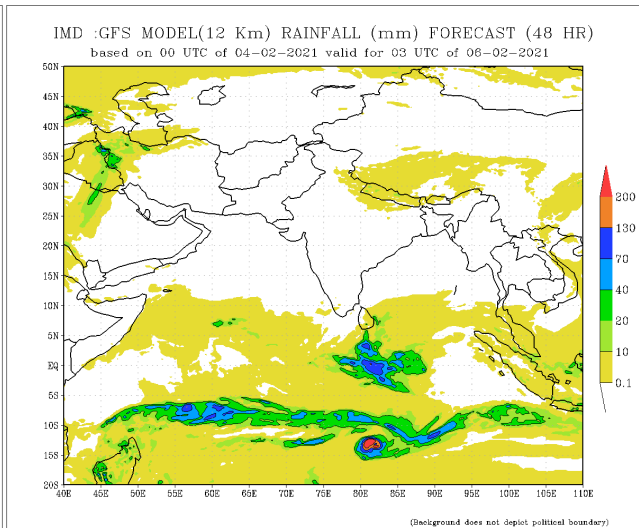
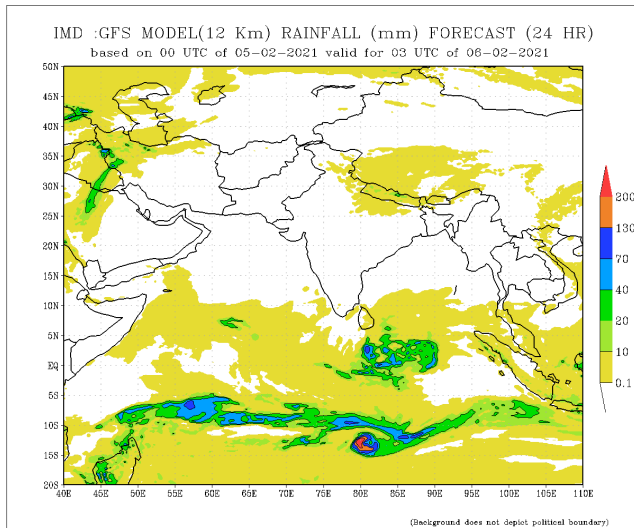
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

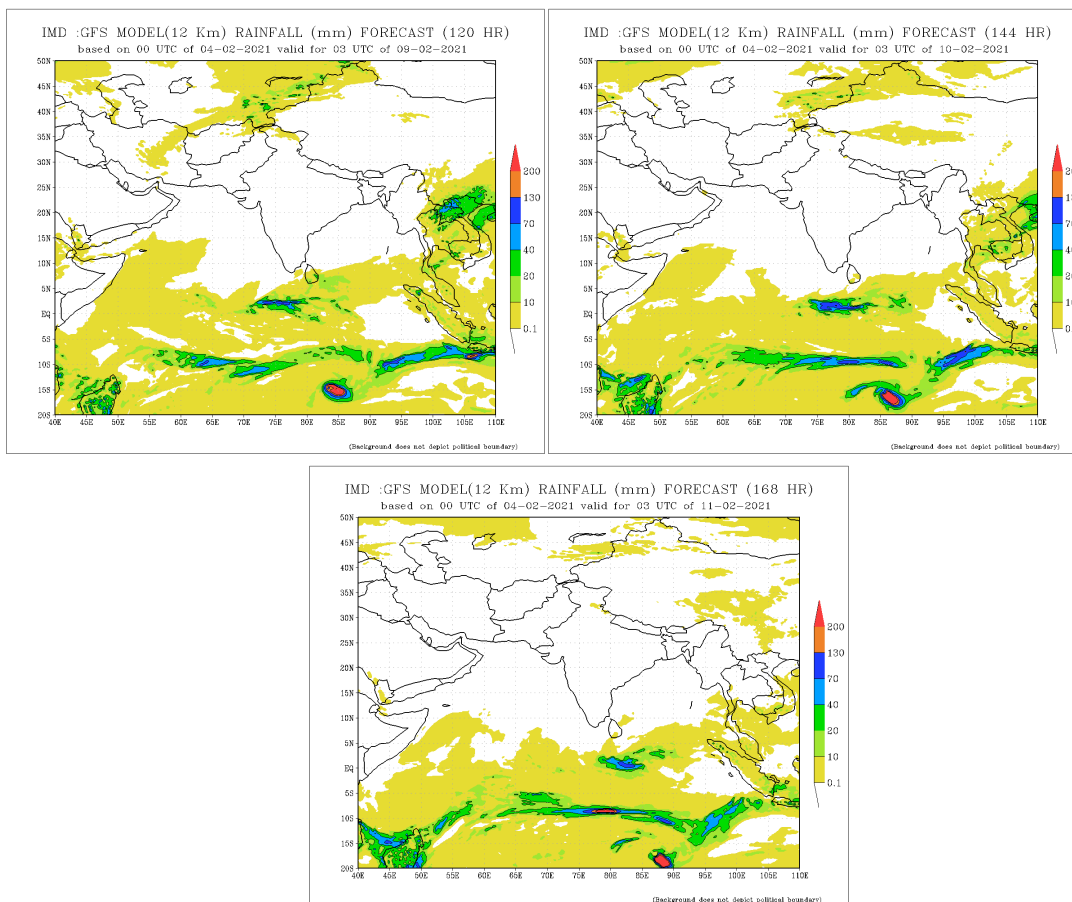


NCEP GFS 1- 14 Day prediction



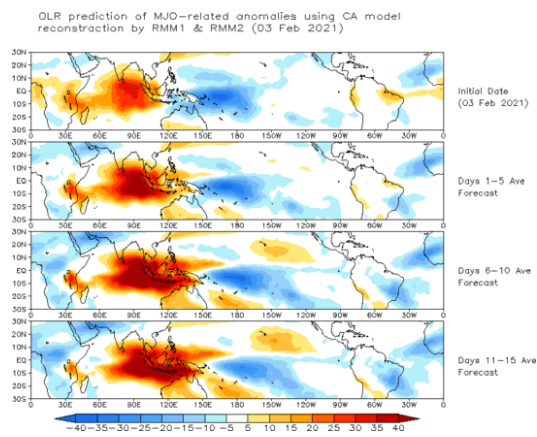
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India





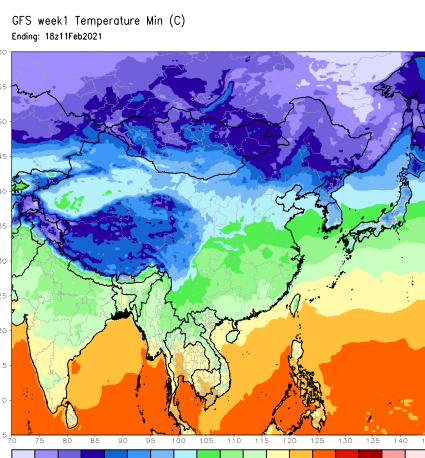
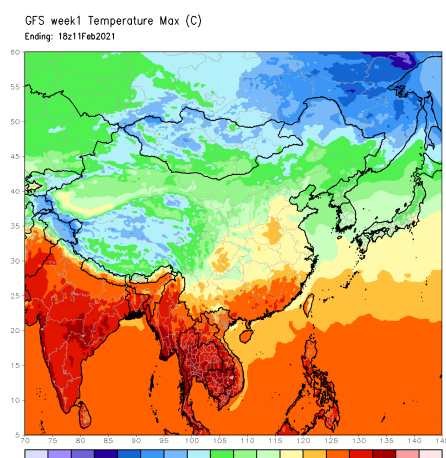
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated anomalous OLR for the next 15 days from the Constructed Analogue (CA) model forecasts.



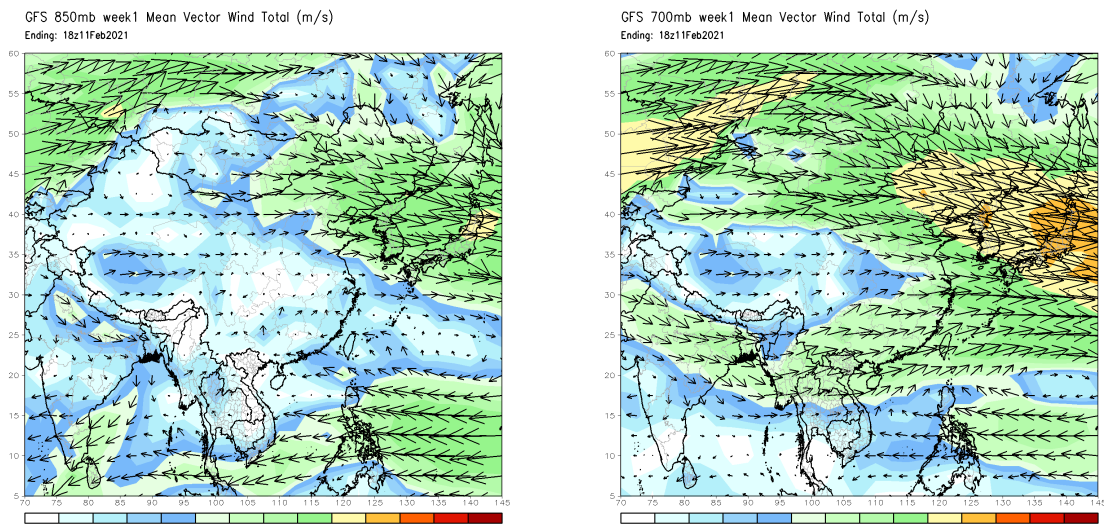
Weekly Temperature Forecast

Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)



Weekly Wind Forecast

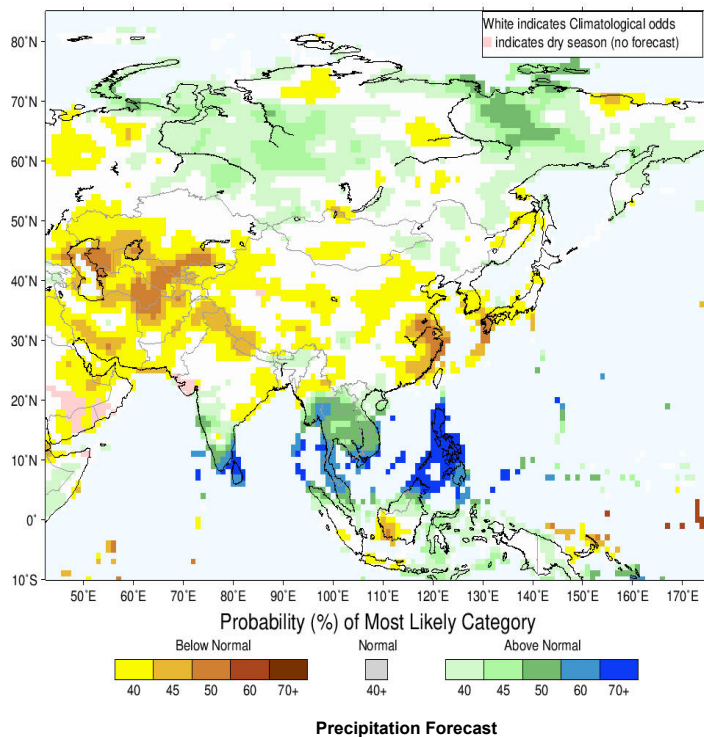
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



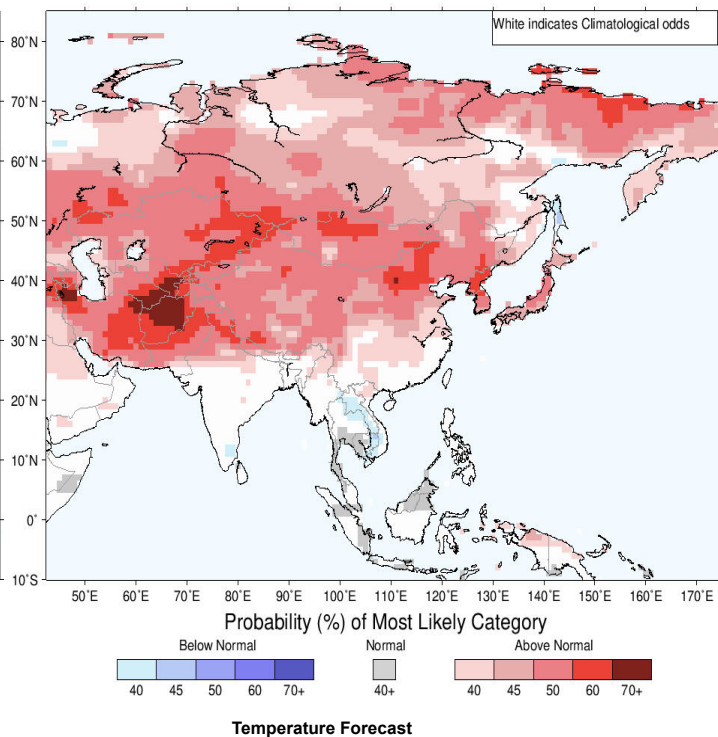
Seasonal Rainfall and Temperature Forecast

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%).

IRI Multi-Model Probability Forecast for Precipitation for February–March–April 2021, Issued January 2021



IRI Multi-Model Probability Forecast for Temperature for February–March–April 2021, Issued January 2021



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