

21 APRIL
2023

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction



Fairly heavy rainfall is predicted for the Sabaragamuwa, Southern, Western, Central and North Western provinces and less rainfall is expected for rest of the country during 20th Apr - 26th Apr.

Monitored Rainfalls



During the last week, average daily rainfall over Sri Lanka was 2.0 mm and hydro catchment areas received 4.3 mm.

Monitored & Predicted Wind



- From 11th - 17th Apr, up to 5 m/s of Easterly winds were experienced at 850 mb level over the island.
- During 21st Apr - 27th Apr, up to 3 m/s of South Easterly winds are expected for the country.

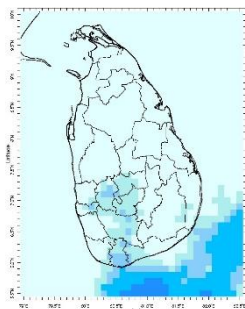
Monitored Sea & Land Temp



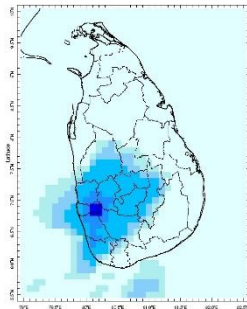
- Sea surface temperature was about one degree above the seasonal norm.
- The maximum land surface across Sri Lanka ranged from 30 - 35°C with a drop in the hills.

Monitoring
Rainfall

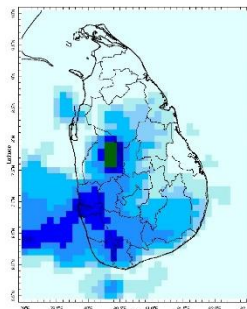
Daily Estimates for Rainfall from 12th April – 19th April 2023



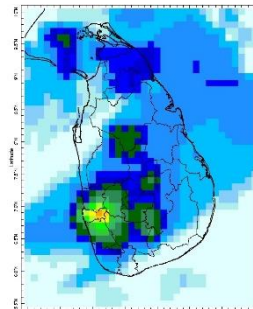
12 April



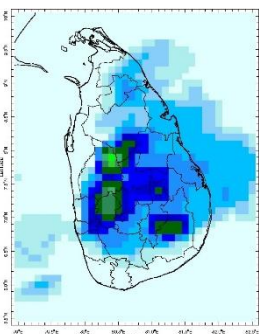
13 April



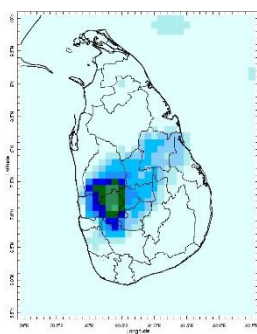
14 April



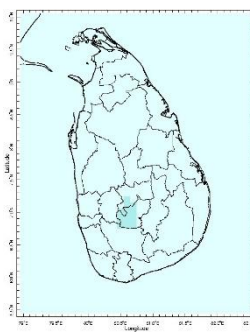
15 April



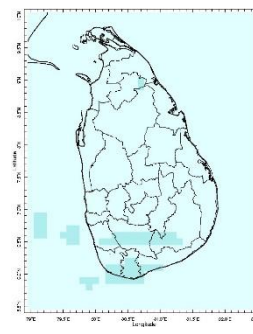
16 April



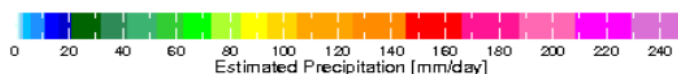
17 April



18 April



19 April



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Ocean State *(Text Courtesy IRI)*

Pacific sea state: April 17, 2023

Equatorial sea surface temperatures (SSTs) are near-to-above average across most of the Pacific Ocean mid-April. The tropical Pacific atmosphere is consistent with ENSO-neutral conditions. A large majority of the models indicate ENSO-neutral conditions are expected to continue through the Northern Hemisphere spring, followed by a 62% chance of El Niño developing during May-July 2023.

Indian Ocean State

Sea surface temperature around Sri Lanka was near normal to the country in 21st – 27th March, 2023. Across the Indian Ocean, a classical negative Indian Ocean Dipole prevails as is typical during a La Niña.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 20th April – 26th April:

Total rainfall by Provinces:

Rainfall	Provinces
65 mm	Southern, Sabaragamuwa, Western
55 mm	Central, North Western
45 mm	North Central
35 mm	Uva
≤ 25 mm	Northern, Eastern

From 27th April – 3rd May:

Total rainfall by Provinces:

Rainfall	Provinces
85 mm	Sabaragamuwa
75 mm	Western, Southern
65 mm	North Western
55 mm	North Central, Central
45 mm	Uva
35 mm	Northern, Eastern

MJO based OLR predictions

For the next 15 days:

MJO shall slightly suppress the rainfall during 20th – 24th April, and slightly enhance the rainfall during 25th April – 4th May for Sri Lanka.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been fairly heavy rainfall over the following area:
Bandarawela

Daily Average Rainfall in the Met stations for previous week of (12th April – 19th April) = 2.0 mm

Maximum Daily Rainfall: 71.5 mm & Minimum Daily Rainfall: 0.0 mm.

Region	Average rainfall for the Last 8 days
Northern Plains	1.6 mm
Eastern	1.8 mm
Western	2.9 mm
Southern Plains	0.0 mm

The Hydro Catchment Areas recorded 4.3 mm of average rainfall for the last week.

Maximum Daily Rainfall: 64.0 mm & Minimum Daily Rainfall: 0.0 mm.

Wind: Easterly winds prevailed in the sea area and around the island last week.

Temperatures: The temperature anomalies were above normal for some parts of the Sabaragamuwa province and near normal for rest of the country driven by the warm SST's.

Predictions

Rainfall: During the next week (20th April – 26th April), fairly heavy rainfall (≥ 55 mm) is predicted for the Southern, Sabaragamuwa, Western, Central, and North Western provinces, and less rainfall is expected for rest of the country.

Temperatures: The temperature will remain above normal for some parts of the Northern, North Western, North Central, Uva, Eastern, and Southern provinces during 21st April – 27th April.

Teleconnections: ENSO-neutral conditions are expected to continue through the Northern Hemisphere spring, followed by a 62% chance of El Nino developing during May-July 2023.

MJO shall slightly suppress the rainfall during 20th – 24th April, and slightly enhance the rainfall during 25th April – 4th May for Sri Lanka.

Seasonal Precipitation: The precipitation forecast for the May-June-July, 2023 season shows near normal precipitation for the country.

Terminology for Rainfall Ranges

	Rainfall (During 24 hours of period)
Light Showers	Less than 12.5 mm
Light to Moderate	Between 12.5 mm and 25 mm
Moderate	Between 25 mm and 50 mm
Fairly Heavy	Between 50 mm and 100 mm
Heavy	Between 100 mm and 150 mm
Very Heavy	More than 150 mm

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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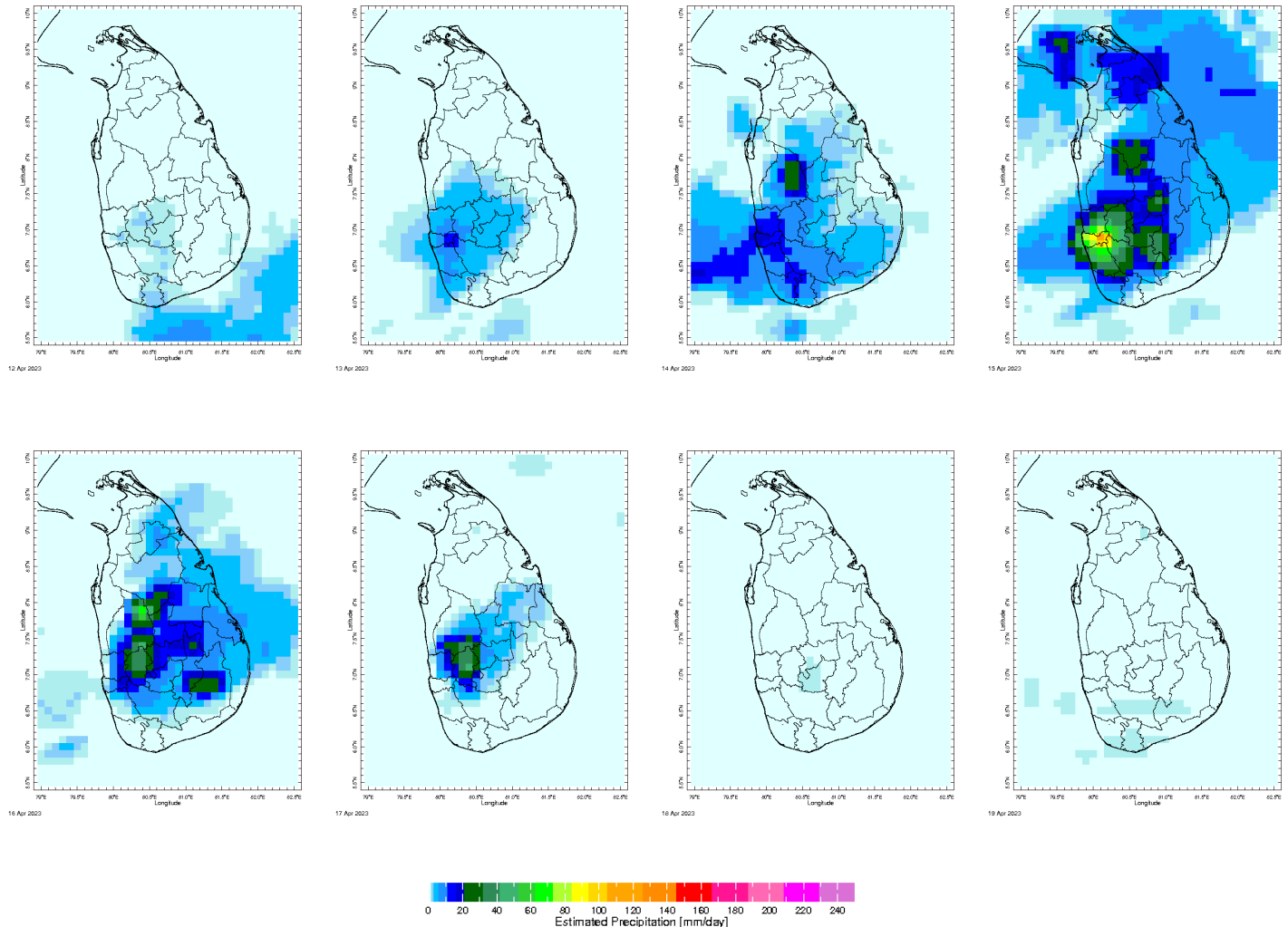
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MONITORING

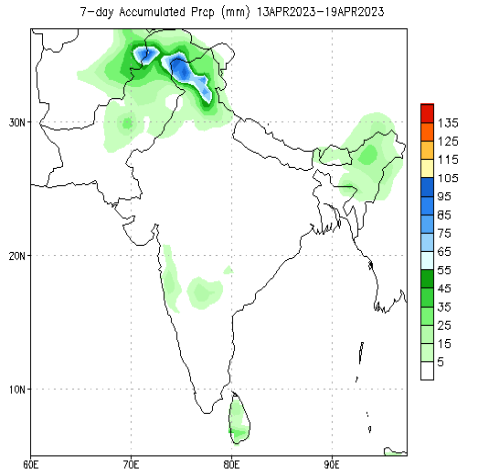
Daily Rainfall Monitoring

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

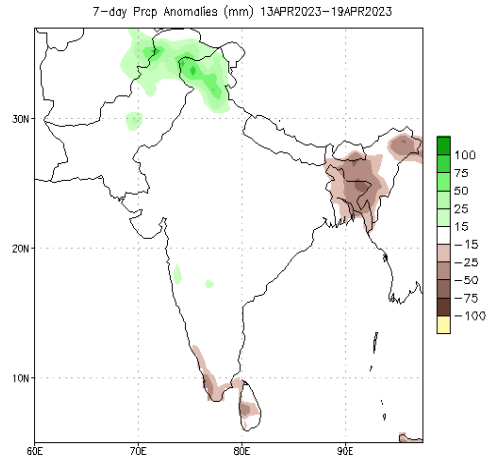


Weekly Rainfall Monitoring

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.



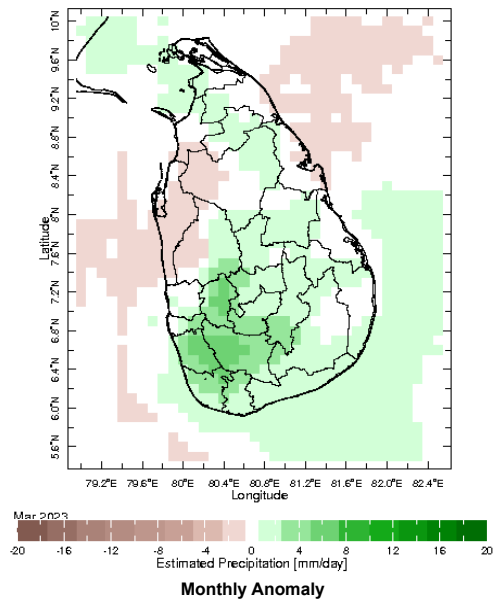
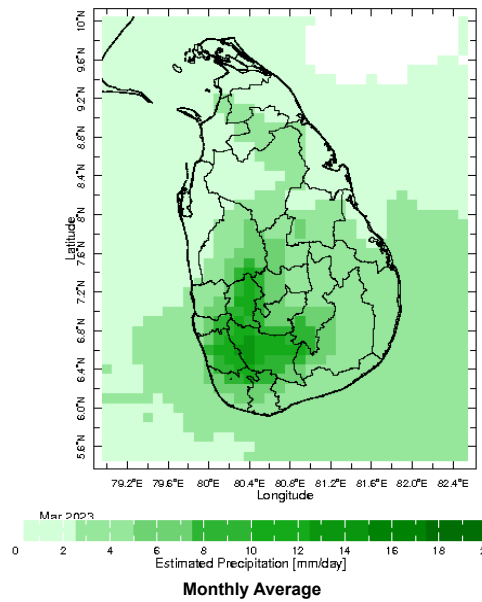
Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis



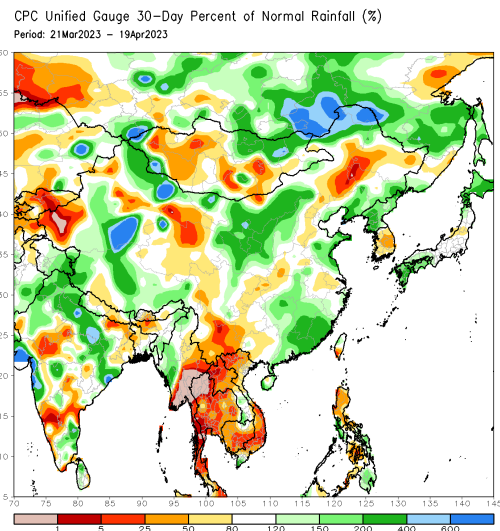
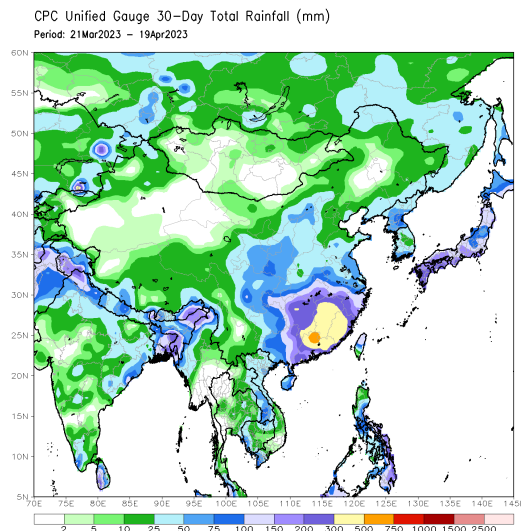
Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis
Climatology (1991–2020)

Monthly Rainfall Monitoring

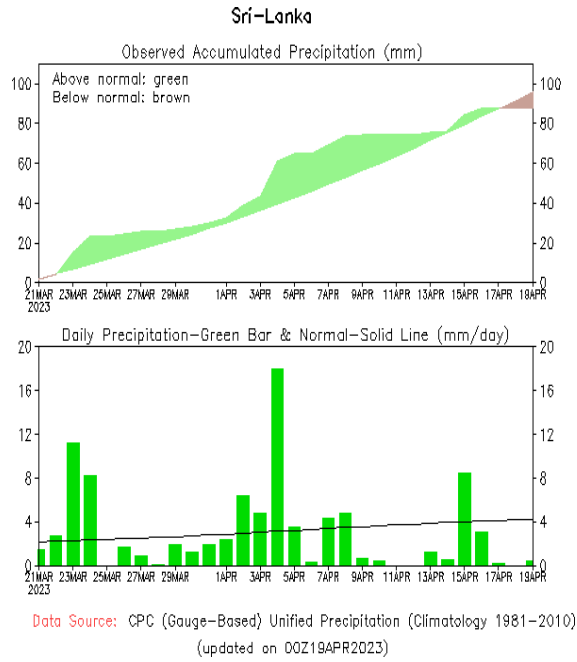
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



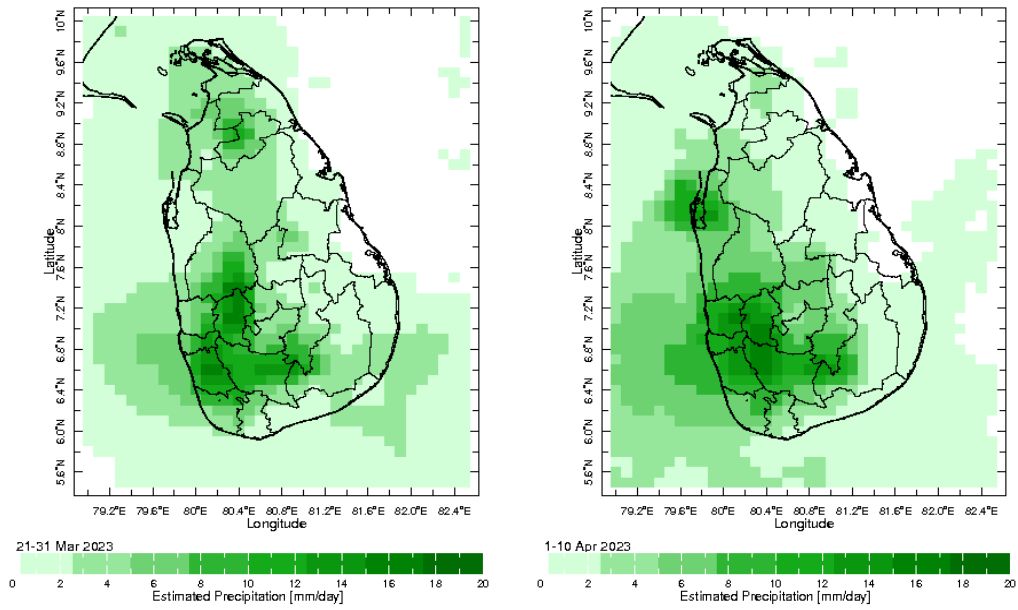
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



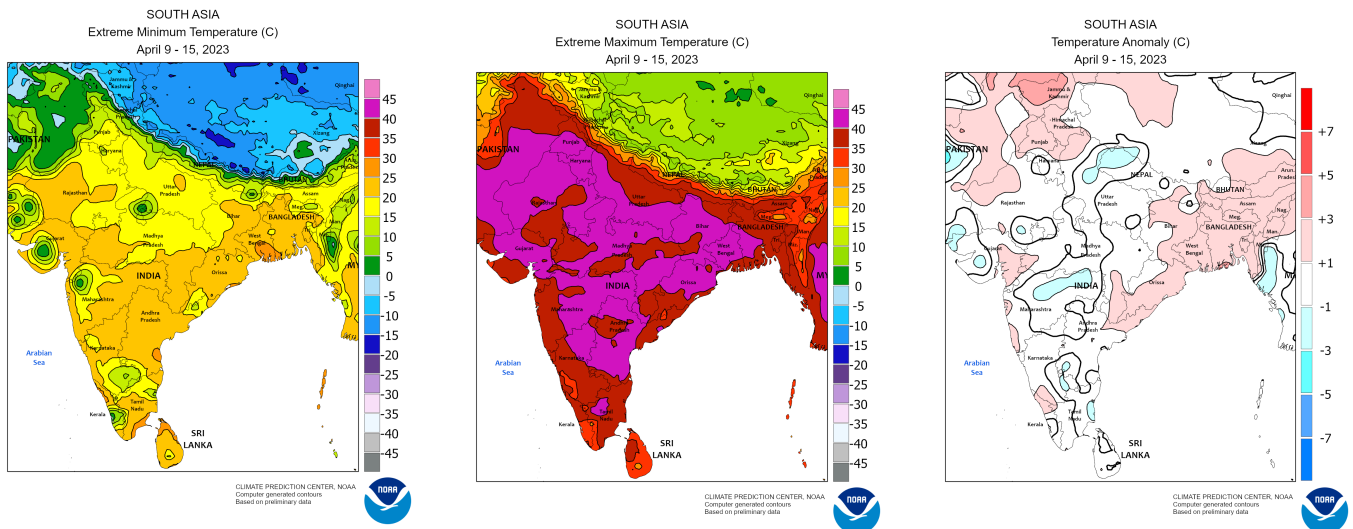
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

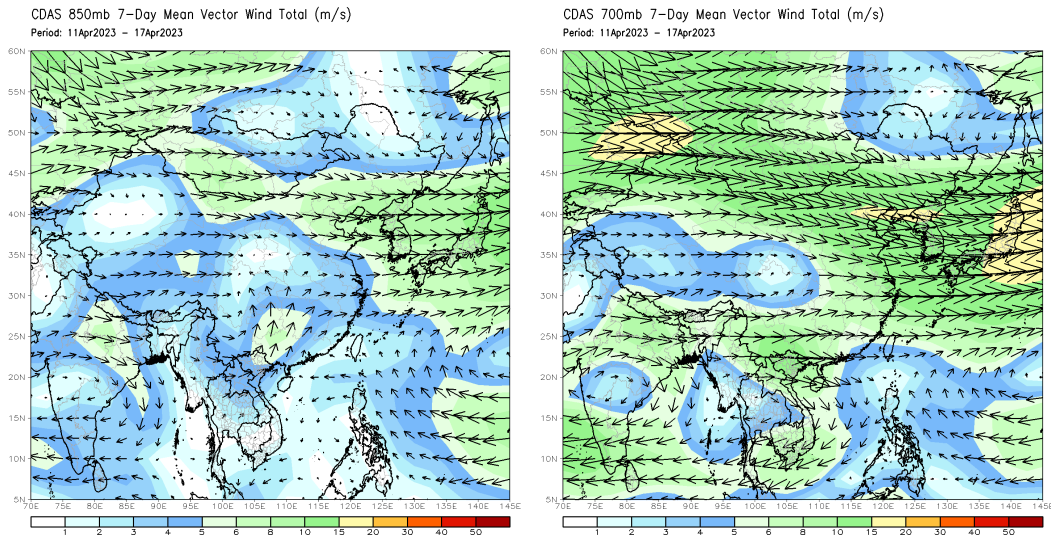


Weekly Temperature Monitoring



Weekly Wind Monitoring

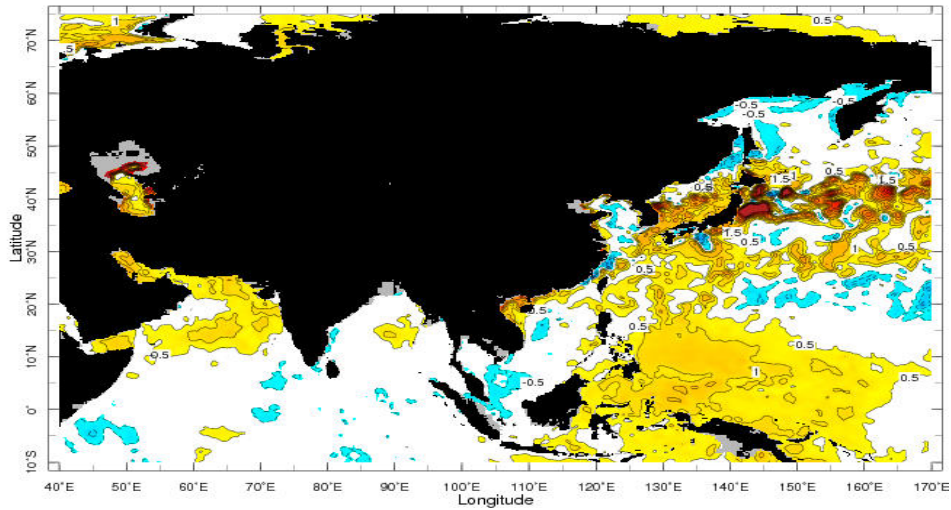
The following figures show the mean vector wind total of the past 7 days near Sri Lanka at two levels. The figure on the left shows 850 mb (~1500 m) level and the figure on the right shows 700 mb (~3000 m) level.



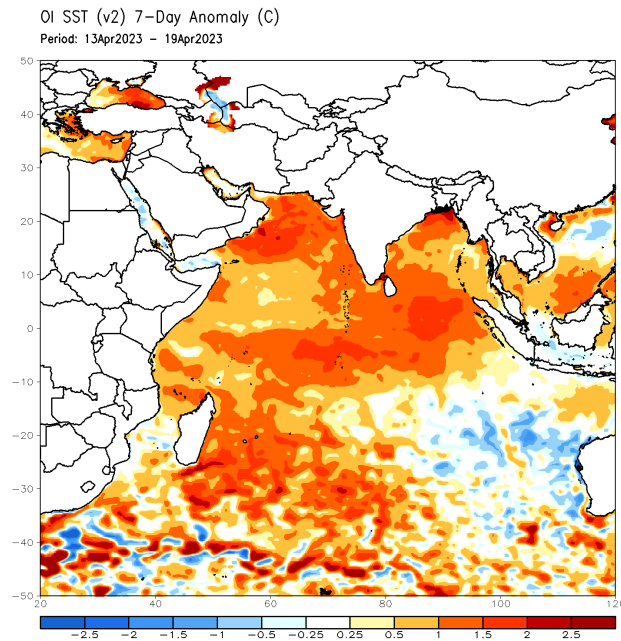
Weekly SST Anomalies

Weekly Sea Surface Temperature (SST) anomaly in the world from IRI

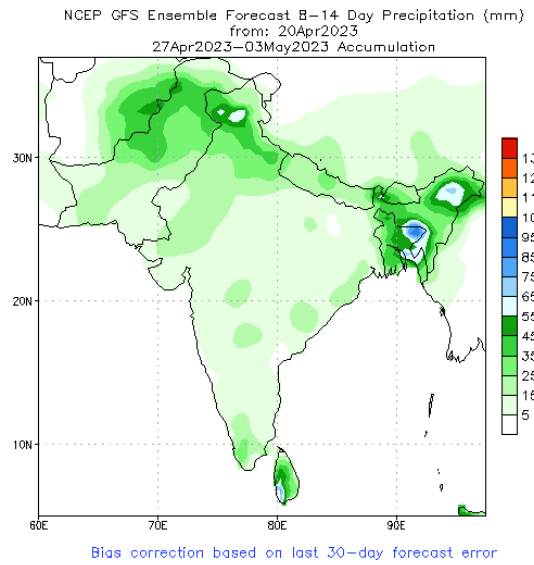
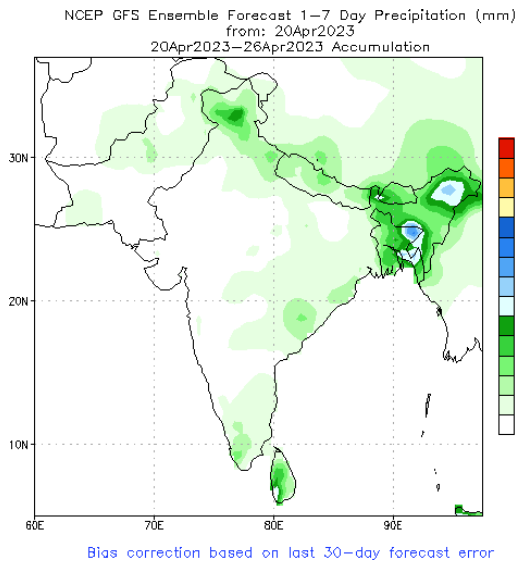
zlev 0.0 meters Time 21-27 Mar 2023



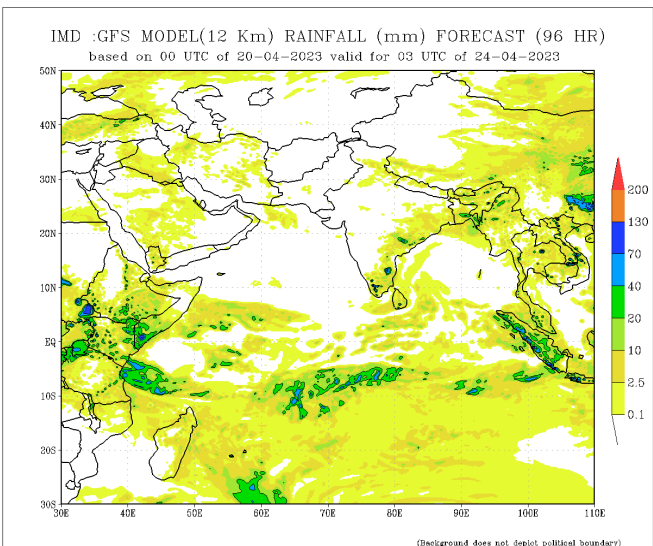
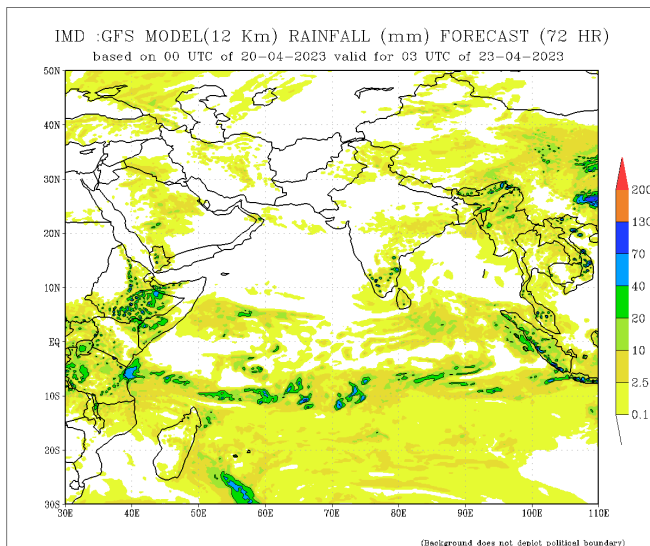
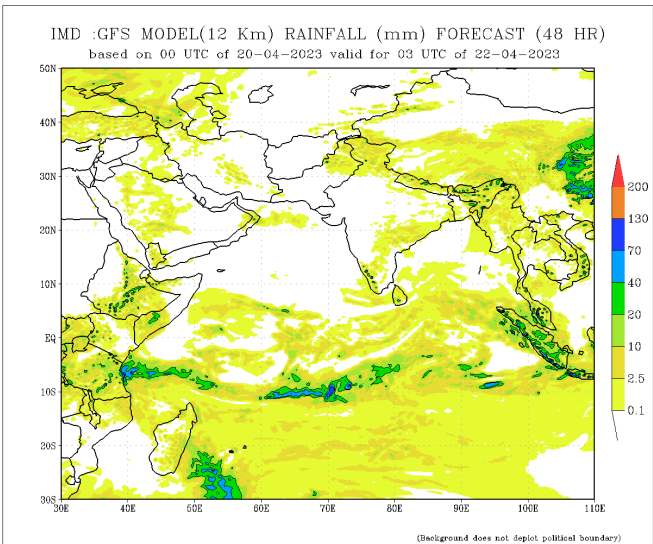
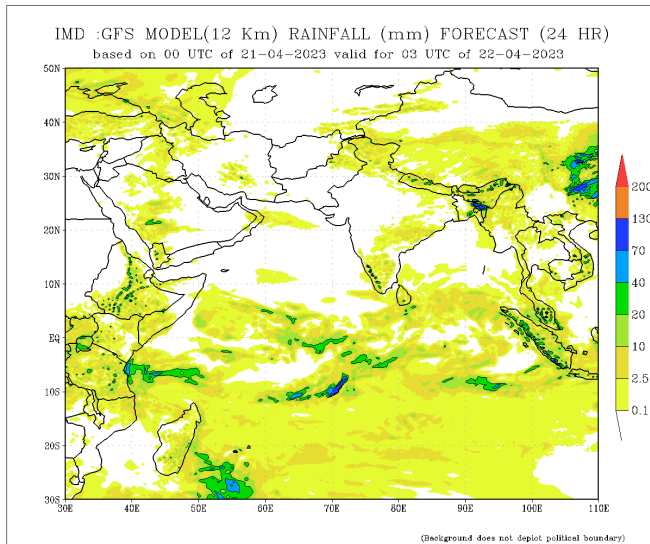
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

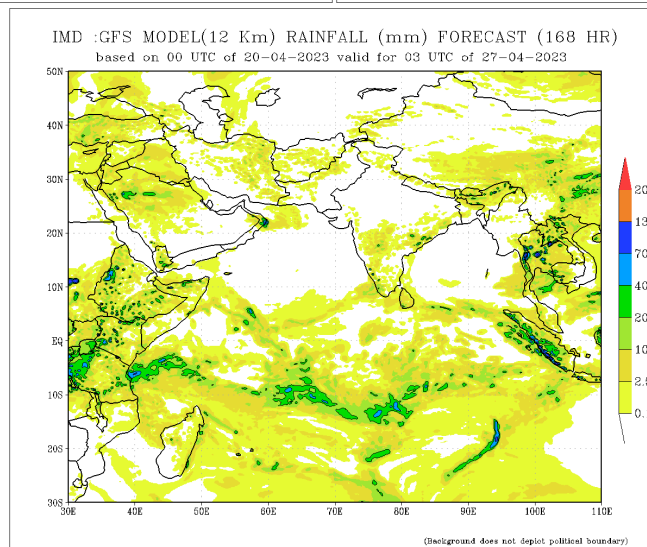
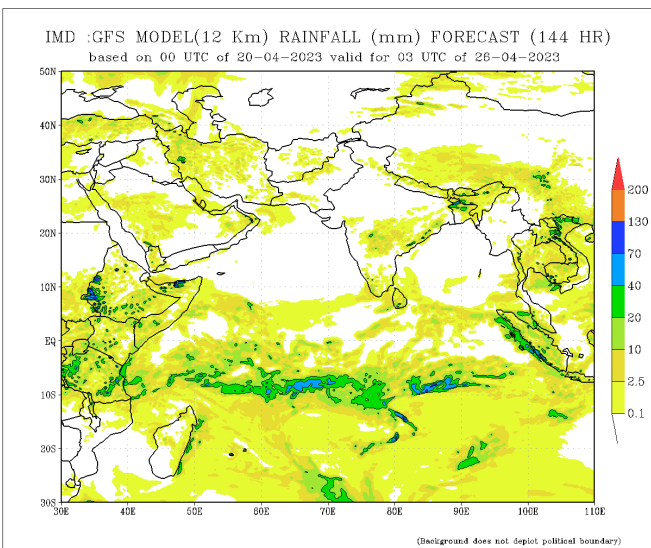
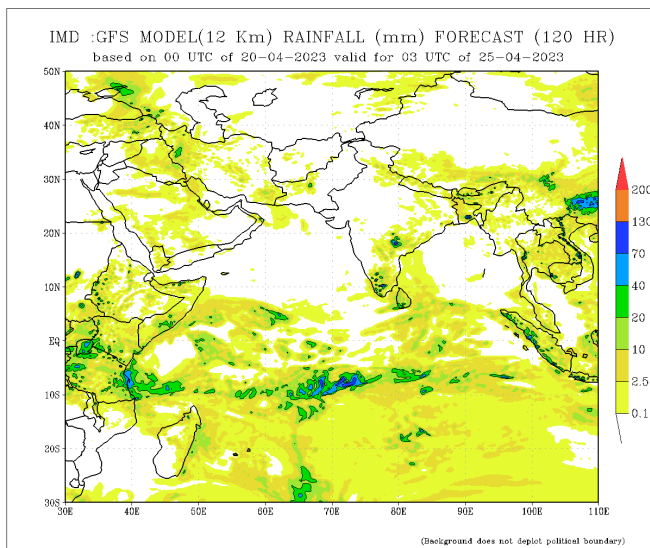


NCEP GFS 1- 14 Day prediction



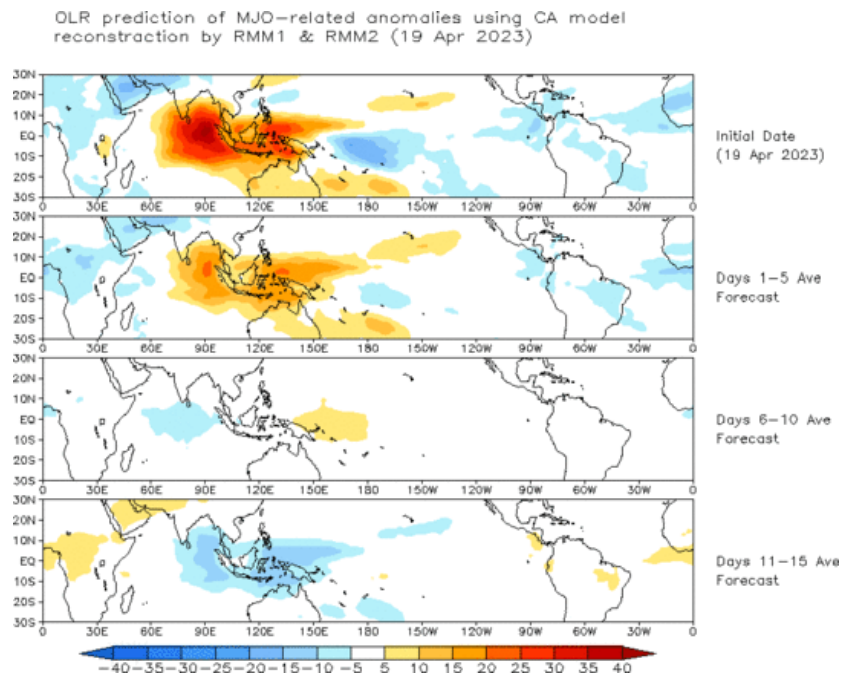
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India





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.

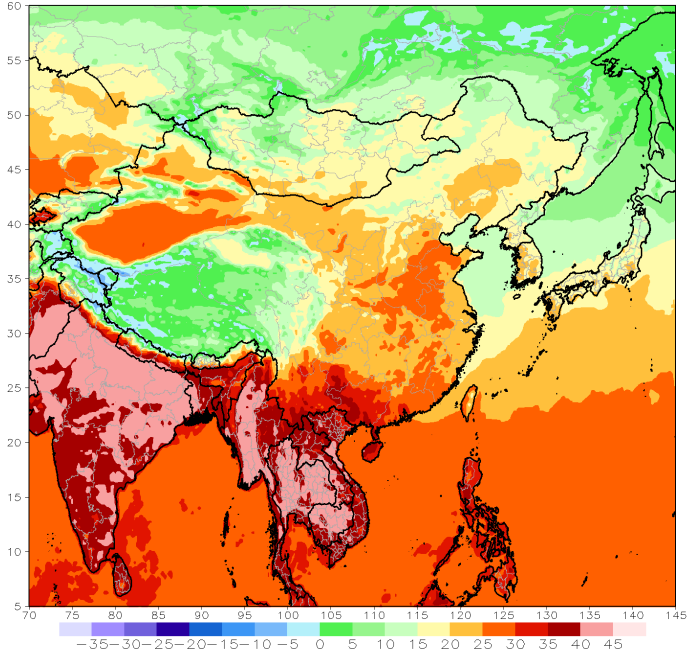


Weekly Temperature Forecast

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

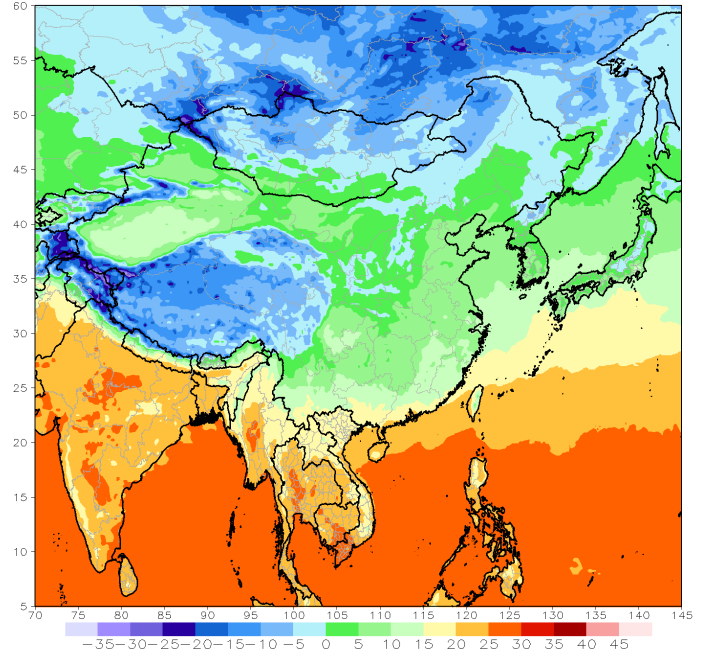
GFS week1 Temperature Max (C)

Period: 18z21Apr2023 - 18z27Apr2023



GFS week1 Temperature Min (C)

Period: 18z21Apr2023 - 18z27Apr2023

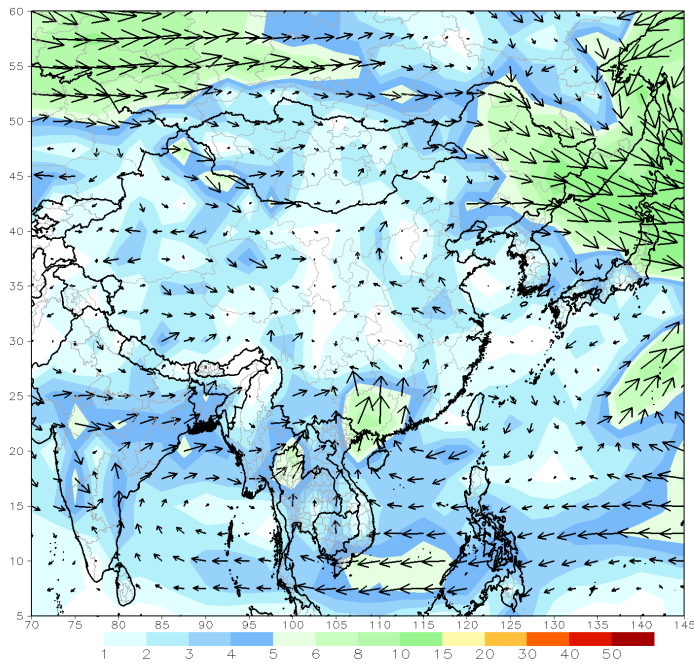


Weekly Wind Forecast

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

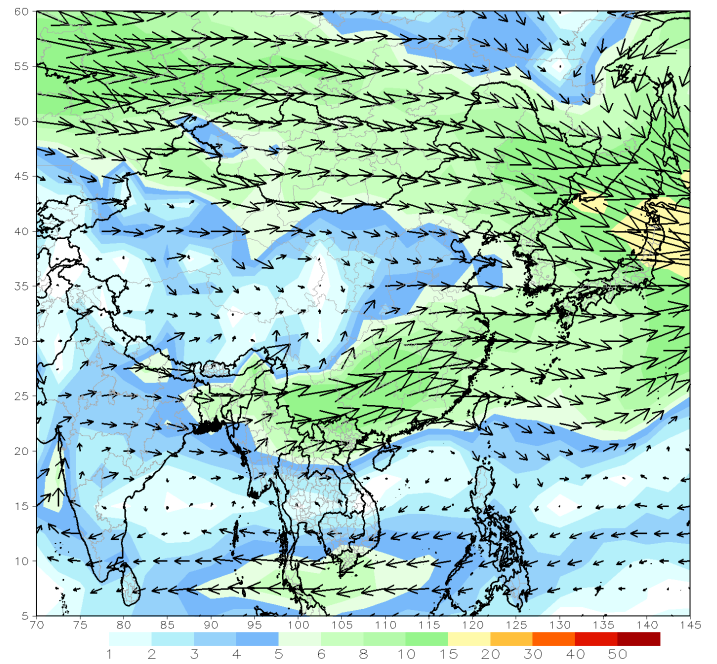
GFS 850mb week1 Mean Vector Wind Total (m/s)

Period: 18z21Apr2023 - 18z27Apr2023



GFS 700mb week1 Mean Vector Wind Total (m/s)

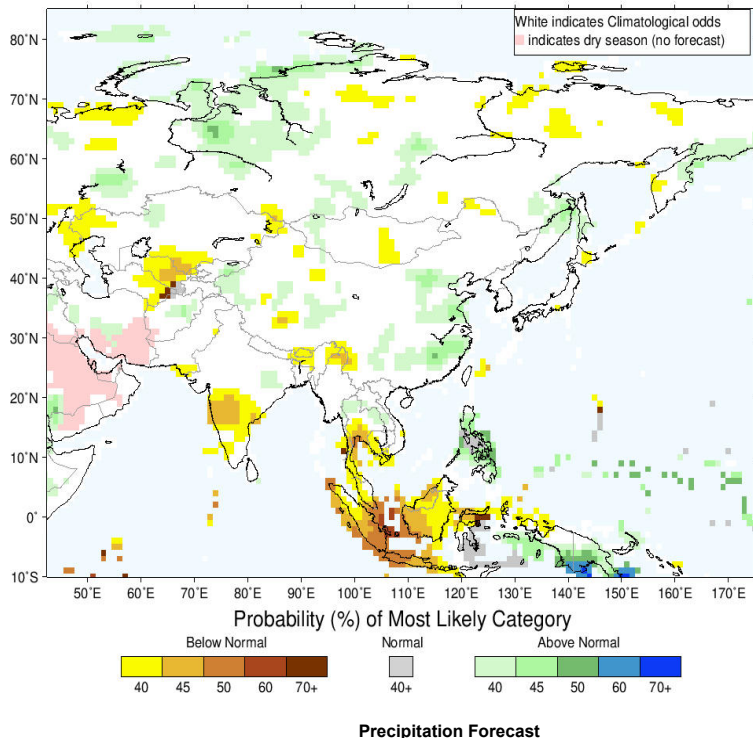
Period: 18z21Apr2023 - 18z27Apr2023



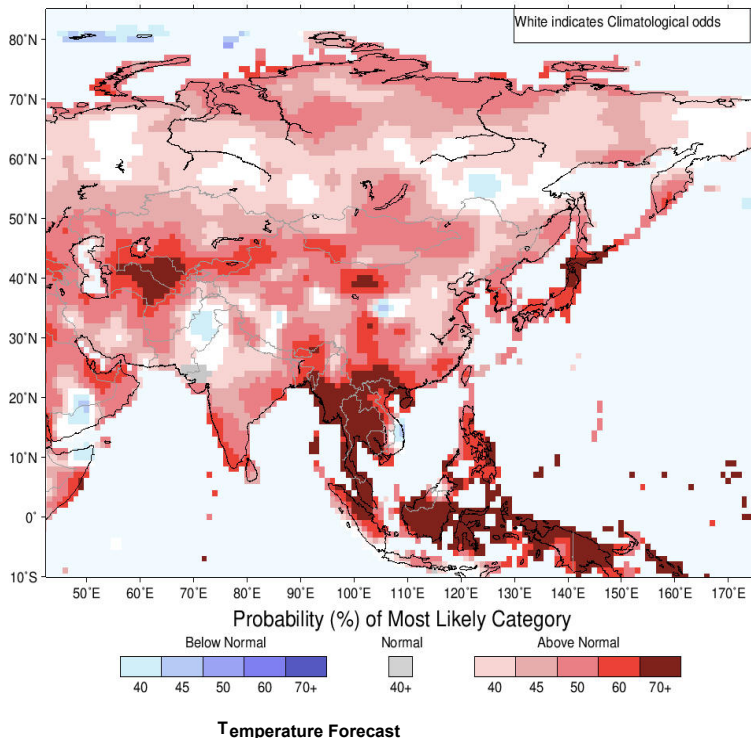
Seasonal Rainfall and Temperature Forecast

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 May-June-July 2023, Issued April 2023



IRI Multi-Model Probability Forecast for Temperature for May-June-July 2023, Issued April 2023



About us

FECT is a federation of 7 organizations registered in four countries which works in countries across the Indian Ocean Islands and its littoral. Over the last 20 years, we have had operations in Africa, South Asia, South-East Asia but now it is mostly in the Indian Ocean Islands.

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