HIGHLIGHTS

Rainfall Prediction

- *High probability of heavy rainfall (100 - 130 mm) is predicted for Sabaragamuwa, Uva, Western provinces and fairly heavy rainfall is predicted for Southern, Central provinces during 16 - 22 Nov.*

Monitored Rainfalls

- *During the last week, average daily rainfall over Sri Lanka was 16.7 mm and hydro catchment was 16.6 mm.*
- *Extreme rainfall (≥ 150 mm/day) was in Ampara and Badulla.*
- *The rainfall of last week was twice as normal.*

Monitored & Predicted Wind

- *From 6 - 12 Nov, up to 4 m/s of north easterly winds were at 850 mb (1.5 km).*
- *During 16 - 22 Nov, up to 4 m/s of north westerly winds are expected at 850 mb (1.5 km).*
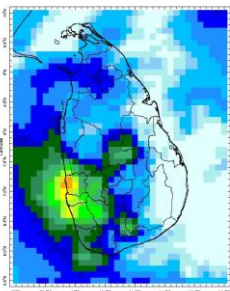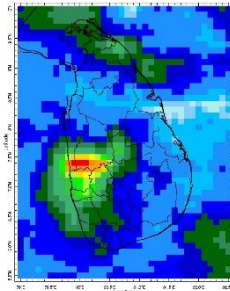
Monitored Sea & Land Temp

- *Sea surface temperature around Sri Lanka was 0.5 - 1.5°C above normal.*
- *From 8 - 15 Nov, maximum daily temperature was recorded in Ratnapura (34.1°C) and Puttalam (33.7°C).*
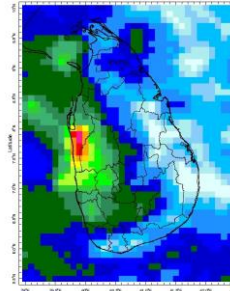
Monitoring

Rainfall

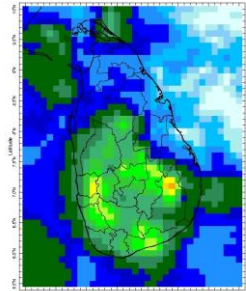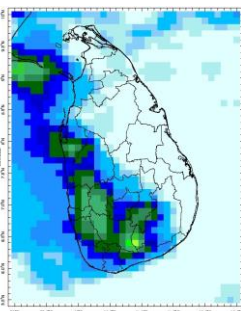*Daily Estimates for Rainfall from 6th November - 13th November 2023*
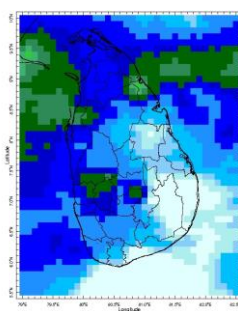

6 November

7 November
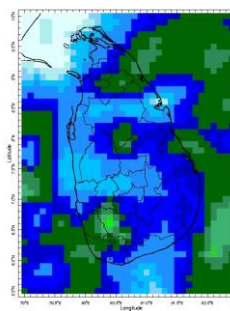
8 November

9 November

10 November

11 November

12 November

13 November

Estimated Precipitation [mm/day]

0   20   40   60   80   100   120   140   160   180   200   220   240

Federation for Environment, Climate and Technology

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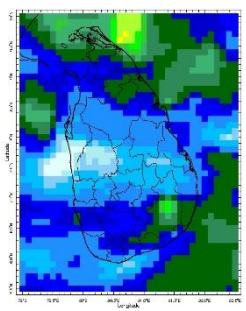
Federation for Environment, Climate & Technology

Ocean State *(Text Courtesy IRI)*

Pacific sea state: November 13, 2023

El Nino Mode has set in according to NOAA since 8th of June. Equatorial sea surface temperatures (SSTs) are above average across the central and eastern Pacific Ocean mid-November. El Niño is anticipated to continue through the Northern Hemisphere spring (with a 62% chance during April-June 2024).

Indian Ocean State

Sea surface temperature around Sri Lanka was 0.5 °C above normal to the Western, Southern, and Northern half of the country in 24th - 30th October, 2023. A positive Dipole Mode has set in across the Indian Ocean since 8th of June.

Predictions

Rainfall

1 - 7 Day prediction: IMD GFS models
From 16th November - 22nd November:

Total rainfall by Provinces:

Rainfall (mm)	Provinces
70 - 130	Sabaragamuwa, Uva, Western
40 - 70	Southern, Central
20 - 40	Eastern, North Central, North Western
≤ 20	Northern

MJO based OLR predictions

For the next 15 days:

MJO shall slightly suppress the rainfall during 15th - 19th November, slightly enhance the rainfall during 20th - 24th November, and moderately enhance the rainfall during 25th - 29th November for Sri Lanka.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been very heavy rainfall over the following areas: Ampara, Badulla

Daily Average Rainfall in the Met stations for previous week of (8th November - 15th November) = 16.7 mm

Maximum Daily Rainfall: 131.5 mm & Minimum Daily Rainfall: 0.0 mm.

Region	Average rainfall for last 8 days (mm)	Average temperature for last 8 days (°C)	
		Maximum	Minimum
Northern plains	18.8	29.7	24.2
Eastern hills	10.2	26.0	18.5

Eastern plains	18.3	31.1	24.3
Western hills	13.6	28.1	19.4
Western plains	16.7	31.1	24.4
Southern plains	19.8	30.6	22.7

Region	Average rainfall for last 8 days (mm)	Daily maximum rainfall for last 8 days (mm)	Daily minimum rainfall for last 8 days (mm)
Hydro catchment	16.6	77.0	0.0

Wind: North 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, Central, and Western provinces of the country driven by the warm SST's.

Predictions

Rainfall: During the next week (16th November - 22nd November), heavy rainfall is predicted for the Sabaragamuwa, Uva, and Western provinces and fairly heavy rainfall is predicted for the Southern and Central provinces and less rainfall is predicted for rest of the country.

Temperatures: The temperature will remain seasonably near normal for the country during 16th November - 22nd November.

Teleconnections: A positive Dipole Mode has set in across the Indian Ocean since 8th of June.

MJO shall slightly suppress the rainfall during 15th - 19th November, slightly enhance the rainfall during 20th - 24th November, and moderately enhance the rainfall during 25th - 29th November for Sri Lanka.

Seasonal Precipitation: The precipitation forecast for the December-January-February, 2024 season shows near normal precipitation.

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

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Weekly Climate Bulletin for Sri Lanka

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   b. Weekly Rainfall Monitoring
   c. Monthly Rainfall Monitoring
   d. Dekadal (10 Day) Satellite Derived Rainfall Estimates
   e. Weekly Temperature Monitoring
   f. Weekly Wind Monitoring
   g. Weekly Average SST Anomalies
2. **Predictions**
   a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
   b. GFS (T574) Model Rainfall Forecast from RMSC New Delhi
   c. MJO Related OLR Forecast
   d. Weekly Temperature Forecast
   e. Weekly Wind Forecast
   f. Seasonal Predictions from IRI

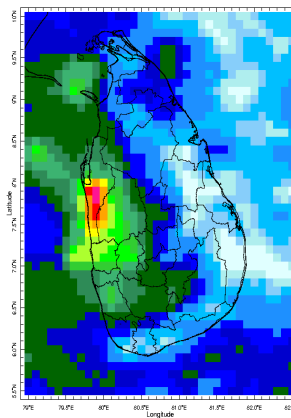
MONITORING

Daily Rainfall Monitoring

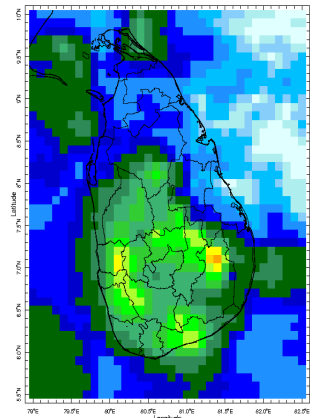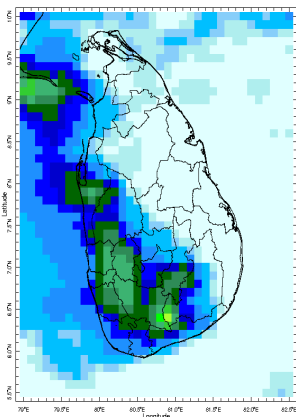**The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.**
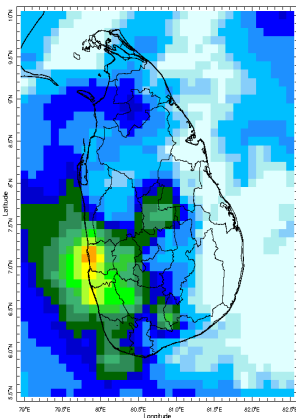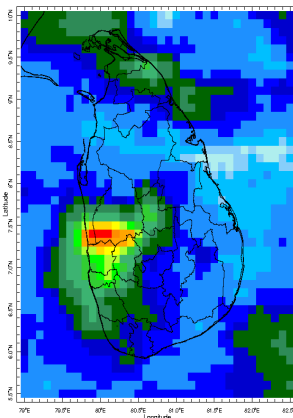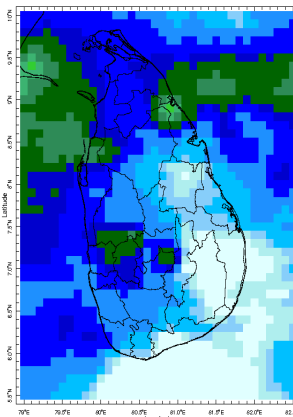
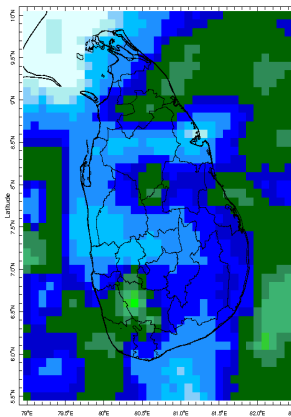6 Nov 2023   7 Nov 2023   8 Nov 2023   9 Nov 2023

10 Nov 2023   11 Nov 2023   12 Nov 2023   13 Nov 2023

Estimated Precipitation [mm/day]
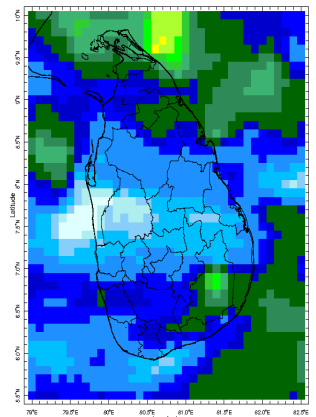
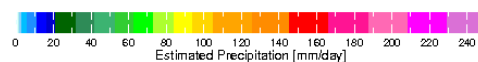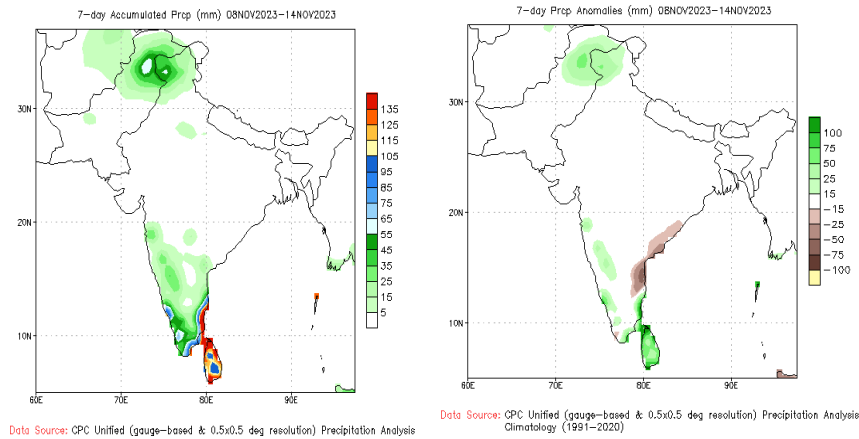## Weekly Rainfall Monitoring

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.


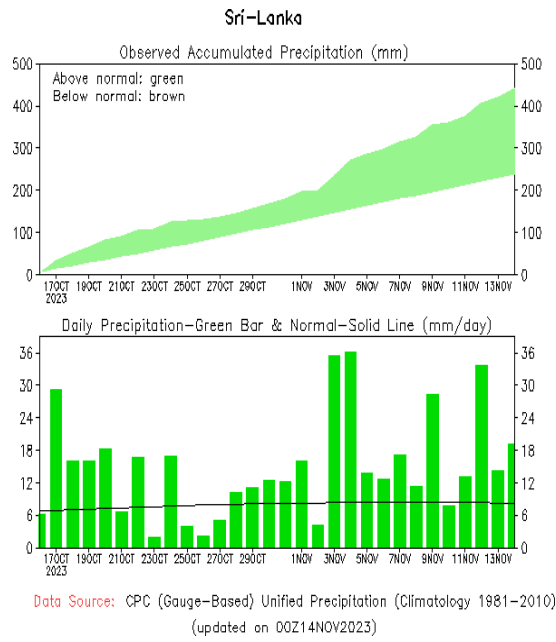## Monthly Rainfall Monitoring

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

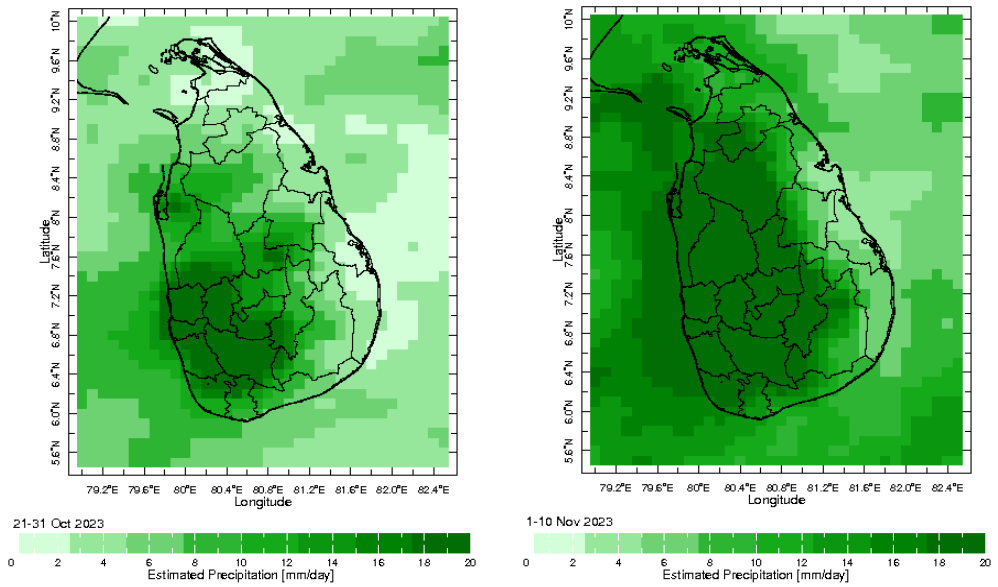**Monthly Average**   **Monthly Anomaly**
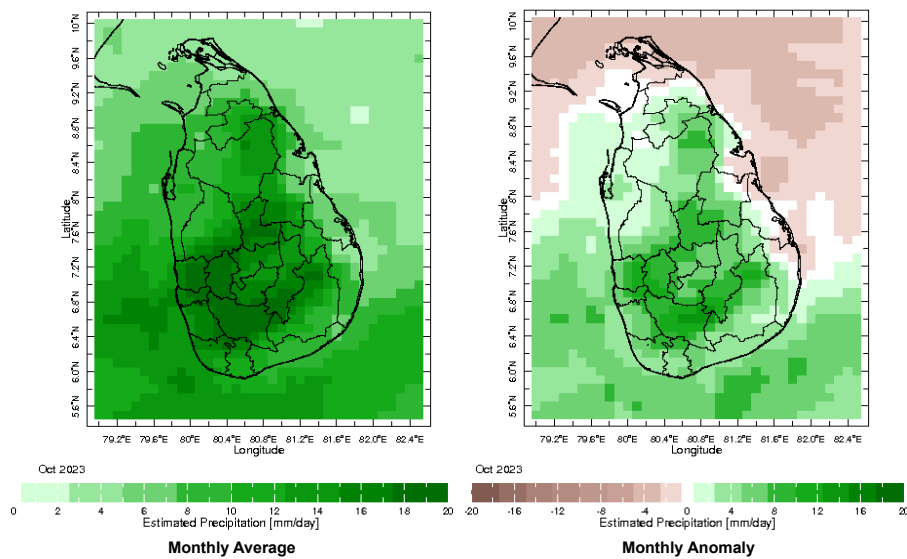
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in the past 30 days compared to normal rainfall in this period.
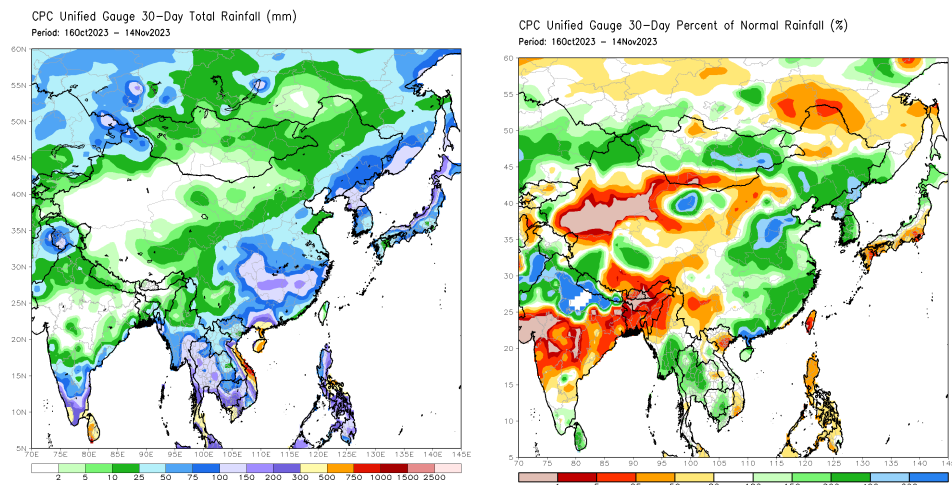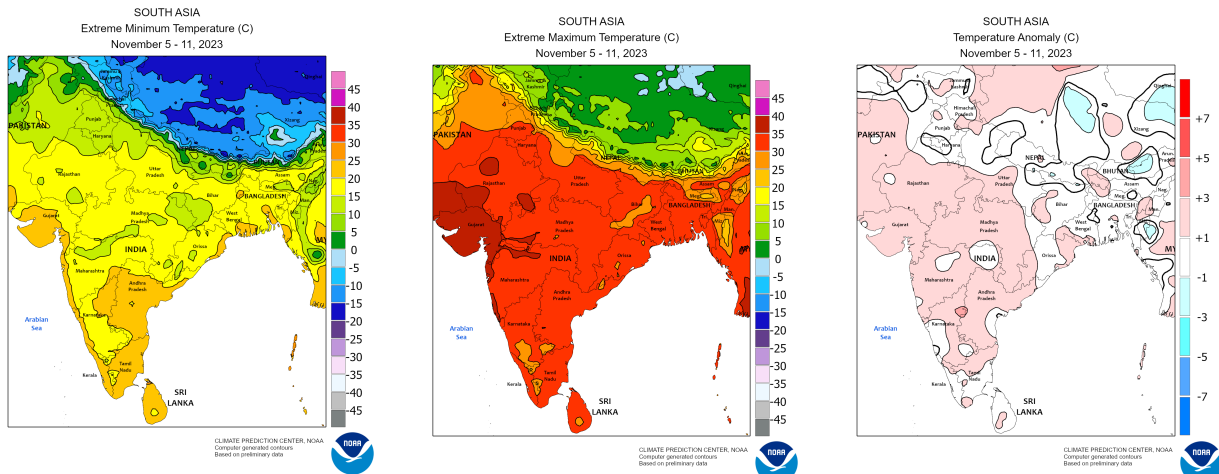
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.

Sri-Lanka

Observed Accumulated Precipitation (mm)

Above normal: green
Below normal: brown

Daily Precipitation—Green Bar & Normal—Solid Line (mm/day)

Data Source: CPC (Gauge-Based) Unified Precipitation (Climatology 1981-2010)
(updated on 00Z14NOV2023)

Dekadal (10 Day) Satellite Derived Rainfall Estimates

21-31 Oct 2023

1-10 Nov 2023

Weekly Temperature Monitoring

SOUTH ASIA
Extreme Minimum Temperature (C)
November 5 - 11, 2023

SOUTH ASIA
Extreme Maximum Temperature (C)
November 5 - 11, 2023

SOUTH ASIA
Temperature Anomaly (C)
November 5 - 11, 2023

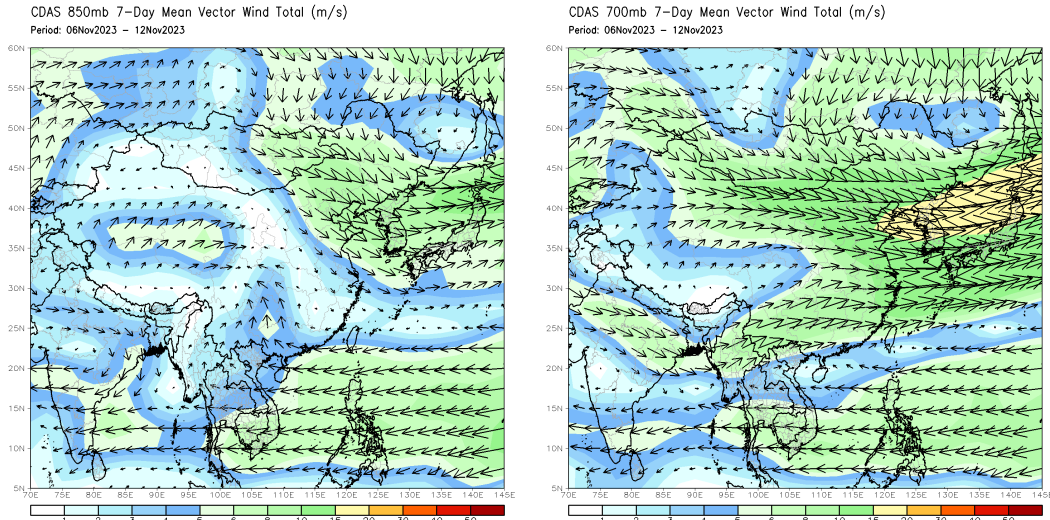## Weekly Wind Monitoring

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.

CDAS 850mb 7-Day Mean Vector Wind Total (m/s)
Period: 06Nov2023 - 12Nov2023

CDAS 700mb 7-Day Mean Vector Wind Total (m/s)
Period: 06Nov2023 - 12Nov2023

Weekly Average SST Anomalies

Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP
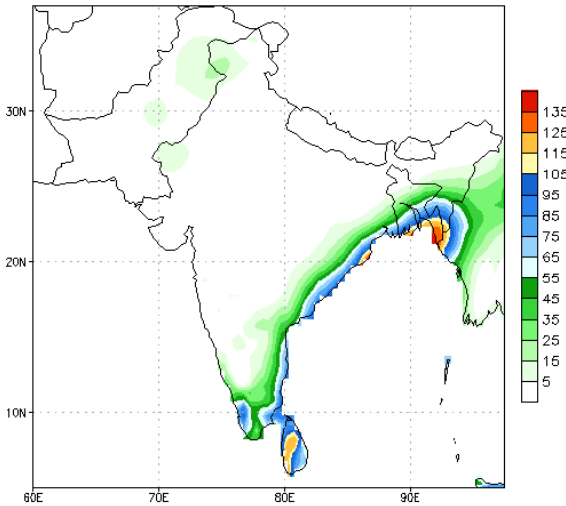
zlev 0.0 meters Time 24-30 Oct 2023

Sea Surface Temperature Anomaly

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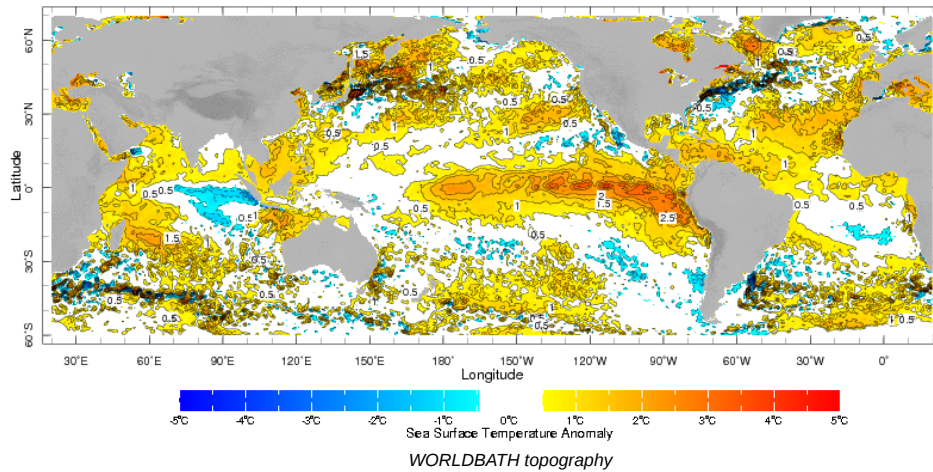
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

OI SST (v2) 7-Day Anomaly (C)
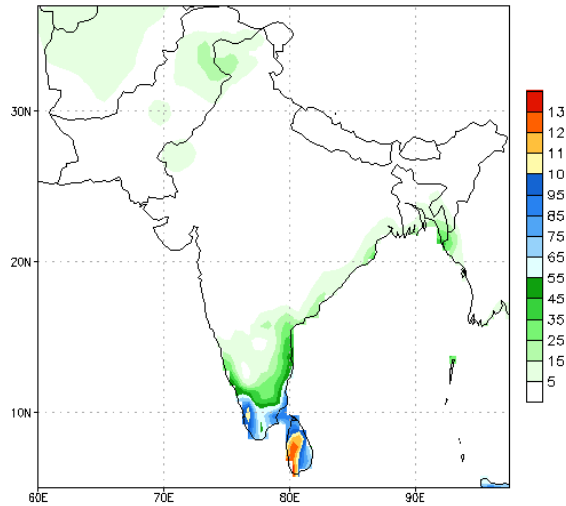Period: 08Nov2023 - 14Nov2023
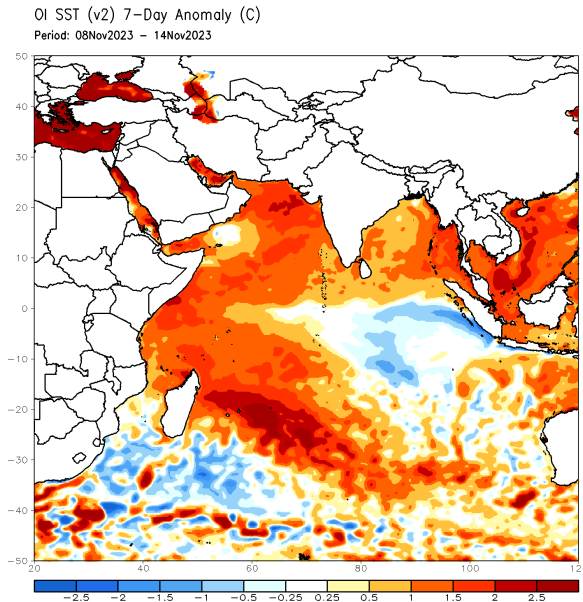
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)
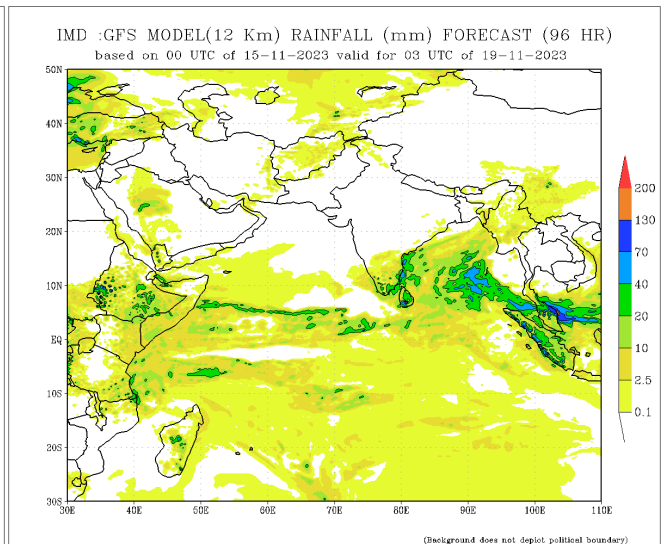from: 15Nov2023
15Nov2023–21Nov2023 Accumulation

Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)
from: 15Nov2023
22Nov2023–28Nov2023 Accumulation
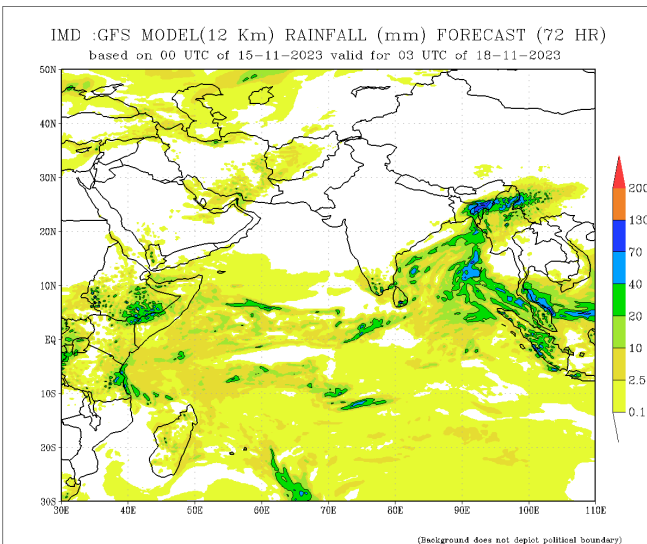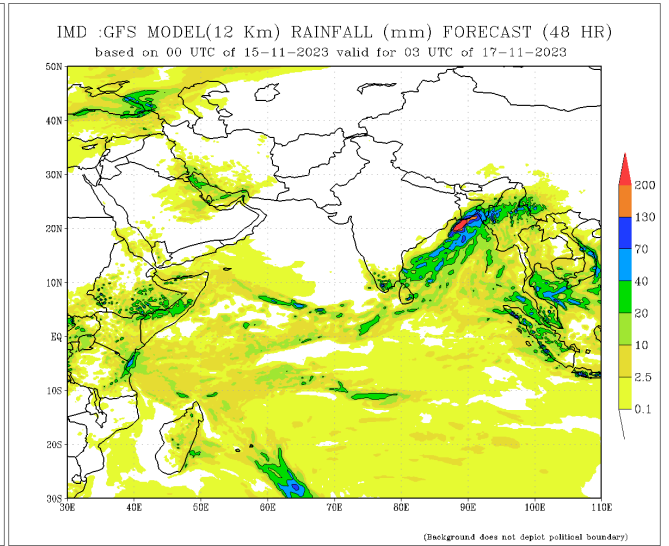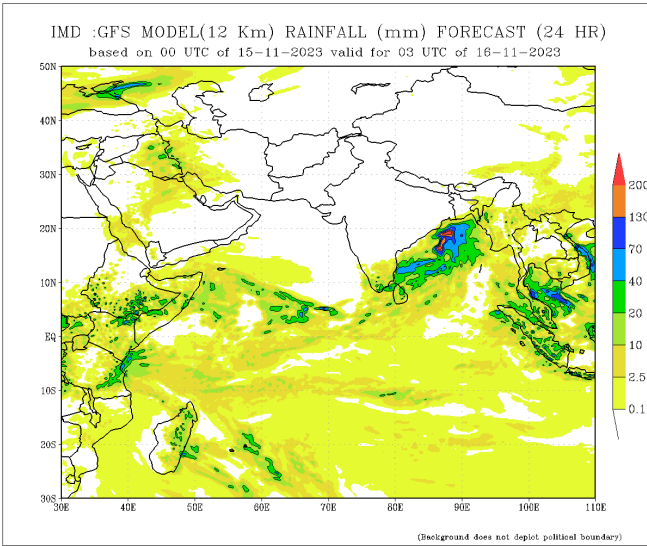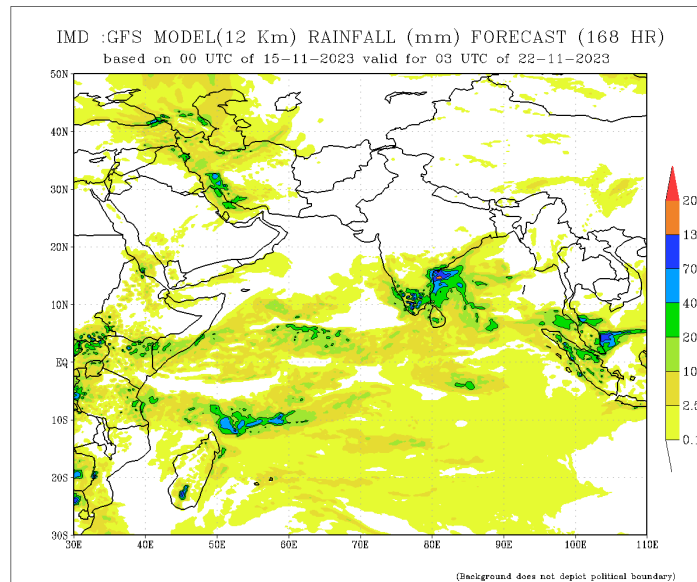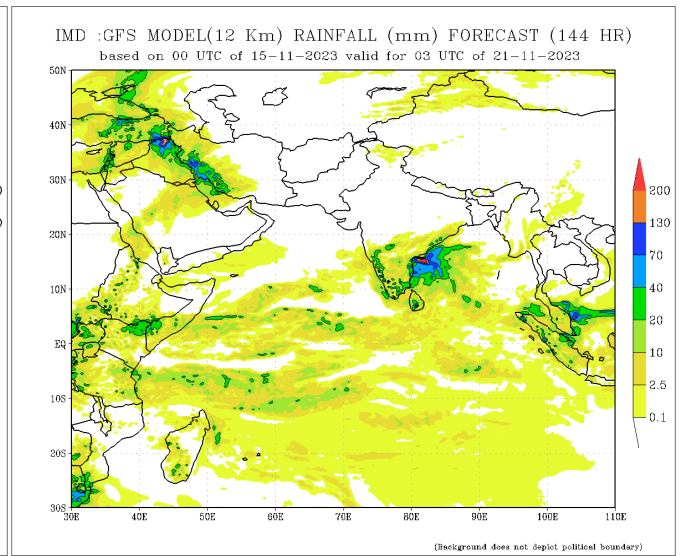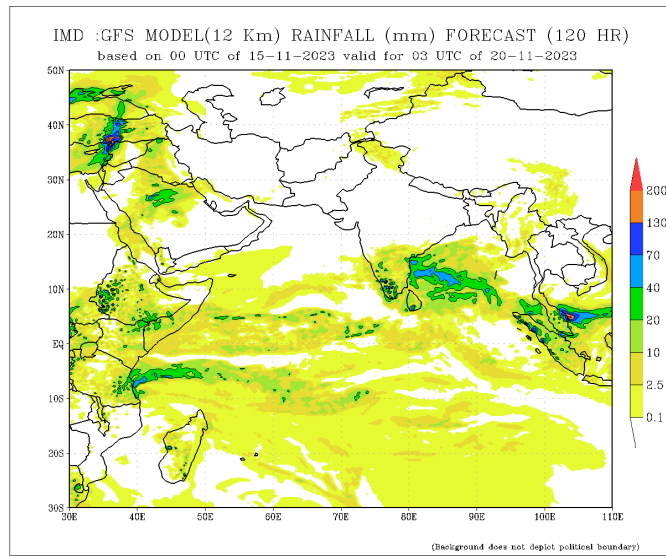
Bias correction based on last 30-day forecast error

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

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)
based on 00 UTC of 15–11–2023 valid for 03 UTC of 16–11–2023

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)
based on 00 UTC of 15–11–2023 valid for 03 UTC of 17–11–2023

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)
based on 00 UTC of 15–11–2023 valid for 03 UTC of 18–11–2023

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)
based on 00 UTC of 15–11–2023 valid for 03 UTC of 19–11–2023

(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (120 HR)
based on 00 UTC of 15-11-2023 valid for 03 UTC of 20-11-2023

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (144 HR)
based on 00 UTC of 15-11-2023 valid for 03 UTC of 21-11-2023

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (168 HR)
based on 00 UTC of 15-11-2023 valid for 03 UTC of 22-11-2023
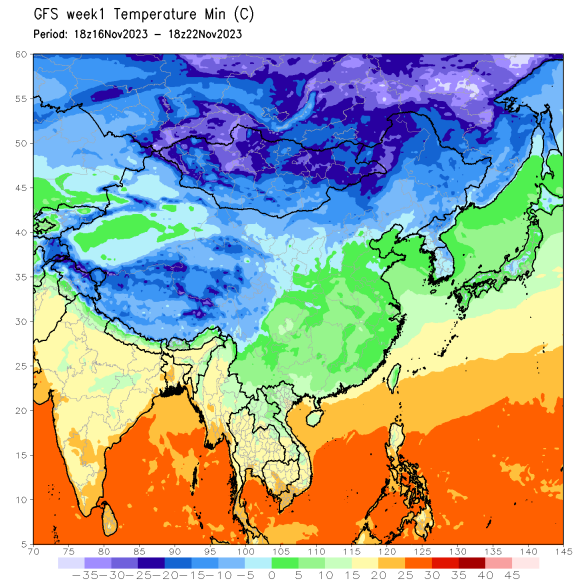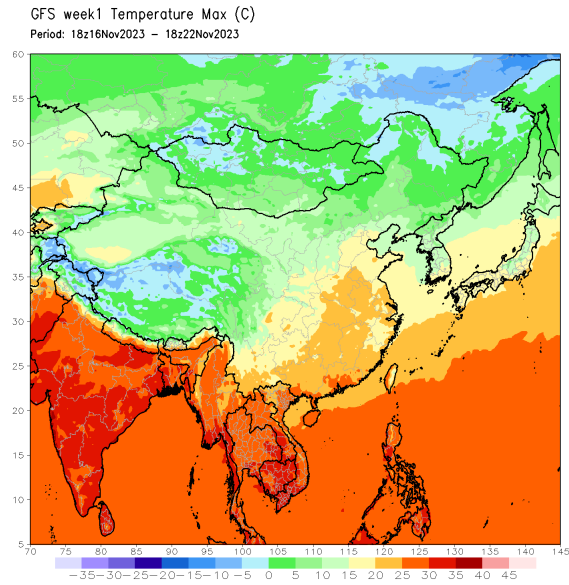
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

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 anomolous OLR for the next 15 days from the Constructed Analogue (CA) model forecasts.
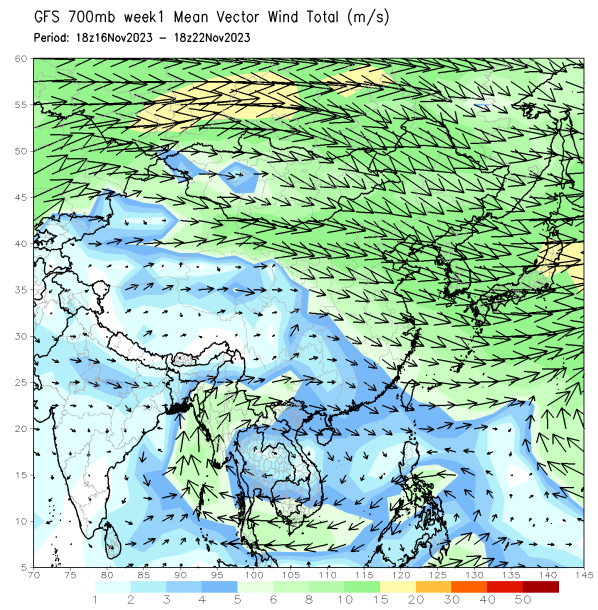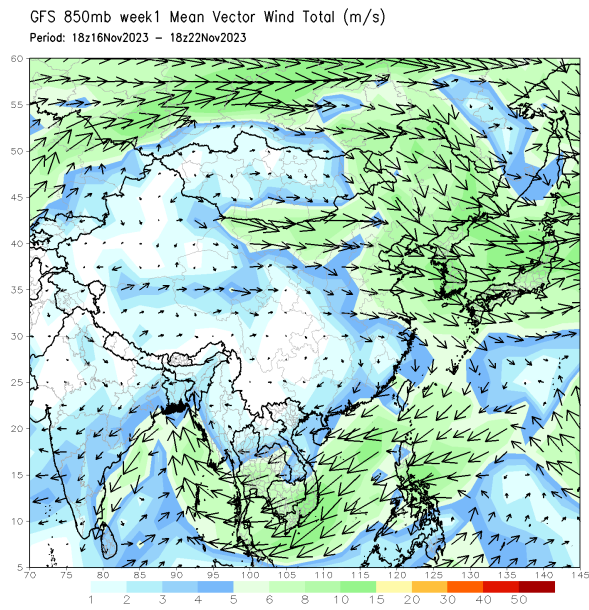
OLR prediction of MJO-related anomalies using CA model
reconstraction by RMM1 & RMM2 (14 Nov 2023)

Initial Date
(14 Nov 2023)

Days 1-5 Ave
Forecast

Days 6-10 Ave
Forecast

Days 11-15 Ave
Forecast
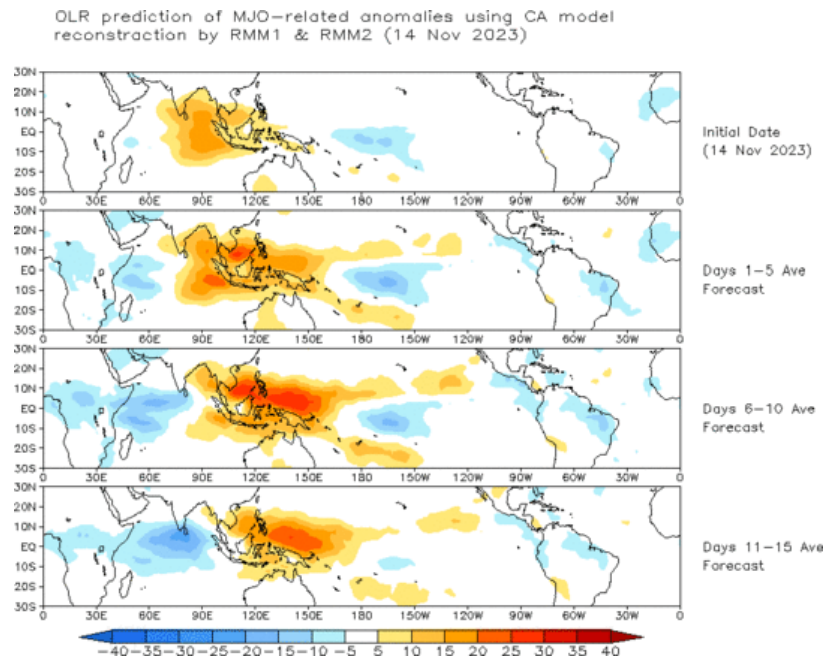
Weekly Temperature Forecast

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

GFS week1 Temperature Max (C)
Period: 18z16Nov2023 – 18z22Nov2023

GFS week1 Temperature Min (C)
Period: 18z16Nov2023 – 18z22Nov2023

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: 18z16Nov2023 – 18z22Nov2023

GFS 700mb week1 Mean Vector Wind Total (m/s)
Period: 18z16Nov2023 – 18z22Nov2023

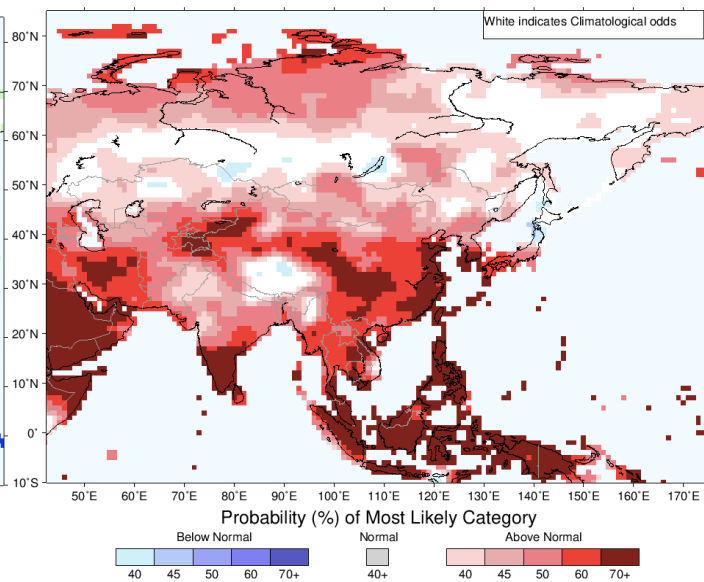# Seasonal Rainfall and Temperature Forecast

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 December–January–February 2024, Issued November 2023
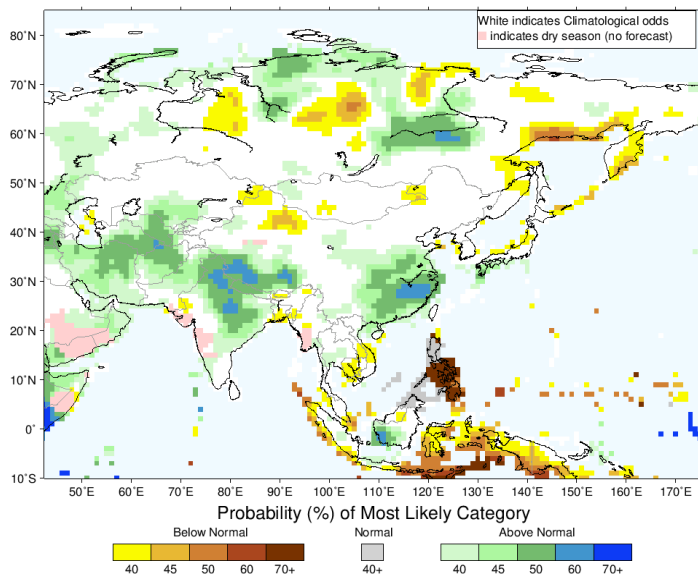
Precipitation Forecast

IRI Multi–Model Probability Forecast for Temperature for December–January–February 2024, Issued November 2023

Temperature Forecast