27 OCTOBER 2023

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction

- *Heavy rainfall (≥ 105 mm) is predicted for the Southern, Sabaragamuwa, Western, Uva, Central, North Western provinces during 26 Oct - 1 Nov.*
- *Heavy rainfall (≥ 125 mm) is predicted for the country during 2 - 8 Nov.*

Monitored Rainfalls

- *During the last week, average daily rainfall over Sri Lanka was 13.5 mm and hydro catchment was 15.7 mm.*
- *Heavy rainfall (> 100 mm) is predicted for Southern and Western regions during next week and following week.*

Monitored & Predicted Wind

- *From 17 - 23 Oct, up to 3 m/s of north westerly winds were at 850 mb (1.5 km).*
- *During 27 Oct - 2 Nov, up to 5 m/s of easterly winds are expected at 850 mb (1.5 km).*

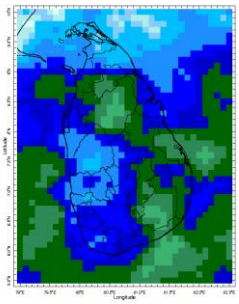
Monitored Sea & Land Temp

- *Sea surface temperature around Sri Lanka was 0.25 - 1.0°C above normal.*
- *From 18 - 25 Oct, maximum daily temperature was recorded in Vavuniya (34.5°C), Polonnaruwa (33.1°C), and Anuradhapura (33.1°C).*

Monitoring

Rainfall

Daily Estimates for Rainfall from 17th October - 24th October 2023



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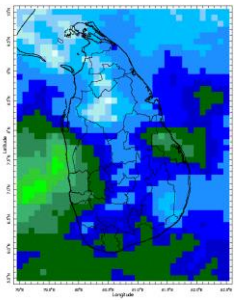

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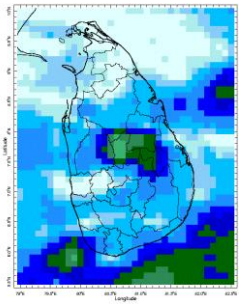
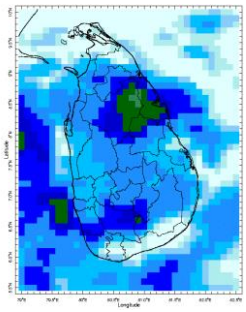
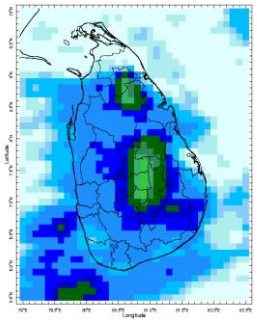


19 October



20 October



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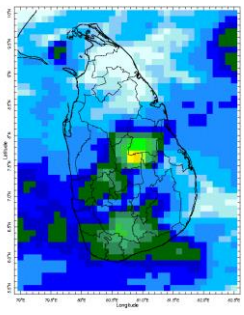

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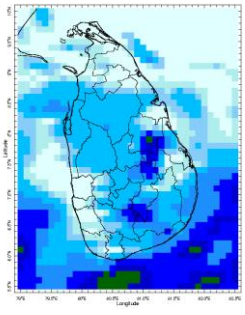
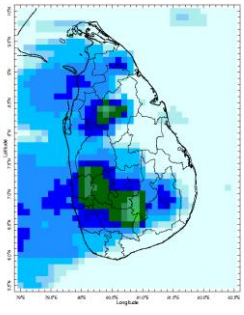


23 October



24 October

Federation for Environment, Climate & Technology

Federation for Environment, Climate and Technology

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Ocean State *(Text Courtesy IRI)*

Pacific sea state: October 23, 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 late-October. El Niño conditions are anticipated to continue through the Northern Hemisphere spring (with an 80% chance during March-May 2024).

Indian Ocean State

Sea surface temperature around Sri Lanka was 0.5 ℃ above normal to the Southern half of the country in 3rd - 9th October, 2023. A positive Dipole Mode has set in across the Indian Ocean since 8th of June.

Predictions

Rainfall

14 - day prediction: NOAA NCEP models

From 26th October - 1st November:

Total rainfall by Provinces:

Rainfall (mm)	Provinces
> 135	Southern, Sabaragamuwa, Western
135	Uva
115	Central
105	North Western
95	Eastern
85	Northern, North Central

From 2nd November - 8th November:

Total rainfall by Provinces:

Rainfall (mm)	Provinces
> 135	Southern, Sabaragamuwa, Western, Uva, Eastern, Central
135	North Western, North Central
125	Northern

MJO based OLR predictions

For the next 15 days:

MJO shall slightly suppress the rainfall during 26th - 30th October, slightly enhance the rainfall during 31st October - 4th November, and moderately enhance the rainfall during 5th - 9th November for Sri Lanka.

Interpretation

Monitoring

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

Daily Average Rainfall in the Met stations for previous week of (18th October - 25th October) = 13.5 mm

Maximum Daily Rainfall: 161.5 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	7.3	31.6	24.3
Eastern hills	13.8	25.3	18.1
Eastern plains	9.7	31.4	23.8
Western hills	13.7	27.0	19.1
Western plains	24.1	30.3	24.2
Southern plains	18.7	30.3	23.9

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	15.7	78.0	0.0

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

Temperatures: The temperature anomalies were seasonably near normal for the country driven by the warm SST's.

Predictions

Rainfall: During the next week (26th October - 1st November), heavy rainfall (≥ 105 mm) is predicted for the Southern, Sabaragamuwa, Western, Uva, Central, and North Western provinces and fairly heavy rainfall (≥ 85 mm) is predicted for the Eastern, Northern, and North Central provinces.

Temperatures: The temperature will remain seasonably near normal for the country during 27th October - 2nd November.

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

MJO shall slightly suppress the rainfall during 26th - 30th October, slightly enhance the rainfall during 31st October - 4th November, and moderately enhance the rainfall during 5th - 9th November for Sri Lanka.

Seasonal Precipitation: The precipitation forecast for the November-December-January, 2024 season shows a 40 - 45% tendency toward above 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

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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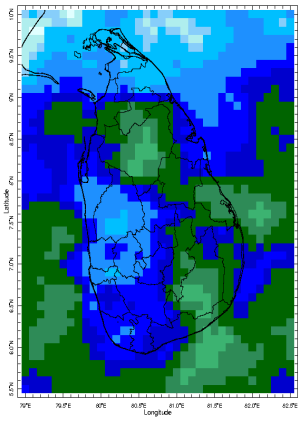
MONITORING

Daily Rainfall Monitoring

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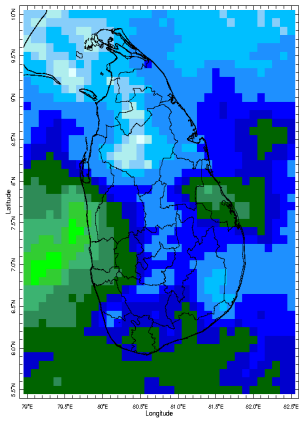
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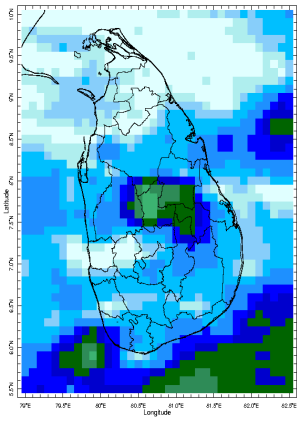
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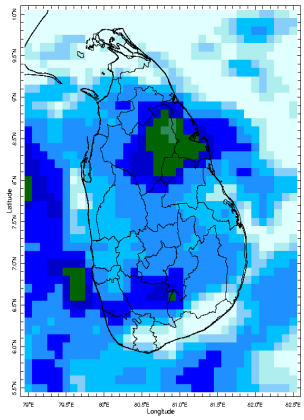
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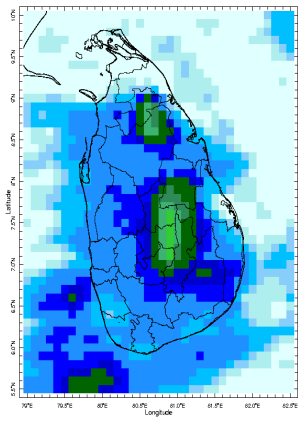
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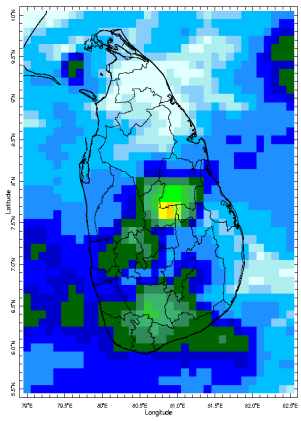
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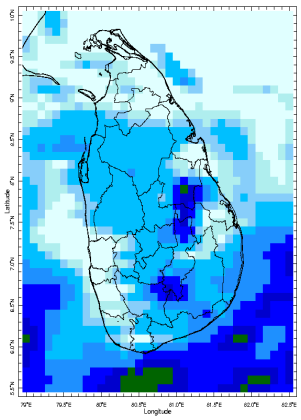
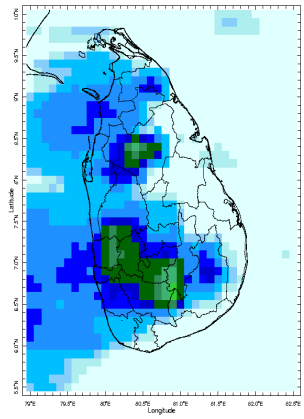
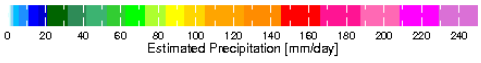
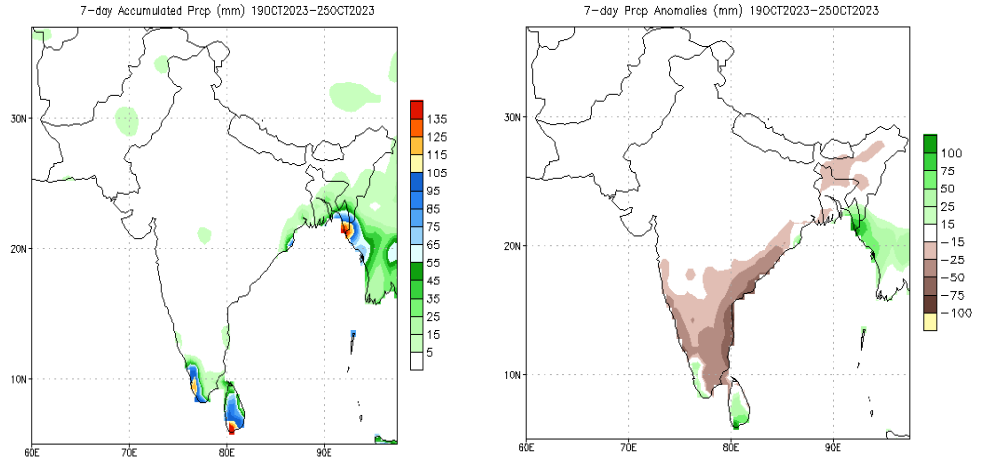

23 Oct 2023


24 Oct 2023



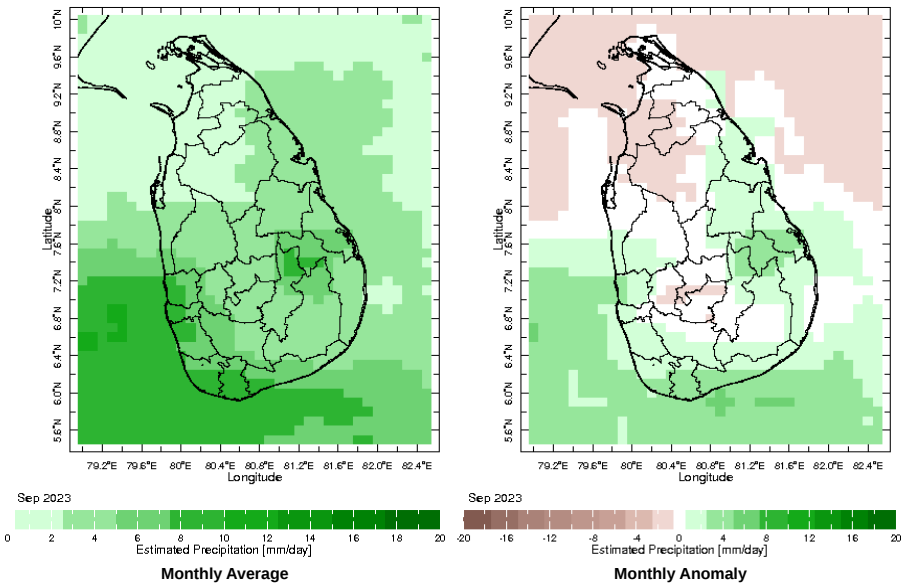
Weekly Rainfall Monitoring

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.

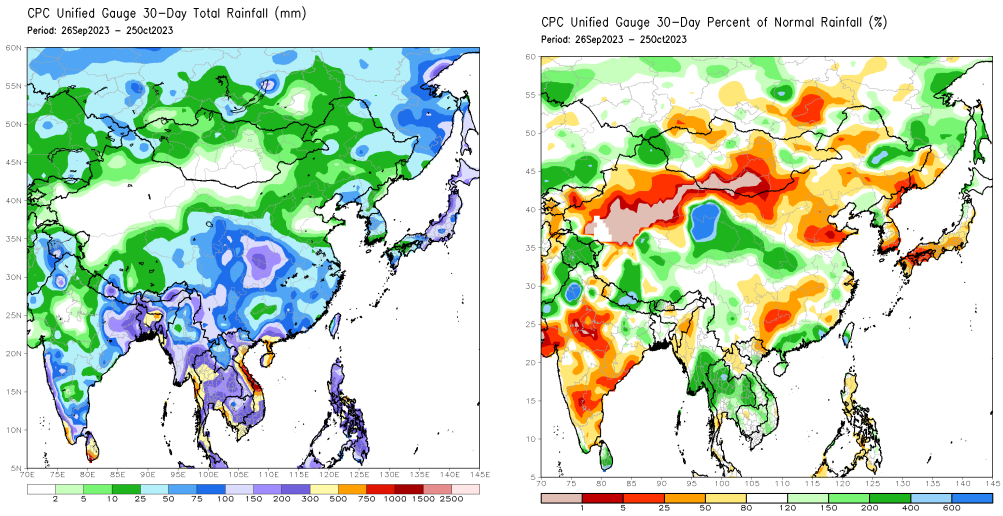


Monthly Rainfall Monitoring

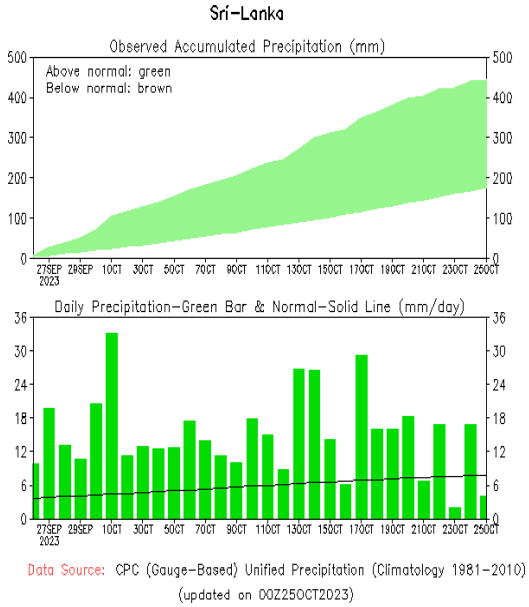
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



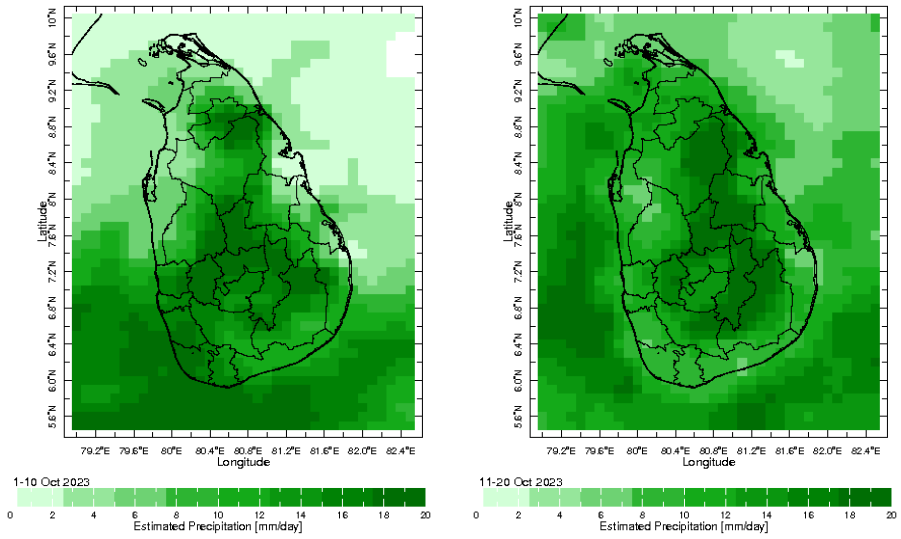
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



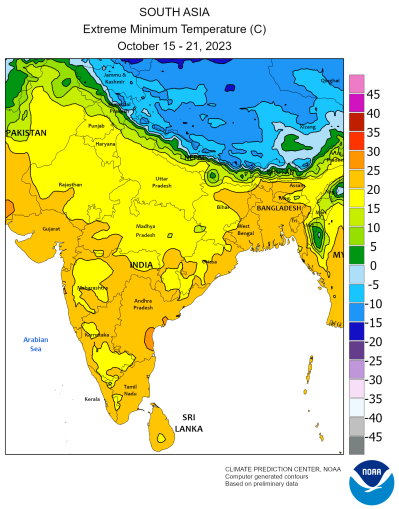
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.

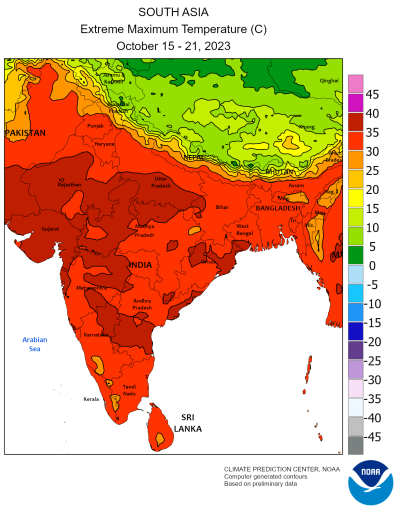


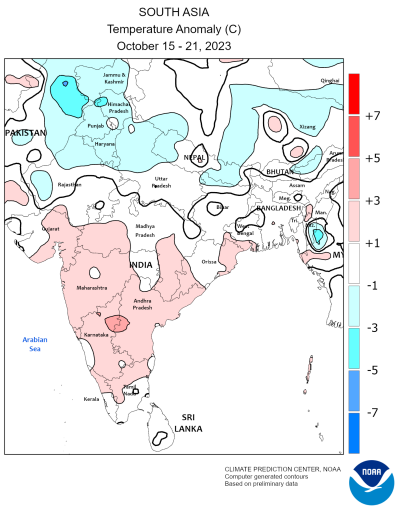
Dekadal (10 Day) Satellite Derived Rainfall Estimates



Weekly Temperature Monitoring

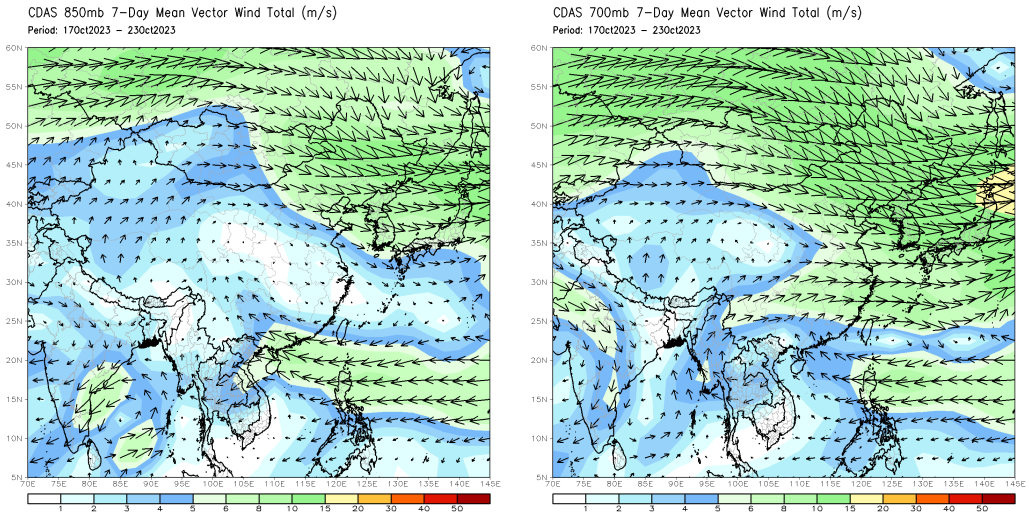






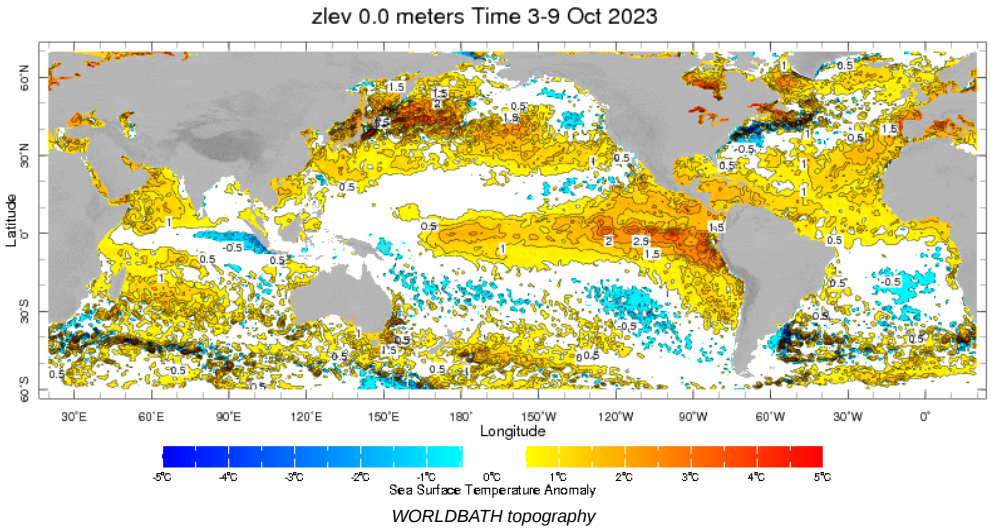
Weekly Wind Monitoring

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.

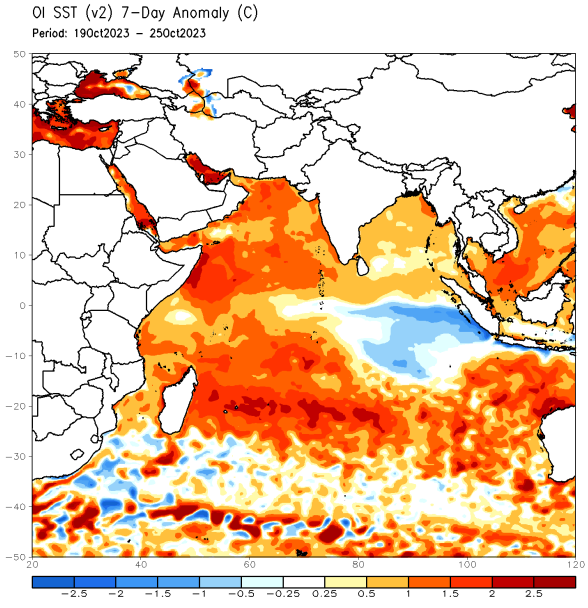


Weekly Average SST Anomalies

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

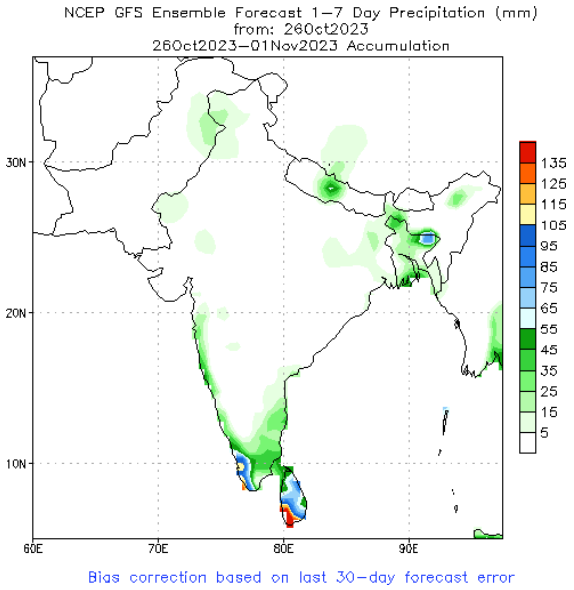


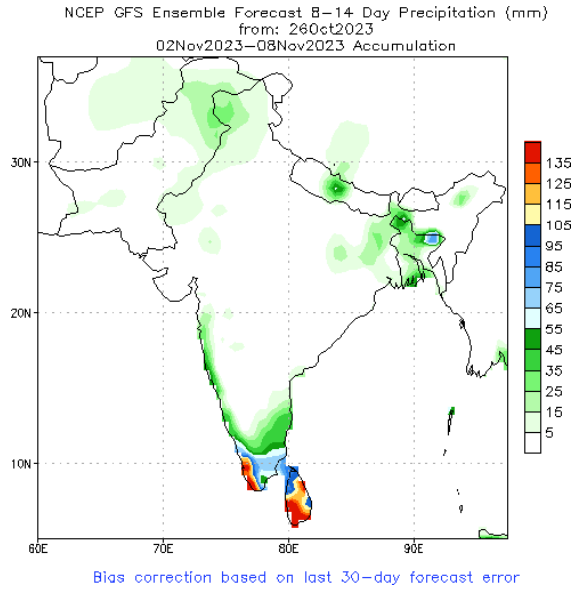
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



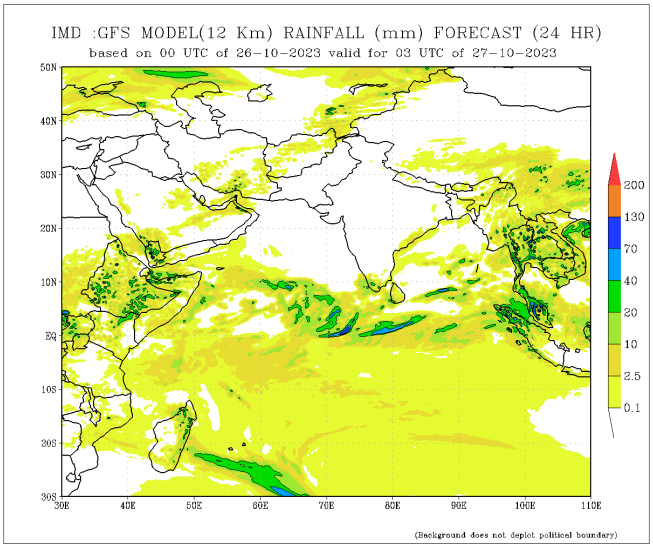
PREDICTIONS

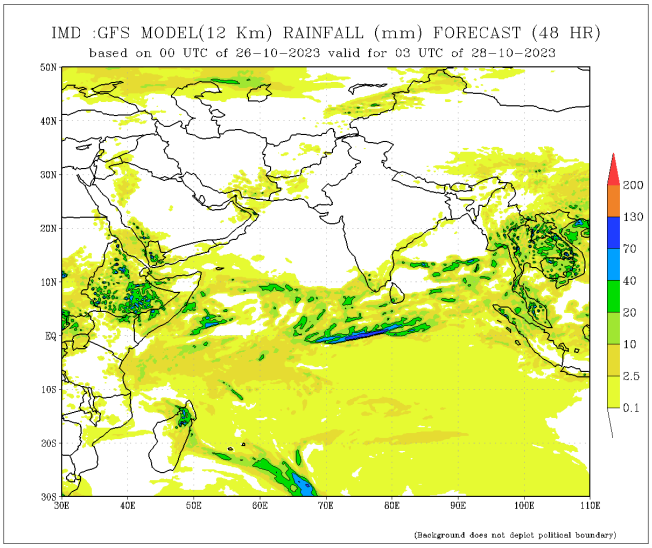
NCEP GFS 1- 14 Day prediction

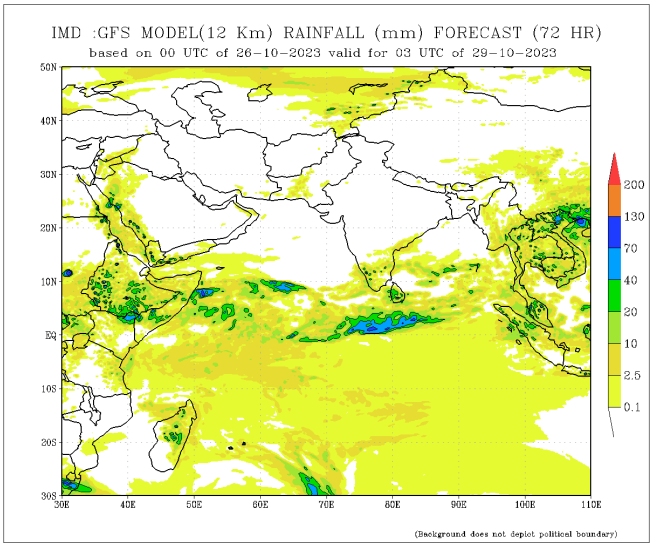


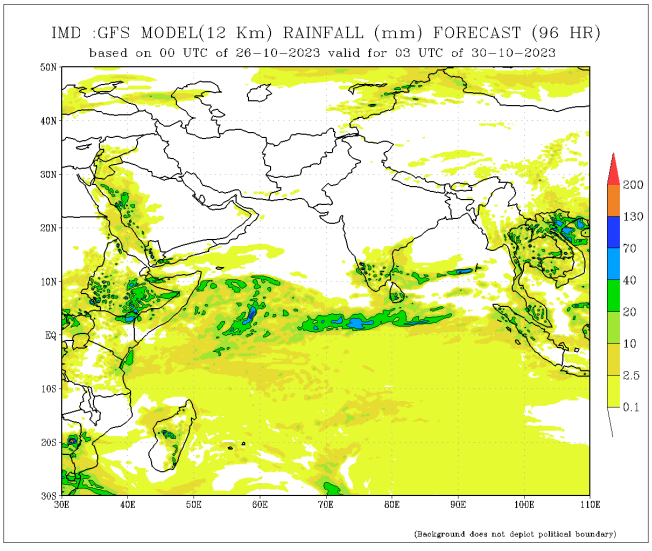


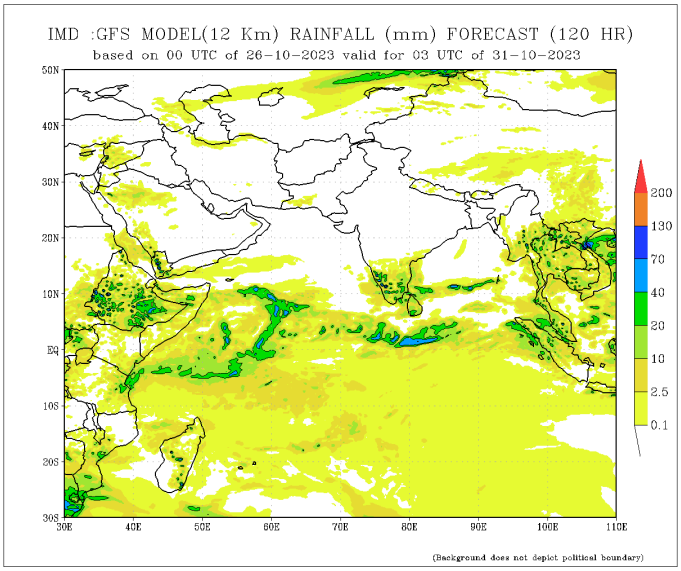
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

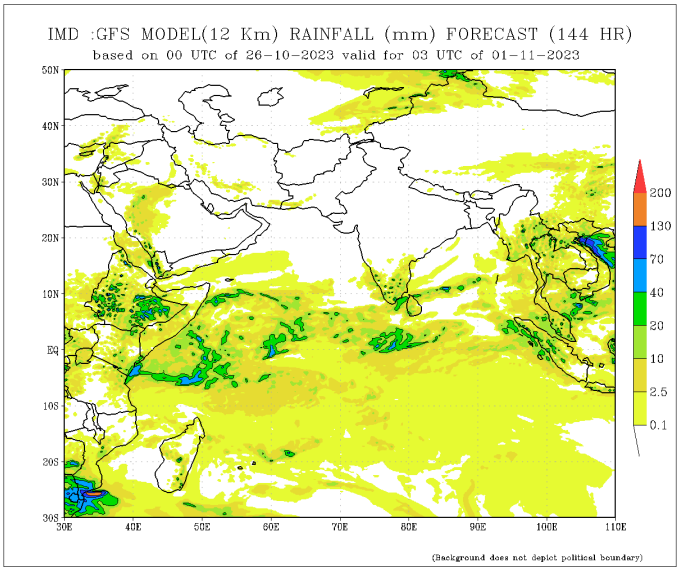


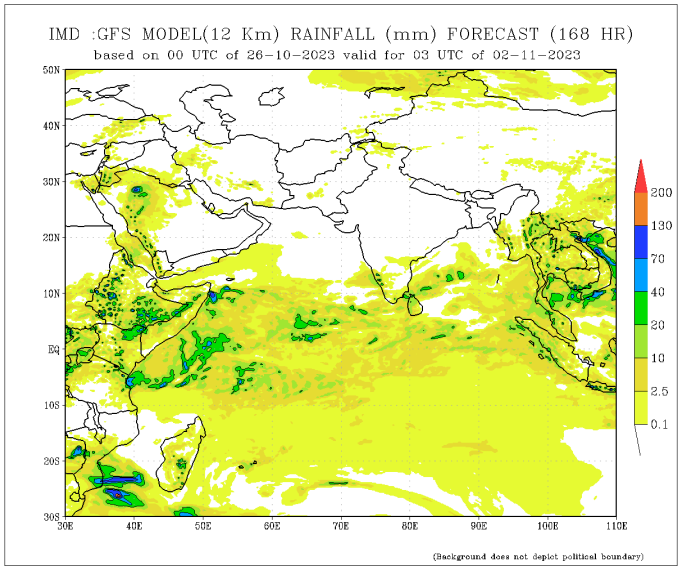






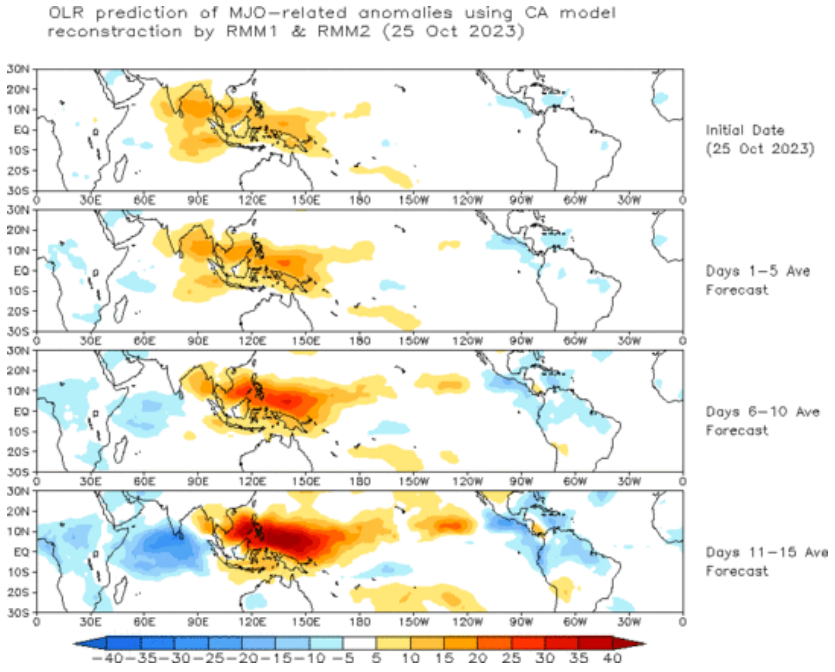






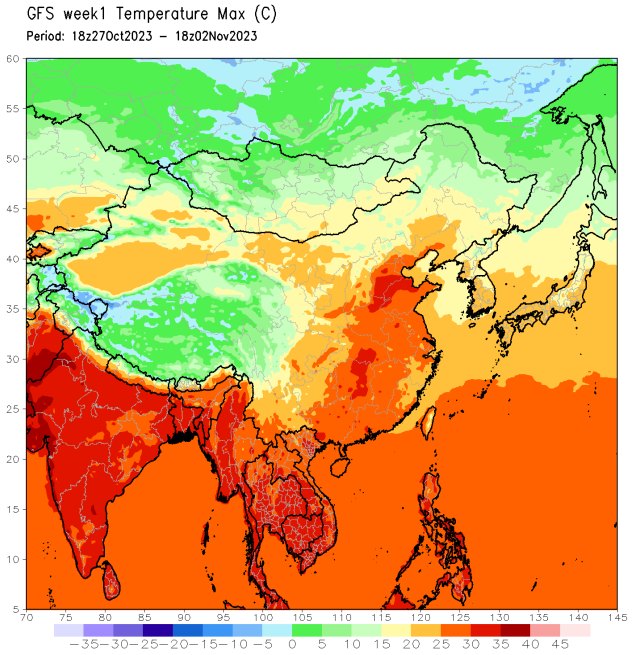
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

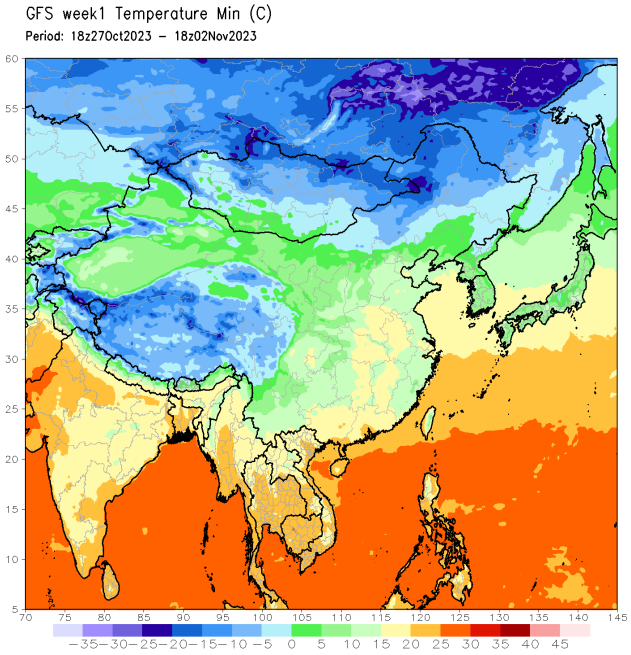
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated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



Weekly Temperature Forecast

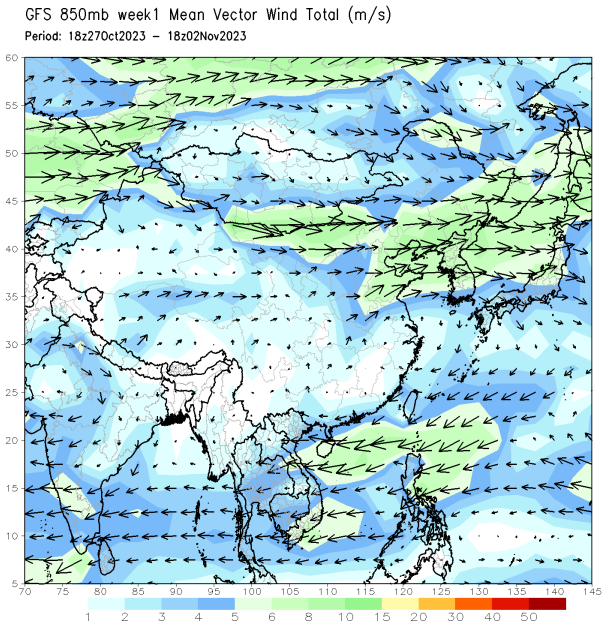
Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)

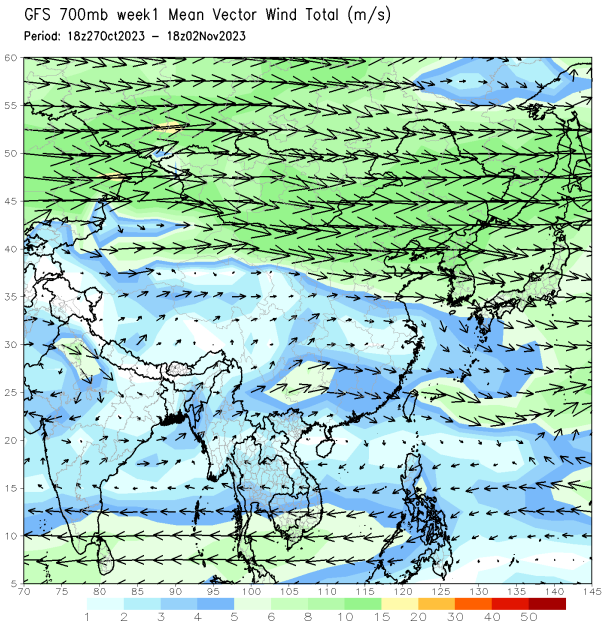




Weekly Wind Forecast

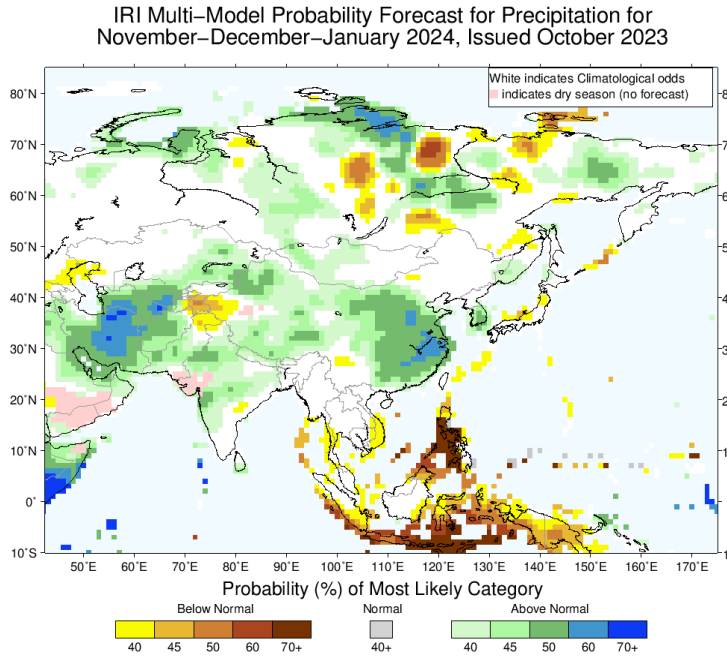
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



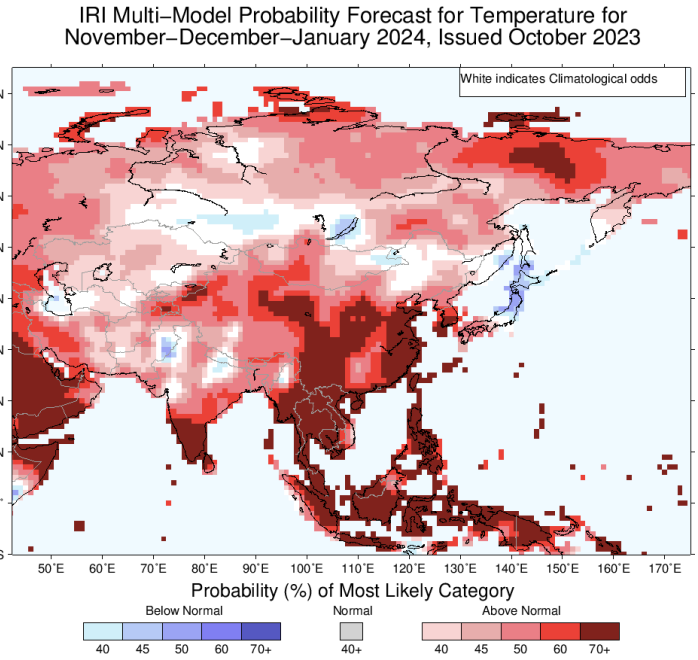


Seasonal Rainfall and Temperature Forecast

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%).



Precipitation Forecast



Temperature Forecast

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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