

HIGHLIGHTS

Rainfall Prediction



- Heavy (> 100 mm) rainfall is predicted for the Eastern province and fairly heavy (≥ 55 mm) rainfall is predicted for the rest of the country during 30th Nov - 6th Dec.

Monitored Rainfalls



- During the last week, the average daily rainfall over Sri Lanka was 0.6 mm & hydro catchment areas received 4.5 mm on average and the highest average rainfall (4.3 mm) was received to the Eastern plains of the country.

Monitored Wind



- From 21st - 27th Nov, up to 6m/s of westerly winds were experienced at 850 mb level over the island.
- Wind Direction has changed from arriving from South West to arriving from North East.

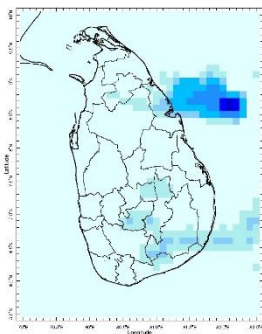
Monitored Sea & Land Temp



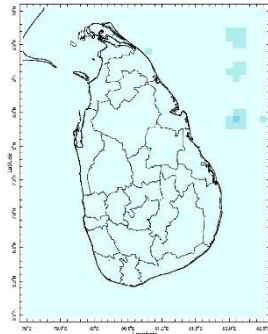
- Sea surface temperature around Sri Lanka was near neutral to the whole country.
- Land surface temperature remained near normal.

Monitoring Rainfall

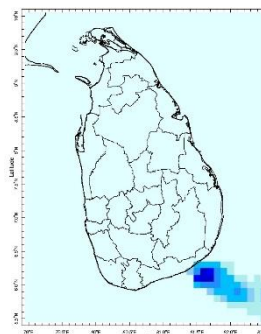
Daily Estimates for Rainfall from 22nd November – 29th November 2022



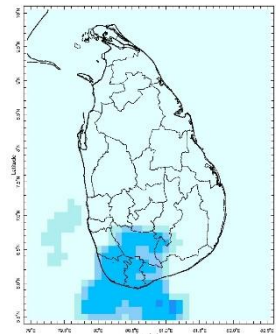
22 November



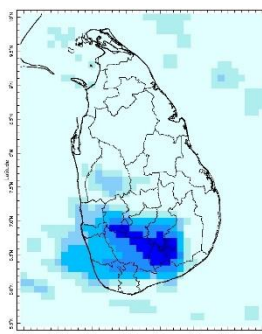
23 November



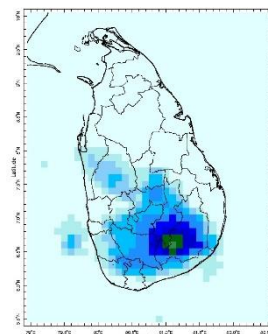
24 November



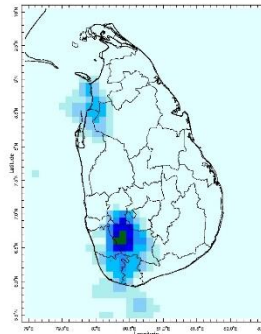
25 November



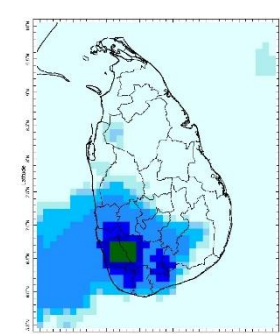
26 November



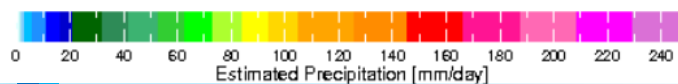
27 November



28 November



29 November



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Ocean State *(Text Courtesy IRI)*

Pacific sea state: November 28, 2022

Equatorial sea surface temperatures (SSTs) are below average across most of the Pacific Ocean early - December. The tropical Pacific atmosphere is consistent with La Niña. A large majority of the models indicate La Niña is favored to continue through during the Northern Hemisphere winter (December-February) 2022-23, with a transition to ENSO-neutral favored in February-April 2023 (57% chance).

Indian Ocean State

Sea surface temperature around Sri Lanka was near neutral to the whole country in 23rd November, 2022. 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 30th November – 6th December:

Total rainfall by Provinces:

Rainfall	Provinces
105 mm	Eastern
95 mm	Uva
85 mm	Sabaragamuwa
75 mm	Southern, Western, Central, Northern, North Central
55 mm	North Western

From 7th December – 13th December:

Total rainfall by Provinces:

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

MJO based OLR predictions

For the next 15 days:

MJO shall near neutral the rainfall during 30th Nov - 4th Dec, slightly increase the rainfall during 5th–9th December, and moderately increase the rainfall during 10th – 14th December for Sri Lanka.

Interpretation

Monitoring

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

Daily Average Rainfall in the Met stations for previous week of (22nd November – 29th November) = 0.6 mm

Rmax: 13.3 mm & Rmin: 0.0 mm.

Region	Average rainfall for the Last 8 days
Northern Plains	0.0 mm
Eastern	4.3 mm
Western	2.1 mm
Southern Plains	2.9 mm

The Hydro Catchment Areas recorded 4.5 mm of average rainfall for the last week

Rmax: 70.5 mm & Rmin: 0.0 mm.

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

Temperatures: The temperature anomalies were below normal for some parts of the North Central, and North Western provinces, driven by the warm SST's.

Predictions

Rainfall: During the next week (30th Nov – 6th Dec), heavy (>100 mm) rainfall is predicted for the Eastern province; and fairly heavy (≥ 55 mm) rainfall is expected for the rest of the country.

Temperatures: The temperature will remain below normal for some parts of the Central, Uva, and Sabaragamuwa provinces during 1st – 7th December.

Teleconnections: La Niña is favored to continue through during the Northern Hemisphere winter (December-February) 2022-23, with a transition to ENSO-neutral favored in February-April 2023 (57% chance).

MJO shall near neutral the rainfall during 30th Nov – 4th Dec, slightly increase the rainfall during 5th – 9th December, and moderately increase the rainfall during 10th – 14th December for Sri Lanka.

Seasonal Precipitation: The precipitation forecast for the December-January-February 2023 season shows a higher tendency for near-normal precipitation to 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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- d. Dekadal (10 Day) Satellite Derived Rainfall Estimates
- e. Weekly Temperature Monitoring
- f. Weekly Wind Monitoring
- g. Weekly Average SST Anomalies

2. Predictions

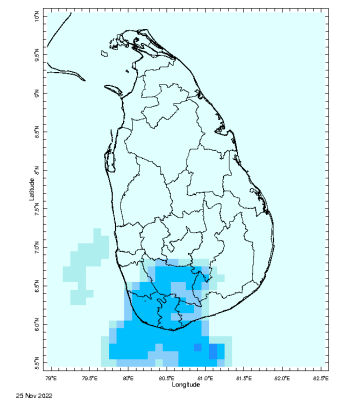
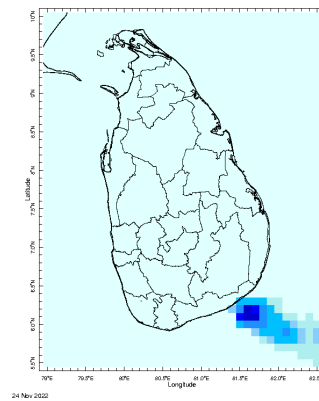
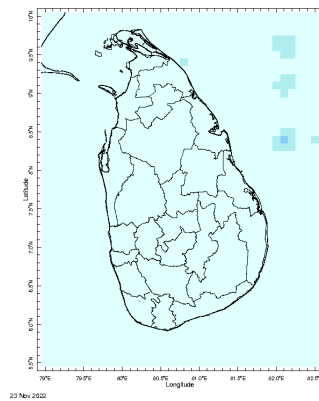
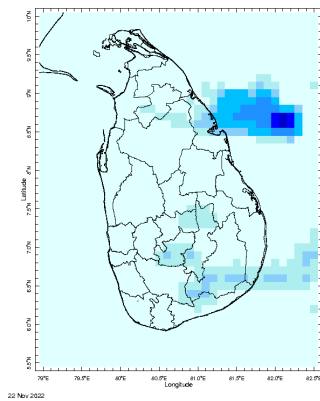
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. GFS (T574) Model Rainfall Forecast from RMSC New Delhi
- c. MJO Related OLR Forecast
- d. Weekly Temperature Forecast
- e. Weekly Wind Forecast
- f. Seasonal Predictions from IRI

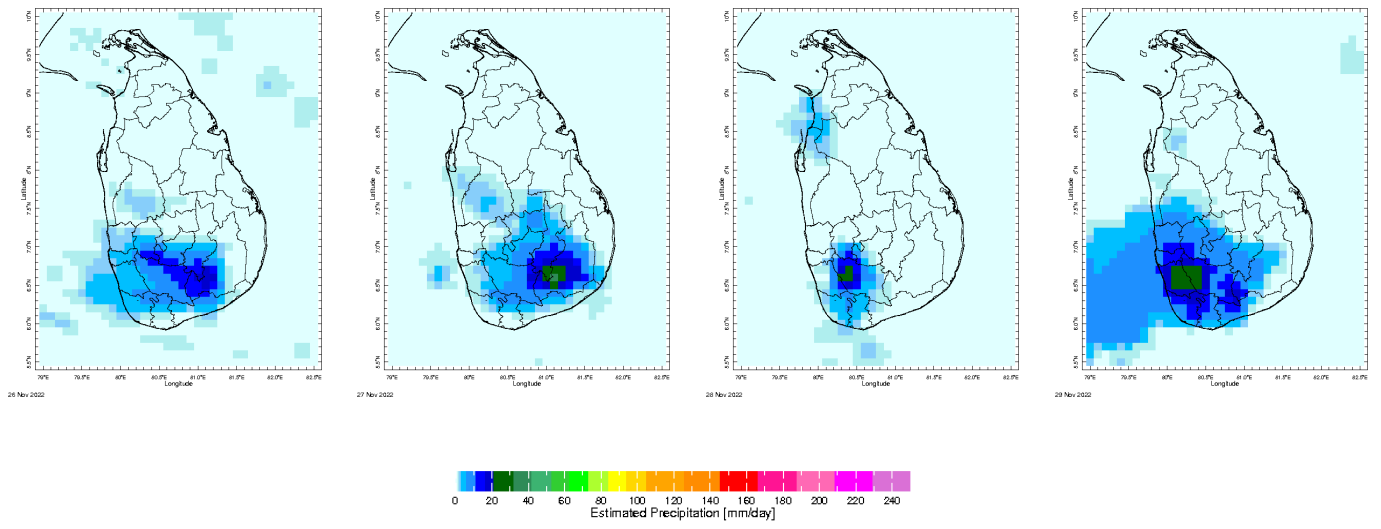


MONITORING

Daily Rainfall Monitoring

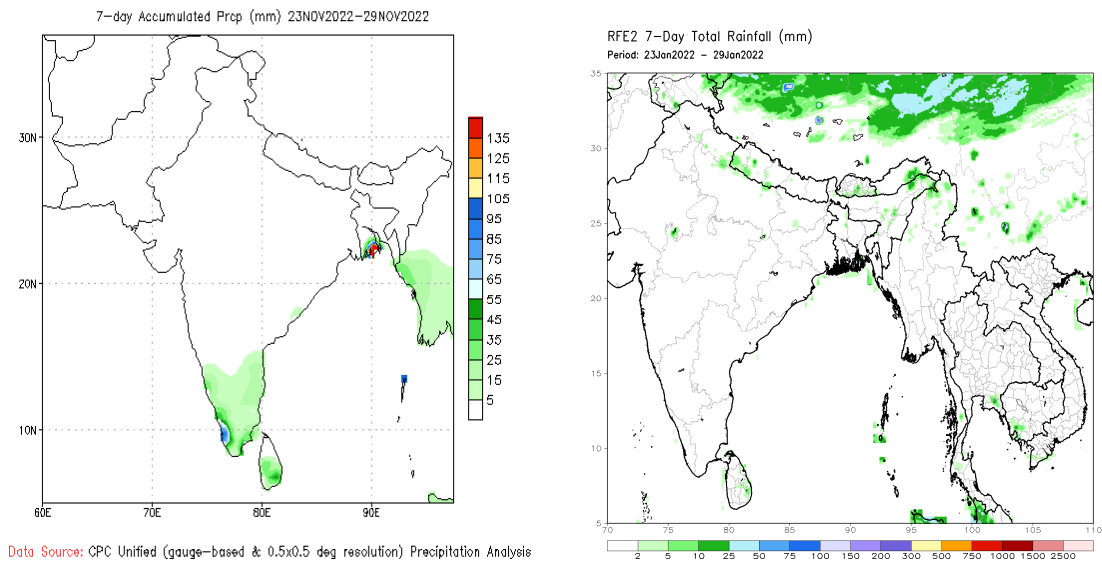
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.

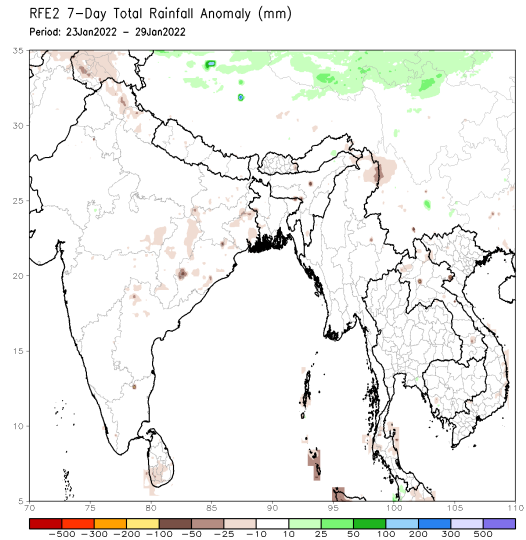
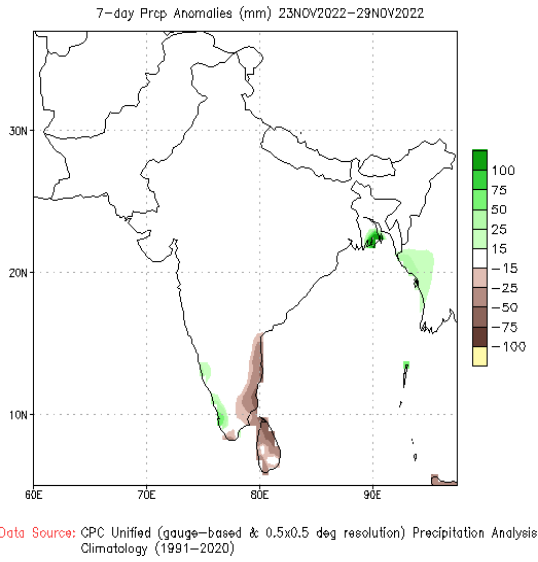




Weekly Rainfall Monitoring

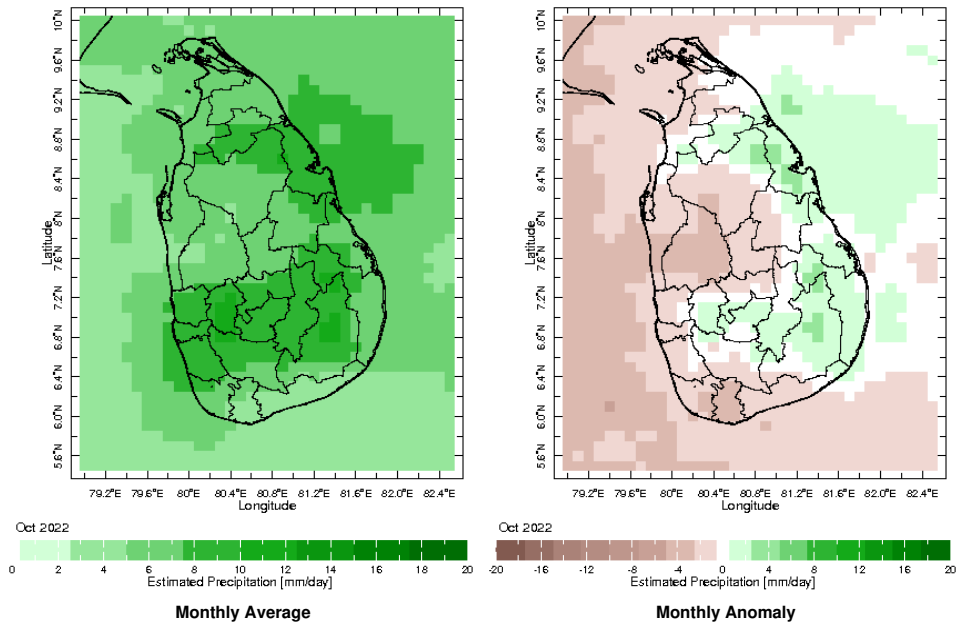
The following figures show the total satellite observed rainfall in the last week in Sri Lanka. The figure in the left is the total 7-day rainfall from NOAA Climate Prediction Center (CPC) Unified Precipitation Analysis and the figure in the right is the total 7-day rainfall from CPC RFE 2.0 Satellite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



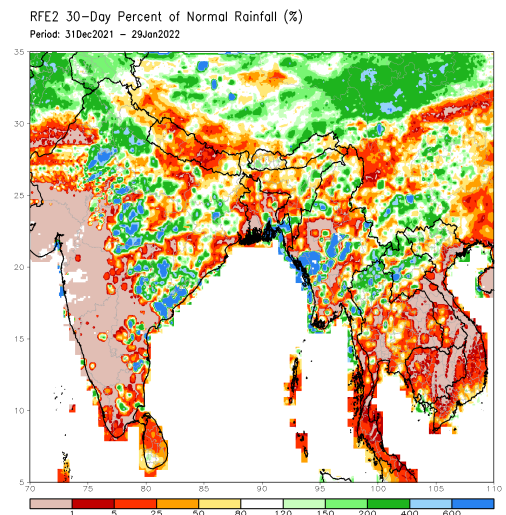
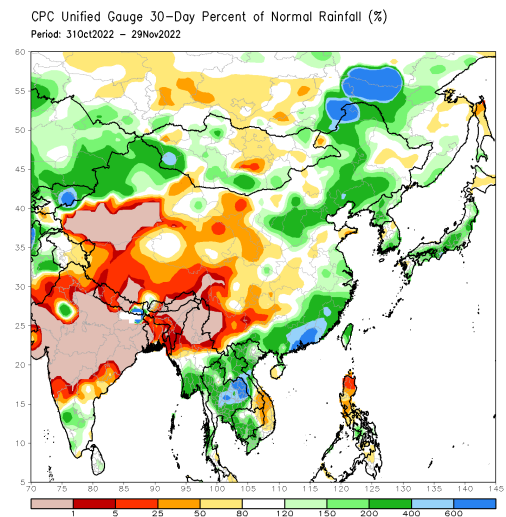
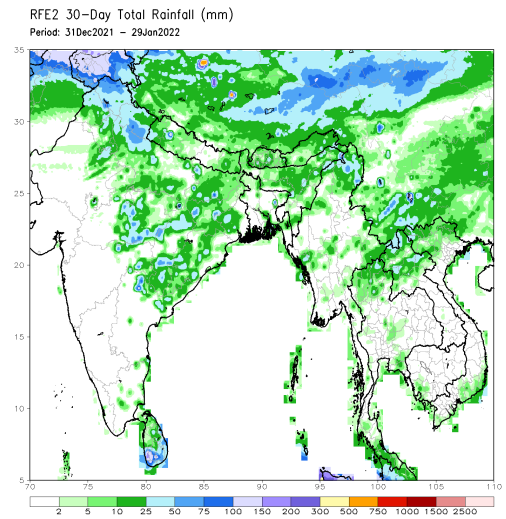
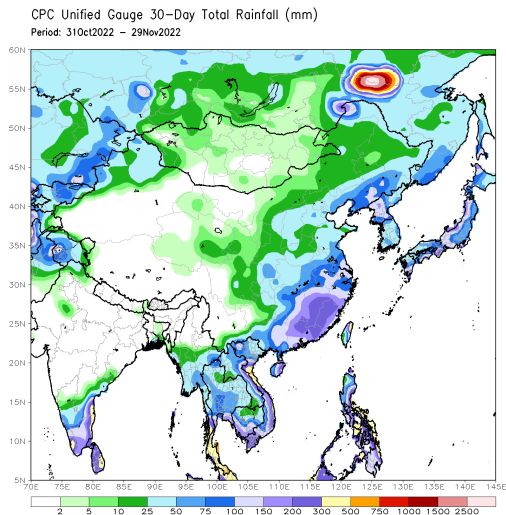


Monthly Rainfall Monitoring

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

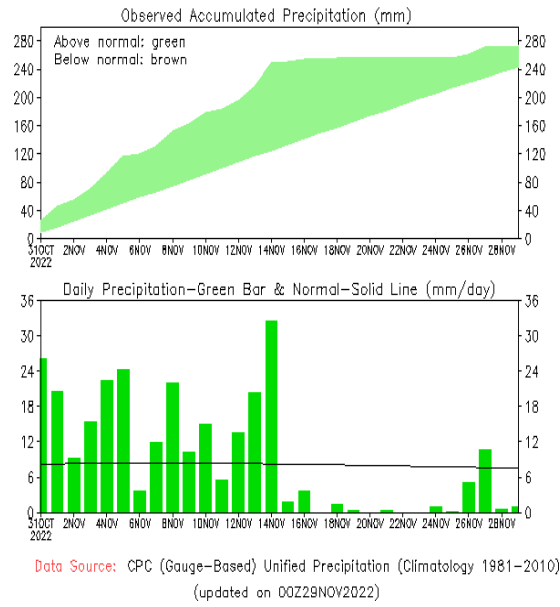


The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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

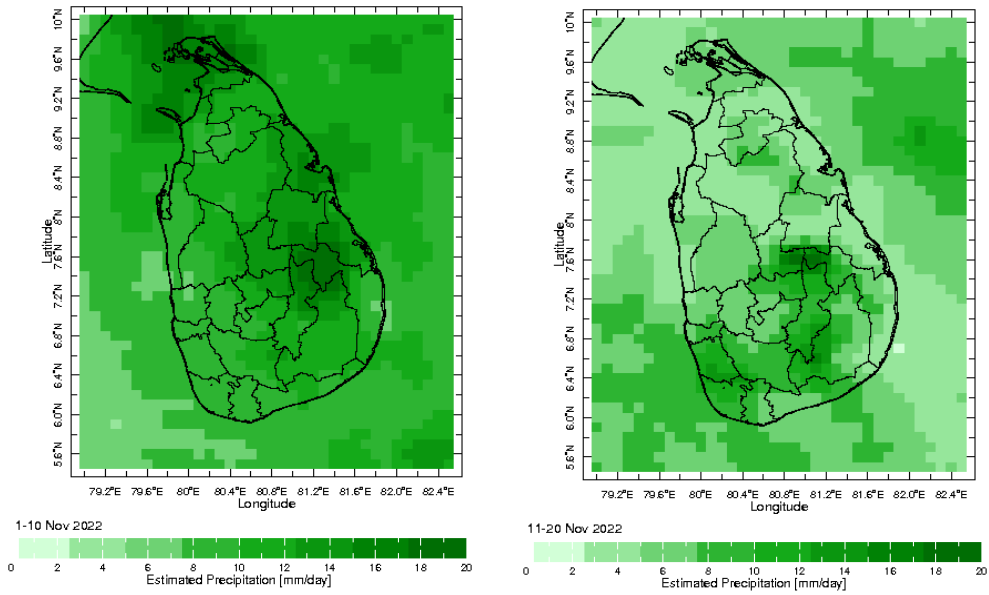


The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.

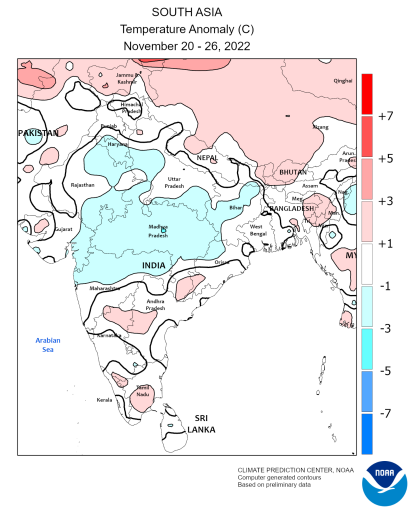
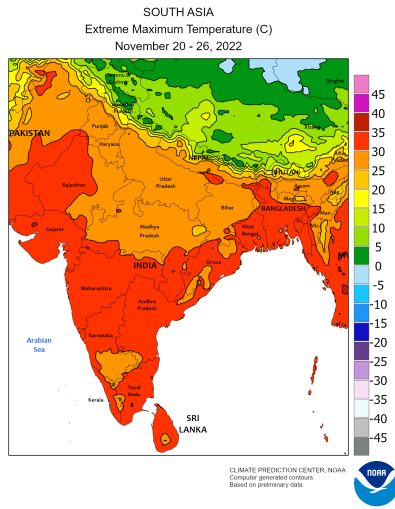
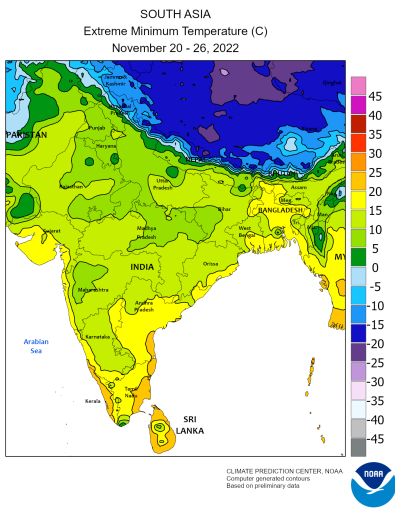
Sri-Lanka



Dekadal (10 Day) Satellite Derived Rainfall Estimates

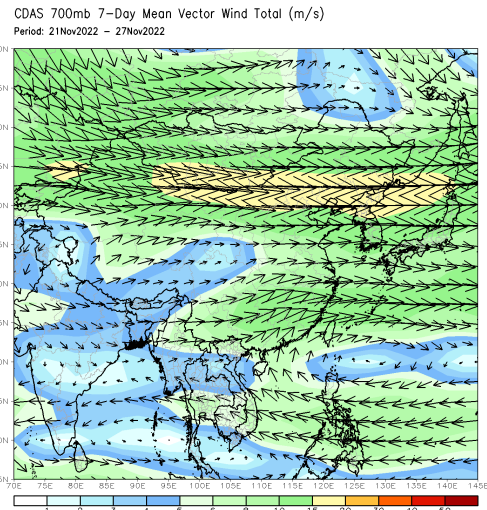
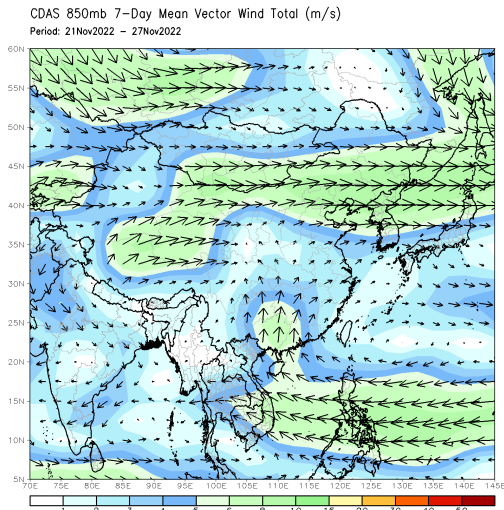


Weekly Temperature Monitoring



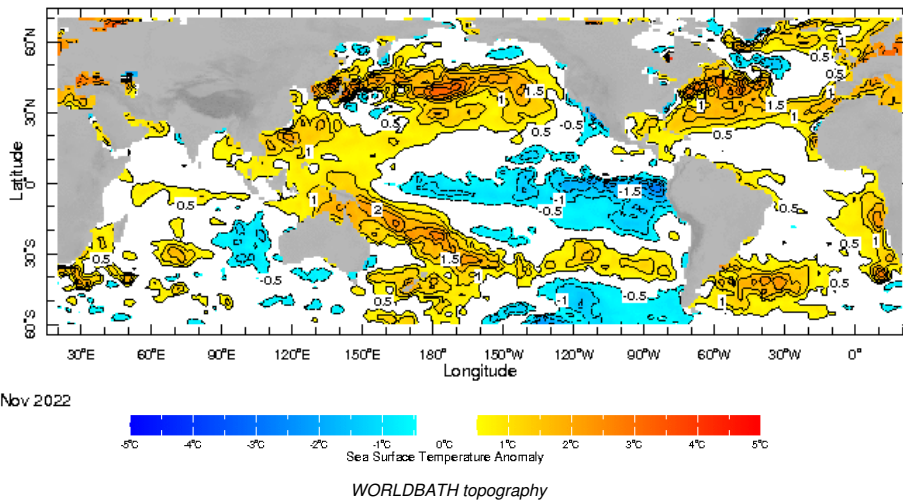
Weekly Wind Monitoring

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.



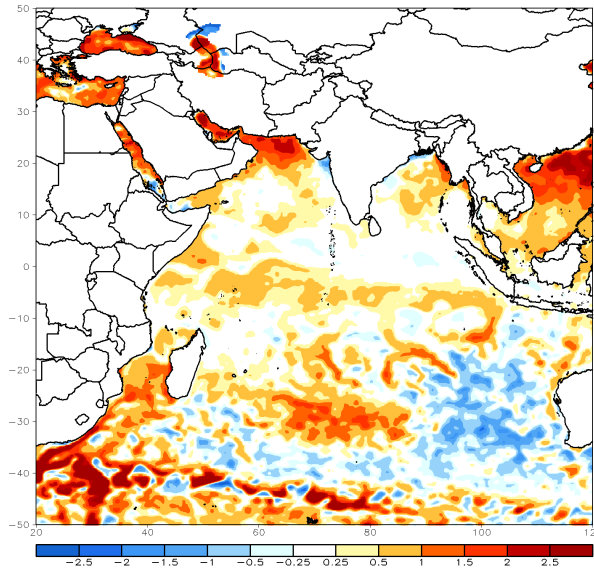
Weekly Average SST Anomalies

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

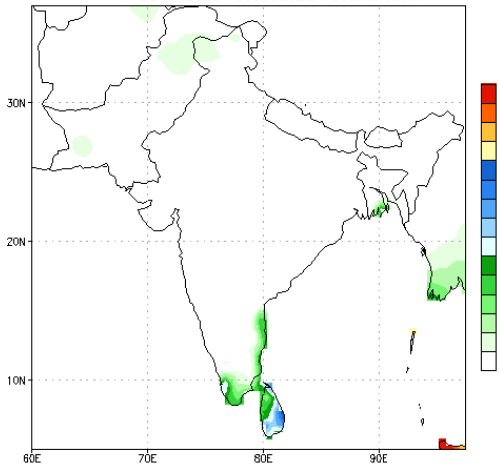
OI SST (v2) 7-Day Anomaly (C)
 Period: 23Nov2022 - 29Nov2022



PREDICTIONS

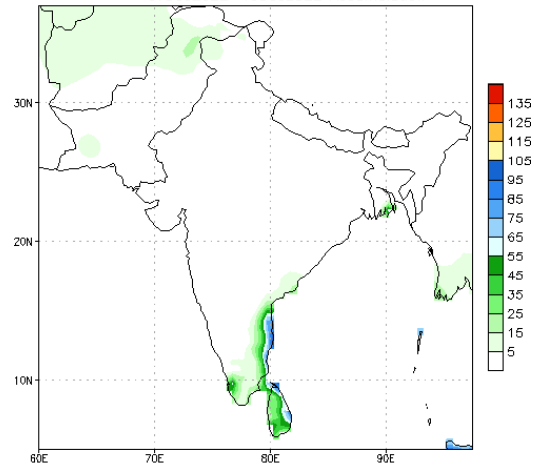
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
 from: 30Nov2022
 30Nov2022-06Dec2022 Accumulation



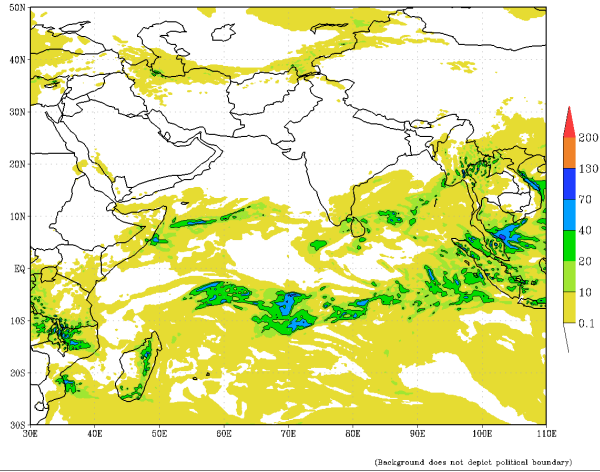
Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
 from: 30Nov2022
 07Dec2022-13Dec2022 Accumulation

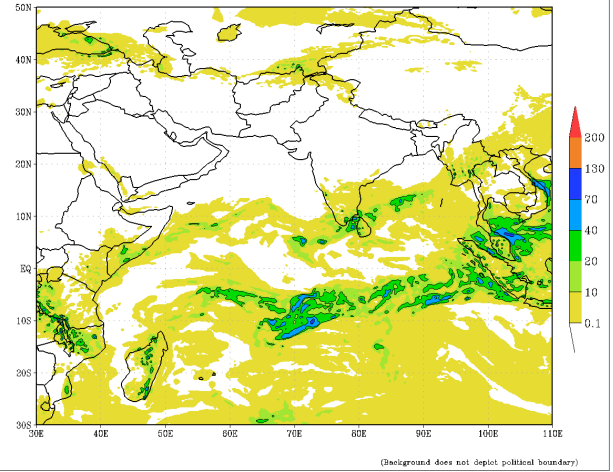


Bias correction based on last 30-day forecast error

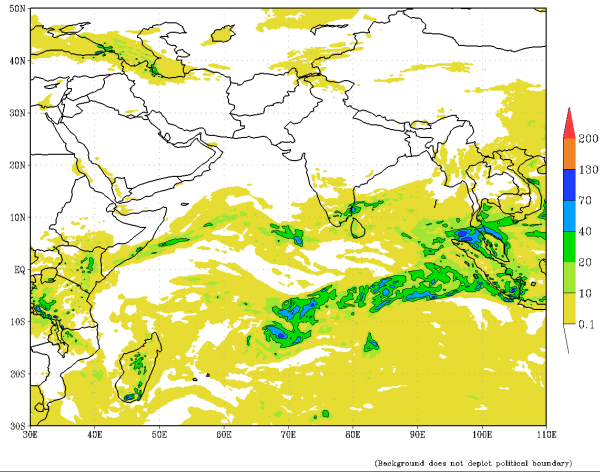
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)
based on 00 UTC of 01-12-2022 valid for 03 UTC of 02-12-2022



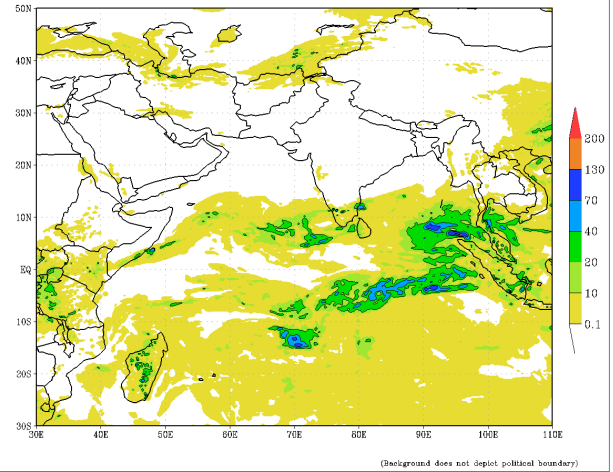
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)
based on 00 UTC of 01-12-2022 valid for 03 UTC of 03-12-2022



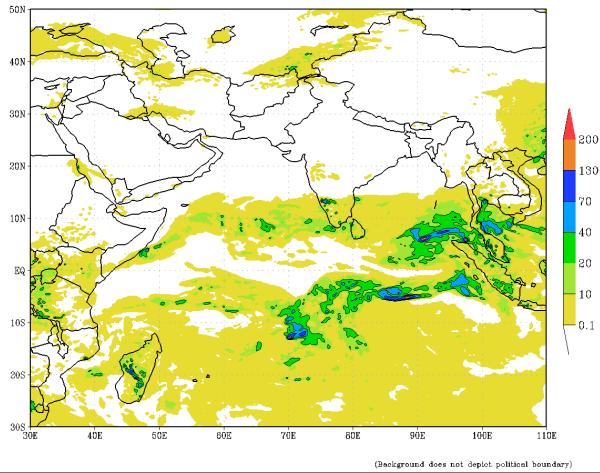
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)
based on 00 UTC of 01-12-2022 valid for 03 UTC of 04-12-2022



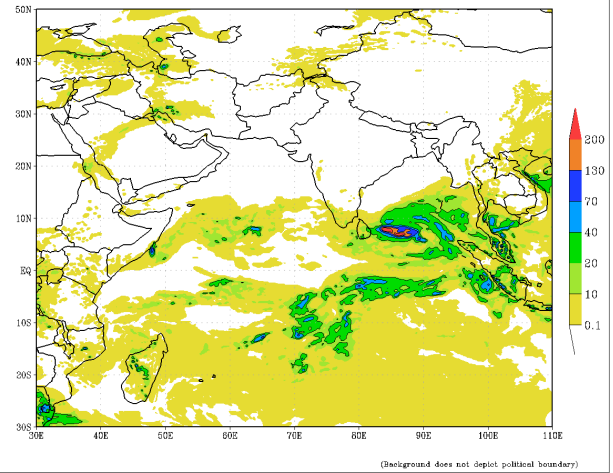
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)
based on 00 UTC of 01-12-2022 valid for 03 UTC of 05-12-2022

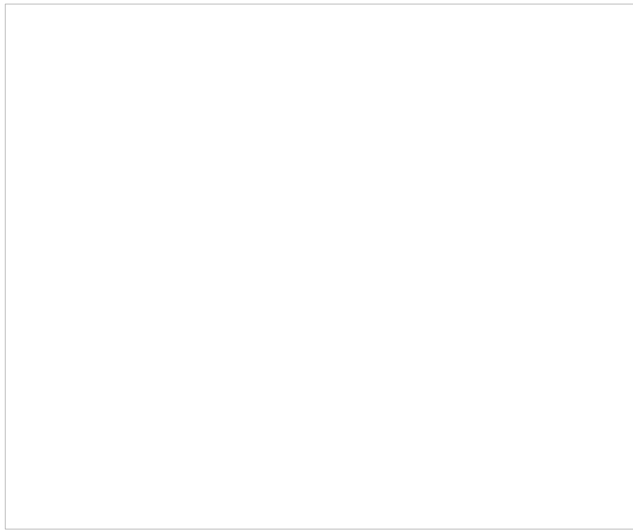


IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (120 HR)
based on 00 UTC of 30-11-2022 valid for 03 UTC of 05-12-2022



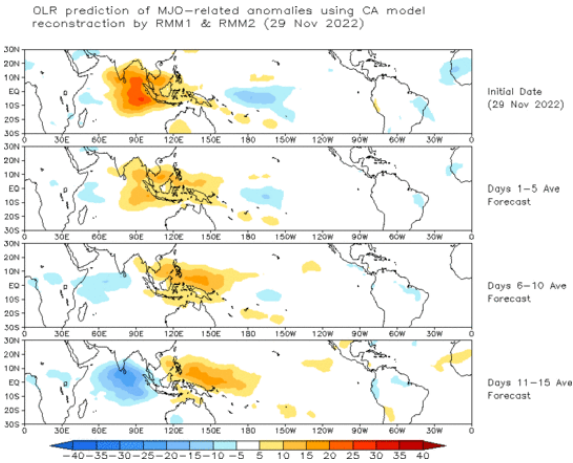
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (144 HR)
based on 00 UTC of 30-11-2022 valid for 03 UTC of 06-12-2022





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

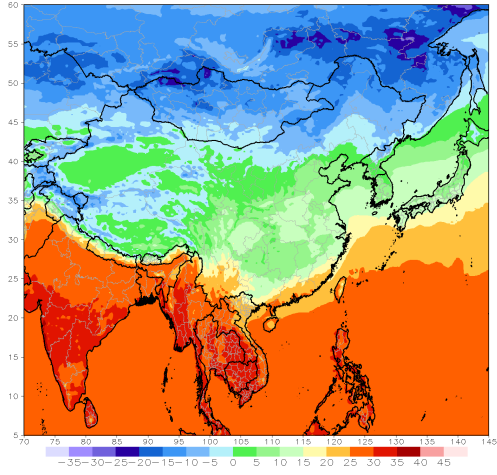
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated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



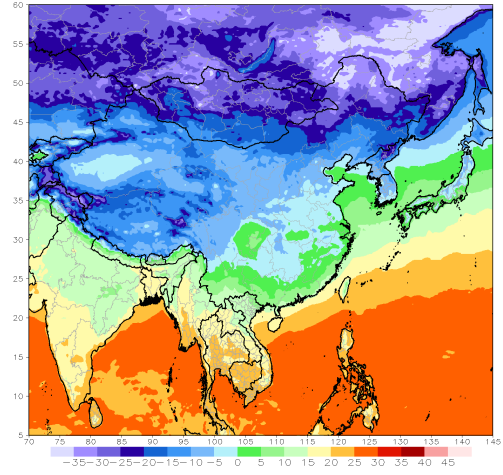
Weekly Temperature Forecast

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

GFS week1 Temperature Max (C)
 Period: 18z01Dec2022 - 18z07Dec2022



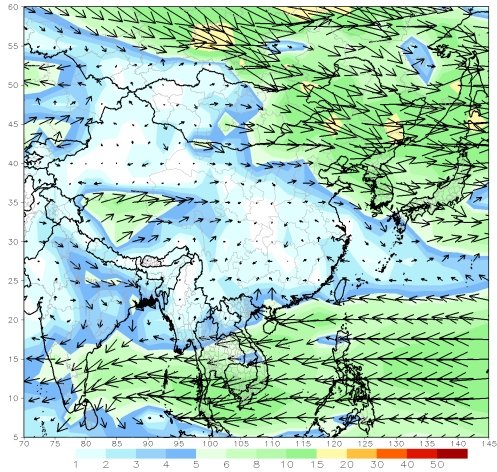
GFS week1 Temperature Min (C)
 Period: 18z01Dec2022 - 18z07Dec2022



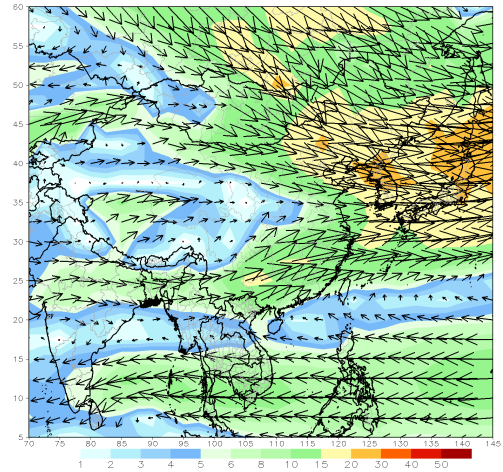
Weekly Wind Forecast

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: 18z01Dec2022 - 18z07Dec2022



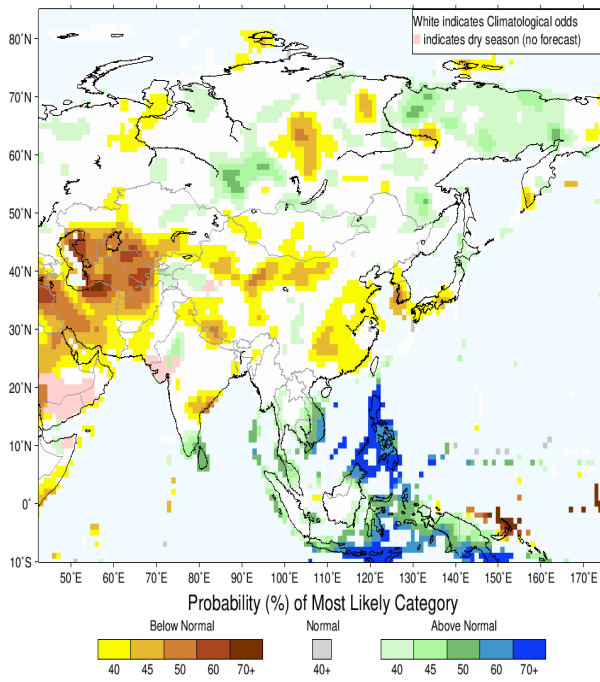
GFS 700mb week1 Mean Vector Wind Total (m/s)
 Period: 18z01Dec2022 - 18z07Dec2022



Seasonal Rainfall and Temperature Forecast

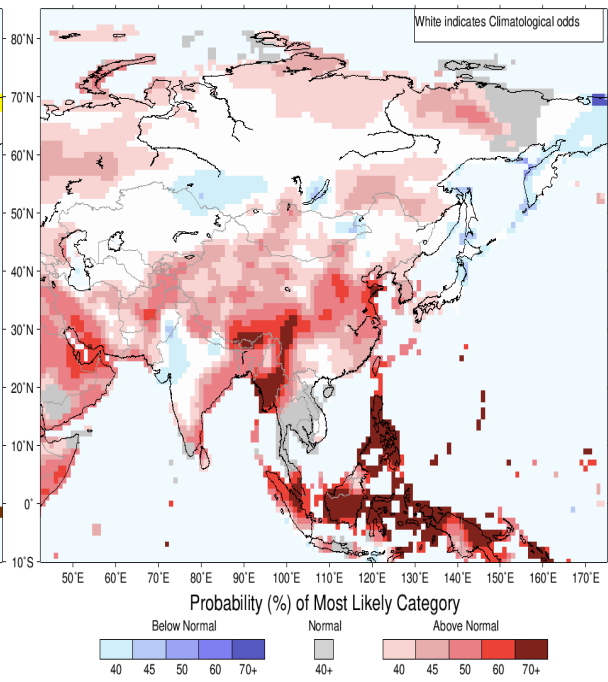
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant 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 November–December–January 2022, Issued October 2021



Precipitation Forecast

IRI Multi-Model Probability Forecast for Temperature for November–December–January 2022, Issued October 2021



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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