PRESS RELEASE

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पृथ्वी विज्ञान मंत्रालय (एम. ओ. ई. एस.)
Ministry of Earth Sciences (MoES)

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

Updated Long Range Forecast for the Southwest Monsoon Seasonal Rainfall during June–September, 2025 and Monthly Rainfall and Temperature Outlook for June 2025

Highlights

a) Quantitatively, the southwest monsoon seasonal rainfall over the country as a whole is likely to be **106% of the Long Period Average (LPA) with a model error of ±4%, indicating that above normal rainfall is most likely** over the country as a whole during the monsoon season (June to September), 2025.

b) The southwest monsoon seasonal (June to September, 2025) rainfall is most likely to be **above normal over Central India and South Peninsular India (>106% of LPA), normal over Northwest India (92-108% of LPA)** and **below normal over Northeast India (<94% of LPA).**

c) The southwest monsoon seasonal rainfall over the **Monsoon Core Zone (MCZ)** consisting of most of the rainfed agriculture areas in the country is most likely to be **above normal (>106% of LPA).**

d) During June to September 2025, normal to above normal rainfall is very likely over most parts of the country except some areas of Northwest and East India and many areas of Northeast India where below normal rainfall is very likely.

e) The average **rainfall** for the country as a whole during June 2025 is most likely to be **above normal** (>108% of the Long Period Average (LPA)).

f) During June 2025, Normal to above normal monthly rainfall is very likely over most parts of the country, except some southern parts of peninsular India and parts of Northwest and Northeast India, where below normal rainfall is likely.

g) In June 2025, normal to below normal monthly maximum temperatures are likely over most parts of the country, except many regions of the Northwest India and Northeast India, where above normal temperatures are very likely. Above-normal monthly minimum temperatures are likely across most parts of the country, except some parts of Central India and adjoining south Peninsula where, where normal to below-normal minimum temperatures are very likely.

h) Currently, neutral El Nino-Southern Oscillation (ENSO) conditions are prevailing over the equatorial Pacific region. The latest Monsoon Mission Climate Forecast System (MMCFS) as well as other climate model forecasts indicate that the neutral ENSO conditions are likely to continue during the monsoon season.

i) At present, neutral Indian Ocean Dipole (IOD) conditions are observed over the Indian Ocean. The latest MMCFS forecast indicates that a weak negative IOD conditions are likely to develop during the southwest monsoon season.

IMD will issue the forecast for the July rainfall in the last week of June.

1. Background

Since 2021, the India Meteorological Department (IMD) has been using a new strategy for issuing operational long rangeforecasts on a monthly and seasonal scales for rainfall and temperatures across the country. For this, a newly developed Multi-Model Ensemble (MME) forecasting system is used. The MME system utilizes simulations from the coupled global climate models (CGCMs) sourced from various global climate prediction and research centers, including IMD's Monsoon Mission Climate Forecasting System (MMCFS) model.

On 15th April, 2025, the IMD has issued the first-stage forecast for the 2025 southwest monsoon seasonal (June to September) rainfall, consisting of quantitative and probabilistic forecasts for the country as a whole, and the spatial distribution of probabilistic forecasts for the tercile categories (above normal, normal, and below normal) of the seasonal (June-September) rainfall. As a part of the second stage forecasts, the IMD has prepared the following forecasts:

1. Updated quantitative and probabilistic forecasts for the monsoon seasonal rainfall over the country as a whole and spatial distribution of the probabilistic forecasts for the seasonal rainfall over the country.
2. Probabilistic forecasts for the seasonal rainfall over the four homogenous regions of India (northwest India, central India, south Peninsula, and northeast India) and the monsoon core zone (MCZ) consisting of most of the rainfed agriculture areas of the country.
3. Probabilistic forecast for the June rainfall over the country as a whole and spatial distribution of the probabilistic forecasts for the June rainfall over the country.
4. Spatial distribution of the probabilistic forecasts for the June Temperatures (Maximum and Minimum) and Outlook for Heat waves for the month of June over the country.

2. Sea Surface Temperature (SST) over the equatorial Pacific & Indian Oceans

Currently, neutral El Nino-Southern Oscillation (ENSO) conditions are prevailing over the equatorial Pacific region. The latest MMCFS as well as other climate model forecasts indicate that the neutral ENSO conditions are likely to continue during the monsoon season.

At present, neutral Indian Ocean Dipole (IOD) conditions are observed over the Indian Ocean. The latest MMCFS forecast indicates that a weak negative IOD conditions are likely to develop during the monsoon season.

3. Second Stage Forecasts for the 2025 Southwest Monsoon Rainfall

3a. Updated Forecast for the Rainfall over the Country as a whole during Monsoon Season, 2025

Quantitatively, the monsoon seasonal rainfall for the country as a whole is likely to be 106% of the Long Period Average (LPA) with a model error of ± 4%. The LPA of the season rainfall over the country as a whole for the period 1971-2020 is 87 cm.

The 5 category probability forecasts for the Seasonal (June to September) rainfall over the country as a whole during 2025 are given below. **It suggests highest probability for the above normal rainfall (105-110% of LPA) for the country as a whole.**

Category	Rainfall Range (% of LPA)	Forecast Probability (%)	Climatological Probability (%)
Deficient	< 90	**2**	16
Below Normal	> 90 - 95	**8**	17
Normal	96 -104	**31**	33
Above Normal	> 105 -110	**32**	16
Excess	> 110	**27**	17

3.b. Updated Forecast for the Spatial Distribution of Rainfall over the Country during monsoon season, 2025

The spatial distribution of probabilistic forecasts for tercile categories (above normal, normal, and below normal) of seasonal rainfall (June to September, 2025) is depicted in Figure 1. It indicates that normal to above normal rainfall is very likely over most parts of the country except some areas of Northwest and East India and many areas of Northeast India where normal to below normal rainfall is very likely. There is no signal by the model over the white shaded areas within the land region of the country.

Above-normal rainfall carries benefits for agriculture and water resources but also introduces risks such as flooding, disruptions to transportation, public health concerns, and harm to ecosystems. To address these risks, strategies can include reinforcing infrastructure, making use of IMD's early warning systems, strengthening surveillance and conservation initiatives, and establishing response mechanisms within sectors that are particularly vulnerable.

3c. Forecast for the Monsoon Rainfall over the four Homogenous regions of the country and Monsoon Core Zone (MCZ) during Monsoon Season, 2025

The tercile category forecasts for the four broad homogenous regions and MCZ for the monsoon seasonal (June-September) rainfall during 2025 are given in the tables below. Tercile categories have equal climatological probabilities of 33.33% of LPA each.

Rainfall Category	NW India		Central India		South Peninsula	
	Range (% of LPA)	Forecast Probability (%)	Range (% of LPA)	Forecast Probability (%)	Range (% of LPA)	Forecast Probability (%)
Below Normal	<92	**12**	<94	**11**	<94	**6**
Normal	92-108	**43**	94-106	**31**	94-106	**18**
Above Normal	>108	**45**	>106	**58**	>106	**76**

Rainfall Category	Northeast India		Monsoon Core Zone (MCZ)	
	Range (% of LPA)	Forecast Probability (%)	Range (% of LPA)	Forecast Probability (%)
Below Normal	<94	**54**	<94	**12**
Normal	94-106	**38**	94-106	**32**
Above Normal	>106	**8**	>106	**56**

4. Probabilistic Forecast for the Rainfall over the Country during June, 2025

The average rainfall for the country as a whole during June, 2025 is **most likely to be above normal (>108% of the Long Period Average (LPA))**. The LPA of the rainfall over the country as a whole during June based on the data of 1971-2020 is 165.4cm.

The spatial distribution of probabilistic forecasts for tercile categories (above normal, normal, and below normal) for rainfall during June, 2025 is displayed in Figure 2. Normal to above normal monthly rainfall is very likely over most parts of the country, except over some southern parts of peninsular India, parts of Northwest and Northeast India, where below normal rainfall is likely. There is no signal indicated by the model over the white shaded areas within the land region of the country.

The Table 1 gives probabilistic category forecast of rainfall for 36 meteorological subdivisons of India. It indicates that most of the subdivisons of India are likely to receive normal to above normal rainfall during June to Spetember 2025 except Arunachal Pradesh, Assam & Meghalaya which would experience below normal rainfall.

5. Probabilistic Forecast for the Temperatures over the Country during June, 2025

Figures 3a and 3b display the forecasted probabilities of maximum and minimum temperatures, respectively, during June 2025.

In June 2025, normal to below normal monthly maximum temperatures are likely over most parts of the country, except many regions of the Northwest India and Northeast India, where above normal temperatures are very likely (Fig. 3a).

During June 2025, above-normal monthly minimum temperatures are likely across most parts of the country, except some parts of Central India and adjoining south Peninsula where, where normal to below-normal minimum temperatures are very likely (Fig. 3b).

6. Heat Wave outlook for the Month of June 2025

The anomaly (deviation from the normal) forecast for the number of heatwave days in the country for June 2025 is shown in Fig. 4. During June, 2025, below-normal heatwave days are likely over most parts of Northwest India and adjoining areas of Central and East India.

7. Extended Range Forecast and short to medium range forecasting services

IMD also regularly prepares and provides extended range forecasts (7–day averaged forecasts for the next four weeks) for rainfall, maximum temperatures, and minimum temperatures over the country. These forecasts are updated every week on Thursday. These forecasts are based on the Multi-model Ensemble Dynamical Extended Range Forecasting System, which is currently operational at IMD. The forecasts are available through IMD website https://mausam.imd.gov.in/imd_latest/contents/extendedrangeforecast.php).

The extended range forecast is followed by short to medium range forecasts issued daily based on various very high resolution Global and Regional Models. The forecasts are available through IMD website https://nwp.imd.gov.in/gfsproducts_cycle00_mausam.php.

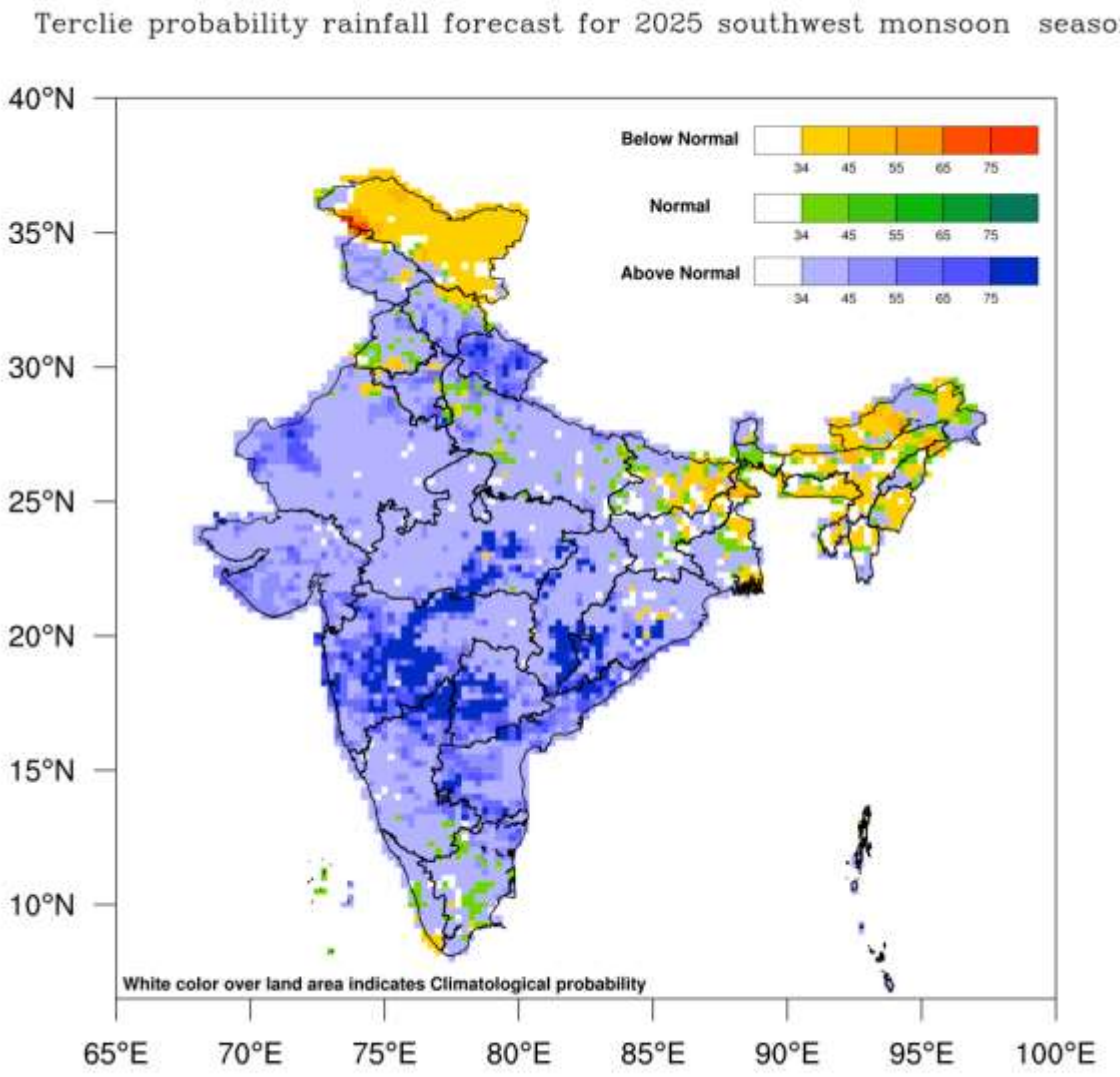

Fig.1. Updated Probability forecast of tercile categories* (below normal, normal, and above normal) of rainfall over India during southwest monsoon season (June-September), 2025. The figure illustrates the most likely categories as well as their probabilities. The white shaded areas within the land region represent no signal from the model.

(*Tercile categories have equal climatological probabilities, of 33.33% each).

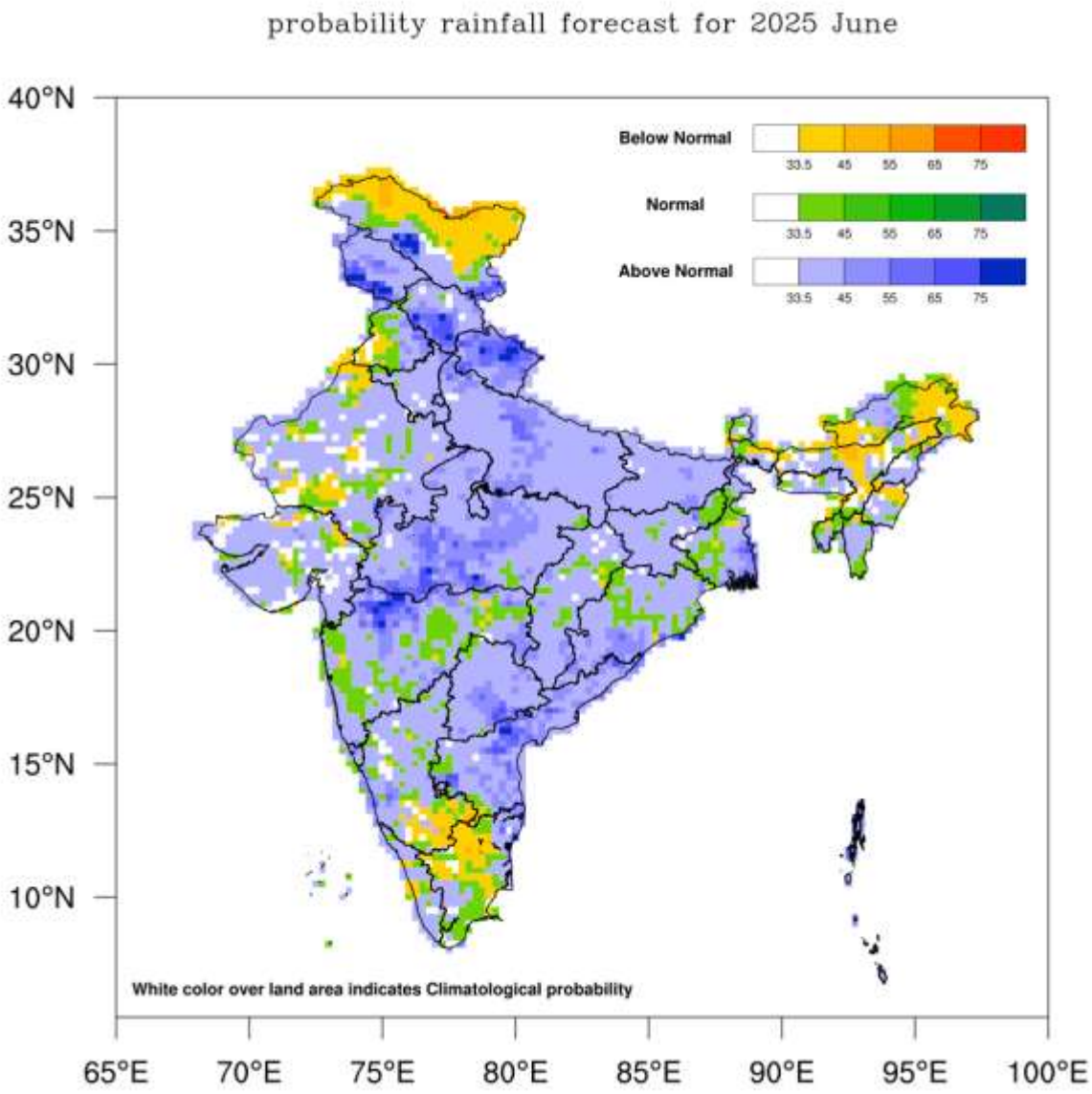

Fig.2. Probability forecast of tercile categories* (below normal, normal, and above normal) for the 2025 Junerainfall over India. The figure illustrates the most likely categories as well as their probabilities. The white shaded areas within the land region represent no signal from the model.

(*Tercile categories have equal climatological probabilities, of 33.33% each).

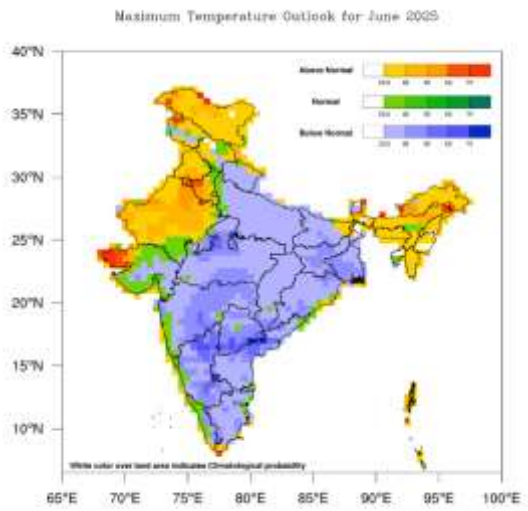

Fig.3a. Probability forecast of Maximum Temperature for June 2025.

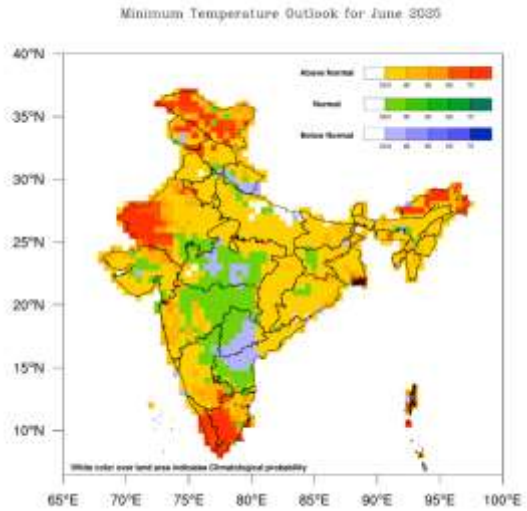

Fig.3b. Probability forecast of Minimum Temperature for June 2025.

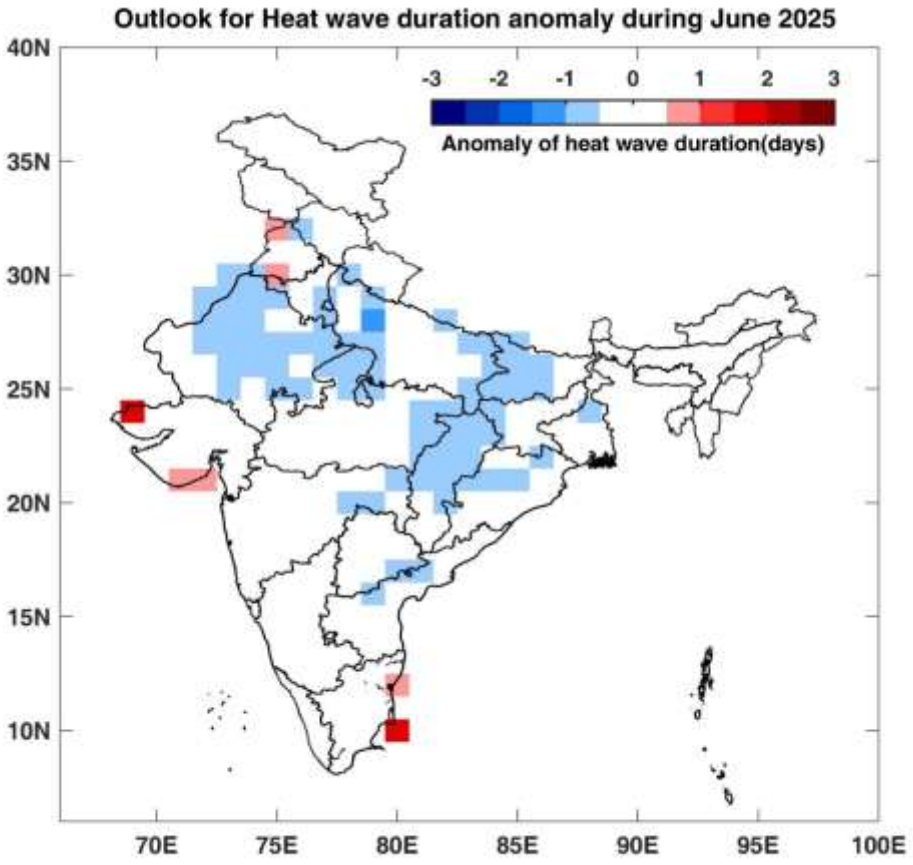

Fig.4. Probability forecast of heat wave days during June 2025.

Table 1 – Subdivsionwise JJAS 2025 Rainfall Probability Forecast Category

Sn.NO	Sub Division Name	2025 Forecast Category of the the Long Period Average (LPA)	Climatological Normals in mm (1971-2020)
1	Andaman & Nicobar Islands	Above Normal (>107% of the LPA)	1632
2	Arunachal Pradesh	Below Normal (<91% of the LPA)	1675
3	Assam & Meghalaya	Below Normal (<93% of the LPA)	1762
4	Nagaland, Manipur, Mizoram & Tripura	Near Normal (92-108% of the LPA)	1302
5	Sub-Himalayan West Bengal & Sikkim	Near Normal (93-107% of the LPA)	1890
6	Gangetic West Bengal	Above Normal (>107% of the LPA)	1167
7	Odisha	Above Normal (>106% of the LPA)	1150
8	Jharkhand	Above Normal (>108% of the LPA)	1023
9	Bihar	Above Normal (>111% of the LPA)	992
10	East Uttar Pradesh	Above Normal (>110% of the LPA)	799
11	West Uttar Pradesh	Above Normal (>112% of the LPA)	672
12	Uttarakhand	Above Normal (>108% of the LPA)	1163
13	Haryana, Chandigarh & Delhi	Above Normal (>114% of the LPA)	431
14	Punjab	Above Normal (>115% of the LPA)	440
15	Himachal Pradesh	Above Normal (>109% of the LPA)	734
16	Jammu & Kashmir and Ladakh	Near Normal (88-112% of the LPA)	549
17	West Rajasthan	Above Normal (>115% of the LPA)	284
18	East Rajasthan	Above Normal (>110% of the LPA)	627
19	West Madhya Pradesh	Above Normal (>109% of the LPA)	877
20	East Madhya Pradesh	Above Normal (>108% of the LPA)	1043
21	Gujarat	Above Normal (>114% of the LPA)	927
22	Saurashtra & Kutch	Above Normal (>119% of the LPA)	540
23	Konkan & Goa	Above Normal (>107% of the LPA)	2871
24	Madhya Maharashtra	Above Normal (>110% of the LPA)	747
25	Marathwada	Above Normal (>112% of the LPA)	643
26	Vidarabha	Above Normal (>109% of the LPA)	937
27	Chattisgarh	Above Normal (>106% of the LPA)	1132
28	Coastal Andhra Pradesh	Above Normal (>109% of the LPA)	601
29	Telangana	Above Normal (>111% of the LPA)	735
30	Rayalaseema	Above Normal (>112% of the LPA)	409
31	Tamilnadu and Puducherry	Above Normal (>110% of the LPA)	329
32	Coastal Karanataka	Above Normal (>106% of the LPA)	3094
33	North Interior Karnataka	Above Normal (>111% of the LPA)	481
34	South Interior Karnataka	Above Normal (>108% of the LPA)	679
35	Kerala	Above Normal (>108% of the LPA)	2019
36	Lakshadweep	Above Normal (>109% of the LPA)	1027