



# India Meteorological Department

## FDP STORM Bulletin No. 22 (22-03-2025)

(For updated FDP Bulletin/Guidance Advisory kindly follow the link: [https://nwp.imd.gov.in/fdp\\_now/fdp\\_bulletins/fdp.pdf](https://nwp.imd.gov.in/fdp_now/fdp_bulletins/fdp.pdf))

### **1. CURRENT SYNOPTIC SITUATION:**

**NWFC Inference (based on 0300 UTC of the day):**

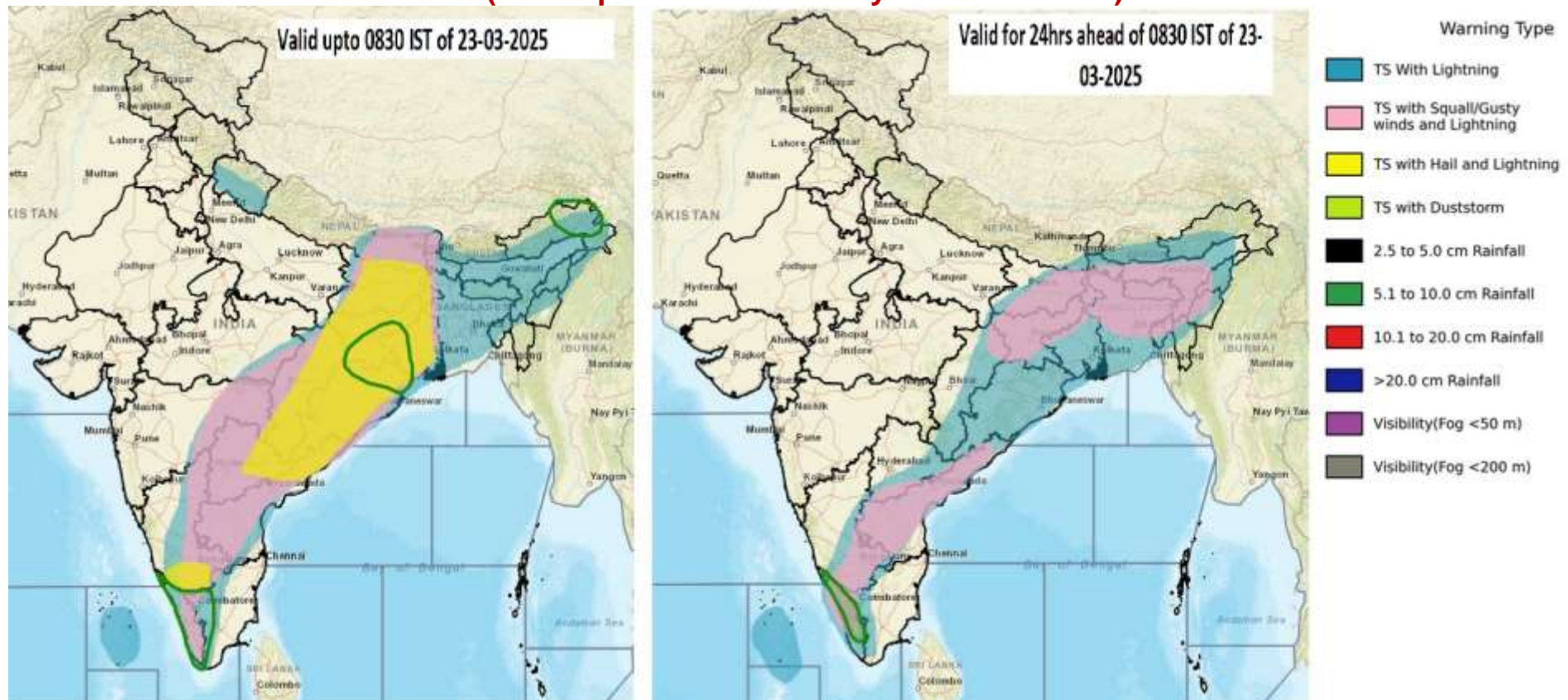
- ❖ **The Western Disturbance** as a trough in middle & upper tropospheric level with its axis between 3.1 & 7.6 km above mean sea level now runs roughly along Long. 82°E to the north of Lat. 20°N.
- ❖ **The cyclonic circulation** over central parts of Madhya Pradesh now lies over central Chhattisgarh & neighbourhood and extends upto 1.5 km above mean sea level.
- ❖ **A trough/wind discontinuity** runs from southeast Uttar Pradesh to south Madhya Maharashtra across the above cyclonic circulation over central Chhattisgarh & neighbourhood, interior Maharashtra and extends upto 1.5 km above mean sea level.
- ❖ **A north-south trough** runs from North interior Karnataka to south Tamil Nadu at 1.5 km above mean sea level.
- ❖ **The Cyclonic Circulation** over northeast Assam & neighbourhood extending upto 1.5 km above mean sea level persists.
- ❖ **A fresh Western Disturbance** is likely to affect Western Himalayan Region from the night of 24th March, 2025.
- ❖ **The trough/wind discontinuity** from south Chhattisgarh to South Interior Karnataka across Telangana and North Interior Karnataka at 1.5 km above mean sea level has become less marked.
- ❖ **The trough** in easterlies from Comorin area to south Tamil Nadu at 0.9 km above mean sea level has become less marked.

## 2. INTENSIVE OBSERVATION PERIOD (IOP) AREAS FOR DAY-1 AND DAY-2 (valid upto 0830 IST of day after tomorrow):

(For updated guidance advisory map kindly follow the link: [https://nwp.imd.gov.in/fdp\\_now/fdp\\_bulletins/iop.jpg](https://nwp.imd.gov.in/fdp_now/fdp_bulletins/iop.jpg) )

IOP Advisory for Day-1	IOP Advisory for Day-2
<p><b>Significant Rainfall:</b> Interior Tamil Nadu, Kerala, north Odisha, Gangetic West Bengal, Jharkhand, and Arunachal Pradesh.</p> <p><b>Thunderstorm with Squally Winds (&gt;60 kmph) and lightning:</b> Nil</p> <p><b>Thunderstorm with Squally Winds (50-60 kmph) and lightning:</b> Gangetic West Bengal and Odisha.</p> <p><b>Thunderstorm with Gusty Winds (upto 40-50 kmph) and lightning:</b> Kerala, Interior Karnataka, Rayalaseema, Coastal Andhra Pradesh, Telangana, East Madhya Pradesh, Vidarbha, Chhattisgarh, Sub-Himalayan West Bengal &amp; Sikkim.</p> <p><b>Thunderstorm with Gusty Winds (upto 30-40 kmph) and lightning:</b> Marathwada and Bihar.</p> <p><b>Thunderstorm with Hail and lightning:</b> Rayalaseema, Coastal Andhra Pradesh, Telangana, Chhattisgarh, Gangetic West Bengal, Jharkhand, Odisha, Bihar and Sub-Himalayan West Bengal.</p> <p><b>Thunderstorm with Lightning:</b> Lakshadweep Islands, Tamilnadu, Coastal Karnataka, Uttarakhand, Sikkim, Assam &amp; Meghalaya, Mizoram, Manipur, Nagaland, Tripura and Arunachal Pradesh.</p> <p><b>Thunderstorm with Duststorm, Lightning and gusty winds (30-40kmph):</b> Nil.</p> <p><b>Strong Surface Winds(30-40kmph):</b> Nil.</p>	<p><b>Significant Rainfall:</b> Kerala.</p> <p><b>Thunderstorm with Squally Winds (&gt;60 kmph) and lightning:</b> Nil.</p> <p><b>Thunderstorm with Squally Winds (50-60 kmph) and lightning:</b> Nil.</p> <p><b>Thunderstorm with Gusty Winds (upto 40-50 kmph) and lightning:</b> Kerala, South Interior Karnataka, Rayalaseema, Coastal Andhra Pradesh and Chhattisgarh.</p> <p><b>Thunderstorm with Gusty Winds (upto 30-40 kmph) and lightning:</b> Telangana, Bihar, Assam &amp; Meghalaya, Mizoram, Manipur, Nagaland, Tripura.</p> <p><b>Thunderstorm with Hail and lightning:</b> Nil.</p> <p><b>Thunderstorm with Lightning:</b> Lakshadweep islands, Tamilnadu, Coastal &amp; North Interior Karnataka, West Bengal &amp; Sikkim, Odisha and Arunachal Pradesh.</p> <p><b>Thunderstorm with Duststorm, Lightning and gusty winds (30-40kmph):</b> Nil.</p> <p><b>Strong Surface Winds(30-40kmph):</b> Nil.</p>

## Graphical Presentation of Potential Areas (IOP) for Severe Weather for Day-1 and Day-2 (Valid up to 0830 IST of day after tomorrow)



(For updated IOP area image during the day, kindly follow the link: [https://nwp.imd.gov.in/fdp\\_now/fdp\\_bulletins/iop.jpg](https://nwp.imd.gov.in/fdp_now/fdp_bulletins/iop.jpg))

### 3. CURRENT OBSERVATIONS (SATELLITE):

#### Current observations:

#### Convection based on 0500 UTC (INSAT-3DS):

Moderate convection observed over extreme east Bihar south west & east Jharkhand Orissa extreme north coastal Andhra Pradesh Gangetic West Bengal Sub Himalayan West Bengal Sikkim North-East states extreme south Tamil Nadu.

Dust (Pink/Magenta during Day time) based on 0515 UTC (METEOSAT RGB): Dust not observed over India.

**Westerly Trough (WD) based on 0500 UTC:** WD observed as a trough roughly along Longitude 80.0E to the north of Latitude 20.0N.

**Vorticity (850hPa) based on 0500 UTC:** Positive vorticity up to +50 ( $\times 10^{-5}/s$ ) observed over Haryana adjoining Delhi south Uttarakhand adjoining north west Uttar Pradesh south Bihar North Interior Karnataka adjoining South Interior Karnataka.

**Wind Shear based on 0500 UTC:** 10-30 kts observed over southern Peninsular India Lakshadweep islands area Andaman & Nicobar islands area. 80-100 kts observed over North –East states. 30-60 kts observed over rest India.

**Wind Shear Tendency based on 0500 UTC:** Negative Wind Shear Tendency upto -20kts observed over Uttar Pradesh Bihar Sub Himalayan West Bengal Sikkim Jharkhand north west Orissa Chhattisgarh Madhya Pradesh south Rajasthan Gujarat Konkan Goa Madhya Maharashtra. Positive Wind Shear Tendency upto +20 kts observed over Jammu & Kashmir Ladakh Himachal Pradesh Uttarakhand Punjab Haryana Delhi Andaman islands area.

**Low Level Convergence (850-925hPa) based on 0500 UTC:** Positive Low Level Convergence up to +5 to +10 ( $\times 10^{-5}/s$ ) observed over Himachal Pradesh adjoining Uttarakhand south east Madhya Pradesh adjoining Vidarbha south Orissa adjoining north coastal Andhra Pradesh.

**Upper Level Divergence (150-300hPa) based on 0500 UTC:** Positive Upper Level Divergence up to +5 to +10 ( $\times 10^{-5}/s$ ) observed over north west Uttar Pradesh adjoining Uttarakhand Madhya Maharashtra Bihar Jharkhand extreme east Madhya Pradesh Chhattisgarh Orissa Gangetic West Bengal Meghalaya adjoining Assam Arunachal Pradesh.

#### **4. NWP MODEL GUIDANCE:**

##### **(i) NCMRWF: NCUM Global (12km) (forecast based on 00 UTC the Day):**

###### **Day/Index: Subdivisions with Lower Level Convergence > $15 \times 10^{-5} /s$**

**Day0:** Odisha, SI\_Karnataka,

**Day1:** Odisha, Madhya\_Maharashtra, Coastal\_AP, NI\_Karnataka, SI\_Karnataka,

**Day2:** Odisha, East\_MP, Madhya\_Maharashtra, Coastal\_AP, NI\_Karnataka, Kerala,

**Day3:** Assam\_Meghalaya, Odisha, Madhya\_Maharashtra, Chhattisgarh, Coastal\_AP, SI\_Karnataka,

**Day4:** NE\_NMMT, Odisha, Madhya\_Maharashtra, Chhattisgarh, Coastal\_AP, SI\_Karnataka,

###### **Day/Index: Subdivisions with Lower Level Vorticity > $15 \times 10^{-5} /s$**

**Day0:** Arunachal\_Pradesh, Assam\_Meghalaya, Sub\_Himalayan\_WB, Gangetic\_WB, East\_UP, Odisha, East\_MP,

**Day1:** Assam\_Meghalaya, Uttarakhand,

**Day2:** Uttarakhand, Himachal\_Pradesh, Odisha,

**Day3:** Uttarakhand, Himachal\_Pradesh,

**Day4:** Arunachal\_Pradesh, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Uttarakhand, Coastal\_AP,

**Day/Index: Subdivisions with Showalter Index < -4**

**Day0:** Arunachal\_Pradesh, NE\_NMMT, Sub\_Himalayan\_WB, Jharkhand, Bihar, Odisha, Vidarbha, Chhattisgarh, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, SI\_Karnataka, Kerala,

**Day1:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, Rayalseema, TN\_Puducherry, SI\_Karnataka, Kerala,

**Day2:** Arunachal\_Pradesh, Assam\_Meghalaya, Sub\_Himalayan\_WB, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir, Coastal\_AP, TN\_Puducherry, Kerala,

**Day3:** Arunachal\_Pradesh, Sub\_Himalayan\_WB, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir, TN\_Puducherry, SI\_Karnataka, Kerala,

**Day4:** Arunachal\_Pradesh, Sub\_Himalayan\_WB, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir,

**Day/Index: Subdivision with Total Totals Index > 52**

**Day0:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir, Odisha, West\_MP, Vidarbha, Chhattisgarh, Telangana, Rayalseema, NI\_Karnataka,

**Day1:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, Uttarakhand,

**Day2:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir,

**Day3:** Arunachal\_Pradesh, Sub\_Himalayan\_WB, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir,

**Day4:** Arunachal\_Pradesh, Sub\_Himalayan\_WB, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir,

**Day/Index: Subdivisions with K Index > 40**

**Day0:** Arunachal\_Pradesh, Odisha, Chhattisgarh, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, NI\_Karnataka, SI\_Karnataka, Kerala,

**Day1:** Arunachal\_Pradesh, NE\_NMMT, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, SI\_Karnataka, Kerala,

**Day2:** Arunachal\_Pradesh, Sub\_Himalayan\_WB, Uttarakhand, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

**Day3:** Arunachal\_Pradesh, Sub\_Himalayan\_WB, Uttarakhand, Himachal\_Pradesh, Jammu\_Kashmir, Madhya\_Maharashtra, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

**Day4:** Arunachal\_Pradesh, Sub\_Himalayan\_WB, Uttarakhand, Coastal\_AP, Telangana, Rayalseema, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka,

**Day/Index: Subdivisions with Precipitation > 2 cm**

**Day1:** Arunachal\_Pradesh, Jharkhand, Odisha, Chhattisgarh, Coastal\_AP,  
**Day2:** Assam\_Meghalaya, NE\_NMMT, Gangetic\_WB, Bihar, SI\_Karnataka,  
**Day3:** Kerala,  
**Day4:** Jammu\_Kashmir, SI\_Karnataka,  
**Day5:** Arunachal\_Pradesh, Jammu\_Kashmir,

**(ii) NCMRWF: NCUM Regional (4km) (forecast based on 00 UTC the Day):**

**Day/Index: Subdivisions with Lower Level Convergence >  $15 \times 10^{-5}$  /s**

**Day0:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Punjab, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, East\_RJ, Odisha, West\_MP, East\_MP, Guj\_Reg, Saurashtra\_Kutch, Konkan\_Goa, Madhya\_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman\_Nicobar, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,  
**Day1:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Punjab, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, East\_RJ, Odisha, West\_MP, East\_MP, Guj\_Reg, Saurashtra\_Kutch, Konkan\_Goa, Madhya\_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman\_Nicobar, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,  
**Day2:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Punjab, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, East\_RJ, Odisha, West\_MP, East\_MP, Guj\_Reg, Saurashtra\_Kutch, Konkan\_Goa, Madhya\_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman\_Nicobar, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

**Day/Index: Subdivisions with Lower Level Vorticity >  $15 \times 10^{-5}$  /s**

**Day0:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Punjab, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, East\_RJ, Odisha, West\_MP, East\_MP, Guj\_Reg, Saurashtra\_Kutch, Konkan\_Goa, Madhya\_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman\_Nicobar, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,  
**Day1:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Punjab, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, East\_RJ, Odisha, West\_MP, East\_MP, Guj\_Reg, Saurashtra\_Kutch, Konkan\_Goa, Madhya\_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman\_Nicobar, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,  
**Day2:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Punjab, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, East\_RJ, Odisha, West\_MP, East\_MP, Guj\_Reg, Saurashtra\_Kutch, Konkan\_Goa, Madhya\_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman\_Nicobar, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

**Day/Index: Subdivisions with Showalter Index < -4**

**Day0:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Punjab, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, East\_RJ, Odisha, West\_MP, East\_MP, Guj\_Reg, Saurashtra\_Kutch, Konkan\_Goa, Madhya\_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman\_Nicobar, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

**Day1:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Punjab, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, East\_RJ, Odisha, West\_MP, East\_MP, Guj\_Reg, Saurashtra\_Kutch, Konkan\_Goa, Madhya\_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman\_Nicobar, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

**Day2:** Arunachal\_Pradesh, Assam\_Meghalaya, NE\_NMMT, Sub\_Himalayan\_WB, Gangetic\_WB, Jharkhand, Bihar, East\_UP, West\_UP, Uttarakhand, Hry\_Chhd\_Delhi, Punjab, Himachal\_Pradesh, Jammu\_Kashmir, West\_RJ, East\_RJ, Odisha, West\_MP, East\_MP, Guj\_Reg, Saurashtra\_Kutch, Konkan\_Goa, Madhya\_Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Andaman\_Nicobar, Coastal\_AP, Telangana, Rayalseema, TN\_Puducherry, Coastal\_Karnataka, NI\_Karnataka, SI\_Karnataka, Kerala,

**Day/Index: Subdivision with Total Totals Index > 52**

**Day0:**Nil

**Day1:**Nil

**Day2:**Nil

**Day/Index: Subdivisions with K Index > 40**

**Day0:**Nil

**Day1:**Nil

**Day2:**Nil

**Day/Index: Subdivisions with Precipitation > 2 cm**

**Day0:**Nil

**Day1:**Nil

**Day2:**Nil

**(iii) IMD GFS (T1534) based on 00 UTC the Day:**

**Synoptic systems:**

- Wind analysis at 850 hPa shows the cyclonic circulation over central parts of Madhya Pradesh extending above mean sea level persists.

- Wind analysis at 850 hPa shows the trough/wind discontinuity from south Chhattisgarh to South Interior Karnataka across Telangana and North Interior Karnataka extending above mean sea level persists.
- Wind analysis at 850 hPa shows the cyclonic circulation over northeast Assam & neighbour extending above mean sea level persists.
- Wind analysis at 925 hPa shows the trough in easterlies from Comorin area to south Tamil Nadu extending above mean sea level persists.

**Location of jet and jet core at 500 hPa 500hPa Jet core (>60kt):** No Jet core over Indian region during next 3 days.

**Spatial distribution of Low level Vorticity {(850hPa Positive Vorticity (>12 x 10<sup>-1</sup>/s)}:** Over parts of Himachal Pradesh, Uttarakhand, Bihar, SHWB & Sikkim, Assam & Meghalaya, Arunachal Pradesh, Saurashtra & Kutch, East Madhya Pradesh, NI & SI Karnataka, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Odisha and GWB **during next 3 days.**

**Spatial distribution of T-storm Initiation Index, Lifted Index, Total Total Index, CAPE, CIN and Sweat Index**

**[High potential for thunderstorm]**

**T-Storm Initiation Index ( > 3.5):**

**Day 1:** no significant value found all over India.

**Day 2:** no significant value found all over India.

**Day 3:** no significant value found all over India.

**Total Total Index( > 64) :**

**Day 1:** Significantly above than threshold value is found over Bihar and Jharkhand.

**Day 2:** Significantly above than threshold value is found over Bihar, SHWB & Sikkim, Assam & Meghalaya, GWB and Jharkhand.

**Day 3:** no significant value found all over India.

**Lifted Index ( < -6 ):**

**Day 1:** Significantly below than threshold value is found over Bihar, SHWB & Sikkim, Jharkhand, Odisha, CAP, Rayalseema and Tamil Nadu & Puducherry.

**Day 2:** Significantly below than threshold value is found over Bihar, SHWB & Sikkim, Assam & Meghalaya, GWB and Jharkhand.

**Day 3:** Significantly below than threshold value is found over GWB and Kerala.

**Sweat Index (> 600):**

**Day 1:** Significantly above threshold value over Bihar, SHWB & Sikkim, Jharkhand, Chhattisgarh, Odisha, CAP, Rayalseema and SI Karnataka.

**Day 2:** Significantly above threshold value over GWB, Odisha and CAP.

**Day 3:** no significant value found all over India.

**CAPE (> 1000):**



**Day 1:** The threshold value mostly seen over Bihar, SHWB & Sikkim, Odisha, Chhattisgarh, Vidarbha, CAP, Telangana, Rayalseema, Tamil Nadu & Puducherry, Kerala, NI Karnataka, Marathwada, Lakshadweep and Andaman & Nicobar Islands.

**Day 2:** The threshold value mostly seen over Odisha, CAP, Rayalseema, Tamil Nadu & Puducherry, Kerala, Lakshadweep and Andaman & Nicobar Islands.

**Day 3:** The threshold value mostly seen over GWB, Odisha, CAP, Tamil Nadu & Puducherry, Kerala, Lakshadweep and Andaman & Nicobar Islands.

**CIN (50-200):**The threshold value mostly seen over East Uttar Pradesh, Bihar, SHWB & Sikkim, Arunachal Pradesh, Assam & Meghalaya, NMMT, GWB, Jharkhand, Odisha, Chhattisgarh, Vidarbha, Telangana, CAP, Rayalseema, Kerala, Coastal Karnataka, NI & SI Karnataka, Lakshadweep and Andaman & Nicobar Islands **during next 3 days**.

### **Rainfall activity:**

**DAY 1:** Forecast of moderate to heavy rainfall activity over Arunachal Pradesh, GWB, Jharkhand, Odisha, Telangana, Tamil Nadu & Puducherry and Kerala; Forecast of light to moderate rainfall activity over Bihar, SHWB & Sikkim, Assam & Meghalaya, Rayalseema, SI Karnataka, Lakshadweep and Andaman & Nicobar Islands; Forecast of light rainfall activity over Uttarakhand, NMMT, Chhattisgarh, CAP, Coastal Karnataka, NI Karnataka and Marathwada.

**DAY 2:** Forecast of moderate to heavy rainfall activity over Odisha, Tamil Nadu & Puducherry, SI Karnataka and Kerala; Forecast of light to moderate rainfall activity over SHWB & Sikkim, Arunachal Pradesh, Assam & Meghalaya, NMMT and Andaman & Nicobar Islands; Forecast of light rainfall activity over Bihar, GWB, Telangana, CAP, Rayalseema, NI Karnataka, Madhya Maharashtra and Lakshadweep.

**DAY 3:** Forecast of light to moderate rainfall activity over Ladakh, Tamil Nadu & Puducherry, Kerala and Lakshadweep; Forecast of light rainfall activity over J&K, Arunachal Pradesh, Assam & Meghalaya, Odisha, CAP, NI & SI Karnataka, Marathwada and Andaman & Nicobar Islands.

### **(iv) IMD WRF (9km based on 00 UTC of the Day):**

#### **Model Reflectivity (Max.dBz):**

5-45 dBz Model reflectivity over parts of Ladakh, J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana & Chandigarh & Delhi, West Uttar Pradesh, West Rajasthan, SHWB & Sikkim, Arunachal Pradesh, Assam & Meghalaya, NMMT, SI Karnataka, Coastal Karnataka, Kerala, Tamil Nadu & Puducherry, Lakshadweep and Andaman & Nicobar Islands **during next 3 days**.

#### **Spatial distribution of Total Total Index, K-Index, CAPE and CIN**

#### **[High potential for thunderstorm]**

##### **Total Total Index (> 50):**

Above threshold value is seen all over the country except Lakshadweep and Andaman & Nicobar Islands **next 3 days**.

##### **K-Index (> 35):**

Below threshold value is seen all over the Country **during next 3 days**.

**CAPE (> 1000):**

**Day 1:** Greater than threshold value seen over East Uttar Pradesh, Bihar, SHWB & Sikkim, GWB, Jharkhand, Chhattisgarh, Vidarbha, Telangana, Odisha, CAP, Rayalseema, Tamil Nadu & Puducherry, Kerala, Lakshadweep and Andaman & Nicobar Islands.

**Day 2:** Greater than threshold value seen over East Uttar Pradesh, Bihar, SHWB & Sikkim, Assam & Meghalaya, NMMT, GWB, Jharkhand, Odisha, Chhattisgarh, Vidarbha, Telangana, CAP, Rayalseema, Tamil Nadu & Puducherry, Kerala, Coastal Karnataka, SI Karnataka, Lakshadweep and Andaman & Nicobar Islands.

**Day 3:** Greater than threshold value seen over Arunachal Pradesh, Assam & Meghalaya, Odisha, Chhattisgarh, Vidarbha, Telangana, CAP, Tamil Nadu & Puducherry, Kerala, Coastal Karnataka, Lakshadweep and Andaman & Nicobar Islands.

**CIN (50-150):**

**Day 1:** the threshold value of the index seen over parts of Bihar, SHWB & Sikkim, Assam & Meghalaya, NMMT, GWB, Jharkhand, Odisha, Chhattisgarh, East Madhya Pradesh, Vidarbha, Marathawada, Telangana, CAP, Rayalseema, NI & SI Karnataka and Andaman & Nicobar Islands.

**Day 2:** the threshold value of the index seen over parts of Bihar, SHWB & Sikkim, Arunachal Pradesh, Assam & Meghalaya, NMMT, GWB, Jharkhand, Odisha, Chhattisgarh, Vidarbha, Marathawada, Telangana, CAP, Rayalseema, Coastal Karnataka, NI & SI Karnataka, Lakshadweep and Andaman & Nicobar Islands.

**Day 3:** the threshold value of the index seen over parts of Assam & Meghalaya, GWB, Jharkhand, Odisha, Chhattisgarh, CAP, Coastal Karnataka, SI Karnataka, Lakshadweep and Andaman & Nicobar Islands.

**Rainfall activity:**

**DAY 1:** Forecast of moderate to heavy rainfall activity over Arunachal Pradesh, Jharkhand, Odisha, Telangana, CAP, Rayalseema, Tamil Nadu & Puducherry and SI Karnataka; Forecast of light to moderate rainfall activity over SHWB & Sikkim, Assam & Meghalaya, NMMT, GWB, Kerala, Lakshadweep and Andaman & Nicobar Islands; Forecast of light rainfall activity over Uttarakhand, West Uttar Pradesh, Bihar, Chhattisgarh, Vidarbha and NI Karnataka.

**DAY 2:** Forecast of moderate to heavy rainfall activity over GWB, Jharkhand and Odisha; Forecast of light to moderate rainfall activity over SHWB & Sikkim, Arunachal Pradesh, Assam & Meghalaya, NMMT, Chhattisgarh, Telangana, Rayalseema, Tamil Nadu & Puducherry, Kerala, SI Karnataka, Lakshadweep and Andaman & Nicobar Islands; Forecast of light rainfall activity over Uttarakhand, East Uttar Pradesh, Bihar, East Madhya Pradesh, CAP and NI Karnataka.

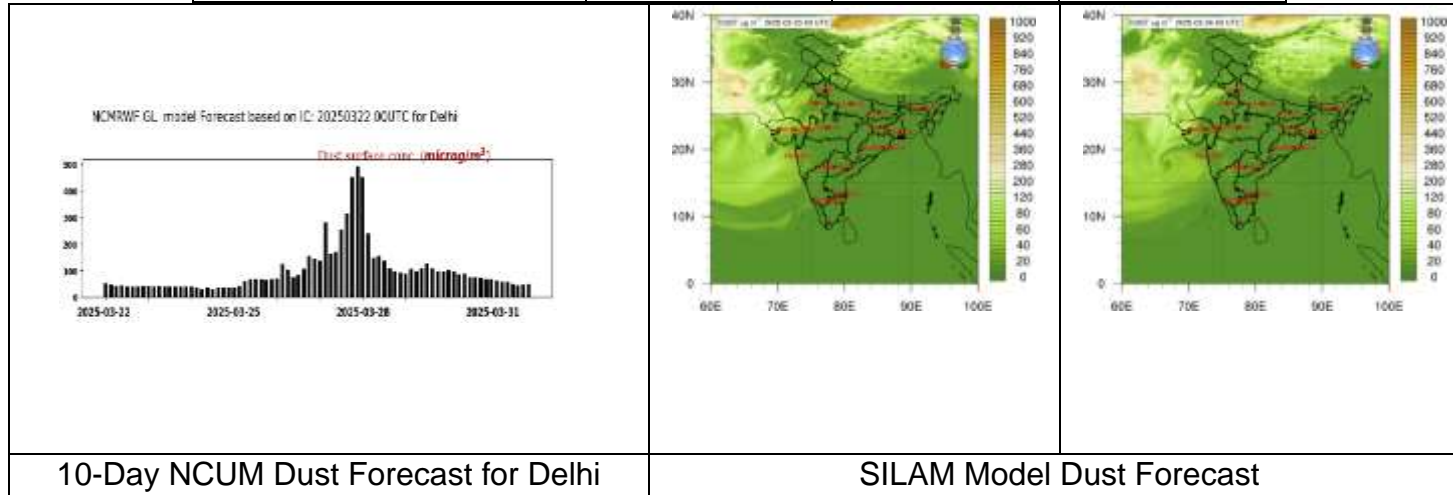
**DAY 3:** Forecast of moderate to heavy rainfall activity over Odisha; Forecast of light to moderate rainfall activity over SHWB & Sikkim, Arunachal Pradesh, NMMT, GWB, Jharkhand, Tamil Nadu & Puducherry, Kerala, NI & SI Karnataka, Coastal Karnataka, Lakshadweep and Andaman & Nicobar Islands; Forecast of light rainfall activity over Bihar, Assam & Meghalaya, Chhattisgarh, Telangana, CAP, Rayalseema and Vidarbha.

**5. ENVIRONMENTAL CONDITION (DUST ETC) AND ITS FORECAST BASED ON 00 UTC OF DATE:**

**Dust forecast:** Lowdust concentration is likely over parts of Rajasthan, Gujarat, Punjab, UP and Delhion 23<sup>th</sup> and 24<sup>th</sup> March 2025. The air quality is likely to be in Moderate category over Delhion 22.03.2025. The air quality is likely to be in Poor category over Delhion 23.03.2025. The outlook for subsequent 6 Days: The air quality is likely to be in Moderate to Poor category.

\*RM→ Running Mean

<b>Delhi – analysis &amp; Forecast</b>	22.03.2025 Observed (10AM)	Forecast 23.03.2025	Forecast 24.03.2025
RM PM10 (micro-g/m <sup>3</sup> )	163	210	190
RM PM2.5 (micro-g/m <sup>3</sup> )	66	96	91



## 6. PAST 24 hours SATELLITE OBSERVATIONS:

### Daily observations:

#### **OLR Daily (on convection based) INSAT-3DR:**

**150-200  $\text{wm}^{-2}$**  observed over east Ladakh south west & east Bihar north Jharkhand north Gangetic West Bengal Sub Himalayan West Bengal Sikkim west Meghalaya Arunachal Pradesh north east Assam.

**200-250  $\text{wm}^{-2}$**  observed over Jammu & Kashmir rest Ladakh north Himachal Pradesh north Uttarakhand south east Uttar Pradesh north east Madhya Pradesh Chhattisgarh north west Bihar south Jharkhand Orissa south Gangetic West Bengal rest North-East states south east Vidarbha Telangana Kerala west Tamil Nadu Andaman & Nicobar islands.

### **Precipitation:**

#### **INSAT-3DR IMC:**

Rainfall **5-30 mm** observed over north east Ladakh extreme north east Chhattisgarh south east Bihar north Jharkhand north Gangetic West Bengal Sub Himalayan West Bengal Arunachal Pradesh south Kerala extreme south Tamil Nadu.

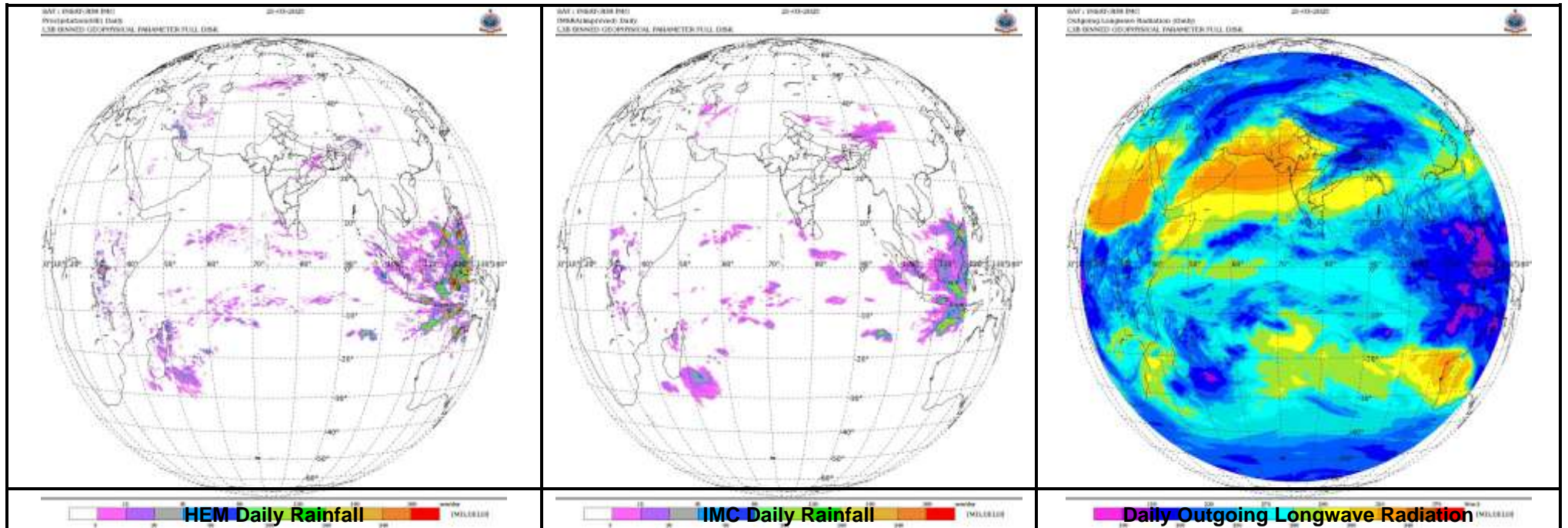
## INSAT-3DR HEM:

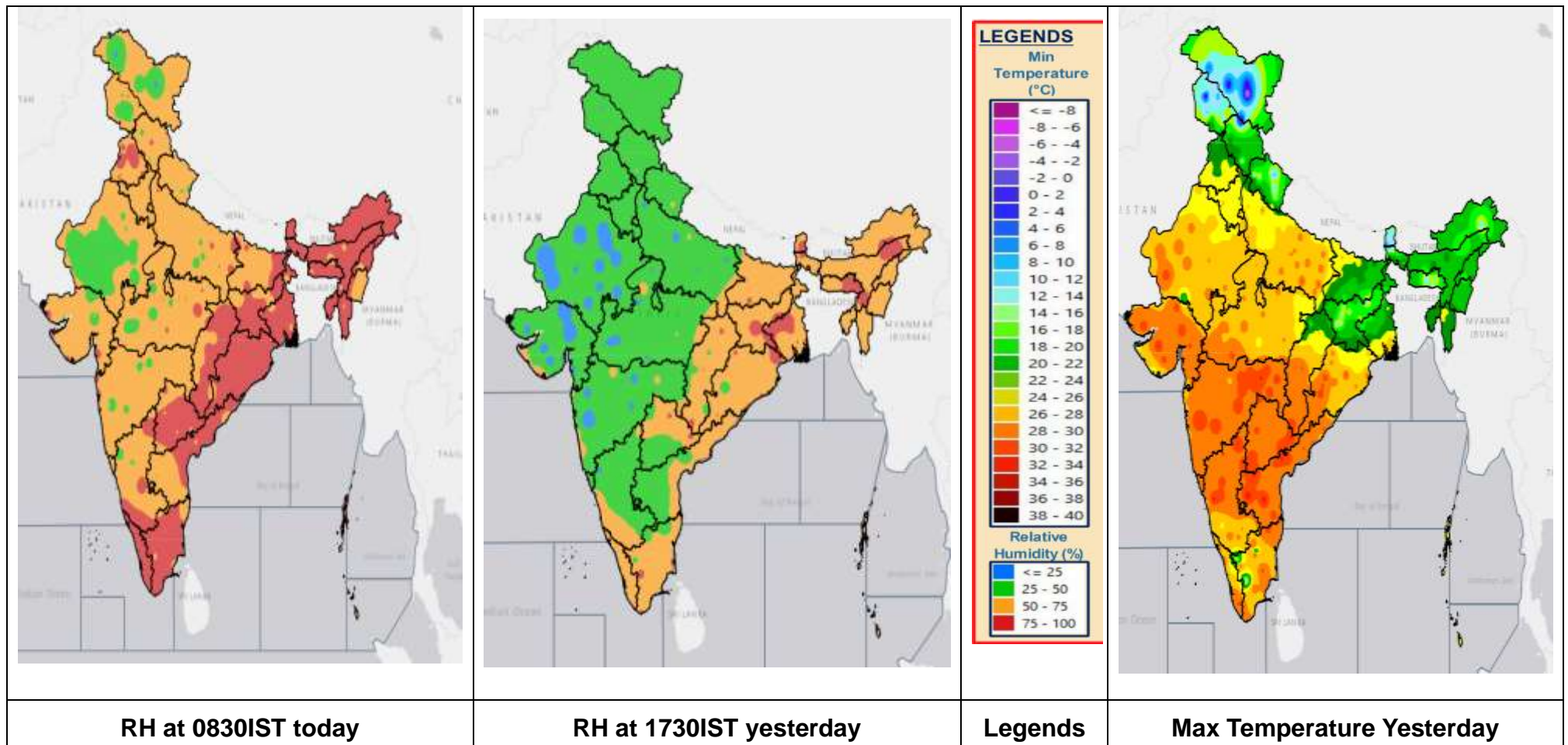
Rainfall **80-160 mm** observed over east Arunachal Pradesh.

Rainfall **5-30 mm** observed over Bihar Jharkhand north east Madhya Pradesh Chhattisgarh north Orissa Sub Himalayan West Bengal rest North-East states Telangana Kerala south Tamil Nadu.

### 7. REALISED WEATHER:

#### (i) Realised Weather Imageries





(ii) Realised TS/HS/SQ during past 24hours ending at 0300 UTC of today (Received from RMCs/MCs):

Region	Thunderstorms	Hailstorm (IST)	Squall/Gusty winds (UTC)	Duststorm (IST)	Remarks
Northwest India	IMD Stations: CHURK, KUM.MUKTESHWAR, KANGRA, SUNDERNAGAR,	Nil		Nil	Nil

<b>Northeast India</b>	<b>IMD Stations:</b> Dibrugarh, Guwahati,	Nil	Nerhema(07:45, 21kt), Kamlong(09:00, 27kt)	Nil	Nil
<b>East India</b>	<b>IMD Stations:</b> M.O Daltonganj, M.O Jamshedpur, MC Ranchi	Nil	Berhampur(22:15,24 kt), Raidighi(09:30, 25kt), Barhi(16:15,28kt), Chatra(16:00,27kt), Simdega(22:45,24kt ), KVMEGHAHATUBU RU(12:15, 28kt), Aurangabad(15:00,2 1kt), Arwal(15:30, 25kt), Rajgir(16:45, 26kt), Cuttack(16:00, 27kt), Kendrapara(15:45,2 1kt),	Nil	Nil
<b>South India</b>	<b>IMD Stations:</b> CIAL Kochi, Thiruvananthapuram City, Kalburgi, Bidar,	Nil	Adilabad(05:45, 40kt), Karimnagar(13:15,3 1kt), Siddipet(13:45,24kt) , Tandur(14:30,25kt), Basantpur(12:45, 47kt), Ayyankunnu(11:15,2 4kt), Kollengode(13:15, 27kt), Kumarakom(14:15,2	Nil	Nil

			7kt), Kottayam(14:00, 26kt), Vadavathoor(14:00, 25kt),		
<b>Central India</b>	<b>IMD Stations:</b> Jabalpur, Sagar, Satna, Ambikapur, Bilaspur, Jagdalpur, Raipur (Mana), Pendra Road, Raipur,	Kanker, Sarguja, Balrampur	Deora(13:15, 29kt), Rewa(12:15, 21kt), Lakhanpur(09:45, 29kt), Aron(07:30, 21kt), JANJIR CHAMPA (18kts, 0315), DANTEWADA(17kts, 2130)  40-50 (22-27)- KORBA(29kts, 1515)  50-60 (27-32)- NIL  60 (32) ABOVE - AMS MANA (43 KT, 1540-1545)		Nil
<b>West India</b>	<b>IMD Stations:</b> Gujarat: Nil IMD Goa: Nil. Maharashtra: Nil.	Nil	Aurangabad(10:30, 24kt),	Nil	Nil

**(iii) Media / Other Reports of Occurrence / Damage Reports: (iv) Past 24hour DWR Reports:**

DWR Station	Date	Time interval of observation (UTC)	Organization of the cells (isolated single cell/multiple cells convective regions/squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station & direction of movement	Remarks	Associated severe weather, if any	Districts affected
DWR HQ New Delhi	22/03/2025	210300-220300	Nil	Nil	Nil	Nil	Nil
Bhuj	22/03/2025	210300-220300	Nil	Nil	Nil	Nil	Nil

Patna	22/03/2025	210300	Single cells	Formation- NE	NIL	Thunderstorm	SITAMARHI, MADHUBANI
		210430 - 211400	NIL	NIL	NIL	NIL	NIL
		211400	Multiple cells	Formation- SW	NIL	Thunderstorm	SASARAM, ARWAL, GAYA, JHANSABAD
		211632 -	NIL	NIL	NIL	NIL	NIL
		211830 -	Multiple cells Max ref-54.5	Formation-N Direction of	NIL	Thunderstorm lightning, Rainfall. Gustv	WEST-CHAMPARAN, SITAMARHI, SHEOHAR, MADHUBANI. SUPAUL.
VSK	22/03/2025	1500-1800	Convective region of maximum reflectivity of 43 dBz and	NW(216 km)	Convective region is dissipating	RA	Kalahand and Nabarangapur Dist(Odissa)
		1800-0000	Multiple cells of maximum reflectivity of 36 dBz and maximum height of 0.4 km	NW(202,172 km)	CB cells are dissipating	RA	Nabarangapur Dist (Odissa) Bastar Dist (Chhatisgarh)
		0000-0300	Isolated CB cell of maximum reflectivity of 38 dBz and maximum height of 7 km	NW(132,140 km)	CB cells are developing	RA	Koraput Dist (Odissa)
Patiala	22/03/2025	21-03 (0300- 0600)-21- 03-(1800- 2100)					
		21-03- 2025 2100-2400	<b>Multiple Cells dBz 20-29 dBz Ht 02-08 Kms</b>	<b>SECTOR: NE, MOVEMENT: SW</b>	<b>LIGHT RAINFALL</b>		हिमाचल प्रदेश: बिलासपुर, मंडी,

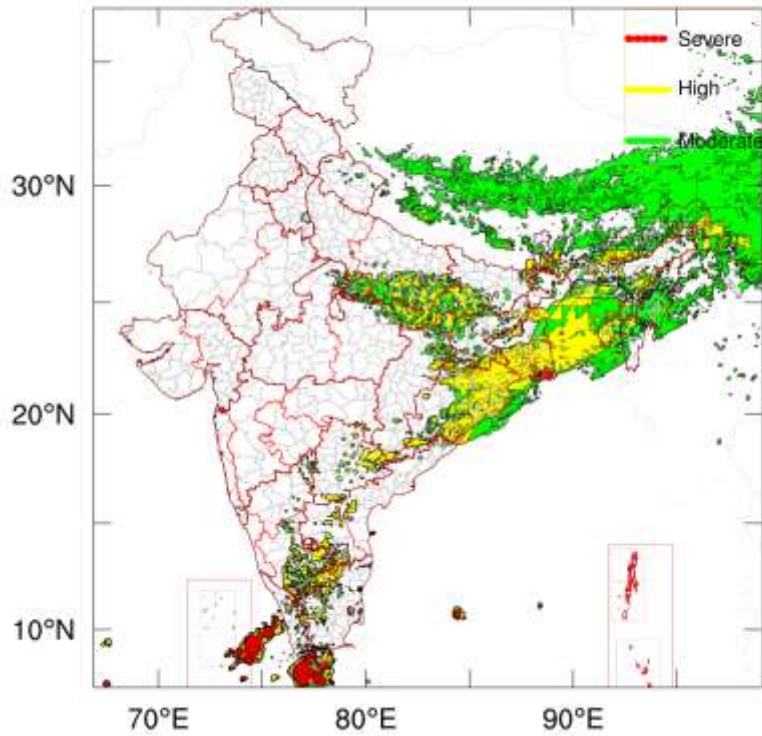


		22-03-2025 0000-0252	<b>Single Cell dBz</b> <b>20-27.5 dBz Ht 04-09 Kms</b>	<b>SECTOR:</b> <b>NE,</b> <b>MOVEMENT:</b> <b>SW</b>	<b>LIGHT</b> <b>RAINFALL</b>		हिमाचल प्रदेश: शिमला
AGARTALA	22/03/2025	210302 - 212359	Multiple cells are formed over Bangladesh, Bangladesh(Bay of Bengal area) Mizoram, Tripura, Assam, Manipur & Meghalaya at 0302 UTC , with Maximum Height of 06 km at 0932 UTC and Maximum Intensity of 45 dBZ at 0932 UTC	Cells are formed at a distance of 40-250 km in the direction of W, SW, S, SE, N, NE, NW of DWR Agartala and were moving towards E, SE, NE Direction with a speed of 15-20 kmph	Still persist over Bangladesh (Bay of Bengal Area) at 2352 UTC.	Rain and Thunderstorm	Meghalaya, Assam, Bangladesh, Mizoram, Tripura, and Manipur

		220002 - 220302	Multiple Cells are formed over Bangladesh, Meghalaya & Bangladesh(Bay of Bengal area) at 0002 UTC with Maximum Height of 03 km at 0002 UTC and Maximum Intensity of 42 dBZ at 0002 UTC	Cells are formed at a distance of 60-200 km in the direction of W, NW, N, SW, S of DWR Agartala and were moving towards E,	Still persist over Bangladesh at 0302 UTC		
<b>Jaipur</b>	22/03/2025	210300-220300	Nil	Nil	Nil	Nil	Nil
<b>Lucknow</b>	22/03/2025	210300-220300	Nil	Nil	Nil	Nil	Nil

**8. THUNDERSTORM FORECAST PRODUCTS:**

**EWRf (3km): Accumulated Lightning Density forecast for 2025-03-22(24hr)**  
 Based on IC 00 UTC of 2025-03-22 valid upto 00 UTC of 2025-03-23



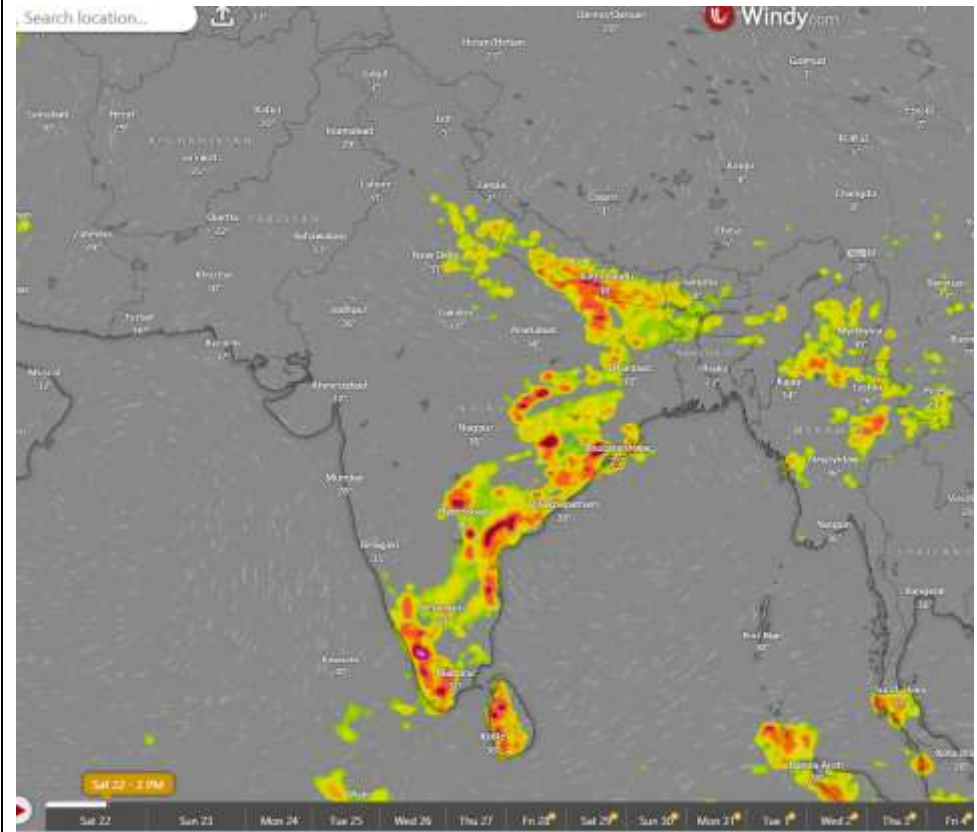
**EWRf Accumulated lightning Density today**

**NA**

**24 hour forecast Lightning (DLP scheme) from WRF model valid for today**

**NA**

**GEFS Forecast Probability of LAYRH >70 valid for today**



**ECMWF thunderstorm forecast for 1500 IST of today**

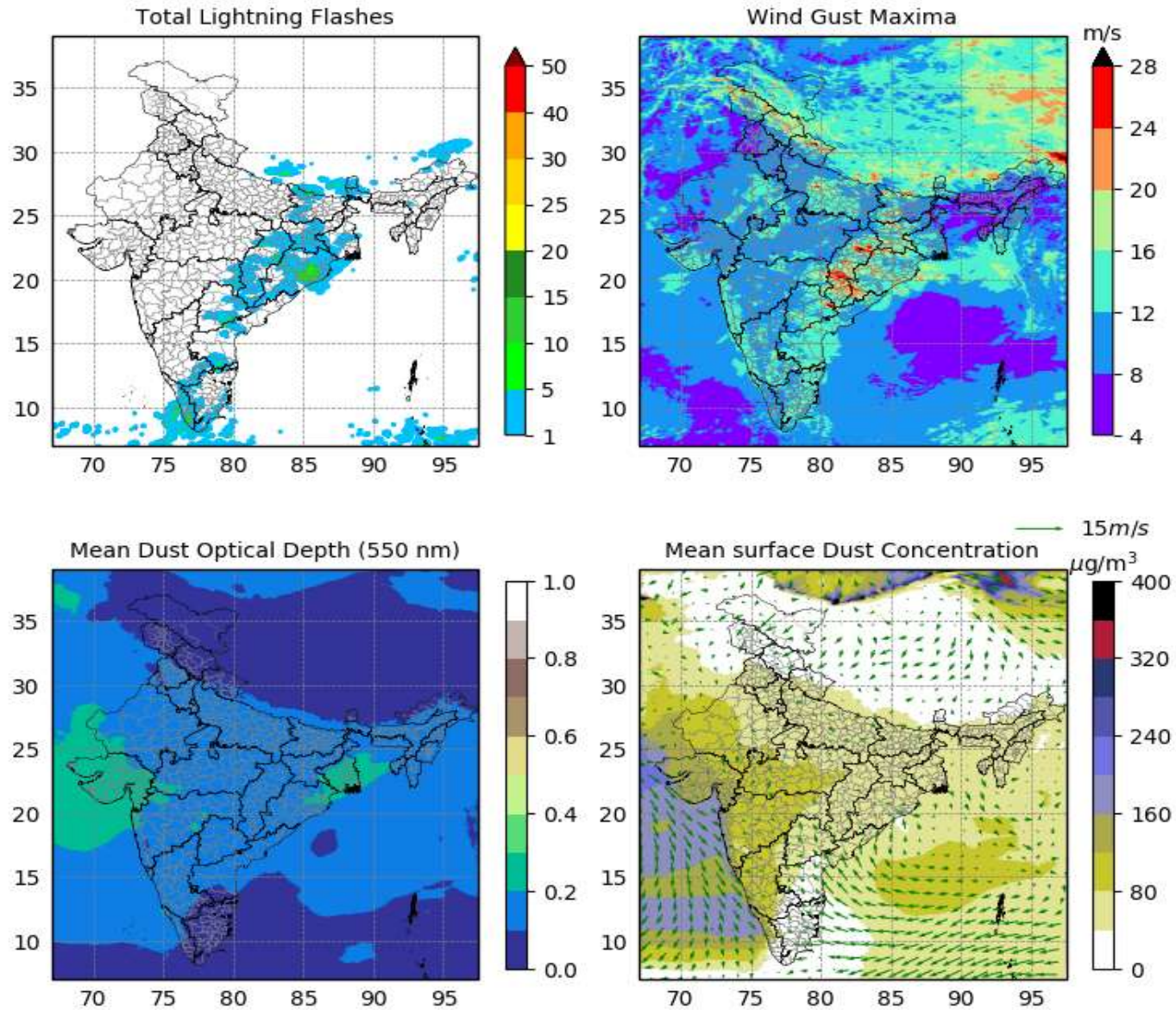
**NA**

**24 hour forecast accumulated Lightning Potential Index (LPI) from WRF model valid for today**

**NA**

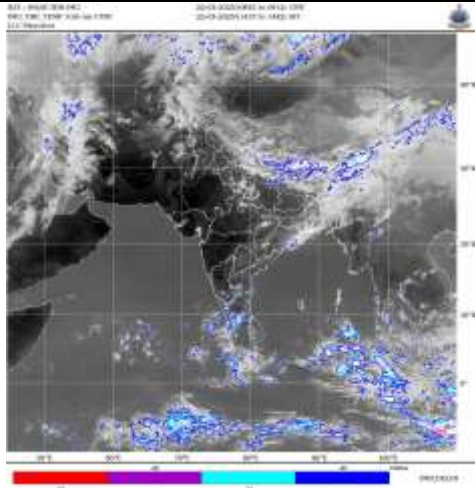
**GEFS Forecast Probability of Wind Gust (>25Kt) valid for today**

NCMRWF regional 4-km model 24-h Forecast Valid on 20250323 00UTC  
based on IC: 20250322 00UTC

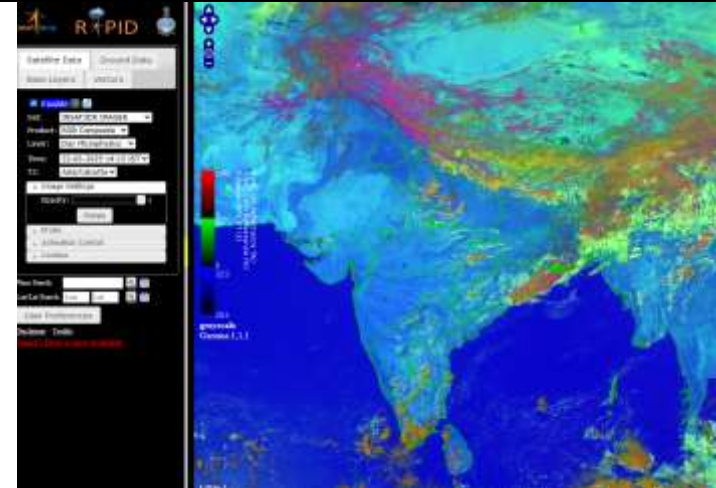


24 hour severe weather forecast (Lightning, Wind Gust, Dust Optical Depth, surface dust concentration) from NCUM (4km) model valid for today

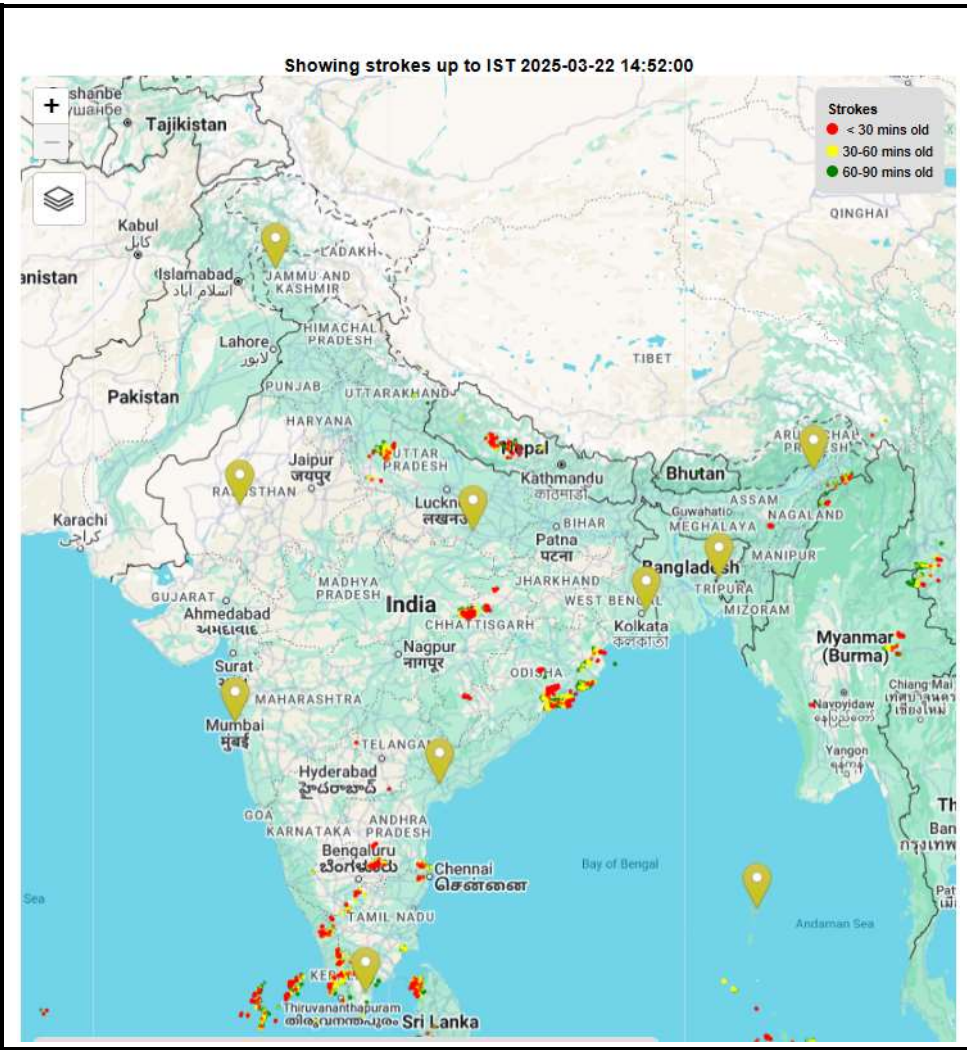
**9. CURRENT WEATHER IMAGERIES:**



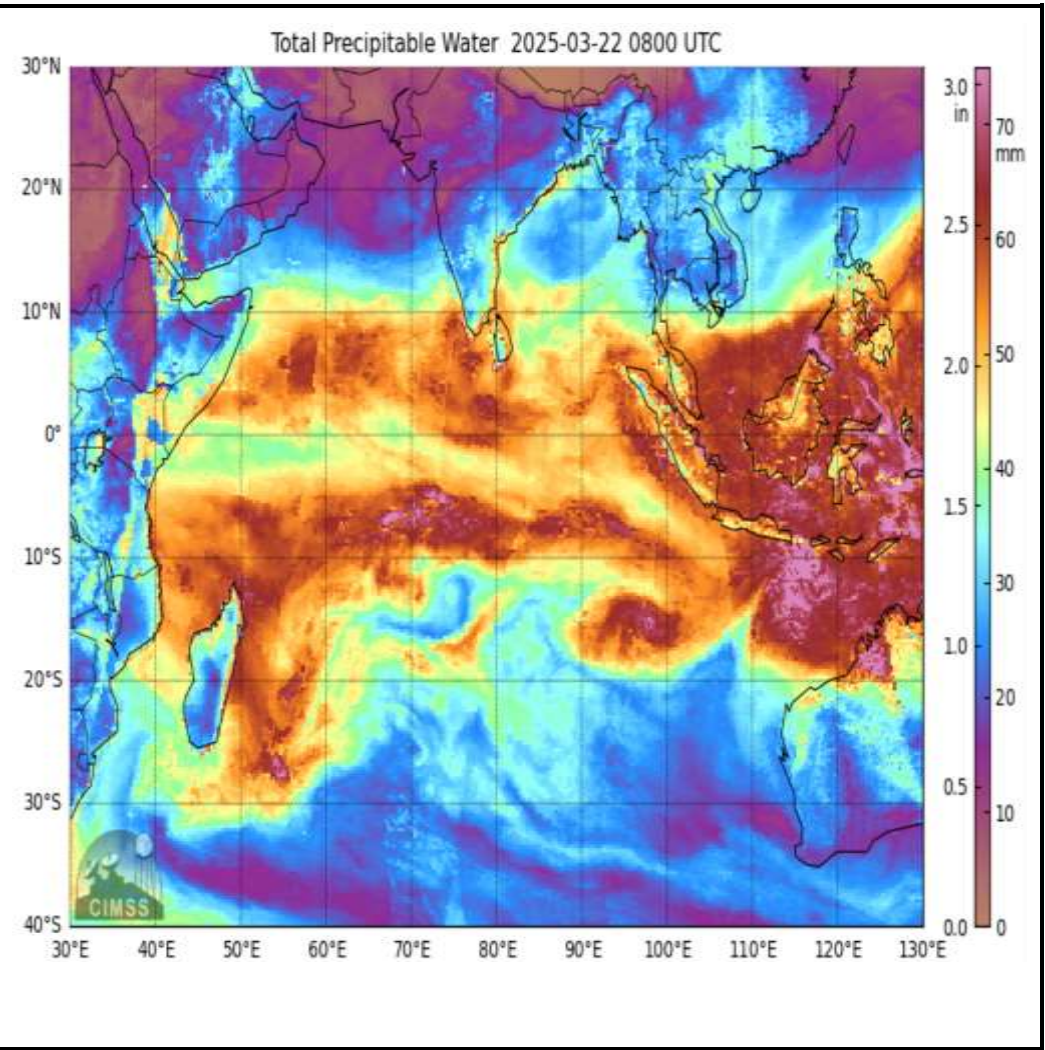
Satellite CTBT Imagery (0845-0912 UTC) today



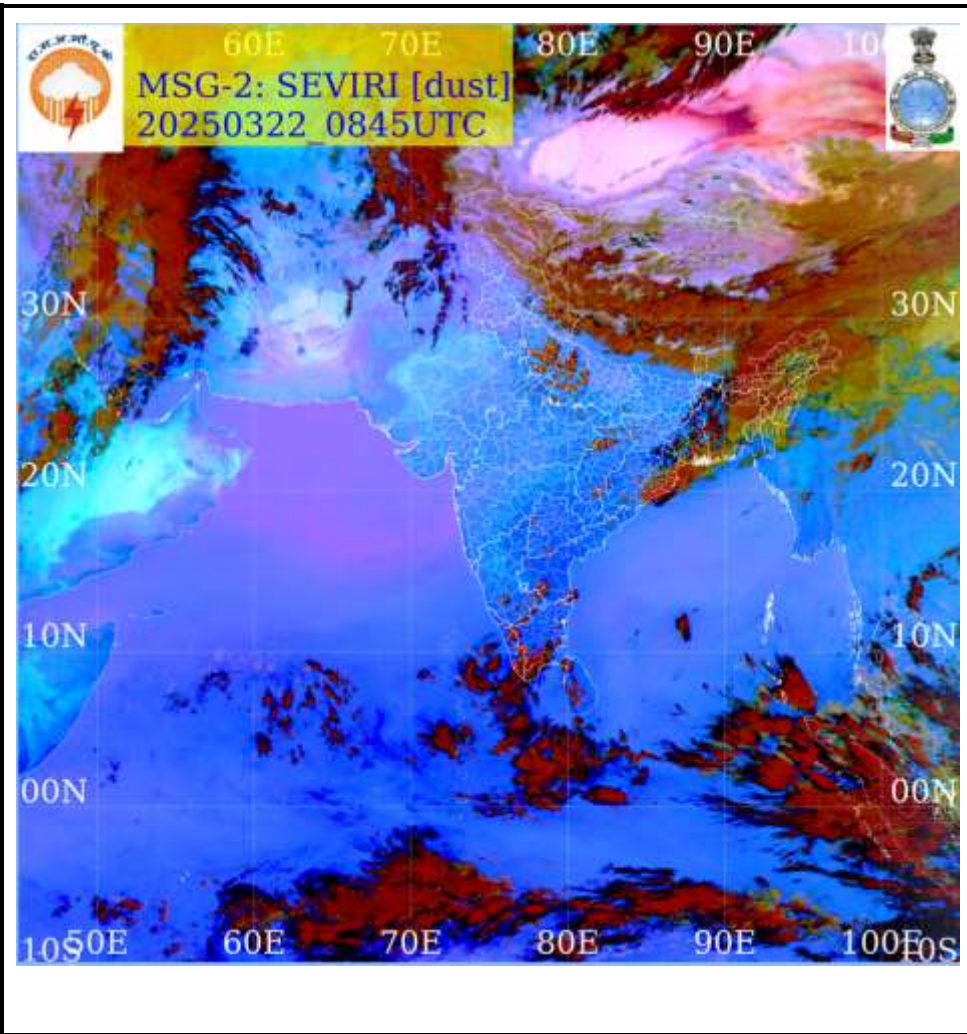
INSAT 3D series RAPID viewer at 1415 IST today



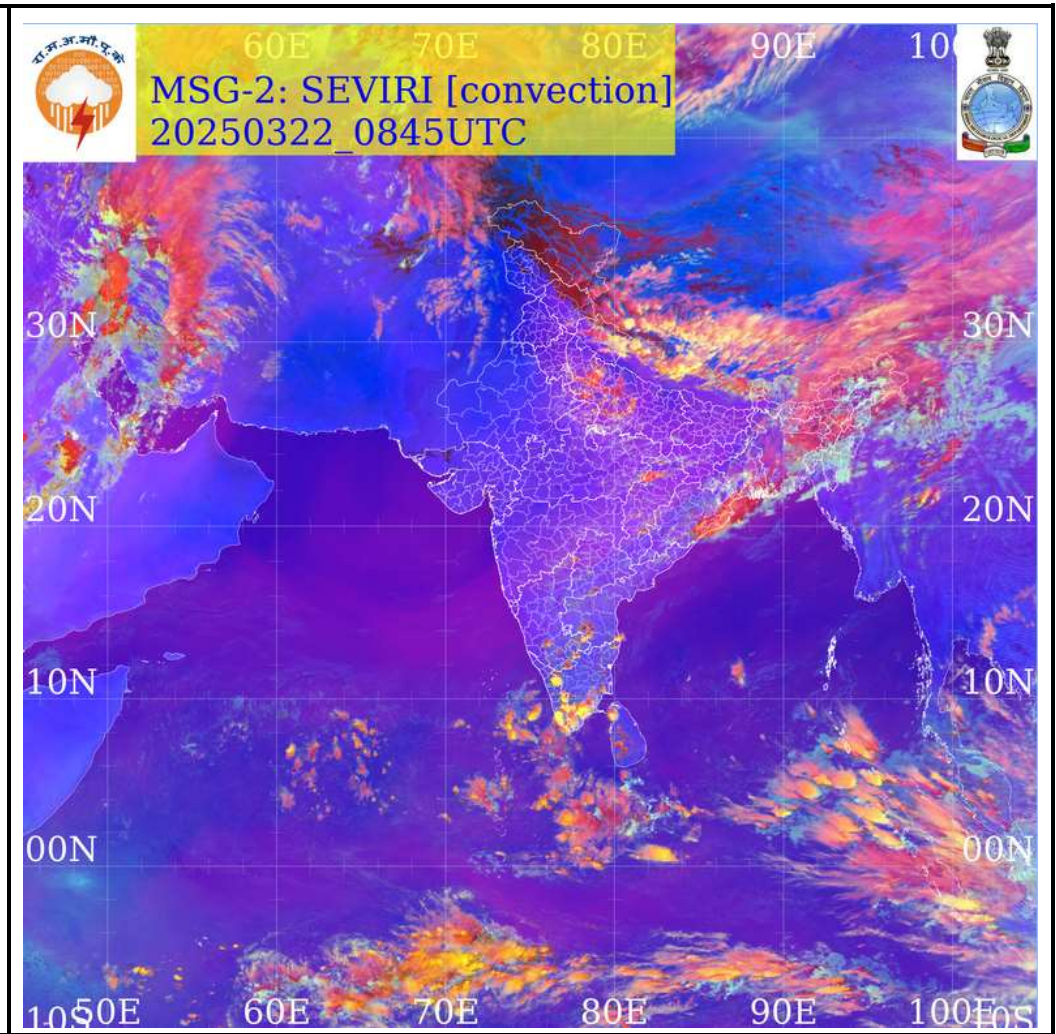
ILDN real-time lightning intensity at 1452 IST today



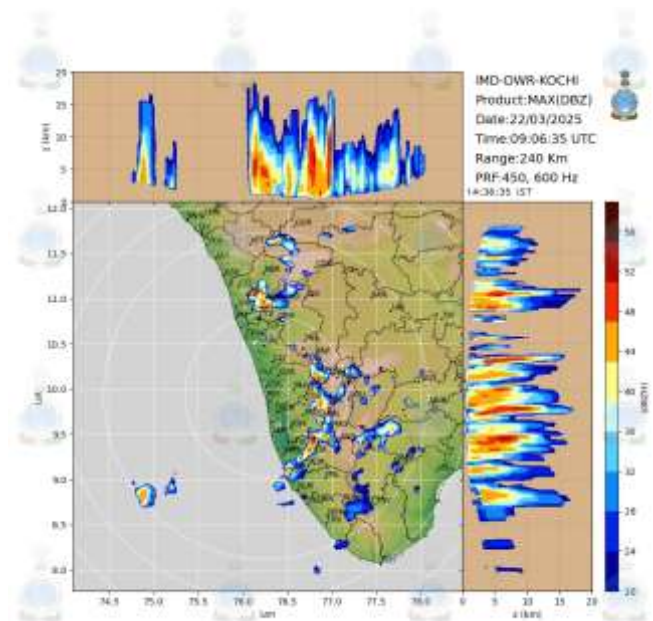
MIMIC TPW-2 product at 0800UTC today



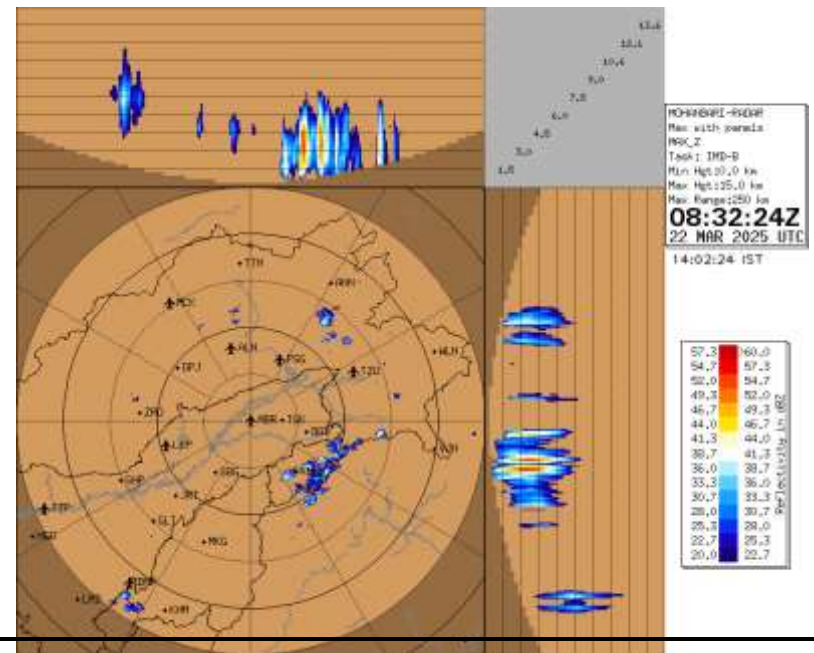
Latest Meteosat SEVIRI observed dust today



Latest Meteosat SEVIRI observed Convection today



DWR Kochi at 0906 UTC



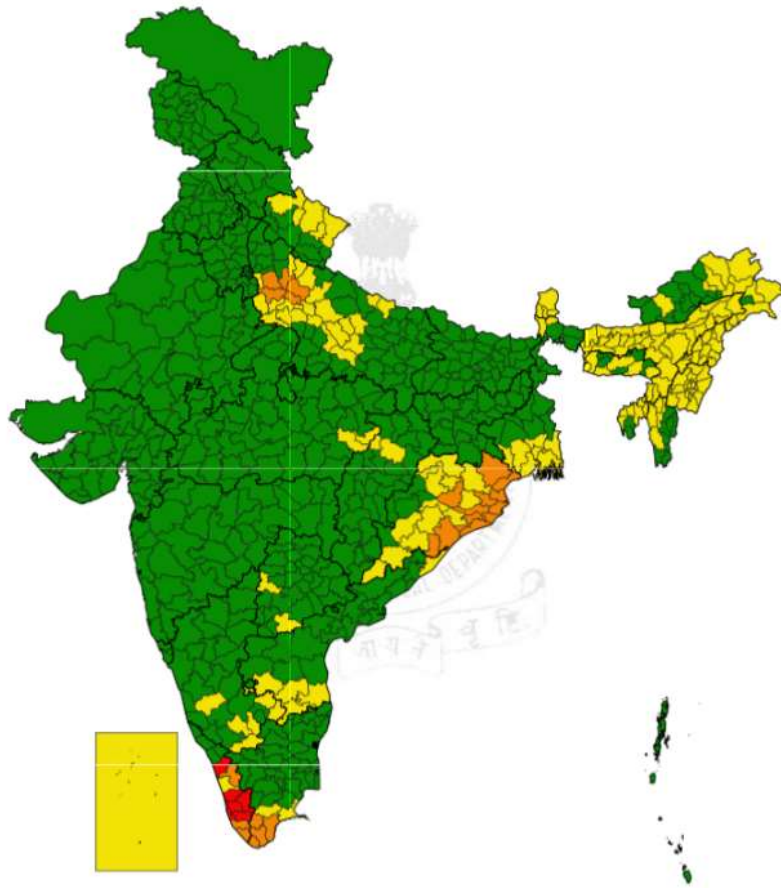
DWR Mohanbari at 0832 UTC

10. NOWCAST Warning:



### DISTRICTWISE NOWCAST WARNINGS

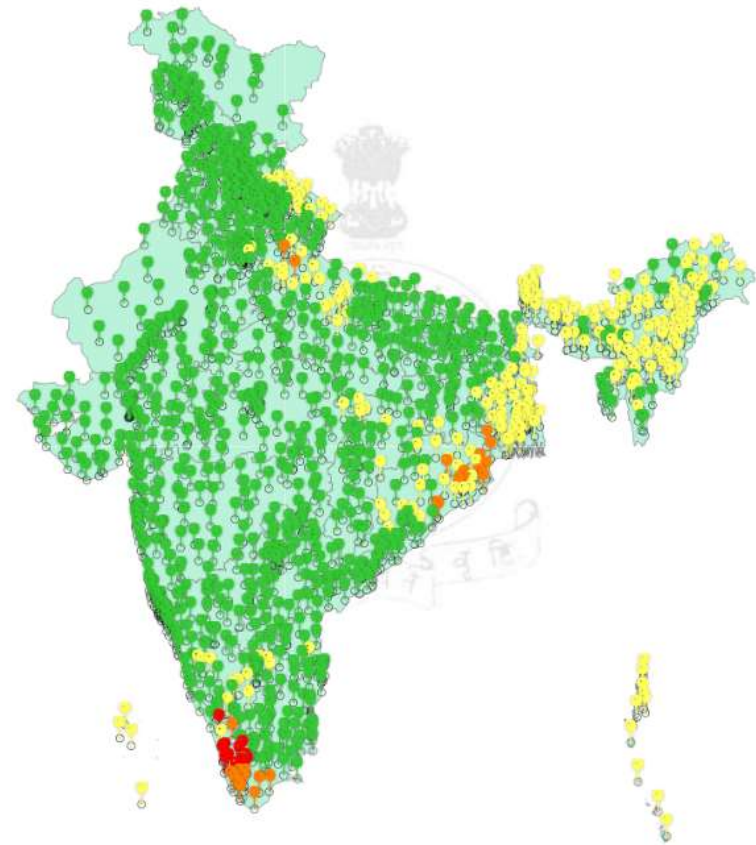
Watch Alert Warning



Districtwise Nowcast warnings at 1320 IST today

### STATIONWISE NOWCAST WARNINGS

Watch Alert Warning



Stationwise Nowcast warnings at 1320 IST today

### 11. IMPORTANT LINKS:

1. For GEFS LAYRH, SCP, Wind Gust Forecast Probabilities:

[https://srf.tropmet.res.in/srf/hires\\_gefs/gfs\\_based.php](https://srf.tropmet.res.in/srf/hires_gefs/gfs_based.php)

**2. For GEFS LAYRH, SCP, Wind Gust Archive Products:**

[https://srf.tropmet.res.in/srf/hires\\_gefs/archive\\_thunderstorm.php](https://srf.tropmet.res.in/srf/hires_gefs/archive_thunderstorm.php)

**3. For 25hour Lightning forecast (WRF) from IITM:**

[https://srf.tropmet.res.in/srf/lightening\\_flash/index.php](https://srf.tropmet.res.in/srf/lightening_flash/index.php)

**4. For Real-time Lightning products from foreignersat:**

<http://foreignsat.imd.gov.in/>

**5. For DWR mosaic (overlayed with lightning/clouds/winds etc.):**

<https://ddgmui.imd.gov.in/radar/leaflet-map-csv-master/mosaic.php>

**6. Current Nowcast Warnings**

[https://mausam.imd.gov.in/imd\\_latest/contents/stationwise-nowcast-warning.php](https://mausam.imd.gov.in/imd_latest/contents/stationwise-nowcast-warning.php)

**7. Thunderstorm Observation, Prediction and Monitoring web page:**

[https://srf.tropmet.res.in/srf/ts\\_prediction\\_system/index.php](https://srf.tropmet.res.in/srf/ts_prediction_system/index.php)

**8. Link for reporting severe weather:**

[https://city.imd.gov.in/citywx/crowd/enter\\_th\\_datag.php](https://city.imd.gov.in/citywx/crowd/enter_th_datag.php)

**12. WEATHER SYMBOLS:**

