



## All India Impact Based Weather Warning Bulletin

**Sunday 20 June 2021**

**Time of Issue: 1630 hours IST**

**(EVENING)**

**20 June (Day 1):** ♦ **Heavy to Very Heavy Rainfall** very likely at isolated places over East Uttar Pradesh and Bihar and **Heavy Rainfall** at isolated places over Uttarakhand, Jharkhand, West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gujarat State, ghat areas of Madhya Maharashtra, Konkan & Goa, Coastal & South Interior Karnataka and Kerala & Mahe.

♦ **Thunderstorm with lightning & gusty winds** (speed reaching 30-40 kmph) very likely at isolated places over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi

**with lightning** at isolated places over Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal & North Interior Karnataka and Tamilnadu, Puducherry & Karaikal.

♦ **Duststorm/Thunderstorm with lightning & gusty winds** (speed reaching 30-40 kmph) very likely at isolated places over Rajasthan.

♦ **Strong Winds (speed 40-50 kmph gusting to 60 kmph)** very likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea and **Squally Weather (speed 50-60 kmph)** over North Bay of Bengal; **(speed 50-60 kmph)** along & off Kerala-Karnataka-Goa-south Maharashtra-Gujarat coasts and Lakshadweep area. Fishermen are advised not to venture into these areas.

**21 June (Day 2):** ♦ **Heavy Rainfall** very likely at isolated places over Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Konkan & Goa Coastal Karnataka Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.

♦ **Thunderstorm with lightning & gusty winds** (speed reaching 30-40 kmph) very likely at isolated places over Uttarakhand and Andaman & Nicobar Islands and

**with lightning** at isolated places over Himachal Pradesh, Uttar Pradesh, East Madhya Pradesh, Haryana, Chandigarh & Delhi, Chhattisgarh, Bihar, Jharkhand, Odisha, Assam & Meghalaya, Coastal Karnataka and Tamilnadu, Puducherry & Karaikal.

♦ **Duststorm/Thunderstorm with lightning & gusty winds** (speed reaching 30-40 kmph) very likely at isolated places over Rajasthan.

♦ **Strong Winds (speed 40-50 kmph gusting to 60 kmph)** very likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.

**22 June (Day 3):** ♦ **Heavy Rainfall** very likely at isolated places over Chhattisgarh, Bihar, Odisha, Andaman & Nicobar Islands, Assam & Meghalaya and Tamilnadu, Puducherry & Karaikal.

♦ **Thunderstorm with lightning & gusty winds** (speed reaching 40-50 kmph) very likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places over East Madhya Pradesh, Chhattisgarh, Bihar, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamilnadu, Puducherry & Karaikal.

♦ **Strong Winds (speed 40-50 kmph gusting to 60 kmph)** likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.

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**23 June (Day 4):** ♦ **Heavy to very Heavy Rainfall** likely at isolated places over Assam & Meghalaya and **Heavy Rainfall** at isolated places over Chhattisgarh, Gangetic West Bengal, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam and Tamilnadu, Puducherry & Karaikal.

♦ **Thunderstorm with lightning & gusty winds** (speed reaching 40-50 kmph) likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places over East Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema and Tamilnadu, Puducherry & Karaikal.

♦ **Strong Winds (speed 40-50 kmph gusting to 60 kmph)** likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.

**24 June (Day 5):** ♦ **Heavy Rainfall** likely at isolated places over Chhattisgarh, Bihar, West Bengal & Sikkim, Odisha, Arunachal Pradesh, Assam & Meghalaya, Coastal Andhra Pradesh & Yanam, Telangana and Tamilnadu, Puducherry & Karaikal.

♦ **Thunderstorm with lightning & gusty winds** (speed reaching 30-40 kmph) likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places over East Uttar Pradesh, East Madhya Pradesh, Vidarbha, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema.

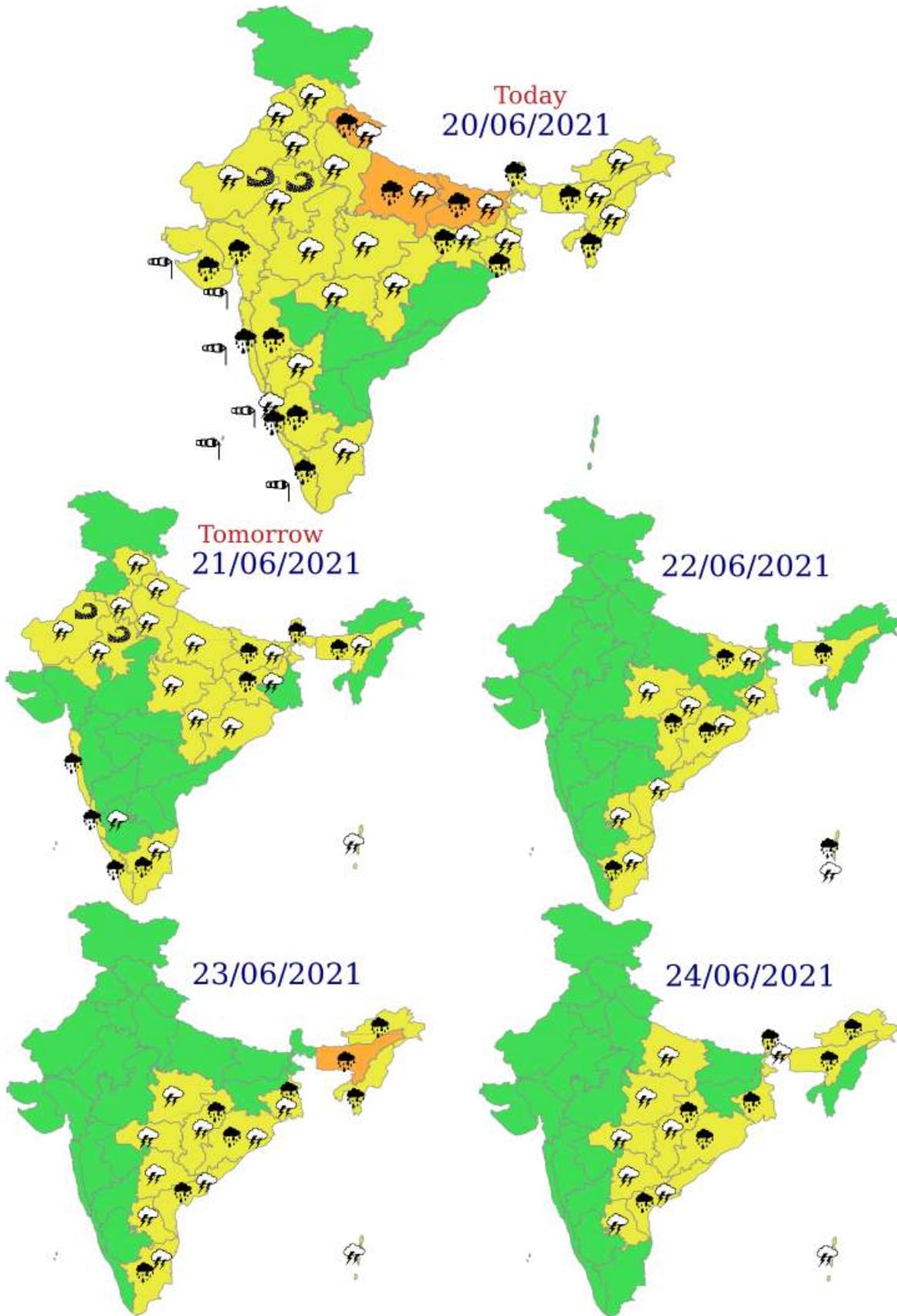
♦ **Strong Winds (speed 40-50 kmph gusting to 60 kmph)** likely over Southwest, Westcentral & adjoining Eastcentral Arabian Sea. Fishermen are advised not to venture into these areas.

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## **EXPECTED IMPACT & ACTION SUGGESTED due to Heavy/Very Heavy Rainfall over East Uttar Pradesh, Bihar and Uttarakhand on 20<sup>th</sup>, June, 2021**

### **A. Impact Expected**

- Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- Occasional reduction in visibility due to heavy rainfall.
- Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
- Minor damage to kutcha roads.
- Possibilities of damage to vulnerable structure.
- Localized Landslides/Mudslides
- Damage to horticulture and standing crops in some areas due to inundation.
- It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

### **B. Action Suggested**

- Check for traffic congestion on your route before leaving for your destination.
- Follow any traffic advisories that are issued in this regard.
- Avoid going to areas that face the water logging problems often.
- Avoid staying in vulnerable structure.

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**EXPECTED IMPACT & ACTION SUGGESTED** due to thunderstorms & lightning over East Uttar Pradesh and Bihar 20th June, 2021.

**A. Impact Expected:**

- Damage to thatched huts and asbestos roofed houses and cars. Roof tops may blow off.
- Unattached metal sheets may fly.
- Damage to power and communication lines due to breaking of tree branches.
- Damage to standing crops.
- Lightning strikes to ground.
- Flash flood due to associated rain

**B. Action Suggested**

- Farmers should not go in open fields.
- Cattle grazers and animals should not be in open.
- No fishing or boat movement.
- Mango and litchi orchards should be out of bound for any activity specially by children.
- Do not take shelter under isolated trees.
- Immediately get out of and away from ponds, lakes, and outdoor watery area (e.g. paddy transplantation).
- Go indoors or seek safe pukka shelters after hearing thunder. Stay indoors for 30 minutes after hearing the last clap of thunder.
- If no shelter is available, immediately get into the lightning crouch.
- During travel, stay inside car or bus or train when thunderstorm occurs.
- Do not use electric/ electronic appliance.
- Stay away from downed power lines.

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## LEGENDS

### WARNING

WARNING (TAKE ACTION)
ALERT ( BE PREPARED)
WATCH (BE UPDATED)
NO WARNING ( NO ACTION)

### Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



Heavy: 64.5 to 115.5 mm/cm \*  
Very Heavy: 115.6 to 204.4 mm/cm\*  
Extremely Heavy: > 204.4 mm/cm \*



When maximum temperature of a station reaches  $\geq 40^\circ\text{C}$  for plains and  $\geq 30^\circ\text{C}$  for hilly regions

(a) Based on Departure from normal  
Heat Wave: Maximum Temperature Departure from normal  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
Severe Heat Wave: Maximum Temperature Departure from normal  $\geq 6.5^\circ\text{C}$

(b) Based on Actual maximum temperature  
Heat Wave: When actual maximum temperature  $\geq 45^\circ\text{C}$ .  
Severe Heat Wave: When actual maximum temperature  $\geq 47^\circ\text{C}$

(c) Criteria for heat wave for coastal stations  
When maximum temperature departure is  $> 4.5^\circ\text{C}$  from normal. Heat Wave may be described provided maximum temperature  $\geq 37^\circ\text{C}$ .



When maximum temperature remains  $40^\circ\text{C}$   
Warm Night: When minimum temperature departure  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
Severe Warm Night: When minimum temperature departure  $> 6.4^\circ\text{C}$ .



When minimum temperature of a station  $\leq 10^\circ\text{C}$  for plains and  $\leq 0^\circ\text{C}$  for hilly regions.

(a) Based on departure  
Cold Wave: Minimum Temperature Departure from normal  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
Severe Cold Wave: Minimum Temperature Departure from normal  $\geq -6.5^\circ\text{C}$

(b) Based on actual Minimum Temperature (for Plains only)  
Cold Wave : When Minimum Temperature is  $\leq 4.0^\circ\text{C}$   
Severe Cold Wave: When Minimum Temperature is  $\leq 2.0^\circ\text{C}$

(c) For Coastal Stations  
When Minimum Temperature departure is  $\leq -4.5^\circ\text{C}$  or actual Minimum Temperature is  $\leq 15^\circ\text{C}$



When minimum temperature of a station  $\leq 10^\circ\text{C}$  for plains and  $\leq 0^\circ\text{C}$  for hilly regions

Based on departure  
Cold Day: Maximum Temperature Departure from normal  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
Severe Cold Day: Maximum Temperature Departure from normal  $\leq -6.5^\circ\text{C}$



Phenomenon of small droplets suspended in air and the horizontal visibility  $< 1\text{km}$

Moderate Fog: When the visibility between 500-200 metres  
Dense Fog: when the visibility between 50- 200 metres  
Very Dense Fog: when the visibility  $< 50$  metres



Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)



An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.



Ice deposits on ground  
Air temperature  $\leq 4^\circ\text{C}$  ( over Plains)



A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph  
Severe: Wind speed 62-87 kmph  
Very Severe: Wind speed  $> 87$  kmph



Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre  
High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre  
Phenomenal: Wind speed  $> 117$  kmph ( $> 63$  knots) & Wave height  $> 14$  metre



Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)  
Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)  
Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)  
Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)  
Super Cyclone Storm: Wind speed  $> 220$  kmph ( $> 119$  knots)

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IPP

## LEGENDS

1. अंडमान और निकोबार द्वीप समूह
2. अरुणाचल प्रदेश
3. असम और मेघालय
4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
5. उप-हिमालयन पश्चिम बंगाल और सिक्किम
6. पश्चिम बंगाल
7. ओडिशा
8. झारखण्ड
9. बिहार
10. पूर्वी उत्तर प्रदेश
11. पश्चिम उत्तर प्रदेश
12. उत्तराखण्ड
13. हरियाणा, चंडीगढ़, दिल्ली
14. पंजाब
15. हिमाचल प्रदेश
16. जम्मू & कश्मीर और लद्दाख
17. पश्चिम राजस्थान
18. पूर्व राजस्थान
19. पश्चिम मध्य प्रदेश
20. पूर्वी मध्य प्रदेश
21. गुजरात
22. सौराष्ट्र
23. कर्नाटक
24. मध्य महाराष्ट्र
25. महाराष्ट्र
26. उत्तरांचल प्रदेश
27. छत्तीसगढ़
28. आंध्र प्रदेश
29. तेलंगाना
30. आंध्र प्रदेश
31. तमिलनाडु, पुदुचेरी, केरल
32. उत्तरांचल प्रदेश
33. उत्तरांचल प्रदेश
34. उत्तरांचल प्रदेश
35. उत्तरांचल प्रदेश
36. लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Orissa
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chand & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Maharashtra
26. Uttaranchal
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. Lakshadweep

## SPATIAL DISTRIBUTION (% of Stations reporting)

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)

## WARNING

WARNING (TAKE ACTION)
ALERT ( BE PREPARED)
WATCH (BE UPDATED)
NO WARNING ( NO ACTION)

## Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

	Heavy Rain		Heavy Snow		Thunderstorm		Dust Storm
	Strong Winds		Visibility		Cyclone		Squall/ Hail
	Frost		Cold Wave		Heat Wave		Sea State

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