



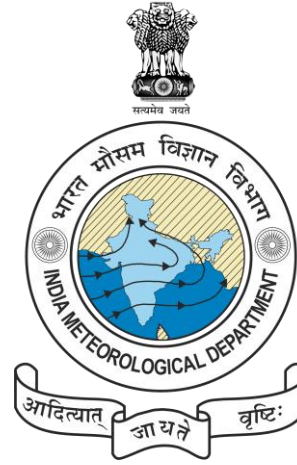
INDIA METEOROLOGICAL DEPARTMENT

# DISASTROUS WEATHER EVENTS 2019



ISSUED BY  
CLIMATE RESEARCH & SERVICES  
PUNE - 411005

Cover Photo : A view of a flooded area following incessant rainfall in Kolhapur district during August 2019 (Image: PTI)  
<https://images.news18.com>



**भारत सरकार**

**GOVERNMENT OF INDIA**

**भारत मौसम विज्ञान विभाग**

**INDIA METEOROLOGICAL DEPARTMENT**

# **DISASTROUS WEATHER EVENTS 2019**

**ISSUED BY:**

**OFFICE OF THE HEAD, CLIMATE RESEARCH & SERVICES  
PUNE – 411005**

## विपदाकारी मौसम घटनाएँ - 2019

**2019 की सबसे चित्तग्राही विपदाकारी मौसम घटनाएँ इस प्रकार थे :**

- मेघ विद्युत से देश में 415 लोगों की मृत्यु हुई, जिसमें से, 239 ओड़िशा से और 65 महाराष्ट्र से हैं। इसके अलावा विपदाकारी घटना गर्ज के साथ तूफान से देश में 348 लोगों की मृत्यु हुई, जिसमें से, 126 झारखंड से, 72 बिहार से और 64 उत्तर प्रदेश से हैं।
- देश के पूर्वी, मध्य, प्रायद्वीपीय एवं उत्तरी भागों में उष्ण लहर की स्थितियाँ प्रबल रहीं, जिसके कारण लगभग 500 लोगों की मृत्यु हुई। जिनमें से, 15 से 18 जून के दौरान बिहार से 293 लोगों की मृत्यु हुई। जबकि, तेलंगाना से 66, महाराष्ट्र से 53 और आंध्र प्रदेश से 45 लोगों की मृत्यु हुई।
- देश के उत्तर, मध्य और पूर्वी भागों में शीत लहर की स्थितियाँ प्रबल रहीं, जिसके कारण लगभग 290 लोगों की मृत्यु हुई। जिनमें से, 24 से 31 दिसंबर के दौरान उत्तर प्रदेश से 240 लोगों की मृत्यु हुई।
- वर्ष 2019 के दौरान बाढ़ तथा भारी वर्षा संबंधित घटनाओं के कारण 1200 से अधिक लोगों की मृत्यु हुई। हालाँकि, 2019 की ग्रीष्मकालीन मॉनसून के दौरान, 1100 से अधिक लोगों की मृत्यु हुई, जिनमें से 253 बिहार से, 223 पश्चिम बंगाल से, 150 गुजरात से, और 141 महाराष्ट्र से हैं। और इसके अलावा अधिक संख्या में पशुधन हानि (5 लाखों से अधिक) एवं कृषि तथा निजी / सार्वजनिक सम्पत्तियों को व्यापक नुकसान हुआ।
- धूल भरी आंधी से राजस्थान में 17 और 18 अप्रैल के दौरान 25 व्यक्तियों की मृत्यु हुई।
- चरम प्रचंड चक्रवाती तूफान "फानी" (26 अप्रैल से 4 मई), बंगाल की खाड़ी (बीओबी) में अक्षांश 5.2 उ. / देशान्तर 88.6 पू. 0600 यू.टी.सी को 27 अप्रैल को विकसित हुआ। 3 मई को 0230 से 0430 यू.टी.सी के बीच अक्षांश 19.75 उ. और देशान्तर 85.70 पू. पुरी के पास ओड़िशा तट को पार किया। और 4 मई को मध्य असम और पड़ोस के क्षेत्र में 1800 यू.टी.सी को कमजोर हो गया। ओड़िशा में 53 लोगों की मृत्यु हो गई।
- अति प्रचंड चक्रवाती तूफान "बुलबुल" (5 नवम्बर से 11 नवम्बर), बंगाल की खाड़ी (बीओबी) में अक्षांश 13.8 उ. / देशान्तर 89.3 पू. 1800 यू.टी.सी को 6 नवम्बर को विकसित हुआ। 9 नवम्बर को 1500 से 1800 यू.टी.सी के दौरान अक्षांश 21.55 उ. और देशान्तर 88.5 पू. सुंदरबन ढाँची जंगल के पास पश्चिम बंगाल तट को पार किया। और 11 नवम्बर को दक्षिण त्रिपुरा और पड़ोस के क्षेत्र में 0300 यू.टी.सी को कमजोर हो गया। पश्चिम बंगाल में 7 लोगों की मृत्यु हो गई।

इन प्राकृतिक आपदाओं का सारांश प्रेस तथा भारत मौसम विज्ञान विभाग के विविध विवरणों की सूचनाओं पर आधारित हैं। प्रतिकूल मौसम स्थितियों से प्रभावित क्षेत्रों को ऋतुवार चार मानचित्रों में दर्शाया गया है।

## DISASTROUS WEATHER EVENTS OF 2019

### **The most striking disastrous weather events of 2019 were the following:**

- Lightning claimed 415 human lives from the country. Of which, 239 from Odisha & 65 from Maharashtra. Also, the devastating event is Thunderstorm, which claimed 348 human lives from the country. Of which, 126 from Jharkhand, 72 from Bihar & 64 from Uttar Pradesh.
- Heat wave conditions prevailed over East, Central, Peninsular & northern parts of the country [Andhra Pradesh, Bihar, Jharkhand, Kerala, Maharashtra, Odisha, Rajasthan, Telangana, and Uttar Pradesh] and claimed about 500 human lives. Of which, 293 lives claimed from Bihar during 15<sup>th</sup> to 18<sup>th</sup> June. While, 66 lives claimed from Telangana, 53 from Maharashtra and 45 from Andhra Pradesh.
- Cold Wave conditions prevailed over North, Central & Eastern parts of the country [Bihar, Jharkhand, Madhya Pradesh, Maharashtra, and Uttar Pradesh] and claimed about 290 human lives. Of which, 240 lives claimed from Uttar Pradesh during 24<sup>th</sup> to 31<sup>st</sup> December.
- During the year 2019, Heavy rain & flood related incidences claimed more than 1200 human lives. However, during summer monsoon of 2019, it claimed more than 1100 human lives, of which 253 from Bihar, 223 from West Bengal, 150 from Gujarat & 141 from Maharashtra. Also, apart from loss of large number of livestock (more than 5 lakhs) and extensive damage to agriculture and public/private property.
- Dust Storm claimed 25 human lives from Rajasthan during 17<sup>th</sup> & 18<sup>th</sup> April.
- An Extremely Severe Cyclonic Storm “FANI” (26 April to 4 May) formed over the Bay of Bengal near Lat. 5.2°N / Long. 88.6°E at 0600 UTC of 27<sup>th</sup> April, crossed Odisha coast close to Puri near Lat. 19.75°N and Long. 85.70°E between 0230 to 0430 UTC of 3<sup>rd</sup> May and weakened into well marked low pressure area over central Assam & neighbourhood at 1800 UTC on 4<sup>th</sup> May. It took a toll of 53 persons from Odisha.
- A Very Severe Cyclonic Storm “BUL BUL” (5 November to 11 November), formed over the Bay of Bengal near Lat. 13.8°N / Long. 89.3°E, at 1800 UTC of 6<sup>th</sup> November, crossed West Bengal Coast close to Sunderban Dhanchi forest near Lat. 21.55°N & Long. 88.5°E during 1500 to 1800 UTC of 9<sup>th</sup> November and weakened into a low pressure area over south Tripura & neighbourhood at 0300 UTC on 11<sup>th</sup> November. It took a toll of 7 persons from West Bengal.

The summary of these natural hazards is based on various reports of the India Meteorological Department and press information. The areas affected by the adverse weather conditions are depicted season wise on four maps.

## अनुक्रमणिका / INDEX

सारिणी सं./ Table No.	घटना / Event	Page Nos.
I.	हिमपात / SNOWFALL	1 - 5
II.	शीत लहर / COLD WAVE	6 - 10
III.	उष्ण लहर / HEAT WAVE	11 - 18
IV.	अंधड़ / SQUALL	19
V.	झंझा / GALE	20 - 21
VI.	आंधी / DUST STORM	22
VII.	मेघ विद्युत / LIGHTNING	23 - 34
VIII.	गर्ज के साथ तूफान / THUNDERSTORM	35 - 46
IX.	ओलावृष्टि / HAILSTORM	47 - 50
X.	बाढ़ और भारी वर्षा / FLOODS AND HEAVY RAINS	51 - 98
XI.	चक्रवाती तूफान / CYCLONIC STORM	99 - 102

## सारिणी - I : हिमपात 2019

### निकष

हल्की : 10.4 सेमी. या कम 24 घंटेमें ।

मध्यम : 10.5 से 64.4 सेमी. 24 घंटेमें ।

भारी : 64.5 से 115.5 सेमी. 24 घंटेमें ।

बहुत भारी : 115.6 से 204.4 सेमी. 24 घंटेमें ।

अत्यंत भारी : 204.5 सेमी. या अधिक 24 घंटेमें ।

### TABLE - I: SNOWFALL 2019

#### CRITERIA

Light: 10.4 cm or less in 24 hrs.

Moderate: 10.5 to 64.4 cm in 24 hrs.

Heavy: 64.5 to 115.5 cm in 24 hrs.

Very Heavy: 115.6 to 204.4 cm in 24 hrs.

Extremely Heavy: 204.5 cm or more in 24 hrs.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
1.	2 Jan.	Poonch (Union Territory-Jammu & Kashmir)	Heavy	One person died and other injured due to snow avalanche along the LoC Saujiyan area of the Dist.	
2.	18 Jan.	Leh (Union Territory-Ladakh)	Very Heavy	10 persons died at Khardungla Top due to snow avalanche.	Damage to 2 trucks reported.
3.	22 Jan.	Ramban, (Union Territory-Jammu & Kashmir)	Heavy	2 persons died and 2 others injured due to snow avalanche.in Trigam village of Khari Thesil.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
4.	24 Jan.	Kupwara (Union Territory-Jammu & Kashmir)	Heavy	2 persons died and other injured at Rangwar forest in Warnow area due to snow avalanche.	
5.	1 Feb.	Anantnag (Union Territory-Jammu & Kashmir)	Heavy	3 persons died.	JCB swept away at Gudkhamb point on the Aru-Pahalgam road.
6.	2 Feb.	Lahaul & Spiti (Himachal Pradesh)	Heavy		Damage to the walls of 2-3 buildings of Dalang Army Transits Camp reported.
7.	6 Feb.	Lahaul & Spiti (Himachal Pradesh)	Heavy		Damage to houses, 2 labours Sheds reported.
8.	7 Feb.	a) Anantnag, Kulgam, Ramban (Union Territory-Jammu & Kashmir)	Heavy	Total 10 persons died due to snow avalanche in different incidences. Anantnag - 2, Kulgam – 8. 2 others injured.	Damage to several houses & a police post reported.
		b) Chamba, Lahaul & Spiti (Himachal Pradesh)	Heavy	77 livestock perished.	i) Damage to houses reported. ii) Damage to 2 cars near Gondhla Monastery reported. iii) Damage to 6 Tipper, 5 Air Compressor, one Semi Circular Storage, 2 Storage Tank, Chowkidhar Shed, Tor Steel, 2 Drums etc. reported. iv) Loss of 90.56 lakhs reported by PWD store.
9.	8 Feb.	Lahaul & Spiti (Himachal Pradesh)	Heavy		i) Damage to a fuel dispenser machine in a petrol pump reported. ii) A mixing plant of private construction company buried under the snow.



S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
10.	9 Feb.	Lahaul & Spiti (Himachal Pradesh)	Heavy		Damage to a bridge in 80-meter span reported.
11.	13 Feb.	Ramban (Union Territory-Jammu & Kashmir)	Heavy	One person died due to snow avalanche.	Damage to houses reported.
12.	14, 15 & 16 Feb.	Chamba, Lahaul & Spiti (Himachal Pradesh)	Heavy	.	i) Damage to houses reported. ii) NH-505, blocked in between Losar and Chicham.
13.	20 Feb.	Kinnaur (Himachal Pradesh)	Heavy	6 Army persons died at Namgiya – Dogri area.	
14.	21 Feb.	Chamba, Kullu, Lahaul & Spiti (Himachal Pradesh)	Heavy		i) Damage to Iron bridge at Pangi tehsil of Chamba Dist. reported. ii) Damage to 04 Pucca houses and a Cowshed in Anni subdivision of Kullu Dist. reported. iii) Keylong Udaipur road from Lahaul & Spiti Dist. blocked.
15.	22 Feb.	Lahaul & Spiti (Himachal Pradesh)	Heavy		i) Damage to 5 Light vehicles, 4 trolley tractor reported. ii) Damage to the roof of Chomo Gompa one security guard room reported. iii) Private land of local peoples washed due to Avalanche. iv) Damage to 50,000-liter capacity water storage tank at Lungu Nallah near Kaza reported. v) Loss of about 8 lakh rupees reported by IPH.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
16.	3 Mar.	Lahaul & Spiti (Himachal Pradesh)	Heavy	A driver of bulldozer injured.	A bulldozer of R/o Dhankar Sub. Division Spiti buried at Kaza Langcha road.
17.	4 Mar.	Kinnaur (Himachal Pradesh)	Heavy		Damage to 20 Apples trees in Rispa Village of Pooh Tehsil in Kinnaur Dist. reported.
18.	12 Mar.	Kupwara (Union Territory-Jammu & Kashmir)	Heavy	3 persons died due to snow Blizzard near Khooni Nallah, Sadhna Top.	
19.	15 Mar.	Baramulla (Union Territory-Jammu & Kashmir)	Heavy	One army porter died in snow avalanche hit him along line control in Uri sector of the Dist.	
20.	30 Mar.	Doda (Union Territory-Jammu & Kashmir)	Heavy	One Person died and 2 others injured due to Snow avalanche in Gandoh village.	
21.	7 Nov.	Budgam , Kulgam, Kupwara, Pulwama, Srinagar (Union Territory-Jammu & Kashmir)	Very Heavy	Total 7 persons died. Budgam – 2, Kulgam - 1, Kupwara - 2, Pulwama – 1, Srinagar – 1.	i) Huge damage to Apple Orchards reported. ii) Huge damage worth Rs 22 crores to power distribution & transmission infrastructures that includes more than 5000 electric poles, over 600 transformers, 200 Km of electric wires & 15 transmission towers in many districts across Kashmir valley reported. iii) Damage to many residential in many districts of the valley reported.
22.	11 Nov	Baramulla (Union Territory-Jammu & Kashmir)	Heavy	3 persons died due to snow avalanche at Gulmarg.	

<b>S. No.</b>	<b>Date/Period</b>	<b>Area affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
23.	18 Nov.	Leh (Union Territory-Ladakh)	Heavy	6 persons including 4 army soldiers & 2 porters died due to snow avalanche at Siachen Glacier in Leh district of Ladakh.	
24.	30 Nov.	Leh (Union Territory-Ladakh)	Heavy	2 army soldiers died due to snow avalanche at an army patrol in southern sector of Siachen Glacier in Leh district of Ladakh.	
25.	4 Dec.	Bandipora, Kupwara (Union Territory-Jammu & Kashmir)	Heavy	4 army soldiers died in Gurez & Tangdhar sectors due to snow avalanche.	
26.	18 Dec.	Mandi, Sirmaur (Himachal Pradesh)	Heavy	2 persons died, one from each Dist due to snow avalanche.	
27.	20 Dec.	Ramban (Union Territory-Jammu & Kashmir)	Heavy	One woman died in Pogal Paristan due to snow avalanche.	

## सारिणी - II : शीत लहर 2019

### निकष

(A) जब, वास्तविक न्यूनतम तापमान  $10^{\circ}\text{C}$  या कम मैदानों के लिए और  $0^{\circ}\text{C}$  या कम पहाड़ी क्षेत्रों के लिए है।

शीत लहर : ऋण विचलन सामान्य से  $4.5^{\circ}\text{C}$  से  $6.4^{\circ}\text{C}$  तक।

तिव्र शीत लहर : ऋण विचलन सामान्य से  $6.4^{\circ}\text{C}$  से अधिक।

(B) तटीय स्टेशन के लिए शीत लहर

जब, न्यूनतम तापमान  $15^{\circ}\text{C}$  या कम।

शीत लहर : न्यूनतम विचलन तापमान  $-4.5^{\circ}\text{C}$  या कम।

(C) वास्तविक न्यूनतम तापमान पर आधारित (केवल मैदानों के लिए)

शीत लहर : जब न्यूनतम तापमान  $4^{\circ}\text{C}$  से कम या बराबर है।

तिव्र शीत लहर : जब न्यूनतम तापमान  $2^{\circ}\text{C}$  से कम या बराबर है।

## TABLE – II : COLD WAVE 2019

### CRITERIA

(A) When; Actual minimum temperature is  $10^{\circ}\text{C}$  or less for plains &  $0^{\circ}\text{C}$  or less for Hilly regions.

Cold wave : Negative departure from normal is  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

Severe cold wave : Negative departure from normal is more than  $6.4^{\circ}\text{C}$ .

(B) Cold Wave for coastal station

When; Minimum temperature  $15^{\circ}\text{C}$  or less.

Cold wave : Minimum temperature departure is  $-4.5^{\circ}\text{C}$  or less.

(C) Based on Actual Minimum Temperature (For plain stations only)

Cold Wave : When minimum temperature is less or equal to  $4^{\circ}\text{C}$ .

Severe Cold Wave : When minimum temperature is less or equal to  $2^{\circ}\text{C}$ .

<b>S. No.</b>	<b>Date/Period</b>	<b>Area affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
1.	8 Jan.	Jalgaon (Maharashtra)	Severe (A & C as appropriate)	One woman died.	
2.	27 Jan.	Vidisha (Madhya Pradesh)	Severe (A & C as appropriate)	2 persons died.	
3.	10 Feb.	Nashik (Maharashtra)	Severe (A & C as appropriate)	2 persons died.	
4.	19 Dec.	Ranchi (Jharkhand)	Severe (A & C as appropriate)	One person died.	
5.	23 to 31 Dec.	Bhandara (Maharashtra)	Severe (A & C as appropriate)	4 women died from Lakhanandur village.	
6.	24 Dec.	Ballia, Mau, Pratapgarh, Prayagraj (Uttar Pradesh)	Severe (A & C as appropriate)	4 persons died.	
7.	25 Dec.	Bahraich, Balrampur, Chandauli, Gorakhpur, Lakhimpur Kheri, Maharajganj, Mirzapur, Pilibhit, Prayagraj, Shravasti, Siddharthnagar (Uttar Pradesh)	Severe (A & C as appropriate)	7 persons died.	
8.	26 Dec.	Banda, Chandauli, Chitrakoot, Hamirpur, Jalaun, Jhansi, Kanpur Dehat, Kanpur Nagar, Kaushambi, Lalitpur, Mahoba, Mainpuri, Prayagraj (Uttar Pradesh)	Severe (A & C as appropriate)	13 persons died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
9.	27 Dec.	a) Azamgarh, Badaun, Ghazipur, Jaunpur, Kanpur Dehat, Lucknow, Mau, Moradabad, Pratapgarh, Prayagraj, Rampur, Sultanpur, Sambhal (Uttar Pradesh)	Severe (A & C as appropriate)	19 persons died.	
		b) Datia, Rewa (Madhya Pradesh)	Severe (A & C as appropriate)	Total 3 persons died. Datia - 2, Rewa - 1.	
10.	28 Dec.	a) Chatra, Hazaribagh (Jharkhand)	Severe (A & C as appropriate)	2 persons died, one from each Dist.	
		b) Amroha, Auraiya, Badaun, Ballia, Etawah, Farrukhabad, Ghazipur, Jhansi, Kannauj, Kanpur Dehat, Kanpur Nagar, Kaushambi, Mainpuri, Mau, Moradabad, Raebareli, Sambhal, Sant Kabir Nagar, Varanasi (Uttar Pradesh)	Severe (A & C as appropriate)	59 persons died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
11.	29 Dec.	a) Aligarh, Amroha, Auraiya, Badaun, Banda, Barabanki, Chandauli, Chitrakoot, Fatehpur, Hamirpur, Kanpur Dehat, Kanpur Nagar, Mahoba, Mau, Pratapgarh, Prayagraj, Sonbhadra, Unnao, Varanasi (Uttar Pradesh)	Severe (A & C as appropriate)	50 persons died.	
		b) Bhind, Vidisha (Madhya Pradesh)	Severe (A & C as appropriate)	One person died from Bhind Dist.  While more than 100 cattle heads perished in Vidisha Dist.	
12.	30 Dec.	a) Bhind, Guna, Harda, Mandla, Shahdol, Shivpuri (Madhya Pradesh)	Severe (A & C as appropriate)	Total 6 persons died, one in each Dist.	
		b) Begusarai, Bhojpur, Darbhanga, East Champaran, Muzaffarpur, Nawada, Rohtas, Samastipur, Saran, Sitamarhi, West Champaran (Bihar)	Severe (A & C as appropriate)	19 persons died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
		c) Bokaro, Chatra, Dhanbad, Garhwa, Giridih, Pakur, Palamu, Ramgarh (Jharkhand)	Severe (A & C as appropriate)	Total 10 persons died. Bokaro - 1, Chatra - 1, Dhanbad - 1, Garhwa - 1, Giridih - 2, Pakur - 1, Palamu - 1, Ramgarh - 2.	
13.	31 Dec.	Aligarh, Ambedkar Nagar, Amethi, Ayodhya, Ballia, Bahraich, Balrampur, Badaun, Banda, Barabanki, Chitrakoot, Ghazipur, Gonda, Hathras, Hamirpur, Hardoi, Jalaun, Jhansi, Kanpur Dehat, Kanpur Nagar, Kaushambi, Lakhimpur Kheri, Lalitpur, Mahoba, Mau, Pratapgarh, Prayagraj, Raebareli, Sambhal, Shravasti, Sitapur, Sultanpur, Varanasi (Uttar Pradesh)	Severe (A & C as appropriate)	88 persons died.	



## सारिणी - III : उष्ण लहर 2019

### निकष

(A) जब, अधिकतम तापमान कम से कम 40°C या अधिक मैदानों के लिए और 30°C या अधिक पहाड़ी स्टेशन के लिए ।

उष्ण लहर : सामान्य से विचलन 4.5°C से 6.4°C ।

तिव्र उष्ण लहर : सामान्य से विचलन 6.4°C से अधिक ।

*(B) तटीय स्टेशन के लिए गर्मी की लहर*

*जब, वास्तविक अधिकतम तापमान 37°C या अधिक है ।*

*उष्ण लहर : सामान्य से अधिकतम तापमान विचलन 4.5°C या अधिक ।*

*(C) वास्तविक अधिकतम तापमान पर आधारित*

*उष्ण लहर : जब वास्तविक अधिकतम तापमान 45°C या अधिक ।*

*तिव्र उष्ण लहर : जब वास्तविक अधिकतम तापमान 47°C या अधिक ।*

## TABLE – III : HEAT WAVE 2019

### CRITERIA

(A) When; Maximum temperature is at least 40°C or more for plains & at least 30°C or more for Hilly station.

Heat wave : Departure from normal is 4.5°C to 6.4°C.

Severe heat wave : Departure from normal is greater than 6.4°C.

*(B) Heat Wave for coastal station*

When; Actual maximum temperature is 37°C or more.

Heat wave : Maximum temperature departure from normal is 4.5°C or more.

*(C) Based on Actual Maximum Temperature*

Heat wave : When Actual maximum temperature is greater than or equal to 45°C.

Severe heat wave : When Actual maximum temperature is greater than or equal to 47°C.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
1.	19 Mar.	Kollam (Kerala)	Severe (B)	One person died.	
2.	22 Mar.	Ernakulam, Thiruvantahapuram (Kerala)	Severe (B)	One person died in Ernakulam (Kaladi) Dist. and other injured at Thiruvantahapuram (Vithura).	
3.	24 Mar.	Kannur, Pathanamthitta, Thiruvantahapuram (Kerala)	Severe (Both A & B as appropriate)	Total 3 persons died, one in each Dist. While, more than 100 persons injured from the whole state.	
4.	26 Mar.	Ernakulam, Wayanad (Kerala)	Severe (Both A & B as appropriate)	One person died & 2 others injured in Ernakulam Dist. While, 3 livestock perished in Wayanad Dist.	
5.	30 Mar.	Thrissur, Thiruvantahapuram (Kerala)	Severe (B)	One farmer died in Thiruvantahapuram Dist. While, 5 others injured. Viz. Thrissur – 1 & Thiruvantahapuram – 4.	
6.	31 Mar.	Alappuzha, Ernakulam, Kasaragod, Kollam, Kottayam, Kozhikode, Palakkad, Thiruvantahapuram (Kerala)	Severe (Both A & B as appropriate)	Total 2 persons died, one each from Kasaragod & Thiruvantahapuram. While, 37 others injured, Viz. Alappuzha-9, Ernakulam-9, Kasaragod-1, Kollam - 6, Kottayam-3, Kozhikode - 5, Palakkad-4.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
7.	1 Apr.	a) Alappuzha, Idukki, Kannur, Kollam, Kottayam, Kozhikode, Malappuram, Palakkad, Pathanamthitta, Thrissur, Thiruvantahapuram, Wayanad (Kerala)	Severe (Both A & B as appropriate)	2 persons died, one each from Kollam & Thiruvantahapuram district. While, 61 others injured, Viz. Alappuzha-22, Idukki-1, Kannur-3, Kollam-6, Kottayam-3, Kozhikode-3, Malappuram-1, Palakkad-14, Pathanamthitta-3, Thrissur-1, Thiruvantahapuram -2, Wayanad-2.	
		b) Aurangabad (Maharashtra)	Severe (Both A & C as appropriate)	One 80-year old woman died.	
8.	2 Apr.	a) Alappuzha, Ernakulam, Kannur, Kollam, Kottayam, Kozhikode, Malappuram, Palakkad, Pathanamthitta, Thrissur, Thiruvantahapuram (Kerala)	Severe (Both A & B as appropriate)	One person died in Thiruvantahapuram Dist. While, 47 others injured, Viz. Alappuzha-1, Ernakulam-6, Kannur-3, Kollam-10, Kottayam-1, Kozhikode-8, Malappuram-3, Palakkad-9, Pathanamthitta-1, Thrissur-3, Thiruvantahapuram-2.	
		b) Amaravati (Maharashtra)	Severe (Both A & C as appropriate)	2 persons died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
9.	4 Apr.	Alappuzha, Ernakulam, Kannur, Kasargode, Kollam, Kozhikode, Palakkad, Wayand (Kerala)	Severe (Both A & B as appropriate)	One person died in Kozhikode Dist. While, 36 others injured, Viz. Alappuzha-14, Ernakulam-7, Kannur-2, Kasargode-2, Kollam-3, Kozhikode-2, Palakkad -3, Wayand-3.	
10.	26 Apr.	Parbhani (Maharashtra)	Severe (Both A & C as appropriate)	One young farmer died in Bondargaon village of Sonpeth taluka.	
11.	27 Apr.	a) Nagpur (Maharashtra)	Severe (Both A & C as appropriate)	4 persons died.	
		b) Kota (Rajasthan)	Severe (Both A & C as appropriate)	One 45-year-old MNREGA labourer died at Kheyawada village.	
7.	28 Apr.	a) Jaipur (Rajasthan)	Severe (Both A & C as appropriate)	2 school teachers working as polling officers on election duty died.	
		b) Nagpur (Maharashtra)	Severe (Both A & C as appropriate)	2 persons died.	
8.	29 Apr.	Ahmadnagar, Akola, Hingoli, Nagpur (Maharashtra)	Severe (Both A & C as appropriate)	Total 9 persons died. Ahmednagar – One 28 year old person died in Desvade village in Parner taluka, Akola-1, Hingoli- 2 (one youth from Gojegaon village of Aundhanagnath taluka & one woman from Girgaon village of Vasmat taluka), Nagpur-5.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
9.	30 Apr.	Akola, Hingoli, Parbhani (Maharashtra)	Severe (Both A & C as appropriate)	Total 4 persons died. Akola -2, Hingoli – 1 in Bopurwadi village, Parbhani – 1 in Gangakhed village.	
10.	2 May	Hingoli (Maharashtra)	Severe (Both A & C as appropriate)	One person died in Dhamangaon in Vasmat taluka.	
11.	1 Mar. to 10 May	a) East Godavari, Guntur, Krishna, Nellore, Prakasam, West Godavari (Andhra Pradesh)	Severe (Both A, B & C as appropriate)	45 persons died.	
		b) Jagital, Karimnagar, Khammam, Kumram Bheem, Medchal, Nalgonda, Nirmal, Nizamabad, Peddapalli, Rajanna Sircilla, Siddipet (Telangana)	Severe (Both A, B & C as appropriate)	66 persons died	
12.	7 May	Washim (Maharashtra)	Severe (Both A & C as appropriate)	One person died.	
13.	10, 11, 14, 20, 24, 26 May	Angul, Bhadrak, Cuttack, Dhenkanal (Odisha)	Severe (Both A, B & C as appropriate)	Total 6 persons died. Viz. Angul – 3, Bhadrak – 1, Cuttack – 1, Dhenkanal – 1.	
14.	11 May	Parbhani (Maharashtra)	Severe (Both A & B as appropriate)	One farmer from Sayakheda village of Jintur taluka died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
15.	12 May	Nagpur, Wardha (Maharashtra)	Severe (Both A & C as appropriate)	Total 4 persons died. Nagpur - 3, Wardha – 1.	
16.	26 May	Amaravati, Bhandara (Maharashtra)	Severe (Both A & B as appropriate)	Total 4 persons died. Amaravati – 3, Bhandara – 1.	
17.	27 May	Hingoli, Washim (Maharashtra)	Severe (Both A & B as appropriate)	Total 3 persons died.  Hingoli - 2 persons died ((One farmer died in Shiradshapur village of Aundhanagnath taluka & other at Charthana village),  Washim – 1.	
18.	29 May	Chandrapur, Nagpur (Maharashtra)	Severe (Both A & B as appropriate)	Total 11 persons died.  Chandrapur - One 50-year old woman died at Varora.  Nagpur - 10 died.	
19.	30 May	Beed (Maharashtra)	Severe (Both A & B as appropriate)	One 50-year old man died.	
20.	4 Jun.	Nagpur (Maharashtra)	Severe (Both A & C as appropriate)	One person died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
21.	9 Jun.	a) Amravati (Maharashtra)	Severe (Both A & C as appropriate)	3 persons died.	
		b) Agra, Aligarh, Amroha, Badaun, Baghpat, Bareilly, Bijnor, Bulandshahr, Etah, Firozabad, Gautam Buddha Nagar, Ghaziabad, Hapur, Hathras, Kasganj, Mainpuri, Mathura, Meerut, Moradabad, Muzaffarnagar, Pilibhit, Rampur, Saharanpur, Sambhal, Shahjahanpur, Shamli (Uttar Pradesh)	Severe (Both A & C as appropriate)	5 persons died.	
22.	10 Jun.	Jhansi (Uttar Pradesh)	Severe (Both A & C as appropriate)	4 elderly pilgrims from Tamil Nadu travelling on a train from Agra to Coimbatore in non-AC coaches died by the time the train reached Jhansi.	
23.	12 Jun.	a) Ranchi, Singhbhum (Jharkhand)	West Severe (Both A & C as appropriate)	Total 4 persons died. Ranchi - 1, West Singhbhum – 3.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
		b) Jajpur (Odisha)	Severe (Both A & C as appropriate)	One person died.	
24.	13 Jun.	Gumla, Ranchi (Jharkhand)	Severe (Both A & C as appropriate)	Total 4 persons died. Gumla - 3, Ranchi – 1. Other 3 injured & a buffalo perished from Ranchi Dist.	
25.	14 Jun.	Sambalpur (Odisha)	Severe (Both A & C as appropriate)	2 persons died.	
26.	15 Jun.	Aurangabad, Gaya, Nawada, Patna, Sheikhpura (Bihar)	Severe (Both A & B as appropriate)	62 persons died.	
27.	16 Jun.	a) Aurangabad, Gaya, Kaimur, Nawada, Patna, Rohtas (Bihar)	Severe (Both A & B as appropriate)	118 persons died	
		b) Chatra, Giridih, Ramgarh (Jharkhand)	Severe (Both A & C as appropriate)	Total 5 persons died. Chatra - 2, Giridih - 2, Ramgarh – 1.	
28.	17 Jun.	Arwal, Aurangabad, Begusarai, Buxar, Gaya, Madhepura, Munger, Nalanda, Nawada, Rohtas, Saran, Vaishali (Bihar)	Severe (Both A & B as appropriate)	66 persons died.	
29.	18 Jun.	Aurangabad, Begusarai, Bhagalpur, Bhojpur, Darbhanga, Gaya, Jamui, Katihar, Munger, Nalanda, Nawada, Rohtas, Samastipur, Saran, Vaishali (Bihar)	Severe (Both A & B as appropriate)	47 persons died.	



## सारिणी - IV : अंधड़ (स्कॉल) 2019

हवा की गति में कम से कम 29 किलोमीटर (16 KTS) प्रति घंटे से  
40 किलोमीटर (22 KTS) प्रति घंटे या अधिक और अचानक वृद्धि  
और कम से कम एक मिनट के लिए स्थायी

निकष

मध्यम : सतह हवा की गति (gusts में) 80 किलोमीटर प्रति घंटे तक।

तीव्र : सतह हवा की गति (gusts में) > 80 किलोमीटर प्रति घंटे।

### TABLE – IV : SQUALL 2019

A sudden increase of wind speed by at least 29 kmph (16 kts), the speed rising to 40 kmph (22 kts) or more and lasting for at least one minute

#### CRITERIA

Moderate : Surface wind speed (in gusts) up to 80 kmph.

Severe : Surface wind speed (in gusts) > 80 kmph.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
1.	25 Feb.	Sundargarh (Odisha)	Severe	One person died.	
2.	15 & 16 Apr.	Nagpur (Maharashtra)	Moderate		Traffic disrupted as several trees uprooted.
3.	3 May	Palamu (Jharkhand)	Moderate	One person died.	
4.	13 May	Giridh (Jharkhand)	Moderate	One person died and other injured.	
5.	3 Jun.	Ranchi (Jharkhand)	Moderate		i) Damage to houses & poultry farm reported. ii) Several trees uprooted.
6.	10 Jun.	Nagpur, Satara (Maharashtra)	Severe	2 oxen perished in Satara Dist.	i) Damage to houses reported. ii) Traffic disrupted as several trees uprooted.

## सारिणी – V : झंझा 2019

निकष

तीव्र : हवा की गति  $\geq 75$  किलोमीटर प्रति घंटे

### TABLE – V : GALE 2019 CRITERIA

Strong: Wind speed  $\geq 75$  kmph

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
1.	13 Apr.	Yavatmal (Maharashtra)	Strong		20 high voltage & 29 low voltage electric poles uprooted.
2.	15 Apr.	a) Wayanad (Kerala)	Strong		Complete damage to house at Ambalavayal reported.
		b) Hyderabad (Telangana)	Strong	2 persons including a five-year-old died & 3 others injured.	i) Damage to floodlight tower at L. B. Stadium in front of Ayakar Bhavan reported. ii) Damage to four cars reported. iii) Several trees, electricity poles uprooted & huge hoardings also collapsed at few places causing disruption in traffic & power supply.
3.	16 Apr.	Nashik, Washim (Maharashtra)	Strong		i) Damage to highway reported. ii) Electric supply disrupted. Several electric poles uprooted.
4.	22 May	a) Coimbatore (Tamil Nadu)	Strong	A 19-year old boy died by a falling tree.	i) Damage to several houses reported. ii) Several trees uprooted.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
		b)Chandrapur (Maharashtra)	Strong		i) Damage to more than 150 houses reported. ii) Several trees, electricity poles uprooted & huge hoardings also collapsed at few places causing disruption in traffic & power supply.
5.	5 Jun.	Wayanad (Kerala)	Strong		Damage to 7 houses & Cattle farm reported at Kattikulam.
6.	11 & 12 Jun.	Thiruvantahapuram (Kerala)	Strong		i) Complete damage to 15 houses reported. Also roofs of several houses blown away. ii) Complete damage to Sea-side road reported.
7.	13 Jun.	Wardha (Maharashtra)	Strong		i) Damage to houses reported. ii) Damage to roads reported. iii) Several trees, electricity poles uprooted & huge hoardings also collapsed at few places causing disruption in traffic & power supply.
8.	21 Jun.	Washim (Maharashtra)	Strong		i) Damage to houses reported. ii) Several trees, electricity poles uprooted & huge hoardings also collapsed at few places causing disruption in traffic & power supply.
9.	19 Jul.	Kollam (Kerala)	Strong	One person died.	i) A coconut tree completely uprooted. ii) Damage to boat reported.
10.	23 Oct.	Keonjhar (Odisha)	Strong	One person died.	
11.	22 Nov.	Thiruvananthapuram (Kerala)	Strong		i) Complete damage to a rooftop of a classroom of Govt. ITI School reported. ii) Trees uprooted.
12.	26 Nov.	Thiruvananthapuram (Kerala)	Strong	One person died as a tree fell over.	Trees uprooted.

**सारिणी – VI : आंधी 2019**  
**TABLE – VI : DUST STORM 2019**

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
1.	17 & 18 Apr.	Alwar, Baran, Bhilwara, Bundi, Dausa, Hanumangarh, Jaipur, Jalore, Jhalawar, Pali, Pratapgarh, Rajsamand, Tonk, Udaipur  (Rajasthan)		Total 25 persons died.  Alwar -1, Baran -1, Bhilwara-1, Bundi - 2, Hanumangarh - 1, Jaipur - 4, Jalore - 2, Jhalawar - 4, Pali - 1, Pratapgarh -1, Rajsamand - 2, Udaipur – 5.  While 17 others injured  Viz. Bhilwara - 1, Dausa - 1, Hanumangarh - 4, Rajsamand - 4, Tonk - 2, Udaipur – 5.	i) Damage to crops reported. ii) Dmage to property reported. iii) Damage to banners, hoardings reported. iv) Abrupt power cuts witnessed. v) Half-a-dozen flights to Jaipur delayed landing & three flights delayed take off. vi) Several trees uprooted.

## सारिणी – VII : मेघ विद्युत 2019

TABLE – VII: LIGHTNING 2019

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
1.	7 Jan.	Koraput (Odisha)		One person died.	
2.	14 Feb.	Chhatarpur, Damoh (Madhya Pradesh)		Total 3 persons died. Chhatarpur-2, Damoh-1	
3.	27 Feb.	Alwar (Rajasthan)		One person died and other injured.	
4.	1 Mar. to 31 May	Cachar, Dhubri, Golaghat, Sivasagar, Sonitpur (Assam)		13 persons died.	
5.	4, 5, 14, 15, , 23, 31 Mar.	Ganjam, Kalahandi, Kendrapara, Keonjhar, Sundargarh (Odisha)		Total 7 persons died. Ganjam - 1, Kalahandi - 2, Kendrapara- 1, Keonjhar - 1, Sundargarh-2.	
6.	17 Mar.	Seoni (Madhya Pradesh)		One person died.	Damage to 4 houses reported.
7.	20 Mar.	Wardha (Maharashtra)		2 persons died in Dhapaki village of Selu tehsil.	
8.	25 Mar.	Dharwad (Karnataka)		One person died & other injured.	
9.	26 Mar.	Hingoli (Maharashtra)		One farmer died in Dudhala village of Aundha Nagnath Tehsil.	
10.	30 Mar.	Wayand (Kerala)		One person died at Kalpetta.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
11.	1, 7, 13, 14,17, 18, 19, 21, 25, 26 Apr.	Balasore,Cuttack, Dhenkanal, Jaipur, Koraput,Mayurbhanj, Nawarangpur, Sambalpur, Subarnapur, Sundargarh (Odisha)		Total 15 persons died.  Balasore-1, Cuttack-2, Dhenkanai-2, Jaipur-1, Koraput-1, Mayurbhanj-1, Nawarangpur – 4, Sambalpur-1, Subarnapur-1, Sundargarh-1.	
12.	4 Apr.	Beed, Pune (Maharashtra)		Total 3 persons died.  Viz. Beed – 2 [One woman died at Kasari & One man from Dhunkawad village of Dharur tehsil],  Pune – 1 woman died in Daund tehsil.	
13.	7 Apr.	Raichur (Karnataka)		One person died.	
14.	8 Apr.	Chitradurga (Karnataka)		One person died.	
15.	13 Apr.	Chitradurga (Karnataka)		One person died.	
16.	16 Apr.	a) Indore, Khargone (West Nimar), Ratlam,Shajapur, Sheopur (Madhya Pradesh)		Total 10 persons died.  Indore – 5,  Khargone (West Nimar) – 2, Ratlam-1, Shajapur-1,  Sheopur -1.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
		b) Nasik, Parbhani, Pune (Maharashtra)		Total 6 persons died & other injured & 40 livestock perished. Nasik - 3 persons including a old woman & temple priest reported. Parbhani - 2 persons died & other severely injured. 40 goats perished in Andhapuri village of Pathari taluka. Pune - One youth died in Yedgaon-Bhorwadi from Junnar Taluka.	
17.	17 Apr.	a) Barwani, Chhatarpur, Sehore (Madhya Pradesh)		Total 4 persons died. Barwani -1, Chhatarpur-1, Sehore – 2	
		b) Ernakulam (Kerala)		Two persons died & other injured at Mulanthuruthy.	
18.	18 Apr.	Amaravati (Maharashtra)		One person died.	
19.	22 Apr.	Nagpur (Maharashtra)		One person died & 2 others injured.	
20.	5 May	a) Neemuch (Madhya Pradesh)		One person died.	
		b) Kushinagar, Lakhimpur Kheri, Siddharthnagar (Uttar Pradesh)		5 persons died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
21.	11 May	a) Wayanad (Kerala)		One person injured.	i) Damage to coffee plantain reported. ii) Damage to electrical appliances, Cable lines reported.
		b) Chamba (Himachal Pradesh)		4 buffaloes perished.	
22.	11, 12, 15, 16, 17, 19, 20, 21, 23, 24, 25, 27, 28, 29, 31 May	Bargarh, Bolangir, Deogarh, Ganjam, Jajpur, Kalahandi, Keonjhar, Koraput, Malkangiri, Mayurbhanj, Nabarangpur, Naupada, Rayagada, Subranpur, Sundergarh(Odisha)		Total 35 persons died. Viz. Bargarh – 2, Bolangir – 1, Deogarh – 2, Ganjam – 4, Jajpur – 2, Kalahandi – 5, Keonjhar – 3, Koraput – 6, Malkangiri – 1, Mayurbhanj – 2, Nabarangpur – 1, Naupada – 1, Rayagada – 2, Subranpur – 1, Sundergarh – 2.	
23.	12 May	Katni, Mandla, Rewa (Madhya Pradesh)		One person died in Katni Dist.  While, 4 others injured, 2 each from Mandla, Rewa.  In addition, a livestock perished in Mandla.	
24.	16 May	Wayanad (Kerala)			Damage to 33 KV cable line reported.
25.	19 May	Wayanad (Kerala)			Damage to roof and compound wall of a Convent school reported.
26.	21 May.	Solapur (Maharashtra)		4 persons died & 2 oxen perished.	



S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
27.	22 May	a) Chandrapur (Maharashtra)		One person died, other injured & 2 ox perished.	
		b) Bijapur, Yadgir (Karnataka)		Total 5 persons died & 4 others injured.  Bijapur – 2 died & 2 injured, Yadgir - 3 died & 2 injured.  While, 4 livestock including 2 cows & 2 horses perished from Bijapur Dist.	Damage to 2 acres of banana plantation reported from Bijapur Dist.
28.	23 May	Poonch (Union Territory-Jammu & Kashmir)		90 livestock including goats & sheep perished in Loran village.	
29.	26 May	Davangere (Karnataka)		One person died.	
30.	1, 2, 3, 5, 6, 8, 10, 14, 15, 16, 17, 18, 19, 20, 27 Jun.	Angul, Bargarh, Bolangir, Cuttack, Dhenkanal, Deogarh, Ganjam, Jajpur, Jharsuguda, Khordha, Kalahandi, Kendrapara, Keonjhar, Koraput, Malkangiri, Mayurbhanj, Nabarangpur, Naupada, Rayagada, Sambalpur, Subranpur (Odisha)		Total 57 persons died.  Viz. Angul – 4, Bargarh – 3, Bolangir – 4, Cuttack – 1, Dhenkanal – 3, Deogarh – 1, Ganjam – 7, Jajpur – 1, Jharsuguda – 3, Khordha – 1, Kalahandi –1, Kendrapara –1, Keonjhar – 1, Koraput – 2, Malkangiri–1, Mayurbhanj – 6, Nabarangpur–11, Naupada-1, Rayagada – 1, Sambalpur–3, Subranpur – 1.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
31.	2 Jun.	Almora (Uttarakhand)			Around 90 sheep perished.
32.	3 Jun.	a) Kupwara (Union Territory-Jammu & Kashmir)			An entire goat flock of about 100 number of goats perished at Tummin near Panzgham
		b) Gulbarga, Raichur (Karnataka)			Total 6 persons died. Gulbarga - 4, Raichur – 2. One person injured from Gulbarga Dist. While several livestock perished in both the Dist.
33.	8 Jun.	Yavatmal (Maharashtra)			One person died.
34.	9 Jun.	Yavatmal (Maharashtra)			One person died
35.	11 Jun.	Doda (Union Territory-Jammu & Kashmir)			180 sheep & goats perished at Abalkote-Sarkan-tha top in Khari Tehsil.
36.	26 Jun.	Washim (Maharashtra)			One person died at Zanzori, Karanja.
37.	28 Jun.	a) Washim (Maharashtra)			One girl died and other injured at Ammani, Jambharunwadi.
		b) Burhanpur (Madhya Pradesh)			3 persons died

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
38.	30 Jun.	Yavatmal (Maharashtra)		3 persons died.	
39.	1 Jul.	Solapur (Maharashtra)		3 persons died & 2 others injured.	
40.	9 Jul.	Wardha (Maharashtra)		One person died.	
41.	13, 14, 16, 18, 19, 23, 24, 27 Jul.	Angul, Bolangir, Dhenkanal, Deogarh, Ganjam, Jharsuguda, Khordha, Kalahandi, Mayurbhanj, Nabarangpur (Odisha)		Total 17 persons died. Viz. Angul – 1, Bolangir – 1, Dhenkanal – 2, Deogarh – 1, Ganjam – 3, Jharsuguda – 2, Khordha – 3, Kalahandi – 1, Mayurbhanj – 2, Nabarangpur – 1.	
42.	14 Jul.	Ganderbal (Union Territory-Jammu & Kashmir)		200 livestock perished.	
43.	20 Jul	Thane (Maharashtra )		One person died & 4 others injured in Umerpada from Bhiwadi taluka.	
44.	21 Jul.	Udaipur (Rajasthan)		One person died.	
45.	27 Jul.	Bhilwara (Rajasthan)		One person died.	
46.	29 Jul.	Pune (Maharashtra)		One person died in Junnar taluka.	
47.	31 Jul.	Bhopal (Madhya Pradesh)		One person died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
48.	3 Aug.	Jalgaon (Maharashtra)		One person died in Khirdi village from Raver Taluka.	
49.	5, 6, 7, 11, 12, 14, 16, 17, 22, 23, 25, 29 Aug.	Bargarh, Balasore, Bhadrak, Bolangir, Cuttack, Dhenkanal, Deogarh, Ganjam, Jajpur, Kendrapara, Khordha, Mayurbhanj, Puri, Rayagada, Sambalpur, Sundergarh (Odisha)		Total 45 persons died.  Viz. Bargarh – 1, Balasore – 2, Bhadrak – 2, Bolangir – 1, Cuttack – 8, Dhenkanal – 2, Deogarh – 1, Ganjam – 2, Jajpur – 3, Kendrapara–11, Khordha-2, Mayurbhanj – 5, Puri – 2, Rayagada – 1, Sambalpur–1, Sundergarh– 1.	
50.	8 & 9 Aug.	Uttarakashi (Uttarakhand)		More than 250 goats perished in Purola area.	
51.	11 Aug.	East Medinipur (West Bengal)		One person died.	
52.	16 Aug.	Kolkata (West Bengal)		One person died.	
53.	17 Aug.	Bankura, Barddhaman, South 24 Parganas (West Bengal)		3 persons died, one in each Dist.	
54.	1 & 2 Sep.	Nagaon (Assam)		2 persons died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
55.	2, 4, 6, 18, 19, 23, 24, 27, 28, 29 Sep.	Angul, Balasore, Bargarh, Bolangir, Ganjam, Jharsuguda, Kandhamal, Kendrapara, Koraput, Mayurbhanj, Sundergarh (Odisha)		Total 15 persons died.  Viz. Angul –1, Balasore – 1, Bargarh – 2, Bolangir – 1, Ganjam – 1, Jharsuguda – 1, Kandhamal – 2, Kendrapara – 1, Koraput – 1, Mayurbhanj – 2, Sundergarh – 2.	
56.	8 Sep.	Kabirdham (Chhattisgarh)		2 persons died in Saraipatera Village.	
57.	20 Sep.	Banswara, Bundi (Rajasthan)		Total 2 persons died, one from each district.	
58.	11 Sep.	Bhopal (Madhya Pradesh)		4 persons injured.  While, 2 livestock perished.	
59.	21 Sep.	Mirzapur, Unnao (Uttar Pradesh)		6 persons died & 10 others injured.	
60.	23 to 30 Sep.	Amravati (Maharashtra)		5 persons died from Dharani.	
61.	27 Sep.	Jalgaon (Maharashtra)		5 farmers including one woman died at Bhavarkheda village of Dharangaon tehsil.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
62.	1, 2, 5, 6, 7, 8, 9, 11, 12, 13, 16, 17, 20, 22, 25, 31 Oct.	Bargarh, Balasore, Bolangir, Boudh, Cuttack, Dhenkanal, Deogarh, Ganjam, Jharsuguda, Kalahandi, Keonjhar, Khordha, Koraput, Mayurbhanj, Nabarangpur, Nayagarh, Sambalpur, Sundergarh (Odisha)		Total 45 persons died. Viz. Bargarh – 1, Balasore – 1, Bolangir – 1, Boudh – 1, Cuttack – 4, Dhenkanal – 2, Deogarh – 1, Ganjam – 4, Jharsuguda – 2, Kalahandi – 5, Keonjhar – 6, Khordha – 2, Koraput – 4, Mayurbhanj – 2, Nabarangpur – 2, Nayagarh – 1, Sambalpur – 3, Sundergarh – 3.	
63.	2 Oct.	Nagpur (Maharashtra)		One person died.	
64.	3 Oct.	Azamgarh, Ballia, Basti, Chandauli, Deoria, Ghazipur, Gorakhpur, Jaunpur, Kushinagar, Maharajganj, Mau, Mirzapur, Sant Kabir Nagar, Sant Ravidas Nagar-Bhadohi, Siddharth Nagar, Sonbhadra, Varanasi (Uttar Pradesh)		6 persons died & 10 others injured.	
65.	4 Oct.	Pune (Maharashtra)		One person died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
66.	5 Oct.	Khamam (Telangana)		4 persons died.	
67.	6 Oct.	a) Dhule, Jalana, Nanded (Maharashtra)		Total 4 persons died. Dhule – 1, Jalana - 3. While 4 livestock perished in Nanded.	
		b) Bijapur, Gulbarga (Karnataka)		One person died in Bijapur Dist. While 4 livestock perished, Bijapur -1, Gulbarga – 3.	
68.	7 Oct.	a) Khamam (Telangana)		3 persons died.	
		b) Jalna (Maharashtra)		3 persons died.	
69.	10 Oct.	Satara, Osmanabad (Maharashtra)		One person died in Kalamb of Osmanabad Dist. 13 livestock perished in Bhadale of Satara Dist.	
70.	13 Oct.	Bijapur, Gadag (Karnataka)		Total 2 persons died, one in each Dist.	
71.	15 Oct.	Haveri (Karnataka)		One person died.	
72.	21 Oct	Davangere (Karnataka)		One person died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
73.	30 Oct.	Akola, Amaravati, Nanded, Yavatmal (Maharashtra)		Total 12 persons died. Akola - 4, Amaravati - 4, Nanded, - 3 Yavatmal – 1.	
74.	9 Nov.	Dhenkanal (Odisha)		One person died.	
75.	11 Nov.	Thiruvananthapuram (Kerala)			Damage to Fridge, Grinder and other home appliances reported.
76.	21 Nov.	Thiruvananthapuram (Kerala)			i) Damage worth 1.15 lakhs reported. ii) Household appliances charred.
77.	12 Dec.	Raisen, Vidisha (Madhya Pradesh)		2 persons died.	
78.	13 Dec.	Amroha, Auraiya, Bijnor, Hardoi, Mahoba, Mathura (Uttar Pradesh)		9 persons died.	
79.	21 Dec.	Keonjhar (Odisha)		One person died.	



## सारिणी –VIII : गर्ज के साथ तूफान (थंडरस्टॉर्म) 2019

TABLE –VIII : THUNDERSTORM 2019

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
1.	20 Feb.	Akola, Beed, Jalana (Maharashtra)			Damage to Onion, Wheat, Pomegranates, Banana & vegetable crops reported.
2.	25 Feb.	Kolkata (West Bengal)		5 persons died and few others injured.	Several trees, electric / telephone poles uprooted causing disruption in communication and power supply.
3.	27 Feb.	Bhojpur, East Champaran, Gaya, Madhubani, Muzzafarpur, Samastipur, Sheohar, Sitamarhi, Supaul, West Champaran (Bihar)		2 persons died one each from Gaya and Samastipur Dist.	Several trees, electric/telephone poles uprooted causing disruption in communication and power supply.
4.	1 Mar. to 31 May	Cachar, Dhubri, Golaghat, Sivasagar, Sonitpur (Assam)		10 persons died. Many others injured.	Damage to property reported.
5.	14 Mar.	Ranchi, West Singhbhum (Jharkhand)		Total 5 persons died. Ranchi -1, West Singhbhum – 4.	
6.	15 & 17 Mar.	Ranchi (Jharkhand)			i) Damage to crops reported. ii) Roofs of many houses blown away. iii) Several trees uprooted.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
7.	17 Mar.	Kolkata and adjacent districts (West Bengal)		2 persons died and one other injured.	i) Extensive damage reported. ii) Air & Railway traffic disrupted. iii) Many trees, electric / telephone poles uprooted causing disruption in communication and power supply.
8.	22 Mar.	Kolkata and adjacent districts (West Bengal)		3 persons died.	i) Extensive damage reported. ii) Air & Railway traffic disrupted. iii) Many trees, electric / telephone poles uprooted causing disruption in communication and power supply.
9.	26 Mar.	Aurangabad, Nalanda, Patna (Bihar)		6 persons died.	Extensive damage to Agricultural crops reported.
10.	31 Mar.	a) Ballari (Karnataka) b) Ranchi (Jharkhand)		One person injured. One buffalo perished.	Roofs of many houses blown away. Damage to crops reported.
11.	1 Apr.	a) Bagalkot (Karnataka) b) West Tripura (Tripura)		One woman from Katira Ranibari village in Jirania sub-division died.	Metal roofs on sheds, many houses, flourmills and huts blown away.
12.	4 Apr.	Pune (Maharashtra)		One ox perished in Someshwarwadi in Baramati taluka.	i) Damage to Wheat, Tomato, Sugarcane, and Pomegranate, vegetable crops in Someshwarwadi from Baramati taluka & Nangaon from Daund taluka reported. ii) Roofs of many houses blown away. iii) Several trees uprooted.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
13.	5 Apr.	Kolkata and adjacent districts (West Bengal)			<ul style="list-style-type: none"> <li>i) Some structural damages reported.</li> <li>ii) Air traffic &amp; train services disrupted.</li> <li>iii) Many trees uprooted.</li> </ul>
14.	6 Apr.	<ul style="list-style-type: none"> <li>a) Bankura, Howrah, Hoogly, Kolkata, North 24 Parganas, South 24 Parganas (West Bengal)</li> <li>b) West Singhbhum (Jharkhand)</li> </ul>		One person died.	<ul style="list-style-type: none"> <li>i) Some structural damages reported.</li> <li>ii) Air &amp; road traffic disrupted.</li> <li>iii) Many trees uprooted.</li> </ul>
15.	9 Apr.	<ul style="list-style-type: none"> <li>a) Bhojpur, Darbhanga, Samastipur, Sheikhpura (Bihar)</li> <li>b) Howrah, Kolkata, South Dinajpur. and adjacent districts (West Bengal)</li> </ul>		<p>8 persons died.</p> <p>2 persons died, one each from Howrah &amp; South Dinajpur.</p>	<ul style="list-style-type: none"> <li>i) Extensive damage to Agricultural crops reported.</li> <li>ii) Damage to building reported.</li> <li>i) Extensive damage reported.</li> <li>ii) Suburban rail services including City Circular Rail &amp; Metro Rail heavily disrupted.</li> <li>iii) Several trees, electric / telephone poles uprooted causing disruption in communication and power supply.</li> </ul>
16.	15 Apr.	Bishnupur, Churachandpur, Kakching, Thoubal (Manipur)		<p>Total 3 women died.</p> <p>Churachandpur - 2, Kakching -1.</p> <p>More than 40 others including 30 students injured in Kwakta town of Bishnupur Dist.</p>	<ul style="list-style-type: none"> <li>i) Churachandpur, Kakching, Thoubal districts severally affected.</li> <li>ii) Complete damage to a school building in Kwakta reported.</li> <li>iii) Damage to more than 1000 houses including makeshift of public meeting &amp; many shops reported.</li> <li>iv) Damage to main High Tension (HT) wire reported which cause disruption in power supply.</li> <li>v) Several trees uprooted.</li> </ul>

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
17.	16 Apr.	Aurangabad, Beed, Hingoli, Jalna, Latur, Nanded, Osmanabad, Parbhani (Maharashtra)			Extensive damage to fruit crops & Rabi crops including Jawar reported from districts in Marathwada.
18.	17 Apr.	Parts of North Gujarat & Saurashtra region		10 persons died.	i) Damage to crops reported. ii) Damage to property reported.
19.	21 Apr.	a) Birbhum, Nadia (West Bengal) b) Gumla (Jharkhand)		One person died & 3 others injured. 3 persons died and 5 others injured.	Huge Banyan tree uprooted.
20.	22 & 23 Apr.	Jammu (Union Territory- Jammu & Kashmir)			i) Damage to an under-construction building at Ambphalla area reported. ii) Damage to 2 vehicles reported.
21.	27 Apr.	Uttara Kannada (Karnataka)			Damage to several acres of Banana and Mango plantations reported.
22.	29 Apr.	Ballari, Chikkamagaluru, Chitradurga (Karnataka)		Total 4 persons died. Ballari – 1, Chikkamagaluru – 2, Chitradurga – 1.	
23.	30 Apr.	Ranchi (Jharkhand)		5 persons injured, 2 livestock perished.	i) Damage to crops reported. ii) Roofs of many houses blown away. iii) Several trees uprooted.
24.	3 May	Muzaffarpur, Saran, Siwan, West Champaran (Bihar)		5 persons died.	Extensive damage to Agricultural crops reported.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
25.	12 to 14 May	Birbhum, Koch Bihar, Kolkata and adjacent districts (West Bengal)		One person died and 10 injured.	<ul style="list-style-type: none"> <li>i) Extensive damage to crops at Mathabhanga, Dinhata, Chandamari, Fesyabari &amp; Sitalkuchi area of Koch Bihar Dist. reported.</li> <li>ii) Damage to more than 500 houses in Koch Bihar Dist. reported.</li> <li>iii) Extensive damage to property from Kolkata and adjacent districts reported.</li> <li>iv) Air traffic disrupted at Kolkata Airport.</li> <li>v) Several trees/electric poles uprooted causing disruption in vehicular traffic &amp; power supply.</li> </ul>
26.	22 May	Buldhana, Chandrapur (Maharashtra)		One person injured due to wall collapsed in Buldhana Dist.	<ul style="list-style-type: none"> <li>i) Damage to Orange garden reported.</li> <li>ii) Damage to house reported.</li> <li>iii) Damage to roads reported.</li> <li>iv) Several trees &amp; electric poles uprooted.</li> </ul>
27.	24 May	Janigir-Champa (Chhattisgarh)		One person died at Kikirda village.	
28.	25 May	Kolkata and adjacent districts (West Bengal)		2 persons died and 3 injured.	<ul style="list-style-type: none"> <li>i) Air traffic disrupted at Kolkata Airport.</li> <li>ii) Rail traffic disrupted.</li> <li>iii) Many trees uprooted causing traffic disruption.</li> </ul>
29.	27 May	Kolar (Karnataka)			Damage to crops worth lakhs of rupees reported.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
30.	30 May	a) Muzaffarpur, Saran, Siwan, West Champaran (Bihar)		15 persons injured.	Extensive damage to Agricultural crops reported.
		b) Baloda Bazar, Durg, Raipur (Chhattisgarh)		One livestock perished.	Damage to houses reported from Pallari village of Raipur Dist. & Ballodi village of Durg Dist.
31.	2 Jun.	Kolar (Karnataka)			i) Damage to crops reported. ii) Roofs of several houses blown away. iii) Few trees uprooted.
32.	3 Jun.	Gumla, Saraikela-Kharsawan (Jharkhand)		Total 4 persons died. Gumla – 3, Saraikela- Kharsawan – 1. While 2 others injured in Gumla Dist.	
33.	5 Jun.	Ranchi (Jharkhand)		3 persons died and other injured.	
34.	6 Jun.	Belgaum, Bellary, Koppal, Uttara Kannada (Karnataka)		Total 3 persons died, one each from Belgaum, Bellary, Koppal Dist.	Damage to Banana plantation around 25 acres in Uttara Kannada Dist. reported.
35.	7 Jun.	Amroha, Badaun, Barabanki, Etah, Farrukhabad, Kannauj, Kasganj, Mahoba, Mainpuri, Mathura, Moradabad, Pilibhit, Sambhal (Uttar Pradesh)		24 persons died, 57 others injured & 25 livestock perished.	Damage to 16 houses reported.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
36.	9 Jun.	Shimoga (Karnataka)		One person died.	
37.	10 Jun.	Gopalganj, Saran, Siwan (Bihar)		7 persons died.	Extensive damage to Agricultural crops reported.
38.	12 Jun.	East Champaran, Nalanda, Patna (Bihar)		15 persons died.	Damage to property reported.
39.	11 & 12 Jun.	Bandipora, Ganderbal, Pulwama (Union Territory-Jammu & Kashmir)		Total 3 persons including 2 women died. Bandipora- 2, Ganderbal- 1. While, 2 others injured.	i) Damage to residential house reported. ii) Several trees uprooted.
40.	15 Jun.	Korba (Chhattisgarh)		2 persons died in Kartala Tehsil.	
41.	16 Jun.	Balrampur, Mahasamund (Chhattisgarh)		Total 5 persons died. Balrampur – 2 in Dhandhapur village, Mahasamund – 3.	
42.	17 Jun.	Surguja (Chhattisgarh)		2 persons died in Rajpur village.	
43.	18 Jun.	Kanker (Chhattisgarh)		3 livestock perished in Kodagaon village.	
44.	20 Jun.	Surguja (Chhattisgarh)		2 persons died in Ambikapur.	
45.	20 & 21 Jun.	Ranchi (Jharkhand)		3 persons died and 4 livestock perished.	Damage to fuel dispensary unit & generator reported.
46.	21 Jun.	Banka, Buxar, Jamui, Khagaria (Bihar)		6 persons died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
47.	22 Jun.	Koriya (Chhattisgarh)		2 persons died & 2 others injured in Badhgaonkala village of Janakpur Tehsil.	
48.	23 Jun.	a) Barmer (Rajasthan)		14 persons died & several others injured. 100 livestock perished.	Complete damage to tent in Jasol village of Balotra area reported.
49.	26 Jun.	b) Ranchi (Jharkhand) Araria, Banka, Bhagalpur, Darbhanga, East Champaran, Jamui, Katihar, Khagaria, Lakhisarai, Madhepura, Munger, Purnia, Saharsa, Sheikhpura, Sheohar (Bihar)		One person died. 6 persons died.	
50.	26 & 27 Jun.	Bokaro, Chatra, East Singhbhum, Gumla, Latehar, Lohardaga, Palamu, Ranchi (Jharkhand)		Total 16 persons died. Bokaro - 3, Chatra - 1, East Singhbhum - 1, Gumla - 2, Latehar - 4, Lohardaga - 2, Palamu - 1, Ranchi - 2. 17 persons injured Viz. Bokaro - 2, Chatra - 1, East Singhbhum - 1, Latehar - 2, Palamu - 3, Ranchi - 8. While, 6 livestock perished in Ranchi.	Several trees uprooted.



S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
51.	29 Jun.	Balrampur, (Chhattisgarh)		One person died & 4 livestock perished at Gopalpur, Rajpur Tehsil.	
52.	30 Jun.	Chatra, Giridih, Ranchi (Jharkhand)		Total 9 persons died. Chatra-2, Giridih-1, Ranchi -6. While, 3 persons injured in Giridih & Many persons injured in Ranchi. 4 livestock perished in Ranchi.	
53.	2 & 3 Jul.	Ranchi (Jharkhand)		One person died and One cow perished.	
54.	6 Jul.	Garhwa (Jharkhand)		3 persons died and 3 others injured.	
55.	8 Jul.	a) Surguja (Chhattisgarh)		2 persons died & other injured from Jori village, Ambikapur.	
		b) Jamui , Nawada (Bihar)		4 persons died.	
56.	9 Jul.	Chandrapur, Nagpur, Wardha (Maharashtra)		2 persons died. 2 livestock perished.	
57.	16 Jul.	Haora (West Bengal)		One person died & 3 others injured.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
58.	19 Jul.	a) Arwal, Aurangabad, Nawada (Bihar)		13 persons died.	
		b) Bhilwara (Rajasthan)		One person died.	
59.	22 Jul.	Banda, Chitrakoot, Fatehpur, Hamirpur, Jalaun, Jhansi, Kanpur Dehat, Kanpur Nagar, Lalitpur, Mahoba, Raebareli (Uttar Pradesh)		36 persons died.	
60.	23 Jul.	Chatra, Dumka, Garhwa, Latehar, Lohardaga (Jharkhand)		Total 12 persons died. Chatra – 4, Dumka – 1, Garhwa – 1, Latehar – 5, Lohardaga – 1.	
61.	24 Jul.	Bokaro, Deoghar, Dumka, Garhwa, Giridih, Gumla, Jamtara, Lohardaga, Pakur, Palamu, Ramgarh, Ranchi (Jharkhand)		Total 22 persons died. Bokaro – 1, Deoghar – 1, Dumka – 2, Garhwa - 2, Giridih – 2, Gumla – 1, Jamtara – 6, Lohardaga – 1, Pakur – 2, Palamu – 1, Ramgarh – 2, Ranchi – 1.  11 persons injured Viz. Garhwa - 1, Gumla - 2, Jamtara - 1, Lohardaga - 5, Ramgarh – 2.	
62.	25 Jul.	Deoria, Gorakhpur, Kushinagar, Maharajganj (Uttar Pradesh)		4 persons died.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
63.	26 Jul.	Garhwa, Giridih, Palamu (Jharkhand)		Total 7 persons died. Garhwa – 4, Giridih – 2, Palamu – 1. 5 livestock perished in Garhwa Dist.	
64.	6 Aug.	Ranchi (Jharkhand)		One person died & 3 others injured. One ox perished.	
65.	11 Aug.	Khunti (Jharkhand)		One person died.	
66.	12 Aug.	Ranchi (Jharkhand)		One person died.	
67.	11 Sep.	Ranchi (Jharkhand)		2 persons injured.	
68.	12 Sep.	Garhwa (Jharkhand)		8 persons died and 20 others injured.	
69.	16 Sep.	Deoghar, Giridih (Jharkhand)		Total 9 persons died and 8 others injured. Deoghar – 7 persons died & 5 others injured. While, Giridih - 2 persons died & 3 others injured.	
70.	21 Sep.	Chatra (Jharkhand)		3 persons died and 4 others injured.	
71.	23 Sep.	Latehar (Jharkhand)		2 persons died and 4 others injured.	
72.	26, 27 & 30 Sep.	Ranchi (Jharkhand)		One person died & 5 others injured. One cow perished.	

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
73.	1 Oct.	Ranchi (Jharkhand)		One person died.	
74.	2 Oct.	Ranchi (Jharkhand)		One person died.	
75.	19 Oct.	Dhanbad, Ranchi (Jharkhand)		2 persons died, one in each Dist.	
76.	21 Oct.	Jorhat (Assam)		One person died and few others injured.	<ul style="list-style-type: none"> <li>i) Damage to 180 houses including 50 number of pucca houses reported.</li> <li>ii) Several trees, electric/telephone poles uprooted causing disruption in communication and power supply.</li> </ul>
77.	12 Dec.	Satna (Madhya Pradesh)			<ul style="list-style-type: none"> <li>i) Damage to some raw houses reported.</li> <li>ii) Several trees, electric/telephone poles uprooted causing disruption in communication and power supply.</li> </ul>
78.	15 Dec.	Ranchi (Jharkhand)		One person died & other injured.	

## सारिणी – IX : ओलावृष्टि 2019

निकष

हलका : विरल, आमतौर पर छोटे आकार और अक्सर बारिश के साथ संमिश्र ।

मध्यम : पर्याप्त प्रचुर मात्रा में जमीन सफेद करने के लिए।

भारी : बड़े पत्थरों के कम से कम एक अनुपात भी शामिल है।

### TABLE – IX : HAILSTORM 2019

#### CRITERIA

**Slight : Sparse, usually small size and often mixed with rain.**

**Moderate : Fall abundant enough to whiten ground.**

**Heavy : Includes at least a proportion of large stones.**

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
1.	24 & 25 Jan.	Chhindwara, Satna, Seoni, Singrauli, Umaria (Madhya Pradesh)	Moderate		Damage to Wheat, Gram & other crops reported.
2.	29 Jan.	Hamirpur (Himachal Pradesh)	Heavy		Extensive damage to Mustard crops reported.
3.	14 Feb.	Agar Malwa, Datia, Guna, Mandsaur, Shajapur (Madhya Pradesh)	Moderate		Damage to crops reported.
4.	25 Feb.	Kolkata (West Bengal)	Moderate		Damage to crops reported.
5.	27 Feb.	Bhind, Datia, Morena (Madhya Pradesh)	Moderate	2 persons died.	Damage to crops reported.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
6.	2 & 3 Mar.	Chhindwara (Madhya Pradesh)	Moderate	1,102 livestock including 590 egrets, 360 parrots and 152 crows perished.	Khamarpani and Kanhar villages badly affected.
7.	15 Mar.	Dindori (Madhya Pradesh)	Moderate		Damage to Wheat, Masoor, Peas crops from 3 villages reported.
8.	31 Mar.	Ranchi (Jharkhand)	Moderate	One Buffalo perished.	Damage to crops reported.
9.	4 Apr.	Beed, Latur, Nagpur, Nanded, Parbhani, Washim, Yavatmal (Maharashtra)	Heavy		Extensive damage to Mango, Orange, Wheat, Onion, Termic crops reported.
10.	18 & 19 Apr.	a) Parts of Punjab	Heavy		i) Damage to hundreds of acres standing Wheat crops reported. ii) Loss of about hundreds of crores reported by Agriculture Department. iii) Damage to harvested wheat at various grain markets also reported.
		b) Parts of Haryana	Heavy		i) Damage to hundreds of acres standing Wheat crops reported. ii) Loss of about hundreds of crores reported by Agriculture Department. III) Damage to harvested wheat at various grain markets also reported.
11.	21 Apr.	Kullu, Mandi, Shimla (Himachal Pradesh)	Heavy		Extensive damage to apple flowering reported.
12.	25 Apr.	Baramulla (Union Territory-Jammu & Kashmir)	Heavy		Huge damage to crops, vegetables & orchards in Sopore, Rafiabab, Sangrama & other areas of Zaingeer reported.

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
13.	1 May	Anantnag, Kulgam (Union Territory-Jammu & Kashmir)	Moderate		Damage to crops & orchards in several areas including Kukernag, Gopalpora, Nihama, Yaroo, Bathipora & other villages reported.
14.	13 May	a) Budgam (Union Territory-Jammu & Kashmir)	Heavy		Large scale damage to crops & orchards in Batpora, Gogji pathri, Ladhen, Branwar, Surasyar, Nowhar & several other areas reported.
		b) Shimla (Himachal Pradesh)	Heavy		Extensive damage to crops from Kufri, Fagu and Theog reported.
15.	26 May.	Baramulla (Union Territory-Jammu & Kashmir)	Moderate		Damage to Orchards & crops in several areas including Watergam, Dangi-wacha & Zaingeer of Sopore reported.
16.	3 Jun.	Doda, (Union Territory-Jammu & Kashmir)	Moderate		Damage to 3000 kanals (i.e. 375 acres) of Mize crop fields, Vegetables & fruits in many villages of Nalthi panchayat including Kholra, Nalthi, Swong Pura, Kach, Basti & other adjoining villages in Athkhar area of Bhaderwah Tehsil reported.
17.	11 & 12 Jun.	Budgam, Doda (Union Territory-Jammu & Kashmir)	Heavy		Massive damage to crops, Vegetables, Walnut, Cherry, Apricot & Apples over thousands kanals in many villages including main town & other areas of Bhaderwah valley reported.
18.	14 Jun.	Sirmaur (Himachal Pradesh)	Heavy		Damage to Apple & Peach crops at Nohradhar reported.
19.	17 & 18 Jun.	Baramulla, Budgam, Srinagar (Union Territory-Jammu & Kashmir)	Heavy		Huge damage to standing crops, Apple Orchards, Vegetables reported.

<b>S. No.</b>	<b>Date/Period</b>	<b>Area affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
20.	20 & 21 Jun.	Bandipora, Pulwama (Union Territory-Jammu & Kashmir)	Heavy		Extensive damage to apple & walnut in many villages reported.
21.	1 Jul.	Kullu (Himachal Pradesh)	Heavy		Damage to Tomato crop at Nohradhar reported.
22.	12 Dec.	Sheopur (Madhya Pradesh)	Moderate		Damage to Wheat crops reported.



सारिणी X - बाढ और भारी बारिश 2019

TABLE X – FLOODS AND HEAVY RAINS 2019

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
<b>STATES</b>					
<b>ANDHRA PRADESH</b>					
	<i>* Whole year</i>	<i>Area affected 0.009 m.ha.</i>		<i>i) 14 human lives lost. ii) 16 cattle lost.</i>	<i>i) Crops in 0.004 m.ha. damaged. ii) 0.198 million population affected. iii) 10707 houses damaged.</i>
<b>ASSAM</b>					
1.	1 Jun. to 30 Jun.	Chirang, Dhemaji, Dibrugarh, Jorhat, Nalbari	Heavy rains & floods	More than 11,000 livestock perished.	i) Cropland of area more than 650 hectares affected. ii) More than 6000 population of 5 districts affected.
2.	10 to 29 Jul.	Baksa, Barpeta, Biswanath, Bongaigao, Cachar, Chirang, Darrang, Dibrugarh, Dhemaji, Dhubri, Goalpara, Golaghat, Hailakandi, Hojai, Jorhat, Karbi Anglong, Kamrup, Karimganj, Kamrup Metropolitan, Kokrajhar, Lakhimpur, Majuli, Morigaon, Nagaon, Nalbari, Sivasagar, Sonitpur, South Salmara - Mankachar, Tinsukia, Udalguri	Heavy rains & Flood (Brahmaputra and tributaries)	88 persons died & many others injured. More than 32 lakhs livestock including big, small animals & poultry birds perished.	i) Crop land of area more than 2,12,000 hectares affected. ii) More than 57,51,000 population of more than 4600 villages in 30 districts affected. iii) Damage to roads, RCC Bridge/Culvert, sub ways, Electric Lines & Transformers at many places reported. Also, the road connectivity is blocked.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
3.	1 Aug. to 5 Aug. & 16 Aug.	Barpeta, Biswanath, Charaideo, Chirang, Darrang, Dhemaji, Dibrugarh, Jorhat, Kamrup, Lakhimpur, Morigaon, Nagaon	Heavy rains & floods	Total 6 persons died. Barpeta - 2 (on 3 <sup>rd</sup> Aug. & 5 <sup>th</sup> Aug.), Biswanath-1 (on 2 <sup>nd</sup> Aug.), Dhemaji-1 (on 4 <sup>th</sup> Aug.), Kamrup-1 (on 16 <sup>th</sup> Aug.), & Morigaon-1 (on 2 <sup>nd</sup> Aug.). While, More than 5,14,000 livestock including big, small animals & poultry birds perished.	i) Cropland of area more than 43,300 hectares affected. ii) More than 3,60,000 population of more than 450 villages in 12 districts affected. iii) Damage to roads, RCC Bridge, sub ways, reported. Also, the road connectivity is blocked.
	<i>* Whole year</i>	<i>Area affected 0.233 m.ha.</i>		<i>i) 103 human lives lost. ii) 281 cattle lost.</i>	<i>i) Crops in 0.233 m.ha. damaged. ii) 7.355 million population affected. iii) 117831 houses damaged.</i>
<b>BIHAR</b>					
1.	11 Jul.	Buxar, Madhepura, Siwan	Heavy Rains	4 persons died.	Damage to property reported.
2.	12 to 14 Jul.	Araria, Darbhanga, East Champaran, Katihar, Kishanganj, Madhepura, Madhubani, Purnia, Saharsa, Sheohar, Sitamarhi, Siwan, Supaul, Vaishali, West Champaran	Heavy rains & floods	63 persons died.	i) Damage to agricultural crops reported. ii) Damage to property reported.
3.	15 to 18 Jul.	Darbhanga, Katihar, Khagaria, Madhubani, Sheohar, Sitamarhi, West Champaran	Heavy rains & floods	98 persons died.	i) Damage to agricultural crops reported. ii) Damage to property reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
4.	22 Jul.	Darbhanga, Madhubani, Sheohar, Sitamarhi, West Champaran	Heavy rains & floods	15 persons died.	i) Damage to agricultural crops reported. ii) Damage to property reported.
5.	1 Aug.	Saran	Heavy Rains	One person died in Panapur.	
6.	13 Aug.	Gaya, Saharsa	Heavy Rains	4 persons died.	
7.	17 Sep.	Arwal, Bhojpur, East Champaran, Gaya, Kaimur, Katihar, Patna, Siwan	Heavy Rains	17 persons died.	
8.	18 Sep.	Bhojpur, Gaya, Jehanabad, Kaimur, Nawada, Patna, Siwan	Heavy Rain	23 persons died.	Damage to agricultural crops reported.
9.	28 Sep	Begusarai , Bhojpur, Gopalganj, Kaimur, Patna, Purnia, Samastipur	Heavy Rains	15 persons died.	i) Damage to agricultural crops reported. ii) Damage to property reported. iii) Water logging in many areas reported.
10.	30 Sep.	Bhagalpur, Patna	Heavy Rains	13 persons died.	i) Damage to agricultural crops reported. ii) Damage to property reported. iii) Water logging in many areas reported.
11.	1 Oct.	Arwal , Begusarai, Bhaglapur, Bhojpur, Buxar, Darbhanga, Jehanabad, Kathihar, Khagaria, Lakhisarai, Nawada, Nalanda, Patna, Samastipur, Vaishali	Heavy Rains	42 persons died.	i) Damage to agricultural crops reported. ii) Damage to property reported. iii) Water logging in many areas reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
12.	2 & 3 Oct	Begusarai, Bhojpur, Buxar, Nalanda, Patna, Siwan	Heavy Rains	11 persons died.	i) Damage to agricultural crops reported. ii) Damage to property reported. iii) Water logging in many areas reported. iv) Many trees/electric poles uprooted causing disruption in vehicular traffic & power supply.
	<i>* Whole year</i>			<i>274 human lives lost.</i>	<i>14.203 million Population affected.</i>
<b>CHHATTISGARH</b>					
1.	7 Sep.	Bastar	Heavy Rains	4 persons died.	Damage to 108 houses reported.
<b>GOA</b>					
1.	9 Aug.	North Goa	Heavy Rains & Floods	One person washed away.	150 families shifted to safer places.
<b>GUJARAT</b>					
1.	1 Aug.	Vadodara	Heavy Rains & Floods (Vishwamitri river)	5 persons died.	i) At least 5,000 people from low-lying places and marooned localities shifted to safer places. ii) Most of the areas in the Vadodara city remained submerged.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
2.	7 to 14 Aug.	Amreli, Aravalli, Bhavnagar, Surat, Surendranagar, Vadodara	Heavy Rains & Floods	Total 16 persons died. Viz. Amreli - 2 teenage washed away, Aravalli - 1 six-year-old boy died in Akrund village due to wall collapsed, Bhavnagar – 2 died in Sihor town, Surat – 2 persons including mother-son electrocuted, Surendranagar - 7 persons washed away in Falku river in Vavdi village, Vadodara - 2 died.	Damage to many houses reported.
3.	9 Aug.	Kheda	Heavy Rains	4 persons including a one-year-old girl died & 5 others injured due to wall collapsed in Nadiad.	Complete damage to a three-storey building in Nadiad town reported.
4.	10 Aug.	Ahmedabad	Heavy Rains	4 members of a family died due to wall collapsed in Shela area.	Damage to houses reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
5.	12 Aug.	Devbhoomi Dwarka	Heavy Rains & Floods	5 persons washed away.	
6.	1 to 31 Aug.	Parts of Gujarat	Heavy Rains & Floods	73 persons died form different parts of Gujarat.	
7.	1 to 30 Sep.	Parts of Gujarat	Heavy Rains & Floods	43 persons died form different parts of Gujarat.	i) 20 districts worst affected. ii) Many people evacuated & shifted to safer places. iii) 18 NDRF teams, 11 State Disaster Response Force (SDRF) teams deployed in recsue operation.
	<i>* Whole year</i>			i) 217 human lives lost. ii) 1042 cattle lost.	<i>6111 houses damaged.</i>
<b>HIMACHAL PRADESH</b>					
1.	21 Feb.	Kinnaur	Landslide		Damage to Aapple tress from Ropa village of PooH Tehsil reported.
2.	25 Feb.	Kullu	Landslide		Damage to historical hot water spring at trivenighat from Anni Sub disown reported.
3.	14 Jul	Solan	Heavy Rains	2 persons died.	Damage to house reported in Kumarhatti.
4.	8 Aug.	Kinnaur	Cloudburst		i) Extensive damage to Apple crops from Kanan, Sangla Valley of about 15 crores reported. ii) Damage to bridge reported. iii) Damage to more than 18 houses reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
5.	17 & 18 Aug.	Bilaspur, Chamba, Hamirpur, Kangra, Kinnaur, Kullu, Lahul & Spiti, Mandi, Shimla, Sirmaur, Solan, Una	Heavy Rains & Floods (Rapti, Beas, etc River)	24 persons died. Bilaspur - 1, Chamba - 3, Kullu - 2, Lahul & Spiti - 1, Shimla - 10, Sirmaur - 2, Solan - 5. While, 12 others injured, Of which, 11 from Shimla Dist.	i) Damage to more than 125 houses and more than 35 cowsheds reported. ii) Damage to six bridges reported. iii) Damage to 1154 transformers reported. iv) Many vehicles washed away, & many damaged. v) A loss of Rs 490 cores reported. vi) Several people shifted to safer places. vii) Extensive damage to national Highway from Kullu Dist. reported. In addition, 9 National Highways & more than 800 roads blocked. viii) Several trees uprooted.
6.	15 Oct.	Kangra	Heavy Rains		Damage to crops in Baijnath & Palampur reported.
	<i>* Whole year</i>	<i>Area affected 0.010 m.ha.</i>		<i>i) 7 human lives lost. ii) 555 cattle lost.</i>	<i>i) Crops in 0.040 m.ha. damaged. ii) 1.616 million population affected. iii) 2940 houses damaged.</i>
<b>JHARKHAND</b>					
1.	1 & 2 Oct.	Ranchi, Sahibganj	Heavy rain	Total 5 persons died. Ranchi - 3, Sahibganj - 2.	
	<i>* Whole year</i>	<i>Area affected 0.019 m.ha.</i>		<i>6 human lives lost.</i>	<i>i) Crops in 0.005 m.ha. damaged. ii) 0.134 million population affected. iii) 126 houses damaged.</i>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
<b>KARNATAKA</b>					
1.	1 Apr.	Kodagu	Heavy Rain		Pepper laid on ground for drying washed away.
2.	6 May	Hassan, Mysore	Heavy Rain		i) Roofs of houses blown away. ii) Trees and electric poles uprooted.
3.	21 May	Bellary	Heavy Rain	One person injured.	Damage to 4 houses reported.
4.	22 May	Chamarajanagar, Gulbarga	Heavy Rain	3 persons died in Gulbarga Dist.	1000 banana plants completely destroyed in Chamarajanagar Dist.
5.	22 Jun.	Uttara Kannada	Heavy Rain		i) Damage to more than 50 houses reported. ii) Damage to agricultural land reported.
6.	6 & 7 Jul.	Chikmagaluru	Heavy Rain		i) Paddy fields inundated. ii) Several trees and electric poles uprooted.
7.	20 Jul.	Bagalkot, Udupi, Uttara Kannada	Heavy Rain	Total 2 persons died, one each from, Bagalkot, Uttara Kannada	Damage to houses reported.
8.	24 Jul.	Uttara Kannada	Heavy Rain	One person died.	Partial damage to house reported.
9.	1 to 3 Aug.	Belgaum	Heavy Rains & Floods in Krishna & its tributaries		i) Extensive damage to Paddy fields reported. ii) Several villages marooned.



S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
10.	5 to 8 Aug.	Belgaum, Chikmagaluru, Dakshina Kannada, Dharwad, Kodagu, Raichur, Shimoga, Udupi, Uttara Kannada, Yadgir	Heavy Rains & Floods in Krishna & its tributaries	Total 10 persons died. Belgaum – 5, Shimoga – 2, Uttara Kannada – 2, Yadgir – 1.	i) Damage to Sugarcane and Tur crops reported. ii) Damage to houses reported. iii) Several villages marooned. iv) Several trees uprooted.
11.	10 & 11 Aug.	Bagalkot, Belgaum, Bellary, Chikmagaluru, Kodagu	Heavy Rain	274 livestock perished.	i) A vast track of paddy fields and banana plantation submerged. ii) Several villages inundated.
12.	7 Sep.	Belgaum	Heavy Rain	One person died.	
13.	23 & 24 Sep.	Bellary, Dharwad	Heavy Rain	2 persons died in Dharwad Dist.	Damage to 250 acres of Paddy, Chilli and Cotton crops reported.
14.	6 Oct.	Bagalkot	Heavy Rain	3 persons died.	
15.	15 Oct.	Koppal	Heavy Rain	3 persons died.	
16.	19 to 21 Oct.	Bellary, Belgaum, Dharwad, Davangere, Haveri, Koppal, Raichur	Heavy Rain	Total 3 persons died, one each from Belgaum, Koppal & Raichur Dist.	i) Damage to Paddy crops including Millet Groundnut, Maize, etc. on more than 700 hectares of land reported. ii) Damage to about 150 houses reported. iii) Damage to roads reported.
17.	25 Oct.	Chikmagaluru, Mysore, Udupi	Heavy Rain	2 persons died in Udupi Dist.	Extensive damage to Coffee, Areca nut and Banana plantation reported.
	* Whole year			i) 301 human lives lost. ii) 4415 cattle lost.	i) Crops in 1.020 m.ha. damaged. ii) 0.115 millions population affected. iii) 168350 houses damaged.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
<b>KERALA</b>					
1.	19 Apr.	Wayanad	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to house reported.</li> <li>ii) Damage to vehicles reported.</li> <li>iii) Electric supply disruption reported.</li> </ul>
2.	24 to 26 Apr.	Malappuram, Thiruvananthapuram, Wayanad	Heavy rains	3 persons died & 2 others injured at Malappuram on 25 <sup>th</sup> April.	<ul style="list-style-type: none"> <li>i) Damage to plantain cultivation reported.</li> <li>ii) Damage to several houses reported.</li> <li>iii) Damage to many vehicles reported.</li> <li>iv) Several trees/electric poles uprooted causing disruption in vehicular traffic &amp; power supply.</li> </ul>
3.	28 & 29 Apr.	Thiruvananthapuram, Wayanad	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to plantain cultivation reported.</li> <li>ii) Roofs of several houses blown away.</li> </ul>
4.	16 May	Wayanad	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to one-acre paddy crop, around 500 rubber, 50 areca nut &amp; 25 coconut trees and 800 banana plantations reported.</li> <li>ii) Damage to houses reported.</li> <li>iii) Around one lakh worth damage reported.</li> <li>iv) Several trees/electric poles uprooted causing disruption in vehicular traffic &amp; power supply.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
5.	19 May	Wayanad	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to 3100 banana plantation, Rubber and areca nut trees reported.</li> <li>ii) Damage to electric posts reported.</li> <li>iii) Disruption in water supply reported.</li> <li>iv) Disruption in traffic and power supply at NH-766 reported as huge tree uprooted and fell across.</li> </ul>
6.	24 May	Thiruvananthapuram	Heavy rains	One person electrocuted & other injured.	<ul style="list-style-type: none"> <li>i) Extensive damage to Banana plantation reported.</li> <li>ii) Damage to SAT Hospital, Children's ICU Ward, several houses, shops including Ration shop, Bakery reported.</li> <li>iii) 5 families shifted to relief camps.</li> <li>iv) 50 Quintals of rice, 40 liters of Kerosene submerged.</li> <li>v) Several trees/electric poles uprooted causing disruption in vehicular traffic &amp; power supply.</li> </ul>
7.	9 to 13 Jun.	Thiruvananthapuram	Heavy rains	2 persons electrocuted on 10 <sup>th</sup> .	<ul style="list-style-type: none"> <li>i) Damage to agriculture crops, thousands of banana crops, coconut trees and rubber trees reported. Also, 150 year old huge Banyan tree uprooted.</li> <li>ii) Low lying areas and cultivated land submerged.</li> <li>iii) Damage to more than 100 houses reported.</li> <li>iv) Damage to vehicles, electric-cables, household appliances, seaside road &amp; fishing equipments reported.</li> <li>v) About 200 families shifted to safer areas / relief camps.</li> <li>vi) Loss of 4 lakhs reported.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
8.	12 Jun.	Ernakulam, Malappuram	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to many houses &amp; Dairy-farm reported.</li> <li>ii) Hundreds of people living along the coast evacuated.</li> </ul>
9.	14 Jun.	Malappuram , Wayanad	Heavy rains		Damage to many houses & Dairy-farm reported.
10.	20 Jun.	Kannur, Kasaragod	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to houses reported.</li> <li>ii) More than 150 people shifted to relief camps.</li> </ul>
11.	10 Jul.	Kottayam	Landslide		<ul style="list-style-type: none"> <li>i) Damage to a house reported.</li> <li>ii) Transport disrupted.</li> </ul>
12.	18 to 20 Jul.	Alappuzha , Ernakulam, Idukki, Kannur, Kasaragod, Kollam, Kottayam, Kozhikode, Pathanamthitta, Thrissur, Thiruvananthapuram, Wayanad	Heavy rains	<p>Total 12 persons died, 9 persons missing &amp; one injured.</p> <p>Ernakulam – 1 person died due to wall collapsed,</p> <p>Kannur-2 persons died &amp; other injured,</p> <p>Kasaragod – 1 person died, Kollam – 1 fisherman drowned &amp; 2 others missing.</p> <p>Kottayam – 1,</p> <p>Kozhikode -1 person died, Thrissur – 1 person drowned,</p> <p>Thiruvananthapuram - 3 persons died &amp; 7 fishermen missing,</p> <p>Wayanad – 1 person died.</p>	<ul style="list-style-type: none"> <li>i) Damage to about 180 houses reported.</li> <li>ii) Low-lying areas inundated.</li> <li>iii) Damage to boats reported.</li> <li>iv) Several families shifted to relief camps.</li> <li>v) Transport disrupted due to Landslip in several places in Idukki Dist.</li> <li>vi) Transport disrupted due to water logging in Pathanamthitta Dist.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
13.	28 Jul.	Idukki	Landslip		<ul style="list-style-type: none"> <li>i) Damage to shops, parked vehicles reported.</li> <li>ii) Traffic disrupted at National Highway in Munnar as rocks and mud caved in.</li> </ul>
14.	4 to 6 Aug.	Wayanad	Heavy rains & Landslip		<ul style="list-style-type: none"> <li>i) Bridge washed away.</li> <li>ii) Huge iron-pipe broke.</li> <li>iii) People shifted to safer places.</li> </ul>
15.	7 Aug.	Thiruvananthapuram	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to 4 houses reported.</li> <li>ii) Damage to several vehicles reported.</li> <li>iii) Damage to boats reported.</li> <li>iv) Rail-traffic disrupted.</li> <li>v) Several trees, electric / telephone poles uprooted causing disruption in communication and power supply.</li> </ul>
16.	8 Aug.	Ernakulam, Idukki, Kannur, Kasaragod, Kozhikode, Malappuram, Palakkad, Thiruvananthapuram, Thrissur, Wayanad	Heavy rains, Floods (Muvattupuzha & Kabani river) & Landslip	<p><b>Idukki :</b> 2 persons including a child died.</p>	<p><b>Ernakulam :</b></p> <ul style="list-style-type: none"> <li>i) Apron area of Kochi International Airport &amp; the taxi way of CIAL flooded.</li> <li>ii) Air traffic disrupted.</li> <li>iii) Muvattupuzha River flooded.</li> </ul> <p><b>Idukki :</b></p> <ul style="list-style-type: none"> <li>i) Damage to around 500 houses reported.</li> <li>ii) Damage to shed reported.</li> <li>iii) Landslide occurred in 30 places.</li> <li>iv) Landslip occurred at 70 places.</li> <li>v) Munnar, Marayur &amp; Mankulam areas isolated due to flooding.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
				<p><b>Kannur :</b> One person died.</p> <p><b>Kasaragod :</b> One person died.</p> <p><b>Kozhikode :</b> One person died.</p> <p><b>Malappuram :</b> One person died.</p>	<p><b>Kannur :</b> i) Several areas of Sreekanthapuram, Kellakom, Kottiyoor, Ambayathode, Mattannur, Mannur, Iritty, and Vallithode flooded. ii) Traffic disrupted due to landslide.</p> <p><b>Kasaragod :</b> i) 25 families isolated, as cut-off from main land. ii) Road traffic disrupted.</p> <p><b>Kozhikode :</b> i) Landslide occurred 4 times. ii) 4 families shifted to relief camps. iii) Traffic including bus services and power-supply disrupted.</p> <p><b>Malappuram :</b> i) Around 200 houses and 100 commercial establishments inundated. ii) 920 people from 21 places shifted to safer places. iii) Nilambur-Kozhikode route bus services and traffic disrupted. iv) 292 families shifted to 171 relief camps.</p>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
				<p><b>Palakkad :</b> One person died.</p> <p><b>Thrissur :</b> One person electrocuted.</p>	<p><b>Palakkad :</b></p> <ul style="list-style-type: none"> <li>i) Landslide occurred at 11 places.</li> <li>ii) Power supply &amp; Traffic disrupted in several areas.</li> </ul> <p><b>Thiruvananthapuram :</b></p> <ul style="list-style-type: none"> <li>i) Damage to rubber crops, Banana plantation, and several vegetable crops repored.</li> <li>ii) Damage to houses including appliances repored.</li> <li>iii) Damage to about 100 electric post &amp; about 380 electric cable-line around 50 places reported.</li> <li>iv) Damage to vehicles reported.</li> <li>v) Huge Advertisement play-cards fell.</li> <li>vi) Trees uprooted around 179 places in the city.</li> <li>vii) Transport and power supply disrupted.</li> <li>viii) Fire force and electricity department contributed a lot in rescue operations.</li> </ul> <p><b>Thrissur :</b></p> <ul style="list-style-type: none"> <li>i) Landslide occurred.</li> <li>ii) Power supply and traffic disrupted in several areas.</li> <li>iii) Railway services disrupted as Railway track inundated.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
				<b>Wayanad :</b> 15 persons died, 40 others missing & 10 injured.	<b>Wayanad :</b> i) Extensive damage to crops including 100 acres of tea-plantation reported. ii) Church, mosque and a temple & vehicles caved in. iii) Damage to about 125 houses reported. iv) Shops inundated. v) 257 families shifted to relief camps. vi) Damage to roads reported. vii) Low-lying areas submerged. viii) Several trees, electric / telephone poles uprooted causing disruption in communication and power supply.
17.	9 Aug.	Ernakulam, Idukki, Kannur, Malappuram, Palakkad, Thiruvananthapuram, Thrissur, Wayanad	Heavy rains & Landslide	<b>Idukki :</b> 2 persons died.	<b>Ernakulam :</b> i) Flight service disrupted as CIAL Kochi runway flooded. ii) Air port shutdown for 2 days. iii) 115 relief camps opened. <b>Idukki :</b> i) Damage to agricultural crops reported. ii) Damage to houses reported. iii) Damage to roads reported. iv) Power supply & mobile services disrupted.



S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
				<p><b>Kannur :</b> One person died.</p> <p><b>Malappuram :</b> 8 persons died.</p> <p><b>Thiruvananthapuram:</b> 2 persons injured.</p>	<p><b>Kannur :</b></p> <p>i) Houses inundated. ii) 6,221 persons shifted to relief camps</p> <p><b>Malappuram :</b></p> <p>i) Landslide reported. ii) More than 30 houses including 48 persons of 19 family caved in. iii) 1200 persons shifted to 82 relief camps. iv) Communication and power supply disrupted.</p> <p><b>Palakkad :</b></p> <p>i) Damage to agricultural crops reported. ii) Damage to houses reported. iii) 44 relief camps opened.</p> <p><b>Thiruvananthapuram :</b></p> <p>i) Damage to agriculture crops reported. ii) Damage to about 200 houses reported. iii) Damage to an autorikshaw reported. iv) 19 persons shifted to relief camps. v) Several trees including Tamarind &amp; Rubber trees, electric / telephone poles uprooted causing disruption in communication and power supply.</p>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
18.	10 Aug.	Alappuzha, Ernakulam, Idukki, Kannur, Kasaragod, Kollam, Kottayam, Kozhikode, Malappuram, Palakkad, Pathanamthitta, Thiruvananthapuram, Thrissur, Wayanad	Heavy rains, Floods & Landslide	<p><b>Wayanad :</b></p> <p>8 persons died.</p>	<p><b>Thrissur :</b></p> <p>6,473 persons shifted to 91 relief camps.</p> <p><b>Wayanad :</b></p> <p>i) Damage to more than 100 acres of tea plants reported.</p> <p>ii) Damage to several buildings &amp; a temple reported.</p> <p><b>Alappuzha :</b></p> <p>i) Damage to agriculture crops reported.</p> <p>ii) Several houses inundated.</p> <p>iii) Home appliances washed away.</p> <p>iv) NDMA Chengannur &amp; Army in Thiruvalla help in rescue operations.</p> <p>v) 824 families with 2836 persons shifted to 6 relief camps.</p> <p><b>Ernakulam :</b></p> <p>i) 23,156 persons shifted to 133 relief camps.</p> <p>ii) Damage to 2 houses fully &amp; 54 houses partially reported.</p>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
					<p><b>Idukki :</b></p> <ul style="list-style-type: none"> <li>i) Landslide occurred at 4 different places.</li> <li>ii) Damage to several acres of agriculture crops reported.</li> <li>iii) 4 bridges washed away in Cheruthoni.</li> <li>iv) Several houses and business institutes submerged.</li> <li>v) 1192 persons shifted to 26 relief camps.</li> <li>vi) Damage to roads reported.</li> <li>vii) Power supply &amp; mobile services disrupted.</li> </ul>
				<p><b>Kannur :</b></p> <p>2 persons died.</p>	<p><b>Kannur :</b></p> <ul style="list-style-type: none"> <li>i) Landslide at three different places reported.</li> <li>ii) Several villages cut-off from other parts.</li> <li>iii) 9743 persons shifted to 104 relief camps.</li> </ul>
					<p><b>Kasaragod :</b></p> <ul style="list-style-type: none"> <li>i) Damage to 21 houses fully &amp; 282 partially reported.</li> <li>ii) Low-lying areas submerged.</li> <li>iii) Tejaswani River flooded.</li> <li>iv) 2549 people of 726 families shifted to 19 relief camps.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
					<p><b>Kollam :</b></p> <ul style="list-style-type: none"> <li>i) Damage to 153 houses partially &amp; 2 housed fully reported.</li> <li>ii) Chengotta-Punalur path railway services disrupted.</li> </ul> <p><b>Kottayam :</b></p> <ul style="list-style-type: none"> <li>i) Damage to agriculture crops including paddy reported.</li> <li>ii) Loss of worth crores reported.</li> <li>iii) Low-lying areas inundated.</li> <li>iv) 4000 people shifted to relief camps.</li> </ul> <p><b>Kozhikode :</b></p> <p>5 persons died.</p> <p><b>Kozhikode :</b></p> <ul style="list-style-type: none"> <li>i) Damage to 3 bridges reported, which cause Maruthilav village cut-off from other parts.</li> <li>ii) Railway services disrupted.</li> <li>iii) 37409 persons shifted to 287 relief camps.</li> <li>iv) 43 villages inundated.</li> <li>v) Damage to a vehicle reported.</li> </ul> <p><b>Malappuram :</b></p> <ul style="list-style-type: none"> <li>i) Bharathapuzha flooded.</li> <li>ii) Hundreds of houses inundated.</li> <li>iii) 683 families with 8272 persons shifted to 187 relief camps.</li> <li>iv) Damage to Vaniempuzha hanging bridge reported.</li> <li>v) Around 200 people in the forest area cut-off from main land.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
					<p><b>Palakkad :</b></p> <p>i) Damage to Paddy cultivation reported.</p> <p>ii) 2,836 families with 8,272 persons shifted to 81 relief camps.</p> <p><b>Pathanamthitta :</b></p> <p>i) Damage to agriculture crops worth 2.5 lakhs reported.</p> <p>ii) Damage to 51 houses reported.</p> <p>iii) Low-lying areas inundated in upper Kuttanad areas.</p> <p>iv) 1788 members of 458 families shifted to 39 relief camps.</p>
				<p><b>Thiruvananthapuram :</b></p> <p>One woman injured in Pathencode.</p>	<p><b>Thiruvananthapuram :</b></p> <p>i) Damage to a compound wall of a rest house reported.</p> <p>ii) Damage to 6 houses fully &amp; 78 houses partially reported. 30 houses inundated &amp; 4 houses submerged.</p> <p>iii) Damage to 2 cars reported.</p> <p>iv) Several trees including Tamarind &amp; Rubber trees, electric / telephone poles uprooted causing disruption in communication and power supply.</p>
				<p><b>Thrissur :</b></p> <p>One person died.</p>	<p><b>Thrissur :</b></p> <p>18,684 persons of 5,291 families shifted to 152 relief camps.</p>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
19.	11 to 14 Aug.	Alappuzha, Idukki, Kollam, Malappuram, Thiruvananthapuram, Wayanad	Heavy rains & Landslide		<p><b>Wayanad :</b></p> <ul style="list-style-type: none"> <li>i) Tea estate plantation and several tourist monuments caved in. 63 persons caved in</li> <li>ii) Damage to about 70 houses reported.</li> <li>iii) 32,276 persons shifted to 197 relief camps.</li> <li>iv) Power supply disrupted.</li> </ul> <p><b>Alappuzha :</b></p> <ul style="list-style-type: none"> <li>i) Extensive damage to crops including paddy cultivation reported.</li> <li>ii) Several houses inundated.</li> <li>iii) Damage worth 37 crores estimated.</li> <li>iv) 13,800 persons of more than 3000 families shifted to 89 relief camps.</li> <li>v) Roads submerged.</li> <li>vi) Traffic disrupted.</li> </ul> <p><b>Idukki :</b></p> <ul style="list-style-type: none"> <li>i) Town flooded by Muthirapuzha River.</li> <li>ii) About 1400 persons shifted to 21 relief camps.</li> <li>iii) Damage to roads reported.</li> <li>iv) Power supply &amp; mobile services disrupted.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
					<p><b>Kollam :</b></p> <p>i) Damage to house reported.</p> <p>ii) Hectares of agriculture crops submerged.</p> <p>iii) Roads inundated.</p> <p><b>Malappuram :</b></p> <p>i) Extensive damage to a bridge reported causing isolation of Shantigramam.</p> <p>ii) Some hoses flooded.</p> <p><b>Thiruvananthapuram :</b></p> <p>2 fishermen died. 7 other persons injured in different incidences.</p> <p><b>Thiruvananthapuram :</b></p> <p>i) Damage to crops mainly Banana cultivation reported.</p> <p>ii) Damage to several houses reported.</p> <p><b>Wayanad :</b></p> <p>One person died at Kalpetta on 11<sup>th</sup>.</p> <p><b>Wayanad :</b></p> <p>i) Low-lying areas inundated.</p> <p>ii) 35,155 people shifted to 203 relief camps.</p> <p>iii) Damage to crops reported.</p>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
20.	19 & 20 Aug.	Alappuzha, Thiruvananthapuram, Wayanad	Heavy rains		<p><b>Alappuzha :</b></p> <p>i) Damage to 5 houses fully &amp; 115 houses partially reported.</p> <p>ii) 300 people shifted to 3 relief camps.</p> <p><b>Thiruvananthapuram :</b></p> <p>Damage to houses reported.</p> <p><b>Wayanad :</b></p> <p>i) Damage to crops Viz. Paddy (45 hectare), Bannana (20 hectare), Ginger (4 hectare), Arecanut (2 hectare), tapioca (2 hectare) &amp; Tuber crops reported.</p> <p>ii) Dairy farms affected.</p> <p>iii) Damage worth one crore reported.</p> <p>iv) Damage to a house reported.</p> <p>v) Kavadam, Chekkalloor areas more affected.</p>
21.	22 & 23 Aug.	Wayanad	Heavy rains		<p>i) Damage to agriculture crops reported.</p> <p>ii) Damage to about 10 houses including home appliances reported.</p> <p>iii) 30 families shifted to relief camps.</p>
22.	3 & 9 Sep.	Wayanad	Heavy rains		<p>i) Damage to Ginger crops reported.</p> <p>ii) Damage to school building reported.</p> <p>iii) Damage to a house including household appliances reported.</p> <p>iv) Damage worth lakhs reported.</p>



S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
23.	12 Sep.	Malappuram	Heavy rains & Landslide		<ul style="list-style-type: none"> <li>i) Damage to several houses reported.</li> <li>ii) Roads washed away.</li> <li>iii) Hundreds of houses inundated.</li> <li>iv) Power supply disrupted.</li> </ul>
24.	26 Sep.	Thiruvananthapuram	Heavy rains		<ul style="list-style-type: none"> <li>i) Water logging in low-lying areas of Thampanoor.</li> <li>ii) Road transport disrupted.</li> <li>iii) One house damaged completely at Attingal.</li> </ul>
25.	17 Oct.	Thiruvananthapuram	Heavy rains & Landslide		<ul style="list-style-type: none"> <li>i) Extensive damage to agriculture crops reported.</li> <li>ii) Bridges submerged.</li> <li>iii) Landslide reported at 8 places &amp; Landslip reported at Kallar-Ponmudi road.</li> <li>iv) Houses submerged.</li> <li>v) Vehicular Traffic and power-supply disrupted.</li> </ul>
26.	21 Oct.	Alappuzha, Ernakulam, Idukki, Kannur, Kasaragod, Kollam, Kottayam, Kozhikode, Malappuram, Palakkad, Pathanamthitta, Thiruvananthapuram, Thrissur, Wayanad	Heavy rains & Landslide		<p><b>Alappuzha :</b></p> <ul style="list-style-type: none"> <li>i) Paddy fields inundated.</li> <li>ii) 446 families shifted to a relief camp.</li> <li>iii) Transport disrupted.</li> <li>iv) Water- logging in low-lying areas.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
					<p><b>Ernakulam :</b></p> <ul style="list-style-type: none"> <li>i) Houses &amp; Ernakulam North Railway-station tracks flooded.</li> <li>ii) Transport &amp; train-services disrupted.</li> <li>iii) 11 relief camps opened.</li> <li>iv) Landslip reported in Velloor(Piravom).</li> </ul> <p><b>Kollam :</b></p> <ul style="list-style-type: none"> <li>i) Complete damage to 5 houses reported.</li> <li>ii) 3 relief camps opened.</li> </ul> <p><b>Kottayam :</b></p> <p>One person electrocuted.</p> <p><b>Kottayam :</b></p> <ul style="list-style-type: none"> <li>i) Traffic and power-supply disrupted.</li> <li>ii) 2 relief camps opened.</li> </ul> <p><b>Malappuram :</b></p> <ul style="list-style-type: none"> <li>i) Agriculture land inundated.</li> <li>ii) Power-supply disrupted.</li> </ul> <p><b>Palakkad :</b></p> <ul style="list-style-type: none"> <li>i) Landslide reported in Attappady.</li> <li>ii) Traffic and power-supply disrupted at several areas.</li> <li>iii) 9 relief camps opened.</li> </ul> <p><b>Thiruvananthapuram :</b></p> <ul style="list-style-type: none"> <li>i) Damage to 30 houses reported.</li> <li>ii) Power-supply and traffic disrupted.</li> </ul> <p><b>Districts of Kerala :</b></p> <ul style="list-style-type: none"> <li>i) Damage to 34 houses reported.</li> <li>ii) 1380 families with 3506 persons shifted to 16 relief camps in the state.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
27.	22 Oct.	Thiruvananthapuram	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to houses reported.</li> <li>ii) Damage to roads reported.</li> <li>iii) Traffic disrupted.</li> <li>iv) Vengaranmood, Kattakada, Varkala area affected.</li> </ul>
28.	30 & 31 Oct.	Thiruvananthapuram	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to agricultural crops including Banana &amp; vegetable crops reported.</li> <li>ii) Damage to about 20 houses reported.</li> <li>iii) Well caved in.</li> <li>iv) Low-lying areas inundated.</li> <li>v) Extensive damage in the Ponmudi-Bonacaud forest area reported.</li> <li>vi) Landslide reported on Ponmudi route.</li> <li>vii) Several trees/electric poles uprooted causing disruption in vehicular traffic &amp; power supply.</li> </ul>
29.	1 & 2 Nov.	Alappuzha, Idukki, Thiruvananthapuram	Heavy rains		<ul style="list-style-type: none"> <li>i) 10,400 hectares of paddy fields submerged.</li> <li>ii) Damage worth rupees 12.25 crores reported.</li> <li>iii) Complete damage to a house reported.</li> </ul>
30.	10 Nov.	Wayanad	Heavy rains	One person injured & 2 cows perished.	

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
31.	11 & 17 Nov.	Thiruvananthapuram	Heavy rains		i) Damage to 2 houses reported. ii) Damage to electrical appliances reported. iii) Damage to a asbestos sheets reported. iv) Damage of more than 2 lakhs reported. v) Water logging in several areas reported.
32.	20 Nov.	Kannur, Malappuram, Thiruvananthapuram	Heavy rains	Total 3 persons died. Kannur-2, Malappuram – 1.	i) Low-lying areas including Kalotsavam – Vedi School inundated. ii) Trees uprooted.
33.	3 Dec.	Wayanad	Heavy rains		Damage to hectares of paddy crops & Banana crops reported.
	<i>* Whole year</i>			i) 301 human lives lost. ii) 11338 cattle lost.	i) Crops in 0.013 m.ha. damaged. ii) 0.114 million population affected. iii) 16543 houses damaged.
<b>MADHYA PRADESH</b>					
1.	1 Aug.	Raigarh	Heavy Rains & Flood	One person died.	
2.	13 Aug.	Alirajpur, Burhanpur	Heavy Rains & Flood	Total 3 persons died. Alirajpur – 1, Burhanpur - 2	
3.	18 Aug.	Bhopal, Ratlam, Sagar	Heavy Rains & Flood	Total 5 persons died. Bhopal - 2, Ratlam - 1, Sagar – 2.	i) Damage to car reported. ii) Many trees/electric poles uprooted causing disruption in vehicular traffic & power supply.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
4.	30 Aug.	Raisen	Heavy Rains & Flood	One person died.	i) Damage to 1500 houses reported. ii) Several trees/electric poles uprooted causing disruption in vehicular traffic & power supply.
5.	8 Sep.	Bhopal, Sehore	Heavy Rains & Flood	2 persons died, one in each Dist.	
6.	9 Sep.	Sehore, Seoni	Heavy Rains & Flood	Total 6 persons died. Sehore-4, Seoni-2.	i) Damage to houses reported. ii) Damage to car reported. iii) Many trees/electric poles uprooted causing disruption in vehicular traffic & power supply.
7.	28 Sep.	Seoni	Heavy Rains & Flood	3 persons died	Several trees/electric poles uprooted causing disruption in vehicular traffic & power supply.
	<i>* Whole year</i>			i) 674 human lives lost. ii) 5158 cattle lost.	i) Crops in 6.047 m.ha. damaged. ii) 5.537 million population affected. iii) 118386 houses damaged.
<b>MAHARASHTRA</b>					
1.	21 May	Solapur	Heavy rains	One girl died due to wall collapsed. 10 livestock perished.	Damage to 103 houses reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
2.	1 Jul.	Mumbai, Nashik, Palghar, Pune	Heavy Rains	Total 12 persons died & 3 others injured.  Viz. Mumbai - One electrocuted at Nehru Nagar in Vile Parle. Nashik - 3,  Palghar - 2 in Jawahar city, Pune - 6 labourers died & 3 others injured due to wall collapsed in Ambegaon area.	
3.	2 Jul.	a) Mumbai	Heavy Rains	Total 23 persons died.  Mumbai - 21 persons died & more than 50 others injured due to wall collapsed in Mumbai's \ northern suburb of Malad & 2 other died in another incident in Malad.	i) A wall collapsed on hutments in Pimpripada area of Malad East.  ii) About 1,000 people shifted to temporary shelters by joint evacuation operation in suburban Kurla with the NDRF, Navy and fire brigade shifting.  iii) Many parts of the financial capital Mumbai waterlogged.  iv) Rail, Air and Road traffic disrupted with several trains and flights cancelled. Altogether 54 flights diverted and 52 cancelled at Mumbai's Chhatrapati Shivaji Maharaj International Airport, where a SpiceJet plane overshot the runway.
		b) Thane	Heavy Rains	3 persons died due to wall collapse in Kalyan.	The wall of an Urdu school behind Durgai Fort collapsed near the hutments adjacent in Kalyan.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
		c) Ratnagiri	Incessant rains leading to flood-like situation.	At least 19 persons died & 4 others missing from Bhendewadi village of Chiplun block	<p>i) Tiware Dam in Chiplun block of Ratnagiri District in the Vashishthi Basin of coastal Maharashtra breached.</p> <p>ii) At least 7 villages including Bhendewadi, Ovali, Riktoli, Aakle, Daadar, Nandivase, Kalkavne, with about 3000 population badly affected.</p> <p>iii) Several houses including at least 12 houses &amp; 20 vehicles from Bhendewadi village near the dam washed away.</p> <p>iv) NDRF teams, Additional rescue teams consisting of government officials, police and volunteers carrying out search and rescue operations.</p>
4.	7 Jul	Palghar	Heavy Rains		<p>i) Damage to 2 taxis reported.</p> <p>ii) State electric consumption dropped.</p> <p>iii) Trees uprooted.</p>
5.	28 Jul	Palghar, Thane	Heavy Rains & Flood	<p>5 persons died in Thane Dist.</p> <p>23 livestock perished at Kedia farm, Ulhasnagar taluka of Thane Dist.</p>	<p>i) Kalyan, Bhivandi, Murbad, Badlapur, Diva area of Thane Dist. &amp; Girgaon area of Palghar Dist. more affected.</p> <p>ii) Bridge in Murbad washed away.</p> <p>iii) Damage to building at Girgaon area of Palghar Dist. reported.</p> <p>iv) Train service disrupted.</p> <p>v) Water logging at many places.</p> <p>vi) People rescued by using boats at Diva, Badlapur area &amp; by using helicopter at Kalyan area.</p>
6.	31 Jul.	Thane	Heavy Rains & Flood	One person died at Kamba, near Kalyan.	50, 000 residents in the low-lying area near Ulhas river in Badlapur affected.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
7.	1 Aug.	Buldhana	Heavy Rains		i) Damage to crops, fruits reported. ii) Several trees uprooted.
8.	2 Aug.	Mumbai	Heavy Rains	One person died.	A tree uprooted & fell on a wall in Chandivli.
9.	3 Aug.	Mumbai, Palghar	Heavy Rains & Flood	Total 5 persons died.  Mumbai – 4 girls washed away at Pandavakada Waterfalls at Khargahr Palghar – 1 person washed away in Tiwas river. While, 4 livestock perished.	
10.	4 Aug.	Nashik, Thane	Heavy Rains & Floods	5 persons washed away in Godavari river Nashik.	i) About 21 villages of Thane Dist. badly affected. ii) More than 1,100 residents of Kamba village near Kalyan, Thane Dist. shifted to safer places. iii) Extensive damage to valuables including documents reported.
11.	5 Aug.	Palghar	Heavy Rains & Floods	2 persons washed away at Vikramgad.	



S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
12.	7 & 8 Aug.	Kolhapur, Pune, Sangali, Satara	Heavy Rains & Floods	Total 22 persons died & 4 others missing. Kolhapur - 2, Pune - 4 died, Sangali - 9 died & 4 missing. Satara - 7 died.	<ul style="list-style-type: none"> <li>i) A private rescue boat carrying around 30 to 32 people affected by floods to a safer place overturned near Brahmanal village located on the banks of the Krishna river in Palus tehsil in flood-hit district Sangli.</li> <li>ii) Around 1.32 lakh flood-affected people shifted to safer places.</li> <li>iii) Kolhapur &amp; Sangli districts worst affected.</li> <li>iv) Many roads including National Highways completely cut-off from the rest parts of the country.</li> <li>v) 139-villages in western Maharashtra marooned.</li> <li>vi) Altogether rescue teams including NDRF, Navy, Coast Guard, Army column, SDRF worked.</li> </ul>
13.	9 Aug.	a) Akola	Heavy Rains & Floods	2 persons washed away at Telhara in pohra nala and Vidrupa river in different incidences.	
		b) Gadchiroli	Heavy Rains & Flood	2 persons washed away in different incidents from Appali & Medapalli villages.	
14.	1 Sep.	Nanded	Heavy Rains & Flood	2 persons died.	

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
15.	4 Sep.	Chandrapur, Wardha	Heavy Rains & Flood	Total 5 persons died. Chandrapur- 1 five year boy died due to wall collapsed in Brahmpuri, Wardha – 4 persons washed away in Hinganghat.	i) Damage to crops reported. ii) Damage to houses reported.
16.	5 Sep.	Mumbai	Heavy Rains & Flood	4 persons died & other missing.	Around 1300 people from Kurla west evacuated with the help of Navy and NDRF personnel.
17.	6 Sep.	Mumbai	Heavy Rains & Flood	One person washed away.	
18.	10 Sep.	Kolhapur	Heavy Rains & Flood		i) Cropland of area 81,000 hectares badly affected. ii) Damage to about Rs.1298.51/- crore reported. iii) Many people shifted to safer places.
19.	23 Sep.	Akola	Heavy Rains & Flood	One woman died in Amboz village.	i) Damage to crops reported. ii) Damage to houses reported.
20.	24 Sep.	Wardha, Yavatmal	Heavy Rains & Flood	Total 2 persons died. Wardha – 1 farmer died in Talegaon, Yavatmal – 1 youth died.	i) Damage to crops reported. ii) Damage to houses reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
21.	25 Sep.	Nashik, Pune, Solapur	Heavy Rains & Flood	4 persons died.	
22.	26 Sep.	a) Pune	Heavy Rains & Flood	17 persons died.	Wall collapsed.
		b) Nashik	Heavy Rains & Flood	3 persons died.	
23.	9 Oct.	Pune, Thane	Heavy Rains & Flood	Total 3 persons died. Pune - one 54 year old van driver died, Thane – 2.	i) Damage to a vehicle reported. ii) Trees uprooted.
24.	1 to 31 Oct.	Parts of Vidarbha	Heavy Rains & Flood		Damage to Soyabean, Mug, Cotton crops reported.
	<i>* Whole year</i>			<i>i) 450 human lives lost. ii) 824 cattle lost.</i>	<i>i) 0.773 million population affected. ii) 48 houses damaged.</i>
<b>MIZORAM</b>					
1.	8 to 12 Jul.	Lunglei	Heavy Rains & Flood (Khawthlangtuipui river)	5 persons died.	i) 1000 families shifted to safer places. ii) 32 villages badly affected.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
<b>ODISHA</b>					
1.	1 to 10 Aug.	Kalahandi, Kandhamal, Koraput	Heavy Flood	Rains &	Total 3 persons died, one in each district 2 persons missing.
					<ul style="list-style-type: none"> <li>i) Damage to roads and bridges reported.</li> <li>ii) 1.3 lakh people in 1012 villages affected.</li> <li>iii) 7 teams of the Odisha Disaster Rapid Action Force (ODRAF), several teams of fire service deployed to carry out rescue and relief operations in the affected areas.</li> <li>iv) More than 14,000 people from low-lying areas evacuated &amp; shifted to safer places.</li> </ul>
2.	11 to 20 Aug.	Parts of Odisha	Heavy Flood	Rains &	7 persons died.
3.	23 to 25 Sep.	Angul, Balasore, Bhadrak, Gajapati, Keonjhar, Khordha	Heavy Rains		
	<i>* Whole year</i>	<i>Area affected 0.499 m.ha.</i>			<ul style="list-style-type: none"> <li>i) 13 human lives lost.</li> <li>ii) 697 cattle lost.</li> </ul>
					<ul style="list-style-type: none"> <li>i) Crops in 0.038 m.ha. damaged.</li> <li>ii) 1.100 million population affected.</li> <li>iii) 25821 houses damaged.</li> </ul>
<b>PUNJAB</b>					
1.	17 Apr.	Parts of Punjab	Heavy rains		Extensive damage to Wheat crops reported.
2.	1 to 26 Aug.	Parts of Punjab	Heavy Flood	Rains &	12 persons died.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
3.	1 to 5 Sep.	Parts of Punjab	Heavy Rains & Flood	2 persons died.	
	* Whole year	Area affected 0.152 m.ha.		i) 20 human lives lost. ii) 615 cattle lost.	i) Crops in 0.079 m.ha. damaged. ii) 0.152 million population affected. iii) 2618 houses damaged.
<b>RAJASTHAN</b>					
1.	25 to 29 Jul.	Baran, Bundi, Dholpur, Jaipur, Jodhpur, Pali, Sikar	Heavy rains & Flood	Total 14 persons died. Baran-1, Bundi-1, Dholpur -1, Jaipur -3, Sikar – 6 Jodhpur - 1, Pali - 1,	Damage to many houses reported.
2.	31 Jul.	Bundi	Heavy rains & Flood	One person washed away.	
3.	1 Aug.	Ajmer	Heavy rain	3 persons died due to house collapsed.	Damage to houses reported.
4.	5 Aug.	Pratapgarh	Heavy rain	2 persons died including a woman and a girl.	
5.	7 & 8 Aug.	Bundi, Nagaur	Heavy rain	4 persons died. Bundi -1, Nagaur – 3.	
6.	14 Aug.	Bundi	Heavy rain	One man died.	
7.	16 to 19 Aug.	Ajmer, Alwar, Baran, Bhilwara, Bundi, Jhalawar, Jodhpur, Kota, Nagaur, Pali, Sawai Madhopur, Sikar, Tonk	Heavy rains & Flood	Total 35 persons died. Ajmer - 3, Alwar- 1, Baran- 1, Bhilwara - 1, Bundi - 4, Jhalawar - 6, Jodhpur-3, Kota – 1, Nagaur - 3, Pali - 2, Sawai Madhopur - 5, Sikar - 2, Tonk – 3.	

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
8.	27 Aug.	Kota	Heavy rains & Flood	One person drowned.	
9.	13 Sep.	Bhilwara, Jhalawar	Heavy rain	2 persons died, one from each districts.	Many trees/electric poles uprooted causing disruption in vehicular traffic & power supply.
10.	16 & 17 Sep.	Baran, Bundi, Dholpur, Jhalawar, Kota, Tonk	Heavy rains & Flood	Total 19 persons died Baran-1, Bundi-16, Tonk-2.	i) Extensive damage to Kharif crops reported. ii) Damage to more than 7800 houses reported.
	<i>* Whole year</i>	<i>Area affected 2.390 m.ha.</i>		i) <i>126 human lives lost.</i> ii) <i>314 cattle lost.</i>	i) <i>Crops in 2.390 m.ha. damaged.</i> ii) <i>13.800 million population affected.</i> iii) <i>28415 houses damaged.</i>
<b>SIKKIM</b>					
1.	6 to 10 Jul.	East Sikkim, South Sikkim, West Sikkim	Heavy rains & Landslide		i) Damage to houses reported. ii) Road connecting Pakyong town & Basilakha, Khongsee from East Sikkim washed away. iii) Due to damage of roads & landslide road connectivity including National & State highways disrupted at many places. iv) People shifted to safer places.
2.	13 & 14 Jul.	East Sikkim	Heavy Rains		i) Damage to several houses reported. ii) Damage to vehicles reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
3.	15 to 25 Jul.	South Sikkim	Heavy Rains & Landslide	Few livestock including a cow perished.	<ul style="list-style-type: none"> <li>i) Landslide at Namchi-Melli.</li> <li>ii) Damage to crops reported.</li> <li>iii) Damage to houses reported.</li> <li>iv) Damage to two cattle-sheds reported.</li> <li>v) Major damage to NHIDCL (National Highway Development Corporation Limited) roads reported.</li> <li>vi) Damage to PHE pipelines, water pipelines in Jaubari along Namchi-Danthang road reported.</li> </ul>
4.	16 Sep.	West Sikkim	Landslide	<p>One woman died in Genchen village.</p> <p>Huge number of castles including cows, goats &amp; domestic animals perished.</p>	<ul style="list-style-type: none"> <li>i) Landslide at Yuksom Dubdi GPU.</li> <li>ii) Damage to agricultural crops reported.</li> <li>iii) Damage to 78 houses from Tsong &amp; Mantabung reported.</li> <li>iv) Damage to roads at multiple locations reported.</li> <li>v) People shifted to safer places.</li> </ul>
<b>TAMIL NADU</b>					
1.	1 to 3 May	Coimbatore	Heavy rain	One person died.	Trsse uprooted.
2.	30 Nov.	Thanjavur	Heavy rain	One person died.	
3.	1 Dec.	Tirunelveli	Heavy rain	One 81-year-old man died due to a wall collapsed.	

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
4.	2 Dec.	Chennai, Coimbatore, Cuddalore, Thoothukudi, Tirunelveli	Heavy rains & Flood	17 persons including two children died at Nadur village of Coimbatore Dist due to wall collapsed. While, 58 livestock perished from different parts.	i) Damage to several houses reported. ii) 1000 people shifted to safer places from Cuddalore, Thoothukudi, and Tirunelveli Dist.
	<i>* Whole year</i>			i) 10 human lives lost. ii) 230 cattle lost.	2814 houses damaged.
<b>TELANGANA</b>					
1.	10 Apr.	Narayanpet	Landslide	10 women working as daily wage laborers died & other injured.	
<b>TRIPURA</b>					
1.	1 to 4 Apr.	Dhalai, Tripura, Tripura	Khowai, South West Unakoti, South West	Heavy rains & Floods	5,894 persons from different parts of West Tripura (4469 persons) and Khowai (1,425 persons) districts shifted to 48 relief camps.
2.	24 to 26 May	Dhalai, Unakoti	North Tripura,	Heavy rains & Floods	i) Damage to 1,039 houses reported. ii) According to State Emergency Operations Centre (SEOC), total 739 people, viz. 358 from Unakoti district and 381 from North Tripura district rendered homeless & shifted in various relief camps. iii) 40 rescue boats deployed by the state revenue department to evacuate people from affected areas. iv) The National Disaster Response Force (NDRF) and Tripura State Rifles (TSR) joined the rescue operations. v) Several trees and electric posts uprooted.



S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
3.	15 Jul.	Parts of Tripura	Heavy rains & Floods	2 persons died.	i) 18,000 people shifted to 61 relief camps. ii) Damage to roads reported.
	<i>* Whole year</i>	<i>Area affected 0.001 m.ha.</i>		<i>i) One human life lost. ii) 15 cattle lost.</i>	<i>i) Crops in 0.001 m.ha. damaged. ii) 0.147 million population affected. iii) 44963 houses damaged.</i>
<b>UTTAR PRADESH</b>					
1.	22 Jan.	Bahraich, Balrampur, Lakhimpur Kheri, Maharajganj, Pilibhit, Shravasti, Siddharthnagar	Heavy rains		Damage to Pulses & Oilseeds crops reported.
2.	24 Jan.	Lucknow	Heavy rains	3 persons injured.	
3.	22 Feb.	Allahabad, Ambedkar Nagar, Amethi, Ayodhya, Bahraich, Balrampur, Barabanki, Basti, Faizabad, Fatehpur, Gonda, Hardoi, Jaunpur, Kanpur-Dehat, Kanpur-City, Kaushambi, Lakhimpur Kheri, Lucknow, Pratapgarh, Raebareli, Sant-Kabir-Nagar, Shravasti, Siddharthnagar, Sitapur, Sultanpur, Unnao	Heavy rains		Damage to Rabi crops reported.
4.	26 Sep.	Ambedkar Nagar, Ballia, Barabanki, Deoria, Firozabad, Hardoi, Lakhimpur Kheri, Prayagraj, Raebareli, Sitapur, Sonbhadra, Unnao	Heavy rains	17 persons died. 7 livestock perished.	Damage to 25 houses reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
5.	2 Oct. * <i>Whole year</i>	Lucknow <i>Area affected 0.890 m.ha.</i>	Heavy rains	One person died. <i>i) 166 human lives lost. ii) 325 cattle lost.</i>	Damage o house reported. <i>i) Crops in 0.650 m.ha. damaged. ii) 0.745 million population affected. iii) 53665 houses damaged.</i>
<b>UTTARAKHAND</b>					
1.	2 Jun.	Almora, Chamoli	Flash floods	One shepherd died due to flash floods in local Gangani stream from Lam Bagar areas in Mahelchouri of Chamoli Dist.  While one person missing from Khira village in Chaukhatiya block of Almora Dist.  Some cattle heads washed away from Almora Dist.	i) Damage to agricultural land reported. ii) Damage to several houses, cowsheds reported. iii) Damage to main roads and local bridges reported. iv) Large-scale destruction in Gangnagar, Lambagad, Ramgaderi, Bisht Bhankhli and Negi Bankhali villages reported. v) The Mahelchouri-Chaukhatiya highway blocked due to the debris.
2.	21 Jun.	Uttarkashi	Heavy rains & flash flood as a result of cloud burst	One person died & 4 others injured in Mori market area.	i) Damage to houses & shops reported. ii) Several trees uprooted causing blocking of main road for a couple of hours.
3.	23 Jun.	Pauri Garhwal	Floods in Binnu river	Some cattle heads washed away in Mansari and Kanadi villages in Chauthan Patti area of Thailisain block.	Damage to houses in Mansari and Kanadi villages in Chauthan Patti area of Thailisain block reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
4.	4 Jul.	Rudraprayag	Heavy rains		Damage to water pipeline & 40-meter road reported in Sari Chamshil village of Augustmuni block.
5.	6 Aug.	Chamoli, Pauri Garhwal, Uttarkashi	Heavy rains & flash flood as a result of cloud burst		<ul style="list-style-type: none"> <li>i) Damage to 11 bridges reported.</li> <li>ii) Damage to a school building from Pathar Katta village of Gairsain area reported.</li> <li>iii) Severe damage to properties in Chad a local nullah reported.</li> <li>iv) Damage to 4 cowsheds reported.</li> <li>v) Thousands of visitors stranded as Rishikesh-Badrinath highway at Lambagad was blocked. In addition, several other motor roads in Chamoli, Uttarkashi and Pauri districts affected.</li> </ul>
6.	8 & 9 Aug.	Chamoli, Pauri Garhwal, Rudraprayag, Tehri Garwal	Heavy rains, flash flood as a result of cloud burst	<p>Total 5 persons died. Chamoli – 2 including a woman &amp; kid, Pauri Garhwal - One youth washed away in Alaknanda river, Tehri – 2.</p> <p>While, 5 persons severely injured in Tharhi village Tehri district.</p> <p>More than 40 livestock perished in Chamoli Dist.</p>	<ul style="list-style-type: none"> <li>i) Damage to agricultural land reported.</li> <li>ii) Damage to more than 230 houses, 50 shops, 24 cowsheds reported.</li> <li>iii) Damage to 10 water mills, water supply lines reported.</li> <li>iv) Damage to more than two dozen local footbridges and about 60 connecting roads reported.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
7.	12 Aug.	Bageshwar, Chamoli	Heavy rains, flash floods & Landslide	6 persons died in Ghat block of Chamoli district.	<ul style="list-style-type: none"> <li>i) Damage to farmlands reported.</li> <li>ii) Damage to drinking water pipelines reported.</li> <li>iii) Damage to Several houses, cowsheds, shops reported.</li> <li>iv) Landslide occurred at Aali, Lankhi &amp; Banjba Gad villages from Chamoli Dist. reported.</li> <li>v) Parts of Katyur valley of Bageshwar Dist. affected.</li> </ul>
8.	18 Aug.	Dehradun, Pauri Garhwal, Tehri Garwal, Uttarkashi	Heavy rains & flash floods (in Tons, Pabbar River) & Landslide	<p>Total 19 persons died.</p> <p>Dehradun – one 42 year old woman swept away in Maldevta area,</p> <p>Tehri Garwal – one woman died due to tree uprooted,</p> <p>Uttarakashi - 17 persons died, several others missing &amp; many people were injured, about 60 livestock perished from Mori Block.</p>	<ul style="list-style-type: none"> <li>i) Extensive damage to agricultural lands reported.</li> <li>ii) Extensive damage to bridges, a primary school reported.</li> <li>iii) Damage to Several houses, cowsheds, shops reported.</li> <li>iv) Several vehicles washed away.</li> <li>v) A helipad submerged in floodwater and national highways were blocked.</li> <li>vi) Damage to around half a dozen villages viz. Makudi, Arakot, Sanel, Tikochi, Khakwadi, Chinwa, Gokul from Uttarkashi Dist. (which is the worst affected district) due to landslide reported.</li> <li>vii) The Mason village in Chauthan Patti area of Thailisain block in Pauri Garhwal, Dist. also affected.</li> <li>viii) Several trees uprooted.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
9.	2 Sep.	Almora	Cloud Burst	Few persons injured due to house collapsed.	Damage to house reported in Jajar village in Dhauladevi Block.
10.	6 to 8 Sep.	Chamoli, Pithoragarh	Heavy rains & flash flood as a result of cloud burst	One person died & 3 others injured & about half a dozen livestock perished from Timtia village of Nachni area in Munsyari tehsil of Pithoragarh Dist. on 7 <sup>th</sup> early morning.  Several persons injured from Gundam village of Tharali Tehsil in Chamoli district.	<ul style="list-style-type: none"> <li>i) Damage to several acres of farmland reported.</li> <li>ii) Damage to a portion of inter college reported.</li> <li>iii) Damage to several houses, cowsheds reported.</li> <li>iv) Damage to several roads including 60-meter stretch of Thal-Munsyari highway, 30 meters stretch of Badrinath highway reported due to which thousands of pilgrims stranded at different locations.</li> <li>v) More than 40 vehicles washed away.</li> <li>vi) 2 water mills were washed away.</li> <li>vii) The electricity and communication services disrupted.</li> </ul>
11.	27 Sep.	Dehradun	Heavy rains & flash flood		Damage to about 15 houses in Clement town reported.
<b>WEST BENGAL</b>					
1.	9 Jul.	Darjeeling	Landslide	2 persons died.	Landslides at Pubungfatak.
2.	14 Jul.	Coochbehar, Jalpaiguri	Heavy Rains	One person died & other injured.	<ul style="list-style-type: none"> <li>i) Water logging.</li> <li>ii) Trees uprooted.</li> </ul>

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
3.	1 Aug. to 30 Sep.	22 districts of West Bengal		220 persons died. Huge livestock perished.	i) More than 500,000 people badly affected, ii) Damage to 30,000 houses (fully and partially) reported. iii) 7 NDRF teams deployed by the government for rescue and evacuation of people from flood affected areas.
	<i>* Whole year</i>	<i>Area affected 0.290 m.ha.</i>		<i>i) 71 human lives lost. ii) 27 cattle lost.</i>	<i>i) Crops in 0.095 m.ha. damaged. ii) 0.435 million population affected. iii) 57248 houses damaged.</i>
		<b>UNION TERRITORY D &amp; N HAVELI</b>			
	<i>* Whole year</i>	<b>UNION TERRITORY- JAMMU &amp; KASHMIR</b>			<i>4 houses damaged.</i>
1.	13 Mar.	Doda	Landslide		Nearly 2 dozen shops were buried under a massive landslide in Bhaleesa area of Doda Dist.
2.	17 Mar.	Ramban	Landslide	2 persons died on Khari Mahu link road at Aarimaarg area in Khari tehsil.	
3.	23 Mar.	Doda	Landslide	2 persons died in Piyakul village on Thathri-Kilhotran road.	Damage to truck reported.
4.	29 Mar.	Baramulla	Landslide	One army Jawan died when he was patrolling along the line of control.	

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
5.	22 & 24 Apr.	Doda	Landslide	5 persons died and 9 others injured at Piyakul on Thathri-Kilhotraan road.	i) Damage to 7 houses reported. ii) Damage to mini bus reported.
6.	13 May	Anantnag	Cloud burst	2 persons of one family died at Poori village.	
7.	12 Jun.	Bandipora	Flash floods & Cloud burst	4 persons injured at Naidkhai – Poshwari village.	A bridge washed away by flash floods in Arin village
8.	5 Jul.	Kishtwar	Landslide	2 persons including a woman and her son died.	Damage to house reported in Ghor Saroor village.
9.	9 Jul.	Rajouri	Flash flood in Aans river	One person washed away in Aans river.	
10.	15 Jul.	Baramulla, Pulwama	Heavy rains		i) Damage to Orchards and crops reported. ii) Damaged to three storey residential building, a school, shops, electric transformer, vehicles reported. iii) Several trees including Chinar tree uprooted & fell on vehicles causing damage.
11.	24 Jul.	Poonch	Heavy rain & Flash floods	One person died. 7 livestock including 2 buffalos & 5 goats perished.	Damage to a cowshed in Charmer area of Surankote reported.

S. No.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
12.	25 Jul.	Kupwara	Heavy rain / Flash floods	A 6-year old boy washed away.	i) Damage to standing crops reported. ii) Damage to several residential houses reported.
13.	26 Jul.	Poonch	Heavy rain & Flash floods	One person washed in Dhargaloon village.	
14.	27 Jul.	a) Pulwama	Cloud burst	One person died. 100 livestock perished in Bradiangan area of Tral.	
		b) Doda	Landslide	One woman died and other injured. 25 livestock perished.	Damage to a house at Bagger, Ramgarh reported.
15.	31 Jul.	Udhampur	Heavy rain	One boy died and other injured due to wall collapsed.	Damage to a house reported.
16.	3 Aug	Pulwama	Cloud burst		i) Damage to residential houses, School and roads in Hajin area of Tral subdivision reported. ii) Partial damage to water supply & electricity transmission lines reported.
17.	19 Nov	Pulwama	Landslide	One person died.	Damage to a house at Shalitukna village reported.
<b>LAKSHADWEEP</b>					
* Whole year					5 houses damaged.



**सारिणी - XI : चक्रवाती तूफान 2019**  
**TABLE – XI: CYCLONIC STORM 2019**

During 2019, Total 8 cyclonic storms formed over the north Indian Ocean, these are, one (1) Super Cyclonic Storm (SuCS) 'KYARR', two (2) Extremely Severe Cyclonic Storms 'FANI' & 'MAHA', three (3) Very Severe Cyclonic Storms 'VAYU', 'HIKAA', & 'BULBUL', and two (2) Cyclonic Storms 'PABUK' & 'PAWAN'. Of these, PABUK formed over Andaman Sea, FANI & BULBUL were formed over Bay of Bengal, While VAYU, HIKAA, KYARR, MAHA & PAWAN were formed over Arabian Sea.

**Out of these FANI & BULBUL caused some damage, details of the same are out lined below:-**

Sr.No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
<b><u>BAY CYCLONE</u></b>					
1.	26 April to 4 May	<p><b><u>Formation</u></b> Near Lat. 5.2°N / Long. 88.6°E, over southeast Bay of Bengal and adjoining east Equatorial Indian Ocean at 0600 UTC of 27<sup>th</sup> April .</p> <p><b><u>Landfall</u></b> It crossed Odisha coast close to Puri near Lat. 19.75°N and Long. 85.70°E between 0230 to 0430 UTC of 3<sup>rd</sup> May.</p> <p><b><u>Dissipation</u></b> Weakened into well-marked low-pressure area over central Assam &amp; neighbourhood at 1800 UTC on 4<sup>th</sup> May.</p>	Extremely Severe Cyclonic Storm (FANI)	Total 53 persons died in Odisha. Cuttack – 6, Jajpur - 3, Kendrapara – 4, Khurda – 4, Mayurbhanj – 4, Puri – 32 While, 53,33,186 livestock perished in Odisha.	<p><b><u>Odisha :</u></b></p> <p>i) Damage to 146311.38 hectares of cropland reported.</p> <p>ii) Damage to 5,56,761 houses &amp; 1,19,694 cow sheds reported.</p> <p>iii) Minor damage The Jagannath Temple in Puri reported.</p> <p>iv) Damage to 6,416 boats and 8,828 nets reported.</p> <p>v) 15,57,170 persons shifted to safer places.</p> <p>vi) Extensive damage to infrastructure like roads, power, railway, telecommunications etc. reported.</p>

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
				28 livestock perished in Andhra Pradesh.	<p><b><u>Andhra Pradesh :</u></b></p> <p>i) Damage to 1,365 hectares of cropland reported.</p> <p>ii) Damage to 222 houses / huts reported.</p> <p>iii) 17,460 persons shifted to safer places.</p> <p>iv) Economical loss for Srikakulam &amp; Vizianagaram districts reported.</p> <p>v) Economical loss to the South Central Railway reported.</p> <p><b><u>West Bengal :</u></b></p> <p>i) Damage to 29,260 houses / huts reported.</p> <p>ii) Damage to 112,000 hectares of cropland reported.</p> <p>iii) 2,34,801 persons shifted to safer places.</p> <p><b><u>Chhattisgarh :</u></b></p> <p>i) Several trees uprooted in Raipur Dist.</p> <p>ii) Damage to many hoardings reported in Raipur Dist.</p>

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
2.	5 Nov. to 11 Nov.	<p><b><u>Formation</u></b></p> <p>Near Lat. 13.8°N / Long.89.3°E, over east central and adjoining southeast Bay of Bengal at 1800 UTC of 6<sup>th</sup> Nov.</p> <p><b><u>Landfall</u></b></p> <p>It crossed West Bengal Coast close to Sunderban Dhanchi forest near Lat. 21.55°N &amp; Long. 88.5°E during 1500 to 1800 UTC of 9<sup>th</sup> November.</p> <p><b><u>Dissipation</u></b></p> <p>Weakened into a Low pressure area over south Tripura &amp; neighbourhood at 0300 UTC on 11<sup>th</sup> Nov.</p>	Very Severe Cyclonic Storm (BUL BUL)	Total 7 persons died in West Bengal. North 24 Parganas –5 East Midnapore – 2.	<p><b><u>West Bengal :</u></b></p> <p>i) East Midnapore, Hooghly, North 24 Parganas, South 24 Parganas districts most affected.</p> <p>ii) Complete damage to Paddy crops cultivated in 1,81,000 hectares &amp; standing paddy on 60,611 hectares of land and also, green vegetables cultivated over 8,628 hectares of land and vegetables grown over 960 hectares of agricultural land reported.</p> <p>iii) Damage to about 60000 houses including 11,347 houses only from East Midnapore Dist. and several shops reported.</p> <p>iv) Thousands of people shifted to relief camps.</p> <p>v) Hundreds of acres of low-lying areas in the coastal belt inundated.</p> <p>vi) Hundreds of trees uprooted.</p> <p>vii) Disruption in power supply and telecom services due to snapped cables reported.</p>

S. No.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
					<p><b><u>Odisha :</u></b></p> <p>i) Balasore, Bhadrak, Jagatsinghpur, Kendrapara districts most affected, While, Jajpur, Mayurbhanj districts also affected.</p> <p>ii) Extensive damage to standing crops in 3 lakh hectares i.e. more than 33 per cent crop reported.</p> <p>iii) Damage to about 5500 houses including 1464 cowsheds reported.</p> <p>iv) Electricity (16 lakh electric consumers) and piped water supply services (653 piped water supply systems suffered break down) affected.</p> <p>v) Several trees, electric poles &amp; telecom towers uprooted causing disruption in telecom services, power supply.</p>

# DISASTROUS WEATHER EVENTS 2019



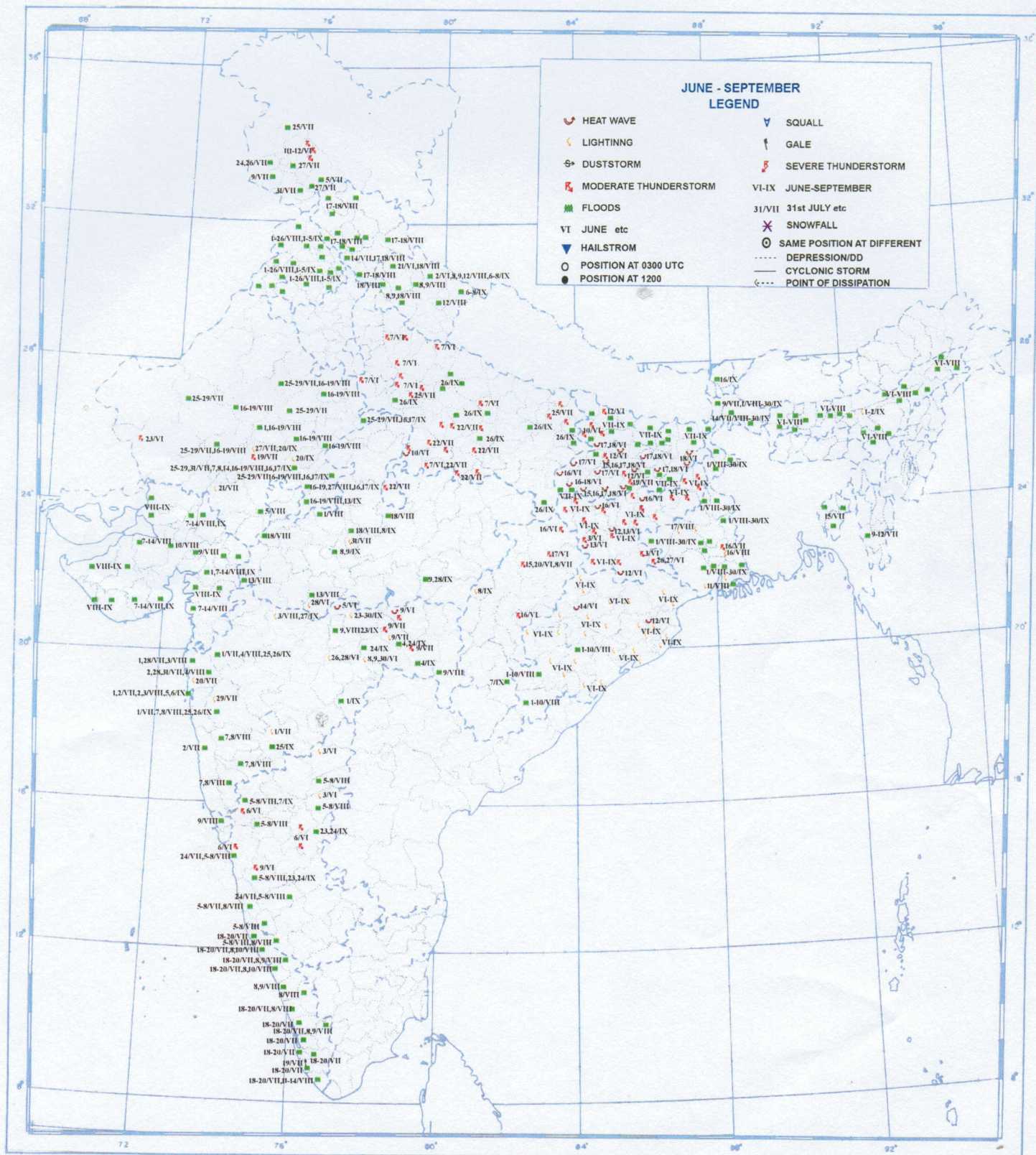


# DISASTROUS WEATHER EVENTS 2019



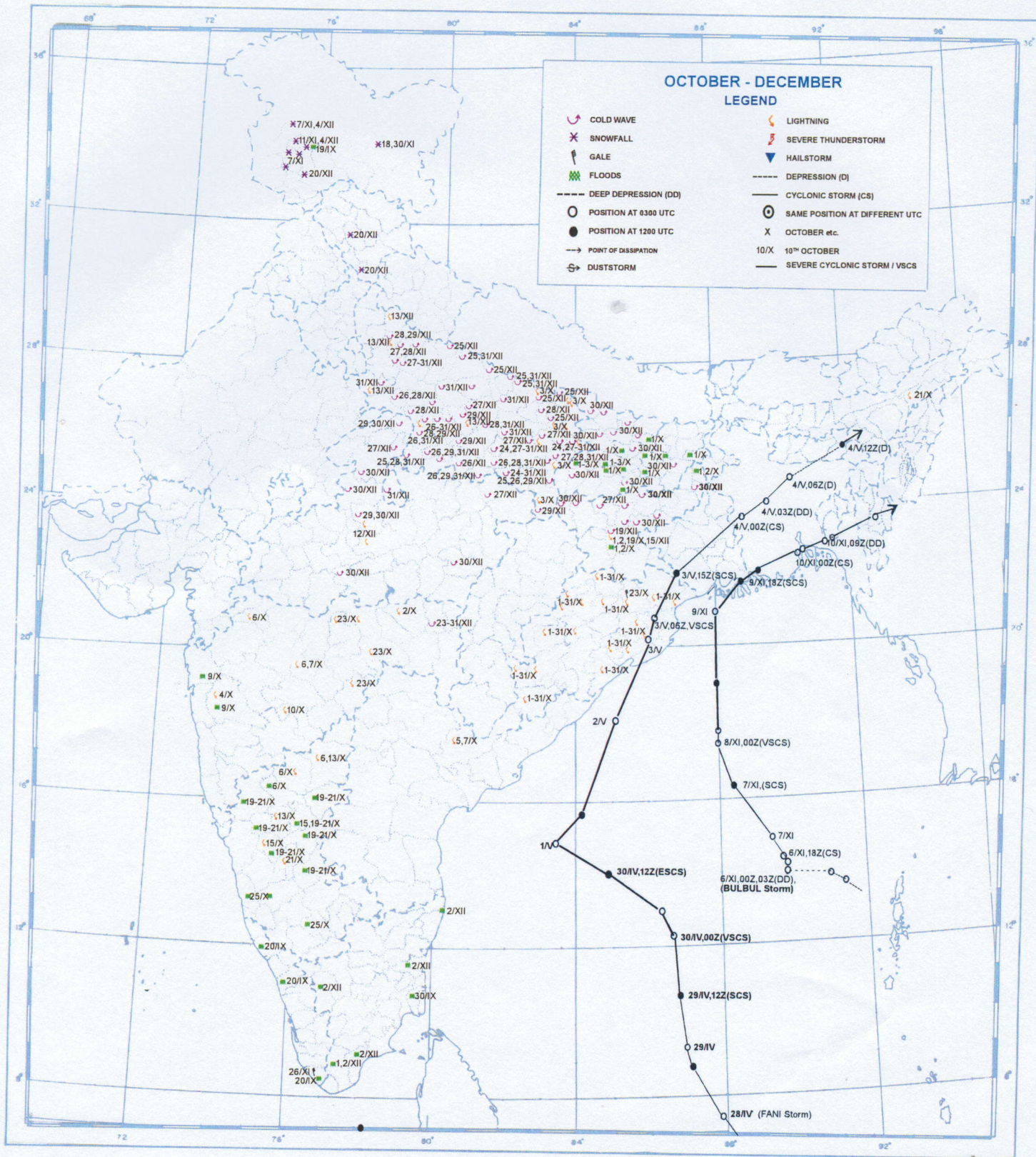


# DISASTROUS WEATHER EVENTS 2019





# DISASTROUS WEATHER EVENTS 2019





**DESIGNED & PRINTED AT**

**THE CENTRAL PRINTING UNIT  
CLIMATE RESEARCH & SERVICES  
PUNE 411005**