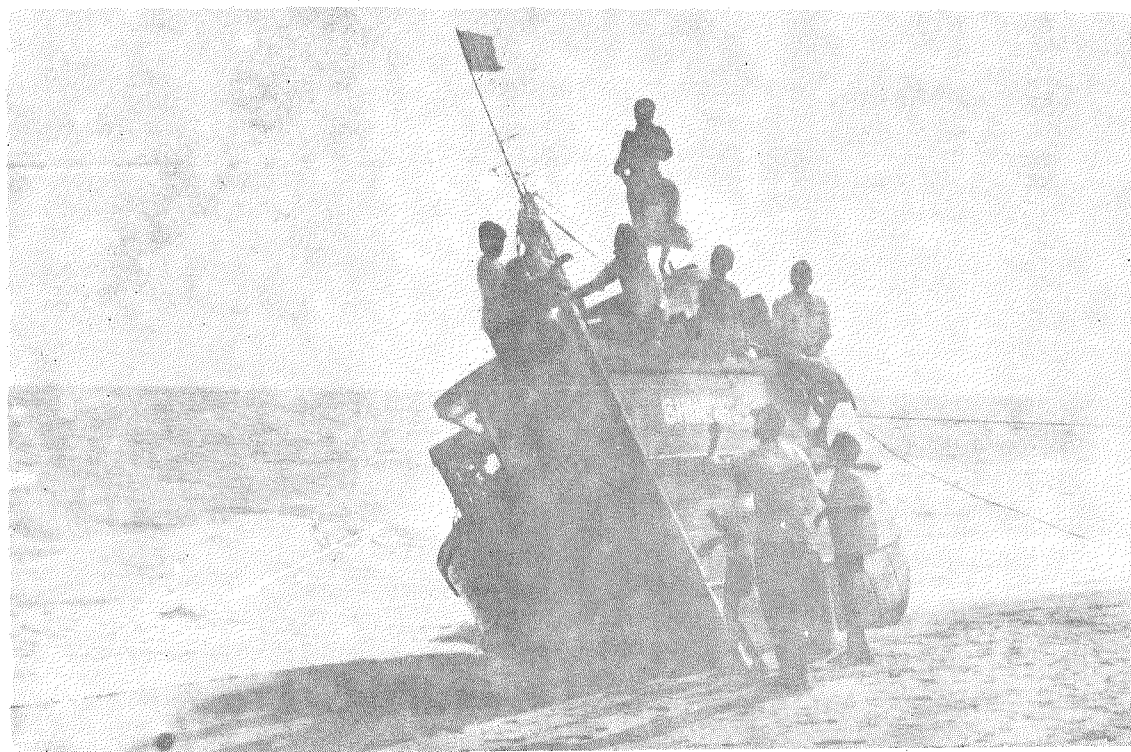




INDIA METEOROLOGICAL DEPARTMENT
DISASTROUS WEATHER EVENTS, 1995



ISSUED BY
ADDITIONAL DIRECTOR GENERAL OF METEOROLOGY
(RESEARCH)
PUNE - 411005

**Cover Photo : Fishing boat aground at Vaddepalem due to tidal waves due to Severe Cyclonic Storm
7 - 10 Nov. 1995.**

Courtesy : CWC VISAKHAPATNAM

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DISASTROUS WEATHER EVENTS OF 1995

The most striking disastrous weather events of 1995 were the following :

- i) A severe cyclonic storm with a core of hurricane winds occurred in the Bay of Bengal during 7-10 November and took a toll of 51 human lives in Andhra Pradesh, Orissa and West Bengal. Property worth Rs. 90 crores damaged in Andhra Pradesh while property worth Rs. 700 crores damaged in Orissa. Total crop area of 4.07 lakh hectares damaged.
- ii) Severe floods and heavy rains occurred over many parts of the country and claimed 1360 human lives. Property worth Rs. 1767 crores damaged and crop in 23.5 lakh hectares damaged.
- iii) Severe heat wave conditions prevailed over Uttar Pradesh during 1st and 2nd week of June in which 161 human lives lost.

The summary of these natural hazards is based on the various reports of the India Meteorological Department and press information. The figures for estimated losses are as per the press reports. The areas affected by the adverse weather phenomena are depicted seasonwise on four maps.

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<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
TABLE - 1 : SNOWFALL					
CRITERIA					
Moderate : 7.6 to 34.9 cm in 24 hrs.					
Heavy : \geq 35.0 cm in 24 hrs.					
1.	1-3 Jan.	Jammu & Kashmir (Entire State)	Heavy		(i) Kashmir valley cut off from the rest of the country due to closure of Jammu-Srinagar national highway. (ii) The world famous Dal lake in Srinagar and Seshnag lake in Kashmir valley frozen. (iii) The mercury dipping to -8.3°C at Srinagar. (iv) In Ladakh Pyogong lake and Tso Morar lake reported frozen.
2.	9 Jan.	Himachal Pradesh (Entire State)	Heavy		(i) Water and power supply and telecommunication system disrupted. (ii) Air services and vehicular traffic in various places suspended.
3.	15-17 Jan.	Himachal Pradesh	Heavy	One person died in Kalpa.	(i) Road traffic, communication, electric supply disrupted. (ii) Hoardings, trees broken. (iii) Water supply to city badly affected.
4.	19 Jan.	Jammu & Kashmir	Heavy	200 persons feared killed and 400 trapped in avalanche in Pir panjal mountain ranges.	
5.	12 Feb.	Jammu & Kashmir	Heavy		(i) Kashmir valley was cut-off from rest of the country due to landslides and snowfall. (ii) 300 km long Srinagar-Jammu national highway was closed due to landslides and snowfall.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
6.	23 Feb.	Lahaul and Spiti	Heavy		(i) Normal life paralysed. (ii) Air services disrupted.
7.	27 Feb.	Shimla	Heavy		(i) Normal life affected. (ii) Vehicular traffic disrupted.
8.	28 Feb.	Shimla	Moderate		(i) Water frozen in Jakhu. (ii) Road traffic disrupted.

TABLE - II : COLD WAVE

CRITERIA

(A) Where; Normal minimum temperature is 10⁰C or more.

Moderate cold wave : Night temperature 5⁰ to 6⁰C below normal.

Severe cold wave : Night temperature 7⁰C or more below normal.

(B) Where; Normal minimum temperature is less than 10⁰C.

Cold wave : Night temperature 3⁰ to 4⁰C below normal.

Severe cold wave : Night temperature 5⁰C or more below normal.

1.	2-4 Jan.	Solan	Severe cold wave (B)	One person died.	Lakes and water in pipe lines frozen.
2.	8 Jan.	Ladakh	Severe cold wave (B)		Dras recorded the lowest temperature.
3.	9 Jan.	Banswara, Bundi, Dholpur, Jaipur, Jhalawar, Kota and Sawai Madhopur	Severe cold wave (Both A and B as appropriate.)	3 persons died.	

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
4.	11 Jan.	Gaya and Hazaribagh	Severe cold wave (Both A and B as appropriate.)	8 persons died, 5 from Nawada in Gaya district.	
5.	16 Jan.	Samastipur	Severe cold wave (A)	7 persons died.	
6.	16-19 Jan.	Bikaner, Jodhpur and Kota	Severe cold wave (Both A and B as appropriate.)	5 persons died of which 3 from Kota.	
7.	18 Jan.	Sonipat	Severe cold wave (A)	Hundreds of cattleheads perished.	
8.	25 Jan.	Calcutta	Severe cold wave (A)	65 years old person, dwelling on footpath died.	
9.	Jan. (4th week)	Darjeeling	Severe cold wave (B)	10 persons including a woman and 2 children died.	
10.	14 Feb.	Nalanda	Severe cold wave (A)	7 persons died at Biharsarif.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
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TABLE - III : HEAT WAVE

CRITERIA

(A) Where; Normal maximum temperature is 40°C or less.

Moderate heat wave : Day temperature 5° to 6°C above normal.

Severe heat wave : Day temperature 7°C or more above normal.

B) Where; Normal maximum temperature is more than 40°C.

Heat wave : Day temperature 3° to 4°C above normal.

Severe heat wave : Day temperature 5°C or more above normal.

1.	24 Apr.	Murshidabad	Severe heat wave (A)	One Rickshawpuller at Berhampore died.
2.	28 Apr.	Bardhaman	Severe heat wave (A)	A seven year old boy died at Bagar village.
3.	7 May	Banswara	Severe heat wave (A)	One person died.
4.	10-18 May	Rajasthan (Entire State)	Severe heat wave (Both A and B as appropriate)	32 persons died.
5.	25 May	Calcutta	Severe heat wave (A)	One person died at Manicktala.
6.	27 May	North 24-Parganas	Severe heat wave (A)	One person died at Ranaghat.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
7.	28 May	(a) Hooghly, Medinipur, Murshidabad and Nadia	Severe heat wave (A)	4 persons died.	
8.	28-30 May	(a) Kheda and Panchmahals	Severe heat wave (B)	4 persons died.	
		(b) Rajasthan (Entire State)	Severe heat wave (Both A and B as appropriate)	4 persons died.	
9.	29 May	Dinajpur and Hooghly	Severe heat wave (A)	2 persons died.	
10.	30 May	Yavatmal	Severe heat wave (B)	One child died.	
11.	31 May	Nagpur	Severe heat wave (B)	One person died.	
12.	Jun. (1st and 2nd week)	Uttar Pradesh (Entire State)	Severe heat wave (A)	161 persons died of which 74 from Varanasi district alone.	
13.	2 Jun.	Morena	Severe heat wave (A)	2 persons died.	
14.	3 Jun.	(a) Chennai	Severe heat wave (A)	3 persons died.	

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
		(b) Vidisha	Severe heat wave (A)		Large number of birds perished.
		(c) Dhanbad and Nalanda	Severe heat wave (A)		(i) 19 persons died. (ii) 12 cattleheads perished.
15.	4 Jun.	Datia	Severe heat wave (A)		One person died.
16.	5 Jun.	(a) Hissar	Severe heat wave (B)		One person died.
		(b) Nagpur	Severe heat wave (A)		15 persons died.
17.	5-7 Jun.	Rajasthan (Entire State)	Severe heat wave (Both A and B as appropriate.)		9 persons died.
18.	6 Jun.	Datia, Gwalior and Morena	Severe heat wave (A)		9 persons died, 5 from Datia district alone.
19.	7 Jun.	Muzaffarpur	Severe heat wave (A)		2 persons died and 40 persons hospitalised at Hajipur.
20.	7 & 8 Jun.	Vizianagaram	Severe heat wave (A)		4 persons died.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
21.	7-9 Jun.	Orissa (Interior)	Severe heat wave (Both A and B as appro- priate.)	9 persons died.	
22.	Jun. (2nd week)	Aurangabad, Begusarai, Rohtas and Vaishali	Severe heat wave (A)	28 persons died.	
23.	9 & 10 Jun.	Rajasthan (Entire State)	Severe heat wave (Both A and B as appro- priate.)	4 persons died.	
24.	10 & 11 Jun.	New Delhi	Severe heat wave (A)	4 persons died.	
25.	11 Jun.	Haryana (Entire State)	Severe heat wave (Both A and B as appro- priate)	2 persons died.	
26.	11-18 Jun.	Punjab	Severe heat wave (Both A and B as appro- priate.)	30 persons died.	
27.	12 Jun.	Bikaner	Severe heat wave (B)	One person died.	
28.	16 Jun.	Alwar and Jaipur	Severe heat wave (A)	5 persons died.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
29.	17-19 Jun.	Madhya Pradesh (Entire State)	Severe heat wave (Both A and B as appro- priate)	26 persons died.	
30.	18 Jun.	(a) Haryana (Entire State)	Severe heat wave (Both A and B as appro- priate)	One person died.	
		(b) New Delhi	Severe heat wave (A)	3 persons died.	
31.	18-20 Jun.	Rajasthan (Entire State)	Severe heat wave (Both A and B as appro- priate.)	20 persons died.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
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TABLE - IV : DROUGHT

ASSAM

1.	Mar. (3rd week)	Kamrup and Nalbari			(i) Entire Rangia subdivision and the parts of Nalbari districts experienced severe drought condition. (ii) Ploughing of Ahu crop became difficult due to scarcity of water.
2.	Mar. (4th week)	Barpeta			(i) Severe drought conditions prevailed over Jalah subdivision. (ii) Rabi crops extensively damaged. (iii) Ploughing of Ahu crop became difficult due to scarcity of water.
3.	Apr. (1st week)	Cachar and Jorhat			(i) Extensive damage to rabi crop reported. (ii) Acute shortage of drinking water reported.
4.	Apr. (4th week)	Marigaon			Extensive damage to crop reported.

MAHARASHTRA

1.	Mar.-May	Ahmednagar, Beed, Latur, Osmanabad, Pune and Solapur			(i) 178 villages in Beed suffered due to scarcity of water. (ii) 5,00,000 people migrated to sugar factories in search of employment. (iii) More than 4,752 villages and 1000 wadies in Marathwada region were under the grip of severe drought. (iv) More than 1400 villages and 1600 hamlets in Marathwada, Konkan and Pune divisions faced acute shortage of drinking water.
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<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
2.	Apr.-May	Sangli, Satara, Solapur and Miraj			(i) Acute shortage of drinking water in Madha, Karmala, Barshi and Akkalkot talukas reported. (ii) 600 families from Sangola and Karmala talukas of Solapur were migrated to town due to acute shortage of water. (iii) Rabi crop in Satara district worst affected.
TRIPURA					
1.	Mar.	Agartala			(i) Rabi crop worth Rs. 82 crore damaged. (ii) Acute shortage of drinking water reported.
2.	May (Entire)	Tripura (Entire State)			(i) Extensive damage to crops reported. (ii) Fish worth Rs. 7.5 lakh destroyed.

TABLE - V : SQUALL

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

CRITERIA

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

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

1.	11 Apr.	Jorhat	Severe		(i) Large number of houses damaged. (ii) Number of trees/electric/telephone poles uprooted.
2.	13 Apr.	Lakhimpur	Severe	3 persons died at Bihpuria	(i) Several houses damaged. (ii) Large number of trees uprooted. (iii) Electric and telecommunication services snapped.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
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TABLE - VI : GALE

CRITERIA

Strong : Wind speed \geq 75 kmph.

1.	27 Mar.	Malda	Strong	(i) A country boat carrying 42 persons capsized at Malicharghat near Malichak. (ii) 9 persons including 6 women drowned while 12 other missing.	
2.	6 May	Kozhikode	Strong	2 persons reported missing.	
3.	31 May	Bangalore	Strong	4 persons injured when the arch of a huge exhibition tent at a RBANMS ground near Ajanta Cinema collapsed.	(i) Power lines snapped. (ii) Several trees uprooted. (iii) Large number of vehicles damaged.
4.	1-9 Jun.	Kozhikode	Strong		(i) 101 houses damaged. (ii) Damage of large number of coconut trees and vegetation reported. (iii) Electric supply disrupted.
5.	16 Jun.	Nagpur	Strong	One girl died and one cattlehead perished	(i) Roofs of 20 houses blown off. (ii) 15 trees uprooted.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
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TABLE - VII : DUSTSTORM

CRITERIA

Moderate : Wind speed between 39 to 74 kmph and horizontal visibility upto 500 metres.

Heavy : Wind speed \geq 75 kmph and horizontal visibility upto 50 metres.

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TABLE - VIII : LIGHTNING

1.	27 Mar.	Amravati		2 persons electrocuted.	
2.	6 Jun.	Jamshedpur			Reservation counter of Tata railway station damaged.
3.	7 Jun.	Akola		One girl died at Karanja.	
4.	12 Jun.	East Singbhum		3 Jawans died and 2 other injured.	
5.	17 Jun.	Bilaspur		2 persons died and 6 other injured.	
6.	18 Jun.	Nagpur		One person died at Naygaon in Tahsil Katol.	
7.	23 Jun.	Nasik		18 year old youth died while his brother was injured at Manmad.	
8.	24 Jun.	Nasik		A woman labourer and her 14 year daughter died near local Engineering College on Bombay-Agra road.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
9.	1 Jul.	Nagpur		One person electrocuted at Kondhali village.	
10.	3 Jul.	Darbhanga		4 persons died and another injured.	
11.	7 Jul.	(a) Ganjam		2 persons injured.	
		(b) Nagpur		One person died.	
12.	8 Jul.	Akola		One person died and another injured.	
13.	11 Jul.	Dungarpur		2 persons died and one other injured.	
14.	19 Jul.	Sikar		One child and 12 goats perished.	
15.	20 Jul.	Satna		(i) One child died. (ii) 2 cattleheads perished.	
16.	23 Jul.	Jhunjhunu			Telephone exchange/Telecom services paralysed.
17.	26 Jul.	Seoni		5 persons died and one person injured.	
18.	29 Jul.	Nagpur		One person died and another injured.	
19.	1 Aug.	Nagpur		One person died and 6 other injured.	
20.	3 Aug.	South 24 Parganas		2 persons died at Dhakuria-Selimpur area.	
21.	20 Aug.	Mayurbhanj		A young man died and 3 other injured at village Satsagodia under Rasgevindpur Police Station.	

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
22.	22 Aug.	Purulia		4 children died and 15 other injured in front of a school at Jamabad area under Kashipur Police Station.	
23.	30 Aug.	Nagpur		A 15 year old girl died and 4 other persons injured.	
24.	31 Aug.	West Singhbhum		3 tribals died and 7 other injured at village Losoiki.	
25.	14 Sep.	(a) Amravati		Two persons died at Chandrapur taluka.	
		(b) Nagpur		One person died at Yerla village.	
26.	17 Sep.	West Dinajpur		2 persons died at Gangaranpur village.	
27.	26 Sep.	Balasore		3 girls died and 2 other injured at Chasakhand village.	
28.	1 Oct.	Mumbai		One person died and another injured seriously when lightning struck the tanker on Santacruz relief road.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
TABLE - IX : THUNDERSTORM					
CRITERIA					
Moderate : Loud peals of thunder with frequent lightning flashes, moderate to heavy rains and maximum wind speed 29 to 74 kmph					
Severe : Continuous thunder and lightning, heavy rains and Maximum wind speed \geq 75 kmph					
1.	8 Jan.	Delhi	Severe		(i) Many trees uprooted. (ii) Giant advertisement hoardings blown off.
2.	10 Jan.	Chandigarh	Moderate		Telephone and electric services disrupted.
3.	23 Feb.	Medinipur	Moderate		37 houses at Ghanyadihi village of Panskura Panchayat collapsed.
4.	28 Mar.	Jorhat	Severe	One person died and another injured at Nagadhuli.	
5.	30 Mar.	South 24 Parganas	Severe	(i) 2 children died due to house collapse. (ii) 30 persons injured due to falling of trees at Mullickpara under Budge-Budge Police Station.	Train services disrupted for 2 hours at Rishra.
6.	2 Apr.	Nagpur	Severe	Few cattleheads perished.	(i) Few houses collapsed. (ii) Damage to crops reported. (iii) Property worth Rs. 10 lakhs damaged.
7.	4 Apr.	(a) Medinipur	Moderate	3 persons missing from the sea beach at Digha.	
		(b) South 24 Parganas	Severe		40 huts destroyed.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
8.	12 Apr.	(a) Calcutta and neighbourhood	Moderate		(i) Normal life paralysed. (ii) Low lying areas in north and central Calcutta flooded. (iii) Vehicular traffic/train services disrupted.
		(b) Howrah	Severe	3 persons injured due to wall collapse at Shalkia.	Train service from Sealdah and Howrah section disrupted.
9.	14 Apr.	Aurangabad	Severe	10 year old girl died in house collapse at Juna Bazar area.	
10.	16 Apr.	Jalpaiguri	Severe	2 persons including one woman died and 6 other injured at Mayhaguri.	
11.	17 Apr.	Jorhat	Severe	One person died and another injured.	
12.	18 Apr.	Jalpaiguri	Severe		(i) 9,500 houses damaged. (ii) 62,000 people rendered homeless in Jhupguri block.
13.	21 Apr.	Guwahati	Moderate		Electric supply disrupted.
14.	22 Apr.	Darrang and Golaghat	Severe	3 persons died	500 houses damaged.
15.	24 Apr.	Kamrup and Sonitpur	Severe	One woman died and 2 children injured.	(i) Low lying areas flooded. (ii) Several houses damaged. (iii) Large number of trees/electric poles uprooted.
16.	25 Apr.	East Khasi Hills	Severe	12 children died and 85 other injured.	
17.	2 & 3 May	Barpeta, Kamrup and Tinsukia	Severe		(i) 200 houses damaged. (ii) Large number of trees/electric/telephone poles uprooted. (iii) Rabi crop badly damaged.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
18.	8 May	Birbhum	Severe	One person died at Kushumbhua village under Rampurhat subdivision.	
19.	11 May	Pune	Severe	200 poltry birds perished in Umbre village.	(i) 25-30 houses damaged. (ii) 35-40 trees uprooted. (iii) Some electric poles fell down.
20.	13 May	Medinipur	Severe	One woman died and 3 other injured at Daudpur village.	
21.	4 Jun.	Malda	Severe	One person died at Vivekanand palli.	Several telephone/electric poles uprooted.
22.	5 Jun.	Hooghly	Severe	One person died at Magra station road.	
23.	7 Jun.	Dakshin Dinajpur	Severe	5 persons died, 3 at Itahar and 2 at Raiganj.	
24.	8 Jun.	Hooghly	Severe	2 persons died, one at Mahyadipur village at Chuchura and another at Jaganathpur village in Dadpur taluka.	
25.	13-15 Jun.	Jalpaiguri	Severe	3 persons died and 7 year old child injured.	(i) Low lying areas flooded. (ii) One lakh people affected.
26.	15 Jun.	Guwahati	Severe	2 persons injured.	
27.	17 Jun.	South 24 Parganas	Severe	3 persons died and one injured.	

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
28.	19 Jun.	Bardhaman	Severe	3 persons died.	
29.	20 Jun.	Nadia	Severe	3 persons died and 2 other injured at Pritinagar at Payradanga.	
30.	25 Jun.	Pune	Severe	One woman died at Baramati taluka.	
31.	27 Jun.	Udaipur	Severe	3 persons injured.	Large number of electric poles/hoardings/ trees uprooted.
32.	30 Jun.	Vidisha	Severe	2 girls and a 8-year old boy died at Pathavpura village.	
33.	1 Jul.	Bardhaman	Severe	3 persons died and other injured.	
34.	3 Jul.	Medinipur	Severe	3 persons died and 8 other injured.	
35.	6 Jul.	South Dinajpur	Severe	One girl died due to wall collapse and another died due to electrocution.	
36.	9 Jul.	North 24 Parganas	Severe	One woman died at Kadamgachi under Barasat Police Station.	
37.	10 Jul.	Purulia	Severe	2 persons died at Hinduri village.	
38.	21 Jul.	Medinipur	Severe	5 persons including a child died at Mandargachia near Kolaghat.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
39.	31 Jul.	Medinipur	Severe	4 boys and one person died at Agrinea village under Potashpur Police Station. Another person died at Bahadur village in Bhutinagar area.	
40.	7 Aug.	(a) Birbhum	Severe	4 persons died at Goa-Bagar village under Rajnagar Police Station.	
		(b) South 24 Parganas	Severe	One person died and 2 other injured at Dwarikapur under Pather-Pratim Police Station.	
41.	12 Aug.	(a) Birbhum	Severe	2 persons died at Mazi village under Dibrajapur Police Station.	
		(b) Medinipur	Severe	One person died at Chattri village under Agra Police Station.	
42.	20 Aug.	Hooghly	Severe	3 persons died at Khanakul area at Chinsura.	
43.	24 Aug.	Medinipur	Severe	3 women died and 8 other injured at Jowrashol village under Swaknail Police Station.	
44.	17 Sep.	Birbhum	Moderate		Many hutments damaged at Boutia village.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
45.	19 Oct.	Hooghly	Severe	One person died at Shastrinagar area under Kanaipur Grampanchayat.	

TABLE - X : HAILSTORM

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.

1.	5 Feb.	Wardha	Heavy	2 women died and other 2 injured at Pulgaon village.	
2.	13 Feb.	Ajmer and Alwar	Heavy		Mustard crop partially damaged.
3.	14 Feb.	Jalandhar	Heavy		Vehicular traffic disrupted in Jalandhar city.
4.	15 Feb.	Chandigarh	Moderate		Telecommunication services disrupted.
5.	10 Mar.	Guna	Heavy	Many birds and cattleheads perished.	(i) 90% crops destroyed. (ii) Telephone and electric poles uprooted.
6.	15 Mar.	Rajgarh	Heavy	(i) One girl died. (ii) One cattlehead perished.	50% crops damaged.
7.	16 & 17 Mar.	Akola, Amravati, Buldhana, Nagpur, Wardha and Yavatmal	Heavy	4 persons including a woman died.	(i) Standing crops badly damaged. (ii) Many houses damaged.
8.	Mar. (3rd week)	Seoni	Heavy		Rabi crops in 5,000 hectares of land damaged.
9.	18 Mar.	Ajmer, Bhilwara, Bundi and Tonk	Heavy		Standing crop of Wheat, Barley, Mustard and Gram worth Rs. one crore damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
10.	25 Mar.	Barmer and Kota	Heavy		Standing crop of Jeera, Isabgol and Rayala damaged.
11.	26 Mar.	Sriganganagar and Udaipur	Heavy	(i) One dozen sheep and goat perished. (ii) Large number of birds perished in Sriganganagar.	
12.	30 Mar.	(a) Dhemaji and Sibsagar (Assam)	Heavy	4 persons including a child died.	(i) 50 houses damaged in Dhemaji district. (ii) Large number of trees/electric/telephone poles uprooted.
		(b) Haryana	Moderate		Standing crop destroyed.
		(c) Punjab	Moderate		Standing crop destroyed.
13.	12 Apr.	Sibsagar	Heavy	4 persons died at Bihubar.	(i) Many houses damaged. (ii) Rabi crop damaged.
14.	15 Apr.	(a) Medak	Heavy	(i) 40 persons felt unconscious. (ii) 100 sheep/goats perished.	(i) Hailstones weighing 1 kg. reported. (ii) 250 villages affected. (iii) Property worth Rs. 2.5 crores damaged. (iv) Paddy crop in 11 villages completely and in 10 villages partially (60%) lost.
		(b) Nalbari	Moderate		Extensive damage to rabi crop reported.
15.	24 Apr.	Kamrup and Tinsukia	Heavy		(i) Several houses damaged. (ii) Large number of trees uprooted.

<i>S.No</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
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TABLE - XI : FLOODS AND HEAVY RAINS

STATES

ANDHRA PRADESH

1.	6-14 May	Chittoor, East Godavari, Krishna, Guntur, Nellore, Prakasam, Srikakulam, Vishakhapatnam, Vizianagaram and West Godavari	Severe flood	(i) 17 persons died. (ii) 3,524 cattleheads perished.	(i) East Godavari and Krishna districts worst affected. (ii) 8,803 houses completely and 31,425 partially damaged. (iii) 1.44 lakhs of hectares of paddy land damaged. (iv) Total loss estimated to worth Rs. 47,000 lakhs.
2.	1 Sep.	West Godavari	Heavy rains	6 persons died.	(i) 10,000 acres of standing crop inundated. (ii) 300 houses submerged and 250 families evacuated to safer places. (iii) Number of tanks and drainage canals breached.
3.	4 Sep.	East Godavari	Heavy rains		400 acres of crop land in low lying areas were submerged.
4.	Oct.(Entire)	Entire State	Severe flood	(i) 119 persons died. (ii) 3,663 cattleheads perished.	(i) 6,64,746 hectares of crop land affected. (ii) 36,371 houses fully and 1,10,154 houses partially damaged. (iii) 5,426 irrigation tanks breached. (iv) 3,744 roads/bridges/culverts damaged. (v) The property worth Rs. 657 crores lost.
*	Whole year	11.97 lakh hectares		(i) 173 human lives lost. (ii) 7049 cattleheads perished.	(i) Crop in 11.97 lakh hectares of land damaged. (ii) 1,92,525 houses damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
ARUNACHAL PRADESH					
1.	18 May	Lohit	Heavy rains	2 persons died.	Extensive damage to crop and houses reported.
2.	16-22 Jun.	Dibang Valley and Lohit	Heavy rains		Tezu and Anini cut off from rest of the country due to landslide.
3.	7 Jul.	Entire State	Heavy rains		Road communication between West Kameng, Upper Siang and West Siang, Lohit and Dibang valley completely disrupted.
4.	10 Jul.	Entire State	Heavy rains	5 persons died of which 2 due to landslide.	
5.	12 Aug.	Changlang	Heavy rains		Few houses damaged.
*	Whole year	0.04 lakh hectares		(i) 7 human lives lost. (ii) 71 cattleheads perished.	Crop in 0.04 lakh hectares of land damaged.
ASSAM					
1.	18-27 May	Dhemaji, Dibrugarh, Goalpara and Jorhat	Severe flood (Brahmaputra and its tributaries)		(i) Extensive damage to crops and houses reported. (ii) Road communication between Dhemaji and the other parts of the state disrupted.
2.	5-26 Jun.	Barpeta, Darrang, Dibrugarh, Dhemaji, Dhubri, Goalpara, Golaghat, Hailakandi, Kamrup, Jorhat, Karbi Anglong, Karimganj, Morigaon, Nagaon, Nalbari and Tinsukia	Severe flood (Brahmaputra and its tributaries)	11 persons died.	(i) 2,10,606 hectares of area with 14,53,890 population affected. (ii) Crops in 87,771 hectares damaged. (iii) 927 houses fully and 1,020 houses partially damaged. (iv) Road communication completely disrupted.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
3.	4-18 Jul.	Barpeta, Bongaigaon, Darrang, Dibrugarh, Dhemaji, Dhubri, Goalpara, Golaghat, Jorhat, Kamrup, Kokrajhar, Morigaon, Nagaon, Nalbari, North Lakhimpur, Sibsagar, Sonitpur and Tinsukia	Severe flood (Brahmaputra and its tributaries)	37 people died.	(i) 7,00,267 hectares of area with population 36,09,901 affected. (ii) 5,770 villages affected. (iii) Crop in 2,18,440 hectares of area either damaged or affected. (iv) 14,894 houses fully and 21,809 houses partially damaged.
4.	13-19 Aug.	Bongaigaon, Darrang, Dhemaji, Dhubri, Dibrugarh, Jorhat, Kamrup, Morigaon, Sibsagar and Tinsukia	Severe flood (Brahmaputra and its tributaries)	(i) 5 persons died. (ii) 216 cattleheads perished.	(i) 2,63,700 hectares of area with 9,22,769 people affected. (ii) 1,250 villages affected. (iii) Crop in 47,350 hectares damaged.
5.	1-3 Oct.	Bongaigaon, Darrang, Dhemaji, Dhubri, Dibrugarh, Kokrajhar, Morigaon, Nalbari, Sibsagar, Sonitpur and Tinsukia	Severe flood (Brahmaputra and its tributaries)		(i) 5,03,147 people in 1,34,324 hectares of area affected. (ii) 864 villages affected. (iii) 47,668 hectares of crop land submerged. (iv) 3 houses damaged.
*	Whole year	13.09 lakh hectares		(i) 63 human lives lost. (ii) 14,690 cattleheads perished.	(i) Crop in 4.15 lakh hectares of land damaged. (ii) 38,644 houses damaged.
BIHAR					
1.	Jul.(2nd week)	East Champaran, West Champaran	Flash flood (Gandak)		(i) Villagers shifted to safer places. (ii) Gandak embankment between Damodarapur and Bathna breached. (iii) Considerable damage to rabi crop reported.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
2.	Jul.(4th week)	Darbhanga, Gopalganj, Katihar, Khagaria, Purnea, Samastipur, Sitamarhi and West Champaran	Severe flood	7 persons died.	(i) 309 villages flooded. (ii) Thousands of acres of paddy crop washed away. (iii) Maize crop in 19 villages destroyed.
3.	17-31 Aug.	Darbhanga, Gopalganj, Katihar, Khagaria, Madhepura, Madhubani, Patna, Purnea, Saharsa, Samastipur, Sitamarhi and West Chanparan	Severe flood	46 persons died.	(i) 1,391 villages of 493 panchayat affected. (ii) Standing crop in 3.5 lakh hectares destroyed. (iii) Crop worth Rs. 12 crores and property worth Rs. 95 crores damaged. (iv) 8,000 houses collapsed.
4.	9-15 Oct.	Banka, Bhagalpur, East Singhbhum, and Sahebganj	Severe flood	(i) 101 persons died. (ii) 1,700 cattleheads perished.	(i) large number of villages marooned. (ii) Crop worth Rs. 0,21 crore damaged. (iii) Barhatt bridge washed away.
5.	23 Dec.	Purnea	Heavy rains		(i) Low lying areas flooded. (ii) Power/Telecommunication services disrupted. (iii) Vehicular traffic suspended.
*	Whole year	9.26 lakh hectares		(i) 528 human lives lost. (ii) 4122 cattleheads perished.	(i) Crop in 4.24 lakh hectares of land damaged. (ii) 2,97,765 houses damaged.
GUJARAT					
*	Whole year			(i) 41 human lives lost. (ii) 390 cattleheads perished.	400 houses damaged.
HARYANA					
1.	12 Jul.	Panipat	Heavy rains	3 persons died due to collapsing of wall of a factory.	

<i>S.No</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
2.	28 Jul.	Entire State	Heavy rains	4 children injured when 3 Juggies collapsed in labour colony Panchkula.	
3.	3 Aug.	Yamunanagar	Heavy rains		Crops worth lakhs of rupees destroyed.
4.	10 Aug.	Entire State	Heavy rains	One child died and 4 other injured seriously.	One and half dozen houses damaged.
5.	29 & 30 Aug.	Ambala, Karnal and Rohtak	Heavy rains	9 persons died and 3 other injured.	
6.	4 & 5 Sep.	Ambala, Bhiwani, Hisar, Kaithal, Karnal, Kurukshetra, Panipat, Rohtak and Sonipat	Severe flood	64 persons died.	(i) 6.5 lakh people in 500 villages affected. (ii) 9,000 houses damaged. (iii) Extensive damage to standing crop reported. (iv) Road communication completely disrupted. (v) Four trains cancelled due to flooding at railway tracks.
7.	9 & 10 Sep.	Bhiwani, Hisar, Jind, Kaithal, Rohtak and Sirsa	Flash flood	112 persons died and 13 other injured.	(i) 15 cities and 2,269 villages with a population of 23.86 lakhs affected. (ii) More than one lakh houses and 1,556 roads damaged. (iii) 12.18 lakh of acre crop land submerged. (iv) Major area of Rohtak submerged under 4-12 ft. of water.
*	Whole year	21.89 lakh hectares		(i) 167 human lives lost. (ii) 3206 cattleheads perished.	(i) Crop in 17.86 lakh hectares of land damaged. (ii) 2,22,078 houses damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
HIMACHAL PRADESH					
1.	15 Feb.	Hamirpur	Heavy rains	Two girls washed away in a flooded nullah near Sandhol village.	(i) Extensive damage to crops reported. (ii) Vehicular and railway traffic disrupted.
2.	5 Jul.	Entire State	Heavy rains	(i) 2 children died, due to house collapse. (ii) 6 cattleheads perished.	15 houses destroyed.
3.	9-12 Jul.	Entire State	Heavy rains	7 persons including 4 children died.	Vehicular traffic disrupted due to landslide on Kullu-Mandi highway.
4.	18 Jul.	Entire State	Heavy rains		(i) Normal life paralysed. (ii) Electric/telecommunication services disrupted.
5.	28 Jul.	Entire State	Heavy rains		(i) Normal life paralysed. (ii) Power/telecommunication/water supply completely disrupted.
6.	2 & 3 Aug.	Entire State	Heavy rains	6 persons died.	
7.	6 Aug.	Shimla	Heavy rains		(i) Normal life paralysed. (ii) Two fly overs over Ruppam river washed away.
8.	8-14 Aug.	Chamba, Kinnaur, Shimla and Solan	Severe flood	12 persons died and 7 other injured.	(i) Large number of houses washed away. (ii) Loss of property worth Rs. 30 crore reported. (iii) Extensive damage to road reported. (iv) Air services disrupted.
9.	31 Aug.	Sirmour	Heavy rains	3 persons died at Nahan.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
10.	5 Sep.	Entire state	Heavy rains	19 persons died in landslide.	(i) Several houses collapsed. (ii) Chamba district completely cut off following landslides on the Pathankot-Chamba highway.
11.	12-14 Sep.	Entire State	Severe flood	(i) 100 people feared died in a landslide at Kullu. (ii) 3,531 cattleheads perished.	(i) Thousands of acres of apple orchard damaged in Kullu. (ii) 32,000 houses damaged. (iii) Property worth Rs. 265 crore damaged. (iv) Road communication completely suspended.
*	Whole year	3.45 lakh hectares		(i) 149 human lives lost. (ii) 5628 cattleheads perished.	(i) Crop in 3.45 lakh hectares of land damaged. (ii) 12,128 houses damaged.
JAMMU AND KASHMIR					
1.	25 Jul.- 2 Aug.	Entire State	Severe flood	104 persons died.	(i) 5,000 houses fully or partially damaged. (ii) 300 km. long Srinagar-Jammu and 434 km. long Srinagar-Leh highway remained closed for consecutive 4 days.
*	Whole year	0.75 lakh hectares		(i) 167 human lives lost. (ii) 33,630 cattleheads perished.	(i) Crop in 0.41 lakh hectares of land damaged. (ii) 36,693 houses damaged.
KARNATAKA					
1.	28 Jul.	Bellary	Heavy rains	(i) 6 persons died. (ii) Many persons injured.	
*	Whole year	0.05 lakh hectares		(i) 11 human lives lost. (ii) 15 cattleheads perished.	(i) Crop in 0.05 lakh hectares of land damaged. (ii) 734 houses damaged.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
KERALA					
1.	28 Mar.	Pathanamthitta	Heavy rains		(i) One house collapsed. (ii) Extensive damage to vegetation reported.
2.	7-8 May	Kollam	Heavy rains		(i) Low lying areas submerged. (ii) Electric supply disrupted.
3.	7-9 May	(a) Ernakulam	Heavy rains	One person died and 5 other injured.	(i) Low lying areas submerged. (ii) 250 huts partially damaged.
		(b) Idukki	Heavy rains	One person died.	16 houses completely and 80 partially damaged.
		(c) Thiruvananthapuram	Heavy rains	One person died.	17 houses completely and 27 partially damaged.
4.	7-10 May	Alappuzha and Kottayam	Heavy rains	2 persons died.	(i) 8 houses damaged. (ii) Agriculture property worth Rs. 20 lakhs destroyed. (iii) 191 houses in Kottayam district damaged.
5.	7-11 May	(a) Kozhikode	Heavy rains		7 houses completely and 35 partially damaged.
		(b) Pathanamthitta	Heavy rains		(i) 2 houses completely and one house partially damaged. (ii) Extensive damaged to vegetation reported.
6.	13-17 Jun.	Ernakulam, Idukki, Kasaragode, Kollam, Kottayam, Kozhikode, Malappuram and Thiruvananthapuram	Heavy rains	2 women died.	(i) Several houses damaged. (ii) Extensive damage to paddy crop reported.
7.	29 Jun.	Kasaragode	Heavy rains		A school shed collapsed.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
8.	5-12 Jul.	Idukki, Kasaragode and Kozhikode	Heavy rains		(i) 85 houses fully and 198 houses partially damaged. (ii) Agricultural loss worth Rs. 2 crores reported.
9.	14-18 Jul.	Idukki, Kottayam and Malappuram	Heavy rains		(i) Low lying areas flooded. (ii) Several houses damaged. (iii) Vegetation/coconut trees uprooted. (iv) Vehicular traffic disrupted.
10.	21-26 Jul.	Kannur, Kasaragod and Kottayam	Heavy rains		(i) Normal life paralysed. (ii) Power supply completely disrupted.
11.	4 Aug.	Kannur	Heavy rains		(i) 200 trees uprooted. (ii) Extensive damage to vegetation reported.
12.	2 & 3 Sep.	Alappuzha, Idukki and Waynad	Heavy rains	Two boys died and one woman injured.	(i) Low lying areas flooded. (ii) Many houses collapsed. (iii) Hundreds of rubber/coconut trees uprooted. (iv) Extensive damage to vegetation reported.
13.	7 Oct.	Kozhikode and Thiruvananthapuram	Heavy rains	One person drowned.	(i) Many houses and compound walls collapsed. (ii) Hundreds of coconut/mango/jackfruit trees uprooted. (iii) Heavy damage to pepper plants reported.
14.	Oct. (3rd and 4th week)	Alappuzha, Kollam, Malappuram, Thiruvananthapuram and Waynad	Heavy rains		(i) Many houses damaged. (ii) Extensive damage to plantations reported.
15.	18-19 Oct.	Idukki and Thiruvananthapuram	Heavy rains		(i) 2 houses collapsed. (ii) Loss of agricultural property due to landslide reported.
*	Whole year	0.78 lakh hectares		74 human lives lost.	(i) Crop in 0.12 lakh hectares of land damaged. (ii) 4318 houses damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
MADHYA PRADESH					
1.	25-28 Jul.	Entire State	Heavy rains	40 persons died.	
2.	8 Aug.	Indore and Morena	Heavy rains		(i) Low lying areas flooded. (ii) Virpura dam breached. (iii) Road link between Gwalior and Shirpur washed away. (iv) Railway lines between Urai and Rangapur washed away.
3.	19 Aug.	Vidisha	Heavy rains		Railway traffic completely disrupted due to flooding of railway lines.
4.	23 Aug.	Bhopal	Heavy rains		(i) Low lying areas flooded. (ii) Several houses and huts damaged. (iii) Several bridges washed away.
5.	3 Sep.	Guna and Indore	Heavy rains		Road communication between Bhopal-Nagpur, Bhopal-Indore, Bhopal-Guna completely suspended.
*	Whole year			58 human lives lost.	
MAHARASHTRA					
1.	19 Mar.	Vidarbha region	Heavy rains		50% crops damaged.
2.	25 Mar.	Buldhana	Heavy rains		Extensive damage to crops reported.
3.	27 Mar.	Vidarbha region	Heavy rains	Dozens of cattleheads perished.	
4.	13 May	Aurangabad	Heavy rains	A 10 year old girl and a woman died and 4 other injured in Juna Bazar area.	

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
5.	29 Jun.	Yavatmal	Heavy rains		Several huts washed away.
6.	8 Jul.	Nasik	Heavy rains	3 persons drowned and one woman injured.	
7.	19 Jul.	Pune	Heavy rains		(i) Normal life paralysed. (ii) Railway services between Pune-Mumbai affected. (iii) Number of air flights between Pune-Mumbai cancelled/delayed.
8.	23 Jul.	Thane	Heavy rains	6 persons including 5 women drowned in Wada taluka.	
9.	1 Aug.	Mumbai	Heavy rains	2 persons including one woman injured.	(i) Low lying areas submerged. (ii) Vehicular traffic completely disrupted. (iii) Local train services completely disrupted due to flooding of railway tracks. (iv) Several long distance trains terminated at Karjat.
10.	31 Aug.	Aurangabad	Heavy rains	5 persons injured.	(i) 250 houses fully/partially damaged. (ii) More than 500 people shifted to safer places.
11.	1 Sep.	(a) Kolhapur	Heavy rains	22 year old girl died and 2 other injured in a house collapse at Safala village in Palghar taluka.	(i) Normal life paralysed. (ii) Vehicular traffic disrupted.
		(b) Nanded and Yavatmal	Heavy rains	6 persons died.	Extensive damage to property reported.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
12.	1 & 2 Sep.	Mumbai and Thane	Heavy rains	5 persons including 2 children drowned.	(i) Low lying areas flooded. (ii) Normal life paralysed. (iii) Local train services disrupted. (iv) Long distance trains delayed. (v) The basement of General Post Office near C.S. Terminus flood and 500 bundles of mail destroyed. (vi) Mumbai-Pune Express train/Air line services delayed.
13.	17 Sep.	Akola	Heavy rains	One person died at Washim village.	
14.	27 Sep.	Pune	Heavy rains		(i) Low lying areas flooded. (ii) Power supply suspended.
*	Whole year	0.09 lakh hectares		(i) 40 human lives lost. (ii) 84 cattleheads perished.	(i) Crop in 0.03 lakh hectares of land damaged. (ii) 3534 houses damaged.
MEGHALAYA					
1.	19 Jun.	Meghalaya (Entire State)	Flash flood	12 persons died.	
*	Whole year	0.11 lakh hectares		6 human lives lost.	(i) Crop in 0.11 lakh hectares of land damaged. (ii) 21 houses damaged.
MIZORAM					
1.	18 May	Mizoram (Entire State)	Heavy rains	25 persons died and several other missing due to landslide.	400 houses razed to ground.
*	Whole year	1.5 lakh hectares		(i) 59 human lives lost. (ii) 25 cattleheads perished.	Crop in 1.5 lakh hectares of land damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
ORISSA					
1.	8-10 May	Orissa (Entire State)	Severe flood	8 persons died due to house collapse.	(i) Many people rendered homeless. (ii) Hundreds of mud houses razed to the ground. (iii) In Ganjam, 200 villages inundated and thousands of people marooned. (iv) Road link between all southern districts disrupted due to the breaches on National highway at Hama and Ichhapur at Bhubaneswar. (v) Extensive damage to crops reported.
2.	14-16 May	21 districts including Balasore, Boudh, Cuttack, Dhankanal, Ganjam, Jagatsinghpur, Jaipur, Kendrapara, Keonjhar, Khurda, Koraput, Nawarangpur, Nayagarh and Puri	Severe flood	39 persons died and 4 other missing	(i) Ganjam district worst affected. (ii) 50.24 lakh people affected. (iii) Crops in 2.24 lakhs of hectares damaged (iv) 1,135 schools and public building and 77,000 private houses damaged. (v) 592 breaches occurred in different rivers and canals. (vi) Damage to crops estimated to worth Rs. 88.39 crores.
3.	18-23 Jul.	Bolangir and Koraput	Heavy rains		(i) 90 thatched houses damaged. (ii) Several roads and bridges washed away disrupting road communication. (iii) Number of irrigation tanks breached. (iv) Vast areas of agricultural crops flooded.
4.	2 Aug.	Khurda	Heavy rains		A bridge over Khurda Bhograra road collapsed.
5.	8-10 Aug.	Keonjhar	Severe flood (Baitarani)		(i) 104 villages under 12 Gram Panchayat in 3 blocks of Anandpur affected. (ii) Extensive damage to crop reported. (iii) Embankments of river Baitarani breached at Samna, Habakswar, Agira, Salabani and Jamdhira.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
6.	15 & 16 Aug.	Bhadrak	Severe flood (Baitarani)		(i) 2.5 lakh people in 4 blocks affected. (ii) Thousands of hectares of cropland inundated. (iii) 3,000 houses in 187 villages collapsed. (iv) Crop in 18,000 hectares of area damaged. (v) 10 wooden bridges washed away. (vi) 20 irrigation tanks breached.
7.	16 & 17 Aug.	Jajpur	Severe flood		(i) 200 villages affected. (ii) 50,000 hectares of Agricultural land inundated.
8.	7-10 Oct.	Cuttack	Heavy rains		(i) Low lying areas submerged. (ii) Extensive damage to Rabi crop reported. (iii) Several thatched houses razed to ground.
9.	7-11 Oct.	Kendrapara	Heavy rains		(i) Many low lying areas inundated. (ii) Rainwater entered in many houses.
10.	8-14 Oct.	Gajapati	Heavy rains		(i) Low lying areas inundated. (ii) Cropland submerged.
11.	8-17 Oct.	Ganjam	Heavy rains		(i) Paddy crop in 786 hectares of cropland submerged. (ii) More than 1,000 mud houses collapsed. (iii) The crop in 395 hectares of area damaged.
*	Whole year	15.76 lakh hectares		(i) 71 human lives lost. (ii) 372 cattleheads perished.	(i) Crop in 15.02 lakh hectares of land damaged. (ii) 1,85,225 houses damaged.
PUNJAB					
1.	6 & 7 Aug.	Amritsar	Heavy rains	10 persons died.	
2.	8 Aug.	Firozpur	Heavy rains	2 persons died.	

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
3.	10 Aug.	Faridkot	Heavy rains	One child died and a woman injured due to house collapse.	
4.	12 Aug.	Ferozepur	Heavy rains	One person died due to wall collapse.	
5.	18 Aug.	Muktsar	Heavy rains		(i) Cotton worth Rs. 200 crore destroyed. (ii) Several villages flooded.
6.	22 Aug.	Ferozepur	Heavy rains	One person died in village Khose.	
7.	30 & 31 Aug.	Ferozepur and Gurdaspur	Heavy rains	5 persons died.	
8.	5 Sep.	Jalandhar	Heavy rains	3 persons died.	(i) Normal life completely paralysed. (ii) Thousands of families rendered homeless.
9.	9 Sep.	Amritsar, Ferozepur and Kapurthala	Heavy rains	7 persons died.	(i) Large number of villages marooned. (ii) Extensive damage to property and crop reported.
10.	12 & 13 Sep.	Faridkot, Gurdaspur and Kapurthala	Flash flood	20 persons died.	(i) 688 villages affected. (ii) In Faridkot district, 455 villages affected, crop worth Rs. 170 crore damaged and property worth Rs. 250 crore lost. (iii) Fencing wall on the Indo-Pak border damaged at many places.
*	Whole year	2.53 lakh hectares		(i) 126 human lives lost. (ii) 1574 cattleheads perished.	(i) Crop in 2.53 lakh hectares of land damaged. (ii) 1,45,452 houses damaged.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
RAJASTHAN					
1.	10 Jul.	Kota	Heavy rains	One child drowned.	
2.	15 Jul.	Alwar	Heavy rains	5 children died and 13 injured due to house collapse.	
3.	16 Jul.	Barmer	Heavy rains	22 persons died when a bus overturned in a overflowing nallah.	
4.	18 Jul.	(a) Ajmer and Alwar	Heavy rains	11 persons died, 4 in Ajmer and 7 in Alwar.	
		(b) Banswara	Heavy rains	3 persons drowned in a overflowing nallah.	
5.	19 Jul.	Chittorgarh, Jodhpur, Nagaur, Sikar and Udaipur	Heavy rains	5 person died.	23 houses collapsed in Jodhpur.
6.	20 Jul.	Barmer	Heavy rains	3 persons drowned in Kunji river.	
7.	28 Jul.	Jalore	Heavy rains	2 persons drowned in a overflowing nallah.	
8.	Aug. (1st week)	Bharatpur, Jaipur and Sawai Madhopur	Heavy rains		(i) Hundreds of villages inundated. (ii) Rail and road traffic disrupted.
9.	6 Aug.	Ajmer	Heavy rains	4 persons drowned.	
10.	9-13 Aug.	Alwar, Bharatpur and Nagaur	Severe flood	10 persons died.	(i) 150 villages affected. (ii) Extensive damage to crops reported.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
11.	19 Aug.	Jaipur	Heavy rains	5 persons including one woman died and 3 others injured due to landslide near Aravali hills.	
12.	20 & 21 Aug.	Bhilwara and Kota	Heavy rains	9 persons died.	200 yards of railway line washed away.
13.	28-30 Aug.	Alwar and Jaipur	Heavy rains	4 persons died.	Extensive damage to property and crop reported.
14.	4 & 5 Sep.	Ajmer and Alwar	Heavy rains	10 persons died.	(i) Twelve villages in Alwar district marooned. (ii) 7 dams breached.
15.	8 Sep.	Bharatpur	Heavy rains	One person died.	One dam breached.
16.	10 Sep.	Jodhpur	Heavy rains		12 houses damaged.
*	Whole year	5.90 lakh hectares		(i) 122 human lives lost. (ii) 1500 cattleheads perished.	(i) Crop in 5.90 lakh hectares of land damaged. (ii) 1,32,000 houses damaged.
SIKKIM					
1.	6 Sep.	Gangtok	Heavy rains	24 persons died.	2 houses completely and 6 wooden houses partially damaged at Decrate Bazar.
TAMIL NADU					
1.	6 May	Kanniyakumari and Chennai	Heavy rains	12 persons died.	(i) Low lying areas flooded. (ii) Train services disrupted. (iii) Power services disrupted.
2.	7-11 Sep.	Kancheepuram	Heavy rains		(i) Several trees uprooted. (ii) Vehicular traffic disrupted.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
3.	2-8 Nov.	Nagapattinam and Thanjavur	Heavy rains	14 persons died.	(i) Many low lying areas flooded. (ii) Samba crop in 4,500 hectares of land damaged. (iii) Vehicular traffic completely disrupted.
*	Whole year			18 human lives lost.	705 houses damaged.
TRIPURA					
1.	8 Jun.	Tripura (Entire State)	Heavy rains	One person died.	(i) Several houses damaged. (ii) Extensive damage to crop reported.
2.	18 Jun.	Tripura	Heavy rains	One person died.	Extensive damage to crop.
3.	5 Jul.	Tripura	Flash flood	One person died.	Extensive damage to houses and crops reported.
UTTAR PRADESH					
1.	14 Aug.	Chamoli and Nainital	Heavy rains	10 persons died and 3 other injured.	Large number of houses washed away.
2.	29 Aug.	Meerut, Muzaffarnagar and Saharanpur	Heavy rains	5 persons including 4 children died and 20 seriously injured in house collapse.	(i) Several kutcha houses collapsed. (ii) Muzaffarnagar-Rishikesh highway blocked due to flooding.
3.	31 Aug.	Agra	Heavy rains	11 persons including 3 women drowned when their boat capsized in Yamuna river.	
4.	Aug.(4th week)- Sep. (2nd week)	Entire State	Severe flood (Ganga and its tributaries)	199 persons died.	(i) Ballia, Kheri, Philibhit, Mathura and Gazipur worst affects districts. (ii) 5,000 villages of 25 lakh population affected.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
5.	3 Sep.	Meerut	Heavy rains	About 40 people feared died.	One 5 storied hotel (Shere Punjab) razed to ground.
6.	9 Sep.	Hardoi	Heavy rains	3 children died due to wall collapsed.	
7.	19 Sep.	Varanasi	Heavy rains	14 people died.	Several trains cancelled due to flooding of railway lines.
*	Whole year	12.79 lakh hectares		(i) 357 human lives lost. (ii) 1259 cattleheads perished.	(i) Crop in 7.99 lakh hectares of land damaged. (ii) 88,455 houses damaged.
WEST BENGAL					
1.	11-13 May	Medinipur	Flash flood		(i) Vast areas of 13 coastal blocks and 2 municipal areas flooded. (ii) 156 mud houses collapsed. (iii) 160 families rendered homeless.
2.	14 & 15 May	South 24 Parganas	Heavy rains		(i) 9 blocks in Sundarbans and Sagar area affected. (ii) 60,000 people rendered homeless. (iii) 20,000 houses damaged.
3.	14-16 May	North 24 Parganas	Flash flood		(i) 15,000 families in Hingalganj, Sedeshkhali, Raimangal and Hasnabad marooned. (ii) 1,000 people rendered homeless.
4.	16 May	Calcutta	Heavy rains	One person died and 20 other injured when a part of the overbridge No. 4 in Parkcircus area collapse.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
5.	15 Jun.	Coochbehar, Jalpaiguri	Heavy rains		(i) About 1 lakh people affected. (ii) 12,000 people shifted to safer places.
6.	20 Jun.	Calcutta and neighbourhood	Heavy rains		(i) Low lying areas of south and north Calcutta flooded. (ii) 6,000 telephone lines became unserviceable. (iii) Tram services suspended. (iv) Train services from Sealdah-Howrah suspended.
7.	25 Jun.	Calcutta	Heavy rains		(i) Low lying areas of south and central Calcutta water lodged. (ii) Tram services disrupted.
8.	29 Jun.	Medinipur	Heavy rains	(i) 4 girls and a boy died due to collapse of a mud house. (ii) One person injured at Jayaldanga village under Jhargram Police Station.	
9.	5 Jul.	Nadia	Heavy rains	One person injured due to house collapse in Nadia.	(i) Many low lying areas of Krishnanagar, Santipur and Ranaghat flooded. (ii) Power supply completely disrupted. (iii) Train/bus services suspended.
10.	5-11 Jul.	Coochbehar, Darjeeling and Jalpaiguri	Heavy rains		(i) Hundreds of families rendered homeless. (ii) Cooch Behar and Jalpaiguri completely cut off from the rest of the country as the road/railway communication suspended.
11.	10 Jul.	Dakshin Dinajpur	Heavy rains		About 11,000 people at Haldarpara, Aiotri colony and A.K. Gopalan colony of Balurghat city rendered homeless.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
12.	16 Jul.	Calcutta	Heavy rains		(i) Low lying areas of south and central Calcutta flooded. (ii) Tram/bus services in south Calcutta suspended.
13.	3 Aug.	Calcutta and neighbourhood	Heavy rains	One person died due to house collapse.	(i) Normal life paralysed. (ii) Vehicular traffic worst hit. (iii) Train services on different sections of Sealdah and Howrah suspended.
14.	12 Aug.	Dakshin Dinajpur	Heavy rains		(i) Several mud houses collapsed. (ii) Large number of people shifted to safer places.
15.	21 Aug.	Medinipur	Heavy rains	One woman and her 2 years old son died due to house collapse.	
16.	3 Sep.	South 24 Parganas	Heavy rains	3 persons injured at Mandirghat area under Kakdip Police Station.	
17.	4 Sep.	Medinipur	Heavy rains	2 persons missing.	3 fishing trawlers carrying 24 fishermen capsized at Digha.
18.	5 Sep.	(a) Birbhum	Heavy rains		One boat carrying 30 persons capsized.
		(b) Calcutta	Heavy rains		(i) Two houses partly collapsed. (ii) Vehicular traffic disrupted. (iii) Suburban train services disrupted. (iv) Circular railway services suspended. (v) Many long distance trains delayed.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
19.	10 Sep.	Medinipur	Flash flood (Kosi)	3 persons died.	(i) 3,75,000 people affected. (ii) 12,000 houses damaged. (iii) Embankment of a river at Toplarkhal in Panskara breached. (iv) National highway No. 6 washed away causing Ghatal subdivision completely cut off from rest of the district.
20.	12 & 13 Sep.	Malda	Heavy rains		(i) Several houses swept away. (ii) Many single storeyed pucca buildings damaged.
21.	16 Sep.	(a) Calcutta	Heavy rains	One person injured due to house collapse.	(i) Many low lying areas flooded. (ii) Train services on circular railway disrupted.
		(b) Malda	Heavy rains	4 children died and 2 other injured due to house collapse at Padmahar village under Gajol Police Station.	
22.	17-18 Sep.	South 24 Parganas	Heavy rains	2 persons missing.	Three fishing trawlers capsized.
23.	26 Sep.	(a) Calcutta	Heavy rains	One girl died and 2 other injured.	(i) Low lying areas flooded. (ii) Vehicular traffic and tram services completely disrupted.
		(b) Howrah, Medinipur and South 24 Parganas	Heavy rains		(i) 1,100 houses damaged in Medinipur. (ii) Hundreds of houses collapsed at Akhayanagar colony in Kakdipara in south 24 Parganas. (iii) 2 houses collapsed at Bally and Shibpur area in Howrah.
24.	26-29 Sep.	Uttar and Dakshin Dinajpur	Heavy rains	18 persons died.	600 houses damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
25.	27 Sep.	(a) Hooghly	Heavy rains		(i) One lakh people in 200 villages in Khanakul area marooned. (ii) Several mud houses collapsed.
		(b) Purulia	Heavy rains	2 persons died and one injured due to wall collapse at Jagla village.	
26.	27 & 28 Sep.	(a) Birbhum	Heavy rains	One person drowned at Tilpara.	301 families were shifted to safer places at Raninagar and Makrampur.
		(b) Malda	Heavy rains	9 persons died in house collapse.	70,000 people affected.
27	8 Oct.	Howrah	Heavy rains		(i) Low lying areas flooded. (ii) Normal life paralysed. (iii) Train and bus services disrupted.
28.	8 & 9 Oct.	Medinipur	Heavy rains		(i) 60 huts damaged at Purba Mukundpur in Digha. (ii) Debra and Ghatal submerged under waist deep water.
29.	9 Nov.	(a) Calcutta	Heavy rains		(i) Normal life completely paralysed. (ii) Different parts of north Calcutta submerged. (iii) City traffic collapsed as major through faces remained under several feet of water. (iv) Metro railway services badly damaged.
		(b) Hooghly	Heavy rains	One person died and 2 other injured due to house collapse.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
30.	10 Nov.	Calcutta	Heavy rains	One woman and a child died.	
*	Whole year	4.47 lakh hectares		(i) 239 human lives lost. (ii) 4181 cattleheads perished.	(i) Crop in 4.47 lakh hectares of land damaged. (ii) 4,29,684 houses damaged.

UNION TERRITORIES

CHANDIGARH

1.	3 Aug.	Chandigarh	Heavy rains		Water/electricity/communication systems disrupted.
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DELHI

1.	4 Sep.	Delhi	Heavy rains		(i) Several houses submerged. (ii) Several trains either cancelled or delayed.
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2.	6 & 7 Sep.	Delhi	Heavy rains	One woman and a child died.	(i) Low lying areas in northwest Delhi flooded. (ii) Large number of people shifted to safer place.
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3.	9 Sep.	Delhi	Heavy rains	One labour died due to falling of roof of three storeyed factory.	
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*	Whole year			23,500 cattleheads perished.	4,04,000 houses damaged.
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* Information received from the Ministry of Agriculture.

<i>S.N.</i>	<i>Date/period</i>	<i>Area of Formation/ Dissipation</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
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TABLE -XII : CYCLONIC STORM

BAY CYCLONES

					In Andhra Pradesh
1.	7-10 Nov.	<p>FORMATION : At Lat.13.5°N, and Long. 87.5°E at 0300 UTC on 8 Nov.</p> <p>LANDFALL : South of Gopalpur between 0400 to 0500 UTC of 9 Nov.</p> <p>DISSIPATION : Over north Bihar plains by 10th evening</p>	Severe Cyclonic Storm with a core of hurricane winds	28 persons died.	<p>(i) Districts affected Srikakulam, Vizianagaram and Visakhapatnam.</p> <p>(ii) 292 houses fully and 3,043 partially damaged.</p> <p>(iii) 2,41,631 hectares of crop area affected.</p> <p>(iv) Total loss estimated to worth Rs. 9,168.27 lakhs.</p> <p>(v) 15 boats sunk and 66 boats capsized in the coastal water of north Andhra Pradesh coast.</p>
					In Orissa
				<p>(i) 19 people died.</p> <p>(ii) 113 fishermen missing</p> <p>(iii) 20 people seriously injured in Ganjam.</p>	<p>(i) Districts affected - Balasore, Cuttak, Gajapati and Ganjam.</p> <p>(ii) Paddy and other crops worth Rs. 453/- crores destroyed.</p> <p>(iii) Bettle Vines in 3,200 hectares of land damaged.</p> <p>(iv) Ganjam and Gajapati districts remained without power and water supply for three consecutive days.</p> <p>(v) Property worth Rs. 700 crores damaged.</p> <p>(vi) In Balasore district, 6.71 lakh people in 12 blocks affected. 1,62,810 hectares of cultivated land affected. 319 school buildings and 2405 houses destroyed.</p> <p>(vii) 2,500 boats damaged.</p>
					In West Bengal
				<p>(i) 4 persons died.</p> <p>(ii) 132 persons reported missing.</p>	<p>(i) Medinipur and South 24 Parganas districts affected.</p> <p>(ii) 300 houses damaged.</p> <p>(iii) 7 trawlers capsized.</p> <p>(iv) Large areas of paddy and other crops damaged.</p>