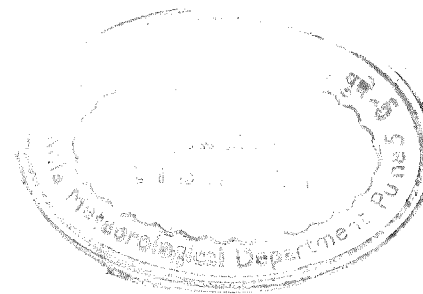


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INDIA METEOROLOGICAL DEPARTMENT
DISASTROUS WEATHER EVENTS, 1992



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

Cover Photo : Damage of Banana plantation due to Bay Cyclone in Tamil Nadu during 11th to 17th November 1992.

Courtesy : The Hindu

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DISASTROUS WEATHER EVENTS OF 1992

The most striking disastrous weather events of 1992 were the following :

- i) A severe cyclonic storm occurred in the Bay of Bengal during 11-17th November and took a toll of 238 human lives in Tamil Nadu and 52 human lives in Kerala. 22,000 families in Kerala rendered homeless. The loss of property worth Rs. 530 crores were reported in Tamil Nadu alone.
- ii) Severe drought conditions prevailed over entire Maharashtra State except Konkan during March to June. The total loss worth Rs. 2,823 crores reported. (This could be mainly due to deficient monsoon and post monsoon rain of 1991).
- iii) Severe flood conditions prevailed over large areas of Andhra Pradesh, Assam, Gujarat, Jammu and Kashmir, Orissa and Uttar Pradesh. Heavy rains and flood took a toll of 1,225 human lives, out of which, 350 were from Jammu and Kashmir alone.
- iv) Severe cold wave conditions prevailed over Bihar State during 1st and 2nd week of January, Which took a toll of 250 human lives. Severe heat wave conditions prevailed over Rajasthan during May and June, taking a toll of 114 human lives.

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>
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TABLE - 1 : SNOWFALL

CRITERIA

Moderate : 7.6 to 34.9 cm in 24 hrs.

Heavy : ≥ 35.0 cm in 24 hrs.

1.	6 & 7 Jan.	Srinagar	Heavy		(i) Normal life in tourist resort of Gulmarg, Khilanmarg, Sonamarg and holy caves shrine of Amarnath, paralysed. (ii) 3 to 4 ft. of snow recorded in these places.
2.	11 Jan.	Himachal Pradesh (Entire State)	Heavy		(i) Shimla cut-off from rest of the state. (ii) Electricity/water supply disrupted in Shimla. (iii) Vehicular traffic on Hindustan-Tibet highway suspended. (iv) Vayudoot flight between Delhi-Chandigarh-Kullu route suspended.
3.	12 Jan.	Chamba, Kangra and Kullu	Heavy		320 km. long Hindustan-Tibet national highway remained suspended for vehicular traffic.
4.	29 Jan.	Himachal Pradesh (Entire State)	Heavy	One person died.	(i) Normal life completely paralysed. (ii) Vehicular traffic on Kullu-Manali and Hindustan-Tibet national highway suspended. (iii) Vayudoot flight on Delhi-Chandigarh-Kullu route suspended.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
5.	24-31 Mar.	Himachal Pradesh (Entire State)	Heavy	9 persons including 5 children killed in an avalanche at Puri village on Sansari- Killar-Thirot road.	(i) Shimla cut-off from rest of the state. (ii) Lahul valley covered under 30-80 cm of snow.

TABLE - II : COLD WAVE

CRITERIA

(A) Where; Normal minimum temperature is 10°C or more.

Moderate cold wave : Night temperature 5° to 6°C below normal.

Severe cold wave : Night temperature 7°C or more below normal.

(B) Where; Normal minimum temperature is less than 10°C.

Cold wave : Night temperature 3° to 4°C below normal.

Severe cold wave : Night temperature 5°C or more below normal.

1.	1 & 2 Jan.	Calcutta	Severe cold wave (A)	16 persons died.	
2.	2 Jan.	(a) Medinipur	Severe cold wave (A)	5 persons died.	Minimum temperature of 5.5°C recorded.
		(b) West Dinajpur	Severe cold wave (A)	2 persons died at Gangarampur village.	Minimum temperature of 5.9°C recorded.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
3.	Jan. (1st week)	(a) Rajasthan (Entire State)	Severe cold wave (Both A and B as appropriate)	4 persons died.	
		(b) Uttar Pradesh (Some parts)	Severe cold wave (Both A and B as appropriate)	17 persons died.	
4.	6 Jan.	Rohtak	Severe cold wave (B)	4 persons died.	
5.	Jan. (1st and 2nd week)	Bihar (Entire State)	Severe cold wave (Both A and B as appropriate)	(i) 250 persons died. (ii) 300 cattleheads perished.	Rabi and potato crop badly damaged.
6.	12 Jan.	Shimla	Severe cold wave (B)		(i) Normal life completely paralysed. (ii) Shimla recorded minimum temperature of -5°C. (iii) Water supply at several places disrupted.
7.	22 Jan.	Dholpur	Severe cold wave (B)	One person died.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
8.	2 Dec.	Jodhpur	Severe cold wave (B)	One person died.	
9.	4 Dec.	Ganganagar	Severe cold wave (B)	2 persons died.	
10.	17 Dec.	Jaipur	Severe cold wave (B)	One person died.	

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.	May (2nd week)	Banaskantha	Severe heat wave (B)	12 persons died.
2.	12-15 May	Rajasthan (Entire State)	Severe heat wave (Both A and B as appropriate)	3 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>
3.	25-27 May	Rajasthan (Entire State)	Severe heat wave (Both A and B as appropriate)	(i) 4 persons died. (ii) Thousands of cattleheads/birds perished.	Bikaner recorded 46.5°C as maximum temperature.
4.	4 Jun.	Rajasthan (Entire State)	Severe heat wave (Both A and B as appropriate)	One person died in Jaipur.	Acute shortage of drinking water reported.
5.	12-22 Jun.	Rajasthan (Entire State)	Severe heat wave (Both A and B as appropriate)	94 persons died.	Acute shortage of drinking water reported.

TABLE - IV : DROUGHT

ASSAM					
1.	May-Jul.	Marigaon			Sali crop at all revenue circles badly damaged.
GUJARAT					
1.	Jan.-May	Banaskantha, Jamnagar, Kutch and Surendranagar			(i) 7,000 out of 18,000 villages affected. (ii) 70,000 cattleheads shifted to south Gujarat from the drought hit area. (iii) Acute shortage of drinking water reported.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
MADHYA PRADESH					
1.	Feb.-May	28 out of 45 districts		5 children died in Raisen district.	(i) One fourth of the state population affected. (ii) 95 tehsils in 28 districts affected. (iii) Acute shortage of drinking water in 11 districts reported.
MAHARASHTRA					
1.	Mar.-Jun.	Entire State (Except Konkan)		Several cattleheads perished.	(i) Worst drought in last two decades. 1.05 crore people affected. 70 lakh people from rural area and 30 lakh people from urban area affected. 68 lakhs cattleheads affected. (ii) Marathwada and Vidarbha region worst affected. Aurangabad, Beed, Jalna, Latur, Nanded, Osmanabad, Parbhani and Solapur districts worst affected. (iii) Production of the kharif crop including Hybrid Jowar, Bajra, Moong, Groundnut and Sunflower dropped to 15 percent. (iv) In Latur district, 22 percent of total 1,57,800 hectares of cultivated land damaged for rabi crop. (v) Sugar production dropped by 30 percent while 14 sugar factories remained closed. (vi) 1.40 lakh acres of orange orchard affected. (vii) Foodgrain and oilseed production dropped by 73.34 lakh tonnes. (viii) Loss of kharif crop estimated to be Rs. 1,986 crore while the loss of rabi crop estimated to be Rs. 837 crore. (Due to negative departure of monsoon rain and deficient post monsoon rainfall during 1991) (ix) Acute shortage of fodder reported. Price of fodder risen from Rs. 200 per 100 pendies to Rs. 400/-.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
		ORISSA			
1.	Sept.-Oct.	Bolangir			Over 50 percent of paddy and other crops affected.
		RAJASTHAN			
1.	Feb.-Jul.	Banswara, Barmer, Bikaner, Churu, Dungarpur, Jaisalmer, Jodhpur and Udaipur			(i) 5,594 villages affected. (ii) Acute shortage of drinking water reported.

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.	2 May	Jorhat	Severe		(i) Many dwellings including building of Diflu L.P. School damaged. (ii) Large number of trees uprooted.
2.	6 May	(a) Kamrup	Severe		(i) Building of Patidarang College and Tulamati L.P. School damaged. (ii) 20 dwellings damaged. (iii) Large number of trees uprooted.
		(b) Nagaon	Severe		Many school buildings and dwellings damaged at Bejia.
3.	9 May	Kamrup	Severe		Several school buildings and dwellings at Gashbari, Bardangiri, Kuchi and Sepakuchi villages damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
4.	15 Oct.	Dhubri	Severe		(i) Several dwellings damaged. (ii) Large number of trees/electric/telephone poles uprooted snapping communication and power supply.

TABLE - VI : GALE

CRITERIA

Strong : Wind speed \geq 75 kmph.

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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.

1.	19 May	Kota	Moderate		(i) Several signboards/electric poles uprooted. (ii) Telephone wires snapped.
2.	23 May	Nagpur	Heavy	One person died due to collapse of temple pillar.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
3.	24 May	Nagpur	Heavy		Several trees/electric poles uprooted disrupting complete power supply.
4.	26 & 27 May	Chhindwara	Heavy	One person seriously injured.	Several trees/electric and telephone poles uprooted.
5.	11 Jun.	Alwar	Heavy		One house collapsed in Duggi village.
6.	15 Jun.	Jodhpur	Moderate		Hundreds of families reported homeless.
7.	26 Jun.	West Rajasthan	Moderate		Railway and road transport disrupted.

TABLE - VIII : LIGHTNING

1.	23 Apr.	Medinipur		5 school children died and 2 others seriously injured at Panskura.
2.	2 May	South 24 Pargnas		One person died and 17 others injured at Taktipur village in Kakdeep area.
3.	4 May	North 24 Pargnas		One person died and 3 others injured at Barasat.
4.	21 May	Haora		2 persons electrocuted.
5.	25 May	Medinipur		One person died and 2 others seriously injured at a locality under Egra Police Station.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
6.	10 Jun.	Nanded		2 boys electrocuted at Wazar village of Degloor tehsil.	
7.	13 Jun.	Nagpur		One person died while working in the field at Kiranpur in Ramtek tehsil.	
8.	16 Jul.	Medinipur		2 members of a family including a woman died and 2 other women injured at Kalindi village under Ramnagar Police Station.	
9.	17 Jul.	Hooghly			Earthing wire of a local telephone exchange office burnt causing 200 lines unserviceable at Chandannagar.
10.	18 Jul.	Nagpur		2 persons died at Dhanoli village in Hingana tehsil.	
11.	23-25 Jul.	Cuttack and Ganjam		6 persons died.	
12.	30 Jul.	Haora		8 children received severe shock in Antala.	
13.	24 Sept.	Medinipur		(i) One child died. (ii) 2 cattleheads perished.	
14.	30 Sept.	Medinipur		3 persons died and 3 others seriously injured at Siara village.	
15.	13 Oct.	Birbhum		3 persons died and 15 others injured.	

<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 - 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 ≥ 75 kmph.

1.	1 Feb.	Guwahati	Severe		(i) Number of houses damaged. (ii) Large number of trees uprooted disrupting vehicular traffic. (iii) Municipal market at Paltan bazar gutted due to fire.
2.	24 Mar.	(a) South 24 Pargnas	Severe	4 members of a family died due to house collapse at a locality under Usti Police Station.	
		(b) West Dinajpur	Severe		(i) Several houses damaged. (ii) Poultry and foodgrain products damaged.
3.	31 Mar.	Raipur	Severe (120 kmph)	2 persons died.	Hundreds of houses/trees/electric poles damaged.
4.	1 Apr.	Dibrugarh	Severe		Considerable damage to houses including concrete building reported.
5.	2 Apr.	Nagpur	Severe	2 persons at Lonara and one person at Sayagaon died.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
6.	15 Apr.	West Khasi Hills	Severe	3 persons including 2 boys died and 15 others seriously injured.	16 houses completely destroyed and 22 severely damaged.
7.	16 Apr.	(a) Cachar, Hailakandi and Karimganj	Severe	14 persons injured in various house collapse.	(i) Several houses damaged. (ii) Large number of trees/electric poles uprooted.
		(b) Tinsukia	Severe	One child died.	(i) 7 houses damaged. (ii) Large number of trees/telegraph poles uprooted disrupting vehicular traffic on national highway No. 52.
8.	18 Apr.	Kamrup	Severe		132 kV transmission line at Baranagar damaged.
9.	19 Apr.	(a) Cachar, Hailakandi and Karimganj	Severe	A 10-year old boy died.	(i) 40 percent of thatched houses in Senai, Dhebi, Udherbund and Kumbha blocks razed to ground. (ii) Roof tops of number of factories blown off.
		(b) Guwahati	Severe (130 kmph)	4 persons died and several other injured.	(i) Several houses razed to ground. (ii) Roof tops of several houses blown off. (iii) C.I. sheets blown off as far as 300 metres away. (iv) Large number of trees/electric and telephone poles uprooted.
10.	22 Apr.	Nagaon	Severe (140 kmph)	21 persons died and 170 persons injured.	(i) One lakh people in 452 villages affected. (ii) 186 educational institutions damaged. (iii) Large number of trees/telephone and electric poles uprooted disrupting vehicular traffic on national highway No. 36 and 37. (iv) In Sanaguri area, extra high voltage grid damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
11.	24 Apr.	(a) Golaghat	Severe	5 persons seriously injured.	(i) About 100 families rendered homeless. (ii) Extensive damage to number of school buildings reported.
		(b) Manipur (Entire State)	Severe	Several persons injured.	(i) Over one thousand houses and other structures damaged. (ii) Large number of trees/telephone and electric poles uprooted disrupting vehicular traffic.
12.	1 May	Calcutta	Moderate (48 kmph)	2 persons died.	
13.	2 May	(a) Balasore and Cuttack	Severe	5 persons died and many other injured.	Extensive damage to private and public property reported.
		(b) Medinipur	Moderate		132 kV electric tower between Egra and Hijli uprooted disrupting power supply.
14.	4 May	Balasore and Cuttack	Severe	9 persons died and 10 other injured.	
15.	6 May	Calcutta, Medinipur and South 24 Pargnas	Moderate	(i) One labour died at Kashipur. (ii) 4 persons including one child injured due to collapse of a chimney of Ganji mill at Beliaghata.	Vast areas in Medinipur plunged into darkness due to snapping of electric wires.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
16.	12 May	Barpeta	Severe		(i) Science laboratory and classroom of Baushi Banikanta college completely damaged. (ii) Asbestos and the C.I. sheets of several buildings either damaged or blown off.
17.	14 May	Bardhaman and Purulia	Moderate		Large number of transmission towers collapsed leading to widespread disruption in power supply.
18.	15 May	Gaya and Patna	Severe	One person died and many other injured due to house collapse.	
19.	16 May	Birbhum	Severe (100 kmph)	5 persons died and 10 others injured.	(i) Several houses including school building and hostel damaged. (ii) Roof tops of several thatched houses blown off. (iii) Boro crop badly affected. (iv) 11 transmission towers collapsed disrupting power supply. (v) Large number of trees uprooted disrupting vehicular traffic.
20.	17 May	(a) Dhubri	Severe		(i) Extensive damage to dwellings, school buildings, shops, markets and Govt. buildings reported. (ii) Tin and asbestos roof tops of many houses blown off more than a quarter kilometer away. (iii) Property worth Rs. 50 lakhs damaged in Dhubri town alone.
		(b) Jalpaiguri	Severe	10 persons seriously injured.	(i) Many houses destroyed. (ii) Crops badly damaged. (iii) Electric supply and telephone lines disrupted.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
		(c) Medinipur	Severe		(i) 500 huts damaged. (ii) Many trees/electric poles uprooted disrupting power supply. (iii) Telecommunication link at several places snapped.
21.	19 May	(a) Calcutta	Severe (88 kmph)	(i) 2 daily wage workers killed when the wall under construction collapsed. (ii) One person died and another woman injured due to wall collapse at Tiljala area.	(i) Large number of trees uprooted disrupting vehicular traffic. (ii) Train services disrupted due to snapping of overhead electric wires. (iii) Wireless control tower at Lalbazar police station collapsed snapping the telecommunication system.
		(b) Guwahati	Severe		(i) Large number of trees uprooted. (ii) Overhead electric lines snapped, disrupting power supply.
		(c) Haora	Severe	2 persons died due to wall collapse.	(i) Large number of trees uprooted. (ii) Power supply cut-off in vast areas. (iii) Train services disrupted due to snapping of overhead electric wires.
22.	20 May	Darjeeling, Jalpaiguri and West Dinajpur	Severe (114 kmph)	(i) 14 persons, 10 from Siliguri alone, died. (ii) 300 persons seriously injured.	(i) 8,000 houses and 50 school buildings razed to ground in Jalpaiguri. (ii) Extensive damage to crop reported. (iii) Power supply disrupted due to snapping of overhead lines. (iv) Large number of trees uprooted disrupting vehicular traffic.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
23.	23 May	Akola	Severe		Several trees/electric poles uprooted disrupting the power supply.
24.	31 May	(a) Goalpara	Severe	6 persons including 2 women injured.	(i) 60 dwellings including 9 public institutions damaged. (ii) Damage estimated to worth Rs. 3.5 lakhs.
		(b) Kamrup	Severe		(i) Several buildings/schools damaged. (ii) Roof tops of Sonapur college building blown away. (iii) Large number of trees uprooted blocking vehicular traffic on national highway No. 37.
25.	3 Jun.	Pune	Severe		Vehicular traffic on Pune-Satara road disrupted as a massive tree fell near Kapurhol village.
26.	6 Jun.	(a) Goalpara	Severe		Roof tops of the official residence of chief judicial magistrate blown away.
		(b) Nalbari	Severe		(i) Kadamtala H.G. School in Barama circle extensively damaged. (ii) Many trees uprooted.
		(c) Raigarh and Raisen	Severe		(i) Tin roof tops of many houses blown away. (ii) Large number of trees/electric poles uprooted disrupting vehicular traffic.
27.	11 Jun.	Golaghat	Severe	One tea garden labour died and 3 others injured.	
28.	12 Jun.	Wardha	Severe		(i) Normal life completely paralysed. (ii) Roof tops of several houses blown off. (iii) Large number of trees/telephone and electric poles uprooted disrupting complete power supply.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
29.	13 Jun.	Yavatmal	Severe		(i) Roof tops of several houses blown off. (ii) Normal life completely paralysed. (iii) Large number of trees/telephone and electric poles uprooted.
30.	14 Jun.	Raigarh (M.P.)	Severe		(i) Several houses damaged. (ii) Roof tops of large number of houses blown off. (iii) Trees/telephone and electric poles uprooted disrupting vehicular traffic.
31.	15 Jun.	Wardha	Severe		(i) Normal life completely paralysed. (ii) 200 houses damaged. (iii) 500 trees uprooted.
32.	15 Jul.	Bhojpur	Severe	12 persons died and 3 children injured.	
33.	22 Jul.	Nalanda	Severe	4 persons died and 3 others injured.	
34.	19 Aug.	Nawada	Severe	(i) 2 persons died. (ii) 2 cattleheads perished.	
35.	28 Sept.	North 24 Pargnas	Severe		3 houses completely destroyed at Pasighat area.
36.	28 & 29 Sept.	Pune	Severe		(i) Low lying areas flooded. (ii) Over half a dozen trees uprooted causing short circuits. (iii) Vehicular traffic on national highway disrupted. (iv) Maharashtra state transport buses ran beyond schedule.

<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 - 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.	7 Jan.	Sambalpur	Moderate		Rabi crop badly damaged.
2.	15 Mar.	Lakhimpur	Heavy		Several houses and school buildings damaged in Narayanpur circle.
3.	30 Mar.	(a) Dholpur	Heavy	(i) One person died. (ii) 100 birds perished.	(i) Hailstones of tennis ball size reported. (ii) Standing wheat crop badly damaged.
		(b) Morena	Heavy		Standing crop in 47 villages damaged.
4.	17 Apr.	Guwahati	Heavy		(i) Two high school buildings badly damaged. (ii) 40 houses damaged. (iii) Large number of trees/electric and telephone poles uprooted.
5.	18 & 19 Apr.	Barpeta and Nalbari	Heavy		(i) A Samabaya Samity Milk Farm of village Roop diga and Anchalik M.E. School completely damaged. (ii) Extensive damage to houses both public and private, reported.
6.	19 Apr.	Mizoram (Entire State)	Heavy		(i) 501 houses destroyed. (ii) Property worth Rs. 3.5 lakh damaged. (iii) Worst affected village Ratu, where 185 houses destroyed.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
7.	21 Apr.	Lakhimpur	Heavy		(i) Building of Luitparia Girls H.E. School completely destroyed. (ii) Several houses damaged. (iii) Large number of trees uprooted.
8.	24 Apr.	Kamrup	Heavy		(i) Roof tops of several houses damaged. (ii) Extensive damage to crop reported. (iii) 9 big trees uprooted.
9.	2 May	Muzaffarpur	Heavy		(i) Hundreds of thatched houses damaged. (ii) Standing moong, maize, mango and lichi crop damaged.
10.	4 May	West Champaran	Heavy		Extensive damage to standing crop reported.
11.	19 May	Malda	Moderate		Mango cultivation badly damaged.
12.	21 May	Jaipur	Moderate		Hailstones of 5 to 10 gms. reported.
13.	24 May	Jaipur	Heavy	Large number of birds perished.	Hailstones of the size of eggs have been reported.
14.	2 Jun.	Puri	Heavy		(i) Several houses razed to ground. (ii) Roof of a school building collapsed. (iii) Many trees/electric poles uprooted.
15.	14 Dec.	Sonitpur	Moderate		Damage to crops in Gohapur area 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>
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TABLE - XI : FLOODS AND HEAVY RAINS

STATES

ANDHRA PRADESH

1.	15-20 Aug.	East Godavari and Khammam	Severe (Godavari and Indra- vati)	7 persons died.	13 villages inundated.
2.	16-19 Nov.	East Godavari, Guntur, Krishna, Kurnool, Mehboobnagar, Nellore, Prakasam, Srikakulam, Visakhapatnam, Vizianagaram and West Godavari	Heavy rains	35 persons died.	(i) 11,52,229 villages affected. (ii) 27,000 houses damaged. (iii) Land area of 2,99,925 hectares submerged under water. (iv) 55,000 tonnes of rice worth Rs. 30 crore lost in East Godavari district.
*	Whole year	0.344 million hectare		(i) 48 human lives lost. (ii) 61 cattleheads lost.	(i) Crop worth Rs. 112.630 crores damaged. (ii) 16,113 houses worth Rs. 0.669 crores damaged. (iii) Public utilities worth Rs. 69.391 crores damaged.

ARUNACHAL PRADESH

1.	27 Jun.	Lower Subansiri	Flash flood		(i) Ranganadi hydel project badly damaged. (ii) Construction material worth Rs. 1.5 crore for 405 mega watts hydel project damaged. (iii) Machinery like dumpers and trucks washed away.
2.	28 Sept.	East Kameng, Tawang and West Kameng	Heavy rains		(i) Road link snapped when a bridge between Bhalukpong and Bomdila damaged. (ii) District headquarters of West Kameng, Tawang and East Kameng cut off from rest of the state.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
ASSAM					
1.	29 & 30 Mar.	Tinsukia	Severe (Noa-Dihing)		(i) 1.25 lakh people affected. (ii) 20,000 to 40,000 hectares of land area flooded. (iii) 100 metre stretch of Sumoniband bridge washed away. (iv) National highway No. 52 submerged disrupting direct road link, between Assam and Arunachal Pradesh.
2.	4 & 5 Apr.	Tinsukia	Severe (Noa-Dihing and Dhalandi)	(i) 14 persons died. (ii) Several cattle-heads washed away.	(i) 1.25 lakh people in 120 villages affected. (ii) Many houses washed away. (iii) Extensive damage to standing crop reported.
3.	7 Jun.	Nalbari	Heavy rains		Singara cattle market under Barama circle washed away.
4.	22 Jun. to 30 Jul.	Barpeta, Dhemaji, Dhubri, Goalpara, Jorhat, Kamrup, Lakhimpur, Marigaon, Nagaon, Nalbari, Sibsagar, Sonitpur and Tinsukia	Severe (Brahmaputra and its tributaries)	17 persons died.	(i) 1,152 villages of population 5,52,551 people affected. (ii) 1,21,081 hectares of land area submerged under flood water. (iii) In Nalbari district 59 houses, and in Dhemaji 6 houses washed away. (iv) Cropped land 29,581 hectares submerged. (v) Road communication in Lakhimpur district completely disrupted. (vi) A portion of Goalpara-Matia P.W.D. road washed away disrupting road communication in Goalpara district. (vii) Road communication on national highway No. 37 and 52 suspended. Surface communication on Sibsagar-Simulguri road also suspended. (viii) In Dhemaji, Joni town cut off as national highway submerged at several places.

<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.	5 Aug.	Golaghat	Severe (Brahmaputra and its tributaries)		(i) Bomeri village of Mahuramouza under Bokhat revenue circle completely submerged. (ii) 32 families rendered homeless.
6.	9 Aug.	Dhemaji	Severe (Brahmaputra and its tributaries)		(i) 20 villages washed away. (ii) Vast area of cropped land submerged. (iii) National highway submerged disrupting road communication.
7.	2 Sept.	Barpeta and Bongaigaon	Severe (Brahmaputra and its tributaries)		Large number of villages in Bijni subdivision and Barnagar circle affected.
8.	27 Sept.	Barpeta	Heavy rains		Jalah Mini stadium and important portion of Jalahghat town affected.
9.	15-19 Oct.	Cachar, Sibsagar and Tinsukia	Severe (Brahmaputra and its tributaries)		(i) 95 villages with population 35,296 affected. (ii) Land area of 45,000 hectares inundated. (iii) In Sibsagar district, standing crop in 74 hectares of land damaged. (iv) National highway No. 37 and 52 submerged disrupting vehicular traffic. (v) River Noa-Dihing breached its embankment at Sumoni.
*	Whole year	0.231 million hectare		(i) 12 human lives lost (ii) 58 cattleheads lost.	(i) Crop worth Rs. 17.898 crores damaged. (ii) 10,012 houses worth Rs. 2.209 crores damaged. (iii) Public utilities worth Rs. 4.978 crores damaged.
BIHAR					
1.	3 Sept.	Sitamarhi	Severe (Bagmati)		15 houses in Belwa village washed away.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
*	Whole year	0.076million hectare		4 human lives lost.	(i) Crop worth Rs. 0.581 crores damaged. (ii) 1,281 houses worth Rs. 0.161 crores damaged. (iii) Public utilities worth Rs. 0.008 crores damaged.
		GOA			
1.	15 Jun.	Entire State	Heavy rains		(i) Normal life completely paralysed. (ii) 150 houses collapsed. (iii) A portion of the approach road of the new Mandovi bridge in the final stage of completion washed away. (iv) Telecommunication system and electric supply disrupted. (v) The loss of public and private property estimated to worth Rs. 29 lakh.
		GUJARAT			
1.	19-26 Jun.	Ahmedabad, Bhavnagar, Surat and Valsad	Severe (Narmada and its tributaries)	30 persons died.	(i) 10,000 people marooned. (ii) 5 houses in Ahmedabad damaged. (iii) Telecommunication services and power supply disrupted.
2.	21 Jul to 1 Aug.	Banaskantha, Bharuch, Junagarh, Kutch and Rajkot	Heavy rains	112 persons died.	(i) In Kutch district 100 people marooned, 100 huts and houses either completely destroyed or badly damaged. (ii) Hundreds of acres of fertile land flooded. (iii) Gujarat electricity board colony at Panandhro completely submerged under rainwater. (iv) Road communication between Narayan Sarovar and Panandhro submerged under 4 ft of water.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
*	Whole year			(i) 34 human lives lost.	(i) 4,385 houses worth Rs. 0.116 crores damaged. (ii) Public utilities worth Rs. 1.775 crores damaged.
HIMACHAL PRADESH					
1.	17 Jul.	Shimla	Heavy rains	35 persons died and 45 other injured when a five storeyed building collapsed in Fiagask estate near Kalibari temple.	
2.	17 Aug.	Entire State	Heavy rains	2 persons died.	(i) Normal life completely paralysed. (ii) Vehicular traffic and telecommunication services disrupted.
3.	20 Aug.	Entire State	Heavy rains	One person died.	(i) 320 km. long Hindustan-Tibet road blocked beyond Tapri due to landslide. (ii) Vayudoot flights on Delhi-Shimla and Shimla-Kalka route suspended.
4.	31 Aug.	Hamirpur	Heavy rains	9 persons died.	(i) Extensive damage to property and crop reported in Bijhari block. (ii) Two houses completely and one partially damaged.
*	Whole year	Negligible		(i) 104 human lives lost. (ii) 756 cattleheads lost	(i) Crop worth Rs. 92.544 crores damaged (ii) 6,598 houses worth Rs. 3.837 crores damaged. (iii) Public utilities worth Rs. 51.190 crores 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>
JAMMU AND KASHMIR					
1.	8-13 Sept.	Entire State	Severe (Chenab)	(i) 350 people died. (ii) 11,185 cattle- heads perished.	(i) More than 6 lakh people marooned. Entire Ladakh region cut off from rest of the country as road Zojila washed away and 8 bridges on Srinagar-Kargil road extensively damaged. (ii) Property worth Rs. 164 crores damaged. (iii) 36,000 houses either totally or partially damaged. (iv) Damage of standing crop estimated to worth Rs. 45 crores. (v) 230 bridges and culverts washed away. (vi) Salal hydel project power house flooded. (vii) Historic Kohinoor bridge washed away. (viii) Two third of 500 ft. span of Akhnoor bridge connecting Jammu with Srinagar damaged.
*	Whole year	0.248 million hectare		(i) 354 human lives lost. (ii) 53,833 cattle- heads lost.	(i) Crop worth Rs.137.558 crores damaged. (ii) 47,788, houses worth Rs. 135.40 crores damaged. (iii) Public utilities worth Rs. 126.55 crores damaged.
KARNATAKA					
1.	7 Oct.	Bangalore	Heavy rains	3 persons died due to house collapse.	500 houses submerged under rain water.
2.	16-18 Nov.	Entire State	Heavy rains	55 persons died.	(i) Thousands of houses damaged. (ii) Thousands of livestock lost. (iii) Lakhs of hectares of crop land submerged. (iv) Extensive damage to crop reported. (v) The loss estimated to worth Rs. 155 crores.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
KERALA					
1.	18 & 19 May	Alapuzha and Ernakulam	Heavy rains	5 persons died.	(i) Several houses damaged. (ii) 100 coconut trees uprooted.
2.	8 & 9 Jun.	Entire State	Heavy rains	7 persons died.	(i) Low lying areas flooded. (ii) Extensive damage to property and agriculture reported. (iii) Railway services disrupted due to flooding of railway tracks.
3.	2 Jul.	Entire State	Heavy rains	55 persons died.	Loss estimated to worth Rs. 56 lakh.
4.	16 Jul.	Alapuzha and Kollam	Heavy rains	9 persons reported missing.	12 fishing boats capsized.
5.	27 & 28 Jul.	Ernakulam	Heavy rains	A child washed away in Putnevelikkara.	600 families evacuated to safer places.
6.	28 Jul.	Thiruvananthapuram	Heavy rains		200 houses collapsed.
7.	31 Jul.	Kollam	Heavy rains	One person died.	150 houses collapsed.
8.	2 Aug.	Kollam	Heavy rains		400 houses damaged at Anchuthengui.
9.	8 Aug.	Kollam and Kozhikode	Heavy rains	(i) One person died and 2 other injured when 7 fishing boats capsized at Neendakaran. (ii) 3 persons reported missing at sea in Quilandy area.	

<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.	10 & 11 Oct.	Alapuzha, Kollam, Pathanamthitta and Thiruvananthapuram	Heavy rains	60 persons died and 19 other reported missing.	(i) 5,000 houses collapsed. (ii) Railway lines submerged disrupting railway services.
*	Whole year	0.119 million hectare		(i) 129 human lives lost. (ii) 11 cattleheads lost.	(i) Crop worth Rs. 43.770 crores damaged. (ii) 26,809 houses worth Rs. 4.56 crores damaged.
MADHYA PRADESH					
1.	12 & 13 Sept.	Chhatarpur and Panna	Heavy rains	(i) 2 persons and a child died. (ii) Several cattle- heads perished.	(i) Several kutchcha houses collapsed. (ii) Road communication disrupted due to damage of road.
2.	20 Sept.	Chhatarpur	Heavy rains		Extensive damage to standing crop reported.
MAHARASHTRA					
1.	20-23 Jun.	Yavatmal	Flash flood (Arunavati)	8 persons died.	(i) Flood water entered into the villages situated on the Umarkhed road. (ii) 200 houses and trees swept away. (iii) Extensive damage to property reported.
2.	18 & 19 Jul.	Bombay	Heavy rains	7 persons died due to house collapse.	(i) Low lying areas flooded. (ii) Suburban train services both on western and central railway disrupted.
3.	Jul. (4th week)	Bombay	Heavy rains	9 persons died.	
4.	4 Aug.	Bombay	Heavy rains	2 persons injured.	(i) Normal life completely paralysed. (ii) Low lying areas flooded. (iii) Suburban train services 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>
5.	12 Aug.	Bombay	Heavy rains		(i) Low lying areas flooded. (ii) 120 trains on mainline and 60 on harbour cancelled due to flooding of tracks and signal failures. (iii) Electric supply snapped at many places.
6.	14 Aug.	Pune	Heavy rains		(i) Normal life completely paralysed. (ii) Railway and road traffic severely affected. (iii) Railway traffic on Bombay-Pune section worst affected. (iv) Maharashtra road transport corporation buses were plying behind schedule. (v) Road traffic on national highway No. 4 badly affected.
7.	15-18 Aug.	Nagpur	Heavy rains	(i) 9 persons died. (ii) 10 people in a car washed away at Goghranala, 75 km from Nagpur.	200 people rescued from Narla village.
8.	16 Aug.	Bombay	Heavy rains	3 persons of a family including a girl drowned at Aksa bridge near Malad.	
9.	21 Aug.	Akola, Buldhana, Chandrapur, Gadchiroli, Nagpur and Yavatmal	Heavy rains	(i) 29 persons died. (ii) 4 cattleheads perished.	7 houses collapsed.
10.	31 Aug.	Pune	Heavy rains	5 persons died due to house collapse at Shaniwarpeth and Bhavanipeth.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
11.	2 Sept.	(a) Akola	Heavy rains	2 persons died and 2 others injured.	
		(b) Bombay	Heavy rains		(i) Normal life paralysed. (ii) Low lying areas flooded. (iii) Local train on central railway were running behind schedule.
		(c) Yavatmal	Heavy rains	Several animals swept away in Pusad.	In Pusad, crops and houses swept away by flood waters.
*	Whole year	0.045 million hectare		(i) 128 human lives lost. (ii) 1225 cattleheads lost.	(i) Crop worth Rs. 7.797 crores damaged. (ii) 41,000 houses worth Rs. 6.022 crores damaged. (iii) Public utilities worth Rs. 17.814 crores damaged.
		MANIPUR			
1.	16 Oct.	3 out of 8 districts	Severe		(i) 5,000 houses inundated. (ii) 10,000 hectares of paddy field submerged.
		MIZORAM			
1.	9 & 10 Aug.	Aizawl	Heavy rains	106 people died in a landslide at south Hlemel, 10 km from Aizawl.	17 houses swept away.
2.	23 Sept.	Chhimtuipui	Heavy rains	2 persons died and 8 other injured when a huge portion of a hillock came down.	4 houses completely and 8 partially damaged.
		ORISSA			
1.	2 May	Balasore and Cuttack	Heavy rains	5 persons died.	

<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.	17 Jun.	Balasore, Cuttack, Ganjam and Puri	Heavy rains	(i) 16 persons died. (ii) 60 fishermen reported missing. (iii) 1000 cattleheads perished.	(i) 18 lakh people affected. (ii) Many low lying areas submerged. (iii) 500 houses collapsed. (iv) Thousands of electric poles and transformers damaged. (v) Several trees uprooted causing complete disruption of vehicular traffic.
3.	21 Jun.	Ganjam	Severe (Jahooja)	One person drowned.	(i) 45,000 people in 53 grampanchayat of 151 villages under 9 blocks rendered homeless. (ii) 3,100 houses damaged. (iii) Extensive damage to crop like vegetables, sugarcane and betelnut plantation reported.
4.	24 Jun.	Cuttack and Puri	Heavy rains	7 persons died.	(i) 6 power transmission towers damaged. (ii) Damages estimated to worth Rs. 70 lakhs.
5.	26 & 27 Jul.	Balasore, Cuttack, Ganjam and Koraput	Heavy rains	One person died and 5 other injured in a wall collapse.	(i) Road communication between Bhubaneswar and Bhanjanagar via Belaguntha cut off, following damage to a bridge over river Loharkhandi near Bhanjanagar. (ii) Operational work of paradeep port affected.
6.	17 Aug. to 3 Sept.	Balasore, Bolangir, Cuttack, Ganjam, Kalahandi, Koraput, Phulbani and Puri	Severe (Mahanadi and its tributaries)	(i) 12 persons died. (ii) 50 persons died when the truck in which they were travelling plunged into a flooded river near Dhadra village.	(i) 8 lakh people affected. (ii) Several villages marooned. (iii) Crop in 30,000 acres of land damaged. (iv) Several roads damaged in Bolangir, Kalahandi and Phulbani districts.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
*	Whole year	0.062 million hectare		(i) 43 human lives lost. (ii) 1397 cattle-heads lost.	(i) Crop worth Rs. 37.100 crores damaged. (ii) 1,66,000 houses worth Rs. 13.28 crores damaged. (iii) Public utilities worth Rs. 185 crores damaged.
		PUNJAB			
*	Whole year	0.024 million hectare		3 human lives lost.	N.A.
		RAJASTHAN			
1.	17 Jul.	Jaipur	Heavy rains	One boy washed away.	
2.	22 Jul.	Alwar	Heavy rains		Jaipur-Alwar road closed to vehicular traffic due to sliding of rocks.
3.	25 Jul.	Jaipur	Heavy rains	6 persons died.	
4.	30 Jul.	Bhilwara	Heavy rains	2 persons died at Begu.	
5.	31 Jul.	Jodhpur	Heavy rains		Train services disrupted. Many trains for Jodhpur cancelled.
6.	6 Aug.	Ganganagar	Heavy rains		(i) 400 houses at Suratgarh damaged. (ii) Wheatgrains and mustard crop extensively damaged.
7.	8 Aug.	Jodhpur and Sawai Madhopur	Heavy rains	One child died near Abu road while one person washed away in Banas river.	Panchara bund 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>
8.	9 Aug.	Kota	Heavy rains		Telecommunication services badly affected.
9.	11 & 12 Aug.	Jalor, Jodhpur and Udaipur	Heavy rains		(i) 150 houses damaged at Pali. (ii) Train services disrupted.
10.	14 Aug.	Ajmer	Heavy rains		100 houses in Kakri tehsil damaged.
11.	17 Aug.	Jaipur	Heavy rains		(i) 100 houses damaged. (ii) Amba Bari Pool damaged.
12.	3 Sept.	Ganganagar	Heavy rains		Several houses damaged.
13.	7 Sept.	Sirohi	Heavy rains	3 persons died at Mt. Abu.	
14.	8 Sept.	Ganganagar	Heavy rains	3 persons died.	300 kutchcha houses damaged.
*	Whole year	N.A.		(i) 49 human lives lost. (ii) 11,446 cattle-heads lost.	(i) 18,446 houses damaged. (ii) Public utilities worth Rs. 37.62 crores damaged.
SIKKIM					
1.	5 Jul.	Gangtok	Heavy rains		(i) Gangtok remained cut off from rest of the state due to landslides. (ii) 2.5 Megawatt power house situated at a place between Rangpo and Gangtok 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>
2.	22 Aug.	East District	Heavy rains	2 truck drivers died due to landslide.	
3.	18 Sept.	Gangtok	Heavy rains		Vehicular traffic disrupted due to landslides at Likauvir on national highway No. 31A.
TAMIL NADU					
1.	9-11 Oct.	Kanyakumari	Heavy rains	7 persons died.	(i) Hundreds of houses damaged. (ii) Loss estimated to worth Rs. 565 lakh.
*	Whole year	0.240 million hectare		(i) 238 human lives lost. (ii) 2794 cattle-heads lost.	(i) Crop worth Rs. 23.75 crores damaged. (ii) 1,78,670 houses damaged. (iii) Public utilities worth Rs. 373.46 crores damaged.
UTTAR PRADESH					
1.	3-20 Sept.	26 districts including Allahabad, Ballia, Banda, Chamoli, Fatehpur, Garhwal, Ghazipur, Kanpur, Pithoragarh and Varanasi	Severe (Ganga and its tributaries)	107 people died.	(i) Ballia, Banda and Ghazipur worst affected districts. (ii) 2.62 million people in 3,424 villages affected. (iii) Land area of 47.51 lakh hectares including 24.51 lakh hectares of cropped area affected. (iv) Total loss estimated to worth Rs.340 crores. (v) In Banda district, 20,700 houses swept away and 40,000 houses damaged. (vi) Several roads blocked due to landslides disrupting vehicular traffic.
*	Whole year	0.696 million hectare		(i) 153 human lives lost. (ii) 1167 cattleheads lost.	(i) Crop worth Rs. 181.280 crores damaged. (ii) 35,900 houses worth Rs. 55.88 crores damaged (iii) Public utilities worth Rs. 298.73 crores 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>
WEST BENGAL					
1.	5 Apr.	South 24 Pargnas	Heavy rains	One child drowned.	(i) Vast areas in Antali grampanchayat under Gosaba block affected. (ii) Several houses and two school buildings damaged. (iii) Damage to rabi crop reported.
2.	18 Jun.	Calcutta	Heavy rains	(i) Many persons injured. (ii) One cow perished when a 60 ft. wide wall collapsed.	(i) Low lying areas flooded. (ii) Vehicular traffic including Tram services severely affected.
3.	18-22 Jun.	Medinipur	Heavy rains	One person died and 10 fishermen reported missing.	(i) 700 mud houses collapsed. (ii) 1,000 mud houses inundated in Egra, Paniparul and Patashpur blocks.
4.	23 & 24 Jun.	Calcutta	Heavy rains	8 persons injured when a crowded bus fell into a pond.	(i) Low lying areas flooded. (ii) Normal city life completely paralysed. (iii) Transport system totally paralysed. (iv) A portion of metro-railway tunnel under construction caved in at the crossing of Coolotolla and Chittaranjan Avenue.
5.	28 Jun.	Calcutta	Heavy rains		(i) Normal life completely paralysed. (ii) Low lying areas submerged. (iii) Vehicular traffic disrupted.
6.	10 Jul.	Calcutta	Heavy rains		(i) Some of the major thoroughfares in the city inundated disrupting vehicular traffic.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
7.	12 Jul.	Darjeeling	Heavy rains		<p>(ii) A tree uprooted and fell upon the Mazerhat bridge snapping overhead Tram wires. Tram services suspended.</p> <p>(i) National highway No. 31 cut off Sikkim, from rest of the country due to heavy landslides.</p> <p>(ii) Landslides also reported at Pesok blocking vehicular traffic between Darjeeling and Ghoom.</p>
8.	20 Jul.	Haora	Heavy rains		2 houses collapsed.
9.	27 Jul.	Medinipur	Heavy rains		<p>(i) More than hundred houses damaged at Tamluk.</p> <p>(ii) Schedule of ship movement hampered.</p>
10.	1 Aug.	Medinipur	Heavy rains		<p>(i) Several houses damaged.</p> <p>(ii) Protective wall of Digha bridge damaged at several places.</p> <p>(iii) Large number of electric poles uprooted disrupting telecommunication services.</p>
11.	6 Aug.	Calcutta and Hooghly	Heavy rains	7 people injured in a house collapse.	<p>(i) Normal life paralysed.</p> <p>(ii) Most areas in the city remained waterlogged.</p> <p>(iii) One double storeyed building at Kommagar in Hooghly district and another at Belgharia collapsed.</p> <p>(iv) Tram services and other vehicular services severely affected.</p>
12.	7 Aug.	Jalpaiguri	Heavy rains		<p>(i) 25,000 people affected.</p> <p>(ii) Vast areas inundated.</p> <p>(iii) One bridge washed away.</p>

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
13.	26 Sept.	Purulia	Flash flood (Kansai)	(i) 15 persons died. (ii) Hundreds of cattleheads washed away.	(i) 20 lakh people affected. (ii) 2,000 families in 8 villages rendered homeless. (iii) 4,000 acres of paddy field submerged. (iv) 500 mud houses damaged. (v) 32 bridges and culverts damaged. (vi) 200 metres of railway track on Purulia Tatanagar section severely damaged suspending train services. (vii) National highway No. 31 linking Purulia with rest of the state breached at several places.
*	Whole year	0.005 million hectare		(i) 15 human lives lost. (ii) 4,056 cattle- heads lost.	6,752 houses damaged.
<u>UNION TERRITORIES</u>					
CHANDIGARH					
1.	18 Aug.	Entire Area	Heavy rains	One person died at Dhanas.	
DELHI					
1.	24 Jul.	Entire Area	Heavy rains	One person died and several other injured due to collapse of a school wall.	
PONDICHERRY					
*	Whole year	0.0005 million hectare		3 human lives lost	(i) Crop worth Rs. 0.010 crores damaged. (ii) 11,215 houses worth Rs. 0.05 crores damaged. (iii) Public utilities worth Rs. 4.29 crores damaged.

* Compiled tentative reports by Central Water Commission.
N.A. - not available.

<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 Tamil Nadu

1. 11-17 Nov.

FORMATION : At Lat.7.5°N
and Long. 86.5°E

LANDFALL : Near Tuticorin
on 13th evening.

DISSIPATION : North Interior
Karnataka

Severe
Cyclonic
storm

(i) 238 persons
died.
(ii) Thousands of
cattleheads
perished.

(i) Lakhs of hectares of agriculture land
submerged, causing extensive damage to
crop.
(ii) Lakhs of houses, private and public
property and installations damaged.
(iii) The loss estimated to worth Rs.530
crores.

In Kerala

56 persons died
and 22 other
reported missing.

(i) Thousands of houses collapsed.
(ii) 22,000 families rendered homeless.