

D
26/12/98
(IMD)
1/4



INDIA METEOROLOGICAL DEPARTMENT
DISASTROUS WEATHER EVENTS, 1994



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

**Cover Photo : Damage caused by Cyclonic Storm in Madras city East of Chatpet Bridge
(29-31 Oct. 1994).**

Courtesy : R.M.C. Madras

*Designed, Typeset and Printed at the Rotaprint Unit, Office of the Additional Director General of Meteorology
(Research), Shivajinagar, Pune 411 005.*

1996

DISASTROUS WEATHER EVENTS OF 1994

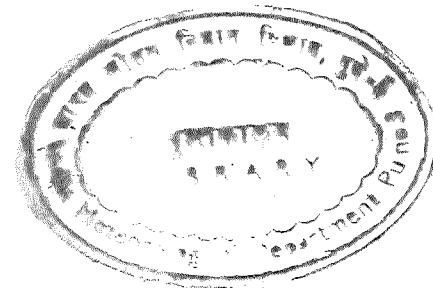
The most striking disastrous weather events of 1994 were the following :

- i) A severe cyclonic storm occurred in the Bay of Bengal during 30-31 October and took a toll of 226 human lives in Andhra Pradesh and Tamil Nadu. Property worth Rs. 61.22 crores damaged in Tamil Nadu alone. Whereas, in Andhra Pradesh crop in 4,44,194 hectares of land damaged.
- ii) Severe floods and heavy rains occurred over many parts of the country and claimed over one thousand human lives. Property worth Rs. 155 crores damaged while crop in 135 lakh hectares of land lost.
- iii) Severe heat wave conditions prevailed over Rajasthan during May and June in which 213 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.

INDEX

<u>Table No.</u>	<u>Event</u>	<u>Page Nos.</u>
I	Snowfall	1
II	Cold Wave	2 - 3
III	Heat Wave	3 - 4
IV	Drought	4
V	Squall	5
VI	Gale	5 - 6
VII	Duststorm	6
VIII	Lightning	6 - 8
IX	Thunderstorm	8 - 14
X	Hailstorm	14 - 17
XI	Floods and Heavy rains	18 - 36
XII	Cyclonic Storm	37



<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.	3 & 4 Jan.	Baramula and Ladakh	Heavy		(i) 1 to 3 feet of snowfall reported at Sonamarg, Yusmarg and the holy cave shrine of Amarnath. (ii) 2 to 4 feet of snowfall reported at Gulmarg and Khilanmarg. (iii) Vehicular traffic on Nubra valley completely disrupted.
2.	21-23 Feb.	Kinnaur, Lahul and Spiti, and Shimla	Heavy	One employee of labour bureau died near Bambloie.	(i) Normal life completely paralysed. (ii) Power supply/telecommunication/water supply disrupted. (iii) Vehicular traffic on Hindustan-Tibet national highway suspended.
3.	28 Dec.	Jammu and Kashmir (Entire State)	Heavy	5 persons died.	(i) Normal life disrupted. (ii) Kashmir valley and tribal belt in Ladakh cut-off from rest of the country.

1994

S.N.	Date/period	Area affected	Intensity	Casualties	Extent of damage
------	-------------	---------------	-----------	------------	------------------

TABLE - II : COLD WAVE — 1994

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.	17 Jan.	Nasik ✓	Severe cold wave (A)		(i) Normal life disrupted. (ii) Minimum temperature dropped to 1.3°C. (iii) Extensive damage to grape crop reported.
2.	26 Jan.	Nalanda	Severe cold wave (A)	(i) 12 persons including 5 children died. (ii) 20 cattleheads perished.	
3.	31 Jan. to 2 Feb.	Most parts of Uttar Pradesh	Severe cold wave (Both A and B as appropriate.)	18 persons died. (8 from Gorakhpur alone)	
4.	11 Dec.	Jaipur, and Pali	Severe cold wave (B)	3 persons died.	
5.	15 Dec.	Jaipur and Kota	Severe cold wave (Both A and B as appropriate)	2 persons died.	

CW 2 1 - - - - - H.W. 2/11

<i>S.No</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
6.	16 Dec.	Bhilwara and Bikaner	Severe cold wave (B)	3 persons died.	
7.	23 Dec.	Nagpur ✓	Severe cold wave (A)	One person died.	
8.	25 Dec.	Ajmer	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.	5 May	Medinipur	Severe heat wave (A)	One person died.
2.	6 May	Nadia and North 24 Pargnas	Severe heat wave (A)	2 persons including a school girl died.
3.	17 May	Jodhpur and Kota	Severe heat wave (B)	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>
4.	20-30 May	(a) Hoshangabad	Severe heat wave (B)	3 persons died due to sunstroke at Zalsar in Babai tehsil.	
		(b) Rajasthan (Entire State)	Severe heat wave (Both A and B as appropriate)	99 persons died.	Phalodi town in Jodhpur district reported maximum temperature of 49°C on 22nd May. This being the highest in the state since 1905.
5.	1-6 Jun.	Bhilwara, Bikaner, Bundi, Churu, Dholpur, Dungarpur, Jhalawar, Jodhpur, Kota, Pali, and Udaipur	Severe heat wave (Both A and B as appropriate)	90 persons died.	
6.	8 Jun.	Hissar	Severe heat wave (B)	One person died.	
7.	9 Jun.	Dholpur and Kota	Severe heat wave (B)	17 persons died.	
8.	10 Jun.	New Delhi	Severe heat wave (A)	18 persons died.	

TABLE - IV : DROUGHT

N I L

S.N.	Date/period	Area affected	Intensity	Casualties	Extent of damage
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 Apr.	Birbhum	Severe	One person died.	(i) Many mud houses at Nalhati and Islambazar collapsed. (ii) Several electric/telephone poles uprooted.
2.	25 Apr.	North 24 Pargnas	Moderate	One person injured due to wall collapse.	
3.	6 May	Guwahati	Severe (82 kmph)	2 persons injured.	Power supply disrupted.
4.	11 Jun.	Nagpur ✓	Severe	One bullock injured.	(i) Large number of roof tops blown away at Jalalkheda in Katol tehsil. (ii) Several trees/electric poles uprooted.

TABLE - VI : GALE**CRITERIA**Strong : Wind speed \geq 75 kmph.

1.	16 Mar.	Alapuzha	Strong		(i) One house damaged. (ii) Hundreds of plantation and paddy fields damaged.
2.	15 Apr.	Idukki	Strong		Thousands of plantain and hundreds of rubber trees uprooted.
3.	16 May	Thiruvananthapuram	Strong		(i) 10 houses damaged. (ii) Extensive damage of vegetables reported.

S.N.	Date/period	Area affected	Intensity	Casualties	Extent of damage
4.	12-14 Jul.	Ernakulam and Thiruvananthapuram	Strong		(i) 28 houses completely and 200 partially damaged. (ii) Vegetables worth Rs. 2 crores damaged.
5.	13 Jul.	Kozhikode	Strong	One student died and 20 other injured when a school shed at Balusserry village collapsed.	
6.	23 Oct.	Pathanamthitta	Strong		(i) Several houses damaged. (ii) Extensive damage to vegetables reported.

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.	5 Apr.	Bharatpur, Bikaner, Jaipur, Jaisalmer, Jodhpur and Nagaur	Heavy		(i) Several trees/electric poles uprooted. (ii) Standing crop partially damaged.
2.	10 May	Alwar	Heavy		10 km long electric lines between Tijara and Bhiwadi towns totally damaged.
3.	25 May	Lucknow	Heavy		(i) Mango groves badly damaged. (ii) Large number of trees uprooted.

TABLE - VIII : LIGHTNING

1.	3 Jan.	Hamirpur		(i) 4 persons died and 7 other injured at Mahua village.
2.	26 Mar.	West Garo Hills		5 persons including a child died at Riangepot village.

<i>S.No</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
3.	21 Apr.	Dhanbad		6 persons died at Gopalpur village under Topchanchi block.	
4.	10 Jun.	Ambala		3 persons died.	
5.	11 Jun.	Aurangabad		2 persons died at Chikatgaon shivar and Kharaj Parla village in Vaijapur taluka.	
6.	18 Jun.	Bhojpur		2 youth died and 6 persons injured at Amba Pitambarpur village under Muffasil Police Station.	
7.	3 Jul.	Palamau		3 persons died and 4 other injured at village Allandia under Chandwa Latehar Police Station.	
8.	20 Jul.	Varanasi		3 women labourers electrocuted at Beerampur village.	
9.	30 Jul.	East Champaran		2 farm labourers electrocuted.	
10.	6 Sep.	Bolangir		One person died.	
11.	9 Oct.	Kottayam		10 persons injured at Thalayolapparambu.	
12.	14 Oct.	Nagpur ✓		One child died at Godpipri village.	
13.	20 Oct.	Nagpur ✓		One person died at Umred village.	

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
14.	21 Oct. 2 2 - -	Alapuzha Neyyoor V.P. In		2 persons died and another injured at Mavelikara.	

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.	1 Feb.	South 24 Pargnas	Severe	3 persons died.	
2.	27 Feb.	Kamrup	Moderate		Raipara Anchalik M.E. School building destroyed causing extensive damage to furniture and other articles.
3.	1 Apr.	(a) East Garo Hills and West Khasi Hills	Severe	One person died and several other injured at Malankhona.	(i) Extensive damage of harvested crop reported. (ii) Several Govt. buildings including local Police Outpost badly damaged.
		(b) Kamrup	Severe	One person died.	(i) One thousand houses damaged. (ii) 10 schools and several churches damaged. (iii) Thousands of acres of cultivated land damaged. (iv) Large number of trees/electric poles uprooted disrupting power supply.
4.	5 Apr.	Bankura	Severe	5 persons including a woman died and 35 other injured at Hazrabandh village under Taldangra Police Station.	
5.	6 Apr.	Lucknow	Severe		Mango crop worth Rs. 250 to 300 crores in Kakori-Malihabad-Mall areas damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
6.	7-9 Apr.	Bhopal, Raisen and Vidisha	Severe		(i) Roof tops of several houses blown away. (ii) Extensive damage to standing crop reported. (iii) Large number of trees uprooted.
7.	9 Apr.	Dakshin Dinajpur	Severe	A boy died when a portion of a temple under Tapan Police Station, collapsed.	Power supply completely disrupted.
8.	13 Apr.	Chandrapur	Severe	26 } 27 goats and a sheep perished at Chimur village.	One mango tree uprooted.
9.	14 Apr.	Akola	Severe		Standing wheat crop and mango grove damaged at Murtijapur tehsil.
10.	17 Apr.	(a) Bardhaman, Dakshin Dinajpur, Hooghly, Howrah, North 24 Pargnas and South 24 Pargnas	Severe	24 persons died, of which 9 from North 24 Pargnas alone due to various house collapse incidents.	(i) Large number of houses collapsed. (ii) Several trees uprooted.*
		(b) Calcutta	Severe		(i) One house at Belgachia in north Calcutta collapsed. (ii) Several tin topped and tiled roofs blown away. (iii) Large number of trees/telephone and electric poles uprooted disrupting power supply.
11.	18 Apr.	Kamrup and Tinsukia	Severe	Many people injured in Tinsukia district.	(i) Several thatched houses badly damaged. (ii) Roof tops of Tribeni M.E. School blown off. (iii) Large number of horticultural plants and electric poles uprooted.
12.	18-20 Apr.	North Tripura	Severe	17 persons, of which 2 were critically injured at hilly Chawmany area.	One thousand people from 150 families severely affected at Larai Karbaripara and Amtalihill villages.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
13.	21 Apr.	West Tripura	Severe	50 persons injured.	450 houses damaged rendering 1500 people homeless.
14.	25 Apr.	Howrah and Medinipur	Severe	(i) One person died and 5 other injured in Howrah town. (ii) One person died at Harishpur in Medinipur district.	(i) Large number of electric poles uprooted disrupting power supply. (ii) Train services between Howrah-Kharagpur section disrupted due to snapping of overhead cable at Chengali. (iii) Several mud houses collapsed.
15.	30 Apr.	Nasik ✓	Severe	3 persons, including 2 women died due to electrocution at Guruvihar in Nandgaon tehsil and 2 other died when a huge tree fell on a hut at Lakhampur village in Dindoree tehsil.	(i) Wheat and Onion crop extensively damaged. (ii) Large number of trees/electric and telephone poles uprooted.
16.	2 May	Pune ✓	Severe	One person electrocuted on Bhandarkar Road and another injured due to falling of a tree.	Several trees/electric poles uprooted disrupting vehicular traffic and power supply.
17.	4 May	Bongaigaon	Severe	5 persons injured at Abhayapuri.	Several houses damaged.
18.	6 May	(a) Barpeta	Severe	(i) Several people injured. (ii) Many cattleheads perished.	Thousands of huts and many educational institutions damaged.
		(b) Bongaigaon	Severe	One child died and several persons injured.	Thousands of dwellings extensively damaged.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
19.	7 May	Nagaon	Severe	4 persons died.	(i) Extensive damage to property reported. (ii) Telecommunication services disrupted.
20.	8 May	(a) Hooghly and Medinipur	Severe	8 persons died and 12 other injured.	
		(b) Kamrup	Severe	4 persons injured at Palasbari.	(i) 45 dwellings including educational institutions damaged. (ii) Large number of trees uprooted. (iii) Power supply disrupted.
21.	15 May	Sonitpur	Severe		(i) Extensive damage to dwellings at Tezpur reported. (ii) Large number of trees, electric/telephone poles uprooted disrupting power/telecommunication services.
22.	17 May	Bardhaman, Birbhum, Malda and Murshidabad	Severe	2 persons died and 4 other injured at Dafarrpur and Rayanda villages in Murshidabad district.	Power supply badly affected.
23.	18 May	Howrah	Severe	A 27-year old farmer died at Dakshin Chand Chak village in Udaynarayanpur tehsil and another 17-year old student died at Bowria.	
24.	21 May	Farrukhabad	Severe	10 persons died and 14 other injured.	Several houses collapsed.
25.	24 May	Shimla	Severe		(i) Normal life completely paralysed. (ii) Roof tops of many houses blown away. (iii) Several trees/electric and telephone poles uprooted disrupting power supply and telecommunication services.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
26.	25 May	Calcutta and neighbourhood	Moderate		(i) Vehicular traffic completely disrupted in central and north Calcutta. (ii) Train and Air services disrupted.
27.	1 Jun.	Durg	Moderate		Electric supply at Bhilai and Korba disrupted.
28.	3 Jun.	(a) Malda	Severe	3 persons died and 5 other injured at Meglatolya village under Kaliachak Police Station.	
		(b) Murshidabad	Moderate (60-70 kmph)	(i) One person died and 9 other injured.	Large number of trees uprooted.
29.	3 Jul.	Cuttack	Severe	10 persons injured at Kujang block of Jagatsingpur.	(i) 200 houses completely damaged. (ii) 100 trees uprooted. (iii) Electric and telecommunication services disrupted.
30.	10 Jul.	Medinipur	Severe	One person died at Pherajpur village under Sankhrail Police Station.	
31.	13 Jul.	Medinipur	Severe	2 persons died at Mataldanga village under Kotwali Police Station.	
32.	25 Jul.	Uttar Dinajpur	Severe	10 persons died and 16 other injured in Raiganj and Islampur areas.	
33.	28 Jul.	Darjeeling	Severe	One person died and 4 other injured at Patiramzota village under Matigara 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>
34.	29 Jul.	North 24 Pargnas	Severe	2 persons died and 3 other injured at Magri under Barasat Police Station.	
35.	30 Jul.	Medinipur	Severe	One person died and 2 children injured at Kuchaipur village under Sabong tehsil.	
36.	2 Aug.	Jaipauri	Severe	2 persons died and 2 other injured.	(i) Tin shed of Zilla Parishad Dak Bunglow blown away. (ii) Large number of trees/electric poles uprooted disrupting complete power supply.
37.	8 Aug.	Purulia	Severe	5 persons died at Muradi and Ramkunali villages.	
38.	12 Sep.	South 24 Pargnas	Severe	3 persons died and another injured at Radhagobindpalli under Sonarpur Police Station.	
39.	13 Sep.	Hooghly	Severe	One student died and 48 other injured at Payraora village.	
40.	14 Sep.	Bardhaman	Severe	4 persons died and 7 other injured at Hijalghara under Jamuria Police Station.	
41.	3 Oct.	Uttar and Dakshin Dinajpur	Severe	2 persons died at Balurghat.	

S.N.	Date/period	Area affected	Intensity	Casualties	Extent of damage
42.	4-5 Oct.	Medinipur	Severe	One teacher died and a student injured.	
43.	22 Oct.	Nagpur ✓	Severe	One person died and 5 other injured at Butibori village.	

AIR 3 5-28
 1 1-
 1 15-
 5 7 5 28

MM-1 2-28
 MM-1 15-
 MM-1
 VIB-1

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.	2 Jan.	Mandsaur	Moderate		Crop in 25 villages damaged.
2.	12 Jan.	Ajmer	Moderate		(i) Hailstones weighing 20 gms reported at Bisudini and Ummedpura villages under Kekri tehsil. (ii) Extensive damage of crop reported.
3.	23 Jan.	Ratlam	Heavy		(i) Roof tops of many houses blown away. (ii) Standing crop damaged.
4.	29 Jan.	Lucknow	Heavy		Extensive damage of wheat and pulses reported.
5.	1 Feb.	Hooghly	Heavy	A 14-year old boy died.	(i) Roof tops of 400 mud houses blown away. (ii) Several trees/telegraph poles uprooted. (iii) Train services in Howrah-Bardhaman chord line section disrupted.
6.	5 Feb.	Nagpur ✓	Heavy	One person died.	
7.	6 Feb.	Amravati and Nagpur ✓	Heavy		Standing wheat crop and orange orchards at Saoner and Gondkhairi villages damaged.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
8.	7 Feb.	Rajgarh	Heavy	(i) One child died. (ii) One cattlehead perished.	Crop worth Rs. 2 crores damaged.
9.	8 Feb.	Guna	Heavy	Several cattleheads and many birds perished.	(i) 70 to 80% crop damaged. (ii) Large number of roof tops blown away. (iii) Thousands of trees uprooted.
10.	9 Feb.	Gwalior	Heavy	(i) One person died. (ii) 7 goats perished.	Extensive damage of crop reported.
11.	10 Feb	Tikamgarh	Heavy	3 persons died and 3 other injured due to electrocution.	Extensive damage of crop at Niwadi tehsil reported.
12.	21 Feb.	Sitapur	Moderate		Extensive damage of crop at Hargaon village reported.
13.	9 Mar.	Puri	Heavy	(i) 2 persons severely injured at Jai Patna Gram Panchayat. (ii) Many cattleheads perished.	(i) Hundreds of people rendered homeless. (ii) Telephone and electricity lines snapped.
14.	15 Mar.	Kamrup	Heavy	One person died and 60 other injured.	(i) Chhayagaon and Palasbari revenue circles worst affected. (ii) 500 houses including educational institutions damaged rendering 270 families homeless. (iii) Vast stretch of paddy fields and rabi crop damaged.
15.	21-26 Mar.	Barak valley (South Assam)	Heavy		(i) Tea gardens at Birkampur, Chandighat, Craigpark, Rampur and Zalalpur extensively damaged. (ii) Roof tops of labour and staff quarters blown away. (iii) Large number of 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>
16.	25 Mar.	Dhubri	Heavy		Extensive damage to standing wheat crop and vegetables reported at Hat-Singimari.
17.	31 Mar.	Kheri	Moderate		Damage to crop reported.
18.	1 Apr.	Goalpara	Heavy		(i) 1,200 families in Bapujinagar area worst affected. (ii) Roof tops of many buildings blown away. (iii) Property worth Rs. 3 crore damaged.
19.	6 Apr.	Bharatpur, Dholpur, Jaipur, Jhunjhunu, and Tonk	Heavy	(i) 13 persons died, of which 5 from Tonk alone. (ii) 263 people injured. (iii) 1,018 cattleheads perished while 206 injured.	(i) 400 villages affected. (ii) 17,256 quintals of foodgrain damaged. (iii) 2,454 houses damaged.
20.	9 Apr.	Nasik ✓	Heavy		(i) Hundreds of farm labourers rendered homeless. (ii) Extensive damage to grape, mango, wheat and sunflower crop reported. (iii) Large number of trees/electric poles uprooted disrupting power supply. (iv) A wireless tower under Sinnar police station collapsed.
21.	9 & 10 Apr.	Ahmednagar ✓	Heavy		(i) Large size hailstones reported. (ii) Kopargaon tehsil worst affected. (iii) Wheat crop in about 3000 hectares of land damaged. (iv) Grape and Chickoo orchards badly damaged. (v) Public property worth Rs. 30 lakhs damaged.

<i>S.No.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity</i>	<i>Casualties</i>	<i>Extent of damage</i>
22.	17 Apr.	(a) Lucknow (b) Kamrup	Heavy Heavy		Wheat crop and mango groves extensively damaged. (i) Several houses including school buildings damaged. (ii) Standing crop as well as horticultural plantations damaged. (iii) Large number of trees/electric poles uprooted.
23.	8 May	Shimla	Moderate		Extensive damage to fruit crop reported.
24.	May (1st & 2nd week)	Kangra	Heavy		Extensive damage to standing wheat crop and stone-fruit reported.
25.	24 May	(a) Amritsar (b) Chandigarh	Heavy Moderate		(i) Hailstones weighing 20 gms reported. (ii) Extensive damage to mango groves reported. 300 Kikkar trees uprooted.
26.	27-29 May	Sirmour	Moderate		Extensive damage to mango and peach reported.
27.	19 Nov.	Imphal	Moderate		Standing paddy crop in 6000 acres of land damaged.

Rec - 2 1 - - vid - 2
 All 2 - 5 - 7 - 10 - 12

<i>S.No</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
-------------	--------------------	----------------------	--------------------------	-------------------	-------------------------

TABLE - XI : FLOODS AND HEAVY RAINS

STATES

ANDHRA PRADESH

1.	20 Jul.	Warangal and West Godavari	Heavy rains	5 persons died.	(i) 6,033 families affected. (ii) 1,000 people evacuated to safer places. (iii) Loss of public property worth Rs. 1.5 crore in West Godavari district reported.
2.	6-10 Sep.	East Godavari, Khammam, and West Godavari	Severe flood (Godavari and its tributaries)	16 persons died.	(i) 90 villages submerged. (ii) Extensive loss of standing crop reported. (iii) 38,000 people shifted to safer places in Khammam district.
3.	4-6 Oct.	Cuddapah, Hyderabad, Krishna, Kurnool, Mehboobnagar and Nalgonda	Heavy rains	31 persons, including 3 children died.	(i) Several low lying areas in Hyderabad city submerged. (ii) 485 houses fully and 2703 partially damaged. (iii) Standing crop in 21,000 hectares affected. (iv) In Kurnool district, 150 families rendered homeless. (v) In Hyderabad town, 25 feet high wall supporting the railway overbridge collapsed causing traffic disruption.

ARUNACHAL PRADESH

1.	Apr. (1st week)	Lohit	Severe flood (Digaru and Noa Dihing)		(i) Tezu town cut off from rest of the state. (ii) A bridge over Telna on Nayaliang Bithu road washed away.
2.	7 Jul.	West Siang	Heavy rains	9 persons died at Along.	Several residential areas submerged.

<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.	11 Aug.	Tawang	Heavy rains	4 persons died and 3 other injured in a landslide at Lower Chowkchung village.	
		ASSAM			
1.	23 Mar.	Tinsukia	Heavy rains		(i) 15 villages near Doom-Dooma submerged. (ii) Road link between Assam and Arunachal Pradesh disrupted. (iii) A bridge on national highway at Kakopathar broken.
2.	30 May	Dhemaji	Heavy rains		35 villages inundated affecting 8000 people.
3.	Jun. (Entire)	Barpeta, Dhemaji, Dibrugarh Jorhat, Lakhimpur, Nalbari and Sibsagar	Severe flood (Brahmaputra and its tri- butaries)	2 persons in Sibsagar district died.	(i) In Barpeta district, 500 villages worst affected. (ii) In Dhemaji, 8 villages completely submerged. (iii) In Jorhat and Lakhimpur districts, 25 villages submerged. (iv) Road communication completely disrupted. (v) Thousands of people shifted to safer places. (vi) Telecommunication services disrupted.
4.	1-16 Jul.	Dhemaji, Jorhat, Marigaon Nalbari and Sibsagar	Severe flood (Brahmaputra and its tri- butaries)	8 persons died, 6 from Sibsagar alone.	(i) 70,000 people in 150 villages of Dhemaji district affected. (ii) In Jorhat town, several Govt. Offices and Educational Institutions submerged. (iii) Wooden bridge over national highway No. 52 washed away. (iv) Road communication between Dhemaji and rest of the country completely cut off.



<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.	16-23 Aug.	Dhemaji and Jorhat	Severe flood (Brahmaputra and its tributaries)		(i) 65 villages in Dhemaji district submerged. (ii) Hundreds of people rendered homeless.
*	Whole year	0.034 million hectare		(i) 3 human lives lost. (ii) 8,850 cattleheads perished.	
BIHAR					
1.	8 Jul.	East Singhbhum	Heavy rains	4 women and 2 children died at Jamshedpur.	
2.	Jul. (2nd week)	West Singhbhum	Severe flood (Swarnarekha)		(i) 10,000 people marooned. (ii) 4,546 families in 52 villages affected. (iii) Road communication disrupted.
3.	Aug. (2nd week)	Bhagalpur, Bhojpur, Khagaria Patna, Samastipur, Saran and Vaishali	Severe flood (Ganga and its tributaries)	28 persons died.	Thousands of villages submerged.
4.	Sep. (3rd week)	East Champaran, Gopalganj Muzaffarpur and West Champaran	Severe flood (Ganga and its tributaries)	2 persons died.	(i) 3 lakh people affected, of which 2 lakh marooned. (ii) 22,000 hectares of crop land washed away. (iii) Bettiah town cut off from rest of the State. (iv) Railway tracks between Sathi and Champatia stations damaged. (v) Train services between Motihari-Narkatiaganj and Motihari-Raxaul disrupted. (vi) Triveni canal breached at 34 points due to flooding of Budhi Gandak river.
*	Whole year	0.601 million hectare		(i) 83 human lives lost. (ii) 34 cattleheads perished.	(i) Crop worth Rs. 48.068 crores damaged. (ii) 2,807 houses worth Rs. 2.178 crores damaged. (iii) Public utilities worth Rs. 1.313 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>
GUJARAT					
1.	Jun. (2nd & 3rd week)	Bharuch, Dang, Junagadh, Surat, Vadodara and Valsad	Severe flood (Sabarmati (and its tri- butaries)	13 persons died.	(i) 8,000 people marooned. (ii) 40 houses swept away. (iii) A check-dam at Datipur village in Valia taluka of Bharuch district breached. (iv) Vehicular traffic completely disrupted due to waterlogging on state highways. (v) Rail traffic between Ankaleshwar and Rajpipla on narrow gauge section of Vadodara division disrupted as bridge at Gumandev village washed away. (vi) Kakrapar Atomic Power Station, near Surat flooded.
2.	Jul. (2nd week)	Amreli, Bharuch, Bhavnagar, Junagadh, Rajkot, Surat and Valsad	Heavy rains	85 persons died.	(i) 395 houses in 19 villages of Una tehsil, damaged. (ii) Electric supply and road communication disrupted.
3.	20-21 Aug.	Ahmedabad, Bharuch, Banaskantha, Kheda and Sabarkantha	Severe flood (Sabarmati and its tri- butaries)	10 persons died.	(i) 11,000 people in 150 villages shifted to safer places. (ii) Several houses collapsed.
HARYANA					
1.	2 Aug.	Sirsa	Heavy rains	3 persons died.	
*	Whole year	0.042 million hectare		(i) 15 human lives lost. (ii) 27 cattleheads perished.	(i) Crop worth Rs. 36.005 crores damaged. (ii) 7,837 houses worth Rs. 4.029 crores damaged. (iii) Public utilities worth Rs. 2.573 crores damaged.
HIMACHAL PRADESH					
1.	7-8 Jul.	Shimla	Heavy rains	(i) 2 persons died. (ii) 15 cattleheads perished.	One house completely collapsed due to landslides.

<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.	11 Jul.	Kullu	Cloud burst	70 persons died.	
3.	15 Jul.	Kullu	Cloud burst		Thousands of people stranded due to road blockade between Kothi and Gulaba on Manali-Kyelong road.
4.	16-17 Jul.	Kinnaur, Lahul and Spiti, and Shimla	Heavy rains	8 persons died due to landslide.	
5.	19-20 Jul.	Hamirpur and Shimla	Heavy rains	4 persons died.	A major portion of Lakkar Bazar road in Shimla submerged.
6.	27-30 Jul.	Hamirpur, Kangra and Solan	Severe flood	6 persons died.	
7.	7 Aug.	Kullu	Heavy rains	2 persons drowned in the swollen Bias.	
8.	10 Aug.	Kullu	Cloud burst	15 persons washed away in a flooded nullah near Katrain.	3 houses, 2 low sheds, 3 shops, 5 water mills and 16 khokas washed away.
9.	11 Aug.	Kullu	Flash flood	11 persons washed away in flash flood at Faujal near Katrain.	
10.	16 Aug.	Bilaspur	Heavy rains	12 persons died.	
10.	23 Aug.	Kullu	Cloud burst	15 persons died and 2 other injured.	
11.	24 Aug.	Kangra and Kinnaur	Heavy rains	2 persons died.	
12.	5 Sep.	Hamirpur and Mandi	Cloud burst	15 persons died and 10 other injured.	Many houses collapsed.

<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.	20-25 Mar.	Jammu and Udhampur	Flash flood (Jhelum and Sindhu)	40 persons died.	(i) Two houses in Mahore tehsil of Udhampur district, collapsed. (ii) Road communication on Jammu-Srinagar national highway disrupted.
2.	20 Jul.	Jammu	Heavy rains	3 persons died in a house collapse.	
KARNATAKA					
1.	5 Jun.	Uttar Kannada	Heavy rains	One person died.	(i) Loss of public utilities worth Rs. 1.15 crore reported. (ii) Road communication on national highway No. 14 disrupted. (iii) Several trees uprooted.
2.	Jul.(2nd week)	Belgaum, Bellary, Bijapur Chickmagalur, Dakshin Kannada, Dharwad, Gulbarga, Hassan, Kodagu, Kolar, Mandya and Mysore	Severe flood	(i) 58 persons died. (ii) 2,268 cattleheads perished.	(i) 954 villages in 63 tehsils affected. (ii) Crop worth Rs. 8.92 crores in 51,194 acres of land lost. (iii) Property worth Rs. 88.63 crores damaged.
3.	6 Oct.	Bijapur and Gulbarga	Flash flood (Hirehale)	(i) 8 persons died. (ii) 6 cattleheads perished.	
*	Whole year	0.128 million hectare		(i) 60 human lives lost. (ii) 2,399 cattleheads perished.	(i) Crop worth Rs. 25.800 crores damaged. (ii) 17,486 houses worth Rs. 5,32 crores damaged. (iii) Public utilities worth Rs. 65,736 crores 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 May	Palakkad	Heavy rains	One woman washed away at Mannarkad.	
2.	Jun.(1st and 2nd week)	Alapuzha, Ernakulam, Idukki, Kasargod, Kollam, Kottayam, Kozhikode, Malappuram, Palakkad, Pathanamthitta, Thiruvananthapuram and Thrissur	Severe flood	30 persons died.	(i) 429 houses completely collapsed and 3,380 houses partially damaged. (ii) Crop worth Rs. 33 lakhs destroyed. (iii) Many coconut trees/electric poles uprooted.
3.	11 Jul.	Kasargod	Heavy rains	2 children drowned.	5 houses completely and 40 partially damaged.
4.	14 & 15 Jul.	Idukki and Malappuram	Heavy rains	12 persons died and 2 other injured.	
5.	14-16 Jul.	Alapuzha, Ernakulam, Idukki, Kozhikode, Palakkad and Thrissur	Heavy rains	14 persons died and 50 other injured.	
6.	15 Jul.	Kannur, Kozhikode, Malappuram, Thiruvananthapuram and Thrissur	Heavy rains	4 persons died.	(i) 72 houses completely and 860 houses partially damaged. (ii) 580 families shifted to safer places. (iii) Extensive damage to vegetables reported.
7.	23 Jul.	Thrissur	Heavy rains		Crops in 25 acres of agricultural land destroyed.
8.	31 Jul.	Kasargod, Kollam, Kozhikode, Palakkad, Pathanamthitta and Thiruvananthapuram	Heavy rains	Many persons drowned.	(i) Several houses damaged. (ii) 1,800 families shifted to safer places. (iii) Vast areas of paddy fields submerged.
9.	1 Aug.	Alapuzha, Thiruvananthapuram and Thrissur	Heavy rains		(i) 35 houses completely and 623 houses partially damaged. (ii) 12,000 families shifted to safer places. (iii) Extensive damage to vegetables reported.
10.	2 Aug.	Ernakulam, Idukki, Kollam Kottayam and Thiruvananthapuram	Heavy rains	3 persons died.	(i) 1000 houses damaged. (ii) 50 families shifted to safer places. (iii) Railway track between Ernakulam and Kottayam dislocated due to landslides. (iv) Extensive damage to vegetables 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.	3-9 Aug.	Alapuzha, Ernakulam, Idukki, Kannur, Kasargod, Kollam, Kottayam, Pathanamthitta, Thiruvananthapuram and Thrissur	Heavy rains		(i) 90 houses damaged. (ii) Vast tracts of paddy field submerged. (iii) Extensive damage to vegetables reported.
12.	22 Sep.	Kannur	Heavy rains	One person reported missing.	
13.	3-6 Oct.	Kollam and Thiruvananthapuram	Heavy rains	10 persons injured.	25 houses completely damaged.
14.	11 Oct.	Idukki	Heavy rains	One woman died in a house collapse.	
15.	16 Oct.	Kozhikode	Heavy rains		Several houses damaged.
16.	24 Oct.	Kollam	Heavy rains		Few houses damaged.
*	Whole year	0.233 million hectare		(i) 209 human lives lost. (ii) 824 cattleheads perished.	(i) Crop worth Rs. 144.500 crores damaged. (ii) 87,000 houses worth Rs. 12.825 crores damaged. (iii) Public utilities worth Rs. 105.000 crores damaged.
MADHYA PRADESH					
1.	22 & 23 Jun.	Bhopal and Hoshangabad	Heavy rains		(i) Rain water entered into large number of huts. (ii) Road communication between surrounding villages and Hoshangabad city completely disrupted.
2.	28 Jun.	Bhopal	Heavy rains		Rain water entered in huts and many colonies of Bhopal city.
3.	12 & 13 Jul.	Balaghat, Bastar, Durg, Hoshangabad, Jabalpur and Rajnandgaon	Heavy rains	(i) 9 persons died. (ii) Large number of cattleheads perished.	(i) 80 villages flooded. (ii) 58 houses collapsed.

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
4.	19-22 Jul.	Bhopal, Durg, Hoshangabad, Jabalpur and Sagar	Heavy rains	(i) 25 persons died. (ii) 1,843 cattleheads perished.	(i) Standing crop in 120 lakh hectares of area affected. (ii) 75 houses collapsed. (iii) Public utilities worth Rs. one crore damaged.
5.	5 Aug.	Bilaspur and Tikamgarh	Heavy rains	3 persons died in Tikamgarh district.	(i) Vehicular traffic and telecommunication services completely disrupted. (ii) 50 houses damaged in Bilaspur.
6.	27 Aug.	Balaghat	Heavy rains		4 houses damaged.
*	Whole year	0.038 million hectare		(i) 288 human lives lost. (ii) 6,674 cattleheads perished.	(i) Crop worth Rs. 31.551 crores damaged. (ii) 2,44,700 houses damaged.
MAHARASHTRA					
1.	2 Jun.	Bhandara	Heavy rains	One person died and another injured at Arjuni Morgaon.	
2.	4 Jun.	Pune	Heavy rains	5 persons in a family residing at Ganesh Peth seriously injured when a wall of their house collapsed.	(i) Low lying areas flooded. (ii) Several trees uprooted. (iii) Power supply disrupted at several places.
3.	6 Jun.	Nagpur	Heavy rains	Two children died in a wall collapse at Ghoradi village in Kamaleshwar tehsil.	
4.	6 & 7 Jun.	Pune	Heavy rains	2 persons died when a two-storeyed building near Satranjiwala Chowk in Ravivar Peth collapsed.	Two bicycle shops and three auto-rickshaws damaged. Estimated loss of Rs. 18 lakhs 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>
5.	16 Jun.	(a) Nasik	Heavy rains	One person electrocuted and a woman injured when a tree fell on her.	(i) Low lying areas flooded. (ii) Power supply disrupted. (iii) Several trees uprooted. (iv) Normal life paralysed.
		(b) Pune	Heavy rains		(i) Several low lying areas inundated. Rain water entered into 50 huts. People shifted to safer places. (ii) At least a dozen trees uprooted. (iii) Vehicular traffic completely disrupted.
6.	27 Jun.	Bombay	Heavy rains	20 people injured in a landslide at Asalpha village in Ghatkopar.	(i) On central railway 68 trains running on main line and 48 running on harbour line cancelled. (ii) BEST buses diverted their routes due to waterlogging.
7.	28 Jun.	(a) Pune	Heavy rains		(i) Low lying areas flooded. Large number of people shifted to safer places. (ii) Most of the trains on Pune-Bombay route delayed. (iii) State Transport out-bound bus services affected. (iv) Interior south of Mulshi dam completely cut off due to massive landslides. (v) 150 metre stretch of a road at Chachivaligaon near Mulshi dam completely breached. (vi) Several State Transport buses and that belong to Tata Power Company stranded.
		(b) Raigad	Heavy rains	13 persons including 5 women and 6 children died and 7 other injured in a landslide at Parmachi village in Mahad tehsil.	(i) 7 houses destroyed. (ii) Vehicular traffic on Indapur-Mahad section 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>
8.	4 Jul.	Nagpur and Yavatmal	Heavy rains	(i) One woman and a boy swept away at Takalghat. (ii) 3 persons died at Pusad.	One building collapsed.
9.	Jul. (2nd week)	Kolhapur and Sangli	Severe flood (Panchganga)	8 persons died and 8 other trapped in a marooned truck.	(i) 170 villages marooned. Low lying areas flooded. 150 families shifted to safer places. (ii) Vehicular traffic completely disrupted. (iii) Several villages remained cut off from district head quarter. (iv) A ambassador car washed away in flooded Kadvi river. (v) 1,200 houses and other structures damaged. (vi) Paddy and groundnut crop extensively damaged.
10.	9 Jul.	Akola	Heavy rains	A man swept away at Dinoda village in Akot tehsil.	
11.	11 & 12 Jul.	Bombay	Heavy rains		(i) Large number of trees uprooted. (ii) Several incidents of short-circuits reported. (iii) 30 trains on western railway cancelled due to flooding of the railway tracks.
12.	11-13 Jul.	Amravati, Bhandara, Chandrapur, Gadchiroli, Nagpur Wardha and Yavatmal	Heavy rains	45 persons died of which 18 from Nagpur district alone.	(i) Normal life completely paralysed. (ii) 20,000 people rendered homeless. (iii) Crop worth crores of rupees lost.
13.	11-14 Jul.	Nasik	Heavy rains	(i) 2 women died. (ii) 4 persons injured in a house collapse.	Normal life paralysed.
14.	12 Jul.	Bombay	Heavy rains	2 persons died and 5 other injured due to falling of trees.	15 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>
15.	13 Jul.	(a) Bombay	Heavy rains	(i) One person died at Sakinaka due to wall collapse. (ii) 5 persons injured at Chembur due to landslide. (iii) 3 persons injured at Nalasopara when a boulder fell on a house.	
		(b) Pune	Heavy rains	50 persons feared buried in a landslide near Bhimashankar in Ambegaon tehsil.	(i) 20 huts situated to the east of Dimbe dam swept away. (ii) Machinery worth Rs. 10 lakhs installed at the dam site damaged. (iii) Road link between several small villages snapped.
16.	14 Jul.	Bombay	Heavy rains	(i) 2 persons died and 2 other injured at Kuria when a portion of a 70-year old building collapsed. (ii) 3 persons injured at Navynagar due to wall collapse.	
17.	18 Jul.	Bombay	Heavy rains		Suburban and long distance train services on central and western railways disrupted.
18.	21 Jul.	Nasik	Heavy rains	2 persons injured at Sinnar when a two-storeyed house collapsed.	
19.	23 Jul.	Chandrapur, Gadchiroli and Wardha	Heavy rains		(i) Large number of houses collapsed. (ii) Standing crop in 20,000 acres of land washed away. (iii) Property worth Rs. 13 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>
20.	25 Jul.	Pune	Heavy rains	2 persons died in a house collapse at Nana Peth.	
21.	19 Aug.	Bhandara	Heavy rains	15 persons including few school children drowned when a boat capsized in Chulband river.	
22.	29-31 Aug.	Bombay	Heavy rains	4 persons died.	Suburban rail service completely disrupted.
23.	30 Aug.	(a) Bhandara, Chandrapur and Nagpur	Heavy rains	(i) 3 persons died in Nagbhid tehsil of Chandrapur district. (ii) 2 persons injured in Nagpur district.	More than 100 houses collapsed in Saholi tehsil of Bhandara district and 7 buildings in Nagpur collapsed.
		(b) Jalgaon and Nasik	Heavy rains	5 persons died and 5 other injured.	78 houses collapsed.
24.	31 Aug.	Bombay	Heavy rains	2 persons died and 8 other injured at Vikroli when a 20 feet wall collapsed and fell over 4 huts.	
25.	Sep. (1st & 2nd week)	(a) Akola, Amravati, Bhandara, Buldhana, Chandrapur, Gadchiroli, Nagpur, Wardha and Yavatmal	Severe flood (Kanhana, Vainganga & Wardha)	(i) 53 persons died. (ii) 6 cattleheads perished.	(i) Akola district worst affected. (ii) In Akola district alone 50,000 people rendered homeless and in Amravati district 10,000 people rendered homeless. (iii) In Wardha district 3,500 people marooned. (iv) 22 villages in Diwasa tehsil of Amravati district affected. (v) Vehicular traffic completely disrupted due to flooding of national/state highways. (vi) Crop worth Rs. 75 crore destroyed. (vii) In Buldhana district, private property worth Rs. 25 crore 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>
26.	2 Sep.	(a) Nasik	Heavy rains	One person died due to house collapse.	
		(b) Thane	Heavy rains	6 persons died due to collapse of a three storeyed building.	
27.	3 Sep.	(a) Bombay	Heavy rains	8 persons died in different wall/house collapse incidents.	
		(b) Thane	Heavy rains	2 persons died.	
28.	16 Oct.	Pune	Heavy rains		(i) Low lying areas flooded. (ii) Many shops in Dehuroad inundated. (iii) Power supply completely disrupted.
*	Whole year	0.041 million hectare		(i) 38 human lives lost. (ii) 693 cattleheads perished.	(i) 15,007 houses worth Rs. 6.123 crores damaged. (ii) Public utilities worth Rs. 20.61 crores damaged.
ORISSA					
1.	Jul. (2nd week)	Balasore, Bolangir, Cuttack Kalahandi, Puri, Sambalpur and Sundergarh	Severe flood	5 persons died.	(i) 10.2 lakh people in 1100 villages affected. (ii) Standing crop in 94,000 hectares of land damaged. (iii) Vehicular traffic between Cuttack-Paradip, Bhubaneswar-Banki and Jharsuguda-Sundergarh completely disrupted.
2.	29 & 30 Aug.	Cuttack	Flash flood	3 persons died.	(i) 100 houses damaged. (ii) High level bridges on Bhubaneshwar-Bolangir road washed away. (iii) Road communication disrupted. (iv) Many areas submerged under flood water.

<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.	Sep. (Entire)	Entire State	Severe flood (Mahanadi)	(i) 72 persons died. (ii) 90 cattleheads perished.	(i) More than 30 lakh people affected. (ii) In Koraput district, 100 houses collapsed. 10,000 hectares of paddy field submerged. Roads in 15 Gram Panchayats badly damaged. Newly constructed bridges at Dumkuguda and Girilingumma washed away. (iii) In Puri district, thousands of people in 37 villages rendered homeless. 10,000 acres of cropped land submerged. (iv) In Cuttack district, 21,000 hectares of paddy land submerged. 137 villages affected. 300 houses collapsed.
PUNJAB					
1.	19-23 Jul.	Gurdaspur, Hoshiarpur, Kapurthala and Patiala	Severe flood	18 persons died.	(i) 160 villages inundated. (ii) Many houses collapsed.
RAJASTHAN					
1.	15 Jun.	Banswara	Heavy rains	4 girls drowned.	
2.	1 & 2 Jul.	Bundi, Jhalawar and Kota	Heavy rains	9 persons died.	Several houses collapsed.
3.	5 Jul.	Bhilwara, Bundi and Pali	Heavy rains		44 dams either partially or fully damaged.
4.	12 Jul.	Bikaner	Heavy rains	4 persons died due to house collapse.	
5.	20 Jul.	Jaipur	Heavy rains	One person drowned and 4 other electrocuted.	
6.	24 & 25 Jul.	Bikaner and Jodhpur	Heavy rains	5 persons died.	
7.	26 Jul.	Ajmer	Heavy rains	One person died.	
8.	27 Jul.	Kota	Heavy rains	3 persons died at Baran.	

<i>S.N.</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
9.	16 Aug.	Udaipur	Heavy rains	2 persons died due to house collapse.	
10.	20 Aug.	Udaipur	Heavy rains	One person drowned.	
11.	28 Aug.	Udaipur	Heavy rains	13 labourers feared dead in Dariha Zinc Mine when rain water rushed in.	
12.	7 Sep.	Banswara	Heavy rains	4 persons died.	
TAMIL NADU					
1.	13 Jul.	Coimbatore	Heavy rains	One woman washed away at Mettupalayam village.	37 huts damaged.
2.	3 & 4 Nov.	Madras and Madurai	Heavy rains		(i) 16 Low lying areas submerged. (ii) 1500 telephone lines affected. (iii) Train services partially suspended.
3.	7 Nov.	Dindigul and Tiruchirapalli	Heavy rains	(i) One boy washed away at Manalmedu. (ii) 7 persons injured when 6 coaches of Kanyakumari Express derailed between Palayur and Vellaiyanai. (iii) 96 cattleheads perished.	(i) 493 huts destroyed. (ii) Several roads breached.
4.	20-22 Dec.	Madras	Heavy rains	3 persons died and 3 other injured due to wall collapse.	(i) Several low lying areas flooded. (ii) Train services affected.
UTTAR PRADESH					
1.	3 Jul.	Dehra Dun, Tehri Garhwal, and Uttar Kashi	Heavy rains	8 persons died.	More than thousand 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>
2.	27 Jul.	Garhwal	Heavy rains	4 pilgrims died and 2 other injured in a land slide on Kedarnath route.	
3.	Aug. (2nd week)	Allahabad, Banda, Fatehpur, Ghazipur, Hamirpur, Kheri, Pilibhit, Tehri Garhwal, and Varanasi	Severe flood (Ganga and its tributaries)	15 persons died.	Several houses collapsed.
4.	12-19 Sep.	Varanasi	Heavy rains	16 persons died in different incidents of house collapse in Varanasi and neighbourhood.	
5.	22 Sep.	Allahabad and Kheri	Flash flood (Belan)	(i) 2 persons died at Kheri. (ii) Hundreds of cattleheads washed away.	(i) Normal life paralysed. (ii) 112 villages affected. (iii) 80% crop damaged. (iv) Several houses washed away. (v) Large number of people evacuated to safer places.
*	Whole year	0.783 million hectare		(i) 271 human lives lost. (ii) 2,351 cattleheads perished.	25,009 houses damaged.
WEST BENGAL					
1.	28 Jun.	Medinipur	Heavy rains		(i) 2 lakh people in Ghatal, Narayangarh and Pataspur blocks affected. (ii) 5,000 people shifted to safer places.
2.	30 Jun.	Medinipur	Heavy rains		(i) 5,000 people in Ghatal, Narayangarh, Pataspur, Pingia and sabong tehsils affected. (ii) 200 mud houses in Ghatal, Pataspur and Tamiuk areas destroyed.
3.	13 Jul.	(a) Calcutta	Heavy rains		(i) Normal life paralysed. (ii) Low lying areas submerged. (iii) 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>
		(b) Hooghly	Heavy rains	3 school girls died due to collapse of a double storeyed building.	
4.	2 Aug.	Calcutta	Heavy rains		(i) Normal life completely paralysed. (ii) Vehicular traffic disrupted. (iii) Train services at Noongola of Howrah divisions disrupted.
5.	3 Aug.	Medinipur	Heavy rains		95,000 people affected.
6.	6 Aug.	Calcutta	Heavy rains		(i) Low lying areas of north and east Calcutta submerged. (ii) Trams and vehicular services completely disrupted. (iii) Train services in Sealdah and Howrah divisions disrupted.
7.	14-16 Aug.	Malda and Murshidabad	Heavy rains	One child died due to house collapse.	(i) Many mud houses collapsed. (ii) 1,500 people affected.
8.	18 Aug.	North 24 Parganas	Heavy rains	One child died at Anandgarh village under Kharda Police Station.	
9.	24 Aug.	Calcutta	Heavy rains		(i) Normal life completely paralysed. (ii) Low lying areas flooded. (iii) Train services at many places disrupted.
10.	19 Sep.	Murshidabad	Flash flood (Padma)		72 houses washed away rendering 10,000 people homeless due to breaches of river embankment.
11.	6-8 Oct.	Birbhum	Heavy rains		(i) Normal life paralysed. (ii) 500 people shifted to safer places. (iii) Train services disrupted due to waterlogging at Rampurhat town.

<i>S.No</i>	<i>Date/period</i>	<i>Area affected</i>	<i>Intensity (river)</i>	<i>Casualties</i>	<i>Extent of damage</i>
<u>UNION TERRITORIES</u>					
CHANDIGARH					
1.	8 Jul.	Chandigarh	Heavy rains	2 children drowned.	

* Compiled tentative reports by Central Water Commission.

<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>
-------------	--------------------	---	------------------	-------------------	-------------------------

TABLE -XII : CYCLONIC STORM

BAY CYCLONES

In Andhra Pradesh

1.	30-31 Oct.	FORMATION : At Lat.12°N, Long. 82°E LANDFALL : North Tamil Nadu coast close to Madras. DISSIPATION : Near 14°N and 78.5°E in the evening of 31st.	Severe	172 persons died.	(i) Chittoor, East Godavari, Guntur, Krishna, Nalgonda, Nellore, Prakasam, West Godavari, districts affected. In all 1,181 villages affected. (ii) A.P. Electric Board incurred losses worth Rs. 150 lakhs. (iii) Panchayat Raj Department incurred losses worth Rs. 150 lakhs. (iv) 43 buildings and 110 roads damaged. (v) Crop in 4,44,194 hectares of land damaged and 12,000 hectares of land become sandcast. (vi) 193 irrigation sources in Nellore and Prakasam districts damaged.
----	------------	---	--------	----------------------	---

In Tamil Nadu

				69 persons died	(i) Chengalpattu, Madras, and MGR districts affected. (ii) Public and private property worth Rs.61.22 crores damaged. (iii) 46,733 houses damaged. (iv) 26 km stretch of highways and 69 km stretch of interior roads damaged. 22 bridges also damaged. (v) 115 lamp posts and 300 street lights damaged. (vi) Several tanks and lakes breached. (vii) 130 trees in Madras Christian college campus uprooted. (viii) Train and Telecommunication services disrupted. (ix) Damage to crops of about 2,050 hectares.
--	--	--	--	-----------------	--