



**INDIA METEOROLOGICAL DEPARTMENT**

## **DISASTROUS WEATHER EVENTS – 2013**



**Cover Photo : ITBP (Indo-Tibetan Border Police)  
men rescue pilgrims at Govindghat in Uttarakhand's  
Chamoli district.**

**Courtesy : The Indian Express, 21 June 2013.**

**ISSUED BY :  
NATIONAL CLIMATE CENTRE  
OFFICE OF THE  
ADDITIONAL DIRECTOR GENERAL OF METEOROLOGY (RESEARCH)  
PUNE – 411005**



भारत सरकार  
GOVERNMENT OF INDIA

भारत मौसम विज्ञान विभाग  
INDIA METEOROLOGICAL DEPARTMENT

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## **DISASTROUS WEATHER EVENTS OF 2013**

The most striking disastrous weather events of 2013 were the following:

- Cold wave conditions prevailed over Northern parts of the country and claimed human lives of 237 out of which 170 lives claimed from Uttar Pradesh only.
- Heat wave conditions prevailed over Northeastern, Central and Peninsular parts of the country and claimed human lives over 1400 out of which 1393 lives claimed from Andhra Pradesh alone.
- During 14 -18 June heavy to very rainfall/flash floods/ cloudbursts/ massive landslides and avalanches reported at multiple places of the North Indian state of Uttarakhand caused the most devastating natural disaster claimed more than 5,000 human lives apart from damage to public/private property and cash crops especially apple crops.
- During summer monsoon of floods and heavy rains claimed about 463 human lives apart from extensive damage to agriculture and public/private property.
- A Very Severe Cyclonic Storm (Phailin) formed during 8-14 October over north Andaman Sea near Lat. 12.0°N/ Long. 96.0°E at 0300 UTC of 8<sup>th</sup> October, crossed the Odisha and north coastal Andhra Pradesh coasts near Gopalpur on 12<sup>th</sup> October. It took a toll of 38 persons in Odisha and one in Andhra Pradesh.
- A Severe Cyclonic Storm (Helen) formed during 19-23 November over the west Central Bay of Bengal near Lat. 14.5°N/ Long. 86.5°E at 0000 UTC of 19<sup>th</sup> November, crossed the Andhra Pradesh coast to south of Machilipatanam on 22<sup>nd</sup> November. It took a toll of 11 persons in Andhra Pradesh.

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

## **I N D E X**

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**TABLE - I : SNOWFALL 2013****CRITERIA****Moderate : 7.6 to 15.5 cm in 24 hrs.****Rather Heavy : 15.6 to 35.5 cm in 24 hrs.****Heavy : 35.6 to 64.4 cm in 24 hrs.**

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
1.	17-20 Jan.	Chamba, Lahaul & Spiti, Kinnaur, Kullu, Mandi and Shimla (Himachal Pradesh)	Heavy	5 persons died due to avalanche in Sangla village while 2 others buried alive in avalanche in Kinnaur and few others injured.	i) Many passenger buses trapped in snowfall. ii) Several areas cut off and more than 100 roads closed. iii) Water & electricity supply disrupted. iv) Road transport and supply of essentials disrupted. v) Normal life paralysed.
2.	4-6 Feb.	Bilaspur, Chamba, Hamirpur, Kangra, Kinnaur, Kullu, Lahaul & Spiti, Mandi, Shimla, Solan and Una (Himachal Pradesh)	Heavy	One person died in Shimla.	i) Avalanche in Kinnaur reported. ii) Water & electricity supply disrupted. iii) Normal life paralysed as more than 180 roads cut off from main road.
3.	5 Feb.	Jammu and Leh (Jammu & Kashmir)	Moderate	22,000 livestock perished in Leh.	Number of houses damaged in Jammu.
4.	23 Feb.	Hamirpur, Lahaul & Spiti, Kinnaur, Kullu, Mandi, Shimla and Siramaur (Himachal Pradesh)	Moderate		i) Several areas cut off and more than 50 roads closed. ii) Normal life paralysed.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
5.	15 Apr.	Baramulla (Jammu & Kashmir)	Heavy	3 persons died in avalanche at Uri forest area.	Air/road traffic badly affected.
6.	26 Apr.	Kargil (Jammu & Kashmir)	Heavy	One person died and 6 others injured on Srinagar-Leh highway when 3 vehicles were hit by the avalanche.	
7.	21 & 22 Dec.	Bandipora and Kishtwar (Jammu & Kashmir)	Heavy	10 persons died when a vehicle plunged into a gorge in snowed area of Warwan valley due to dense fog and 2 girls died in an avalanche in the area Kilshay of Gurez.	
8.	23 Dec.	Lahul & Spiti (Himachal Pradesh)	Heavy	6 persons died near Rohatang Pass.	

<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 – II : COLD WAVE 2013**

**CRITERIA**

**(A) When; Normal minimum temperature is 10<sup>0</sup>C or more**

**Cold wave : Night temperature 5<sup>0</sup>C to 6<sup>0</sup>C below normal**

**Severe cold wave : Night temperature 7<sup>0</sup>C or more below normal**

**(B) When; Normal minimum temperature is less than 10<sup>0</sup>C**

**Cold wave : Night temperature 4<sup>0</sup>C to 5<sup>0</sup>C below normal**

**Severe cold wave : Night temperature 6<sup>0</sup>C or more below normal**

1.	2 Jan.	Fatehabad (Haryana)	Severe (B)	2 persons died.
2.	2-8 Jan.	Most parts of Jharkhand	Severe (Both A & B as appropriate)	28 persons died.
3.	3 Jan.	Bhatinda (Punjab)	Severe (B)	2 persons died.
4.	4 Jan.	Sehore (Madhya Pradesh)	Severe (A)	One person died.
5.	7 Jan.	Bhopal (Madhya Pradesh)	Severe (A)	One person died.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
6.	6 & 7 Jan.	Bundi, Dausa, Jaipur, Jodhpur and Pali (Rajasthan)	Severe (Both A & B as appropriate)	7 persons died.	
7.	8 Jan.	Most parts of Bihar	Severe (Both A & B as appropriate)	8 persons died in East Champaran and 34 others in the rest of Bihar.	
8.	8 & 9 Jan.	Malda and Murshidabad (West Bengal)	Severe (Both A & B as appropriate)	13 persons died.	
9.	1 <sup>st</sup> & 2 <sup>nd</sup> week of Jan.	(a) Most parts of Uttar Pradesh	Severe (Both A & B as appropriate)	About 170 persons died.	
		(b) Parts of Vidarbha (Maharashtra)	Severe (Both A & B as appropriate)	3 persons died.	
10.	23 Jan.	Bhopal (Madhya Pradesh)	Severe (A)	One person died.	
11.	29 Jan.	Ranchi (Jharkhand)	Severe (B)	One person died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
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**TABLE – III : HEAT WAVE 2013**

**CRITERIA**

**(A) When; Normal maximum temperature is 40°C or less**

**Heat wave : Departure from normal is 5°C to 6°C**

**Severe heat wave : Departure from normal is 7°C or more**

**(B) When; Normal maximum temperature is more than 40°C**

**Heat wave : Departure from normal is 4°C to 5°C**

**Severe heat wave : Departure from normal is 6°C or more**

1.	* Apr to Jun. (2-3 Apr., 17-19 Apr., 10 & 11 May, 18 – 22 May, 24 – 26 May, 30 May – 4 Jun)	Adilabad, Anantapur, Chittor, East Godavari, Guntur, Kadapa, Karimnagar, Khammam, Krishna, Kurnool, Mahaboobnagar, Medak, Nalgonda, Nellore, Nizamabad, Prakasam, Ranga Reddy, Srikakulam, Visakhapatnam, Vizianagaram, Warangal, West Godavari	Severe (Both A & B as appropriate)	1393	
2.	13 Apr.	Bardhaman (West Bengal)	Severe (A)	One person died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
3.	15 Apr.	Nayagarh (Odisha)	Severe (A)	One person died.	
4.	29 Apr.	Wardha (Maharashtra)	Severe (B)	One person died.	
5.	6 May	East Singhbhum (Jharkhand)	Severe (A)	3 persons died.	
6.	11 May	(a) Hazaribagh, Koderma and Lohardaga (Jharkhand)	Severe (Both A & B as appropriate)	3 persons died.	
		(b) Bardhaman and Purulia (West Bengal)	Severe (A)	3 persons died.	
7.	20 May	(a) Ahmedabad (Gujarat)	Severe (B)	6 persons died.	
		(b) Gwalior and Sagar (Madhya Pradesh)	Severe (B)	3 persons died.	
8.	21 May	Baran and Jhalwar (Rajasthan)	Severe (B)	2 persons died.	
9.	30 May	Bhandara and Buldhana	Severe (Both A & B as appropriate)	2 persons died.	
10.	9 Jun.	Bikaner and Churu (Rajasthan)	Severe (B)	3 persons died including one woman.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
11.	12 & 13 Jun.	Guwahati, Hailakandi, Kamrup, Nagaon and Sonitpur (Assam)	Severe (Both A & B as appropriate)	12 persons died.	

\* As per data received from Disaster Management, Govt. of AP.

**TABLE – IV : SQUALL 2013**

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

**CRITERIA**

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

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

1.	24 Mar.	Bilaspur, Chamba, Dharamshala, Hamirpur, Kinnaur, Kullu, Mandi, Lahaul and Spiti and Shimla (Himachal Pradesh)	Moderate		Number of houses damaged.
2.	26 May	Belgaum (Karnataka)	Severe	One boy died when roof sheet fell on him.	Roofs of many kachcha houses blown away.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
3.	29 May	Rajnandgaon (Chhattisgarh)	Moderate		i) Tin shed of a stadium and kachcha houses blown away. ii) Electric poles uprooted causing disruption in electric supply and road traffic.
4.	5 Jun.	Nagpur (Maharashtra)	Moderate		i) Many trees uprooted causing damage to kachcha houses. ii) Damage to Maharashtra State Electricity Distribution Company Limited reported.
5.	16 Nov.	Nagapattinam (Tamil Nadu)	Moderate		Roof of a school building blown away.
6.	29 Dec.	Nagapattinam (Tamil Nadu)	Moderate		One boat damaged.

**TABLE – V : GALE 2013**

**CRITERIA**

**Strong : Wind speed  $\geq$  75 kmph**

1.	10 & 15 Apr.	Tirunelveli (Tamil Nadu)	Strong		Extensive damage to banana plantations on some acres of land reported.
2.	15 Apr.	Yavatmal (Maharashtra)	Strong	In Pandharkawa city: i) 2 persons died. ii) Few cattle perished.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
3.	11 Jun.	Baramulla (Jammu & Kashmir)	Strong		About 100 trees uprooted causing damage to dozens of buildings and fruits in Sopore area reported.
4.	12 Sep.	Baramulla (Jammu & Kashmir)	Strong		Damage to standing crops reported.
5.	4 Nov.	Sivagangai (Tamil Nadu)	Strong		About 30 houses partially damaged.
6.	14 Dec.	(a) East Sikkim District (Sikkim)	Strong	One person died and 7 others injured.	Many trees uprooted causing disruption in power supply.
		(b) Thiruvananthapuram (Kerala)	Strong		One house damaged and damage worth 3 lakhs reported in Navayikulam village.
7.	29 Dec.	Cuddalore and Karaikal (Tamil Nadu)	Strong		i) One person missing while fishing. ii) One boat damaged in Karaikal.

**TABLE – VI : DUST STORM 2013**

**CRITERIA**

**Moderate : Wind speed between 39 to 74 kmph and horizontal visibility up to 500 metres**

**Severe : Wind speed  $\geq$  75 kmph and horizontal visibility up to 50 metres**

1.	9 Jun.	Sawai Madhopur (Rajasthan)	Severe	One person died.	i) Some trees uprooted. ii) Road traffic/electric supply disrupted.
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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 – VII : LIGHTNING 2013**

1.	17 Jan.	Churu (Rajasthan)		One person died.	
2.	5 Feb.	Kota (Rajasthan)		One person died in Kanwas Taluka.	
3.	15 Feb.	Chittor, Krishna, Nellore and Prakasam (Andhra Pradesh)		12 persons died.	
4.	16 Feb.	(a) Rajgarh and Sagar (Madhya Pradesh)		3 persons died.	
.		(b) Jaipur (Rajasthan)		One person died in Mansarowar area and 4 others injured. Another died in Kotputali city.	
5.	23 Feb.	(a) Sirmaur (Himachal Pradesh)		Damage to few houses reported.	
		(b) Karauli (Rajasthan)		One person died in Fatehpur village.	
		(c ) Hoshangabad (Madhya Pradesh)		One woman died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
6.	16 Mar.	(a) Belgaum (Karnataka)		2 women died and 7 others injured.	
		(b) Damoh, Raisen, Rajgarh and Sagar (Madhya Pradesh)		11 persons died.	
		(c ) Baran and Chittorgarh (Rajasthan)		3 persons died including one woman.	
7.	24 Mar.	Bilaspur,Chamba, Dharamshala, Hamirpur, Kinnaur, Kullu, Mandi, Lahaul and Spiti, Shimla and Una (Himachal Pradesh)		6 persons injured.	
8.	28 Mar.	(a) Goalpara (Assam)		2 persons died in Sutarpara area.	
		(b) Badwani (Madhya Pradesh)		One person died in Niwali Taluka.	
9.	29 Mar.	Baran and Bharatpur (Rajasthan)		One person died in Narhargarh city and another in Takha village.	
10.	7 Apr.	Virudhunagar (Tamil Nadu)		3 persons died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
11.	12 Apr.	Ranchi (Jharkhand)		4 persons died and 12 others injured.	
12.	13 Apr.	Gondia (Maharashtra)		One person died.	
13.	15 Apr.	Thirunelveli (Tamil Nadu)		One person died.	
14.	16 Apr.	Doda and Ramban (Jammu & Kashmir)		2 women died in Duksan area and another in Banpal area.	
15.	17 Apr.	Barpeta and Kamrup (Assam)		4 persons died and 3 others injured in Boko & Baghbar area.	
16.	19 Apr.	Dhar, Satna and Shivpuri (Madhya Pradesh)		8 persons died.	
17.	22 Apr.	Vellore (Tamil Nadu)		2 persons died.	
18.	25 Apr.	(a) Chandrapur, Latur, Satara and Washim (Maharashtra)		6 persons died.	
		(b) Rayagada (Odisha)		One person died. Few livestock perished.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
19.	26 Apr.	Bellary, Gadag, Dakshina Kannada and Davangiri (Karnataka)		4 persons died.	
20.	27 Apr.	Bagalkote and Chitradurga (Karnataka)		2 persons died.	
21.	28 Apr.	(a)Goalpara (Assam)		2 persons died in Sutarpara.	
		(b) Hassan (Karnataka)		One woman died.	
22.	29 Apr.	Kandhamal (Phulbani), Keonjhar and Koraput (Odisha)		About 50 livestock perished.	
23.	3 May	(a) Chickmagalur and Hassan (Karnataka)		3 persons died.	
		(b) Jagatsinghpur (Odisha)		4 persons died.	
24.	4 May	(a) Mysore (Karnataka)		One person died and 6 others injured.	
		(b) Mayurbhanj (Odisha)		2 persons died and 9 others injured.	
25.	5 May	(a) Kamrup (Assam)		One woman died and 4 others injured.	
		(b) Mayurbhanj (Odisha)		6 persons died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
26.	6 May	Nalbari (Assam)		One woman died.	
27.	8 May	Chitradurga (Karnataka)		One person died and 8 others injured.	
28.	11 May	Malkangiri (Odisha)		3 persons died.	
29.	18 May	Kalahandi (Odisha)		One person died.	
30.	19 May	Nayagarh (Odisha)		One person died.	
31.	26 May	(a) Budgam (Jammu & Kashmir)		One man died in Doodpathri area.	
		(b) Bellary (Karnataka)		One person died.	
		(c) Ganjam (Odisha)		3 persons died.	
32.	27 May	(a) Morigaon (Assam)		4 persons died and 10 others injured.	
		(b) Bagalkote (Karnataka)		One person died.	
33.	28 May	(a) Karbi Anglong (Assam)		One woman died.	
		(b) Belgaum, Dharwad and Haveri (Karnataka)		3 persons died including one boy.	
		(c) Sangli (Maharashtra)		One person died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
		(d) Pudukottai (Tamil Nadu)		One person died.	
34.	29 May	Kolhapur (Maharashtra)		One person died and other injured.	
35.	30 May	Belgaum Urban, Bidar and Dakshina Kannada (Karnataka)		6 persons died and 7 others injured.	
36.	3 Jun.	Kolhapur, Latur and Nanded (Maharashtra)		5 persons died.	
37.	4 Jun.	Pune (Maharashtra)		One boy died.	
38.	5 Jun.	(a) Kamrup and Kokrajhar (Assam)		2 BSF jawans and one person died.	
		(b) Belgaum, Koppal and Raichur (Karnataka)		5 persons died and 2 others injured.	
39.	6 Jun.	Ahmednagar and Ratnagiri (Maharashtra)		4 persons died.	
40.	7 Jun.	Bundi (Rajasthan)		One person died.	
41.	8 Jun.	(a) Udalguri (Assam)		One person died.	
		(b) Kota, Tonk and Udaipur (Rajasthan)		6 persons died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
42.	11 Jun.	(a) Nagpur (Maharashtra)		3 persons died and 7 others injured.	
		(b) Jaipur (Rajasthan)		One person died.	
43.	14 Jun.	(a) Burhanpur (Madhya Pradesh)		One child died.	
		(b) Chittorgarh (Rajasthan)		One person died.	
44.	18 Jun.	Maharajganj (Uttar Pradesh)		3 persons died.	
45.	19 Jun.	Dhubri (Assam)		2 persons died.	
46.	24 Jun.	Dhubri (Assam)		One person died and 2 others injured.	
47.	25 Jun.	Goalpara (Assam)		One person died and 2 others injured.	
48.	27 Jun.	Chitrakoot (Uttar Pradesh)		2 persons died.	
49.	4 Jul.	Kendrapada (Odisha)		2 persons died.	
50.	5 Jul.	(a) Araria, Katihar and Lakhisarai (Bihar)		8 persons died and 5 others injured.	
		(b) Kodagu (Karnataka)		One person died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
51.	6 Jul.	Sri Ganganagar (Rajasthan)		One girl died.	
52.	8 Jul.	(a) Patna (Bihar)		4 persons died and 8 others injured.	
		(b) Bharatpur (Rajasthan)		One child died.	
53.	9 Jul.	Bundi (Rajasthan)		One woman died.	
54.	10 Jul.	Cuttack (Odisha)		One person died.	
55.	11 Jul.	Mayurbhanj (Odisha)		One person died.	
56.	12 Jul.	Wardha (Maharashtra)		5 women died.	
57.	13 Jul.	(a) Jabalpur, Raisen & Rajgarh (Madhya Pradesh)		4 persons died.	
.		(b) Nagpur and Wardha (Maharashtra)		5 women died and 2 others injured.	
		(c) Bundi (Rajasthan)		2 persons died.	
58.	14 Jul.	(a) Golaghat (Assam)		2 persons died.	
		(b) Bauxar (Bihar)		5 persons died.	
		(d) Kendrapada and Mayurbhanj (Odisha)		2 persons died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
		(e) Jaipur and Jhalawar (Rajasthan)		4 persons died.	
59.	16 Jul.	Yavatmal (Maharashtra)		4 persons died.	
60.	18 Jul.	Amaravati (Maharashtra)		2 persons died.	
61.	21 Jul.	Angul (Odisha)		One person died.	
62.	22 Jul.	Sonepur (Odisha)		One person died.	
63.	30 Jul.	Kamrup (Assam)		One woman died.	
64.	2 Aug.	Banswara and Bundi (Rajasthan)		4 persons died including 2 women in Garadia village.	
65.	3 Aug.	Bhilwara (Rajasthan)		2 women died.	
66.	11 Aug.	Darrang (Assam)		One person died.	
67.	15 Aug.	Khammam (Andhra Pradesh)		6 persons died.	
68.	21 Aug.	Giridh (Jharkhand)		13 persons died.	
69.	25 Aug.	Udaipur (Rajasthan)		One person died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
70.	9 Sep.	(a) Medak (Andhra Pradesh)		2 persons died.	
.		(b) Amraoti (Maharashtra)		2 persons died and other injured.	
71.	10 Sep.	Siramaur and Una (Himachal Pradesh)		2 persons died.	
72.	11 Sep.	Gulbarga (Karnataka)		One person died.	
73.	12 Sep.	Adilabad (Andhra Pradesh)		2 persons died.	
74.	13 Sep.	(a) Guntur (Andhra Pradesh)		8 persons died.	
.		(b) Yavatmal (Maharashtra)		3 persons died.	About 25 sheep perished.
75.	16 Sep.	(a) Belgaum (Karnataka)		One person died.	
		(b) Bhubanshwar, Cuttack, Deogarh, Khurda, Sambalpur and Sundergarh (Odisha)		13 persons died.	
76.	17 Sep.	Belgaum and Bidar (Karnataka)		2 persons died.	
77.	18 Sep.	Adilabad and Warangal (Andhra Pradesh)		4 persons died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
78.	20 Sep.	(a) Bongaigaon (Assam)		2 women died.	
		(b) Gulbarga (Karnataka)		One person died.	
		(c) Nagpur (Maharashtra)		4 persons died and 2 others injured.	
79.	21 Sep.	(a) Adilabad (Andhra Pradesh)		6 persons died.	
		(b) Udaipur (Rajasthan)		One person died.	
80.	22 Sep.	Banswara and Udaipur (Rajasthan)		2 persons died.	
81.	24 Sep.	Mandi (Himachal Pradesh)		One person died and 3 others injured.	
82.	29 Sep.	Koraput and Malkangiri (Odisha)		6 persons died.	
83.	2 Oct.	Bhandara, Chandrapur, Wardha and Yavatmal		5 persons died.	
84.	15 Oct.	Coimbatore (Tamil Nadu)		One person died.	
85.	20 Oct.	Cuddalore (Tamil Nadu)		One person died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
86.	31 Oct.	Thiruvananthapuram (Kerala)		One person died and 2 others injured.	i) Home appliances, electric wiring of several houses damaged. ii) Surgical and electric equipments damaged at Perapancode hospital. iii) Damage worth Rs.6 lakhs reported.
87.	24 Nov.	Thiruvananthapuram (Kerala)		2 persons injured.	i) Oil mill completely charred in Venjaranmoodu. ii) Few houses damaged. iii) About 10 lakhs worth damage reported.

**TABLE –VIII : THUNDERSTORM 2013**

**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.	17 Mar.	(a) Bhadrak (Odisha)	Severe	3 persons died.	i) Damage to kachcha houses reported. ii) A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
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<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
		(b) North 24-Paraganas (West Bengal)	Severe	3 persons died.	i) Damage to kachcha houses reported. ii) A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
2.	18 Mar.	Jorhat (Assam)	Severe	One person died.	i) Damage to dwelling houses reported. ii) Extensive damage to standing crops reported. iii) A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
3.	22 Mar.	Nalbari (Assam)	Severe		i) Roofs of several houses blown away rendering people homeless. ii) Extensive damage to standing crops reported. iii) A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
4.	25 Mar.	Udalguri (Assam)	Severe	One person died.	i) Roofs of several houses blown away rendering people homeless. ii) Damage to standing crops reported.
5.	28 Mar.	Dhenkanal (Odisha)	Severe	One person died.	Many trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
6.	30 Mar.	Bankura, Birbhum and Bardhaman (West Bengal)	Severe	6 persons died and 15 others injured.	i) Damage to kachcha houses reported. ii) A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
7.	10 Apr.	Kokrajhar (Assam)	Moderate		Damage to houses and property in Ultapani area near Indo-Bhutan border reported.
		(b) West Khasi Hills (Meghalaya)	Severe	3 persons died and more than 50 others injured.	i) Damage to kachcha houses reported. ii) A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
8.	12 Apr.	Bardhaman (West Bengal)	Severe	One person died and 2 others injured.	
9.	13 Apr.	Purulia (West Bengal)	Severe	2 persons died.	i) Some trees / electric poles / telephone poles uprooted. ii) Roofs of many kachcha houses blown away.
10.	14 Apr.	Patna (Bihar)	Moderate	4 persons injured.	
11.	16 Apr.	(a) Parts of Tripura	Severe	One person died.	i) About 400 kachcha houses damaged. ii) Extensive damage to rubber plantations reported.
		(b) Bardhaman and Purulia (West Bengal)	Severe	4 persons died.	Damage to number of houses reported.
12.	17 Apr.	Bardhaman, Haora, South 24-Paraganas and Paschim Medinipur (West Bengal)	Severe	9 persons died.	A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
13.	18 Apr.	Barpeta and Sonitpur (Assam)	Severe	4 persons injured.	i) Damage to kachcha houses reported. ii) A number of trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.
14.	19 Apr.	(a) Bokaro and Ranchi (Jharkhand)	Severe	2 persons died and 12 others injured.	i) Trees / electric poles / telephone poles uprooted causing disruption in road traffic and telecommunication services. ii) Roofs of kachcha houses blown away.
		(b) Purulia (West Bengal)	Severe	2 persons died.	
15.	20 Apr.	Kanker and Koriya (Chhattisgarh)	Severe	4 persons died.	Trees / electric poles / telephone poles uprooted causing disruption in road traffic, power supply and telecommunication services.
16.	21 Apr.	(a) Darbhanga, Samastipur, Saran and Paschim Champaran (Bihar)	Severe	4 persons died and 4 others injured.	i) Trees / electric poles / telephone poles uprooted causing disruption in road traffic, power supply and telecommunication services. ii) Roofs of many kachcha houses blown away.
		(b) Bolangir (Odisha)	Severe	6 persons died and 9 others injured.	i) A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services. ii) Roofs of kachcha houses blown away.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
17.	22 Apr.	Kamrup and Sibsagar (Assam)	Severe	A tree fell on a dwelling house and caused death of a woman in Nazira town in Sibsagar. One person died and 2 others injured in Kamrup.	i) Trees / electric poles / telephone poles uprooted causing disruption in road traffic and telecommunication services. ii) Roofs of kachcha houses blown away.
18.	26 Apr.	Dhenkanal (Odisha)	Severe	2 persons died.	
19.	29 Apr.	Anantapur and Kurnool (Andhra Pradesh)	Severe	3 persons died.	
20.	3 May	(a) Baksa and Dhubri (Assam)	Severe	About 13 persons injured in Hatsinghimari area in Dhubri. Number of domestic animals perished in Baksa.	i) Many trees uprooted causing traffic disruption in Baksa. ii) About 100 dwelling houses, school buildings and health centres damaged in Dhubri.
		(b) Purulia (West Bengal)	Severe	One person died and 2 others injured.	
21.	5 May	Purba Medinipur (West Bengal)	Severe	One person died.	
22.	6 May	Purulia (West Bengal)	Severe	2 persons died and other injured.	A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
23.	7 May	Purulia (West Bengal)	Severe	One person died.	
24.	8 May	Purulia (West Bengal)	Severe	One person died.	
25.	11May	Birbhum and Murshidabad (West Bengal)	Severe	8 persons died.	i) A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services. ii) Roofs of katchcha houses blown away.
26.	12 May	(a) Arwal, Jehanabad, Nalanda, Sheikhpura and Saran (Bihar)	Severe	4 persons died and 30 others injured.	i) Damage to many houses reported. ii) Some trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.
		(b) Malda (West Bengal)	Severe	5 persons died.	
27.	14 May	(a) Tinsukia (Assam)	Severe	Number of domestic animals perished.	
		(b) Purulia (West Bengal)	Severe	One person died.	
28.	17 May	Begusarai and Muzaffarpur (Bihar)	Severe	5 persons died and few injured.	Damage to many houses reported.
29.	19 May	(a) Giridih and Jamtara (Jharkhand)	Severe	6 persons died and few injured.	i) Damage to many houses reported. ii) Some trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
		(b) Hoogly (West Bengal)	Severe	3 persons died.	Some trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.
30.	21 May	Nadia (West Bengal)	Severe	One person died and 3 others injured.	
31.	28 May	Dhemaji (Assam)	Severe	Few persons injured.	i) Damage to many houses reported. ii) More than 100 villages affected in Jonai subdivision. iii) Some trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.
32.	1 Jun.	North 24-Paraganas (West Bengal)	Severe	2 persons died and 2 others injured.	Some trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.
33.	2 Jun.	Chittoor, Guntur, Medak and Warangal (Andhra Pradesh)	Severe	6 persons died.	Damage to thatched houses reported.
34.	3 Jun.	Ranchi (Jharkhand)	Severe	4 persons died.	
35.	4 Jun.	(a) Aurangabad, Gaya, Nalanda and Patna (Bihar)	Severe	16 persons died and 27 others injured.	i) Damage to many houses reported. ii) Many trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.
		(b) Chhtra, Garhwa and Palamu (Jharkhand)	Severe	9 persons died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
36.	5 Jun.	(a) Adilabad, East Godavari, Medak, Karimnagar, Karnool and Warangal (Andhra Pradesh)	Severe	13 persons died.	Some trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.
		(b) Ranchi (Jharkhand)	Severe	One person died and 5 others injured.	
		(c) Jharsuguda, Koraput and Rayagada (Odisha)	Severe	12 persons died.	765 KV tower destroyed.
		(d) Uttar Dinajpur (West Bengal)	Severe	3 persons died and 6 others injured.	
37.	6 Jun.	(a) Khunti and Ranchi (Jharkhand)	Severe	3 persons died and 3 others injured.	
		(b) Jamui and Kaimur (Bihar)	Severe	7 persons died.	
38.	7 Jun.	(a) Hazaribagh, Latehar Lohardaga and Ranchi (Jharkhand)	Severe	6 persons died.	Some trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.
		(b) Bardhaman and Haora (West Bengal)	Severe	4 persons died and 2 others injured.	A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services. Roofs of katchcha houses blown away.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
39.	9 Jun.	Simdega (Jharkhand)	Severe	One person died.	
40.	11 Jun.	(a) Baramulla (Jammu & Kashmir)	Moderate		i) Damage to dozen of buildings reported. ii) Damage to fruit crops reported.
		(b) Garhwa, Lohardaga and Ranchi (Jharkhand)	Severe	5 persons died and 5 others injured.	
41.	18 Jun.	Madhubani and Rohtas (Bihar)	Severe	5 persons died and 12 others injured.	i) Roofs of many houses blown away. ii) Many trees / electric poles uprooted disrupting power supply, road traffic and telecommunication services.
		(b) Dakshin Dinajpur (West Bengal)	Severe	One person died and 5 others injured.	
42.	19 Jun.	(a) Garhwa, Giridh and Ranchi (Jharkhand)	Severe	6 persons died and 6 others injured.	A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
		(b) Bardhaman, Birbhum, Paschim Medinipur (West Bengal)	Severe	9 persons died and 23 others injured	
43.	20 Jun.	(a) Ranchi (Jharkhand)	Severe	One person died.	
		(b) Dakshin Dinajpur, Haora, Kolkata, Paschim Medinipur and South 24-Paraganas (West Bengal)	Severe	5 persons died.	i) Damage to many houses reported. ii) Many trees / electric poles uprooted disrupting power supply, road traffic and elecommunication services.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
44.	21 Jun.	Purba Medinipur (West Bengal)	Severe	30 persons injured.	
45.	23 Jun.	(a) Baikundpur (Chattisgarh)	Moderate	6 persons injured.	
		(b) Bankura (West Bengal)	Severe	2 persons died.	
46.	26 Jun.	Darjeeling and Uttar Dinajpur (West Bengal)	Severe	4 persons died and 11 others injured.	i) Damage to many houses reported. ii) Many trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
47.	28 Jun.	Uttar Dinajpur (West Bengal)	Severe	2 persons died and 4 others injured.	
48.	12 Jul.	Latehar (Jharkhand)	Severe	One person died and 6 others injured.	
49.	22 Jul.	Hoogly (West Bengal)	Severe	2 persons died.	
50.	23 Jul.	(a) Janjgir-Champa (Chattisgarh)	Severe	2 persons died.	
		(b) Bankura (West Bengal)	Severe	3 persons died.	A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
51.	24 Jul.	Corba (Chattisgarh)	Severe	One person died.	
52.	26 Jul.	Purulia (West Bengal)	Severe	One person died.	

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
53.	2 Aug.	Giridih (Jharkhand)	Severe	One person died.	
54.	4 Aug.	Ranchi (Jharkhand)	Severe	i) 2 persons died and 3 others injured. ii) 8 cattle heads perished.	
55.	5 Aug.	Hoogly and North 24-Paraganas (West Bengal)	Severe	5 persons died.	
56.	8 Aug.	Bankura, Birbhum, Bardhaman, Malda, North 24-Paraganas and South 24-Paraganas (West Bengal)	Severe	12 persons died and few others injured.	i) Damage to many houses reported. ii) Many trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
57.	10 Aug.	Bardhaman (West Bengal)	Severe	One person died.	
58.	11 Aug.	(a) Bokaro (Jharkhand)	Severe	One person died.	
		(b) Hoogly (West Bengal)	Severe	4 persons died.	
59.	16 Aug.	(a) Korba (Chhattisgarh)	Moderate	5 schoolgirls injured.	
		(b) Garhwa, Giridih, Hazaribagh, Koderma, Latehar, Pakur, Ranchi and Sahebganj (Jharkhand)	Severe	25 persons died.	i) Damage to many houses reported. ii) Many trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
60.	26 Aug.	Ranchi (Jharkhand)	Severe		<ul style="list-style-type: none"> <li>i) Tornado reported.</li> <li>ii) Roof of the terminal building of Ranchi airport flown away. Hoardings and trolleys blown off.</li> <li>iii) Number of trees/electric poles uprooted.</li> <li>iv) Ponds water level lifted.</li> </ul>
61.	8 Sep.	West Singhbhum (Jharkhand)	Severe	3 persons died.	
62.	13 Sep.	Korba (Chhattisgarh)	Severe	3 students died and 22 others injured.	
63.	14 Sep.	(a) Lower Subansiri (Arunachal Pradesh)	Severe		<ul style="list-style-type: none"> <li>i) A tornado lashed Reru, Tajang and Nenchalyan villages.</li> <li>ii) Damage to about 77 houses and 7 granaries reported.</li> </ul>
		(b) Bankura, East Medinipur and Purulia (West Bengal)	Severe	7 persons died.	Many trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
64.	18 Sep.	Araria (Bihar)	Severe	3 persons died and 20 others injured.	A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
65.	26 Sep.	South 24-Paraganas (West Bengal)	Severe	19 persons injured.	
66.	27 Sep.	Bankura, Birbhum and Nadia (West Bengal)	Severe	9 persons died and 3 others injured.	<ul style="list-style-type: none"> <li>i) Damage to many houses reported.</li> <li>ii) Many trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.</li> </ul>

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
67.	28 Sep.	(a) North Lakhimpur (Assam)	Severe	One person died and few others injured.	i) Number of families rendered homeless. ii) A number of trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
		(b) North 24-Paraganas (West Bengal)	Severe	One person died.	
68.	29 Sep.	Baloda Bazar (Chhattisgarh)	Severe	3 persons died.	
69.	1 Oct.	Kanker (Chhattisgarh)	Severe	One teacher and a girl died and 21 students injured.	
70.	5 Oct.	Murshidabad (West Bengal)	Severe	One person died.	
71.	15 Oct.	Bardhaman and South Dinajpur (West Bengal)	Severe	7 persons died and 2 others injured.	i) Damage to many kachcha houses reported. ii) Damage to crops reported. iii) Many trees/electric poles uprooted disrupting power supply, road traffic and telecommunication services.
72.	20 Oct.	Jorhat, Nagaon and Nalbari (Assam)	Severe	About 15 persons injured.	i) Damage to some houses reported as tin roofs blown away/damaged. ii) Damage to tea bush farm fields reported. iii) Transport services of NH-37 disrupted .

<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 : HAILSTORM 2013**

**CRITERIA**

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

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

**Heavy : Includes in least a proportion of large stones**

1.	19 Jan.	Most parts of Uttar Pradesh	Moderate		Damage to crops reported.
2.	29 Jan.	Rangareddy (Andhra Pradesh)	Heavy	About 7,200 livestock perished.	<b>In Chevella, Moinabad, Shankerpally mandals:</b> i) Extensive damage to the 255 hectares of agricultural and 1,050 of horticultural land reported. ii) About 20 houses damaged.
3.	12 Feb.	Ashokanagar, Betul, Bhopal, Guna, Harda, Raisen, Rajgarh and Sehore (Madhya Pradesh)	Moderate		Damage to crops and stored grains reported.
4.	13 Feb.	Nashik (Maharashtra)	Moderate		Damage to standing crop wheat, onions and grapes reported.
5.	14 Feb.	(a) Betul, Raisen and Sehore (Madhya Pradesh)	Moderate		Extensive damage to wheat, gram, tur crops in about thousand acres of cropland in Nasrullaganj, Shahpur, Sultanpur towns and Prabhat Pattan, Aathner tehsils reported.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
		(b) Nanded (Maharashtra)	Moderate		Extensive damage to mango flowers, jawar, gram and tur crops reported.
6.	15-17 Feb.	Adilabad, Cuddapah, Guntur, Karimnagar, Khammam, Krishna, Nellore, Nizamabad, Prakasam, Rangareddy and Warangal (Andhra Pradesh)	Heavy	22 persons died.	i) Damage to crops in 1,47,986 hectares of land reported. ii) Damage to plants in 1,45,000 hectares of horticultural land reported. iii) About 1,000 houses damaged.
7.	16 Feb.	(a) Ashokanagar, Barwani, Guna, Hoshangabad, Rajgarh, Sehore and Vidisha. (Madhya Pradesh)	Heavy	One person died in Rajgarh in house collapse.	Damage to wheat and gram crops reported.
		(b) Sikar (Rajasthan)	Heavy	One person died in Thoi village.	
8.	18 Feb.	Palamu (Jharkhand)	Moderate		Damage to rabi crops in Chainpur village reported.
9.	23 Feb.	Betul, Guna, Hoshangabad, Raisen, Rajgarh, Sehore and Vidisha (Madhya Pradesh)	Moderate		Damage to crops and stored grains reported.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
10.	14 Mar.	Fatehabad (Haryana)	Moderate		Extensive damage to crops reported in surrounding 24 villages.
11.	24 Mar.	(a) Bilaspur, Chamba, Dharamshala, Hamirpur, Kinnaur, Kullu, Mandi, Lahaul and Spiti and Una. (Himachal Pradesh)	Moderate		Damage to horticultural crops reported.
		(b) Betul (Madhya Pradesh)	Moderate		Damage to crops in Sarni village reported.
12.	1 Apr.	Adilabad, Anantapur, Chittoor, Karimnagar, Medak and Nizamabad (Andhra Pradesh)	Heavy	4 persons died in Nizamabad.	Crops damaged in 2,000 acres of land.
13.	2 Apr.	Hyderabad, Karimnagar, Medak and Nizamabad (Andhra Pradesh)	Heavy		Crops damaged in 20,027 acres of land.
14.	3 Apr.	Nagaon and Sonitpur (Assam)	Heavy	3 persons injured.	Damage to many houses, school buildings in Kaliabor town and in Tezpur city reported.
15.	11 Apr.	Parts of Meghalaya	Heavy	3 persons died.	More than 690 families rendered homeless.
16.	14 Apr.	Nagpur (Maharashtra)	Heavy	4 persons died and about 3 others injured.	Many trees uprooted causing damage to vehicles and disruption in road traffic reported.
17.	15 Apr.	(a) Shopian (Jammu & Kashmir)	Heavy		Extensive damage to apple orchards reported.

<b>S.N.</b>	<b>Date/Period</b>	<b>Area Affected</b>	<b>Intensity</b>	<b>Casualties</b>	<b>Extent of damage</b>
		(b) Yavatmal (Maharashtra)	Heavy	2 persons died in Pandharkawada city.	Roofs of many houses blown away causing damage to many buildings and vehicles worth few lakhs rupees reported.
		(c ) Chittor, Karimnagar, Nalgonda, Prakasam and Warangal (Andhra Pradesh)	Heavy	One person died in Nalgonda.	Crops damaged in 4,740acres of land.
18.	16 Apr.	(a) Srikakulam (Andhra Pradesh)	Heavy	One person died.	
19.	19 Apr.	Chittor, Srikakulam, Visakapatnam and Vizianagaram (Andhra Pradesh)	Heavy	2 persons died in Srikakulam.	
20.	21 Apr.	Rajnandgaon (Chhattisgarh)	Moderate		Damage to mango and vegetables reported.
21.	21 Apr.	Guntur, Krishna, Prakasam and Warangal (Andhra Pradesh)	Heavy	13 persons died.	Damage to crops in 65, 915 ha. area reported.
22.	22 Apr.	Adilabad, Hyderabad, Karimnagar, Khammam, Krishna, Nalgonda, Nellore, Ranga Reddy and Warangal (Andhra Pradesh)			

<b><i>S.N.</i></b>	<b><i>Date/Period</i></b>	<b><i>Area Affected</i></b>	<b><i>Intensity</i></b>	<b><i>Casualties</i></b>	<b><i>Extent of damage</i></b>
23.	11 Jun.	Kathua, Pooch, Rajouri, Reasi and Udhampur (Jammu & Kashmir)	Moderate		Damage to fruits and crops reported.
24.	16 Jun.	Kupwara and Pulwama (Jammu & Kashmir)	Moderate		Extensive damage to fruits and paddy crops reported.
25.	26 Jun.	Kupwara (Jammu & Kashmir)	Moderate		Damage to crops in Kalaroos village reported.
26.	8 Sep.	Baramulla, Budgam and Srinagar (Jammu & Kashmir)	Moderate		Damage to fruits and paddy crops reported.
27.	15 Sep.	Kulgam (Jammu & Kashmir)	Moderate		Damage to fruits and standing crops reported.

**TABLE XI – FLOODS AND HEAVY RAINS - 2013**

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
<b>STATES</b>					
<b>ANDHRA PRADESH</b>					
1.	14 Jun.	Adilabad, Karimnagar and Warangal	Heavy rains		Damage to 3 houses reported.
2.	12 Jul.	Adilabad, Karimnagar, Khammam, Hyderabad and Visakhapatnam	Heavy rains	12 persons died.	i) Trees/poles uprooted. ii) Rail/road/air traffic disrupted. iii) Roads and houses submerged.
3.	16-25 Jul.	Adilabad, Khammam, Warangal and West Godavari	Heavy rains	One person died in Adilabad.	i) Damage to 3 lakhs acres and 69,000 ha. of crop land reported. ii) About 1.10 lakh tones of coal production submerged. iii) More than 250 houses damaged in Adilabad, East & West Godavari, Khammam and Waranga. iv) About 1,475 houses submerged. v) 3,877 km. roads damaged.
4.	31 Jul.	Adilabad	Heavy rains	2 persons died.	

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
5.	1- 4 Aug.	East Godavari, Khammam, Nalgonda and Warangal	Heavy rains	4 persons died and other missing.	<b>1 Aug.:</b> 1.5 lakh coal production loss in Adilabad. <b>3 Aug.:</b> 140 villages submerged in Khammam and East Godavari. <b>4 Aug.:</b> 68 villages submerged.
6.	16 & 17 Aug.	Khammam, Nalgonda and Prakasam	Heavy rains	2 persons died.	i) 85 villages submerged. ii) Damage to crops in 10,000 hectares area in Nalgonda and 2,500 acres crops in Prakasam reported.
7.	13 Sep.	Guntur and Kadapa	Heavy rains	2 persons died.	i) Damage to 350 houses reported. ii) 2580 acres of crops damaged. iii) 4500 acres paddy crops damaged in Guntur.
8.	11-14 Oct.	Srikakulam, Visakhapatnam and Vizianagaram	Heavy rains	i) One person died. ii) 99 livestock perished.	i) 5,233 hectare agricultural crops, 7,000 hectares horticultural crops damaged. ii) 1,720 houses damaged. iii) 70 km. roads damaged. iv) Damage to 3,602 boats & nets reported.
9.	20-28 Oct.	East Godavari, Kadapa, Karimnagar, Krishna, Kurnool, Mahboobnagar, Nalgonda, Hyderabad, Prakasam, Visakhapatnam, Warangal and West Godavari	Heavy rains	i) 53 persons died and 6 others missing. ii) About 1912 animals perished.	i) About 48,434 houses damaged. ii) Agricultural loss 11.37 hectares reported. iii) 1721 boats and 3366 nets damaged. iv) Damage to 4707.75 kms. street roads reported. v) Damage to 688.28 kms. urban infrastructure reported. vi) Damage to 2589.36 kms. public and private roads reported.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
*	Whole year	Area affected 1.630 m.ha.		i) 88 human lives lost. ii) 2743 cattle lost.	i) 3.020 million population affected. ii) 75,304 houses damaged. iii) Crops in 1.630 m. ha. damaged.
<b>ARUNACHAL PRADESH</b>					
1.	26-29 Jun.	Changlang, Dibang Valley, Lohit and Upper Subansiri	Heavy rains		i) Extensive damage to standing crops reported. ii) About 50 houses inundated and few washed away. iii) Sipo and Sikut Hydroproject affected.
*	Whole year	Area affected 0.310 m.ha.		i) 52 human lives lost. ii) 75 cattle lost.	i) 0.310 million population affected. ii) 986 houses damaged. iii) Crops in 0.310 m. ha. damaged.
<b>ASSAM</b>					
1.	16 May	Parts of Assam	Heavy rains		i) Damage to about 50 acres of cultivated land reported. ii) More than 20 villages affected.
2.	29 May	Golaghat and Kamrup	Heavy rains		i) About 15,000 people of 60 villages badly affected. ii) About 550 hectares of cropland affected.
3.	26-30 Jun.	Dhemaji, Golaghat, Jorhat, Morigaon, Kamrup, Lakhimpur, Sibsagar and Tinsukia.	Heavy rains		i) More than 40,000 people of 125 villages in Dhemaji district affected. ii) About 2,000 hectares of crop land affected.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
4.	5-12 Jul.	Bongaigaon, Chirang, Dhemaji, Golaghat, Jorhat, Kamrup, Lakhimpur, Morigaon, Nagaon, Sibsagar, and Tinsukia	Flood (Brahmaputra and tributaries)		<ul style="list-style-type: none"> <li>i) About 1,16,176 people of 550 villages badly affected.</li> <li>ii) Damage to cropland of area 8812.63 hectares reported.</li> <li>iii) Landslide reported on 12 Jul. causing hundreds of people stranded on NH-29.</li> <li>iv) 6 roads, 1 bridge 3 culverts in Golaghat damaged.</li> <li>v) Vast area inundated.</li> <li>vi) Road traffic disrupted.</li> </ul>
5.	19 Jul.	Dibrugarh	Heavy Rains		<ul style="list-style-type: none"> <li>i) About 8 houses washed away.</li> <li>ii) Many hectares of cropland affected at Sassani and Mancotta Khanikar mouza area .</li> </ul>
6.	10-13 Aug.	Goalpara and Jorhat	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to about 2300 hectares of cropland in 17 villages reported.</li> <li>ii) Extensive damage to paddy and vegetables reported.</li> <li>iii) Rail/road/air traffic disrupted.</li> <li>iv) Roads and houses flooded.</li> </ul>
7.	18 Aug.	Sibsagar	Heavy rains	5 persons including 2 women washed away.	<ul style="list-style-type: none"> <li>i) Damage to standing crops reported.</li> <li>ii) Rail/road/air traffic disrupted.</li> </ul>
8.	29 Aug.	Golaghat	Heavy rains		<ul style="list-style-type: none"> <li>i) Some vital portions of irrigation project washed away.</li> <li>ii) Rail/road/air traffic disrupted.</li> <li>iii) Roads and houses flooded.</li> </ul>

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
9.	7 & 8 Sep.	Bongaigaon, Dhemaji, Dibrugarh, Jorhat, Lakhimpur, Nagaon, Nalbari, Sonitpur, Sibsagar and Tinsukia	Flash flood (Brahmaputra and Dibru rivers)		i) The worst affected area in Dibrugarh: Larua Mouza area 48 villages, 50 villages in Kalakhowa and Madhupur areas. ii) Dibru Saikhowa National Park affected for a week in Tinsukia. iii) 172 villages affected in the district Tinsukia. iv) Total 3 lakh people affected in 10 districts.
10.	6 Oct.	Kamrup	Heavy rains	One person died due to landslide.	
*	Whole year	Area affected 0.001 m.ha.			i) 0.006 million population affected. ii) Crops in 0.001 m. ha. damaged.
<b>BIHAR</b>					
1.	27 May.	Nalanda, Nawada and Patna	Heavy rains	5 persons died.	i) Damage to crops reported. ii) Trees/poles uprooted.
2.	18 Jun.	Muzaffarpur	Heavy rains	One woman died and 6 others injured due to house collapse.	
3.	11-15 Jul.	Araria, Katihar, Kishanganj, Madhepura, Purnea and Supaul	Heavy rains	9 persons died as a boat carried away in flood water of Kosi river in Madhepura while 28 others died in different incidences.	i) Damage to crops reported. ii) Trees/poles uprooted. iii) Rail/road/air traffic disrupted. iv) Roads and houses submerged.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
4.	7 Aug.	Bhojpur and Monghyr	Heavy rains	5 persons died.	i) Trees/poles uprooted. ii) Rail/road/air traffic disrupted. iii) Roads and houses submerged.
5.	18 Aug.	Bhagalpur	Heavy rains	2 persons died.	
6.	26-28 Aug.	Gopalganj, Samastipur, Saran and Vaishali	Heavy rains	3 persons died.	i) Extensive damage to the banana plantations and crops reported. ii) Few houses washed away.
*	Whole year	Area affected 0.600 m.ha.		i) 218 human lives lost. ii) 6548 cattle lost.	i) 6.900 million population affected. ii) 1,56,518 houses damaged. iii) Crops in 0.600 m. ha. damaged.
<b>CHHATISGARH</b>					
1.	13 Jul.	Bilaspur	Heavy rains	One constable swept away in Bhairamgarh tehsil.	i) Low lying areas flooded. ii) Road traffic disrupted.
2.	30 & 31 Jul.	Durg, Janjgir-Champa, Raigarh, Raipur and Rajnandgaon	Heavy rains	2 boys died due to house collapse in Janjgir-Champa.	i) Extensive damage to crops reported. ii) About 300 kachcha houses collapsed. iii) About 40 villages in Janjgir-Champa flooded. iv) Many villages of other districts inundated. v) Many streets, bridges and approach roads inundated. vi) About 490 families affected.
3.	1 Aug.	Korba and Raipur	Heavy rains	2 persons swept away.	i) Trees/poles uprooted disrupting rail/road traffic. ii) Roads and houses submerged.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
<b>GUJARAT</b>					
1.	18 Jun.	Dahod	Heavy rains	3 persons died in Garbada tehsil due to house collapse.	
2.	26 Sep- 2 Oct.	Most parts of Gujarat	Heavy rains	13 persons died in different incidences.	i) Low lying areas flooded. ii) About 50,000 people shifted to safer places. iii) Rail/road traffic disrupted.
*	<i>Whole year</i>			i) 186 human lives lost. ii) 274 cattle lost.	i) 0.177 million population affected. ii) 407 houses damaged.
<b>HIMACHAL PRADESH</b>					
1.	3 <sup>rd</sup> week of Jun.	Kinnaur	Heavy rains	About 10 persons died and 25 shepherds missing due to massive landslide.	i) Extensive damage to apple plants in Ropa valley belt reported. ii) Damage to green peas fields, wheat and barley crops reported. iii) Damage to NH-22 reported. iv) More than 250 meters of road vanished at different spots. v) Irrigation channels breached. vi) Number of people evacuated from Pooh, Sangla and Reckong Pao.
2.	6 & 7 Jul.	Kangra, Mandi, Sirmaur and Una	Heavy rains	One person died in cloud burst in Mandi.	i) Landslides reported. ii) Nearly 60 roads including Chandigarh-Manali road blocked. iii) Power generation in NAPHTHA -Jakhri power project affected.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
3.	16-20 Jul.	Mandi, Hamirpur, Kangra, Shimla, Sirmaur and Una	Heavy rains	One person died due to landslide and other died as his truck washed away.	i) Landslides reported. ii) Damage to crops reported. iii) Nahan-Panota and Mandi-Pathankot highway blocked. iv) Jogindernagar-Pathankot railway service blocked due to landslides.
4.	24 Jul.	Mandi, Kangra, Kullu, Shimla, Sirmaur and Una	Heavy rains		More than 60 roads closed due to flooding and landslides.
5.	2-6 Aug.	Chamba, Mandi, Kangra, Parts of Lahul & Spitti and Shimla	Heavy rains	i) 5 persons died due to house collapse and landslides. ii) About 200 animals perished.	i) Damage to more than 60 roads and 50 army quarters reported due to landslides in Kangra. ii) Number of kachcha houses and electric poles washed away.
6.	13-19 Aug.	Chamba, Hamirpur, Kangra, Kullu, Mandi and Sirmaur	Heavy rains	5 persons washed away including 2 girls and 2 more women died due to house collapse.	i) Landslides reported. ii) One bridge and many houses, roads damaged/ washed away. iii) Damage to railway track reported in Kangra.
7.	9 Sep.	Shimla	Heavy rains	One child died and other injured due to landslide.	
8.	15 Sep.	Bilaspur, Kangra, Shimla, Sirmaur and Una	Moderate		i) Extensive damage to maize crop reported. ii) Many trees and about 200 electric poles uprooted disrupting power/electricity supply.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
*	Whole year	Area affected 0.102 m.ha.		i) 73 human lives lost. ii) 24,267 cattle lost.	i) 11,243 houses damaged. ii) Crops in 0.102 m. ha. damaged.
<b>JAMMU &amp; KASHMIR</b>					
1.	26 May	Baramulla	Heavy rains	One girl swept away in Qazipora area of Rafiabad.	
2.	29 May	Anantanag	Heavy rains (Cloud burst)	One person died in forest area of Dooru.	
3.	20 Jul.	Jammu, Kathua and Samba	Heavy Rains	4 persons died.	About a dozen houses collapsed and caused damage to many other houses.
4.	30 Jul.	Anantanag	Heavy rains (Cloud burst)		i) Paddy fields spread over hundred acres of land submerged. ii) Damage to some houses reported in Doodu-madhama village.
5.	1 Aug.	Kargil	Heavy rains (Cloud burst)	One person injured.	i) Number of persons trapped in flash flood. ii) NH SRN-Leh washed away.
6.	9 Aug.	Jammu, Kathua and Samba	Heavy rains	One woman died.	Damage to some houses reported.
7.	14 Aug.	Poonch and Ramban	Heavy rains	12 persons died and 2 others injured.	Lanslide reported in Panthal in Ramban.
8.	19 Aug.	Baramulla and Pulwama	Heavy rains	2 persons died in Baramulla.	Some government buildings damaged due to heavy rains in Tral town, Pulwama.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
9.	9 Sep.	Rajouri	Heavy rains	2 children died due to house collapse.	
10.	13 Sep.	Shopian	Heavy rains (Cloud burst)	One person died and other injured in Haapat Nar Keller area.	
<b>JHARKHAND</b>					
1.	19 Aug.	Deoghar	Heavy rains	2 persons died.	
2.	2 Oct.	Ranchi	Heavy rains	2 persons died.	i) Few kachcha houses collapsed. ii) Many trees uprooted disrupting power and road communication.
*	Whole year	Area affected 0.022 m.ha.		i) 3 human lives lost. ii) One cattle lost.	i) 0.199 million population affected. ii) 528 houses damaged. iii) Crops in 0.022 m. ha. damaged.
<b>KARNATAKA</b>					
1.	31 May	Bangalore Urban	Heavy rains	One died due to wall collapse.	
2.	5 Jun.	Belgaum	Heavy rains	One woman died as a tree fell on her.	
3.	10-18 Jun.	Dakshina Kannada	Heavy rains	4 persons died, 4 others washed and 6 others injured.	i) Low lying areas flooded. ii) Trees/electricity poles uprooted causing disruption in road traffic and power communication.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
4.	2-5 Jul.	Belgaum, Dakshina Kannada, Honavar and Kodagu	Heavy rains	3 persons died and 4 others washed away.	i) Low lying areas flooded. ii) Trees/electricity poles uprooted causing disruption in road traffic and power communication.
5.	15 Jul.	Bellary and Shimoga	Heavy rains	2 persons washed away.	
6.	20 Jul.	Davanagere	Heavy rains	2 persons died.	
7.	25 Jul.	Uttara Kannada	Heavy rains	One person washed away.	
8.	1 Aug.	Kodagu	Heavy rains	One person died.	
9.	5 Aug.	Udupi	Heavy rains	One woman died due to wall collapse.	
10.	11-20 Sep.	Banglore Urban, Belgaum, Bidar, Davanagere, Gadag, Gulbarga, Koppal, Raichur and Tumkur	Heavy rains	9 persons died due to wall collapse and 10 others washed away.	
*	Whole year	Area affected 0.228 m.ha.		i) 124 human lives lost. ii) 368 cattle lost.	i) 12,310 houses damaged. ii) Crops in 0.228 m. ha. damaged.
<b>KERALA</b>					
1.	9 Mar.	Wayand	Heavy rains		i) Around 10,000 banana, coconut, arecanut plantations damaged. ii) Damage to crops worth lakhs rupees reported.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
2.	12 Mar.	Kannur	Heavy rains	About 4,500 hens perished.	Damage to farm equipments of worth 12 lakhs rupees reported.
3.	26 Mar.	Thiruvananthapuram	Heavy rains		<ul style="list-style-type: none"> <li>i) Low lying areas submerged.</li> <li>ii) Number of electric poles/trees uprooted causing traffic and vehicular disruption.</li> <li>iii) Heavy damage to Govt. Ayurveda Hospital and post office buildings reported.</li> </ul>
4.	29-31 Mar.	Wayanad	Heavy rains		<ul style="list-style-type: none"> <li>i) Thousands of Banana plantations and other crops uprooted.</li> <li>ii) Loss worth lakhs rupees reported.</li> </ul>
5.	26-28 Apr.	Wayanad	Heavy rains	2 persons injured.	<ul style="list-style-type: none"> <li>i) Acres of banana plantations, paddy and vegetables damaged.</li> <li>ii) Damage to several houses reported.</li> <li>iii) Trees uprooted causing disruption in road traffic and power supply reported.</li> </ul>
6.	3-7 May	Wayanad	Heavy rains		<ul style="list-style-type: none"> <li>i) Damage to thousands of banana, rubber and mango plantations reported.</li> <li>ii) Number of villages inundated.</li> </ul>
7.	5 May	Thiruvananthapuram.	Heavy rains		<ul style="list-style-type: none"> <li>i) Several villages inundated.</li> <li>ii) Few houses damaged.</li> <li>iii) Many trees including rubber plantations uprooted.</li> <li>iv) Mango orchards completely damaged.</li> <li>v) Cattle sheds inundated.</li> <li>vi) Loss worth 3.5 crore rupees reported.</li> </ul>

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
8.	2-6 Jun.	Thiruvananthapuram.	Heavy rains		<ul style="list-style-type: none"> <li>i) Extensive damage to banana, rubber, coconut reported.</li> <li>ii) Few houses partially damaged.</li> </ul>
9.	8 Jun.	Thiruvananthapuram and Thrissur	Heavy rains	One person injured.	<p><b>Thiruvananthapuram:</b></p> <ul style="list-style-type: none"> <li>i) Several crops submerged.</li> <li>ii) About 300 houses submerged and more than 100 houses damaged.</li> <li>iii) Around 150 people shifted relief camps.</li> <li>iv) Several trees uprooted and fell over several buildings, houses, roads causing disruption in traffic and power supply.</li> </ul> <p><b>Thrissur:</b></p> <ul style="list-style-type: none"> <li>i) More than 80 houses partially damaged.</li> <li>ii) Several houses flooded.</li> <li>iii) People shifted to relief camps.</li> <li>iv) Number of coconut trees uprooted.</li> </ul>
10.	8 & 16 Jun.	Wayanad	Heavy rains		About 20,500 banana plantations damaged.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
11.	11-26 Jun.	Thiruvananthapuram	Heavy rains	7 persons died and few others injured in different incidences.	i) About 3,000 houses partially and 500 completely damaged. ii) Extensive damage to the banana, rubber, bamboo, coconut plantations reported. iii) Several roads/canals/houses flooded. iv) More than 500 people shifted to the relief camps. v) Extensive damage to agricultural crops/land reported. vi) Several cable lines damaged. vii) Many trees/electric poles uprooted causing traffic disruption and also fell over buildings, vehicles causing damage to the property. viii) Massive damage to the house hold articles reported. ix) Number of boats, boat nets and fishing equipments drowned.
12.	17 Jun.	Kasaragod	Heavy rains	2 persons died and 2 others injured due to landslide.	Landslide reported.
13.	24-27 Jun.	Kasaragod and Wayanad	Heavy rains		i) About 40 houses partially damaged. ii) About 590 people shifted to relief camps. iii) 6 wells collapsed causing a loss of worth Rs. 47,000/-only. iv) Extensive damage to agricultural crops reported. v) Dried bamboo plantations fell across NH roads causing traffic disruption. vi) Madakkal suspension bridge in Kasargode collapsed.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
14.	25-29 Jun.	Idukki, Ernakulam, Kollam, Kozhikode, Palakkad and Pathanamthitta	Heavy rains	2 persons died due to wall collapse in Pathanamthitta while one person died due to landslide in Munnar.	<p><b>Ernakulam:</b></p> <ul style="list-style-type: none"> <li>i) 16 houses fully and 326 houses partially damaged.</li> <li>ii) About 1360 people shifted to the relief camps.</li> <li>iii) 68.7 hectares of agricultural land submerged.</li> <li>iv) Loss of worth Rs. 5.37 crores reported.</li> </ul> <p><b>Kollam:</b></p> <ul style="list-style-type: none"> <li>i) One house fully and 20 houses partially damaged.</li> <li>ii) 3 wells caved in.</li> </ul> <p><b>Kozhikode:</b></p> <ul style="list-style-type: none"> <li>iii) 45 houses fully and 2 partially damaged.</li> <li>iv) 6 boats completely and 1 boat partially damaged.</li> <li>v) About 30 boats drowned at Chaliyar coast.</li> </ul> <p><b>Palakkad:</b></p> <ul style="list-style-type: none"> <li>i) 12 houses damaged causing a loss of worth Rs. 1.2 lakhs reported.</li> <li>ii) 6.75 hectares of agricultural land damaged causing a loss of worth Rs. 1.32 crores reported.</li> </ul> <p><b>Pathanamthitta:</b></p> <ul style="list-style-type: none"> <li>i) Extensive damage to rubber plantations reported.</li> <li>ii) Punalur-Muvattapuzha State highway submerged causing vehicular disruption.</li> </ul>

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
15.	27-29 Jun.	Alappuzha	Heavy rains	7 persons died and 3 others drowned.	<ul style="list-style-type: none"> <li>i) 33 houses fully and 633 houses partially damaged causing a loss of worth Rs. 88.89 lakhs.</li> <li>ii) Alappuzha-Changanacherry road inundated causing traffic disruption.</li> <li>iii) About 15 villages inundated.</li> <li>iv) Few houses washed away.</li> <li>v) About 4.5 lakh people shifted in relief camps.</li> <li>vi) More than 200 hectares of paddy fields submerged.</li> <li>vii) About 3,300 hectares of agricultural land affected. causing a loss of worth Rs. 3.8 crore.</li> </ul>
16.	1-4 Jul.	Wayanad	Heavy rains		<p><b>Mananthavady Tehsil:</b></p> <ul style="list-style-type: none"> <li>i) Landslides reported.</li> <li>ii) One house partially damaged.</li> <li>iii) One well caved in.</li> <li>iv) Many bamboo grooves, rubber trees uprooted causing traffic disruption.</li> <li>v) Niravill bridge submerged.</li> <li>vi) Mainly tribal people and farmers affected.</li> <li>vii) Pollampara bridge damaged as it was submerged.</li> </ul> <p><b>Vythiri Tehsil:</b></p> <ul style="list-style-type: none"> <li>i) 56 houses partially and 3 houses completely damaged.</li> <li>ii) One well caved in.</li> <li>iii) 257 families shifted to 16 relief camps.</li> <li>iv) Rs. 7.89 lakhs worth loss reported.</li> </ul>

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
17.	5-12 Jul.	Idukki and Thiruvananthapuram	Heavy rains	i) 2 persons injured in Maruthankuzhy area as a tree fell over them. ii) Few livestock perished.	<b>Cheruthoni town in Idukki:</b> i) Landslide reported. ii) 5 acres of standing crops washed away. <b>Thiruvananthapuram:</b> i) A tree fell over a house damaging it in Killimanoor town. ii) A tree fell over electric cable lines disrupting power supply. iii) Acacia, Jackfruit, coconut, rubber, teak trees uprooted fell over a transformer, one house and a shop compound wall, damaging/collapsing the structures and also damaging some vehicles. iv) Several trees uprooted fell over NH road disrupting traffic and damaging a temple, a school building and a cattle-shed. v) A well caved in. vi) Taluka hospital of Chrayankeezehu damaged as a tree fell over it. vii) Few houses damaged.
18.	11 Jul.	Wayanad	Heavy rains		<b>Mananthavady Tehsil:</b> 1,90,000 banana plantations damaged. 8 hectares of ginger, 5 hectares of yam, 1118 arecanut trees, 336 rubber trees, 1.5 acres of paddy damaged causing Rs.2 crores worth loss reported.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
19.	11-13 Jul.	Alappuzha, Ernakulam, Kollam and Kottayam	Heavy rains	i) One person drowned in Kuttanad. ii) One person missing as fishing boat capsized in Kollam. iii) A girl drowned at Thiruchandoor. iv) In Ernakulam one person died as he fell into a flooded canal.	<b>Alappuzha:</b> i) Coconut, banana plantations, tapioca, vegetables damaged. ii) 15,000 houses inundated. iii) About one lakh people shifted in relief camps.
20.	19-26 Jul.	Thiruvananthapuram	Heavy rains		i) 40 houses damaged. ii) Crops and rubber, banana plantations damaged. iii) Jack, teak and coconut trees uprooted. iv) Loss of worth one lakh rupees reported.
21.	23 Jul.	Ernakulam	Heavy rains	4 persons died and 2 others injured in a landslide.	
22.	29 Jul.	Pathanamthitta	Heavy rains	One person died.	

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
23.	1 & 2 Aug.	Wayanad	Heavy rains		<p><b>Taruvana town:</b></p> <ul style="list-style-type: none"> <li>i) Thousands of paddy, banana, arecanut, coconut, rubber plantations submerged and damaged.</li> <li>ii) 841.30 ha. of crops damaged.</li> <li>iii) 4 houses partially damaged.</li> </ul> <p><b>Kalpetta town:</b></p> <ul style="list-style-type: none"> <li>i) 17 houses completely while 14 houses partially damaged.</li> <li>ii) 361 families shifted to relief camps.</li> </ul> <p><b>Mananthavady Tehsil:</b></p> <ul style="list-style-type: none"> <li>i) 18 families with 133 people shifted to relief camps.</li> <li>ii) Several trees uprooted causing traffic disruption.</li> <li>iii) Cherupuzha bridge submerged.</li> <li>iv) One house damaged fully and other partially.</li> </ul> <p><b>Padinjarathara town:</b></p> <ul style="list-style-type: none"> <li>i) Agricultural crops, worth lakhs rupees damaged.</li> <li>ii) Thousands of banana, paddy, arecanut, coconut plantations submerged.</li> <li>iii) Several families shifted to safer places.</li> </ul>

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
24.	2-6 Aug.	Thiruvananthapuram	Heavy rains	One person injured as tree fell on him in Kilimanoor.	<b>Kilimanoor, Kallara, Pangode and Chirayankeezhu towns:</b> <ul style="list-style-type: none"> <li>i) Several rubber, banana, coconut and agricultural crops damaged.</li> <li>ii) Several trees uprooted damaging houses. 60 houses damaged partially in Neyyattinkkara, Nedumangad and Chirayankeezhu tehsils.</li> <li>iii) In Pangode 3 hectares of Mangiyam trees uprooted.</li> <li>iv) Wall of a well caved in.</li> <li>v) Several electric lines damaged in Kadakkavoor and Vakkom areas.</li> </ul>
25.	4 -8 Aug.	Alappuzha, Ernakulam and Idukki,	Heavy rains	<b>Idukki:</b> <ul style="list-style-type: none"> <li>i) 15 persons died as a mini bus, a jeep and few motor cycles swept away.</li> <li>ii) One person missing and 2 injured in landslide.</li> </ul> <b>Kochi:</b> <p>2 persons died in Kochi.</p>	<b>Alappuzha:</b> <ul style="list-style-type: none"> <li>i) One house washed away and several houses inundated.</li> <li>ii) About 1.8 lakh people shifted to 183 relief camps.</li> <li>iii) Damage to 1600 acres of agricultural crops reported.</li> </ul> <b>Ernakulam:</b> <ul style="list-style-type: none"> <li>i) Kothamangalam town and Kochi airport runway flooded.</li> <li>ii) Landslide at Blavana Pooyamkutty road reported.</li> <li>iii) About 14,043 people shifted to 121 relief camps.</li> <li>iv) Manikandanchal bridge, Mahadeva temple submerged in Aluva.</li> </ul>

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
					<b>Idukki:</b> i) About 10 shops buried in landslide. ii) Few houses and buildings collapsed. iii) 240 people shifted to 5 relief camps. iv) Landslide reported near Kulamavu and around 4 acres of land washed away. v) A hill caved down around 600 feet causing damage to agricultural crops. vi) Land caved in and roads blocked causing road traffic disruption.
26.	10 & 16 Aug.	Wayanad	Heavy rains		i) Landslide reported. ii) Acres of paddy fields damaged. iii) Thalasserry-Mananthavady road completely damaged disrupting vehicular traffic
27.	1 Sep.	Idukki	Heavy rains		i) 15 acres of paddy fields washed away in Mangad. ii) Loss of worth lakh rupees reported.
28.	12 Sep.	Wayanad	Heavy rains		i) Padumutty bridge collapsed. ii) 2 houses damaged partially. iii) Several houses inundated. iv) Landslide reported. v) People shifted to safer places.
29.	17 Sep.	Thiruvananthapuram	Heavy rains	3 persons injured.	i) In Venjaranmood village, a tree fell and broke 11KV electric line causing traffic disruption. ii) Some vehicles damaged.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
<b>MADHYA PRADESH</b>					
1.	26 & 27 Jun.	Betul, Rajgarh, Sagar, Sehore and Ujjain	Heavy rains	7 persons swept away.	Trees/poles uprooted disrupting electricity/ telephone services.
2.	4 Jul.	Indore	Heavy rains	One girl drowned in manholes and 2 others swept away.	
3.	13-16 Jul.	Betul and Harda	Heavy rains	i) 10 persons swept away in the flood water of Bukakhedi river in Betul. ii) 2 boys swept away in Harda.	Low lying areas and crop land inundated.
4.	23 Aug.	Sehore	Heavy rains	One girl swept away.	i) Damage to few houses reported. ii) More than 100 villages submerged. iii) Low lying areas inundated.
<b>MAHARASHTRA</b>					
1.	11 Feb.	Jalgaon and Nanded	Heavy rains		Damage to wheat, banana, papaya, chilly crops reported.
2.	23 Feb.	Wardha	Heavy rains	One person died as a tree fell on him.	Damage to oranges, mosambi, wheat, gram, chilly and vegetables in some hectares of area reported.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
3.	17 Apr.	Jalgaon	Heavy rains	One woman died as a tree fell on her.	Banana, cotton and jawar plantations damaged.
4.	23 Apr.	Nagpur	Heavy rains		About 50,000 sacks of soya and wheat grains affected.
5.	7 Jun.	Pune	Heavy rains	One woman along with her daughter swept away at Shindewadi, Katraj.	
6.	9 Jun.	Mumbai	Heavy rains	2 persons died in Bhandup and 9 others injured.	i) Low lying areas flooded. ii) Trees/poles uprooted causing vehicular and traffic disruption.
7.	16-18 Jun.	Pune and Thane	Heavy rains	i) 3 women died due to wall collapse in Pune. ii) 3 labours died and 2 others injured in the landslide at Turbhe.	i) Low lying areas flooded. ii) Trees/poles uprooted causing vehicular and traffic disruption.
8.	22-28 Jun.	Akola, Amaravati, Bhandara, Buldhana, Chandrapur, Gondia, Nagpur, Wardha, Washim and Yavatmal	Flood	3 persons died.	i) Extensive damage to the standing and paddy crops reported. ii) Bridges washed away and many huts submerged. iii) About 50 houses and 3 cattle sheds damaged.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
9.	3 Jul.	Raigad and Ratnagiri	Heavy rains	5 persons died and other swept away.	i) Low lying areas flooded. ii) Trees/poles uprooted causing vehicular and traffic disruption.
10.	14-19 Jul.	Amaravati, Chandrapur, Gondia, Nagpur, Wardha, Washim and Yavatmal	Flood	i) About 30 persons died, 16 others drowned and one swept away. ii) About 1000 livestock perished.	i) About 330 houses fully and 2000 kachcha houses partially damaged. ii) Extensive damage to the soyabean, cotton, tur, rice in thousands of hectares reported. iii) Many areas submerged. iv) Number of families shifted to safer places.
11.	24 Jul.	Buldhana	Heavy rains	One person swept away in Gundha village, Lonar tehsil.	Damage to Kharif crops reported in some villages.
12.	1-3 Aug.	Amaravati, Chandrapur, Nagpur, Wardha and Yavatmal	Heavy rains	9 persons died, 5 others swept away and 18 others injured.	i) Low lying areas and crop land inundated. ii) Railway tracks, vehicles, roads inundated. iii) About 5.42 lakh hectares of land of standing crops washed away in Nagpur district. iv) About 2.5 lakh hectares of crops damaged in Chandrapur district. v) About 5000 houses damaged/collapsed. vi) Many places inundated and many families shifted to safer places. vii) Road traffic/ electricity/ telecommunication services disrupted. viii) More than hundreds of a cattle sheds damaged. ix) Estimated loss of about 100 crore rupees reported.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
13.	19 Sep.	Pune	Heavy rains	4 persons died as a house collapsed in Yerawada area.	Road traffic/ electricity/ telecommunication services disrupted.
14.	26 Sep.	Nandurbar	Heavy rains	8 persons died and few others injured due to massive landslide.	
15.	11 Oct.	Jalgaon	Heavy rains	5 persons died due to house collapse.	i) Low lying areas flooded. ii) Trees/poles uprooted causing vehicular and traffic disruption.
<b>MIZORAM</b>					
1.	11 May	Aizwal	Heavy rains	17 persons died in a massive landslide.	Damage to some buildings reported.
<b>NAGALAND</b>					
1.	12 Jul.	Kohima	Heavy rains		i) Landslides disrupt vehicular movement on NH-29. ii) A large number of vehicles were stranded on NH-29 near Phesama village
<b>ODISHA</b>					
1.	2 Aug.	Bhadrak	Heavy rains	2 persons died.	
2.	10 Aug.	Koraput	Heavy rains	2 persons died.	

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
3.	23 Aug.	Bhadrak	Heavy rains	One person died.	
4.	16 Sep.	Cuttack	Heavy rains	One person died.	
*	Whole year	Area affected 0.046 m.ha.		i) 24 human lives lost. ii) 34 cattle lost.	i) 0.390 million population affected. ii) 5857 houses damaged. iii) Crops in 0.046 m. ha. damaged.
<b>RAJASTHAN</b>					
1.	16 Feb.	Banswara, Dholpur and Sawai Madhopur	Heavy rains	3 persons died.	
2.	8 Jun.	Kota, Tonk and Udaipur	Heavy rains	6 persons died due to wall collapse.	Road traffic/ electricity/ telecommunication services disrupted.
3.	11 Jun.	Jaipur	Heavy rains	One person died.	
*	Whole year	Area affected 0.040 m.ha.		i) 14 human lives lost. ii) 157 cattle lost.	i) 0.229 million population affected. ii) 13,108 houses damaged. iii) Crops in 0.040 m. ha. damaged.
<b>TAMIL NADU</b>					
1.	11 Sep.	Chennai and Tiruvallur	Heavy rains	4 persons died.	i) Several trees/electric poles uprooted causing traffic disruption. ii) Roof of some houses blown away.
2.	15 Oct.	Coimbatore and Cuddalore	Heavy rains	2 persons died due to wall collapse.	

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
3.	20 Oct.	Coimbatore and Tiruvannamalai	Heavy rains	One person died due to wall collapse and other washed away.	
4.	16 Nov.	Cuddalore, Dharamapuri, Kanyakumari, Nagapattinam, Thanjavur, Thiruvarur and Villupuram	Heavy rains	i) 11 persons died in different incidences. ii) 7 cattle heads perished.	i) About 35 houses fully and 150 houses partially damaged. ii) Damage to banana plantations reported. iii) About 100 electric poles damaged in Sirkazhi town. iv) Roof of a school building blown away. v) 2500 acres of salt pans submerged.
5.	25 Nov.	Pudukkottai	Heavy rains	3 persons died.	
6.	13 Dec.	Nagapattinam	Heavy rains	One fisherman lost his life.	About 6,000 acres of paddy crops damaged.
*	<i>Whole year</i>			i) <i>92 human lives lost.</i> ii) <i>258 cattle lost.</i>	<i>1,314 houses damaged.</i>
<b>UTTAR PRADESH</b>					
1.	12 Jun.	Kannauj	Heavy rains	10 persons died.	i) Low lying areas and crop land inundated. ii) Several trees/electric poles uprooted causing traffic disruption. iii) Roof of some houses blown away.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
2.	17 Jun.	Muzaffar Nagar	Heavy rains	One woman died and 3 others injured due to house collapse.	i) Several trees/electric poles uprooted causing traffic disruption. ii) Roof of some houses blown away.
3.	19 Jun.	Barabanki and Bahraich	Heavy rains	2 persons died.	
4.	25-30 Jun.	Faizabad, Gonda and Sitapur	Heavy rains	About 12 persons died in different incidences.	i) Damage to some houses reported. ii) Low lying areas flooded. iii) Road/rail traffic disrupted.
5.	15 Jul.	Faizabad	Heavy rains	One person died and 3 others injured.	
6.	26 Jul.	Balrampur	Heavy rains	2 persons died.	
7.	17 Aug.	Kannauj	Heavy rains	15 persons died and 3 others injured.	i) Damage to some houses reported. ii) Low lying areas flooded. iii) Road/rail traffic disrupted.
*	Whole year	Area affected 0.349 m.ha.		i) 380 human lives lost. ii) 550 cattle lost.	i) 3.544 million population affected. ii) 79,600 houses damaged. iii) Crops in 0.349 m. ha. damaged.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
<b>UTTARAKHAND</b>					
1.	14-18 Jun.	12 out of 13 districts affected badly and worst affected Chamoli, Pithoragarh, Rudraprayag and Uttarkashi districts.	Heavy to very rainfall/flash floods (Saraswati and Mandakini Rivers and its tributaries triggered by very heavy rainfall and lake burst), cloudburst on Jun16 &17 Jun, massive landslides and avalanches reported at multiple places.	i) About 5,000 people- the locals, the pilgrims, the tourists, trakers died/missing. ii) More than thousand livestock perished.	i) More than thousands of pilgrims of Char Dham on the Gangotri and Yamunotri routes, Hemkund, Roopkunda and tourists/trakers of Valley of flowers stranded. ii) Lakhs of people shifted to safer places. iii) Many roads including state highways, infrastructures, villages washed away/damaged. iv) Many Hydroelectric projects, houses, water schemes, bridges, commercial and residential buildings, hotels, rest houses, shops, temples, telephone towers, vehicles destroyed/ drifted in the floods of rivers. v) Damage to the cash crops especially apple crops reported.
*	Whole year			i) 580 human lives lost. ii) 9,470 cattle lost.	4,726 houses damaged.
<b>UNION TERRITORY</b>					
<b>ANDAMAN &amp; NICOBAR ISLANDS</b>					
1.	24 & 25 May	South Andaman	Heavy rains	One person died.	Damage to the old and thatched houses reported.

S. N.	Date/Period	Area affected	Intensity [River(s)]	Casualties	Extent of damage
<b>NEW DELHI</b>					
1.	16 & 17 Jun.	Delhi	Heavy rains	One person swept away in Yamuna river.	
*	Whole year	Area affected 0.007 m.ha.			i) 0.008 million population affected. ii) Crops in 0.002 m. ha. damaged.
<b>PUDUCHERRY</b>					
1.	25 Nov.	Puducherry	Heavy rains	3 persons died due to wall collapse.	

\* As per data available from Central Water Commission, total damage for the whole season for entire state has been incorporated.

S. N.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
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**TABLE – XII : CYCLONIC STORM 2013**

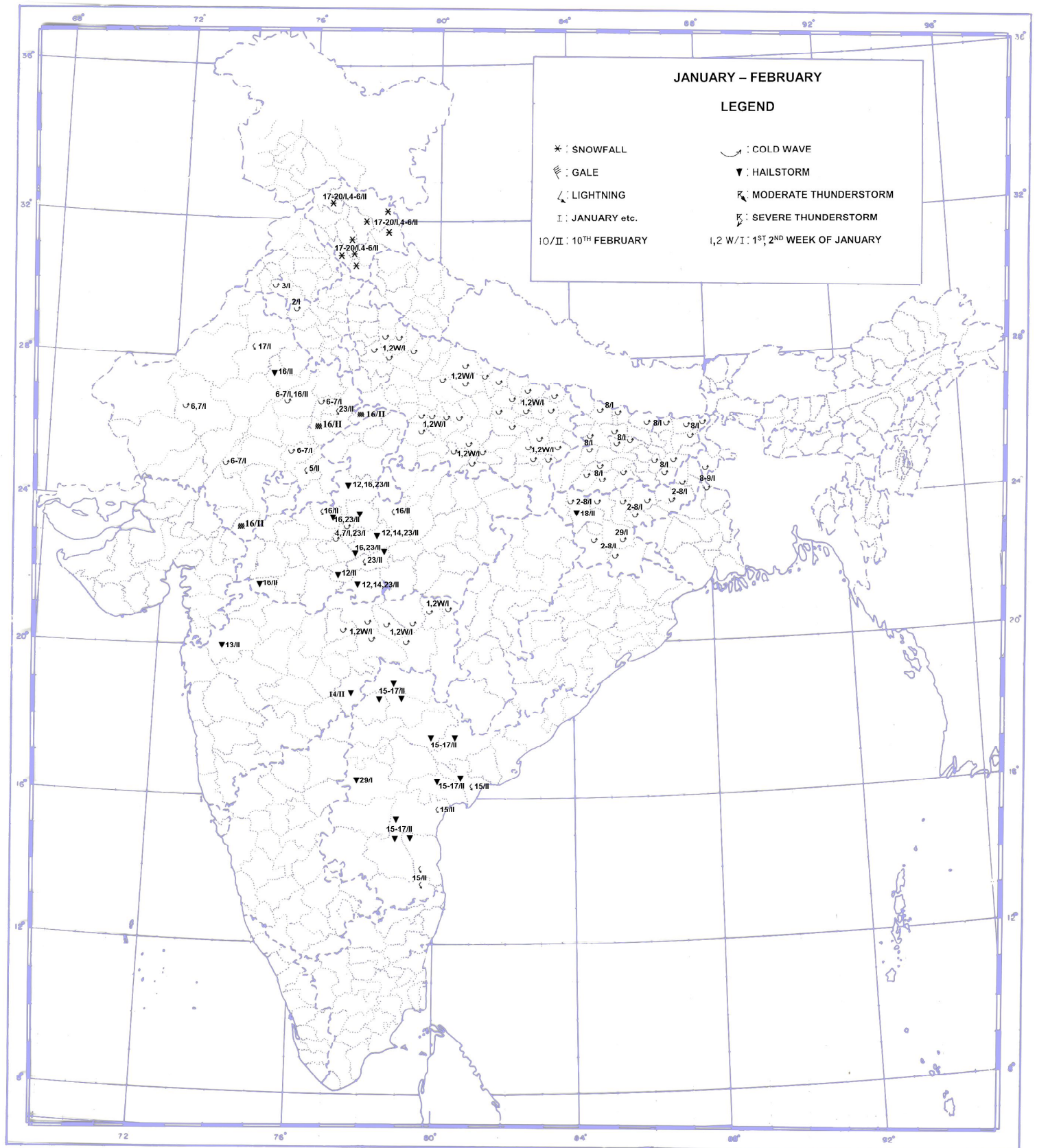
During 2013, three (3) Very Severe Cyclonic Storms (Phailin, Lehar and Madi), one (1) Severe Cyclonic Storm (Helen) and one (1) Cyclonic Storm (Mahasen) formed over the Bay of Bengal. Out of these Phailin and Helen caused some damage, details of the same are out lined below:-

**BAY CYCLONE**

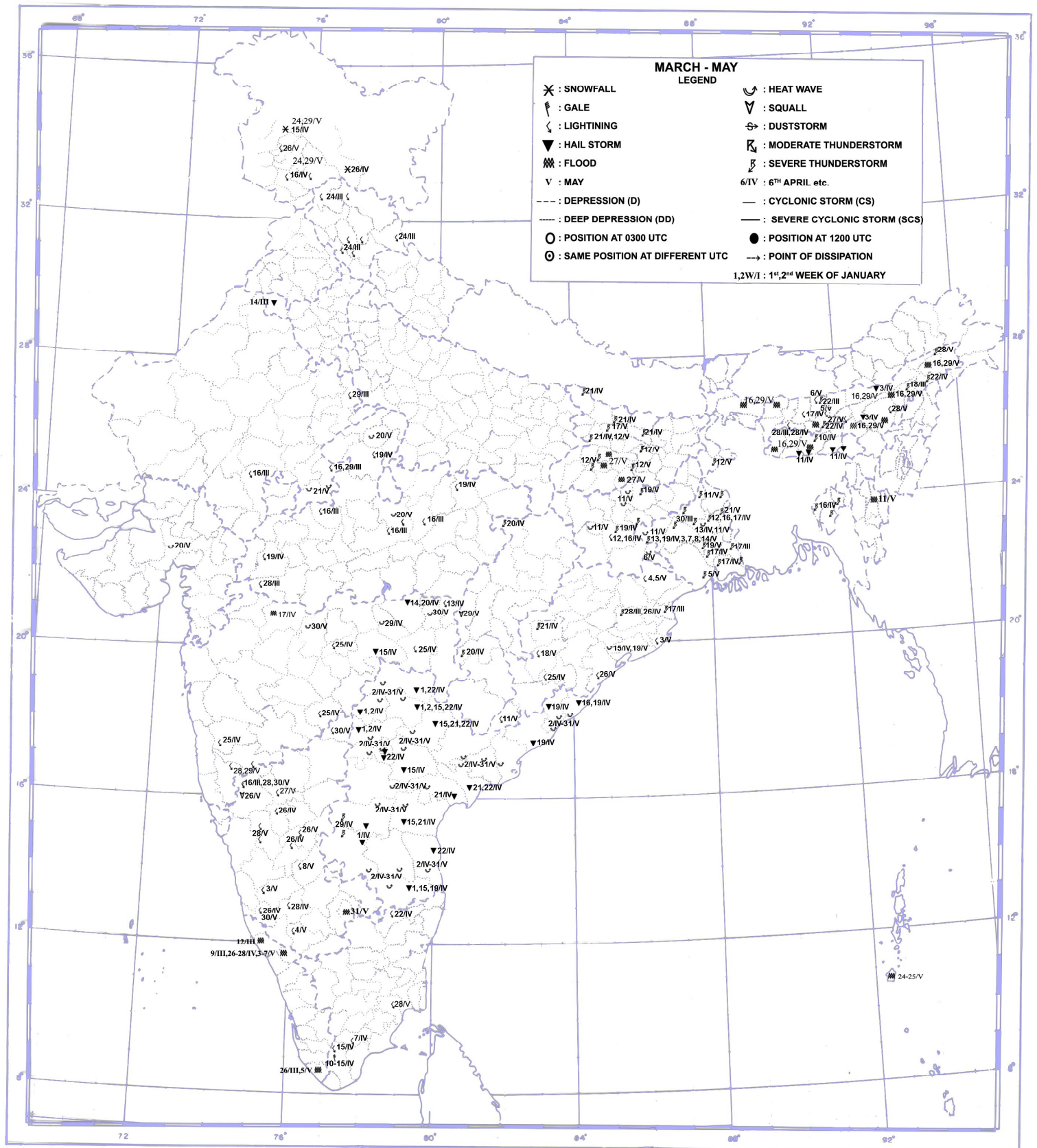
1.	8 -14 Oct.	<p><b>Formation</b> Near Lat. 12.0°N / Long. 96.0°E, about 220 km. north-northwest of Port Blair at 0300 UTC of 8<sup>th</sup> Oct. over north Andaman sea.</p> <p><b>Landfall</b> It crossed the Odisha and north coastal Andhra Pradesh coasts near Gopalpur during 1500 and 1600 UTC of 12<sup>th</sup> Oct.</p> <p><b>Dissipation</b> Weakened into a well marked low pressure area over southwest Bihar and neighbourhood at 0900 UTC of 14<sup>th</sup> Oct.</p>	Very Severe Cyclonic Storm (Phailin)	<p>i) 38 persons died in Odisha.</p> <p>ii) One person died in Andhra Pradesh.</p>	<p><b>Odisha:</b></p> <p>i) About 80 lakh people affected and 8.73 lakh people evacuated.</p> <p>ii) Damage to 6 lakh hectares of crop land reported.</p> <p>iii) 14,500 villages of 1900 Grampanchayats in 99 blocks affected.</p> <p>iv) 39 urban local bodies affected.</p> <p>v) Damage to around 26 lakh trees reported.</p> <p>vi) Estimated loss to fisheries and shrimp sectors to about Rs. 364 crore reported.</p> <p>vii) Fish farmers in Balasore, Bhadrak, Ganjam, Jagatsingpur, Jajpur and Kendrapada districts worst affected.</p> <p><b>Andhra Pradesh:</b></p> <p>i) Thousands of people displaced.</p> <p>ii) Extensive damage to crops as paddy, coconut, teak, mango and banana over 12,0000 hectares of land in Srikakulam district reported.</p> <p>iii) Many houses partially/fully damaged</p>
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S. N.	Date/Period	Area affected	Intensity	Casualties	Extent of damage
					<p><b><u>West Bengal:</u></b></p> <p>About 100 houses damaged.</p> <p><b><u>Andaman &amp; Nicobar Islands:</u></b></p> <p>i) Damage to old thatched houses reported.  ii) Extensive damage to agriculture reported.</p> <p><b><u>Jharkhand:</u></b></p> <p>i) Many kachcha houses collapsed.  ii) Many trees uprooted.  iii) Air/rail services disrupted.</p> <p>i) Extensive damage to paddy crops over 3.5 lakh hectares reported.  ii) Damage to coconut and banana plantations over 8,700 hectares in East Godavari district reported.  iii) Extensive damage to Machilipatanam in Krishna district as many trees/electric lines uprooted.  iv) Estimated loss of Rs. 1,628.73 crore in Krishna, West and East Godavari districts reported.</p>
2.	19-23 Nov	<p><b><u>Formation</u></b>  Near Lat. 14.5°N / Long. 86.5°E, about 310 km.south-southeast of Vishakhapatnam at 0000 UTC of 19<sup>th</sup> Nov. over the West Central Bay of Bengal.</p> <p><b><u>Landfall</u></b>  It crossed Andhra Pradesh coast south of Machilipatnam during 0800 and 0900 UTC of 22<sup>nd</sup> Nov.</p> <p><b><u>Dissipation</u></b>  Weakened into a well marked low pressure area over coastal Andhra Pradesh and neighbourhood at 0000 UTC of 23<sup>rd</sup> Nov.</p>	Severe Storm (Helen)	Cyclonic	11 persons died in Andhra Pradesh.

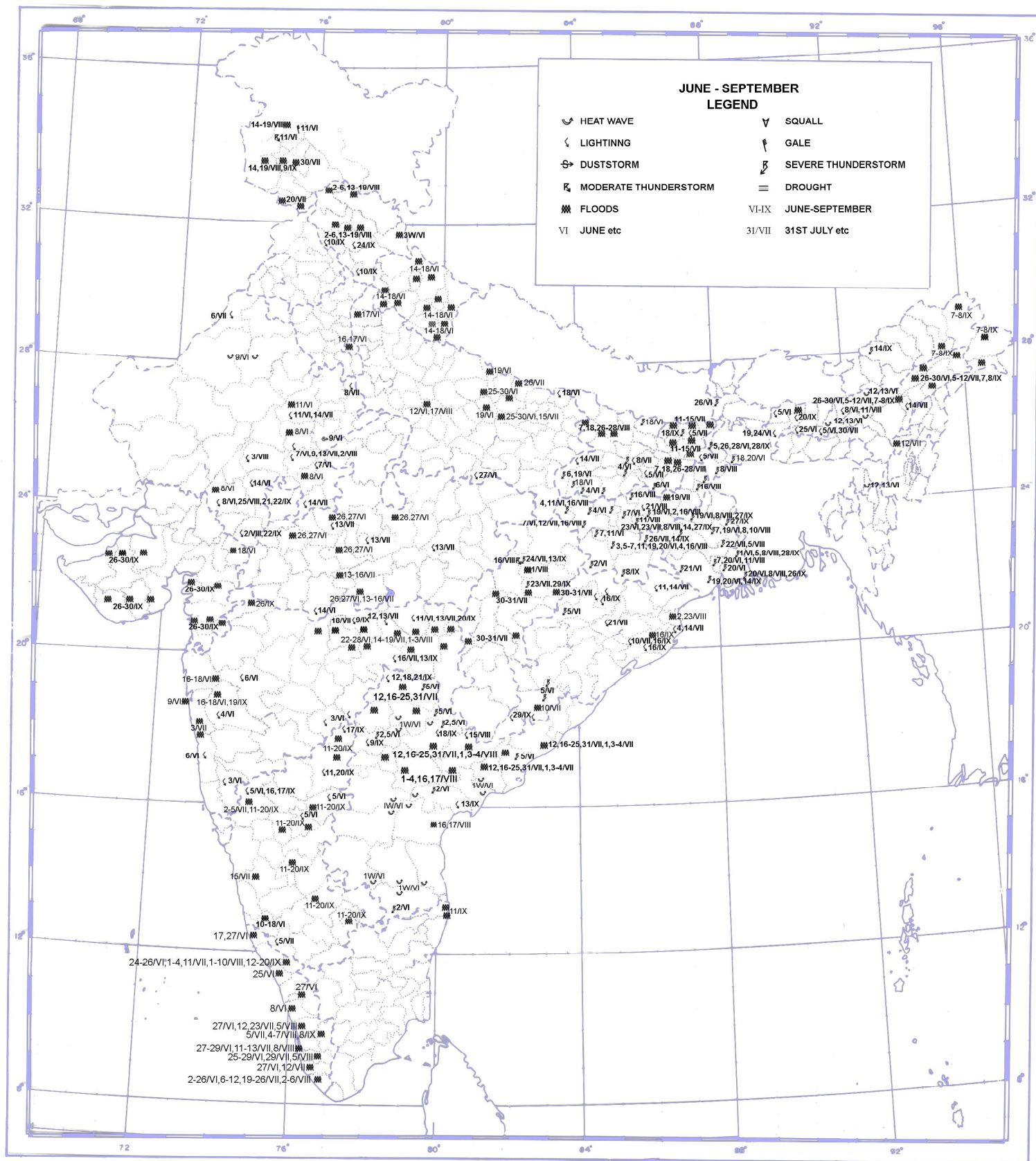
# DISASTROUS WEATHER EVENTS - 2013



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**DESIGNED & PRINTED AT**

**THE CENTRAL PRINTING UNIT,  
OFFICE OF THE ADDITIONAL DIRECTOR GENERAL  
OF METEOROLOGY (RESEARCH)  
PUNE – 411005**