

## Weather in India

### HOT WEATHER SEASON (March – May 2008)\*

#### 1. Chief features

(i) In terms of maximum temperature, the hot weather season of 2008 did not feature any abnormally high values. *Severe heat wave\** conditions were relatively less.

(ii) The pre-monsoon cyclone season witnessed formation of only one cyclone, viz., the Very Severe Cyclonic Storm (Nargis) during 27 April – 3 May over the Bay of Bengal which crossed Myanmar coast causing huge loss of lives and properties.

(iii) Widespread thundershowers occurred over major parts of the country from 3<sup>rd</sup> week of March to 2<sup>nd</sup> week of April. It caused loss of lives and properties in south peninsula.

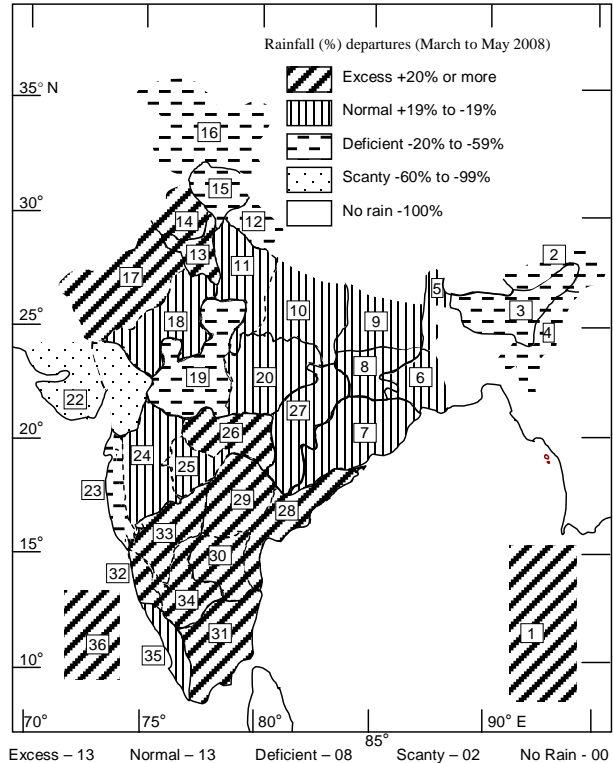
(iv) The southwest monsoon set in over Kerala on 31 May.

#### 2. Seasonal rainfall

The sub-divisionwise rainfall and its departures from normal for each month and season as a whole are given in Table 1. Also the sub-divisional rainfall departures for the season March-May 2008 are depicted in Fig. 1.

The *excess / normal* rainfall over the peninsular India during the season could be attributed to the rain / thundershowers resulted from the large amplitude easterly waves and wind discontinuities during the period 13 March – 9 April and rainfall associated with the advance of southwest monsoon towards the end of May. There was *excess/normal* rainfall reported over parts of NW India also.

\* Definitions of terms in italics other than subtitles are given in Appendix.



**Fig. 1.** Sub-divisionwise seasonal rainfall departure from normal (%) for the period (March - May 2008). 36 Sub-divisions are indicated by numbers on the map & bold letters in legend below. The rainfall anomaly values for these sub-divisions are indicated below :

<b>1</b>	88	<b>7</b>	-14	<b>13</b>	145	<b>19</b>	-58	<b>25</b>	8	<b>31</b>	105
<b>2</b>	-43	<b>8</b>	-16	<b>14</b>	33	<b>20</b>	-16	<b>26</b>	55	<b>32</b>	47
<b>3</b>	-28	<b>9</b>	2	<b>15</b>	-59	<b>21</b>	-73	<b>27</b>	0	<b>33</b>	87
<b>4</b>	-50	<b>10</b>	-2	<b>16</b>	-52	<b>22</b>	-85	<b>28</b>	31	<b>34</b>	46
<b>5</b>	-14	<b>11</b>	6	<b>17</b>	48	<b>23</b>	-25	<b>29</b>	147	<b>35</b>	-7
<b>6</b>	-8	<b>12</b>	-48	<b>18</b>	9	<b>24</b>	0	<b>30</b>	70	<b>36</b>	35

#### 3. Significant features during various months

##### 3.1. March

##### 3.1.1. Weather and associated synoptic features

The details of the weather systems during the month are summarised in Table 2 and the resultant rainfall distribution in Table 3. The principal amounts of rainfall are given in Table 12.

**TABLE 1**  
**Sub-divisionwise rainfall (mm) for each month and season as a whole (March - May 2008)**

S. No.	Meteorological Sub-divisions	March			April			May			Season		
		Actual (mm)	Normal (mm)	Dep. (%)	Actual (mm)	Normal (mm)	Dep. (%)	Actual (mm)	Normal (mm)	Dep. (%)	Actual (mm)	Normal (mm)	Dep. (%)
1.	Andaman & Nicobar Islands	116	19	511	204	69	195	547	373	47	867	461	88
2.	Arunachal Pradesh	119	158	-25	113	277	-59	177	285	-38	409	719	-43
3.	Assam & Meghalaya	116	84	39	166	201	-18	208	396	-48	489	681	-28
4.	Nagaland-Manipur-Mizoram-Tripura	42	65	-35	32	149	-79	147	229	-36	221	443	-50
5.	Sub-Himalayan West Bengal & Sikkim	68	55	24	140	117	20	161	259	-38	369	430	-14
6.	Gangetic West Bengal	12	27	-56	47	46	1	94	93	1	153	167	-8
7.	Orissa	25	25	1	34	36	-5	45	60	-25	104	121	-14
8.	Jharkhand	23	19	22	17	21	-18	31	46	-31	72	86	-16
9.	Bihar	2	11	-85	16	19	-13	68	55	25	86	85	2
10.	East Uttar Pradesh	**	10	-99	5	6	-14	27	17	57	33	33	-2
11.	West Uttar Pradesh	0	11	-100	6	5	27	25	13	93	31	29	6
12.	Uttarakhand	5	59	-91	32	35	-11	45	62	-28	82	157	-48
13.	Haryana, Chandigarh & Delhi	**	13	-99	16	7	129	68	14	396	84	34	145
14.	Punjab	0	27	-100	32	12	163	41	16	160	72	54	33
15.	Himachal Pradesh	5	115	-96	47	66	-29	50	66	-24	102	247	-59
16.	Jammu & Kashmir	9	169	-95	97	100	-3	60	77	-22	165	346	-52
17.	West Rajasthan	**	4	-93	11	3	217	15	10	45	25	17	48
18.	East Rajasthan	**	4	-92	6	3	116	13	11	20	19	17	9
19.	West Madhya Pradesh	2	5	-67	2	2	4	2	7	-70	6	14	-58
20.	East Madhya Pradesh	11	14	-21	7	6	18	5	8	-33	23	28	-16
21.	Gujarat region	0	1	-100	2	1	71	0	6	-100	2	9	-73
22.	Saurashtra & Kutch	**	1	-99	1	1	-39	0	2	-100	1	5	-85
23.	Konkan & Goa	17	**	5766	1	4	-70	13	36	-65	30	40	-25
24.	Madhya Maharashtra	28	3	752	5	10	-52	9	28	-68	41	41	0
25.	Marathwada	31	6	401	5	7	-30	1	21	-97	36	33	8
26.	Vidarbha	39	12	218	4	8	-45	5	11	-58	49	31	55
27.	Chattisgarh	34	16	116	10	17	-40	9	21	-55	53	53	0
28.	Coastal Andhra Pradesh	90	13	622	9	22	-59	25	60	-58	124	94	31
29.	Telangana	113	10	1041	16	17	-3	8	29	-71	138	56	147
30.	Rayalaseema	82	7	1149	1	18	-96	51	54	-6	133	78	70
31.	Tamil Nadu	176	19	806	31	42	-26	55	67	-17	262	128	105
32.	Coastal Karnataka	186	4	4283	22	27	-21	57	148	-62	264	179	47
33.	North interior Karnataka	123	6	1887	18	26	-32	24	56	-58	164	88	87
34.	South interior Karnataka	119	9	1247	24	44	-45	76	97	-22	219	150	46
35.	Kerala	216	38	470	104	122	-15	79	268	-71	398	428	-7
36.	Lakshadweep	120	13	863	16	43	-63	180	178	1	317	234	35

\*\* Indicates amounts between 0.1 to 0.4 mm. (Amounts less than 0.1 is rounded off to 0)

**TABLE 2**  
**Details of the weather systems during March 2008**

S. No.	System	Duration	Place of first location	Direction of movement	Final location	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>(A) Low pressure area</b>						
1.	At sea level	20-22	Commorin-Maldives area	West	East central and adjoining southeast Arabian off Karnataka coast	Became less marked on 23
<b>(B) Western disturbances</b>						
<i>(i) As upper air cyclonic circulations</i>						
1.	Upto mid tropospheric levels	5-6	North Pakistan and adjoining Jammu & Kashmir	Northeast	Eastern parts of Jammu & Kashmir	Moved away on 7
2.	Do	6-9	North Pakistan and neighbourhood	Do	Do	Moved away on 10
3.	Do	9-12	North Pakistan and adjoining Jammu & Kashmir	Do	Do	Moved away on 13
4.	Do	13-19	North Pakistan and neighbourhood	Do	Do	Moved away on 20
5.	Do	19-24	Do	Do	Do	Moved away on 25
6.	Do	25-27	North Pakistan and adjoining Jammu & Kashmir	Do	Do	Moved away on 28
7.	Do	28-30	Do	Eastnortheast	Eastern parts of Jammu & Kashmir	Moved away on 31
<i>(ii) As induced cyclonic circulations</i>						
1.	Upto lower tropospheric levels	1-10	Centre Pakistan and adjoining west Rajasthan	Northeast	Punjab and neighbourhood	Became less marked on 11
2.	Do	19-22	Punjab and neighbourhood	Stationary	<i>In situ</i>	Became less marked on 23
3.	Do	25-30	West Rajasthan and neighbourhood	Do	Do	Became less marked on 31
<b>(C) Other upper air cyclonic circulations</b>						
1.	Between 1.5 & 3.6 kms a.s.l.	1-2	Bihar and neighbourhood	Stationary	<i>In situ</i>	Became less marked on 3
2.	Upto lower tropospheric levels	1-3	Commorin Maldives area and adjoining Lakshadweep	Quasi-stationary	Lakshadweep and neighbourhood	Became less marked on 4
3.	Do	3-5	Assam & Meghalaya and neighbourhood	Do	Do	Became less marked on 6
4.	Do	4-7	Commorin area and neighbourhood	West	Lakshadweep and adjoining southeast Arabian Sea	Became less marked on 8
5.	Do	11-16	Gujarat region and neighbourhood	East	Madhya Maharashtra and adjoining Marathwada	Became less marked on 17

TABLE 2 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
6.	Upto lower tropospheric levels	12-19	Commorin area and neighbourhood	Quasi-stationary	Commorin-Maldives area	Became less marked on 20
7.	Do	9-10	Assam & Meghalaya and neighbourhood	Stationary	<i>In Situ</i>	Became less marked on 11
8.	Do	17-18	South Tamil Nadu and adjoining Sri-Lanka	West	-	Merged with the trough over Lakshadweep and adjoining southeast and eastcentral Arabian Sea on 19
9.	Do	23-24	Telangana and neighbourhood	Stationary	<i>In Situ</i>	Became less marked on 25
10.	Do	25-26	Eastcentral Arabian Sea off Karnataka-Goa coasts	Do	Eastcentral Arabian Sea off Karnataka-Goa Maharashtra coasts	Became less marked on 27
11.	Do	20-23	East Uttar Pradesh and neighbourhood	East	Assam & Meghalaya and neighbourhood	Became less marked on 24
<b>(D) Troughs in easterlies</b>						
1.	At sea level	7-17	Southeast and adjoining south Andaman Sea	West	Commorin area to southwest Bay off Tamil Nadu coast	Became less marked on 18
2.	Do	12-19	Lakshadweep and adjoining southeast Arabian Sea	Do	Lakshadweep and adjoining southeast and eastcentral Arabian Sea	Became less marked on 20
3.	At sea level	18-19	Southeast Bay and adjoining south Andaman Sea	Stationary	<i>In situ</i>	Became less marked on 20
4.	Do	25 Mar - 1 Apr	South Andaman sea and adjoining Southeast Bay	West	Southeast Bay and neighbourhood	Became less marked on 2 April
<b>(E) Trough / wind discontinuity</b>						
1.	Upto 0.9 km a.s.l.	11-23	Lakshadweep to south Konkan & Goa	Oscillatory	Commorin-Maldives areas to west Madhya Pradesh	Became less marked on 24
2.	Do	26 Mar- 6 Apr	Vidarbha to Kerala	Do	Chattisgarh to Kerala	Became less marked on 7 April
<b>(F) Troughs in westerlies</b>						
1.	Mid & upper tropospheric levels	9-14	Along Long. 60.0° E north of Lat. 25.0° N at 7.6 kms a.s.l.	Northeast	Along Long. 75.0° E north of Lat. 25.0° N at 7.6 kms a.s.l.	Moved away on 15
2.	Upto 7.6 kms a.s.l.	11-15	Sub-Himalayan West Bengal & Sikkim to Orissa	East	Arunachal Pradesh to Gangetic West Bengal	Became less marked on 16
3.	Do	24 Mar - 4 Apr	Sub-Himalayan West Bengal & Sikkim to north Bay	Quasi-Stationary	Sub-Himalayan West Bengal & Sikkim to north Orissa	Became less marked on 5 April

TABLE 3

No. of days of different rainfall distribution over the country during March 2008

S. No.	Sub-division	Ext. HR	VHR	HR	W	Fw	Sc	Iso	Dry
1.	Andaman & Nicobar Islands	-	-	1	3	2	7	6	13
2.	Arunachal Pradesh	-	-	-	4	4	6	7	10
3.	Assam & Meghalaya	-	1	2	2	5	6	10	8
4.	Naga, Mani, Mizo. & Trip.	-	-	-	1	-	5	8	17
5.	Sub-Himalayan W. B. & Sikkim	-	-	2	2	3	4	13	9
6.	Gangetic West Bengal	-	-	-	1	-	3	4	23
7.	Orissa	-	-	2	-	1	1	10	19
8.	Jharkhand	-	-	-	-	1	-	3	27
9.	Bihar	-	-	-	-	-	-	1	30
10.	East Uttar Pradesh	-	-	-	-	-	-	-	31
11.	West Uttar Pradesh	-	-	-	-	-	-	-	31
12.	Uttarakhand	-	-	-	-	-	-	-	31
13.	Haryana Chnd. & Delhi	-	-	-	-	-	-	-	31
14.	Punjab	-	-	-	-	-	-	-	31
15.	Himachal Pradesh	-	-	-	-	-	2	5	24
16.	Jammu & Kashmir	-	-	-	-	-	1	6	24
17.	West Rajasthan	-	-	-	-	-	-	1	30
18.	East Rajasthan	-	-	-	-	-	-	1	30
19.	West Madhya Pradesh	-	-	-	-	-	-	2	29
20.	East Madhya Pradesh	-	-	-	-	-	1	6	24
21.	Gujarat Region #	-	-	-	-	-	-	-	31
22.	Saurashtra & Kutch	-	-	-	-	-	-	-	31
23.	Konkan & Goa	-	-	-	-	2	4	1	24
24.	Madhya Maharashtra	-	-	1	-	-	5	6	20
25.	Marathwada	-	-	-	-	1	1	6	23
26.	Vidarbha	-	-	-	-	2	1	7	21
27.	Chattisgarh	-	-	-	-	1	1	9	20
28.	Coastal Andhra Pradesh	-	-	3	1	2	4	5	19
29.	Telangana	-	3	1	2	1	1	6	21
30.	Rayalaseema	-	-	1	-	3	3	10	15
31.	Tamil Nadu & Puduchhery	-	4	9	2	5	6	14	4
32.	Coastal Karnataka	-	1	3	3	4	1	9	14
33.	North interior Karnataka	-	1	4	2	1	2	12	14
34.	South interior Karnataka	-	2	6	1	4	6	7	13
35.	Kerala	-	2	6	5	3	4	12	7
36.	Lakshadweep	-	-	1	2	2	1	6	20

Ext. HR : Extermely heavy rainfall, VHR : Very heavy rainfall, HR : Heavy rainfall, W : Widespread rainfall, Fw : Fairely widespread rainfall, Sc : Scattered rainfall, Iso : Isolated rainfall, Dry : Dry weather

TABLE 4

Dates of occurrence of cold wave/severe cold wave and various categories of minimum temperatures - March 2008

S. No.	Sub-division Name	Dates (Number of days)						
		Severe cold wave	Cold wave	Cold day	Appreciably to markedly below normal	Below normal	Appreciably to markedly above normal	Above normal
2.	Arunachal Pradesh	Nil	Nil	Nil	Nil	Nil	3, 5, 6, 22 (4)	Nil
3.	Assam & Meghalaya	Nil	Nil	Nil	4, 5, 7 (3)	1, 2, 6 (3)	12-15, 29 (5)	1, 5, 8, 10, 11, 16-19, 24-26 (12)
4.	Naga., Mani., Mizo. and Tri.	Nil	Nil	Nil	Nil	31 (1)	8-11, 14-16, 20-22, 24-26, 28-30 (16)	4, 6, 8, 10, 13, 22, 23 (7)
5.	S. H. W. B. & Sikkim	Nil	Nil	Nil	5 (1)	29 (1)	1, 3, 10-15, 20, 21, 23-28, 31 (17)	7, 8, 16, 17, 20 (5)
6.	Gangetic West Bengal	Nil	Nil	Nil	Nil	Nil	3, 10-14, 18, 19, 22, 23, 27, 28, 30 (13)	8, 17, 20, 29 (4)
7.	Orissa	Nil	Nil	Nil	1-3 (3)	7, 25 (2)	3, 4, 10, 12-14, 19, 21, 23, 24, 27, 29 (12)	2, 5, 6, 9, 11, 16, 20, 22, 23, 26, 28, 30, 31 (13)
8.	Jharkhand	Nil	Nil	Nil	2, 3, 17 (3)	7, 28 (2)	13, 14, 19, 25, 26, 30, 31 (7)	11, 20, 21, 23, 27, 29 (6)
9.	Bihar	Nil	Nil	Nil	Nil	2, 16, 19, 31 (4)	3, 11, 13, 14, 16, 23, 25-28, 30 (11)	3, 5-9, 20, 21 (8)
10.	East Uttar Pradesh	Nil	Nil	Nil	Nil	2, 16, 30 (3)	1, 3, 4, 7, 9, 11, 13, 14, 18-21, 24, 29, 31 (15)	3, 7, 8, 10, 12, 15-17, 23, 25, 26, 28 (12)
11.	West Uttar Pradesh	Nil	Nil	Nil	Nil	5 (1)	1-5, 7, 9, 11, 13, 18-20, 24, 29, 31 (15)	3, 8, 10, 12, 14-17, 23, 25, 26, 28 (12)
12.	Uttarakhand	Nil	Nil	Nil	Nil	20 (1)	2, 9, 10, 16, 21 (5)	4, 6, 10, 15, 17, 18, 24, 25 (8)
13.	Haryana, Chandigarh & Delhi	Nil	Nil	Nil	Nil	Nil	2-5, 7-13, 16-29, 31 (26)	1, 8, 14 (3)
14.	Punjab	Nil	Nil	Nil	Nil	Nil	2, 7, 13, 16, 19, 21 (6)	3, 10, 12, 15, 17, 18, 26 (7)
15.	Himachal Pradesh	Nil	Nil	Nil	Nil	5 (1)	1, 3-5, 7, 8, 12, 13, 16-19, 21, 22, 25-28 (18)	8-10, 15, 20, 23, 24, 29, 31 (9)
16.	Jammu & Kashmir	Nil	Nil	Nil	Nil	5(1)	1, 4-9, 11, 12, 16, 17, 19, 22, 26 (14)	2, 3, 8, 18, 20, 31 (6)
17.	West Rajasthan	Nil	Nil	Nil	Nil	5 (1)	1-31 (31)	2, 4, 8 (3)
18.	East Rajasthan	Nil	Nil	Nil	Nil	5 (1)	1-13, 15-21, 23-26, 28, 30, 31 (27)	2, 4, 8, 22 (4)
19.	West Madhya Pradesh	Nil	Nil	Nil	1-5 (5)	5 (1)	5, 7, 9-23, 25-31 (24)	15, 24, 26 (3)
20.	East Madhya Pradesh	Nil	Nil	Nil	1, 5 (2)	5 (1)	1, 5, 8-14, 16-25, 27-31 (24)	Nil
21.	Gujarat Region	Nil	Nil	Nil	2-5 (4)	31 (1)	10-17, 20, 25-27, 29, 30 (14)	4, 7, 18, 22 (4)
22.	Saurashtra & Kutch	Nil	Nil	Nil	9 (1)	7, 8, 19, 20 (4)	1, 4, 11-14, 16, 25-29, 31 (13)	3, 9, 15, 17, 18, 22, 30, 31 (8)

TABLE 4 (Contd.)

S. No.	Sub-division Name	Dates (Number of days)						
		Severe Cold wave	Cold wave	Cold Day	Appreciably to markedly below normal	Below normal	Appreciably to markedly above normal	Above normal
23.	Konkan & Goa	Nil	Nil	Nil	3,4 (2)	2, 7, 8, 27 (4)	21 (1)	4, 15, 16, 18, 19, 23, 27 (7)
24.	Madhya Maharashtra	Nil	Nil	Nil	1,2, 4, 25, 26 (5)	3, 31 (2)	5, 12, 14-16, 18-24, 26, 27, 29, 30 (16)	4, 6, 8, 10, 11, 13, 16-18, 22, 28, 31 (12)
25.	Marathawada	Nil	Nil	Nil	Nil	2 (1)	5, 9, 11, 12, 14, 15, 17-25, 29, 30 (17)	2, 7, 10, 13, 27, 28, 31 (7)
26.	Vidarbha	Nil	Nil	Nil	1, 5, 24 (3)	2, 19, 24, 25 (4)	1, 12, 13, 16-22 (10)	9, 14, 23, 26, 29, 30 (6)
27.	Chattisgarh	Nil	1 (1)	Nil	1, 2, 5 (3)	Nil	11, 13, 14, 18-23, 26, 27 (11)	9, 10, 12, 16, 26, 30 (6)
28.	Coastal Andhra Pradesh	Nil	Nil	Nil	5, 7-10 (5)	9-12, 29, 31 (6)	18-21, 23, 31 (6)	2, 13, 15-17, 25-30 (11)
29.	Telangana	Nil	Nil	Nil	1, 4, 5, 7, 9, 10 (6)	3, 9-11, 13, 22-24 (8)	14-18, 20, 21 (7)	11, 26 (2)
30.	Rayalaseema	Nil	Nil	Nil	4-10 (7)	2, 3, 9, 10, 16, 22, 24, 25, 27, 31 (10)	20, 21 (2)	8, 14 (2)
31.	Tamil Nadu	Nil	Nil	Nil	4, 5, 7-10, 22 (7)	9-13, 19, 20, 23-25 (10)	Nil	1, 2, 11-15, 18, 19, 25, 26, 28, 30, 31 (14)
32.	Coastal Karnataka	Nil	Nil	Nil	2, 7, 9, 10, 17 (5)	1, 7, 8, 21, 23, 25 (6)	14 (1)	13, 18-20 (4)
33.	North Interior Karnataka	Nil	Nil	Nil	6, 25, 26 (3)	3, 8, 21, 23, 31 (5)	16 (1)	Nil
34.	South Interior Karnataka	Nil	Nil	Nil	1-8, 10, 24, 25 (11)	1, 7, 10, 12, 23, 24, 27, 28, 31 (9)	14 (1)	Nil
35.	Kerala	Nil	Nil	Nil	8, 9, 17 (3)	11, 16, 19, 22 (4)	Nil	1, 30 (2)

The enhanced rainfall over the peninsular India during the second half of the month occurred due to the thundershower activity resulting from the high amplitude troughs in easterlies and embedded circulations as well as the low level wind discontinuities. Due to this, the peninsula received heavy rainfall during 21-24 March. The rainfall activity over the northern parts was *scanty* due to the absence of active western disturbances.

### 3.1.2. Temperature distribution

#### (a) Minimum temperatures

The dates of occurrence of *cold waves* and dates on which the minimum temperatures remained *appreciably to*

*markedly above/below normal* and *above/below normal* are given in Table 4. The same date appearing in two different columns of a sub-division may be reckoned as occurrence of that category over parts of the sub-division.

Dry northwesterly winds contributed to the development of *cold wave conditions* in some parts of Central India in the beginning of the month.

The month's and the season's lowest minimum temperatures over the plains was 9° C recorded at Narnaul (Haryana) on 4 March 2008.

TABLE 5

Dates of occurrence of heat wave/severe heat wave and various categories of maximum temperatures - March 2008

S. No.	Sub-division Name	Dates (Number of days)						
		Severe heat wave	Heat wave	Hot day	Appreciably to markedly above normal	Above normal	Appreciably to markedly below normal	Below normal
2.	Arunachal Pradesh	Nil	Nil	Nil	1-3, 8 (4)	5(1)	6, 28(2)	30(1)
3.	Assam & Meghalaya	Nil	Nil	Nil	1-4, 10-12, 14, 16 (9)	5, 15, 17-19, 25 (6)	5, 6, 26, 27 (4)	9, 19, 20, 29, 31 (5)
4.	Naga., Mani., Mizo. and Tri.	Nil	Nil	Nil	8, 15, 16, 21 (4)	4, 5, 13, 15, 27, 31 (6)	6, 23-25(4)	7, 9, 22, 23, 28 (5)
5.	S. H. W. B. & Sikkim	Nil	Nil	Nil	1 (1)	3, 15-18, 28 (6)	3, 5-7, 19, 24-26 (8)	10, 22 (2)
6.	Gangetic West Bengal	Nil	Nil	Nil	18, 19, 29 (3)	10, 16, 21, 30 (4)	5, 24-26 (4)	5 (1)
7.	Orissa	Nil	Nil	Nil	3, 7-10, 13, 16, 19, 21-23 (11)	2, 4-6, 10-12, 14-18, 20, 28, 29, 31 (16)	25-27 (3)	15, 20, 26 (3)
8.	Jharkhand	Nil	Nil	Nil	6-10, 12, 13, 17-21, 30 (13)	3, 4, 11, 14, 16, 22, 23, 27-29, 31 (11)	6, 24 (2)	14 (1)
9.	Bihar	Nil	Nil	Nil	14, 30 (2)	17-19, 22, 26, 28, 29, 31 (8)	7, 8, 24 (3)	13 (1)
10.	East Uttar Pradesh	Nil	19 (1)	Nil	2, 4-6, 18, 19, 21, 22, 27, 30 (10)	9-11, 17, 18, 23-26, 28, 31 (11)	6, 12 (2)	5, 7, 8, 13 (4)
11.	West Uttar Pradesh	Nil	20 (1)	Nil	1, 2, 4-9, 17-19, 21, 22, 24, 27, 31 (16)	10, 16, 23, 26, 28 (5)	14 (1)	12 (1)
12.	Uttarakhand	Nil	Nil	Nil	5, 6, 10, 11, 17-21, 23-26, 28, 29 (15)	16, 30, 31 (3)	Nil	Nil
13.	Haryana, Chandigarh & Delhi	Nil	Nil	Nil	1-8, 11, 12, 17-25, 27-31 (24)	9, 10, 15, 16, 24, 26, 30 (7)	Nil	14 (1)
14.	Punjab	Nil	Nil	Nil	1-4, 6-8, 10, 11, 13, 14, 17-26, 29-31 (24)	9, 12, 15, 16, 27, 28 (6)	Nil	Nil
15.	Himachal Pradesh	Nil	Nil	Nil	1-6, 8-13, 17-19, 21-29, 31 (26)	15, 16, 30 (3)	Nil	Nil
16.	Jammu & Kashmir	Nil	Nil	Nil	1-20, 22-31 (30)	Nil	Nil	Nil
17.	West Rajasthan	Nil	22,23, 30 (3)	Nil	1-12, 15-22, 24-29, 31 (27)	Nil	13 (1)	Nil



TABLE 5 (Contd.)

Sub-division		Dates (Number of days)						
S. No.	Name	Severe heat wave	Heat wave	Hot day	Appreciably to markedly above normal	Above normal	Appreciably to markedly below normal	Below normal
18.	East Rajasthan	Nil	Nil	Nil	1-11, 16-29, 31 (26)	15 (1)	12-14 (3)	Nil
19.	West Madhya Pradesh	Nil	19 (1)	Nil	1-11, 16-18, 20-23, 27-31 (23)	12, 15, 16, 26, 28, 30 (6)	Nil	14, 25 (2)
20.	East Madhya Pradesh	Nil	19, 20 (2)	Nil	1-11, 16-18, 21-23, 27-31 (22)	12, 16, 28, 30 (4)	Nil	13 (1)
21.	Gujarat region	Nil	Nil	Nil	1, 2, 6, 17, 18, 21-24, 29 (10)	5, 7, 10, 11, 16, 19, 20, 23, 27, 28, 30 (11)	12 (1)	8 (1)
22.	Saurashtra & Kutch	Nil	22, 25 (2)	Nil	1-18, 21-24, 28, 29 (24)	19, 26-28 (4)	3, 4, 8 (3)	20, 26, 31 (3)
23.	Konkan & Goa	Nil	Nil	Nil	1, 8-10 (4)	11, 13, 16-18, 23 (6)	Nil	Nil
24.	Madhya Maharashtra	Nil	Nil	Nil	1, 2, 7-10, 15, 16, 19, 21, 22 (11)	3-6, 11-14, 16-20, 25 (14)	23-25, 27, 28 (5)	Nil
25.	Marathawada	Nil	Nil	Nil	5, 18 (2)	2, 11, 19 (3)	23, 25 (2)	23, 27, 28 (3)
26.	Vidarbha	Nil	7 (1)	Nil	1, 2, 5-10, 12 (9)	4, 11, 13, 17-22, 31 (10)	23-28 (6)	23, 29 (2)
27.	Chattisgarh	Nil	Nil	Nil	2-6, 8-10, 12, 13, 18, 19 (12)	2, 4, 10, 11, 14, 16-18, 20, 29-31 (12)	23-26 (4)	27 (1)
28.	Coastal Andhra Pradesh	Nil	Nil	Nil	2, 3, 7-10, 13, 14 (8)	1, 4-6, 11, 16-18, 20, 21, 29 (11)	22, 25, 26 (3)	15, 23, 27 (3)
29.	Telangana	Nil	Nil	Nil	18 (1)	2-7, 9 (7)	15, 19, 23-29, 31 (10)	27, 30 (2)
30.	Rayalaseema	Nil	Nil	Nil	Nil	3, 4 (2)	13, 15, 19, 22-29, 31 (12)	11, 30 (2)
31.	Tamil Nadu	Nil	Nil	Nil	8 (1)	2, 3, 5, 7, 9-11, 27, 28, 31 (10)	12-14, 16-20, 22-25 (12)	1, 2, 11, 15, 21, 25, 29, 30 (8)
32.	Coastal Karnataka	Nil	Nil	Nil	1, 2, 7-12, 19 (9)	3, 17, 18, 20 (4)	23-25 (3)	15, 16, 26, 27 (4)
33.	North Interior Karnataka	Nil	Nil	Nil	Nil	7, 9 (2)	22-29 (8)	14, 28, 30 (3)
34.	South Interior Karnataka	Nil	Nil	Nil	Nil	2, 4, 5, 7, 9 (5)	8, 10, 12-14, 16-19, 22-29, 31 (18)	14, 20, 21, 28, 30 (5)
35.	Kerala	Nil	Nil	Nil	18 (1)	10 (1)	14, 19, 20, 22-24 (6)	17, 18, 21, 31 (4)

TABLE 6

## Details of the weather systems during April 2008

S. No.	System	Duration	Place of first location	Direction of movement	Final location	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>(A) Cyclonic storms/depressions</b>						
1.	Very severe cyclonic storm (Nargis)	27 Apr - 3 May	Southeast Bay and adjoining South Andaman Sea	Northwest, north and then northeast	Myanmar	Details are given in the text
<b>(B) Western disturbances/eastward moving systems</b>						
<i>(i) As upper air cyclonic circulations</i>						
1.	Mid tropospheric levels	30 Mar - 10 Apr	North Pakistan and neighbourhood	Eastnortheast	Jammu & Kashmir and neighbourhood	Moved away on 11
2.	Do	11-15	North Pakistan and adjoining Jammu & Kashmir	Northeast	Eastern parts of Jammu & Kashmir	Moved away on 16
3.	Do	14-18	North Pakistan and neighbourhood	Do	Jammu & Kashmir and adjoining Himachal Pradesh	Moved away on 19
4.	Do	18-20	North Pakistan and adjoining Jammu & Kashmir	Eastnortheast	Eastern parts of Jammu & Kashmir	Moved away on 21
5.	Do	22-24	North Pakistan and neighbourhood	Do	North Pakistan and adjoining Jammu & Kashmir	Moved away on 25
6.	Do	30 Apr - 1 May	North Pakistan and adjoining Jammu & Kashmir	Do	Eastern parts of Jammu & Kashmir	Moved away on 2 May
<i>(ii) As induced cyclonic circulation</i>						
1.	Upto 3.6 km a.s.l.	30 Mar - 2 Apr	Central Pakistan and adjoining Punjab	Eastnortheast	Punjab and neighbourhood	Became less marked on 3
2.	Upto 2.1 km a.s.l.	3-6	South Pakistan and adjoining west Rajasthan	Do	Central Pakistan and adjoining northwest Rajasthan	Became less marked on 7
3.	Between 3.1 & 5.8 kms a.s.l.	7-9	Punjab and neighbourhood	Stationary	<i>In Situ</i>	Became less marked on 10
4.	Mid tropospheric levels	9-13	West Rajasthan and neighbourhood	Do	Do	Became less marked on 14
5.	Upto 2.1 kms a.s.l.	15-16	Do	Do	Do	Became less marked on 17
6.	Upto 0.9 km a.s.l.	20-22	Do	Do	Do	Became less marked on 23
7.	Upto 0.9 km a.s.l.	28-30	West Rajasthan and neighbourhood	Eastnortheast	Northwest Madhya Pradesh and neighbourhood	Became less marked on 1 May
8.	Upto 1.5 km a.s.l.	30	Northwest Rajasthan and neighbourhood	Stationary	<i>In situ</i>	Became less marked on 1 May
<b>(C) Other upper air cyclonic circulations</b>						
1.	Lower tropospheric levels	2	East Uttar Pradesh and neighbourhood	Stationary	<i>In situ</i>	Became less marked on 3
2.	Do	3-4	Jharkhand and adjoining Gangetic West Bengal	Quasi Stationary	Gangetic West Bengal	Became less marked on 5

TABLE 6 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
3.	Lower tropospheric levels	3-6	North Madhya Pradesh and neighbourhood	East	Chattisgarh and neighbourhood	Became less marked on 7
4.	Do	9-14	Sub-Himalayan West Bengal & Sikkim and neighbourhood	Do	Sub-Himalayan West Bengal & Sikkim and northwest Bay	Became less marked on 15
5.	Do	9-16	South Tamil Nadu and adjoining Sri-Lanka	West	Kerala and neighbourhood	Became less marked on 17
6.	Do	10-15	North Madhya Maharashtra and neighbourhood	Eastnortheast	East Madhya Pradesh and neighbourhood	Became less marked on 16
7.	Do	16-17	West Uttar Pradesh and neighbourhood	Northeast	East Uttar Pradesh and neighbourhood	Became less marked on 18
8.	Do	20-21	Gangetic West Bengal and neighbourhood	East	Bangladesh and neighbourhood	Became less marked on 22
(9)	Do	30	Jharkhand and neighbourhood	Stationary	<i>In situ</i>	Became less marked on 1 May
<b>(D) Troughs in easterlies</b>						
1.	At sea level	6-14	Southeast Bay and adjoining south Andaman Sea	West	Maldives and neighbourhood	Became less marked on 15
<b>(E) Troughs /Wind discontinuity</b>						
1.	Upto 3.6 km a.s.l.	18-19	Sub-Himalayan West Bengal & Sikkim to northwest Bay of Bengal	Stationary	<i>In situ</i>	Became less marked on 20
2.	Upto 2.1 km a.s.l.	23-28	Do	West	Bihar to Orissa	Became less marked on 28
3.	At 0.9 km a.s.l.	24-27	Vidarbha to south Konkan-Goa	Quasi-stationary	East Madhya Pradesh to Lakshadweep	Became less marked on 28
<b>(F) Troughs in westerlies</b>						
1.	Mid tropospheric levels	5-6	Along Long. 65.0° E to the north of Lat. 18.0° N	Northeast	Along Long.73.0° E to the north of Lat. 25.0° N	Moved away on 7
2.	Do	7-8	Along Long. 65.0° E to the north of Lat. 25.0° N	Do	Along Long. 67.0° E to the north of Lat. 20.0° N	Became less marked on 9
3.	Mid & upper tropospheric levels	24 Apr - 1 May	Afghanistan, eastern parts of Iran and Saudi Arabia	Do	Along Long.75.0° E to the north of Lat. 15.0° N	Became less marked on 2 May

TABLE 7

No of days of different rainfall distribution over the country during April 2008

S. No.	Sub-division	Vigorous	Active	Ext. HR	VHR	HR	W	Fw	Sc	Iso	Dry
1.	Andaman & Nicobar Islands	-	-	-	-	1	8	-	6	9	7
2.	Arunachal Pradesh	-	-	-	-	2	5	4	9	1	11
3.	Assam & Meghalaya	-	-	-	1	4	3	7	7	6	7
4.	Naga, Mani, Mizo. & Trip.	-	-	-	-	-	1	-	4	5	20
5.	Sub-Himalayan W.B. & Sikkim	-	-	-	-	2	4	2	12	6	6
6.	Gangetic West Bengal	-	-	-	-	-	1	5	1	3	20
7.	Orissa	-	-	-	-	-	-	2	1	7	20
8.	Jharkhand	-	-	-	-	-	-	-	-	1	29
9.	Bihar	-	-	-	-	-	-	-	1	-	29
10.	East Uttar Pradesh	-	-	-	-	-	-	-	1	3	26
11.	West Uttar Pradesh	-	-	-	-	-	-	-	3	1	26
12.	Uttarakhand	-	-	-	-	-	1	1	2	3	23
13.	Haryana, Chandigarh & Delhi	-	-	-	-	-	2	2	1	4	21
14.	Punjab	-	-	-	-	-	2	-	4	5	19
15.	Himachal Pradesh	-	-	-	-	-	4	3	3	3	17
16.	Jammu & Kashmir	-	-	-	-	-	2	4	6	2	16
17.	West Rajasthan	-	-	-	-	-	-	-	1	7	22
18.	East Rajasthan	-	-	-	-	-	-	-	-	7	23
19.	West Madhya Pradesh	-	-	-	-	-	-	-	-	4	26
20.	East Madhya Pradesh	-	-	-	-	-	-	-	1	4	25
21.	Gujarat region #	-	-	-	-	-	-	-	-	2	28
22.	Saurashtra & Kutch	-	-	-	-	-	-	-	-	2	28
23.	Konkan & Goa	-	-	-	-	-	-	-	-	2	28
24.	Madhya Maharashtra	-	-	-	-	-	-	-	-	10	20
25.	Marathwada	-	-	-	-	-	-	-	-	2	28
26.	Vidarbha	-	-	-	-	-	-	1	-	-	29
27.	Chattisgarh	-	-	-	-	-	-	1	1	3	25
28.	Coastal Andhra Pradesh	-	-	-	-	-	-	-	-	8	22
29.	Telangana	-	-	-	-	-	-	-	1	4	25
30.	Rayalaseema	-	-	-	-	-	-	-	-	2	28
31.	Tamil Nadu & Puduchhery	-	-	-	-	5	-	-	1	25	4
32.	Coastal Karnataka	-	-	-	-	-	-	-	3	15	12
33.	North interior Karnataka	-	-	-	-	-	-	-	1	16	13
34.	South interior Karnataka	-	-	-	-	-	-	-	2	24	4
35.	Kerala	-	-	-	1	1	-	2	10	18	-
36.	Lakshadweep	-	-	-	-	-	-	-	-	2	28
	Total	-	-	-	2	15	33	34	82	216	715

TABLE 8

Dates of occurrence of heat wave/severe heat wave and various categories of maximum temperatures - April 2008

S. No.	Sub-division Name	Dates (Number of days)						
		Severe heat wave	Heat wave	Hot day	Appreciably to markedly above normal	Above normal	Appreciably to markedly below normal	Below normal
2.	Arunachal Pradesh	Nil	Nil	Nil	9 (1)	Nil	14, 18, 20, 28 (4)	Nil
3.	Assam & Meghalaya	Nil	Nil	Nil	7-13, 17, 22-24, 26 (12)	11, 21, 22 (3)	1-5, 14, 20, 26-30 (12)	15, 18, 19, 25 (4)
4.	Naga., Mani., Mizo. and Tri.	Nil	Nil	Nil	7, 10, 12-14, 19-21, 25, 27-30 (13)	9, 11, 15, 26 (4)	1, 2, 5 (3)	17 (1)
5.	S. H. W. B. & Sikkim	Nil	22 (1)	Nil	10-13, 20, 25 (6)	9, 11 (2)	1-5, 7, 14, 16-18, 26, 27, 30 (13)	7, 15, 29 (3)
6.	Gangetic West Bengal	Nil	Nil	Nil	21-23, 26 (4)	24 (1)	2, 5, 7, 9, 16, 17, 30 (7)	10, 15 (2)
7.	Orissa	Nil	19, 20, 22 (3)	Nil	1, 10-13, 18, 20, 21, 24 (9)	1, 3, 4, 8, 9, 14, 15, 22, 23, 25-27, 30 (13)	2, 5, 7-9, 15, 27, 30 (8)	3, 10, 16, 28, 29 (5)
8.	Jharkhand	Nil	Nil	Nil	1, 11, 13, 17, 18, 24, 25, 27-29 (10)	1, 14, 20-22, 25, 26, 30 (8)	2, 5, 8, 9 (4)	3, 10 (2)
9.	Bihar	Nil	Nil	Nil	19, 21, 24-26, 29 (6)	1, 13, 22, 23, 27, 30 (6)	5, 7, 9, 17 (4)	2, 4 (2)
10.	East Uttar Pradesh	Nil	16, 26, 28 (3)	16, 26 (2)	13, 15-18, 21-25, 27-30 (14)	9, 11, 12, 14, 15, 20-22 (8)	4, 5, 7, 8 (4)	5 (1)
11.	West Uttar Pradesh	Nil	26, 28, 30 (3)	15, 16, 23, 24, 26 (5)	14-17, 21, 23-25, 27-30 (12)	9, 12, 15, 21, 22 (5)	4, 5, 7, 8 (4)	2, 5 (2)
12.	Uttarakhand	Nil	Nil	Nil	1, 11, 15, 21-25, 30 (9)	13, 20, 28, 29 (4)	4, 17 (2)	2 (1)
13.	Haryana, Chandigarh & Delhi	Nil	22-27, 30 (7)	14, 15, 26 (3)	11, 14-16, 21-25, 27-30 (13)	1, 3, 12, 13, 20 (5)	2, 4, 5, 7, 8, 18 (6)	9 (1)
14.	Punjab	Nil	25-27, 29, 30 (5)	26 (1)	15, 22, 23, 25, 27-30 (8)	3, 13, 20, 21 (4)	2, 4, 5, 7, 8, 17, 18 (7)	16 (1)
15.	Himachal Pradesh	Nil	23, 24 (2)	Nil	1, 14-16, 19, 20, 23, 24, 28-30 (11)	9, 12 (2)	4, 5, 21 (3)	Nil
16.	Jammu & Kashmir	Nil	30 (1)	Nil	19, 21-26, 28-30 (10)	5, 12, 14, 15, 27 (5)	3, 4, 8, 16, 17 (5)	7, 9, 11 (3)
17.	West Rajasthan	Nil	24, 26-30 (6)	22, 25 (2)	10-12, 14, 22, 24-30 (12)	1, 2, 11, 13, 15, 21, 22, 25 (8)	4, 5, 7, 8, 17, 18 (6)	2, 3, 18 (3)
18.	East Rajasthan	Nil	25, 27, 29, 30 (4)	13 (1)	1, 10-12, 14-16, 21-30 (17)	1, 11, 13, 18, 22, 25 (6)	4, 5, 7, 8 (4)	2, 18 (2)
19.	West Madhya Pradesh	Nil	21, 25, 26, 30 (4)	Nil	11, 13-18, 20-30 (18)	11, 12, 15, 21, 22, 29 (6)	1, 4, 5, 7, 8 (5)	1, 2, 4, 5, 19 (5)
20.	East Madhya Pradesh	Nil	16, 25-28, 30 (6)	13-15, 17 (4)	13-16, 18, 21-25, 28-30 (13)	12, 15, 19, 21, 22, 29 (6)	4, 5, 7, 8 (4)	1, 2, 4, 5 (4)
21.	Gujarat region	Nil	19, 21, 27(3)	26 (1)	20, 22-28 (8)	8, 14, 15, 30 (4)	1-5, 7 (6)	5, 7 (2)
22.	Saurashtra & Kutch	Nil	22, 26-28 (4)	18, 24 (2)	8-11, 14, 19, 25, 26, 28, 29 (10)	11-13, 15, 16, 23, 24, 29, 30 (9)	1-3, 5, 7 (5)	5, 7, 12 (3)
23.	Konkan & Goa	Nil	Nil	25 (1)	10-12, 27, 24, 25, 29 (7)	15, 23, 30 (3)	Nil	Nil
24.	Madhya Maharashtra	Nil	22, 25-28 (5)	26 (1)	12, 13, 15-24, 27-29 (15)	13-15, 20, 22, 23, 25, 30 (8)	1, 2, 4, 5, 8 (5)	1, 3, 5, 7, 9, 10 (6)
25.	Marathawada	Nil	Nil	24 (1)	15, 23-27, 30 (7)	15, 16, 18, 20-22, 29 (7)	1, 2, 4, 5, 7-9 (7)	3, 4, 10 (3)

TABLE 8 (Contd.)

S. No.	Sub-division Name	Dates (Number of days)						
		Severe heat wave	Heat wave	Hot day	Appreciably to markedly above normal	Above normal	Appreciably to markedly below normal	Below normal
26.	Vidarbha	Nil	23, 24, 26-28, 30 (6)	Nil	12, 14, 16-26, 28-30 (16)	13, 21, 27 (3)	1, 2, 7, 8 (4)	3, 4, 9, 10 (4)
27.	Chattisgarh	Nil	Nil	Nil	16-26, 29 (12)	14, 15, 18, 25, 26, 29, 30 (7)	1, 2, 7-9 (5)	Nil
28.	Coastal Andhra Pradesh	Nil	20, 22, 23 (3)	24(1)	12, 15, 19-21 (5)	3-5, 9, 13, 14, 18, 24, 29 (9)	1, 30 (2)	1, 8, 25, 26 (4)
29.	Telangana	Nil	Nil	Nil	19, 20, 22-24, 29, 30 (7)	15, 18, 21, 22 (4)	1, 2, 4, 7-10 (7)	1, 3, 11, 17 (4)
30.	Rayalaseema	Nil	19-22, 24 (5)	Nil	14, 17, 19, 22, 24, 30 (6)	13, 15, 18, 25, 26, 28, 30 (7)	1, 2, 7, 9, 10 (5)	1, 3, 8 (3)
31.	Tamil Nadu	Nil	19 (1)	24 (1)	1, 18, 20-24, 26, 29, 30 (10)	2, 5, 15, 19, 20, 22, 23, 25, 28-30 (11)	3, 4, 13 (3)	1, 7-12 (7)
32.	Coastal Karnataka	Nil	Nil	Nil	1, 7-11, 15-17, 19, 22, 27 (12)	16, 18, 20, 23, 25, 26, 28-30 (9)	Nil	4, 21 (2)
33.	North Interior Karnataka	Nil	Nil	Nil	22(1)	25(1)	1-3, 5, 7-10 (8)	5, 11, 25 (3)
34.	South Interior Karnataka	Nil	Nil	Nil	19, 22 (2)	14, 20, 23, 27 (4)	1-5, 7, 8, 10, 20, 27 (10)	5, 9, 11, 24, 29 (5)
35.	Kerala	Nil	Nil	Nil	Nil	15 (1)	13, 29 (2)	Nil

(b) *Maximum temperatures*

The dates of occurrence of *heat waves* and dates on which the maximum temperatures remained *appreciably to markedly above normal* are given in Table 5. It may be noted from the table that even though the temperatures remained *appreciably to markedly above normal* over major parts of the country, the *heat wave conditions* were confined only to a few days over northwest and central parts. In fact, the heating up of the land was offset by the thundershowers towards the later half of the month.

The month's highest maximum temperature over the plains was 40° C recorded at Akola (Vidarbha) on 7 and 18, Malegaon (Madhya Maharashtra) on 16, 20, 23 & 27, Nowgong (east Madhya Pradesh) on 20, Bhuj & Naliya (Saurashtra & Kutch) on 25 Barmer (West Rajasthan) and Ahmedabad (Gujarat region) on 29 March.

3.1.3. *Disastrous weather events and damage*

According to media and other disaster weather reports, heavy rains and lightning took a toll of 18 people in Tamil Nadu, 17 in Kerala, 11 in Andhra Pradesh, 5 in West Bengal and 3 in Maharashtra. Heavy rain in Kerala

caused damage to Agriculture and collapsing of many houses. A total loss of Rs. 40 crores was estimated. Chilli, Tobacco, Mango and Grape crops and several houses were damaged in Andhra Pradesh. A crop loss of Rs. 70 crores was estimated in Andhra Pradesh. Flood damaged standing crops and paddy fields in Tamil Nadu. Also heavy rains caused damage upto 550 crores in Karnataka.

3.2. *April*3.2.1. *Weather and associated synoptic features*(a) *Very Severe Cyclonic Storm (Nargis) over the Bay of Bengal (27 April – 3 May 2008)*

A trough of low lay over the southeast Bay and adjoining south Andaman Sea on 24. It persisted with a cyclonic circulation extending upto 1.5 km a.s.l. over the region on 25 and organised into a low pressure area over the southeast Bay and neighbourhood on 26. It concentrated into a Depression and lay centred at 0300 UTC of 27, near Lat. 12.0° N / Long. 87.0° E, about 750 km eastsoutheast of Chennai. Moving slightly westwards, it intensified into a Deep Depression and lay centred near

**TABLE 9**  
**Details of the weather systems during May 2008**

S. No.	System	Duration	Place of first location	Direction of movement	Final location	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>(A) Low pressure area</b>						
1.	At sea level	13 eve - 16	North Andaman Sea and adjoining east central Bay	East	Coastal Myanmar	Became less marked on 17
<b>(B) Western disturbances /eastward moving cyclonic circulations</b>						
<i>(i) As upper air cyclonic circulations</i>						
1.	Upto mid tropospheric levels	3-7	North Pakistan and neighbourhood	Northeast	Jammu & Kashmir and neighbourhood	Moved away on 8
2.	Do	8-12	Jammu & Kashmir and adjoining north Pakistan	Do	Do	Moved away on 13
3.	Do	13-17	North Pakistan and adjoining Jammu & Kashmir	Do	Do	Moved away on 18
4.	Do	16-23	Do	Do	Do	Moved away on 24
5.	Do	27-30	Do	Do	Eastern parts of Jammu & Kashmir	Moved away on 31
<i>(ii) As induced cyclonic circulations</i>						
1.	Upto 2.1 km a.s.l.	7	Central Pakistan and neighbourhood	Stationary	<i>In situ</i>	Became less marked on 8
2.	Upto 0.9 km a.s.l.	11-12	Central Pakistan and west Rajasthan	Do	Do	Became less marked on 13
3.	Upto 1.5 km a.s.l.	14-17	Punjab and adjoining central Pakistan	Northeast	Punjab and neighbourhood	Became less marked on 18
4.	Upto 3.1 km a.s.l.	19-26	Central Pakistan, adjoining northwest Rajasthan and Punjab	Do	Northwest Rajasthan and neighbourhood	Became less marked on 27
5.	Upto 1.5 km a.s.l.	27 May - 5 Jun	West Rajasthan and neighbourhood	East	East Uttar Pradesh and neighbourhood	Became less marked on 6
<b>(C) Other cyclonic circulations</b>						
1.	Between 1.5 & 3.1 km a.s.l.	6-7	Assam & Meghalaya and neighbourhood	Stationary	<i>In situ</i>	Became less marked on 8
2.	Upto 0.9 km a.s.l.	21	East Uttar Pradesh and neighbourhood	Do	Do	Became less marked on 22
3.	Between 1.5 & 3.6 kms a.s.l.	18-20	Assam & Meghalaya and neighbourhood	Do	Do	Became less marked on 21
4.	Upto 0.9 km a.s.l.	17-21	Gangetic West Bengal and neighbourhood	Quasi-stationary	Do	Became less marked on 22

TABLE 9 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
5.	Upto 3.6 km a.s.l.	24	Lakshadweep and neighbourhood	West	West central and adjoining southwest Arabian Sea	Merged with a trough extended from east Arabian Sea to west central and adjoining southwest Arabian Sea on 25
6.	Upto 1.5 km a.s.l.	22-24	Bihar and neighbourhood	Stationary	<i>In situ</i>	Became less marked on 25
7.	Upto 2.1 km a.s.l.	24-25	East Uttar Pradesh	Quasi-stationary	Bihar and East Uttar Pradesh	Became less marked on 26
8.	Do	24-26	Gangetic West Bengal and neighbourhood	Stationary	<i>In situ</i>	Became less marked on 27
9.	Mid tropospheric levels	28-30	Lakshadweep and neighbourhood	Do	Do	Became less marked on 31
10.	Between 3.1 & 4.5 km a.s.l.	28 May-4 Jun	South Tamil Nadu and adjoining Sri-Lanka	West	South Tamil Nadu and adjoining Commorin area	Became less marked on 5 June
<b>(D) Troughs in easterlies</b>						
1.	At sea level	25-26	East Arabian Sea	West	West central and adjoining southwest Arabian Sea	Moved away on 27
2.	Do	27 May-1 Jun	Eastcentral Arabian sea to southeast Arabian Sea	Do	West central to southwest Arabian Sea	Moved away on 2 June
<b>(E) Troughs in westerlies</b>						
1.	Lower and mid tropospheric levels	1-5	Sub-Himalayan West Bengal & Sikkim to north Orissa	Quasi-stationary	Sub-Himalayan West Bengal & Sikkim to Gangetic West Bengal and Orissa	Became less marked on 6
2.	Between 3.1 & 4.5 km a.s.l.	7	Assam & Meghalaya to coastal Andhra Pradesh	Stationary	<i>In situ</i>	Became less marked on 8
3.	Between 1.5 & 3.6 km a.s.l.	14	Sub-Himalayan West Bengal & Sikkim to north Bay	Do	Do	Became less marked on 15
<b>(F) Wind discontinuity</b>						
1.	Upto 0.9 km a.s.l.	1-2	Jharkhand to south Konkan-Goa	Quasi-stationary	Assam & Meghalaya to Orissa and Chattisgarh	Became less marked on 3
2.	Lower levels	8-12	Jharkhand to south Tamil Nadu	Do	Jharkhand to coastal Tamil Nadu	Became less marked on 13
3.	Upto 1.5 km a.s.l.	23-24	Bihar and neighbourhood to Madhya Maharashtra	Quasi-stationary	<i>In situ</i>	Became less marked on 25
4.	Upto 0.9 km a.s.l.	24-30	East Madhya Pradesh to south Konkan-Goa	Do	Vidarbha to north interior Karnataka	Became less marked on 31



**TABLE 10**  
**No of days of different rainfall distribution over the country during May 2008**

S. No.	Sub-division	Vig.	Act.	Ext. HR	VHR	HR	W	Fw	Sc	Iso	Dry
1.	Andaman & Nicobar Islands	-	-	-	3	5	11	2	11	2	5
2.	Arunachal Pradesh	-	-	-	-	1	3	9	10	8	1
3.	Assam & Meghalaya	-	-	-	1	5	3	11	7	10	-
4.	Naga, Mani, Mizo, & Trip.	-	-	-	-	3	1	8	8	12	2
5.	Sub-Himalayan W.B.&Sikkim	-	-	-	-	2	9	5	11	6	-
6.	Gangetic West Bengal	-	-	-	-	-	-	4	11	8	8
7.	Orissa	-	-	-	-	1	-	-	4	25	2
8.	Jharkhand	-	-	-	-	-	-	2	2	5	22
9.	Bihar	-	-	-	-	-	-	2	2	8	19
10.	East Uttar Pradesh	-	-	-	-	-	-	1	3	9	18
11.	West Uttar Pradesh	-	-	-	-	-	-	3	2	7	19
12.	Uttarakhand	-	-	-	-	-	-	2	2	6	21
13.	Haryana Chnd. & Delhi	-	-	-	-	1	1	4	7	9	10
14.	Punjab	-	-	-	-	-	-	1	7	10	13
15.	Himachal Pradesh	-	-	-	-	1	1	5	5	6	14
16.	Jammu & Kashmir	-	-	-	-	-	1	3	7	8	12
17.	West Rajasthan	-	-	-	-	-	-	-	2	7	22
18.	East Rajasthan	-	-	-	-	-	-	2	1	7	21
19.	West Madhya Pradesh	-	-	-	-	-	-	-	-	8	23
20.	East Madhya Pradesh	-	-	-	-	-	-	-	1	6	24
21.	Gujarat region #	-	-	-	-	-	-	-	-	-	31
22.	Saurashtra & Kutch	-	-	-	-	-	-	-	-	-	31
23.	Konkan & Goa	-	-	-	-	-	-	-	-	12	19
24.	Madhya Maharashtra	-	-	-	-	-	-	-	-	7	24
25.	Marathwada	-	-	-	-	-	-	-	-	3	28
26.	Vidarbha	-	-	-	-	-	-	-	1	4	26
27.	Chattisgarh	-	-	-	-	-	-	-	-	5	26
28.	Coastal Andhra Pradesh	-	-	-	-	-	-	-	3	15	13
29.	Telangana	-	-	-	-	-	-	-	-	11	20
30.	Rayalaseema	-	-	-	-	2	-	2	5	10	14
31.	Tamil Nadu & Puduchery	-	-	-	-	7	-	-	1	28	2
32.	Coastal Karnataka	-	-	-	-	2	-	-	5	11	15
33.	North interior Karnataka	-	-	-	-	1	-	-	2	16	13
34.	South interior Karnataka	-	-	-	1	3	-	1	6	19	5
35.	Kerala	-	-	-	1	1	-	3	4	21	3
36.	Lakshadweep	-	-	-	-	2	2	3	2	5	19
	Total	-	-	-	6	37	32	73	132	334	545

Vig. : Vigorous, Act. : Active, Ext. HR : Extermely heavy rainfall, VHR : Very heavy rainfall, HR : Heavy rainfall, W : Widespread rainfall, Fw : Fairely widespread rainfall, Sc : Scattered rainfall, Iso : Isolated rainfall, Dry : Dry weather

TABLE 11

Dates of occurrence of heat wave/severe heat wave and various categories of maximum temperatures - May 2008

S. No.	Sub-division Name	Dates (Number of days)						
		Severe heat wave	Heat wave	Hot day	Appreciably to markedly above normal	Above normal	Appreciably to markedly below normal	Below normal
2.	Arunachal Pradesh	Nil	Nil	Nil	14-16, 18, 25, 26, 30 (7)	10, 28 (2)	3 (1)	21 (1)
3.	Assam & Meghalaya	Nil	Nil	Nil	5, 6, 8, 10-18, 20, 24-29, 31 (20)	1, 3, 9, 22-25, 30 (8)	3 (1)	21 (1)
4.	Naga., Mani., Mizo. & Tri.	Nil	Nil	Nil	2, 4-6, 9-17, 25, 27, 29 (16)	1, 7, 8, 24, 28, 30 (6)	17 (1)	23 (1)
5.	S. H. W. B. & Sikkim	Nil	Nil	Nil	8, 10, 13-17, 19, 26, 27, 29, 30 (12)	6, 11, 12, 16, 18, 23, 28 (7)	3, 9, 24 (3)	4, 7, 20-22, 25 (6)
6.	Gangetic West Bengal	Nil	Nil	Nil	18, 29 (2)	4, 23 (2)	8, 22, 24, 25, 27 (5)	2, 21 (2)
7.	Orissa	Nil	4, 6, 10, 18 (4)	Nil	3, 6, 10, 11, 15, 18, 19, 23, 29-31 (11)	2, 5, 9, 13-17, 20, 21 (10)	1, 8, 12, 24, 26 (5)	7, 9, 10, 13-15, 22, 27 (8)
8.	Jharkhand	Nil	Nil	17 (1)	19 (1)	1-5, 14, 21, 30 (8)	16, 22-27 (7)	9, 13, 19 (3)
9.	Bihar	Nil	Nil	Nil	31 (1)	20, 21 (2)	5, 6, 16, 18, 22-27 (10)	3-5, 7, 9, 14 (7)
10.	East Uttar Pradesh	Nil	1 (1)	Nil	2, 4 (2)	3, 11, 21 (3)	6, 8, 16, 18, 22-28 (11)	10, 11, 13, 15, 19, 28 (6)
11.	West Uttar Pradesh	Nil	1, 2 (2)	Nil	2(1)	3-5, 21 (4)	6, 8, 10, 16, 18, 22-28 (12)	7, 11, 12, 14, 19, 29 (6)
12.	Uttarakhand	Nil	Nil	Nil	1, 4, 29 (3)	3, 5 (2)	22, 23, 26 (3)	14 (1)
13.	Haryana, Chandigarh & Delhi	Nil	1, 2, 4, 5 (4)	2, 14, 16-18 (5)	2, 5 (4)	21 (1)	6, 8, 10-15, 22-29 (16)	7, 11, 19, 30, 31 (5)
14.	Punjab	4, 6 (2)	2, 5, 6 (3)	18 (1)	2-5, 7, 13 (6)	10, 13, 17, 20, 21 (5)	6, 10, 11, 14, 15, 22-28 (12)	30 (1)
15.	Himachal Pradesh	Nil	4, 5 (2)	Nil	1-4, 8, 9, 18, 19 (8)	17 (1)	12-14, 22-27 (9)	15, 29, 30 (3)
16.	Jammu & Kashmir	Nil	1, 4, 5, 22 (4)	Nil	2, 3, 5, 8, 9, 13, 15, 16, 18-20, 24 (12)	21, 23 (2)	11, 23, 26, 28, 29 (5)	6, 10, 27 (3)
17.	West Rajasthan	Nil	1, 2, 4, 5, 18 (5)	2, 16-18 (4)	3-6 (4)	20, 21 (2)	8-11, 19, 22-27, 29, 31 (13)	11, 12, 14, 15, 17, 20 (6)
18.	East Rajasthan	Nil	4, 5 (2)	2, 17 (2)	3-6 (4)	2, 3, 20, 21 (4)	8-11, 22, 23, 25-27, 31 (10)	7, 11, 12, 17, 20, 24 (6)
19.	West Madhya Pradesh	Nil	5 (1)	Nil	1, 29 (2)	20, 21, 28, 30 (4)	3, 7, 8, 10, 11, 13, 22-25 (10)	3, 9, 12, 17, 19, 20 (6)
20.	Nil	Nil	2, 5, 18 (3)	4, 18 (2)	Nil	1, 2, 20, 28, 30, 31 (6)	3, 13, 19, 22-26 (8)	3, 7, 10, 12, 20 (5)
21.	Gujarat Region	Nil	31(1)	Nil	27, 29 (2)	20, 21, 28 (3)	1, 10, 11, 13, 16-19, 22 (9)	3-7, 9, 11, 12, 14, 15, 23, 24, 26 (13)
22.	Saurashtra & Kutch	Nil	Nil	Nil	19, 21, 26, 27 (4)	3, 4, 6, 8, 11, 13-18, 20-22, 24, 25, 28, 30, 31 (19)	11, 13, 19, 23 (4)	5, 7, 9, 12, 14 (5)
23.	Konkan & Goa	Nil	Nil	21 (1)	5, 9, 19, 21, 23, 29, 30 (7)	2, 11, 18, 20, 24, 26-28, 31 (9)	22 (1)	Nil
24.	Madhya Maharashtra	Nil	Nil	Nil	12, 27, 29, 30 (4)	1, 24, 26, 28, 31 (5)	3, 6, 10, 11, 16, 18 (6)	3, 7, 9, 13, 17, 19 (6)

TABLE 11 (Contd.)

Sub-division		Dates (Number of days)						
S. No.	Name	Severe heat wave	Heat wave	Hot day	Appreciably to markedly above normal	Above normal	Appreciably to markedly below normal	Below normal
25.	Marathawada	Nil	Nil	Nil	12, 27, 29 (3)	1, 28, 30 (3)	Nil	8, 11, 13-15 (5)
26.	Vidarbha	Nil	2, 30, 31 (3)	Nil	1, 12, 29 (3)	27, 28, 30, 31 (4)	8, 11, 16, 26 (4)	3, 4, 9, 10, 13, 15, 21(7)
27.	Chattisgarh	Nil	Nil	Nil	1,11,19-21,29 (6)	2, 6, 9, 16, 18, 28, 30(7)	25, 26 (2)	Nil
28.	Coastal Andhra Pradesh	16-21 (6)	2-18, 20-26, 28, 30, 31(27)	31(1)	2, 10, 12, 23, 24-27 (6)	1, 2 (2)	Nil	Nil
29.	Telangana	Nil	Nil	Nil	19, 27, 29, 31 (4)	1, 12, 16-18, 20, 26 (7)	Nil	Nil
30.	Rayalaseema	Nil	2, 4-6 (4)	2 (1)	29 (1)	1, 13, 14, 16-18, 20 (7)	12 (1)	23, 27 (2)
31.	Tamil Nadu	Nil	2-7, 11, 12, 14, 16-18, 20, 21, 27, 28, 30, 31 (18)	Nil	1, 3-5, 8, 10, 12, 13, 15, 18, 19, 21, 23, 28, 29, 31 (16)	1, 2, 6, 7, 9-11, 14, 17, 22, 24, 30 (12)	24-26 (3)	Nil
32.	Coastal Karnataka	Nil	Nil	29 (1)	5, 6, 9, 11, 13, 16, 17, 20, 21, 23, 25, 29, 30 (13)	1, 10, 12-14, 18, 22, 26 (8)	Nil	Nil
33.	North Interior Karnataka	Nil	Nil	Nil	21, 29 (2)	9 (1)	23 (1)	Nil
34.	South Interior Karnataka	Nil	Nil	Nil	8, 14, 21 (3)	4, 9, 11, 13, 15, 26 (6)	27 (1)	10 (1)
35.	Kerala	Nil	Nil	Nil	19, 23 (2)	20, 25 (2)	Nil	13 (1)

Lat. 12.0° N / Long. 86.5° E at 1200 UTC of 27. Subsequently moving northwestwards, it further intensified into a Cyclonic Storm (NARGIS) and lay centred at 0000 UTC of 28, near Lat. 13.0° N / Long. 85.5° E, about 550 km. east of Chennai. For the following 24 hrs, it remained practically stationary and intensified into a Severe Cyclonic Storm at 0900 UTC of 28. Then it moved northwards and intensified into a Very Severe Cyclonic Storm and lay centred at 0300 UTC of 29, near Lat. 13.5° N / Long. 85.5° E and at 1200 UTC, near Lat. 14.0° N / Long. 85.5° E. Re-curving northeastwards, it lay centred near Lat. 14.5° N / Long. 86.5° E at 0300 UTC and near Lat. 14.5° N / Long. 87.0° E at 1200 UTC of 30 April, respectively. It continued to move northeastwards and lay centred at 0300 UTC of 1 May, near Lat. 15.5° N / Long. 89.0° E and at 1200 UTC, near Lat. 16.0° N / Long. 90.5° E. Subsequently moving eastwards, it lay near Lat. 16.0° N / Long. 93.0° E at 0300 UTC of 2, near Lat. 16.0° N / Long. 94.0° E at 1200 UTC and crossed southwest coast of Myanmar between 1200 & 1400 UTC, along Lat. 16.0° N. It moved northeastwards across Myanmar and weakened into a Severe Cyclonic Storm at 0300 UTC of 3 and lay centered near Lat. 17.0° N / Long. 96.0° E. It further weakened into a Cyclonic Storm near Lat. 18.0° N / Long. 97.0° E at 0900 UTC of 3 and further into a well

marked low pressure area over east central Myanmar by the evening of 3.

The lowest Estimated Central Pressure (ECP) was 962 hPa. The maximum estimated mean wind speed was 90 kts.

The system was mainly tracked by satellite. The maximum intensity of T. No. 5.0 was reported from 0500 to 1200 UTC of 2 May. "Eye" was seen from 0400 UTC of 1 May to 1200 UTC of 2 May.

*Widespread rainfall* activity from 27 April to 2 May with isolated heavy falls (on 29 April, 1 and 2 May) occurred over Andaman & Nicobar Islands.

Some chief amounts of rainfall are:

29 Apr : Port Blair 8, Maya Bandar 7.

1 May : Car Nicobar 7.

2 May : Long Islands 11, Maya Bandar & Port Blair 6 each.

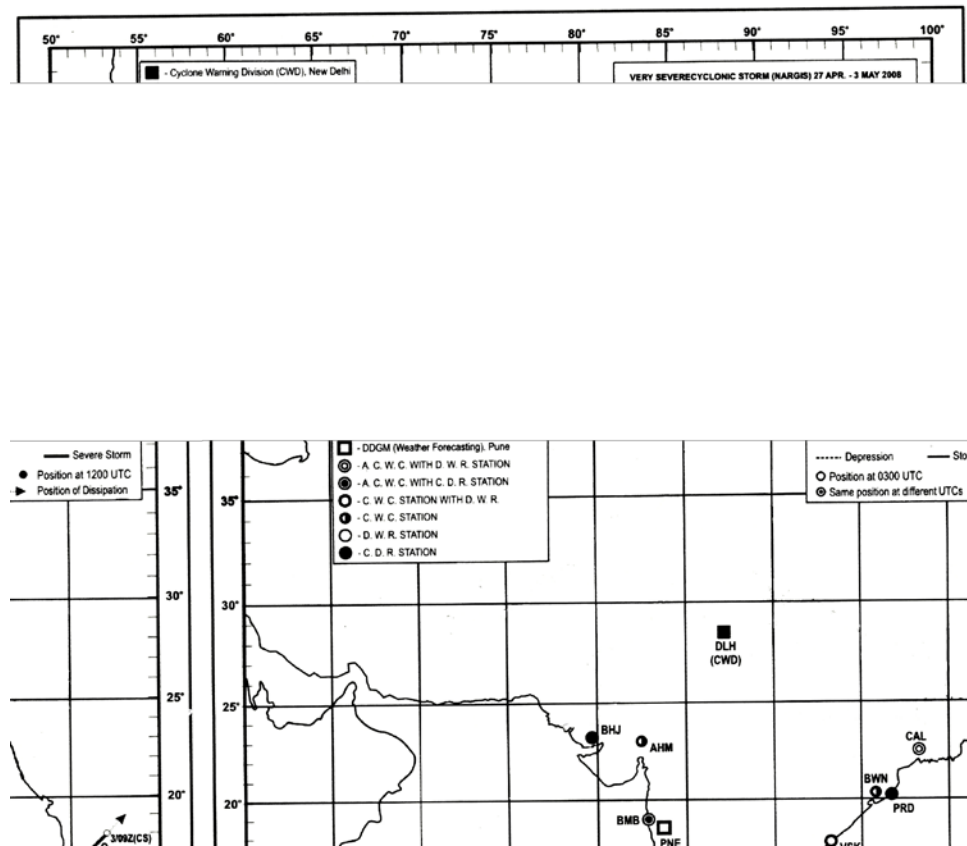


Fig. 2. Track of the very severe cyclonic storm (Nargis) during 27 April - 3 May 2008

### (b) Other synoptic features and weather

Details of the weather systems during the month are given in Table 6 and the resultant rainfall distribution in Table 7. The principal amounts of rainfall are given in Table 12.

Troughs in lower level westerlies gave rise to rainfall over northeast India in the beginning of the month. Favourable interaction between troughs in mid and upper tropospheric westerlies and wind discontinuity in the lower levels gave rise to widespread thundershower activity over major parts of the country, during the first half of the month. The second week of April witnessed a short spell of snowfall over the higher reaches of Himalayas and rainfall over the plains due to the eastward movement of an active western disturbance overlaid by a trough in westerlies in the upper tropospheric levels.

#### 3.2.2. Temperature distribution

From Table 8, it may be seen that *severe heat wave conditions* were absent throughout the month. This could

be attributed to the thundershowers that occurred due to the synoptic situations mentioned above. However, the *heat wave / hot day conditions* started manifesting during the later part of the month.

The month's highest maximum temperature over the plains was 47° C recorded at Khajuraho (East Madhya Pradesh) on 26 April.

#### 3.2.3. Disastrous weather events

According to media and other disaster reports, thunderstorm / hailstorm, lightning, squalls and landslides claimed the lives of 37 people in Andhra Pradesh, 16 in Kerala, 13 each in Karnataka and Bihar, 9 in Assam, 3 in Jharkhand, 2 in West Bengal and 1 in Maharashtra. Also 22 people in Orissa, 13 in Gujarat and 11 in West Bengal lost their lives due to heat stroke. Thunderstorms/squalls created damage to several houses and standing crops in most of these states. Hailstorm and associated squally wind caused damage to

TABLE 12

## Principal amounts of rainfall (1 cm and above) (March, April and May 2008)

Date	March	April	May
(1)	(2)	(3)	(4)
1.	Car Nicobar 9, Chidambaram 6, Thiruvapur & Nagapattinam 5 each, Kattumannarkoil 4, Sirkali & Karaikal 3 each, Panruti, Mayiladuthurai & Vedaranniyam 2 each, Nancowry, Parangipettai, Srimushnam & Pamban 1 each	Erode & Tirukoilur 12 each, Mangalapuram 10, Sathanur Dam 8, Tiruvannamalai & Rasipuram 7 each, Charmarajanagara, Majbat, Tiruppuvanam & Tiruchengode 6 each, Bandipura, Balimundali, Cooch Behar, Cheyyur, Sankaridurg, Kadavur, Thuraiyur & Pennagaram 5 each, Nanjangud, Jalpaiguri, Vellore & Puducherry 4 each, Cuddalore, Salem, Yercaud Chennai, Dhubri & Silchar 3 each, Keonjhar, Coimbatore, Gangtok & Pachmari 2 each, Coonoor, Madurai, Guwahati, Valparai, Port Blair, Lengpui, Sagar Islands, Bapatla & Thiruvananthapuram 1 each	Car Nicobar 7, Sompura 4, Dholai, Pottangi, Seppa & Tezpur 3 each, Tawang, Hut Bay & Guwahati 2 each, Aizwal, Umakote, Kollam, Silchar, Jagdalpur & Bangalore 1 each
2.	Alangudi & Karambakudi 4 each, Alathur & Thirumayam 3 each, Pudukottai 2, Maya Bandar, Chidambaram, Parangipettai, Natham, Perungalur, Thanjavur, Adirampattinam, Papanasam, Valangaiman, Sankarankoil, Tenkasi, Kodavasal, Kochi, Thiruthuraiipoondi, Nannilam, Srivilliputhur, Watrap, Neyyattinkara & Varkala 1 each	Kovilapatti 7, R. Udaigiri 6, Teni 5, Kumarakom 4, Khonsa, Kokrajhar, Nancowry, Car Nicobar, Jalpaiguri, Sathur & Paramakudi 3 each, Shillong, Lengpui, Guler, Maniyatchi & Tuni 2 each, Shenkottai, Peraiyur, Palayamkottai, Coonoor, Periyar Dam, Koodalur, Thali, Guwahati, Cherrapunji, Purnea, Narnaul, Mandi & Jaipur 1 each	Long Islands 11, Kokrajhar 7, Goalpara, Port Blair & Maya Bandar 6 each, Shillong 4, Cooch Behar, Hasimara, Tezu, Sholinghur, Cherrapunji & Silchar 3 each, Singlabazar, Tadong, Tirupathi & Tezpur 2 each, North Lakhimpur, Jorhat, Dibrugarh, Imphal, Jalpaiguri & Passighat 1 each
3.	Thiruvalla & Thrissur 3 each, Vaikom & Port Blair 2 each, Basar, Kochi, Piravom, Mettupalayam & Shenkottai 1 each	Devala 10, Mettupalayam & Coonoor 7 each, Kottayam & Nal 5 each, Shenkottai Valparai & Bangalore 4 each, Munnar, Kundha Bridge, Bikaner, Hut Bay & Napoklu 3 each, Majbat, Pilani, Salem, Coimbatore, Batote, Bhaderwah, Nedumbassery & Kupwara 2 each, Thiruppur, Yercaud, Srinagar, Dhubri, Dibrugarh, Cooch Behar, Bareilly, Dehra Dun, Adampur, Ludhiana, Kochi, Tezu, Kohima, Churu & Mysore 1 each	Mellabazar, Kokrajhar & Seppa 5 each, Cherrapunji & Cooch Behar 4 each, Jaipur & Beki Road 3 each, Mathabhanga, Ziro, Phek, Berhampore & Maya Bandar 2 each, Hosur, Long Islands, Port Blair, Gangtok, Tadong & Balasore 1 each
4.	Darjeeling & Cherrapunji 3 each, Arundhutinagar & Dhubri 2 each, Majbat, Sonamura, Varkala, Cooch Behar, Shillong, Agartala, Gangtok, Jalpaiguri & Purnea 1 each	Burdwan 9, Mananthavady 6, Alipore, Kanjirapally, Kokrajhar, Chaibasa, Bashirhat & Gangtok 5 each, Cooch Behar 4, Goalpara, Chickmagalur, Badagar, Kahu, Tehri & Cherrapunji 3 each, Sujapur Tira, Dehra Dun, Bankura, Tadong, Kodaikanal, Punalur, Agartala, Lengpui & Tezpur 2 each, Namakkal, Sankarankoil, Udhampur, Nal, Sikar, Narnaul, Balachaur, Ranchi, Jamshedpur, Gaya, Guwahati, Dhubri & Balasore 1 each	Kallakurichi, Chettikulam & Cheyyur 3 each, Diana, Gheropara, Durgapur, Honsur, Vembavur, Maduranthagam & Padallur 2 each, Gharmura, Arundhutinagar, Pahalgam, Nanjangud, Sendamangalam, Samayapuram, Attur, Tiruvannamalai, Burdwan & Midnapur 1 each
5.	Kokrajhar, Long Islands, Port Blair & Cherrapunji 3 each, Deomali, Khonsa, Basar, Goalpara, Belonia & Darjeeling 2 each, Kohima, Guwahati, North Lakhimpur, Agartala, Kailashahar & Passighat 1 each	Paradip 8, Puri 7, Nelamangala 6, Idukki, Jagraon, Bandipura, Kanjirapally, Palacode, Tondi, Bhuvaneshwar & Chandbali 4 each, Pollachi, Chittorgarh, Port Blair, Kolkata & Canning Town 3 each, Ropar, Gurdaspur, Rawatbhata, Kovilpatti, Naduvattam, Champa, Chambal, Kota, Barmer, Katra, Delhi & Balasore 2 each, Palayamkottai, Pendra, Kalingapatnam, Yercaud, Banihal, Rohtak, Amritsar, Jagraon, Dharamsala, Deesa, Nahan, Cuttack, Chapra, Hindon & Mathura 1 each	Kanjirapally 5, Usilamapatti 3, Tusuma, Jaipur, Nilgiri, Paravur, Manaparai, Vadipatti, Kodaikanal & Kolkata 2 each, Gharmura, Lengpui, Sholavandan, Chinna Kallar, Kadavur, Balasore, Patiala, Kukernag, Avantipur, Pahalgam, Quazigund, Srinagar, Bahraich, Bareilly, Hindon, Kochi, Silchar & Dhubri 1 each

TABLE 12 (Contd.)

(1)	(2)	(3)	(4)
6.	Nancowry & Car Nicobar 2 each, Lakhimpur, William Nagar & Shillong 1 each	Katra, Jammu, Adampur, Halwara & Koratagere 5 each, Tiruchendur & Dehra Dun 4 each, Nahan, Ballupet, Neyyattinkara, Chalakudy, Banihal, Batote, Amritsar, Sarsawa, Tehri, Balasore & Cuttack 3 each, Nanguneri, Eraniel, Shimla, Chandigarh, Bahraich, Kalingapatnam, Nalgonda, Nedumbassery, Midnapore, Shillong, Kupwara, Rohtak, Kahu & Paradip 2 each, Bikaner, Ambala, Delhi, Lucknow, Car Nicobar, Thiruvananthapuram & Sidhi 1 each	Mettupatti 7, Belonia & Agartala 6 each, Jorhat 4, Rampurhat, Panagarh, Nahariagan, Peermade, Sabroom, Beki Mathanguri, Itanagar, Purnea, Bhagalpur & Kukernag 3 each, Arundhutinagar, Dhubri, Barpeta, Puthimari, Dharamtul, Goalpara, Jamsolaghat, Sriniketan, Chandigarh, Banihal, Quazigund & Churu 2 each, Gangtok, Nalbari, Golaghat, Kampur Tangla, Panbari, Cherrapunji, Silchar, Beki RD Bridge, AIE NH Xing, Krishnanagar, Karnal, Dharamsala, Kalpa, Nahan, Bhaiderwah, Sidhi & Sikar 1 each
7.	Ramanathapuram 1	Baderwah, Jammu, Katra & Ron 5 each, Mundargi & Ambasamudram 4 each, Dharmasthala, Bagewadi & Mavelikara 2 each, Subramanya, Nagpur, Vilathikulam, Patna, Parbhani, Amraoti, Nizamabad & Thiruvananthapuram 1 each	Bhubaneshwar & Dhenkanal 5 each, Khanitar, Diana, Passighat & Lakhimpur 3 each, Jamsheedpur, Cuttack, Angul, Keonjhar, Ranchi, Silchar, Long Islands & Port Blair 2 each, Omalur, Pappireddipatti, Amraghat, Imphal & Phek 1 each
8.	Hut Bay 2, Nancowry & Car Nicobar 1 each	Radhapuram 7, Maniyatchi 6, Ramanathapuram 5, Nilakottai & Watrap 4 each, Sathur, Punalur & Sivagiri 3 each, Sambre, Hubli, Osmanabad, Kochi, Kodaikanal, Natham, Nagercoil, Belgaum & Kupwara 2 each, Coonoor, Devakottai, Bijapur, Solapur, Thiruvananthapuram & Srinagar 1 each	Tiruchirapalli 10, Dharapuram & Kangeyam 8 each, Jia Bharali & N T Xing 6 each, Dhubri 5, Sevoke, Kuppady, Thammampatti & Usilampatti 4 each, Dharmapuri, Jorhat, Beki Mathanguri, Beki Road Bridge, Barpeta, Neematighat, Tikrikilla, Port Blair, T. Narsipura & Vythiri 3 each, Bandipura, Arundhutinagar, Mohana, Chengam, Lalgudi, Musiri, Yercaud, Coonoor, Tirupattur, North Lakhimpur, Goalpara & Kokrajhar 2 each, Dindigul, Hosur, Valparai, Badatighat, Dharamtul, Panbari, Tezpur, Salem, Uthagamandalam, Maya Bandar, Nancowry & Itanagar 1 each
9.	Khanapara 1	Rameshwaram 12, Thiruvananthapuram 5, Tirupattur & Lalgudi 4 each, Rabkavi, Thrissur, Kozha & Palayamkottai 3 each, Sivakasi, Kochi & Kottayam 2 each, Belgaum, Gokak, Tiruchirapalli, Ramanathapuram & Pamban 1 each	Port Blair 8, Panambur 7, Jalpaiguri 6, Long Islands, T. Narsipura & Amarghat 5 each, Mangalore, Mani, Chintamani, Taliparamba & Dholai 4 each, Goalpara, Gheropara, Satara, Hut Bay, Car Nicobar & Bangalore 3 each, Palacode, Sriniketan, Bankura, Balasore, Cooch Behar, Gangtok, Maya Bandar, Nancowry, Jodhpur & Ajmer 2 each, Yercaud, Mysore, Kozhikode, Narnaul, Jharsuguda, Tadong & Silchar 1 each
10.	Radhapuram 5, Hut Bay 4, Nancowry, Boothapandy & Tiruchendur 3 each, Mylaudi & Sattankulam 2 each, Port Blair, Car Nicobar, Thuckalay, Nagercoil, Srivaikuntam & Nanguneri 1 each	Ron & Neyyattinkara 4 each, Almatte, Kozha, Thiruvananthapuram & Hut Bay 3 each, Belgaum 2, Kupwara, Kohima, Sonamura, Haliyal, Palayamkottai, Kukernag, Pahalgam & Kochi 1 each	Port Blair 21, Long Islands 9, Yercaud 8, Itanagar 6, Beki Road Bridge & Salem 5 each, Nancowry, Virajpet, Manas, NH Xing, Valparai, Kanchipuram & Jodhpur 3 each, Jeapur, Darjeeling, Chamarajnaraga, Rasipuram & Omalur 2 each, Ajmer, Chittorgarh, Vellore, Kodaikanal, Kochi, Tezpur, Ambala, Ghamroor, Dharmapuri, Kukernag & Quazi Gund 1 each
11.	Rameshwaram 3, Pamban, Paramakudi, Tiruvadana, Ramanathapuram & Tondi 1 each	Punalur 4, Thiruvananthapuram & Alapuzha 3 each, Lengpui, Agartala & Tondi 2 each, Banihal, Quazigund, Pahalgam, Kukernag, Kanyakumari, Malerkotla, Tondi, Gangtok & Tadong 1 each	Rasipuram 9, Long Islands 8, Ketti 7, Kothagiri, Pennagaram, Kolkata & Port Blair 5 each, Barrackpur, Ponampet, M.M. Hills, Irikkur, Lalgudi, Dharmapuri & Tiruchengode 4 each, Omalur, Mettur Dam, Cooch Behar, Salem & Maya Bandar 3 each, Thodupuzha, Shimla, Salem, Coonoor, Bhavanisagar, Dharampur, Guwahati & Cherrapunji 2 each, Padallur, Yercaud, Attur, Jorhat, Silchar, Kukernag, Kota & Vellore 1 each

TABLE 12 (Contd.)

(1)	(2)	(3)	(4)
12.	Kattumannarkoil 24, Sirkali & Mayiladuthurai 12 each, Kollidam & Sethiyathope 9 each, Chidambaram & Aluva 8 each, Gingee & Jayamkondan 7 each, Virudhachalam & Nannilam 6 each, Puducherry, Villupuram, Cholavaram & Nagapattinam 5 each, Perumbavur, Cuddalore, Tambaram, Srimushnam & Thozhudhur 4 each, Thiruthuraiipoondi, Chengalpattu, Maduranthagam, Cheyyur, Parangipettai, Tiruvidaimaruthur, Pamban, Tiruvannamalai, Vandavasi, Karaikal, Nedumbassery, Thiruvarur & Tiruvadanaï 3 each, Tirukoilur, Ulundurpet, Kallakurichi, Vanur, Tindivanam, Polur, Poonamalle, Poondi, Tarangambadi, Thathiengarpet, Tondi, Utheiramerur, Adirampattinam, Tiruvallur, Padalur, Manaparai, Aranthangi, Tirukoilur & Kodavasal 2 each, Chennai, Arakonam, Musiri, Rameshwaram, Ponneri, Keeranur, Tirupattur, Papanasam, Pattukottai, Kumbakonam, Thuraiyur, Samayapuram & Krishnagiri 1 each	Tadong 4, Nancowry, Gangtok & Punalur 3 each, Dhundi, Banihal & Pahalgam 2 each, Bhuntar, Rampur Bushar, Puttur, Kozha & Kanyakumari 1 each	Port Blair 13, Hut Bay & Kavaratti 7 each, Nancowry & Maya Bandar 5 each, Kallakurichi, Sundernagar, Nanjangud & Sundernagar 4 each, Paravur, Krishngiri, Namakkal, Shimla, Coimbatore & Krishnanagar 3 each, Gheropara, Metur Dam, Paramathi, Vandavasi & Long Islands 2 each, Theni, Omalur, Mettupalayam, Vellore, Kozhikode, Cuttack, Paradip, Chandbali, Mukteswar, Tehri & Siliguri 1 each
13.	Kollidam 23, Chidambaram 19, Parangipettai & Sirkali 13 each, Sethiyathope 12, Karaikal 11, Tarangambadi & Nagapattinam 10 each, Virudhachalam 6, Mayiladuthurai, Thiruvarur, Nannilam, Vedarnniyam & Srimushnam 5 each, Kanjirapally, Subramanya & Shenkottah 4 each, Piravom, Kattumannarkoil, Puducherry, Kochi, Kottayam, Villupuram, Tenkasi, Tiruthuraiipoondi, Papanasam, Jayamkondan & Mudibidre 3 each, Muthupet, Mannargudi, Needamangalam, Kodavasal, Cuddalore, Ulundurpet, Vanur, Orathanadu, Kumbakonam, Alapuzha, Tiruvidaimaruthur, Valangaiman, Kodaikanal, Cheyyur, Ambasamudram, Toludur, Rameshwaram, Pamban & Medikeri 2 each, Coonoor, Kundha Bridge, Kothagiri, Kallakurichi, Gingee, Tirukoilur, Mudukur, Tiruvallur, Maniyatchi, Bhavani, Adirampattinam, Pattukottai & Tindivanam 1 each	Hasimara, Murti, Baghdogra, Goalpara, Kokrajhar, Thodupuzha & Neyyattinkara 3 each, Gangtok, Tadong, Dhubri, North Lakhimpur, Alapuzha & Guwahati 2 each, Thiruvananthapuram, Nedumbassery, Punalur, Jalpaiguri, Sarsawa, Kukernag, Madurai, Jorhat, Cherrapunji, Tezpur, Passighat, Khonsa, Dhundi & Itanagar 1 each	Port Blair 18, Long Islands 13, Virudhunagar 11, Maya Bandar 10, Villupuram 7, Kallakurichi 6, Anandpur & Tirukoilur 5 each, Altuma, Aruppukottai, Andipatti, Tiruppuvanam & Dibrugarh 4 each, Chaibasa, Churu, Sibsagar, Kollidam, Chidambaram, Gingee & Puducherry 3 each, Tindivanam, Vanur, Sikar, Nancowry, Narnaul, Passighat & Peermade 2 each, Cuddalore, Ajmer, Nagapattinam, Madurai, Shimla, Batote, Cherrapunji & Imphal 1 each
14.	Kochi 12, Mannarkad, Thrissur & Nedumbassery 11 each, Vadakkancherry 10, Jayapura 9, Indi, Kozha, Shenkottah & Pollachi 8 each, Vadakara, Hosanagara, Redhills, Poonamalle & Cheyyur 7 each, Vaikom, Kota, Rajapalayam & Srivilliputhur 6 each, Gadag, Kozhikode, Valangaiman, Uthagamandalam, Kodaikanal & Kodavasal 5 each, Cholavaram, Tenkasi, Coonoor, Ketti, Pechiparai & Tiruvidaimaruthur 4 each, Kundha Bridge, Panambur, Karipur, Kothagiri, Papanasam, Nannilam, Rameshwaram, Kuzhithurai & Watrap 3 each, Vanur, Usilampatti, Ulundurpet, Mannargudi, Sriperum-pudhur, Chinnakalar, Srimushnam, Nungambakkam, Kanchipuram, Muthupet, Puducherry, Sathankulam, Arani, Vedaranyam, Gudalur Bazar, Virudhachalam & Maduranthagam 2 each, Anna University, Gingee, Sivakasi, Sivagiri, Chennai, Needamangalam, Koodalur, Belgaum, Bagalkote, Tiruvannamalai, Valparai, Ponneri, Villupuram, Mudukulathur, Nagapattinam,	Thodupuzha & Kozha 4 each, Khonsa, Thakurmunda, Rairangpur, Digha & Nancowry 3 each, Tadong, Gangtok, Kolkata, Lakhimpur, Nearnatighat & Dharmanagar 2 each, Nadia, Balasore, Alapuzha, Car Nicobar, Guwahati, Silchar, North Lakhimpur, Kailashahar & Lengpui 1 each	Port Blair 6, Sevoke, Phek, Alipurduar, Avinashi, Manaparai, Baghdogra & Long Islands 3 each, Champasari, Tadong & Hut Bay 2 each, Maya Bandar, Jalpaiguri, Bhopal & Kodaikanal 1 each

TABLE 12 (Contd.)

(1)	(2)	(3)	(4)
	Kottayam, Alapuzha, Minicoy, Naduvattam, Ponneri, Kazhugumalai, Tindivanam, Chidambaram & Kalpa 1 each		
15.	Kodaikanal 13, Kunigal 11, Humchadakatte & Arasalu 9 each, Nedumangad 8, Chinnakalar 7, Coonoor, Minicoy, Kumbakonam & Nilakottai 6 each, Periyakulam, Kundapura, Boothapandy, Tirukoilur, Nagercoil & Chitradurga 5 each, Gingee, Usilampatti, Theni, Miao, Uthamapalayam, Pallipattu, Mettupatti & Bhavani 4 each, Koodalur, Bhavanisagar, Kothagiri, Sindhanur, Periyanaickanpalayam, Avinashi, Passighat, Dibrugarh, Andipatti, Cheyyur, Kumarapalayam, Sivagiri, Valparai, Kundha Bridge, Thuckalay, Salem & Ketti 3 each, Tindivanam, Ulundurpet, Radhapuram, Periyar, Dam, Vandavasi, Cholavaram, Erode, Harur, Sathankulam, Peraiyur, Tambaram, Bodinayakanur, Tiruttani, Ariyalur, Redhills, North Lakhimpur, Tiruvannamalai, Paramakudi, Thiruthuraiipoondi & Puducherry 2 each, Sankarankoil, Srimushnam, Nungambakkam, Natham, Tiruppur, Kazhugumalai, Pamban, Sholingir, Walajapet, Sathyamangalam, Shenkottah, Thiruvurur, Gangtok, Virudhachalam, Coimbatore, Mettupalayam, Alangayam, Maduranthagam, Kamudhi, Gadag, Nagapattinam, Medikeri, Cannur, Thiruvananthapuram, Ambasamudram, Tirukattupalli, Annur, Tripattur, Srivilliputhur, Mulanur, Anna University, Guindy, Uthagamandalam, Tiruvadana, Polur & Gangtok 1 each	Cherrapunji 7, Kailashahar 6, Khonsa 4, Matizuri & Dharmanagar 3 each, Gangtok, Tadong, Silchar, Bhang & Pahalgam 2 each, Bhuntar, Kalpa, Banihal, Batote, Kukernag, Pahalgam, Quazigund, Kupwara, Srinagar, Kochi, Guwahati, Dibrugarh, Imphal, Junagarh & Kalpa 1 each	Long Islands & Maya Bandar 7 each, Virudhachalam & Port Blair 5 each, Sirkali, Kollidam & Dibrugarh 4 each, Sethiyathope, Anaicut, Villupuram & M. Thurai 3 each, Vedarnniyam, Chidambaram, Kodavasal, Thiruvurur, Hindon, Sriniketan, Karaikal, Nahariagun, Kendrapara, Khowang & Rohtak 2 each, Vanur, Tiruvannamalai, Parangipettai, Midnapore, Kolkata, Patna, Bhagalpur, Muzaffarpur, Delhi, Rohtak, Aligarh, Sundernagar, Nal, Cuddalore, Hassan, Agra, Hut Bay, Dhubri, Perumbavur, Kohima & Itanagar 1 each
16.	Mancompu & Vadakara 12 each, Ketti 11, Thirthahalli 10, Bangalore & Alapuzha 9 each, Kuzhithurai 8, Nedumbessary, Tuticorin, Sankarankoil, RS Mangalam, Malavalli & Mudukulathur 7 each, Mysore, Kadaladi, Radhapuram & Udumalpet 6 each, Agumbe, Periyakulam, Virudhunagar, Kundha Bridge, Paramakudi, Maniyatchi, Mylaudy, Tiruppuvanam, Ilayangudi, Shenkottah, Kothgiri, Pattukottai, Tiruvadana & Karkala 5 each, Sivagiri, Arantangi, Srivaikuntam, Kamudhi, Sivaganga, Passighat, Sangli, Uthagamandalam, Tiruchendur, Hassan & Aruppukottai 4 each, Nagercoil, Devala, Kodaikanal, Tenkasi, Ramanathapuram, Devakottai, Pamban, Tirumangalam, Melur, Adirampattinam, Medikeri, Palayamkottai, Bodinaickanur, Tirupathur, Thammanpatti, Kochi, Thiruvananthapuram, Kozhikode, Karipur, Tirumayam, Arimalam, Natham & Jayamkondan 3 each, Chittampatti, Nalwatwad, Kazhugumalai, Manamadurai, Punalur, Sathankulam, Madurai, Watrap, Tirukattupalli, Marungapuri, Perungallur, Vellore, Tiruttani, Namakkal, Padallur, Ambasamudram, Salem, Nanguneri, Tondi, Bhoothapandi, Vilathikulam, Aravakurichi, Sathur, Tiruchuzhi, Rajapalayam, Manaparai, Pudukottai, Pechiparai & Vadipatti 2 each, Kodavasal, Thiruvaiyaru, Thuckalay, Surangudi, Thogamalai, Alangayam,	Cherrapunji 6, Perumbavur 4, Bhaderwah, Kupwara & Quazigund 3 each, Banihal, Kukernag, Pahalgam, Bankura, K. B. Dam, D. P. Ghat, Dharamsala, Tezpur, Srinagar, Nedumbassery, Kochi, Bhuntar & Kalpa 2 each, Batote, Avantipur, Bankura, Sriniketan & Amritsar 1 each	Imphal & Maya Bandar 5 each, Bokajan, Munnar & Sankalan 4 each, Digha & Port Blair 3 each, Minicoy & Kohima 2 each, Perumbavur, Sheopurkalan, Tawang, Paradip, Bhubaneswar, Chandbali, Banihal, Umaria, Lumding & Long Islands 1 each



TABLE 12 (Contd.)

(1)	(2)	(3)	(4)
	Ottapidaram, Peravurani, Periyanaickanpalayam, Kanyakumari, Walajapet, Ambur, Periyar Dam, Chinnakalar, Mangalore, Salem, Alangudi, Musiri, Pappireddipatti, Thuraiyur, Kulithalai, Panchapatti, Karaikudi, Thiruvavur, Valangaiman, Pollachi, Andipatti, Pullambadi, Coonoor, Naduvattam, Rasipuram, Papanasam, Karambakudi, Sholingir, Virudhachalam, Gudalur Bazar, Peraiyur, Athur, Polur, Pendra, Thiruvananthapuram, Amini Divi, Agathi & Khonsa 1 each		
17.	Tuticorin 7, Kottayam & Chalakudy 5 each, Piravom, Enamackel, Agumbe & Shimoga 4 each, Belthangadi, Palayamkottai, Tenkasi, Shenkottah, Kangeyam, Chinnakalar, Kundha Bridge, Kazhugumalai & Parangipettai 3 each, Sirsi, Mellabazar, Bableshtar, Mangalore, Kochi, Alapuzha, Srimushnam, Kadavur, Ambasamudram, Sathankulam & Kodaikanal 2 each, Mulanur, Radhapuram, Tirukattupalli, Natham, Nilakottai, Tuticorin, Kollidam, Sivagiri, Periyar Dam, Karur, Sulur, Tiruchengode, Mayanur, Sirkali, Valparai, Punalur, Rajapalayam, Koodalur, Golaghat, Kodaikanal, Panjim & Maniyatchi 1 each	B. Muguri 12, Tangla & Jorhat 4 each, Manash, Bhaderwah & Eraniel 3 each, Tadong, Hasimara, Bhalukpong & Shimla 2 each, Batote, Kukernag, Thiruvananthapuram, Kalpa, Rampur Bushar, Sujapur Tira, Gorakhpur, Tehri, Pathankot, Mukerian, Bhuntar, Kuzhithurai & Nagercoil 1 each	Long Islands 12, Melur 6, Motihari 4, Tikrikilla & Muzaffarnagar 2 each, Ziro, Aizwal, Kohima, Bahraich, Sundernagar, Bhaderwah, Silchar, Imphal & Malda 1 each
18.	Rameshwaram 9, Sivakasi, Sathankulam, RS Mangalam & Ramanathapuram 7 each, Theni 6, Tondi, Ambasamudram, Pudukottai & Sathur 5 each, Pamban, Mudukulathur & Eraniel 4 each, Sivagiri, Virudhunagar, Tiruvadana, Srivilliputhur, Sivaganga, Manamadurai, Tiruppuvanam, Nanguneri, Kamudhi, Srivaikuntam, Kazhugumalai, Periyakulam, Maniyatchi, Tuticorin, Tiruchuzhi, Watrap, Tirumayam, Paramakudi, Ilayankudi, Melur, Tiruchendur & Rajapalayam 3 each, Kodaikanal, Arantangi, Jalpariguri, Uthamapalayam, Munnar, Chittampatti, Andipatti, Thirumangalam, Devakottai, Karaikudi, Radhapuram, Surangudi, Natham, Palavankottai, Vadipatti, Aruppukottai, Kadavur, Usilampatti, Sholavandan, Ottapidaram, Kothagiri, Chinnakalar, Mettupatti, Bodinayakanur & Minicoy 2 each, Thammanpatti, Sankarankoil, Arimalam, Vilathikulam, Coonoor, Mylaudi, Periyar Dam, Kadaladi, Mettur Dam, Koodalur, Alangudi, Shenkottah, Orthanadu, Mangalore, Panambur, Cannur, Manaparai, Tenkasi, Valparai, Madurai, Guwahati, Adirampattinam, Peraiyur, Kanyakumari, Peruvurani, Needamangalam, Thirupattur, Ketti, Keeranur, Cooch Behar & Muthupet 1 each	Passighat 8, Shimoga 5, Khowang 4, Cherrapunji, Dhollabazar, Karkala, Ramdurg, Hassan, Cooch Behar, Patna & Dibrugarh 3 each, Neora, Murti, Hasimara, Cooch Behar & Sangli 2 each, Thiruvananthapuram, North Lakhimpur, Jorhat & Itanagar 1 each	Dibrugarh 6, Khonsa, Golaghat & Margherita 4 each, Pochampalli, Ambur, Dillighat, Numaligarh, Sibsagar, Tezpur, Cherrapunji, Arundhutinagar, Kolkata & Sabroom 3 each, Uthagamandalam, Pennugondapuram, Amraghat, Chouldhowaghat, Itanagar, Tezu, Jia Bharali, N. T. Xing, Jorhat, North Lakhimpur & Bhalukpong 2 each, Palacode, Krishnagiri, Karimganj, Khowang, Neematighat, Naharkatia, Dhollabazar, Agartala, Kohima, Sonamura, Bankura, Balasore, Delhi, Pahalgam, Uluberia, Sompura, Itanagar, K. R. Pet & Sakaleshpur 1 each
19.	RS Mangalam 16, Ambasamudram 12, Ilayankudi 9, Ketti 7, Paramakudi & Tondi 6 each, Shenkottah, Paravur, Tiruvadana, Vedaranyam, Muthupet & Manamadurai 5 each, Kazhugumalai, Kodaikanal, Sivaganga, Aluva, Devakottai, Tenkasi & Mettupatti 4 each, Rameshwaram, Karambakudi, Adirampattinam, Thathiengarpet, Kothagiri, Periyakulam, Chittampatti, Sholavandan, Pudukottai, Tirumayam, Tiruppuvanam, Tiruchuzhi, Keeranur, Coonoor, Pattukottai, Chouldhowaghat, Sangli & Thiruvananthapuram	North Lakhimpur 4, Chouldhowaghat, Dharmasthala, Kundagol, Dharwad & Humchadakatte 3 each, Itanagar, Nahariagun, Karatagi, Ranebennur, Gangtok & Dibrugarh 2 each, Panjim, Bapatla, Mangalore, Kochi, Tezpur & Passighat 1 each	Sabroom 8, Motihari, Beki, Mathanguri, Sonamura & Talli 5 each, Kuknoor, Sira, N. H. Xing, Tirupathi, Patiala & Uluberia 3 each, Rajghat, Narnaul, Yelburga, Sravanabelgola, Uthagamandalam & Jorhat 2 each, Dhubri, Guwahati, Shillong, Cherrapunji, Imphal, Agartala, Gangtok, Cooch Behar, Midnapore, Canning Town, Kolkata, Hardoi, Aligarh, Tehri, Ayanagar, Delhi, Bhiwani, Narnaul, Ambala, Pilani, Patiala & Arajiban 1 each

TABLE 12 (Contd.)

(1)	(2)	(3)	(4)
	<p>3 each, Thiruthurai, Panchapatti, Karaikudi, Sankarankoil, Virudhunagar, Manaparai, Ramanathapuram, Watrap, Alangudi, Kollidam, Surangudi, Dharapuram, Uthamapalayam, Thiruvavur, Vadipatti, Natham, Nanguneri, Andipatti, Kanyakumari, Radhapuram, Mudukulathur, Alapuzha, Tuticorin, Kamudhi, Nilakottai, Melur, Boothapandy, Peraiyur, Karur, Paramathi, Tiruvidaimaruthur, Silchar, Jorhat, Tirumanagalam, Theni, Gondia, Tezu &amp; Numalighat 2 each, Pamban, Marungapuri, Arimalam, Gandharvakottai, Aranthangi, North Lakhimpur, Dibrugarh, Shillong, Srivilliputhur, Madurai, Vilathikulam, Kadavur, Eraniel, Thirupathur, Perungallur, Dindigul, Karur, Kundha Bridge, Aruppukottai, Palani, Passighat, Sendamangalam, Devala, Tiruchendur, Maniyatchi, Koodalur, Thuckalay, Peravurani, Nagercoil, Rajapalayam, Sivakasi, Jayamkondan, Pollachi, Musiri, Pechipparai, Kulithalai, Bodinayakanur, Ariyalur, Kumarapalayam, Namakkal, Chinnakalar, Ottapidaram, Kuzhithurai, Thammanpatti, Nahariagun, Itanagar &amp; Kozhikode 1 each</p>		
20.	<p>Sivakasi 12, Rajapalayam &amp; Watrap 11 each, Radhapura 10, Sivagiri &amp; Minicoy 9 each, Srivilliputhur 8, Ketty &amp; Shenkottah 7 each, Uthamapalayam, Nannilam, Kazhugumalai, Coonoor, Haripad &amp; Sorada 6 each, Sankarankoil, Keeranur, Sattur, Devakottai, Peravurani, Kanyakumari &amp; Piravom 5 each, Nilakottai, Bodinayakanur, Peraiyur, Viralimalai, Ambasamudram, Tenkasi, Pattukkottai, Karambakkudi, Alangudi, Kadaladi, Nanguneri, Thiruvavur, Adirampattinam, Kodaikanal, Khonsa &amp; Tikrikilla 4 each, Manapparai, Srivaikuntam, Mudukulathur, Rameshwaram, Muthupet, Kamuthi, Theni, Tiruchendur, Mettupatti, Kodavasal, Kundha Bridge, Sathankulam, Perungalur, Srimushnam, Koodalur, Surangudi, Melur, Thiruvaidaimaruthur, Vedarnniyam, Sholavandan, Padallur, Andipatti, Vilathikulam, Pullambadi, Kandarvakottai, Chettikulam, Vadipatti, Tondi, Palayamkottai, Karipur, Kottayam, Deomali &amp; Cherrapunji 3 each, Perambalur, Sathanur, Nagercoil, Tarangambadi, Arantangi, Mylaudy, Kattumannarkoil, Aravakurichi, Orathanadu, Valangaiman, Thiruchuzhi, Periyardam, Chittampatti, Lalgudi, Mettur Dam, Tiruppuvanam, Pechipparai, Chengam, Tiruvaiyaru, Madukur, Tiruvadanai, Tuticorin, Karaikal, Madurai, Nagapattinam, Guwahati, Sibsagar &amp; Khanapara 2 each, Usilampatti, Ottapidaram, Sethiyathope, Pollachi, Karaikudi, Natham, Myladuthurai, Needamangalam, Pudukottai, Tirumangalam, Dharapuram, Ariyalur, Chidambaram, Chinna Kallar, Mayanur, Sivaganaga, Thuckalay, Kulithalai, Vedasandur, Jayamkondam, Vriddhachalam, Ramanathapuram, Punalur, Thiruvananthapuram, Tiruchirapalli, Puducherry, Udhamandalam, Ambikapur, Dhubri, Sriniketan, Amini Divi &amp; Daltonganj 1 each</p>	<p>Tadong 4, Mangalore, Kadur &amp; Gangtok 2 each, Srinagar, Bantwal, Tezpur &amp; Kuzhithurai 1 each</p>	<p>Dibrugarh 13, Silchar 10, Santhebennura 9, Ranebennur 6, Kohima, Balachaur, Patiala &amp; Passighat 5 each, Munnar, Malur, Gubbi, Mayanur &amp; Chatrapatti 4 each, Srinagar 3, Jaipur, Gadag, Minicoy, Delhi, Karnal, Narnaul &amp; Andipatti 2 each, Periyanaikanpalyam, Balasore, Daltonganj, Patna, Hindon, Sarsawa, Ambala, North Lakhimpur, Imphal, Jalpaiguri, Midnapore, Berhampore, Port Blair, Chandigarh, Rohtak, Amritsar, Halwara, Rampur Bushar, Katra, Pahalgam, Bhaderwah &amp; Kochi 1 each</p>

TABLE 12 (Contd.)

(1)	(2)	(3)	(4)
21.	R. S. Mangalam 21, Ketty & Radhapuram 19 each, Sivagiri & Karur Paramathi 15 each, Tuticorin, Nanguneri & Kozhikode 13 each, Srivaikuntam 12, Tiruvadanaï & Karipur 11 each, Erode, Natham, Sholingur, Kadaladi, Taliparamba & Vaikom 10 each, Sathankulam, Pennagaram, Kazhugumalai, Ottapidaram, Palayamkottai & Kodaikanal 9 each, Rajapalayam, Poondi, Thiruppathur, Devala, Ambasamudram, Mylaudy, Sankarankoil, Srivilliputhur & Bantwal 8 each, Tiruppuvanam, Tiruchendur, Kamuthi, Perundurai, Shencottah, Gingee, Chittampatti, Bhavani, Nagercoil, Devakottai & Coonoor 7 each, Andipatti, Mettupatti, Tiruvallur, Melur, Karur, Paramakudi, Karaikudi & Kanyakumrai 6 each, Uthagamandalam, Watrap, Minicoy, Thiruvananthapuram & Vellore 5 each, Parangipettai, Cherrapunji, Ariyalur, Omalur, Yercaud, Panambur, Medikeri & Trikikilla 4 each, Tiruchirapalli, Madurai, Nedumbassary, Paramathi, Contai, Ramanathapuram, Dharamapuri, Mysore, Jorhat, Mangalore & Amini Divi 3 each, Coimbatore, Puducherry, Nagapattinam, Kochi, Ranchi & Dibrugarh 2 each, Daltonganj, Guwahati, Tezpur, Shillong, North Lakhimpur, Haldia, Bapatla, Salem, Tirupathi, Chennai, Karaikal, Cuddalore, Salem, Bangalore, Agumbe, Hassan, Punalur & Vedarnniyam 1 each	Mundargi, Thirthahali, Santhebennur & B. Durga 3 each, Margharita, Kadur & Gangtok 2 each, Byadgi 1	Hindon 7, Delhi & Rohtak 6 each, Patiala, Bhiwani, Sohana, Cherrapunji & Beki Road Bridge 5 each, Cherthala, Enamackel, Yedwad, Hoskote, Udala, Ayanagar, Gohana, Amini Divi & Kanchipuram 4 each, Karnal, Ambala, Panipat, Meerut, Ranchi & Cooch Behar 3 each, Ludhiana, Hansi, Gorakhpur, Balasore, Chandbali, Kozhikode, Alapuzha, Keonjhar, Midnapore, Gangtok, Dhubri & Shillong 2 each, Harnai, Hyderabad, Shirali, Jamshedpur, Canning Town, Jalpaiguri, Guwahati, Lakhimpur, Passighat, Aligarh, Karipur & Agathi 1 each
22.	Kanavaram 14, Kedumangad 11, Kadaladi 10, R. S. Mangalam, Maduranthagam, Vanur, Mudukulathur & Cannur 9 each, Ilayankudi, Watrap, Mayiladuthurai, Orathanadu & Chennai 8 each, Nannilam, Karambakkudi, Tiruchirapalli, Maniyatchi, Paramakudi, Cholavaram, Karkala, Mudibidre & Kasargod 7 each, Aruppukottai, Thiruvananthapuram, Tindivanam, Coonoor & Ponneri 6 each, Tambaram 5, Ahmednagar, Thiruvadanaï, Cheyyar, Red Hills, Parangipettai, Puducherry, Cuddalore, Karaikudi, Kodaikanal, Tiruchirapalli, Sattankulam, Vijayawada & Cherrapunji 4 each, Thanjavur, Tuticorin, Palayamkottai, Tondi, Natham, Alapuzha, Kolhapur, Guwahati, Imphal, Honavar, Mangalore & Passighat 3 each, Kozhikode, Gadag, Radhapuram, Nilakottai, Madurai, Karaikal, Bapatla & Yeotmal 2 each, Chittampatti, Bhavani, Koodalur, Kochi, Ariyalur, Nedumbassery, Adirampattinam, Machilipatnam, Narsapur, Goa, Gangtok, Jalpaiguri, Cooch Behar, Karwar & Chitradurga 1 each	Kalghatgi & Car Nicobar 1 each	Chintamani 12, Nalbari 9, Bagepalli, Koikuntala, Narnaul & Tezpur 8 each, Kavaratti, Mulbagal & Gooty 7 each, Cherrapunji, Kokrajhar & Poondi 6 each, Agathi, Kailashahar & Tiruvallur 5 each, Dharmanagar, Allahabad, Annapurna Ghat & Tikrikilla 4 each, Gharmura, Manas, N. H. Xing, Matizuri, Puthimari, Numalighat, Goalpara, Jia Bharali, Guwahati, Bhalukpong, Ramakrishnarajpet, Gobichettipalayam, Aligarh, Hindon, Delhi, Nawashahar, Agumbe & Karipur 3 each, Tiruttani, Thanjavur, Kulithalai, Bhavani, Kodaikanal, Jalpaiguri, Tiruvaiyaru, Jamshedpur, Varanasi, Bhiwani, Patiala, Kalingapatnam, Anantpur, Kurnool, Kodaikanal, Tiruttani, Gadag, Bangalore, Alapuzha & Amini Divi 2 each, Seppa, Naduvattam, Ketti, Kundha Bridge, Walajapet, Gudiyatham, Lalgudi, Sathanur Dam, Shillong, Darjeeling, Tadong, Midnapore, Meerut, Mathura, Dehra Dun, Ganganagar, Raichur, Bellary & Chitradurga 1 each
23.	Kodangal 18, Karkala, Kalgi & Gurumitkal 15 each, Hosdurg, Kalasa & Rameshwaram 14 each, Koppal & Ron 13 each, Sedam & Badami 12 each, Cannur, Thiruvananthapuram & Panambur 10 each, Bagalkote & Mangalore 9 each, Eraniel, Chickmagalur, Belgaum & Kanyakumari 8 each, Orathanadu, Radhapuram, Pamban & Hyderabad 7 each, Raichur, Pendra, Vadakara & Kottigehara 6 each, Ketti, Kamuthi, Andipatti, Shenkottah & Gadag 5 each, R. S.	Singlabazar 4, Mudibidre, Mangalore, Hubli, Shimoga & K. R. Pet 3 each, Alipurduar, Karkala, Kalghatgi, Mundargi, Jayapura & Medikeri 2 each, Port Blair, Cooch Behar & Agumbe 1 each	Yercaud 11, Tiruvannamalai 7, Kavaratti, Ramagiri, Thathiengarpet & Salem 6 each, Byadgi, Nargund, Sundernagar, Aie N H Xing & Villupuram 5 each, Ambala, Lucknow, Agartala, Lalgudi, Gingee Nannilam, Denkanikottai, Mettur Dam, Barpeta, Beki Road Bridge, Digha, Agathi & Ilkal 4 each, Dharamsala, Itanagar, Walajapet, Vaniyambadi, Naduvattam, Sholagiri, Pennagaram, Delhi,

TABLE 12 (Contd.)

(1)	(2)	(3)	(4)
	Mangalam, Thuckalay, Tiruchendur, Paramakudi, Kadaladi, Peravurani, Adirampattinam, Tondi, Yeotmal & Shirali 4 each, Kundha Bridge, Ramanathapuram, Mylaudy, Kuzhithurai, Nagercoil, Honavar, Cuddalore, Champa, Akola, Kailashahar, Agartala, Kurnool & Satara 3 each, Karaikudi, Uthagamandalam, Kattumannarkoil, Nizamabad, Pune, Narsinghpur, Kodaikanal, Alapuzha, Kozhikode & Coimbatore 2 each, Kochi, Karipur, Punalur, Puducherry, Thanjavur, Anantpur, Bapatla, Amraoti, Mahabaleshwar, Aurangabad, Jharsuguda, Jabalpur, Mandla, Hassan, Chitradurga, Dabolim & Tuticorin 1 each		Arundhutinagar, Diamond Harbour, Hindon, Chitradurga & Nahariagun 3 each, Ayanagar, Ulundurpet, Gudiyatham, Melalathur, Chengam, Vandavasi, Arani, Sathanur Dam, Tirukoilur, Kallakurichi, Cuddalore, Dillighat, Kolkata, Cuttack, Bhagalpur & Sangli 2 each, Ziro, Attur, Omalur, Rayakottah, Hosur, Pennugondapuram, Thozudur, Batote, Dholpur, Jabalpur, Kattumannarkoil, Vellore, Vembavur, Perambalur, Puthimari, Imphal, Kohima, Rohtak, Chandigarh, Bangalore & Amini Divi 1 each
24.	Vellandu 22, Bhongir 18, Dummagudem & Kodangal 13 each, Kudulu & Rameswaram 10 each, Kasargod, Jeypore, Panambur & Ongole 9 each, Gunpar, Warora, Mylaudy, Nagercoil & Mangalore 8 each, Hyderabad, Ramagundam, Vijayawada & Machilipatnam 7 each, Thuckalay & Bhoopathadi 6 each, Tondi, Kanyakumari & Kakinada 5 each, Kurnool & Raichur 4 each, Bagalkote, Narsapur, Jagdalpur, Adirampattinam & Shirali 3 each, Kaveli, Bapatla, Kalingapatnam, Raipur, Silchar, Pamban, Gulbarga, Agumbe & Thiruvananthapuram 2 each, Dharapuram, Cannur, Karipur, Kodaikanal, Anantpur, Nizamabad, Honavar, Vishakhapatnam, Gangtok, Puri, Titlagarh, Bhavanipatna, Bhopal, Shajapur, Sangli & Goa 1 each	Sravanabelgola 6, Panbari, Sulya, Mundargi & Kadur 3 each, Hut Bay, Vythiri, Ambalavayal, Dharamasthala & Savanur 2 each, Itanagar, Daporijo, Nancowry, Car Nicobar & Tadong 1 each	Gudibande 15, Sunibhaji 11, Mettur Dam 9, C.D. Ghat & Bharamasagar 6 each, Bellati, Laxmeshwar, Dhramshala, Nadaun & Gopalpur 5 each, Kavaratti, Mundagod, Sikar, Lakhimpur Kheri, Keeranur, Omalur, Gudiyatham, Ariyalur, Guler, Kahu, Mandi, Nal, Suratgarh & Gadag 4 each, Berthin, Nagrota Surian, Paramathi, Rasipuram, Vaniyamabadi, Hut Bay, Gaya, Cooch Behar, Sultanpur, Devprayag & Pathankot 3 each, Sawai Madhopur, Tehri, Gorakhpur, Fursatganj, Ambur, Purnea, Patna, Bikaner, Rewa, Kolhapur & Thiruvananthapuram 2 each, Jaipur, Dehra Dun, Varanasi, Jhansi, Aligarh, Lalgudi, Melalathur, Naduvattam, Devala, Talli, Dibrugarh, Shillong, Shimla, Pilani, Bangalore, Minicoy & Agathi 1 each
25.	Kudathini 14, Kaikalur 12, Yerragaondapalem 11, Margherita & Dhubri 10 each, Koppal 9, Gadag & Gohak 8 each, Hospet, Puttur & Cooch Behar 7 each, Pallipattu, Chennai, Manas & N. H. Xing 6 each, Tambaram, Beki RD Bridge & Matunga 5 each, Tezpur, Tikrikilla, Itanagar & Machilipatnam 4 each, Denkanikottai, Hosur, Vishakhapatnam, Narsapur, Naharlagan, Tirupathi, Panambur & Honavar 3 each, Vedarnniyam, Mangalore, Kakinada, Kalingapatnam, Tuni, Kolhapur, Deomali, Bhalukpong, Bhagalpur, Nalbari, Chouldhowaghat, Majbat, Kokrajhar, Agumbe, Cannur & Solapur 2 each, Nagapattinam, Ongole, Bapatla, Guwahati, North Lakhimpur, Jorhat, Barpeta, Annapurnaghat, Badatighat, Goalpara, Tadong, Belgaum, Ziro, Daporijo, Passighat, Nancowry & Tirutani 1 each	Port Blair 5, Kokrajhar, B. Mathanguri, Shimoga, Car Nicobar & Nancowry 4 each, Nahariagun, Itanagar, Manas, Vadakara, Jalpaiguri & Long Islands 3 each, Ankola, Athangi, North Lakhimpur & Hut Bay 2 each, Cannur, Kochi, Tezpur, Guwahati, Maya Bandar & Gadag 1 each	Dibrugarh 8, Erode 6, Haliyal & Rampura 5 each, Barur, Rayakottah, Perundurai & Ketti 4 each, Kodaikanal, Pennugondapuram, Port Blair, Cooch Behar, Purnea, Shimla, Kupwara, Belgaum, Sambra & Davanagere 3 each, Golaghat, Kollam, Talli, Pennagaram, Maya Bandar, Hut Bay, Itanagar, Berhampore, Bahraich, Ratnagiri & Honavar 2 each, Pochampalli, Uthagamandalam, Kothagiri, Kadavur, Panchapatti, Thogamalai, Nilakottai, Usilampatti, Ambur, Agartala, Malda, Kolkata, Hazaribag, Tehri, Nagpur, Kakinada, Bangalore, Thiruvananthapuram & Cherrapunji 1 each
26.	Tikabali, Chengam & Poonamallee 6 each, Nancowry 4, Tirumayam 3, Daringibadi, Devgad, Kudal & Agumbe 2 each, Aurangabad, Vengurla, Guwahati, Madukur, Srimushnam, Medikeri, Chitradurga, Bellary, Cherrapunji, Dhubri, Rewaghat, Sangli, Gadag & Dabolim 1 each	Goalpara 5, Punalur 4, Long Islands, Gangtok, Port Blair, Chengannur & Ziro 3 each, Dharmasthala, Karkala, Khawang, Jorhat, Naharkatia, Neematighat, Sibsagar & Tikrikilla 2 each, Mahabaleshwar, Belgaum, Beki R. D. Bridge, Badatighat, Manas, N.H. Xing, Kokrajhar, Panbari, Dhubri, Jorhat, Tezpur, Maya Bandar, Passighat, Nagercoil, Tezu & Boothapandy 1 each	Hirekerur 9, Bellary 8, Haveri city, Sakleshpura & Pamidi 7 each, Tikrikilla, C. D. Ghat, Jorhat, Hassan & Solan 6 each, Punalur, Jorhat, Sholavandan & Ratnagiri 5 each, Bankura, Nannilam, Manaparai, Bhuvaneshwar, Purnea, Chitradurga, Basar, Banavasi & Bantwal 4 each, Jamshepur, Patna, Nancowry, Natham, Tiruppuvanam, Tirupattur, Ketti & Karur Paramathi 3 each, Ambala, Bhiwani, North Lakhimpur, Cherrapunji, Kundha Bridge, Sulur, Tiruvarur, Haldia, Anantpur & Alapuzha 2 each, Hosur, Pennagaram, Palacode,

TABLE 12 (Contd.)

(1)	(2)	(3)	(4)
			Avinashi, Coimbatore, Marungapuri, Vaniyambadi, Arupukottai, Patiala, Thiruchuzhi, Valangaiman, Coonoor, Kailashahar, Nahan, Shimla, Kukernag, Coimbatore, Coonoor, Shirali & Mangalore 1 each
27.	Yelhanka 11, Vinjamur, Talli & Thali 9 each, Alland, Hoskote, Araku Valley & Gangtok 7 each, Bidar, Bangalore, Tezu & Rayakottai 6 each, Hosur, Tadong, Silchar, Khowang & Pottangi 5 each, Anchetty & Cherrapunji 4 each, Kurnool 3, Yercaud, Soolagiri, Denkanikottai, Uthangarai, Anantpur, Machilipatnam, Diburgarh, Bangalore & Nancowry 2 each, Salem, Sangli, Satara, Yeotmal, Tuni, North Lakhimpur & Passighat 1 each	Manas 9, Kayakulam 8, Khowang & Thuckalay 7 each, Diburgarh & Thiruvalla 6 each, Minicoy 5, Passighat, Nancowry & Hasimara 4 each, Khanitar, Tirupattur & Periyar Dam 3 each, Pudukottai, Uthamapalayam, Radhapuram, Kuzhithurai, Boothapandy, Kanyakumari, Itanagar, Kozhikode, Tezpur & North Lakhimpur 2 each, Mudukulathur, Kodaikanal, Valparai, Adirampattinam, Kochi, Karipur, Minicoy, Gangtok, Port Blair & Car Nicobar 1 each	Namakkal 10, Thozudur 8, Belonia & Agartala 7 each, Basar, Tiruchengode, Krishnagiri & Agathi 6 each, Karimanj, Kavaratti, Darjeeling, Amini Divi, Perambalur, Paramathi, Mulanur, Denkanikottai, Kumbakonam & Hindon 5 each, Delhi, Passighat & Shillong 4 each, Sankaridurg, Salem, Anchetty, Palacode, Karur Paramathi, Panchapatti, Shirali, Karwar, Gobichettipalayam, Vaniyambadi, Long Islands, Minicoy, Sibsagar, Dabholim & Karkavali 3 each, Darjeeling, Silchar, Chinna Kallar, Rohtak, Vembavur, Periyanaikanpalyan, Palayamkottai, Mayanur, Kadavur, Thogaimalai, Vridhachalam, Tiruvaiyaru, Kumarapalayam, Uthagamandalam, Ambur, Sultanpur & Bareilly 2 each, Kailashahar, Yercaud, Ketti, Rasipuram, Kolkata, Pahalgam, Nagpur, Tuni, Goa & Koppal 1 each
28.	Tiptur 6, Rajghat, Cherrapunji & Palani 5 each, Khowang & Ketti 4 each, Athur, Alangayam, Valparai, Yercaud, Nizamabad, North Lakhimpur, Silchar, Nancowry & Jaleswar 3 each, Deomali, Uthamapalayam, Avinashi, Diburgarh & Imphal 2 each, Sholapur, Nagpur, Port Blair, Hut Bay, Car Nicobar, Maya Bandar, Imphal & Peermade 1 each	Kozhikode 13, Passighat 9, Khanitar 8, Vadakara 7, Margherita 6, Haripad, Goalpara, Port Blair & Hut Bay 5 each, Itanagar, Nahariagun, Alapuzha, Cherrapunji, Diburgarh, North Lakhimpur & Car Nicobar 4 each, Daporijo, Devala & Karipur 3 each, Kottayam, Nancowry & Maya Bandar 2 each, Guwahati, Uthagamandalam, Nedumbassery & Shillong 1 each	Chouldhowaghat 9, Basar & Khonsa 8 each, Nahariagun, Kolhapur, Cooch Behar, North Lakhimpur, Khowang, Itanagar & Nelamanagala 5 each, Kalingapatnam, Arundhutinagar, Dhubri, Cooch Behar, Bhalukpong & Kukernag 4 each, Dharamanagar, Tuni, Matizuri, Talli, Denkanikottai & Krishnagiri 3 each, Pahalgam, Cuttack, Sholagiri & Kailashahar 2 each, Karimanj, Dholai, Shillong, Usilampatti, Mettupatti, Jalpaiguri, Peraiyur, Hosur, Narnaul & Hissar 1 each
29.	Cherrapunji 19, Chikballapur 12, Siddighatta 10, Pennagaram 9, Gundalpet 8, Jayapura & Anchetty 7 each, Parlakhemundi 6, Jeypore, Kanjirapalli, Tiruchengode, Chatrapati, Soolagiri & Nancowry 5 each, Aravakurichi, Hosur, Sankaridurg & Jagdalpur 4 each, Visakhapatnam 3, Salem & Hut Bay 2 each, Silchar, Chandbali, Pamban, Uthagamandalam, Coonoor, Car Nicobar & Kundha Bridge 1 each	Port Blair 8, Maya Bandar 7, Long Islands 6, Hut Bay, Cherrapunji & Tezpur 4 each, Tadong, Cherthala, Gangtok, Kochi & Guwahati 3 each, Passighat, Cooch Behar, Dhubri, Diburgarh, Jorhat, Mettur Dam & Car Nicobar 2 each, Karkala, Pandavapura & Pappireddipatti 1 each	Hoskote 9, Shivani 8, Panbari, Chouldhowaghat & Murti 7 each, Nawarangpur 6, Itanagar, Alipurduar, Dharmasthala & Silchar 5 each, Basar, Karkala & Aravakurichi 4 each, Belonia, Indi, Coonoor, North Lakhimpur, Tadong & Bangalore 3 each, Palani, Bhavani, Bhavanisagar, Alangayam, Soolagiri, Pappireddipatti, Kailashahar, Gangtok, Jodhpur, Chitradurga, Alapuzha & Kochi 2 each, Mayanur, Natham, Uthagamandalam, Yercaud, Rayakottai, Manaparai, Harur, Karipur & Kottayam 1 each
30.	Baripada & Valparai 7 each, Denkanikottai 6, Periyapatna & Beki Mathanguri 5 each, Periyar Dam 4, Ballupet, Udala, Udumalpet, Chinnakallar & Cherrapunji 3 each, Harinkhola, Thodupuzha, Punalur, Rajnandgaon, Manaparai, Diburgarh & Guwahati 2 each, Thali, Long Islands, Hut Bay, Car Nicobar, Maya Bandar, Imphal, Alapuzha & Itanagar 1 each	Cherrapunji 17, Mananthavady & Koraput 4 each, Hosur, Kochi & Beki Mathanguri 3 each, Bokajan, Madurai, Nedumbassery, Dharamtul, Car Nicobar, Hut Bay & Maya Bandar 2 each, Jia Bharali, N. T. Xing, Tezpur, Guwahati, Beki RD Bridge, Manas, NH Xing, Phek, Gangtok, Tadong, Cooch Behar, Long Islands, Port Blair, Itanagar, Ziro, Dharmapuri, Melur & Krishnagiri 1 each	Bhalukpong & Murti 8 each, R. Udaigiri & Kasargode 7 each, Pottangi, Honnali & Thiruvananthapuram 6 each, Itanagar, Jia Bharali, Subramanya, Kakinada, Cherrapunji, Nilakottai & Uthagamandalam 5 each, Chatrapatti & Vadipatti 4 each, Sendamangalam, Namakkal, Mettupatti & Yercaud 3 each, Sholavandan, Chittampatti, Ketti, Hassan, Cannur & Kochi 2 each, Dindigul, Kodaikanal, Vembavur, Vaniyambadi, Gudiyatham, Perungalur,

TABLE 12 (Contd.)

(1)	(2)	(3)	(4)
			Kuzhithurai, Marungapuri, Silchar, Chandbali, Agartala, Jalpaiguri, Gangtok, Shimla, Tuni, Ongole, Karwar, Mysore & Kottayam 1 each
31.	Chikballapur 11, Dubbak & Uthamapalayam 9 each, Siddighatta & Doddaballapura 8 each, Cherrapunji & Tiruppur 7 each, Manvi 6, Kokrajhar, Kodavasal, Ramagundam & Kurnool 5 each, Hut Bay, Peraiyur, Tiruchirapalli, Punalur & Vishakhapatnam 4 each, Maya Bandar, Guwahati, Silchar & Jagdalpur 3 each, Dharapuram & Long Islands 2 each, Yercaud, Dindigul, Salem, Shillong, Jorhat, Kailashahar, Gondia & Bramhapuri 1 each		Kollam 18, Paravur 15, Mulki & Kochi 8 each, Kailashahar 7, Kundapur, Balehonnur & Kuzhithurai 6 each, Bhalukpong, Khanapur, Channapatna & Thuckalay 5 each, North Lakhimpur, Omalur, Thiruvananthapuram & Chouldhowaghat 4 each, Dibrugarh, Tezpur, Barur, Nilkottai, Pennugondapuram, Peraiyur, Karur Paramathi, Nagercoil, Jalpaiguri, Sriniketan, Keonjhar, Peraiyur, Shirali & Chickmangalur 3 each, Dhuri, Tiruchirapalli, Harur, Sathanur Dam, Gangtok, Agumbe & Alapuzha 2 each, Tirupathur, Uthangarai, Kothagiri, Denkanikottai, Tiruchirapalli, Passighat, Cherrapunji, Silchar, Chittorgarh, Tiruchirapalli, Kozhikode & Karipur 1 each

standing wheat and mango crops in Delhi, Haryana and Uttar Pradesh. The Jammu-Srinagar National Highway was blocked for vehicular traffic due to landslides following heavy rain.

### 3.3. May

#### 3.3.1. Weather and associated synoptic features

##### (a) Advance of southwest monsoon

Southwest monsoon arrived over parts of southeast Bay, Nicobar islands and Andaman Sea on 10 May, more than a week ahead of its normal as in years 2007 and 1988. However, its further advance over the oceanic region was sluggish. It set in over Kerala on 31 May.

##### (b) Synoptic features and rainfall

Details of weather systems during the month are given in Table 9 and the resultant rainfall distribution in Table 10. The principal amounts of rainfall are given in Table 12.

Thundershower activity picked up over the northern parts of the country in the first week of May. The juxtaposition of low level cyclonic circulations associated with western disturbances with the diffluence zones of the subtropical westerly jet stream in the upper levels gave rise to thundershower activity over north India. Also many places over the northwestern part experienced

squally winds and dust storms during the month. Also towards the end of May, in association with the strengthening and deepening of westerly flow over the Arabian Sea and south peninsula and the presence of an off shore trough and an east-west shear zone, fairly widespread rainfall occurred over the peninsular India.

#### 3.3.2. Temperature distribution

From Table 11, it may be seen that though heat wave conditions prevailed over many parts of north as well as peninsular India, almost throughout the month, severe heat wave conditions in the later part of the month were restricted to coastal Andhra Pradesh alone. This could be attributed qualitatively to the local circulation patterns offsetting the moderating effect of sea breeze by delaying its onset. The lack of severe heat wave conditions over the northern parts had been due to the thundershower activity over the regions.

The month's as well as the season's highest maximum temperature of 47.2° C was recorded at Hamirpur (east Uttar Pradesh) on 2 May 2008.

#### 3.3.3. Disastrous weather events and damage

According to media and other disaster reports, heat wave claimed the lives of 58 people each in Andhra Pradesh and Orissa, 8 in Chandigarh and 3 in Uttar Pradesh. Thunderstorm / hailstorm, squall, lightning, heavy rains and flood claimed 95 lives in Orissa, 22 in

Chandigarh, 16 in Tamil Nadu, 15 each in Haryana and Andhra Pradesh, 11 in West Bengal, 5 each in Assam, Bihar and Jharkhand, 4 in Uttar Pradesh, 3 in Karnataka and 1 in Kerala.

Apart from the above, a press report stated that 89 people lost their lives in 19 districts of Uttar Pradesh, due to strong winds mainly causing fire incidents in hutments. Also at the same time [1000 hrs (IST) of 14 May 2008] squall with wind speed of 80-105 kmph caused damage to standing crops and small building structures over Delhi and adjoining areas.

### Appendix

#### Definitions of the terms given in 'Italics'

##### *Rainfall*

<i>Excess</i>	- percentage departure from normal rainfall is + 20% or more.
<i>Normal</i>	- percentage departure from normal rainfall is from – 19 % to + 19 %.
<i>Deficient</i>	- percentage departure from normal rainfall is from – 20 % to – 59 %.
<i>Scanty</i>	- percentage departure from normal rainfall is from – 60 % to – 99 %.
<i>At most places</i>	- 76% or more stations of a meteorological sub-division reporting atleast 2.5 mm rainfall.
<i>At many places</i>	- 51% to 75 % stations of a meteorological sub-division reporting atleast 2.5 mm rainfall.
<i>At a few places</i>	- 26% to 50% stations of a meteorological sub-division reporting atleast 2.5 mm rainfall.
<i>At isolated places</i>	- 25% or less stations of a meteorological sub-division reporting at least 2.5 mm rainfall
<i>Extremely heavy rain</i>	- rainfall amount 24.5 cm or more.
<i>Very heavy rain</i>	- rainfall amount from 12.5 cm to 24.4 cm.
<i>Heavy rain</i>	- rainfall amount from 6.5 cm to 12.4 cm.

##### Temperature

#### (a) Maximum/day temperatures

According to the new criteria being followed since 1<sup>st</sup> March 2002, Heat Wave will be declared only when the

maximum temperature of a station reaches at least 40° C for plains and at least 30° C for hilly regions.

*Severe heat wave* - departure of maximum temperature from normal is + 6° C or more for the regions where the normal maximum temperature is more than 40° C and departure of maximum temperature from normal is + 7° C or more for the regions where the normal maximum temperature is 40° C or less.

*Heat wave conditions* - departure of maximum temperature from normal is between + 4° C to + 5° C for the regions where the normal maximum temperature is more than 40° C and departure of maximum temperature from normal is + 5° to + 6° C for the regions where the normal maximum temperature is 40° C or less.

*Hot day conditions* - whenever the maximum temperature remains 40° C or more and minimum remains 5° C or more above normal, provided, it is not satisfying the heat wave criteria.

*Markedly above normal* - departure of maximum temperature from normal is + 5° C to + 6° C for the region where the normal maximum temperature is 40° C or less.

*Appreciably above normal* - departure of maximum temperature from normal is between + 3° C to + 4° C for the region where the normal maximum temperature is 40° C or less.

*Above normal* - departure of maximum temperature from normal is + 2° C.

*Appreciably below normal* - departure of maximum temperature from normal is from – 3° C to – 4° C where the normal maximum temperature is 40° C or less

*Markedly below normal* - departure of maximum temperature from normal is from – 5° C to – 6° C where the normal maximum temperature is 40° C or less.

*Below normal* - departure of maximum temperature from normal is – 2° C.

**(b) Minimum/night temperatures**

*Cold wave conditions*

- departure WCTn from normal minimum temperature is from  $-5^{\circ}\text{C}$  to  $-6^{\circ}\text{C}$  where normal minimum temperature  $\geq 10^{\circ}\text{C}$  and from  $-4^{\circ}\text{C}$  to  $-5^{\circ}\text{C}$  elsewhere.

Also cold wave is declared when WCTn is  $\leq 0^{\circ}\text{C}$  irrespective of the normal minimum temperature for those stations.

*Appreciably below normal*

- departure of minimum temperature from normal is from  $-3^{\circ}\text{C}$  to  $-4^{\circ}\text{C}$  for the region where the normal minimum temperature is  $10^{\circ}\text{C}$  or more.

*Markedly below normal*

- departure of minimum temperature from normal is  $-5^{\circ}\text{C}$  to  $-6^{\circ}\text{C}$  where the normal minimum temperature is  $10^{\circ}\text{C}$  or more.

*Below normal*

- departure of minimum temperature from normal is  $-2^{\circ}\text{C}$

*Markedly above normal*

departure of minimum temperature from normal is from  $+5^{\circ}\text{C}$  to  $+6^{\circ}\text{C}$ .

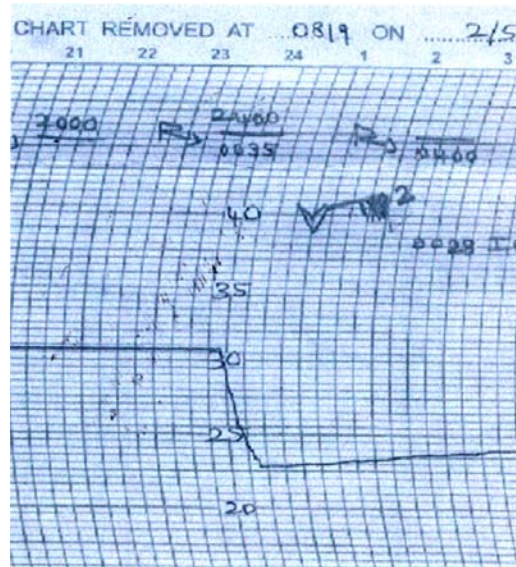
*Appreciably above normal*

- departure of minimum temperature from normal is from  $+3^{\circ}\text{C}$  to  $+4^{\circ}\text{C}$ .

**ERRATUM**

Vol. 59, No. 4 (October 2008)

Fig. 1(a) on page 535 may see correct figure given below



Correct Fig. 1(a) showing the drop of temperature by  $9^{\circ}\text{C}$