GOVERNMENT OF INDIA
INDIA METEOROLOGICAL DEPARTMENT

ANNUAL CLIMATE SUMMARY 2005

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ISSUED BY
NATIONAL CLIMATE CENTRE
OFFICE OF THE
ADDITIONAL DIRECTOR GENERAL OF METEOROLOGY (RESEARCH)
INDIA METEOROLOGICAL DEPARTMENT
PUNE - 411 005

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ANNUAL CLIMATE SUMMARY 2005

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HIGHLIGHTS

The year 2005 was marked by extreme weather across the country, both in terms of temperature and precipitation. The year was characterized by above normal temperatures over different parts of the country. Rainfall over the country was near normal during the southwest monsoon season. Rainfall in June and August was deficient. Northeast monsoon was also active with record rainfall over many places in south peninsula. Breaking the declining trend observed over the past few years, a revived occurrence of low-pressure systems typical of the summer monsoon season was observed this year.

TEMPERATURE

Spatial pattern of annual mean, maximum and minimum temperature anomalies for 2005 are shown in Fig.1. Mean temperatures were above normal almost throughout the country except over parts of Punjab, southwest Rajasthan, Gujarat, north Maharashtra and Assam. Annual maximum temperature anomalies were also positive over most parts of the country except over northwestern parts of the country. Annual minimum temperature anomalies were positive over the country except over the west coast of India.

In 2005, annual mean temperature averaged over the country as a whole was $+0.37^{0}$C above the 1961-1990 average [Fig. 2]. Thus, 2005 was the 11^{th} warmest year since 1901. The ten warmest years on record are 2002(0.69), 2003(0.56), 1998(0.53), 1987 & 2004(0.51), 1941, 1999 & 2001(0.47), 2000(0.40) and 1988(0.39). Since 1993, annual mean temperature has been consistently above normal.

Spatial pattern of trends in the mean annual temperature anomalies [Fig.3] suggests significant positive (increasing) trend over most parts of the country except over parts of Rajasthan, Gujarat and Bihar, where significant negative (decreasing) trends were observed.

Fig.4 shows anomalies in monthly maximum and minimum temperatures.

During January, maximum temperatures were above normal over the peninsular and extreme northern parts of the country and were below normal elsewhere. In the month, minimum temperatures were generally above normal throughout the country except over parts of Gujarat and adjoining area.

During February, maximum temperatures were above normal over the eastern and peninsular parts of the country and were below normal elsewhere. Minimum temperatures were generally above normal throughout the country.

In March, maximum temperatures were generally above normal throughout the country except over the extreme northeastern parts, where temperatures were below normal. Minimum temperatures were also above normal throughout the country except over parts of west peninsula.

During April, maximum temperatures were above normal over extreme northern parts of the country, Gujarat & western Maharashtra, Bihar, Jharkhand, Orissa and parts of Coastal Andhra Pradesh. Minimum temperatures were generally below normal over the country except over eastern and northeastern parts of the country.

During May, maximum temperatures were above normal over the peninsula, central and eastern parts of the country and were below normal over northwestern and extreme

northeastern parts of the country. Minimum temperatures were above normal over interior parts of Maharashtra, parts of north Coastal Andhra Pradesh, Orissa and West Bengal. They were below normal over rest of the country.

During June, maximum temperatures were generally above normal throughout the country. Minimum temperatures were also above normal over most parts of the country except over extreme northern parts.

During July, maximum temperatures were generally below normal throughout the country except over parts of West Rajasthan, northeastern region and Tamil Nadu, where positive anomaly of the order 0.5^{0}C was observed. Minimum temperatures were above normal over most parts of the country.

In August, maximum temperatures were generally above normal throughout the country. Minimum temperatures were also generally above normal throughout the country except over extreme northern parts, Gujarat and western peninsula.

During September, maximum temperatures were generally above normal over central and northern parts of the country and below normal over the southern parts. Minimum temperatures were also generally above normal throughout the country except over south peninsula, parts of Jharkhand and Gangetic West Bengal.

During October, maximum temperatures were below normal throughout the country except over southernmost peninsula and extreme northern parts of the country. Minimum temperatures were above normal over most parts of the country except over the northwest peninsula, westcentral and extreme northern parts of the country.

In November, maximum temperatures were above normal over most parts of the country except over south peninsula and some northeastern parts of the country. Minimum temperatures were below normal over most parts of the country except over some northwestern and northeastern parts of the country.

In December, maximum temperatures were above normal over most parts of the country except over parts of Gujarat, Rajasthan and Orissa. Minimum temperatures were below normal over most parts of the country except over southeast peninsula, northeastern parts of the country, parts of Rajasthan, Uttar Pradesh, Uttaranchal and Himachal Pradesh.

Rainfall

Time series of seasonal and annual normalized area weighted rainfall over the country as a whole are shown in Fig. 5. In 2005, the annual rainfall over the country as a whole was 102 % of Long Period Average (LPA). Season wise rainfall distribution over the country as a whole was as follows:

Winter (January to February)	: **159%** of LPA
Pre-monsoon (March to May)	: **94 %** of LPA
Monsoon (June to September)	: **99%** of LPA
Post-monsoon (October to December)	: **109%** of LPA.

Sub-division wise annual and seasonal rainfall statistics are given in Table 1. Sub-division wise annual and seasonal percentage departures of rainfall are shown in Fig. 6. Month wise rainfall distribution is shown in Fig. 7.

Annual

Rainfall activity over the country as a whole was normal during the year. Gujarat, north Maharashtra and peninsular India received excess rainfall. Gujarat, Rayalaseema and Tamil

Nadu received nearly one and half times of their respective normal rainfall. Himachal Pradesh, East Uttar Pradesh, Bihar, Jharkhand and West Madhya Pradesh received deficient rainfall. Out of 36 meteorological subdivisions, 8 received excess rainfall, 23 received normal rainfall and 5 received deficient rainfall.

Winter (January-February)

During the winter season, rainfall activity was generally good with northern, northwestern, northeastern and peninsular parts of the country receiving excess rainfall. Jammu & Kashmir and Punjab received more than twice of the normal rainfall, while rainfall over Vidarbha, and Telangana exceeded four times of the respective normal values. Out of 36 meteorological subdivisions, 14 received excess rainfall, 9 received normal rainfall, 7 received deficient rainfall and 4 received scanty rainfall. 2 subdivisions (Gujarat region and Saurashtra & Kutch) did not receive any rain.

Pre-monsoon (March-May)

Rainfall activity during the season was near normal over the country as a whole. Rajasthan, West Madhya Pradesh, North Interior Karnataka, Rayalaseema, Tamil Nadu and Gangetic West Bengal received excess rainfall during the season. 10 subdivisions received excess rainfall, 11 received normal rainfall, 9 received deficient rainfall and 6 received scanty rainfall.

Monsoon (June-September)

Spatial rainfall distribution during the season was generally good, but it was not well distributed over time. Due to the late onset and initial tardy advancement of monsoon, rainfall activity during the first three weeks of June was subdued. However, monsoon became active by fourth week of June and active monsoon conditions continued till the end of July. In August, monsoon was subdued over the country with a large deficiency of 27%. Subdued monsoon conditions prevailed in the first week of September also. By the second week of September, monsoon again revived and remained active over most parts of the country till the end of the season. During the monsoon season, out of 36 meteorological subdivisions, 8 received excess rainfall, 25 received normal rainfall and the remaining 3 subdivisions received deficient rainfall.

Post-monsoon (October-December)

Northeast monsoon was active during the season. Coastal Andhra Pradesh, Rayalaseema, Tamil Nadu & Pondicherry and South Interior Karnataka received excess rainfall. Rayalaseema received nearly twice of its normal rainfall (rainfall departure 99%) during the season. Kerala received normal rainfall. During the post-monsoon season, out of 36 meteorological subdivisions, 12 received excess rainfall, 4 received normal rainfall, 7 received deficient rainfall and 12 received scanty rainfall. 1 subdivision (East Rajasthan) did not receive any rain. The northeast monsoon seasonal rainfall over south peninsula (comprising of 5 subdivisions viz. Coastal Andhra Pradesh, Rayalaseema, Tamil Nadu & Pondicherry, South Interior Karnataka and Kerala) in 2005 was 164% of its LPA, which was the highest on record since 1901. Time series of northeast monsoon seasonal rainfall over south peninsula is shown in Fig. 9.

Daily mean rainfall (mm) for 2005 averaged over the country as a whole (excluding hilly regions) and its long term normal are shown in Fig. 8.

Tropical storms in the Indian Seas

In 2005, number of cyclonic storms (maximum wind speed exceeding 33 knots) formed during winter, pre-monsoon, monsoon and post-monsoon seasons were 1, 0, 1 and 2 respectively. Similarly many depressions formed over the Indian Seas during the monsoon and Post-monsoon seasons. The details are given below:

During the monsoon season (June to September), as many as 11 low-pressure systems formed over the Indian region, 8 over the Bay of Bengal, 2 over the Arabian sea and 1 over land. Out of these 11 low pressure systems, 5 developed (2 over the Arabian Sea, 2 over the Bay of Bengal and 1 over the land) into monsoon depressions and one into a Cyclonic storm. This is for the first time after 1997, that in September, a low pressure system over the Bay of Bengal intensified into a cyclonic storm and crossed the east coast.

During the post-monsoon season, two cyclonic storms, one each in the months of November and December and three depressions, one each in the months of October, November and December formed over the Bay of Bengal.

The tracks of above systems are shown in Fig.10 (a, b). Time series of depressions and cyclonic storms formed over north Indian Seas in monsoon and post-monsoon seasons during the period 1951-2005 are given in Fig.11(a, b).

Extreme weather events

Cold wave conditions prevailed over northern and western parts of the country during the fourth week of January and in the third week of February over Gujarat and parts of Rajasthan (Fig.12). These events took a toll of more than 20 lives. Similar conditions prevailed over northern parts of the country during the second fortnight of December and claimed approximately 40 lives.

There was heavy snowfall in Jammu & Kashmir, Himachal Pradesh and Uttaranchal during the fourth week of January. In the second week of February, unusually heavy snowfall occurred in parts of Jammu & Kashmir. More than 200 people lost their lives in Jammu & Kashmir due to snow and avalanches. Also, more than 300 people were reported to be missing.

Heat wave conditions prevailed over northern and eastern parts of the country during second fortnight of May and during the first three weeks of June. These events took a toll of more than 500 lives.

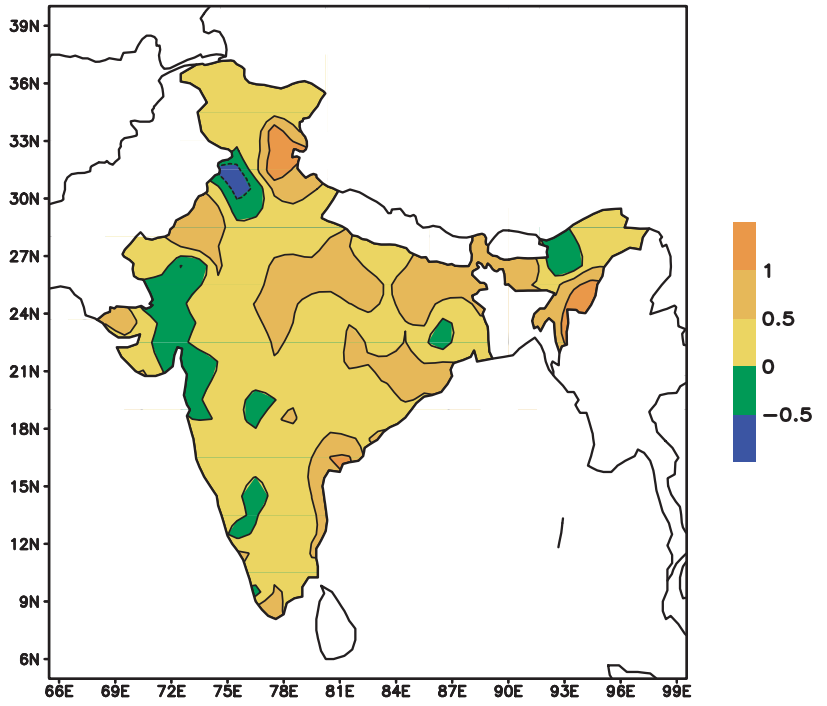
During the second and third week of June, maximum temperatures were 6 to 8^{0}C above normal over Jharkhand, Orissa, East Madhya Pradesh and Chattisgarh (Fig.13) which took a toll of approximately 200 lives from Orissa alone.

Heavy rains and floods (monsoon season), took a toll of nearly 1500 people. Heavy rains during the fourth week of June and first week of July claimed life of at least 200 people in Gujarat and 20 in Madhya Pradesh. On 27 July, unprecedented heavy rainfall (944 mm in 24 hours) was reported at Santacruz (Mumbai). Heavy rains in Maharashtra and adjoining Karnataka during last week of July and first week of August caused death of at least 1000 people, with about 425 in the Mumbai city alone.

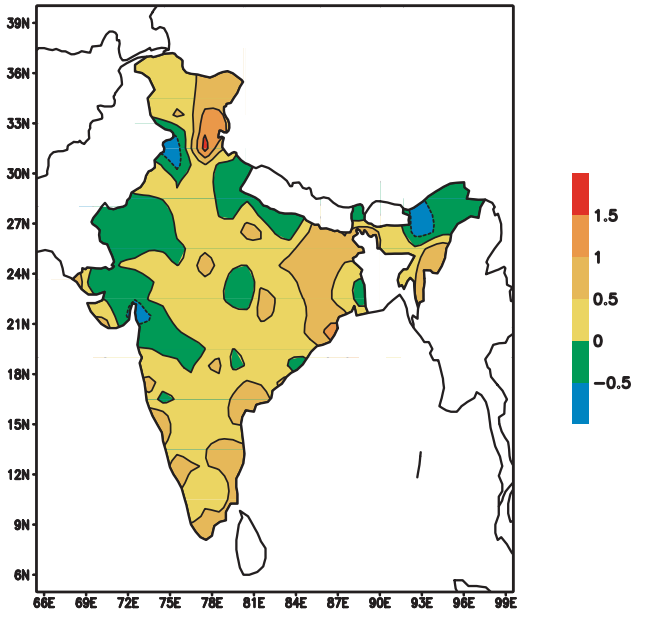
A cyclonic storm that crossed Andhra Pradesh coast near Kalingapatnam on 19 September, took a toll of 56 lives in the state. Heavy rains due to active northeast monsoon during the last ten days of October and first week of December, led to flood situations in Tamil Nadu, Karnataka and Andhra Pradesh. Incessant heavy rains claimed at least 300 lives in Tamil Nadu and 36 in Coastal Andhra Pradesh. Due to floods, a train tragedy occurred at Nalgonda in Andhra Pradesh, which claimed around 200 lives. On 3 December, Chennai recorded 28 cm of rainfall in past 24 hours, which is a new record for 24-hours rainfall in December.

Significant weather events during 2005 and associated loss of lives and damages are given in Fig. 14.

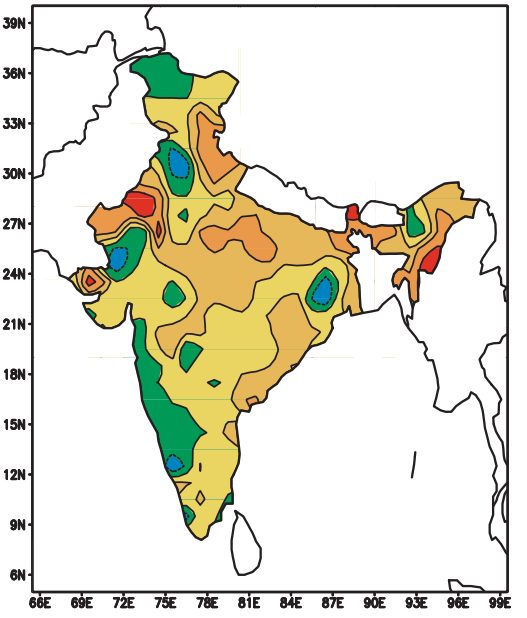
Similarly, the highest maximum, lowest minimum and highest rainfall recorded in 24-hours with the date of occurrences are given in Table 2. The information is given for 75 stations.



(a) MEAN



(b) MAXIMUM



(C) MINIMUM

FIG. 1 : ANNUAL TEMPERATURE ANOMALIES (°C) FOR 2005 WITH RESPECT TO 1961 - 1990 AVERAGE

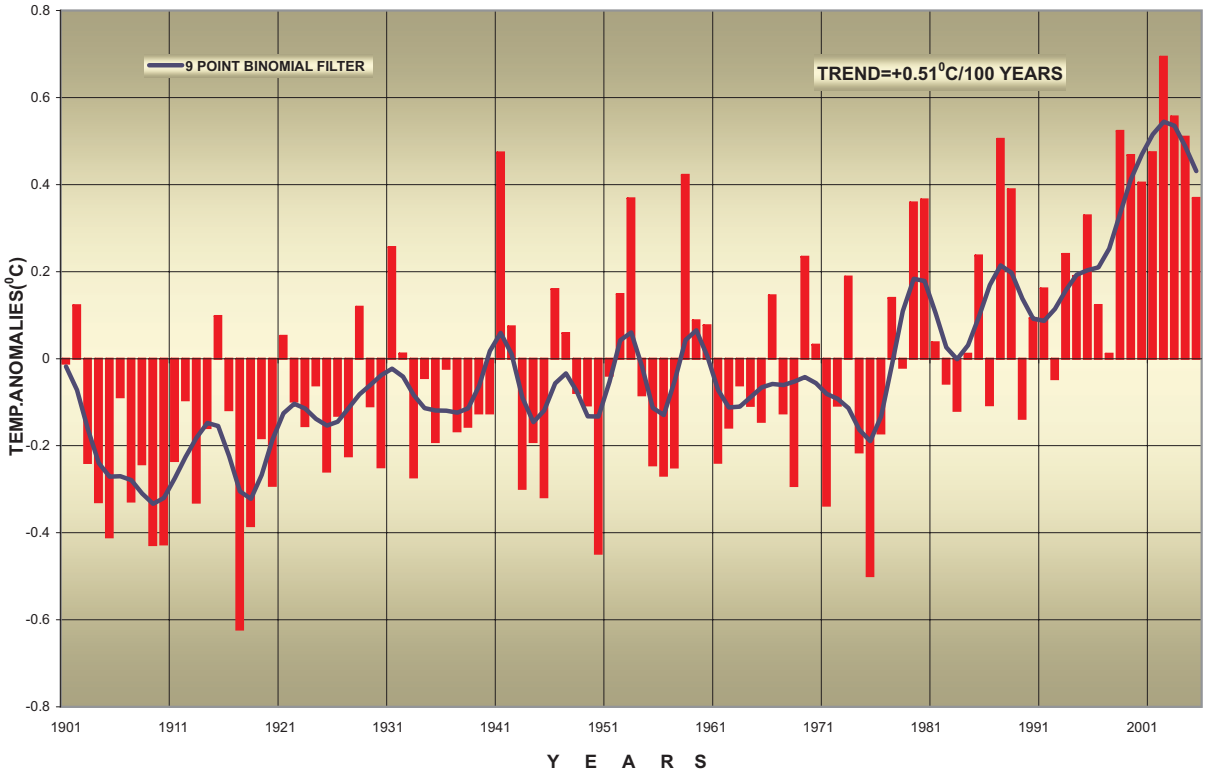


FIG. 2 : ALL INDIA ANNUAL MEAN TEMPERATURE ANOMALIES FOR THE PERIOD 1901 - 2005 SHOWN AS VERTICAL BARS. THE SOLID BLUE CURVE HAD SUB-DECADAL TIME SCALE VARIATIONS SMOOTHED WITH A BINOMIAL FILTER (DEPARTURES FROM THE 1961 - 1990 AVERAGE)

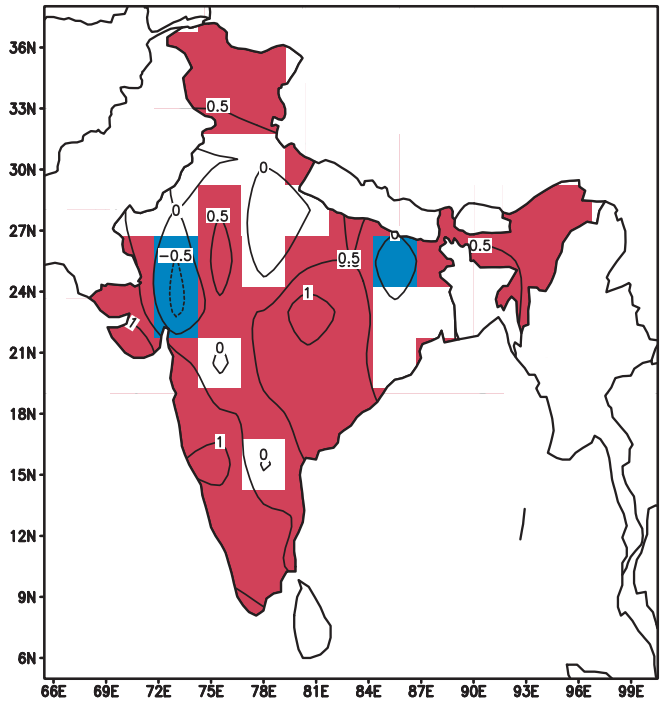
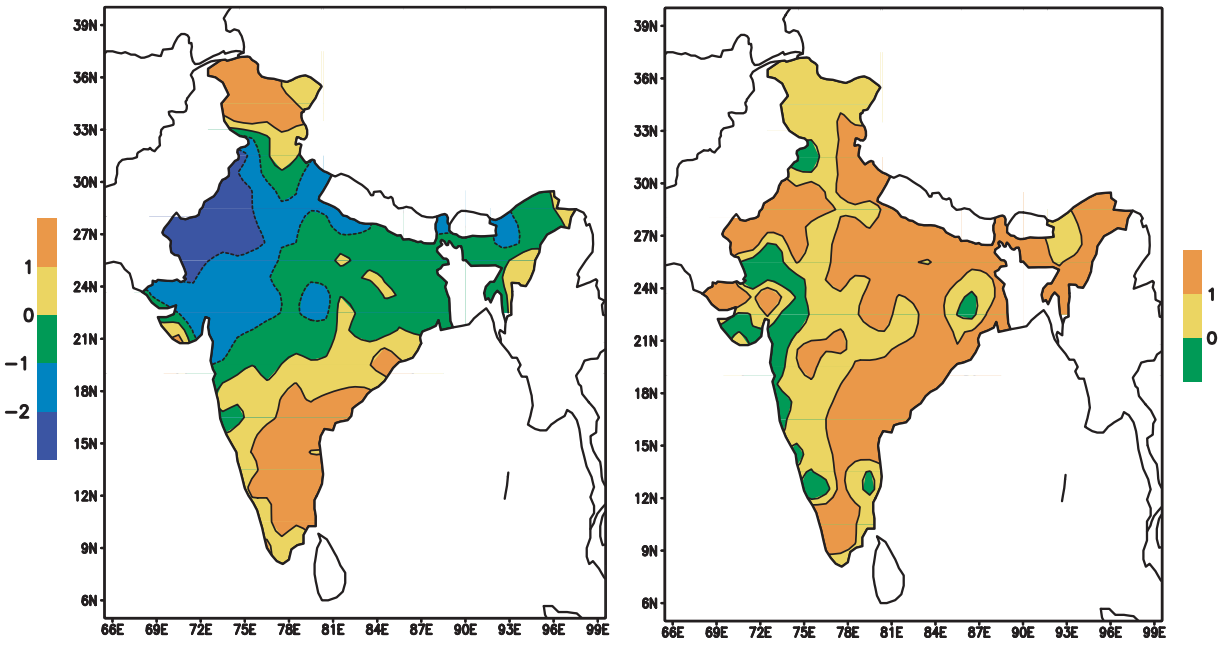


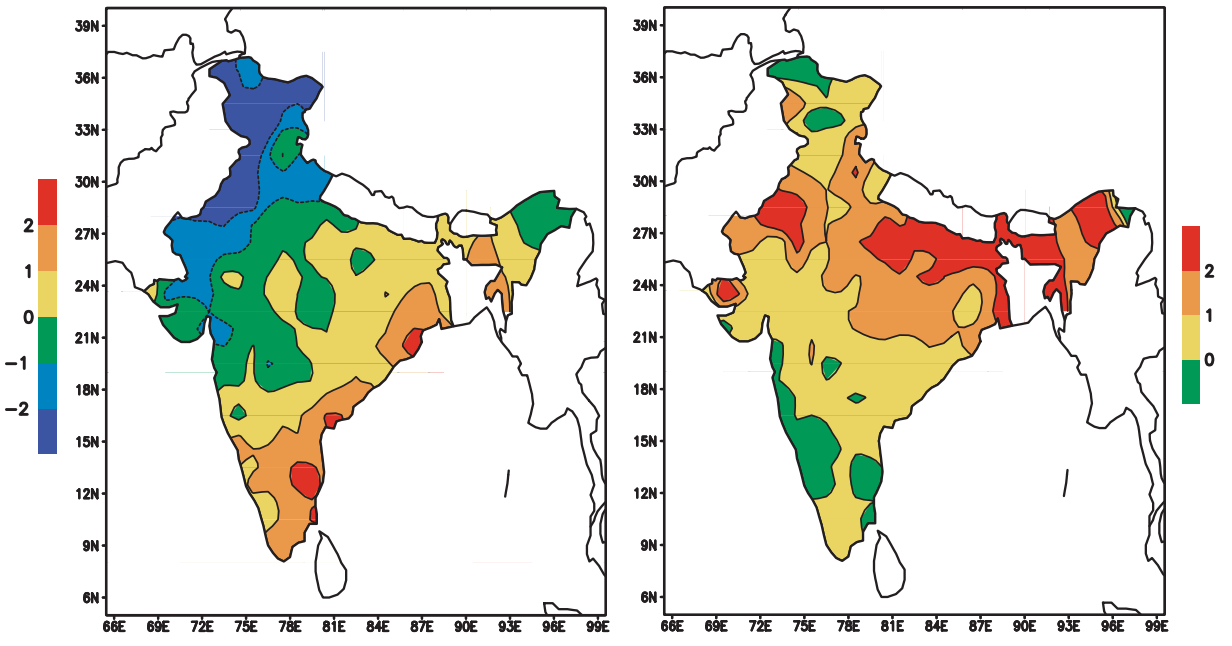
FIG. 3 : ANNUAL MEAN TEMPERATURE TRENDS (°C / 100 YEARS) ARE SHOWN AS CONTOUR LINES. THE TRENDS WHICH ARE SIGNIFICANT AT 95% LEVEL ARE SHADED. POSITIVE TRENDS IN RED AND NEGATIVE TRENDS IN BLUE. PERIOD OF ANALYSIS : 1901 - 2005

JANUARY



MAXIMUM MINIMUM

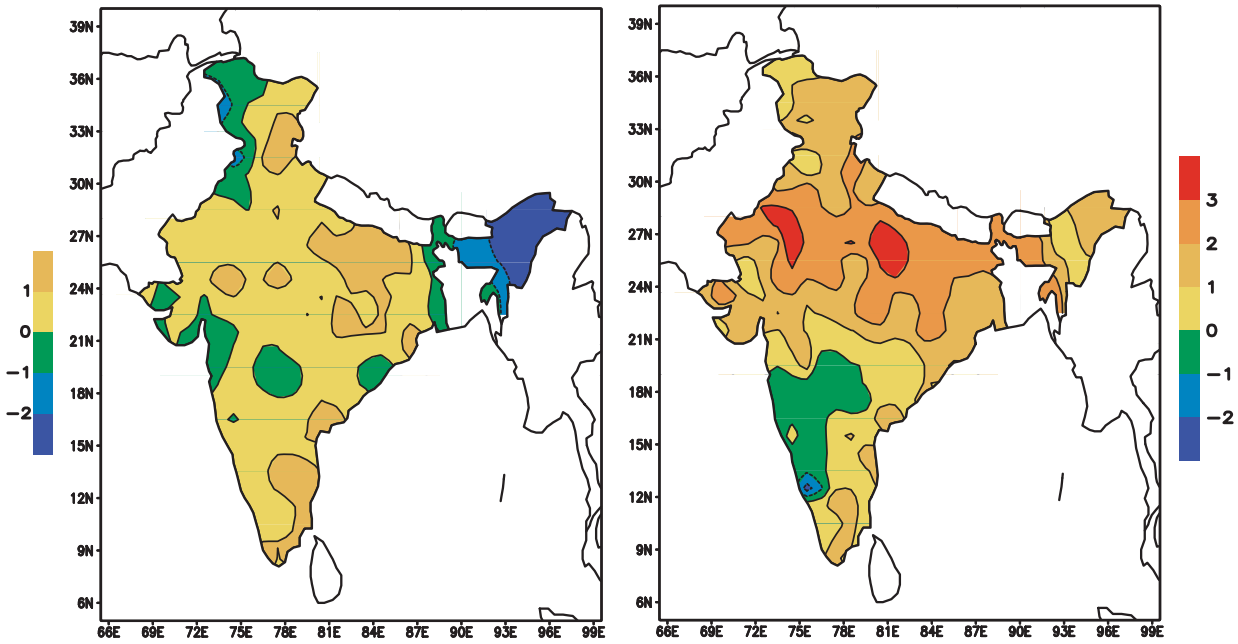
FEBRUARY



MAXIMUM MINIMUM

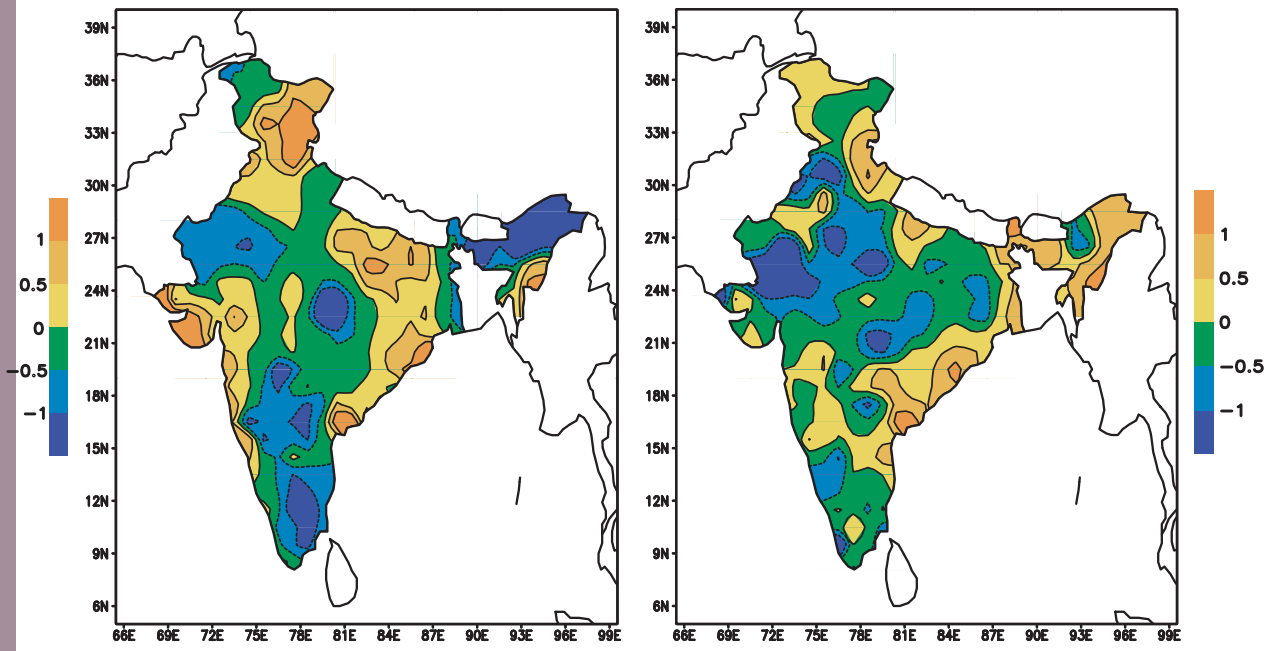
FIG. 4 : MONTHLY MEAN MAXIMUM AND MINIMUM TEMPERATURE ANOMALIES(°C) WITH RESPECT TO 1961-1990 AVERAGE

MARCH



MAXIMUM MINIMUM

APRIL



MAXIMUM MINIMUM

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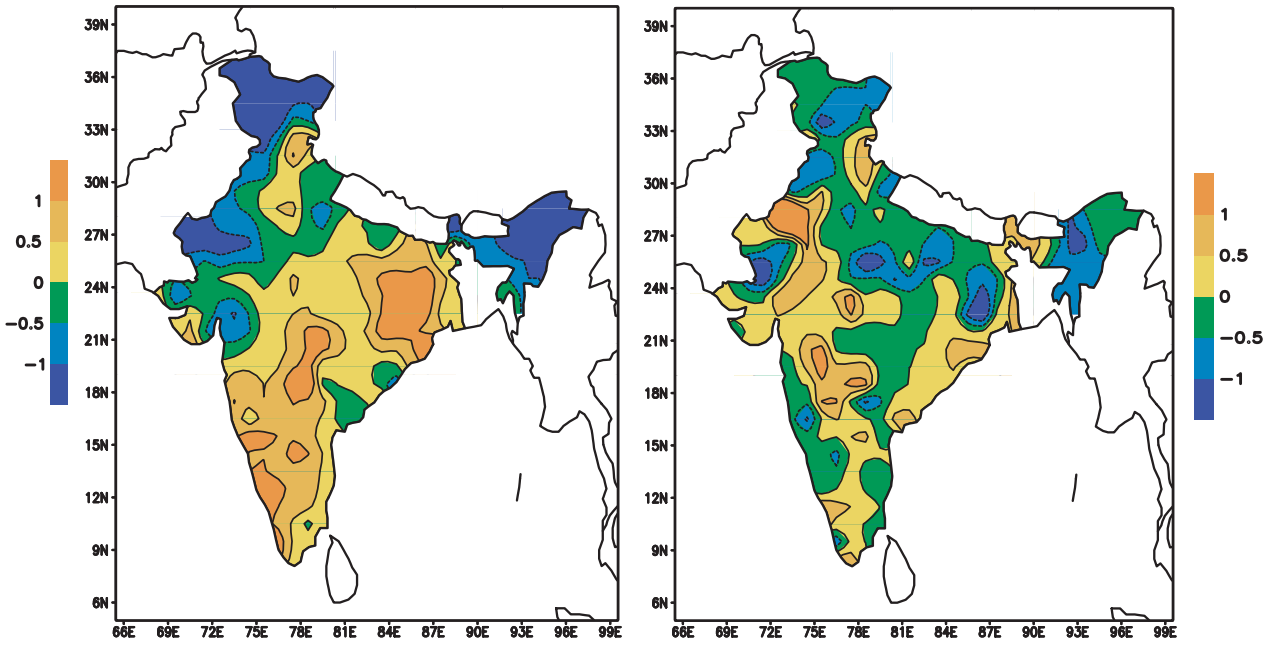
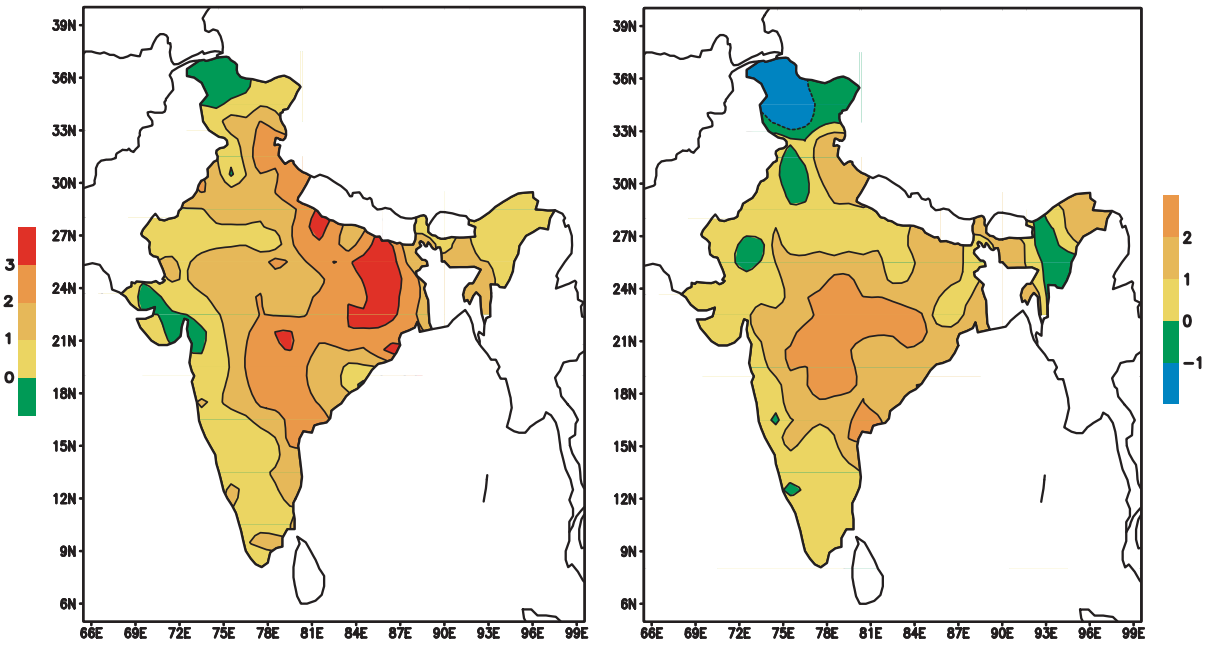
MAY



MAXIMUM MINIMUM

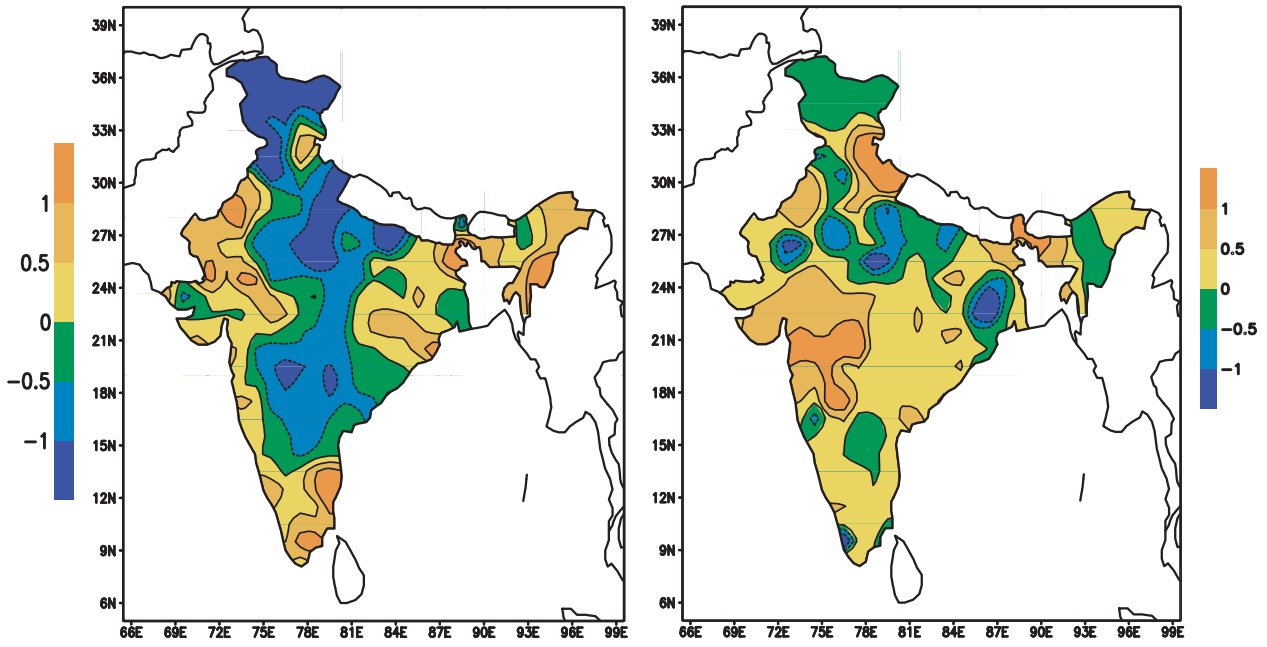
JUNE



MAXIMUM MINIMUM

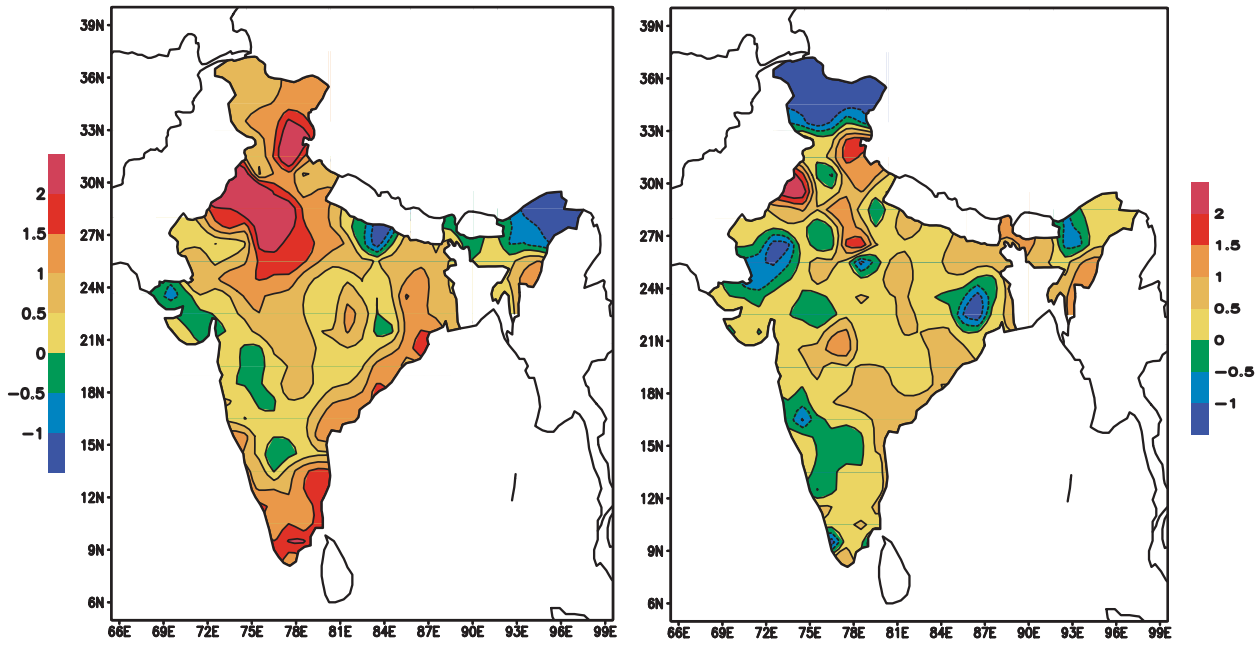
FIG. 4 : MONTHLY MEAN MAXIMUM AND MINIMUM TEMPERATURE ANOMALIES(°C) WITH RESPECT TO 1961-1990 AVERAGE

JULY



MAXIMUM MINIMUM

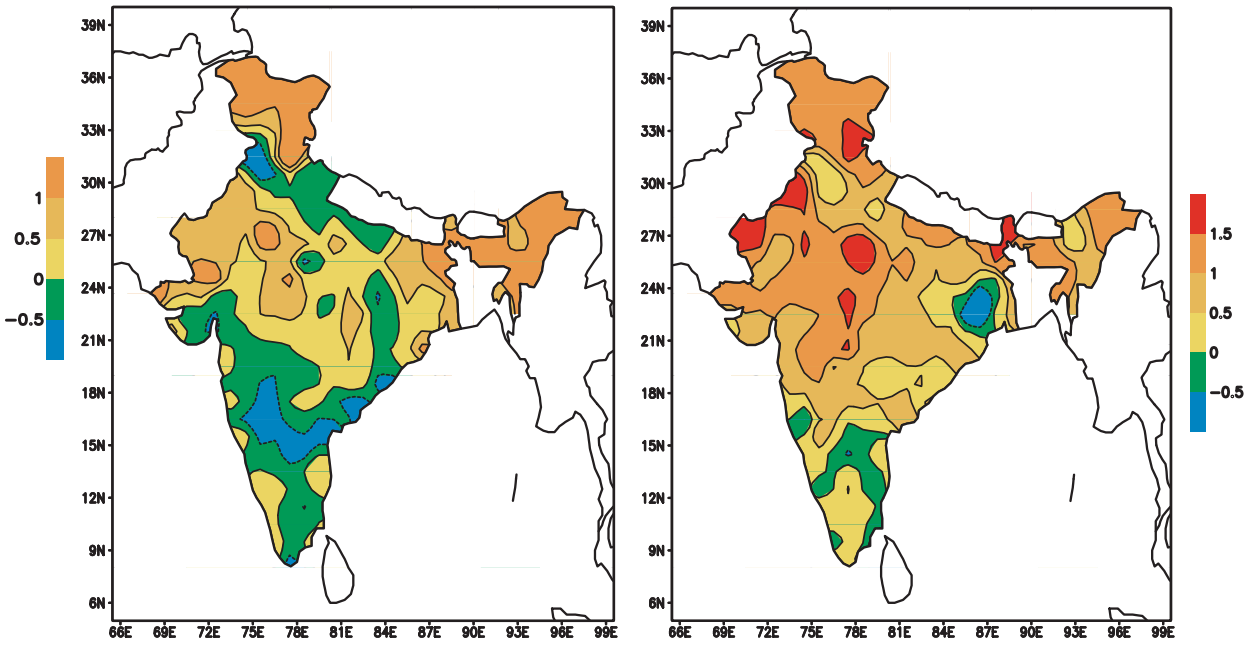
AUGUST



MAXIMUM MINIMUM

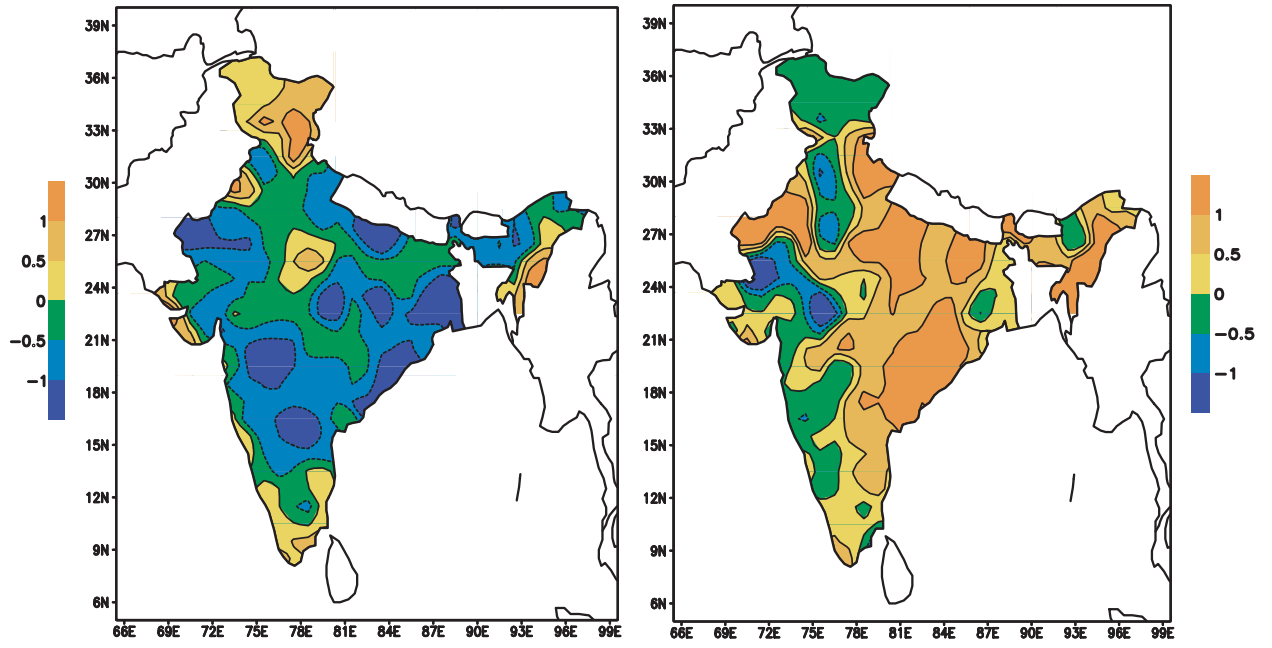
FIG. 4 : MONTHLY MEAN MAXIMUM AND MINIMUM TEMPERATURE ANOMALIES(°C) WITH RESPECT TO 1961-1990 AVERAGE

SEPTEMBER



MAXIMUM MINIMUM

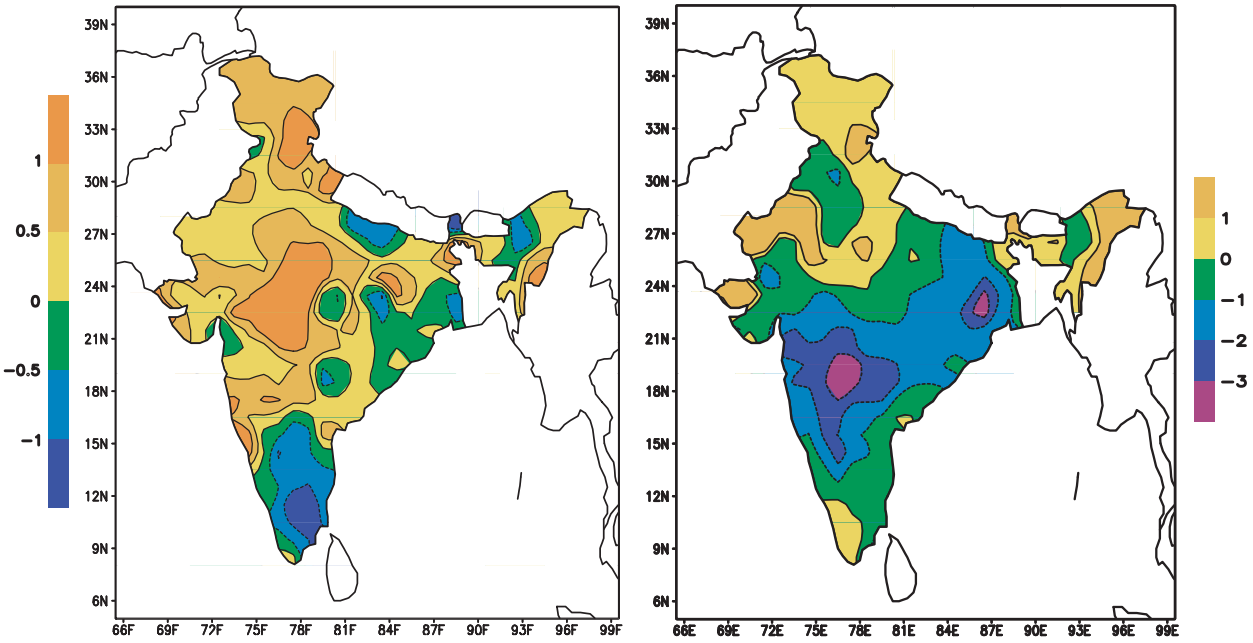
OCTOBER



MAXIMUM MINIMUM

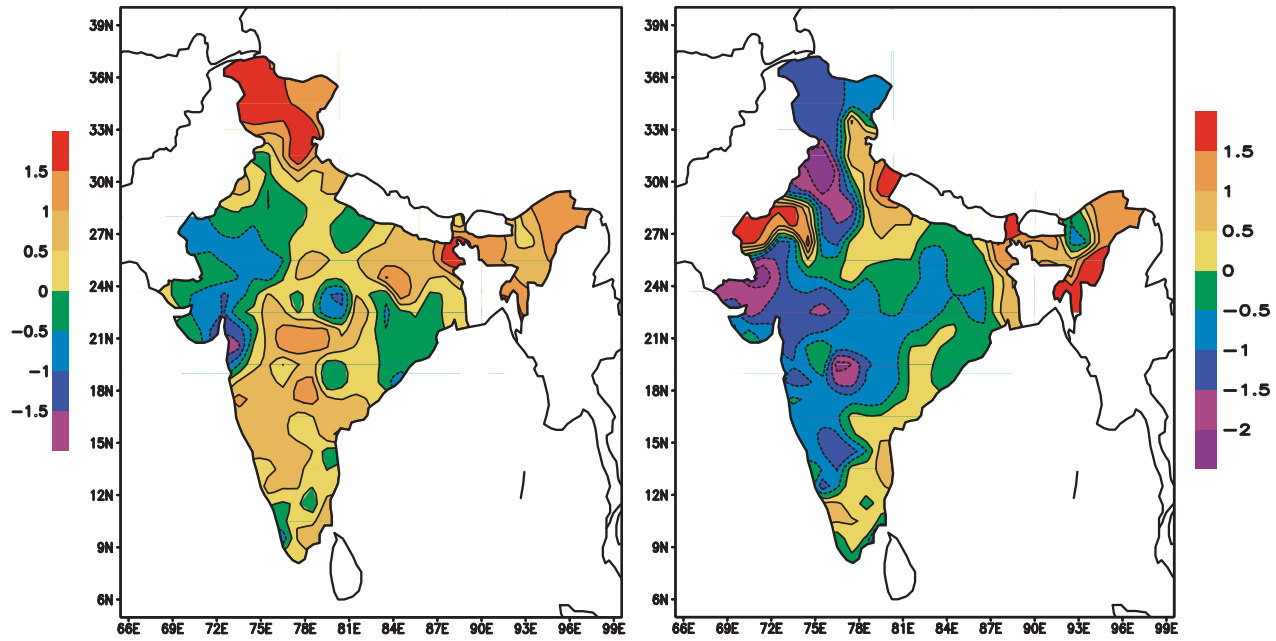
FIG. 4 : MONTHLY MEAN MAXIMUM AND MINIMUM TEMPERATURE ANOMALIES(°C) WITH RESPECT TO 1961-1990 AVERAGE

NOVEMBER



MAXIMUM MINIMUM

DECEMBER



MAXIMUM MINIMUM

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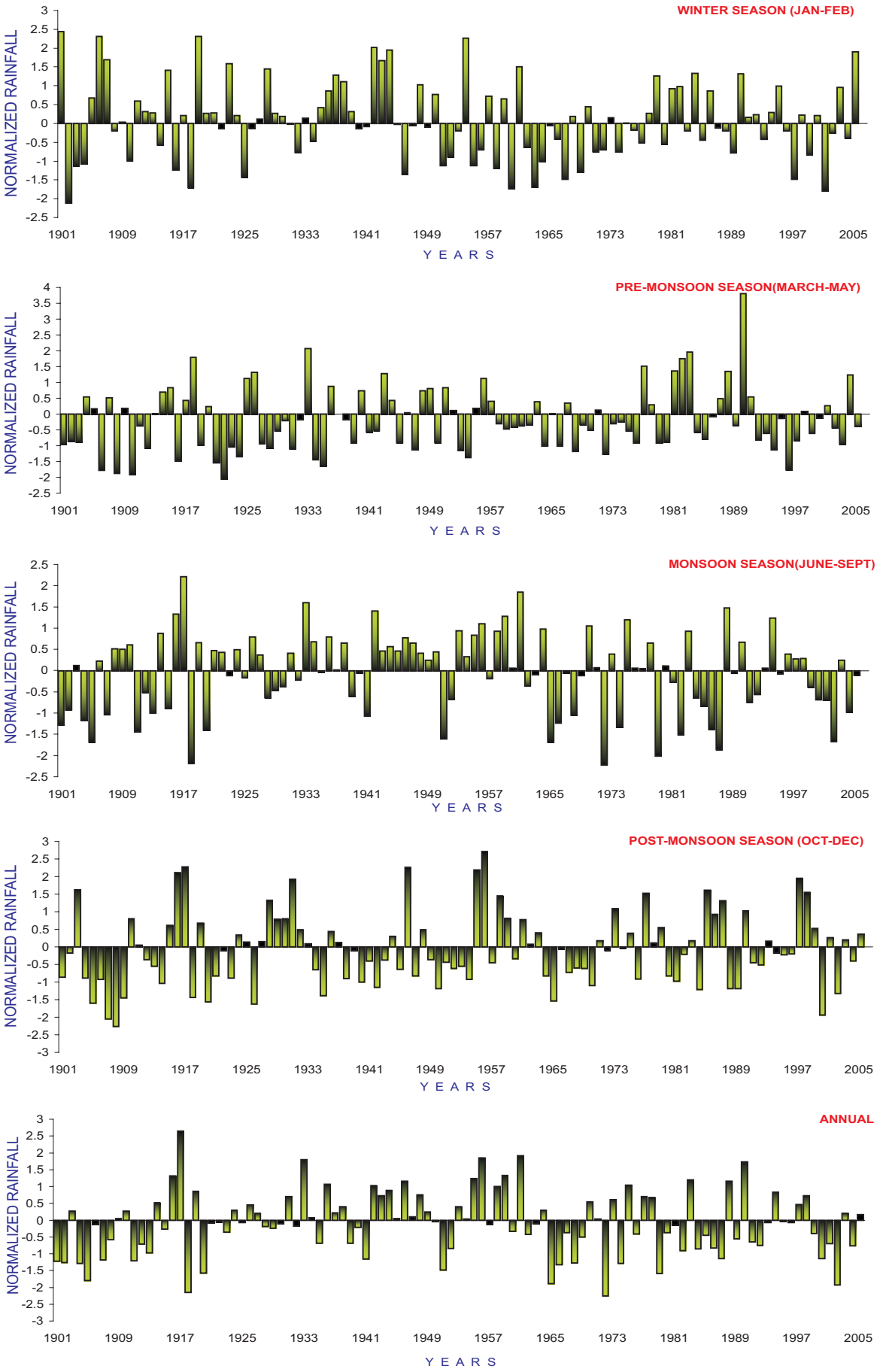
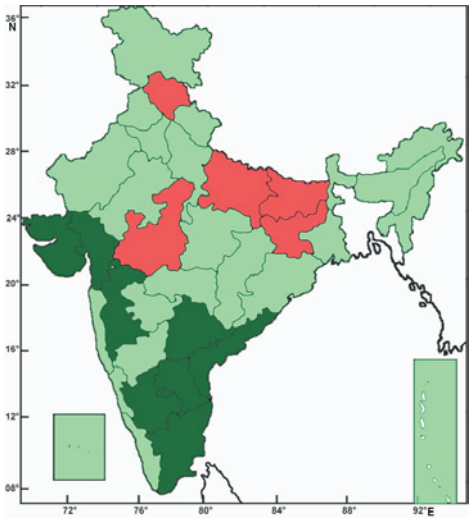
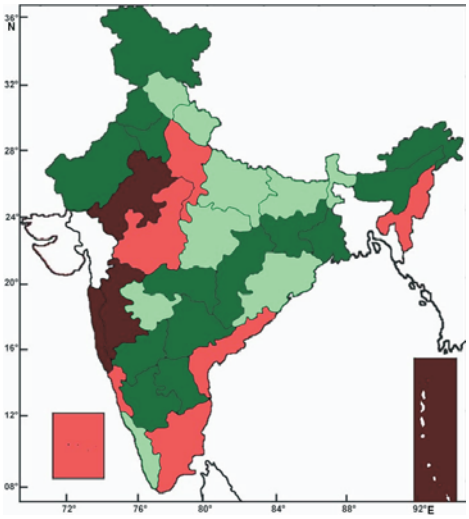


FIG. 5 : NORMALIZED AREA WEIGHTED SEASONAL AND ANNUAL RAINFALL OVER THE COUNTRY AS A WHOLE

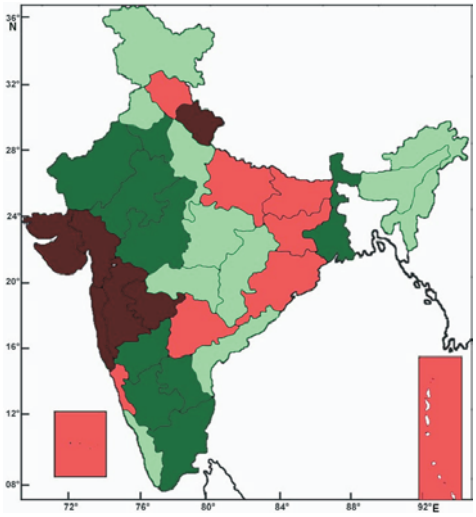
(NORMAL IS BASED ON THE DATA FOR THE PERIOD 1941 - 1990)



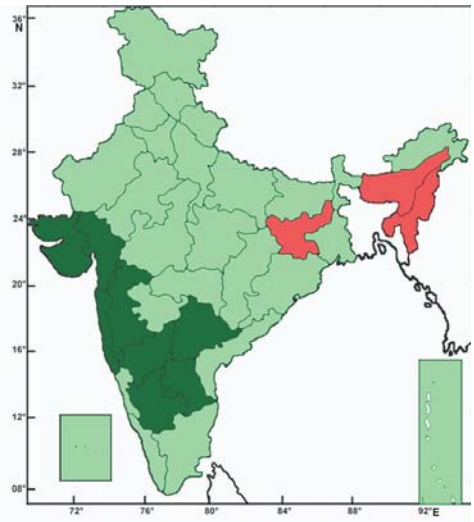
ANNUAL



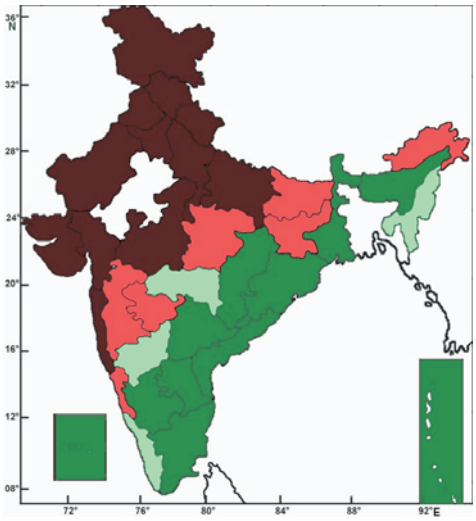
WINTER



PRE-MONSOON



MONSOON



POST-MONSOON

FIG. 6 : SUB-DIVISIONWISE ANNUAL & SEASONAL RAINFALL PERCENTAGE DEPARTURES

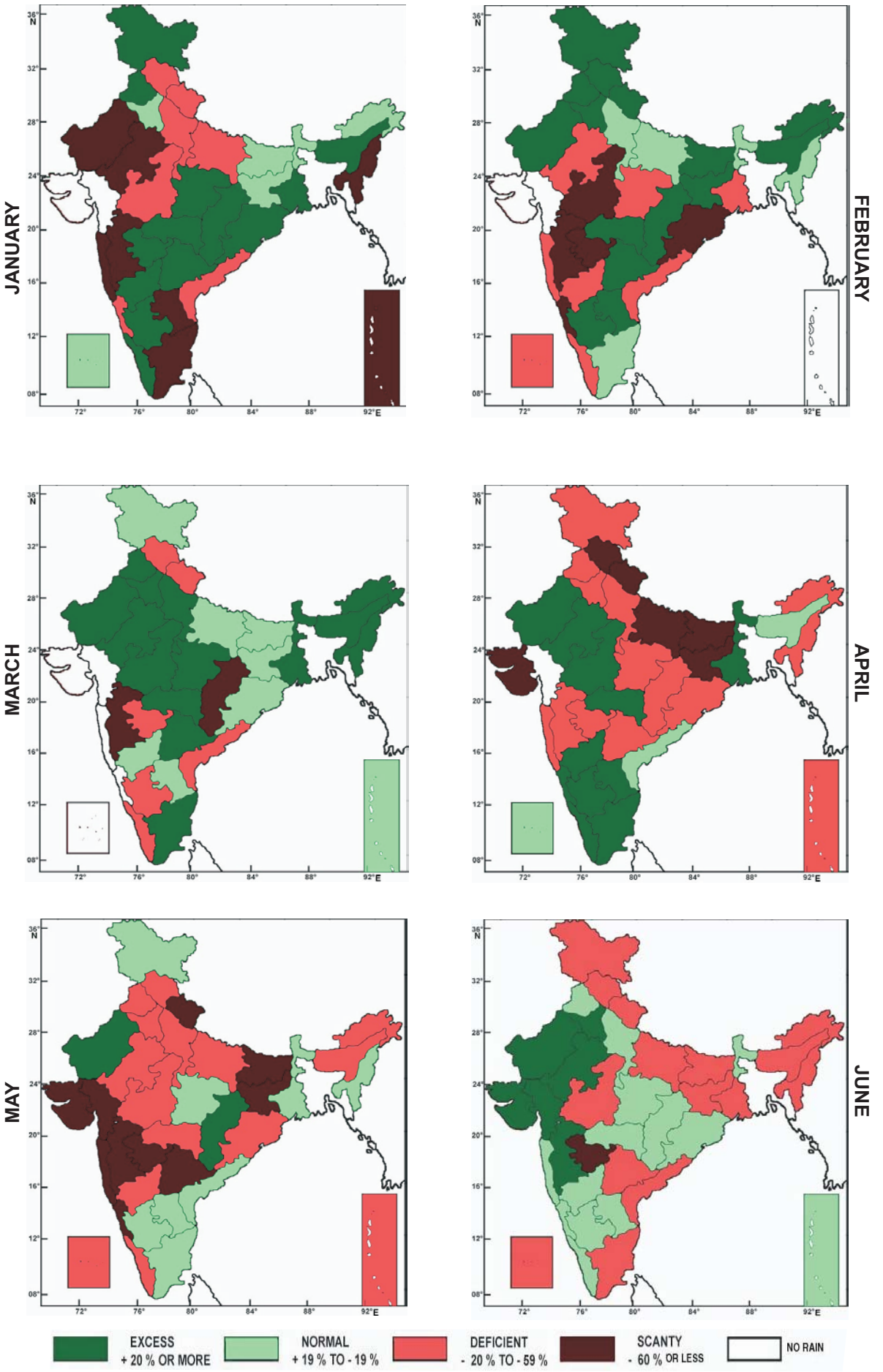


FIG.7 : MONTHLY SUB-DIVISIONWISE RAINFALL PERCENTAGE DEPARTURES

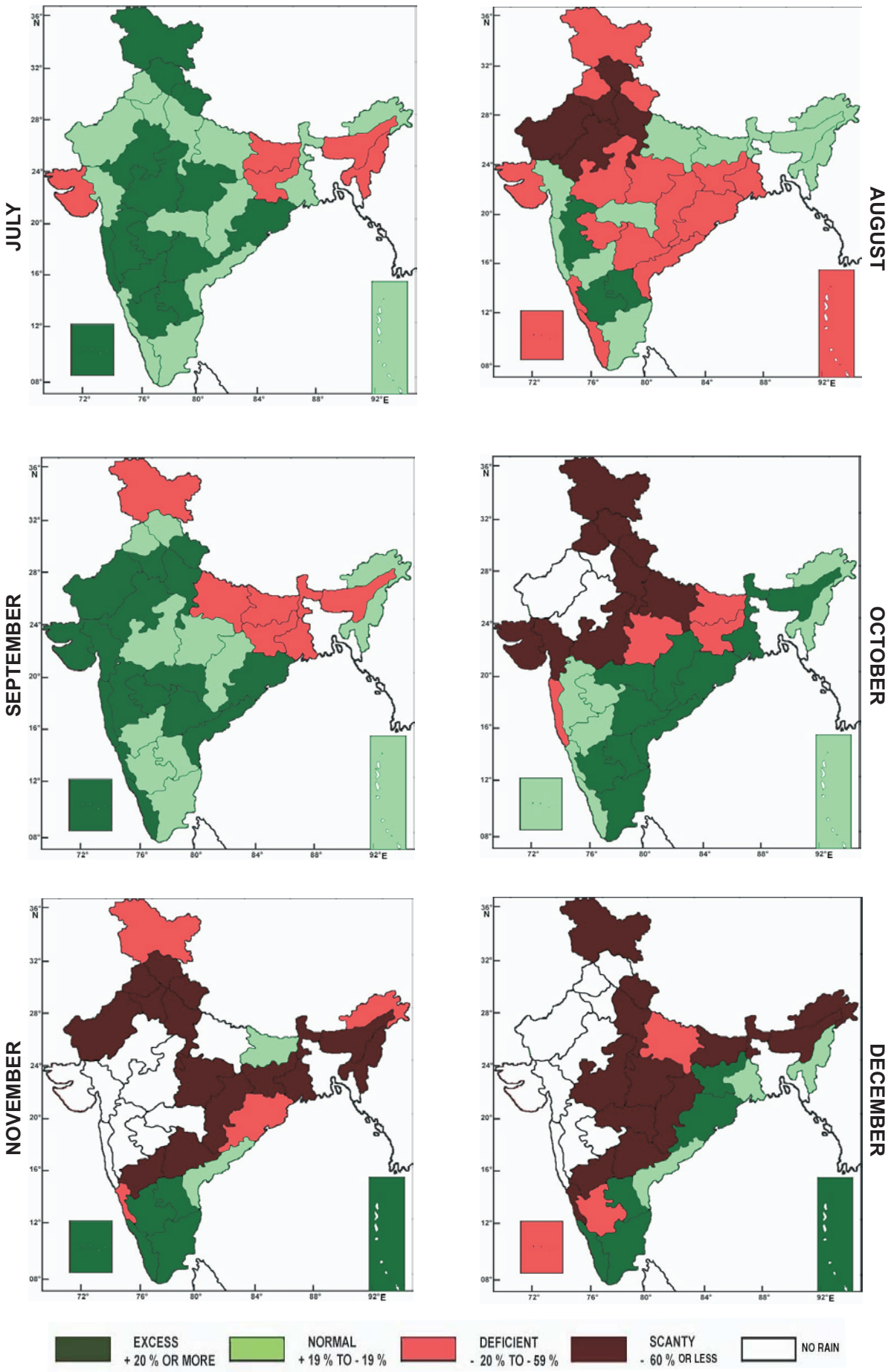


FIG.7 : MONTHLY SUB-DIVISIONWISE RAINFALL PERCENTAGE DEPARTURES

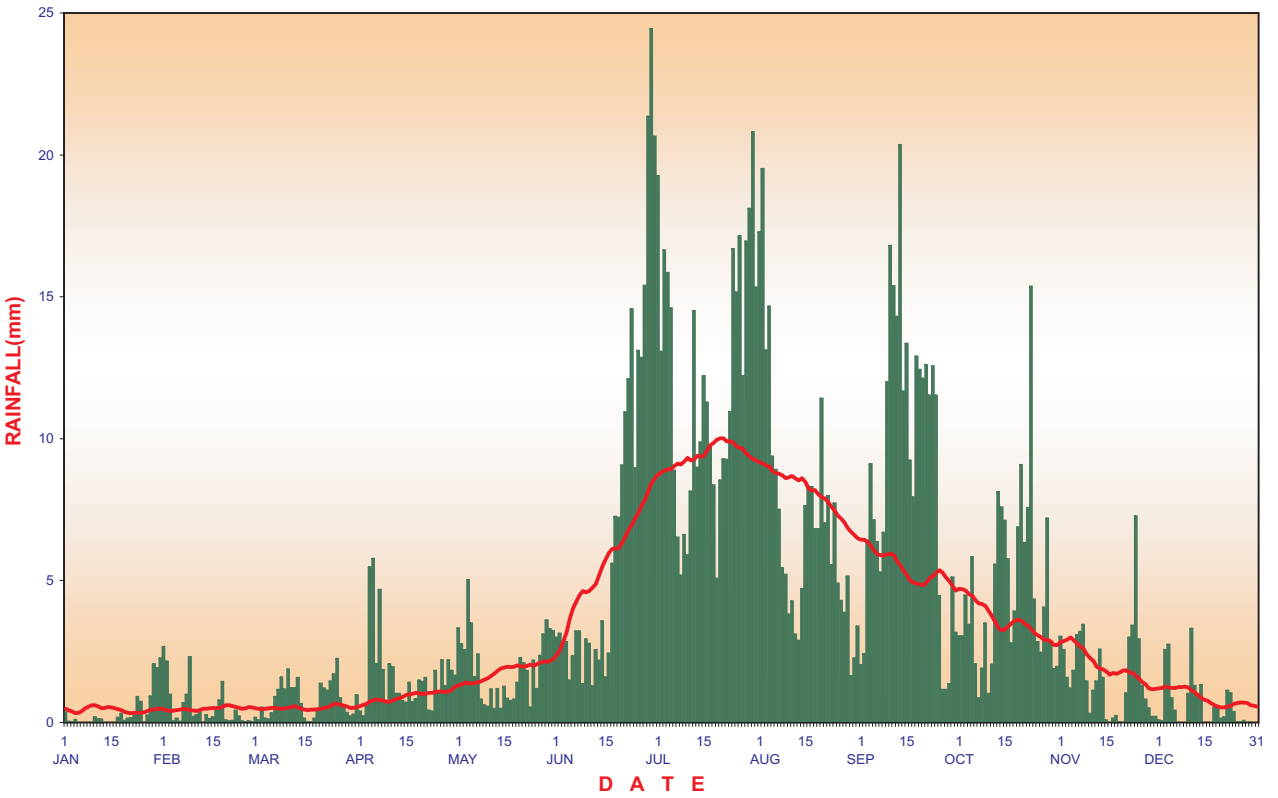


FIG. 8 : DAILY MEAN RAINFALL (mm) AVERAGED OVER THE PLAINS OF THE COUNTRY (VERTICAL BARS) AND ITS LONG TERM AVERAGE (1951-2000) (CONTINUOUS LINE) 1 JANUARY - 31 DECEMBER 2005

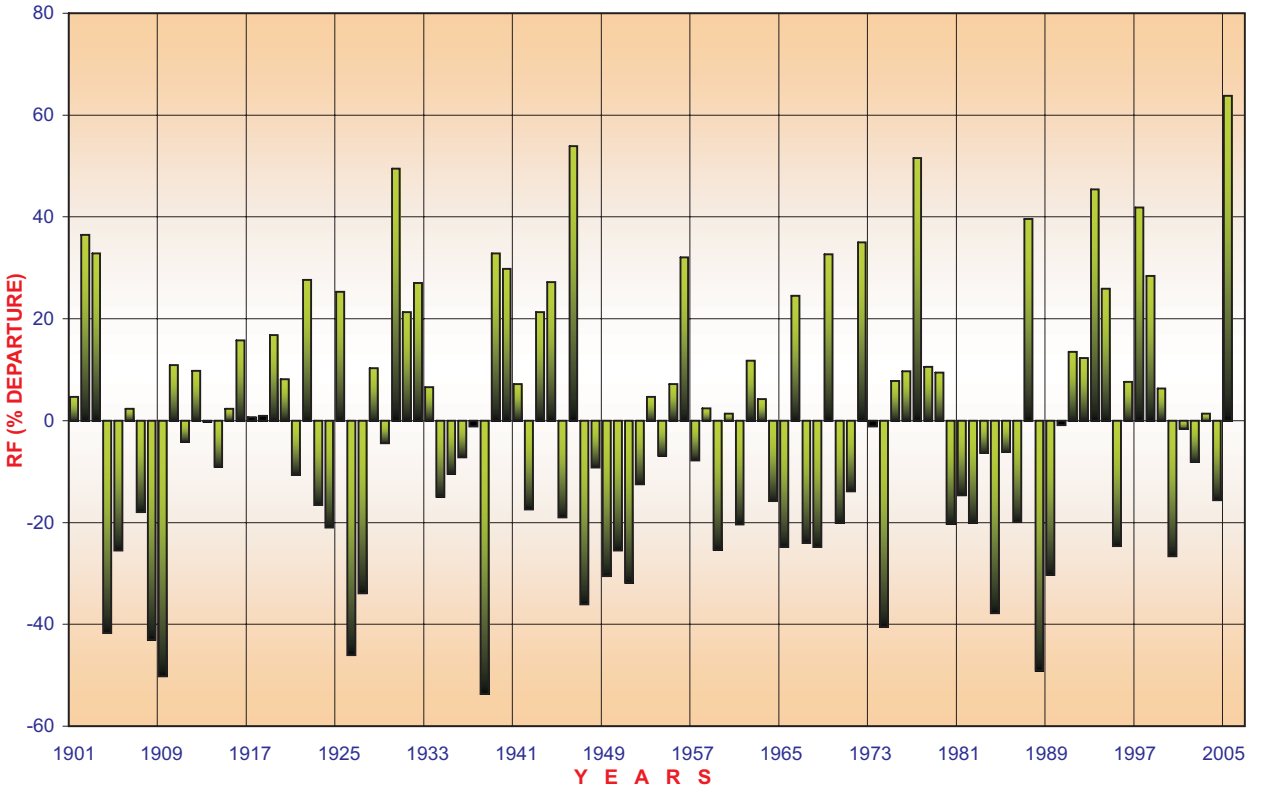
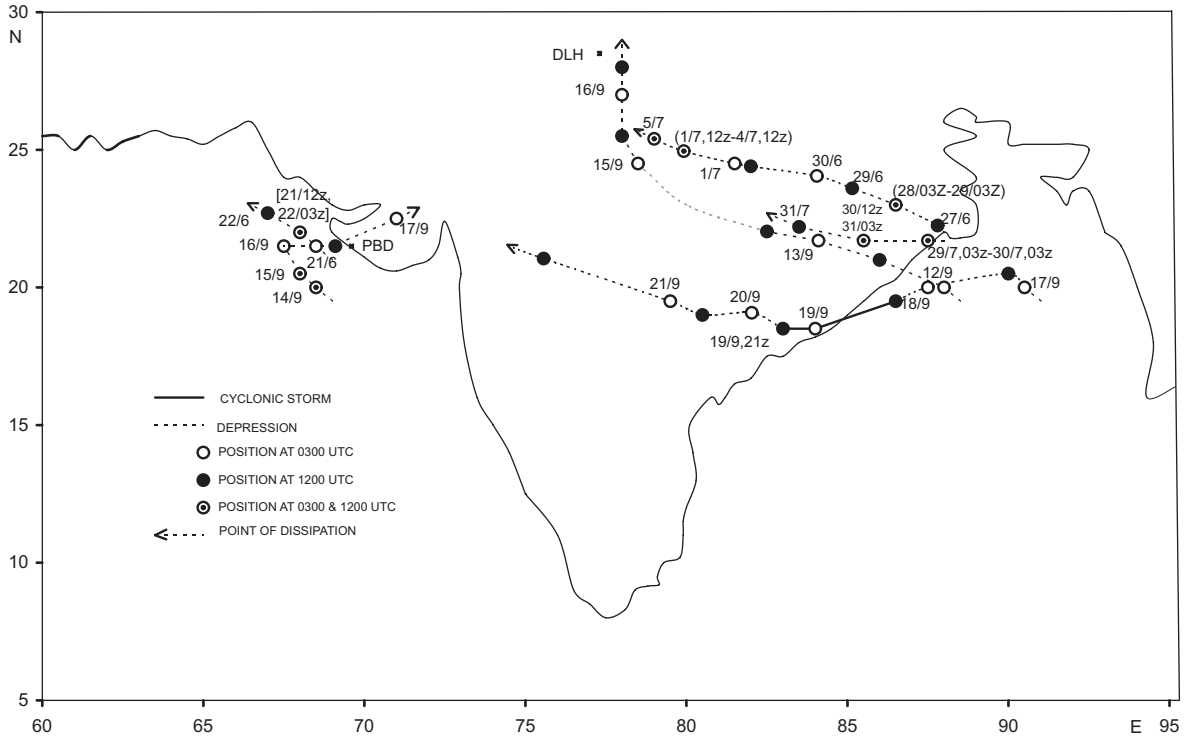
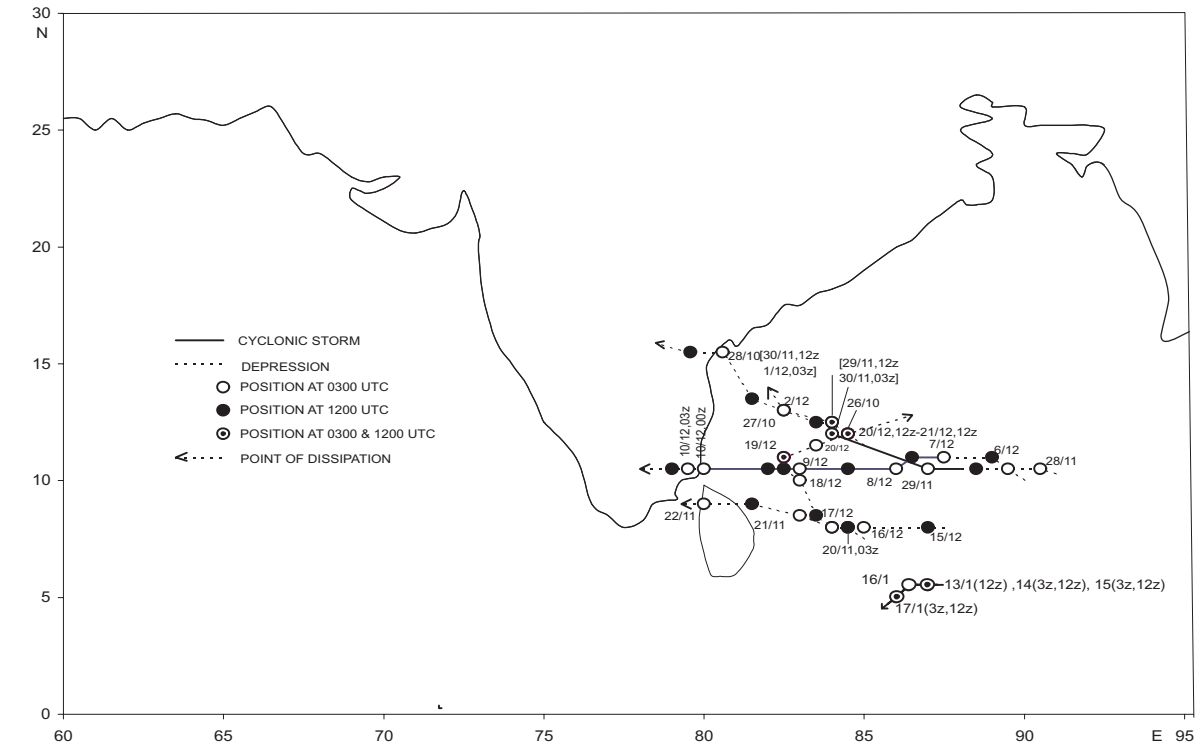


FIG. 9 : PERCENTAGE DEPARTURE OF RAINFALL DURING THE POST-MONSOON SEASON (OCTOBER TO DECEMBER) OVER THE SOUTH PENINSULA (1901-2005)

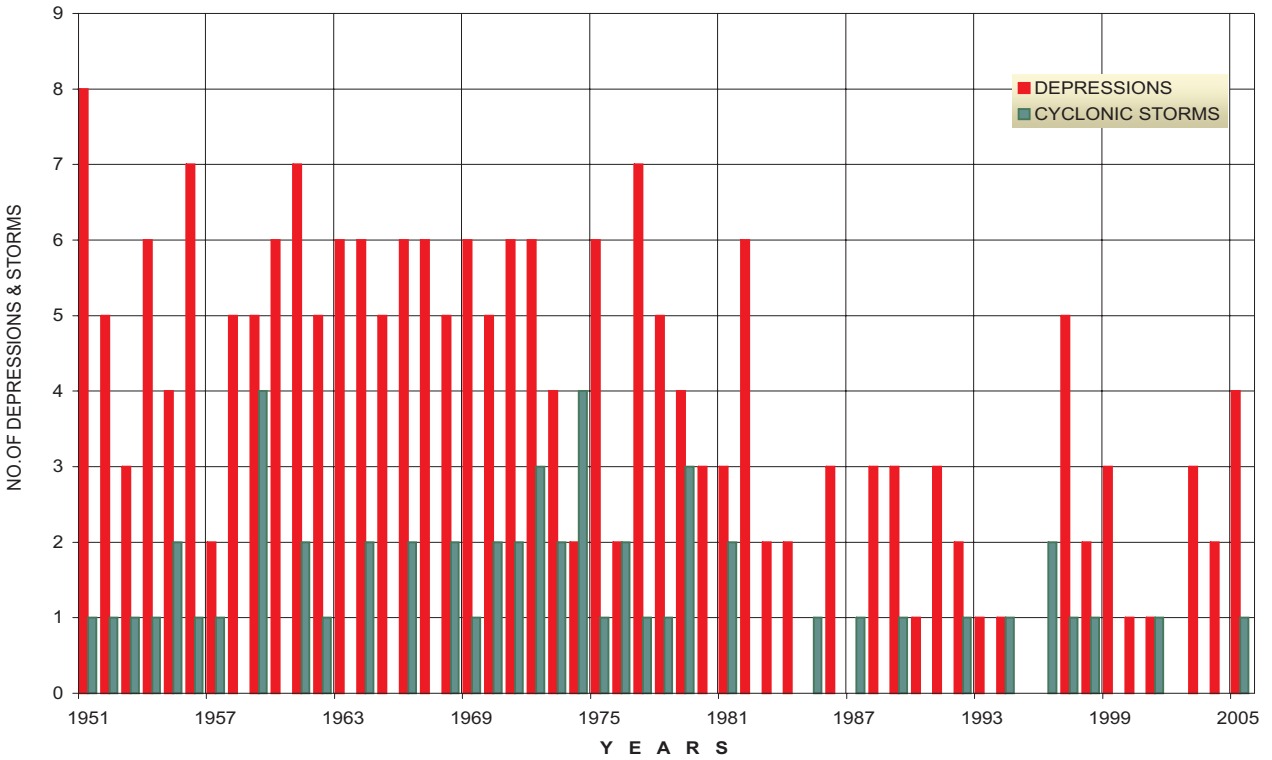


(a) MONSOON SEASON (JUNE TO SEPTEMBER)

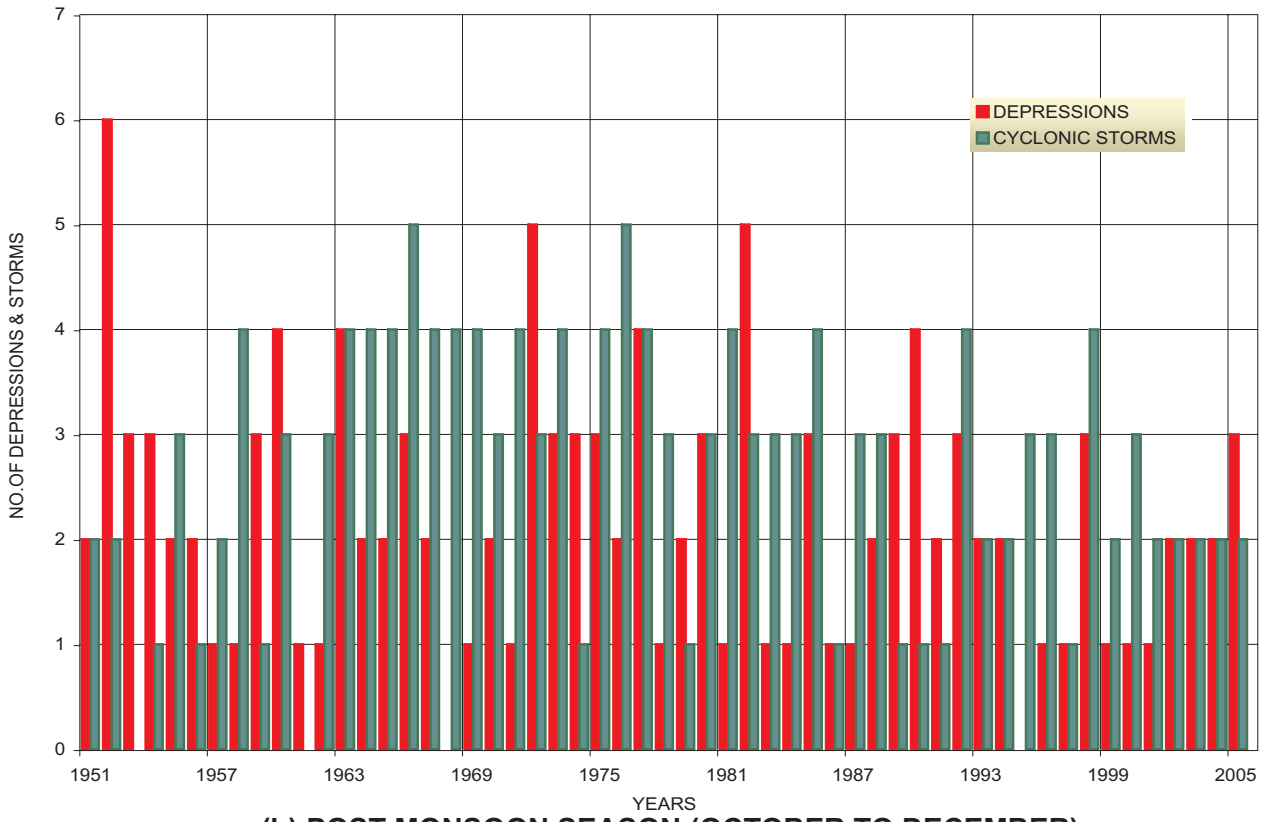


(b) REMAINING MONTHS

FIG. 10 : TRACKS OF DEPRESSIONS AND CYCLONIC STORMS



(a) MONSOON SEASON (JUNE TO SEPTEMBER)



(b) POST MONSOON SEASON (OCTOBER TO DECEMBER)

FIG. 11 : FREQUENCY OF DEPRESSIONS AND CYCLONIC STORMS FORMED OVER THE NORTH INDIAN OCEAN

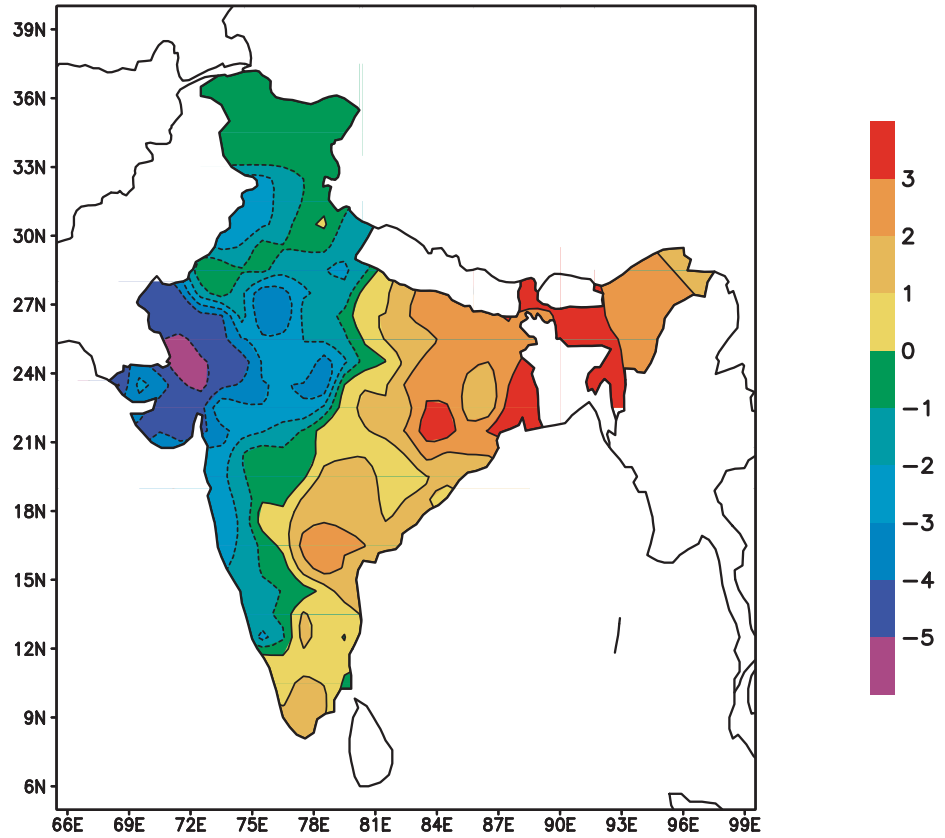


FIG. 12: MINIMUM TEMPERATURE ANOMALY (°C) DURING 19-25 FEBRUARY WITH RESPECT TO 1961-1990 AVERAGE

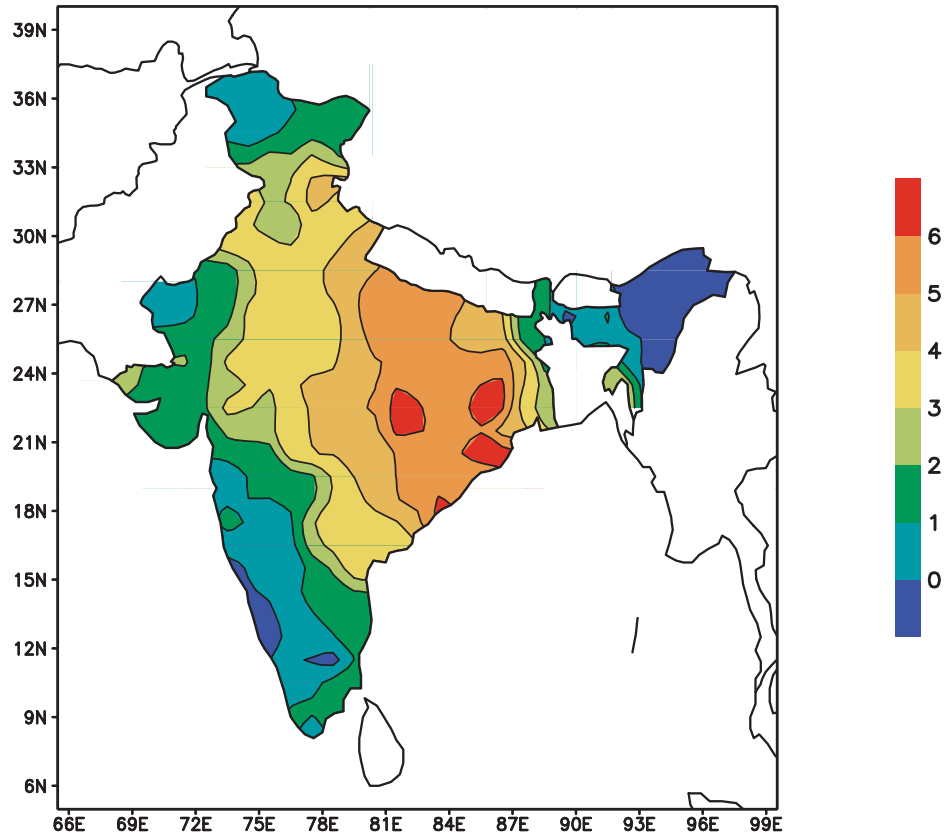


FIG. 13: MAXIMUM TEMPERATURE ANOMALY (°C) DURING 14-22 JUNE WITH RESPECT TO 1961-1990 AVERAGE

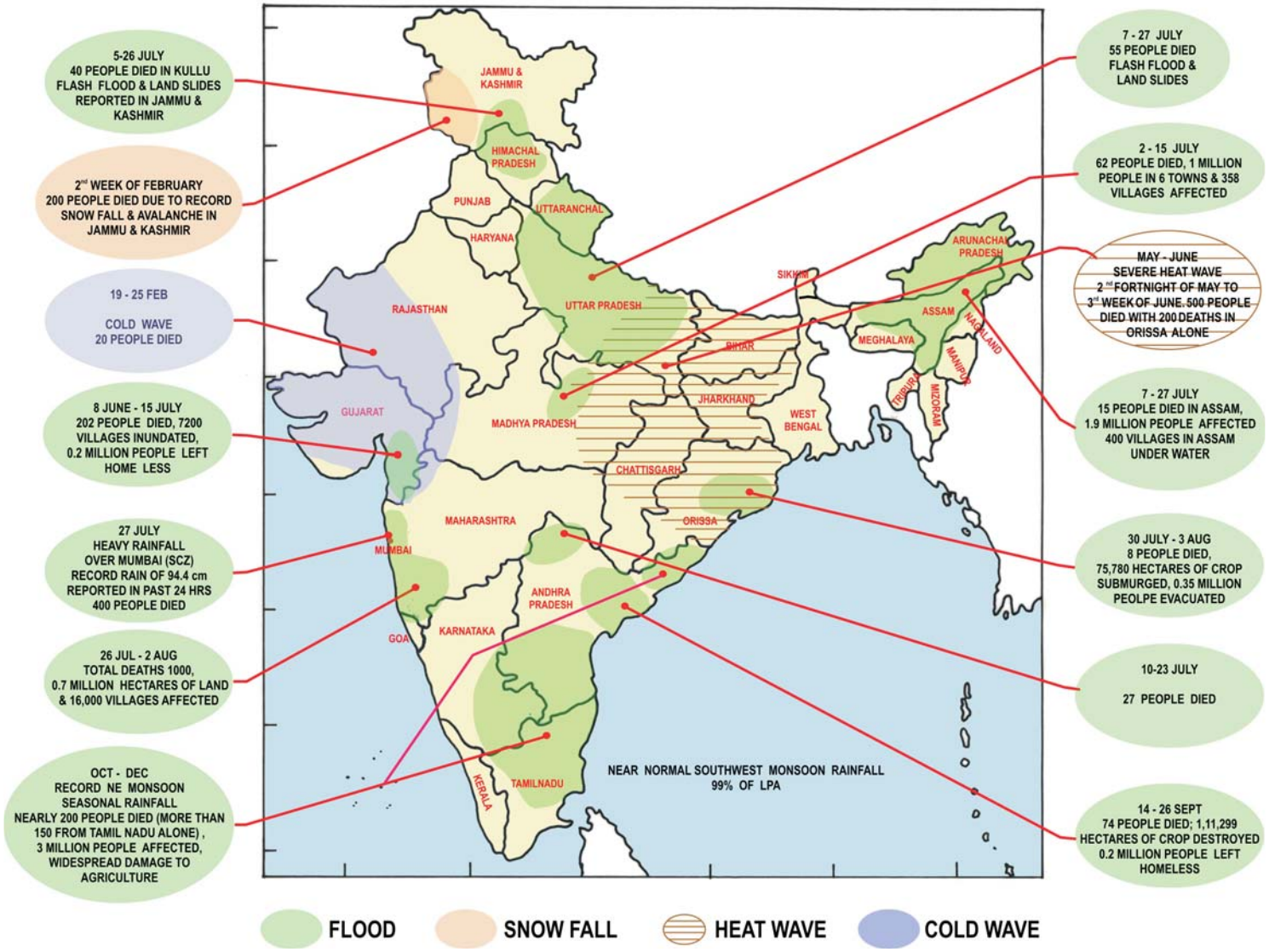


FIG. 14 : SIGNIFICANT WEATHER EVENTS DURING 2005

TABLE - 1

METEOROLOGICAL SUB-DIVISION WISE SEASONAL AND ANNUAL RAINFALL STATISTICS FOR THE YEAR 2005 BASED ON OPERATIONAL DATA

		WINTER SEASON			PRE-MONSOON			MONSOON			POST MONSOON SEASON			ANNUAL 2005		
S.NO	SUBDIVISION NAME	ACTUAL	NORMAL	%DEP	ACTUAL	NORMAL	%DEP	ACTUAL	NORMAL	%DEP	ACTUAL	NORMAL	%DEP	ACTUAL	NORMAL	%DEP
1	A & N ISLANDS	18.9	85.1	-78	294.4	461	-36	1554.9	1755.2	-11	894.3	700.4	28	2762.5	3001.7	-8
2	ARUNACHAL PRADESH	186.1	137.8	35	634.4	719.5	-12	1698.9	1834.9	-7	181.2	243.7	-26	2700.6	2935.9	-8
3	ASSAM &MEGHALAYA	59.2	44.6	33	647.9	681.5	-5	1379.2	1885.3	-27	228.5	190.5	20	2314.8	2801.9	-17
4	NAG.,MANI.,MIZO.,TRIP	27.9	41	-32	464.2	443.3	5	957.9	1240.9	-23	189.7	195.3	-3	1639.7	1920.5	-15
5	S.H.W.B.&SIKKIM	47.2	48.9	-3	519.8	429.7	21	1812.1	1955.4	-7	291.7	183.1	59	2670.8	2617.1	2
6	GANGATIC W.B.	41.1	32.3	27	219.7	166.7	32	973.7	1136.3	-14	350.9	159.3	120	1585.4	1494.6	6
7	ORISSA	36.2	32.2	12	94.9	118.5	-20	1177.8	1160	2	240.8	153.4	57	1549.7	1464.1	6
8	JHARKHAND	47	39.3	20	36.5	89.7	-59	723.4	1104.6	-35	51.3	101.1	-49	858.2	1334.7	-36
9	BIHAR	29.8	28.4	5	39.1	87.1	-55	852.9	1048.2	-19	44	78.4	-44	965.8	1242.1	-22
10	EAST U.P.	28.5	33.3	-14	23.7	33.1	-28	759.2	913.6	-17	20.9	61.9	-66	832.3	1041.9	-20
11	WEST U.P.	28.6	36.2	-21	31.5	29	9	690.2	772.8	-11	2.3	50.8	-95	752.6	888.8	-15
12	UTTARANCHAL	117.2	115.8	1	55.1	157	-65	1297	1223.1	6	23.3	86.7	-73	1492.6	1582.6	-6
13	HAR., CHANDI., DELHI	56.2	35.7	57	53.2	34.4	55	476.5	470	1	1.3	27.4	-95	587.2	567.5	3
14	PUNJAB	106.8	51.1	109	50.8	54.4	-7	466.4	501.8	-7	0.8	41.5	-98	624.8	648.8	-4
15	HIMACHAL PRADESH	195.2	192	2	137.7	246.6	-44	709	773.7	-8	1.4	111.5	-99	1043.3	1323.8	-21
16	JAMMU & KASHMIR	514.7	234.1	120	306.6	345.7	-11	456.3	513.6	-11	32.1	152.6	-79	1309.7	1246.0	5
17	WEST RAJASTHAN	13.5	8.2	65	25.4	17.1	49	221.1	262.8	-16	0.3	8.9	-97	260.3	297.0	-12
18	EAST RAJASTHAN	4.1	11.3	-64	22.4	17.3	29	590.8	623.6	-5	0	26	-100	617.3	678.2	-9
19	WEST M.P.	8.2	17.1	-52	17.7	14.4	23	757.5	904.3	-16	1.1	52	-98	784.5	987.8	-21
20	EAST M.P.	52.3	44.8	17	31.2	28.1	11	1299.3	1097.4	18	25.8	59.1	-56	1408.6	1229.4	15
21	GUJARAT REGION	0	2.1	-100	0.1	8.5	-99	1384.2	933.6	48	1.1	34.7	-97	1385.4	978.9	42
22	SAURASHTRA & KUTCH	0	1.9	-100	0.4	4.7	-91	637.1	485.7	31	1.2	26	-95	638.7	518.3	23
23	KONKAN & GOA	0.1	1	-90	3.3	40.1	-92	3500.3	2802.1	25	54	135.4	-60	3557.7	2978.6	19
24	MADHYA M'RASHTRA	1	3.6	-72	8.3	41.4	-80	1010.8	700.1	44	81.6	105.4	-23	1101.7	850.5	30
25	MARATHAWADA	7.6	6.7	13	10.5	33.4	-69	776	704.3	10	70.2	96	-27	864.3	840.4	3
26	VIDARBHA	89.8	21.8	312	36.9	31.3	18	1043.8	976.2	7	87.2	75.3	16	1257.7	1104.6	14
27	CHATTISGARH	77.9	27.3	185	45.1	53.3	-15	1080.8	1205.8	-10	101.4	82	24	1305.2	1368.4	-5
28	COASTAL A.P.	10.8	15.4	-30	86.1	94.4	-9	630.2	575.2	10	511.9	326.2	57	1239.0	1011.2	23
29	TELANGANA	43.8	10.2	329	43.6	55.7	-22	958.6	767.3	25	184.9	109.6	69	1230.9	942.8	31
30	RAYALASEEMA	11.7	6.7	75	102.5	78.2	31	462.1	380.9	21	423	212.1	99	999.3	677.9	47
31	TAMIL NADU	15	35.1	-57	232.9	128.2	82	294.7	315.5	-7	771.8	431.8	79	1314.4	910.6	44
32	COASTAL KARNATAKA	1	2	-50	133.8	179.4	-25	2939	3173.9	-7	201	258	-22	3274.8	3613.3	-9
33	N.I.KARNATAKA	9.8	4.6	113	113.5	87.9	29	607.7	490.9	24	125.3	136.7	-8	856.3	720.1	19
34	S.I.KARNATAKA	13.7	5.4	154	184.1	150.4	22	841.5	659.3	28	317.7	199.7	59	1357.0	1014.8	34
35	KERALA	25.3	26.5	-5	368	427.8	-14	2244.7	2143	5	515	498.5	3	3153.0	3095.8	2
36	LAKSHADWEEP	28.6	36.9	-22	129.8	233.7	-44	1011	985.2	3	409.6	328.9	25	1579.0	1584.7	0

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TABLE - 2

STATION WISE TEMPERATURE AND RAINFALL EXTREMES FOR THE YEAR 2005

S.NO.	STATION NAME	MINIMUM TEMP. (^{0}C)	DATE (MONTH/DAY)	MAXIMUM TEMP. (^{0}C)	DATE (MONTH/DAY)	RAINFALL(mm) IN PAST 24 Hrs.	DATE (MONTH/DAY)
1	Agartala AP	8	1/22,2/4,12/31	36	6/3	97	7/25
2	Dibrugarh AP	8	1/1,13,14	36	6/28	87.6	6/1
3	Guwahati AP	8	1/13	36	6/11,15	136	8/19
4	Tezpur	9	1/13,14,23,25	35	6/26,27,28	82.3	8/25
5	Kolkata	12	2/4	41	6/2	112	10/19
6	Gangtok	1	1/24	31	6/18	141	9/25
7	Bhubaneshwar AP	11	12/15	46	6/12,17,18	154.9	7/30
8	Gopalpur	13	12/16,28	38	6/10	98.7	9/9
9	Jharsugda AP	9	1/21,12/14,15	47	5/24	81.5	7/30
10	Gaya AP	6	1/21,2/4,12/15,16,31	47	6/18	85	9/18
11	Patna AP	6	12/14	46	5/29	71	7/16
12	Ranchi AP	6	1/21	42	5/24,6/3,12,17,18	60.4	7/20
13	Allahabad AP	6	12/15,16	47	6/17--20	92.3	8/22
14	Bareilly	0	1/19	45	6/17,19	267.2	9/17
15	Dehra Dun	4	1/18,20	41	6/19	121	7/11
16	Lucknow AP	5	12/15	46	6/18--20	127.5	9/16
17	New Delhi AP	3	12/12,19	45	6/20	67.6	8/21
18	Ajmer	5	12/24	44	6/5	47	9/13
19	Barmer	5	2/20	45	5/21	15.7	8/5
20	Bikaner	1	1/24	45	5/16,21,6/3--6	36.1	7/3
21	Ganganagar	1	12/23	48	6/5	37.8	9/9
22	Jaipur AP	3	12/4	45	6/4	58.4	7/15
23	Jaisalmer	4	2/19	45	5/21,6/4,5	81.2	9/9
24	Jodhpur AP	3	2/20	44	5/20,21,6/5	49.4	7/1
25	Udaipur	3	2/20,12/25	44	5/21	112.5	7/28
26	Ambikapur	5	12/12--17	44	5/17,23,17	171	6/30
27	Bhopal(AP)	6	1/20	44	5/21,25,6/2	92.8	9/15
28	Gwalior	4	12/15	46	6/18,19	43.1	7/6
29	Indore(AP)	5	1/20	44	5/21	160	8/1
30	Jabalpur	6	12/16--19	45	5/21,22,25	171.7	7/5
31	Jagdalpur	7	12/28	42	5/16,17,25	97.3	9/13
32	Satna	5	1/20	45	5/22,23,25,26,6/5,6,17,19	189.2	7/3
33	Ahmedabad AP	6	2/20	44	5/20,21,24,6/6	236	7/1
34	Baroda	9	1/18,19,2/20,21	45	4/5	297.4	7/1
35	Bhavnagar AP	9	2/20,21	43	5/20,6/6	166.4	6/29
36	Bhuj AP	8	2/20	42	4/5,5/31	23	7/1
37	Deesa	2	2/20	44	5/21	99.4	7/2
38	Dwarka	12	2/20,21	40	4/15	80.2	9/18
39	Rajkot AP	6	2/20,21	44	5/20	155.3	6/30

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STATION WISE TEMPERATURE AND RAINFALL EXTREMES FOR THE YEAR 2005

S.NO.	STATION NAME	MINIMUM TEMP. (^{0}C)	DATE (MONTH/DAY)	MAXIMUM TEMP. (^{0}C)	DATE (MONTH/DAY)	RAINFALL(mm) IN PAST 24 Hrs.	DATE (MONTH/DAY)
40	Surat	9	1/18	43	4/4	224	6/30
41	Veraval	9	2/20,21	45	6/8	73.6	6/22
42	Akola	7	12/26	46	5/17,20,21	57.8	7/28
43	Aurangabad AP	7	12/18,19	43	5/20,21	111.8	7/20
44	Mahabaleshwar*	8	1/31	36	5/20	432.9	7/26
45	Mumbai (SCZ)	15	1/19,2/22	36	4/4	944	7/27
46	Nagpur AP	7	12/5	48	5/22	142.7	9/14
47	Panjim	17	1/13,2/22,23,12/18,19	43	4/29	216.4	7/25
48	Parbhani	8	12/26,27,28	45	5/20--23	264.5	7/27
49	Pune	6	1/19,2/22,12/19	42	5/20	78.6	7/26
50	Sholapur	12	1/12,12/9,28	45	5/19	99.2	8/30
51	Anantpur	11	12/28	44	5/19,21	88.9	8/31
52	Hyderabad AP	9	12/27	44	5/17	82.2	7/10
53	Kakinada	16	12/15	45	6/13	282.4	9/20
54	Kalingapatnam	14	12/14-16,27-29	36	5/23,26,30	355.4	9/19
55	Kurnool	13	1/11,12/17	44	5/16,17,19	83.2	10/14
56	Machilipatnam	16	12/8	44	6/12,13	141.6	9/20
57	Nellore	19	1/10,11,14,2/14,16,27	44	5/12	259.9	10/28
58	Visakhapatnam AP	14	12/29	42	6/11	161.2	9/20
59	Chennai AP	18	2/14	41	5/10,11,16,17,6/2,3,7,12,13,17	282.8	12/3
60	Coimbatore	16	12/17	38	4/28--30,5/23--26	74.2	10/5
61	Cuddalore	17	1/12	40	5/17,6/12,13,17,18	154.2	11/24
62	Madurai AP	18	1/11,12	40	5/9,26,6/11--15,23,24,30	85.7	11/24
63	Nagapattinam	18	2/15	40	6/15	276.3	11/8
64	Tiruchirapalli AP	17	1/12	41	5/18,26	157.8	11/24
65	Bangalore AP	14	1/7,10,16,2/8,16,12/17,28	37	5/14,17--19	97.2	10/18
66	Chitradurga	12	12/8,17,20,27	40	5/19	105.8	9/3
67	Gadag	11	12/9,17	41	5/17,19	89.7	7/14
68	Honavar	16	12/29	35	4/4	217.9	6/22
69	Karwar	11	1/11	37	4/15	234.9	6/22
70	Mangalore AP	16	2/28	38	5/21	220.6	6/20
71	Cochi AP	21	2/12,14,12/28,29	35	4/19	208.4	10/23
72	Thiruvananthapuram	20	12/28	35	4/2,26,29,5/1,16--18	99	11/14
73	Port Blair	17	2/14	35	4/24,26	197.3	6/10
74	Amini Divi	19	12/25	36	4/30,5/12,18,25	69.5	7/11
75	Minicoy	20	12/25	35	5/9,12,13,15,19,20,22,23	81.5	6/5

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