

Weather

HOT WEATHER SEASON (MARCH-MAY 1985)*

1. Chief features

In the month of May two cyclonic storms developed, one in the Bay of Bengal and the other in the Arabian Sea.

Rainfall for the season (Fig. 2) was largely excess in west Rajasthan; slightly excess in Nagaland, Manipur, Mizoram and Tripura, Saurashtra & Kutch and north interior Karnataka; normal in Arunachal Pradesh, Assam & Meghalaya, Bihar Plains, west Madhya Pradesh, Konkon & Goa, Kerala and Lakshdweep; slightly deficient in Sub-Himalayan West Bengal & Sikkim, Punjab, east Rajasthan, east Madhya Pradesh, Vidarbha, Telangana & coastal Karnataka; moderately deficient in Andaman & Nicobar Islands, Gangetic West Bengal, Orissa, east Uttar Pradesh & hills of west Uttar Pradesh, Himachal Pradesh, Jammu & Kashmir, Madhya Maharashtra, Marathwada & south interior Karnataka. It was largely deficient in the remaining sub-divisions.

2. March

The thundershower activities were rather subdued over Tamil Nadu during March. The following systems affected India during the month:

2.1. Systems in westerlies

(i) Ten western disturbances moved away eastwards across north Pakistan, western Himalayas and neighbourhood during the month. The eleventh western disturbance of the month became less marked over northwest Rajasthan on 29th. The twelfth western disturbance lay over Himachal Pradesh and adjoining hills of west Uttar Pradesh on the last day of the month.

(ii) As many as five induced cyclonic circulations in the lower tropospheric levels developed over Pakistan and adjoining northwest India. Of these the worth mentioning were one, which lay over Punjab and adjoining Pakistan on 23rd, became less marked over Haryana and adjoining west Uttar Pradesh on 25th; the other one, which developed over Pakistan and adjoining west Rajasthan on 29th, became less marked over Haryana and neighbourhood on 30th evening.

Following cyclonic circulations/troughs in the lower tropospheric westerlies affected northeast India.

(iii) Over Sub-Himalayan West Bengal and Sikkim and adjoining Bangla Desh on the last day of the previous month, became less marked over Assam and Meghalaya on 2nd evening.

(iv) Over Sub-Himalayan West Bengal and Sikkim and neighbourhood from 3rd to 5th and another over West Bengal and Sikkim on 8th.

(v) Over Assam and Meghalaya and neighbourhood from 13th to 21st.

(vi) Over Sub-Himalayan West Bengal and Sikkim and neighbourhood on 29th, persisted there on the last day of the month.

2.2. Systems in easterlies

Several perturbations extending to lower tropospheric levels were observed in the equatorial trough regions, of which the following ones produced precipitation over the country :

(i) A feeble cyclonic circulation was observed over Comorin on 1st, which became less marked there by next day.

(ii) A cyclonic circulation developed over Comorin and adjoining Maldives on 12th. It moved away westwards by next day.

(iii) A cyclonic circulation, which lay over Sri Lanka and adjoining southwest Bay on 17th evening, became less marked over Comorin and neighbourhood on 19th.

(iv) Two cyclonic circulations moved westwards across Sri Lanka, Comorin and neighbourhood, first one between 21st and 24th and the second one between 25th and 27th.

(v) A cyclonic circulation was observed over Sri Lanka and adjoining southwest Bay on 27th. It became less marked there by next day.

(vi) Trough/wind discontinuity at 0.9 km asl over the Peninsula was observed on most days between 14th and 20th and on several days from 21st to 31st.

Under the influence of these systems rainfall was generally widespread on 14 days in Arunachal Pradesh with isolated heavy fall on 8th. It was so on 3 to 5 days in Nagaland, Manipur, Mizoram and Tripura and Jammu & Kashmir and on 1 to 2 days in Assam and Meghalaya, West Bengal and Sikkim, Himachal Pradesh, Marathwada, Telangana and Kerala. Rainfall was

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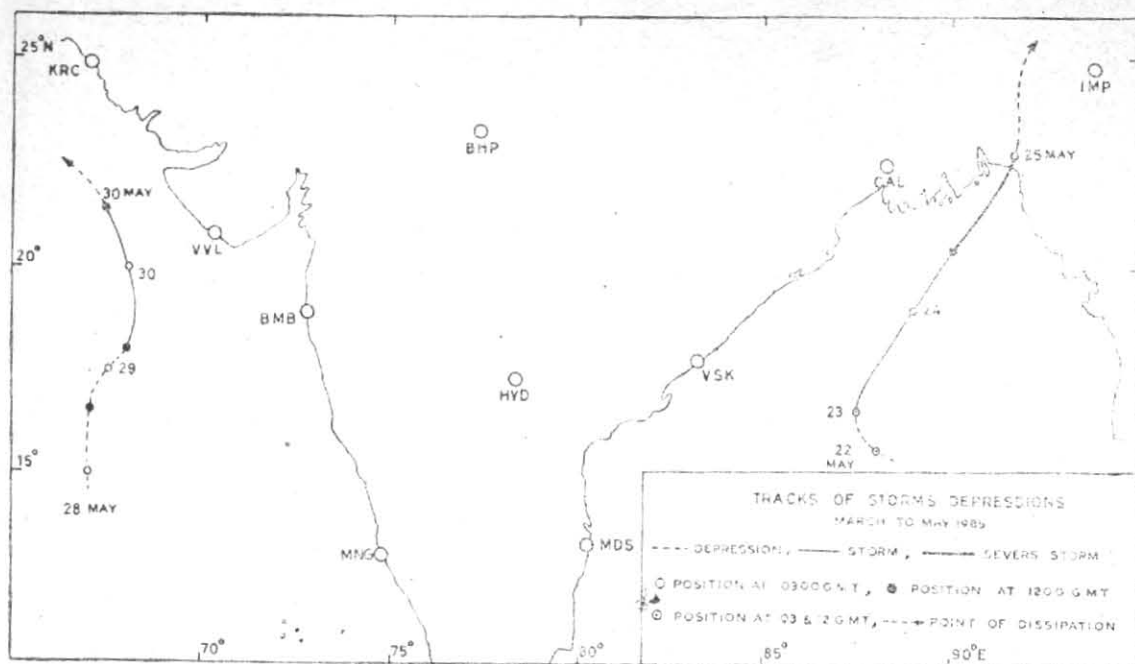


Fig. 1

of isolated or scattered nature on 13 to 16 days in Andaman and Nicobar Islands, Assam and Meghalaya and Sub-Himalayan West Bengal and Sikkim; on 4 to 9 days in Arunachal Pradesh, Nagaland, Manipur, Mizoram and Tripura, Himachal Pradesh, Jammu & Kashmir, east Rajasthan, coastal Andhra Pradesh, Tamil Nadu, interior Karnataka and Kerala. It was so on 1 to 3 days in rest of the country outside Bihar Plateau, Gujarat State, Konkan and Goa, Madhya Maharashtra and coastal Karnataka, where the weather was mainly dry.

2.3. Rainfall during the month

Rainfall for the month was excess in Assam and adjacent States, and Lakshadweep; normal in Andaman and Nicobar Islands, north interior Karnataka and Kerala; deficient in Sub-Himalayan West Bengal and Sikkim, Marathwada, coastal Andhra Pradesh, Telangana, Tamil Nadu and south interior Karnataka; scanty over the rest of the country outside Gujarat State and coastal Karnataka where there was no rainfall.

Significant amounts (cm) of rainfall were :

- 8th Tezu, Pasighat, Dibrugarh AP 7 each, North Lakhimpur, Charrepunji 5 each,
- 9th Pasighat 5,
- 13th Tondi 7,
- 19th Punalur, Cherrapunji 6 each
- 20th Cherrapunji 6, Silchar AP, Imprial 5 each,
- 25th Colar Gold Field 7, Tiruppattur 6,
- 29th Kayamkulam 6, Cherrapunji, Cochin AP 5 each,
- 30th Cherrapunji 6,

2.4. Temperature

Day temperatures were generally above normal in the country being appreciably to markedly so on many

days in Bihar Plateau, plains of Uttar Pradesh, North-west India, Madhya Pradesh, Gujarat State, north Madhya Maharashtra and Vidarbha.

Night temperatures were generally above normal being appreciably to markedly so on a few days in Assam and Meghalaya, Nagaland, Manipur, Mizoram and Tripura, Gangetic West Bengal, Rajasthan, west Madhya Pradesh, Saurashtra and Kutch, Vidarbha, coastal Andhra Pradesh and interior Karnataka. They were so in the second fortnight of the month in Orissa, Haryana, Himachal Pradesh, east Madhya Pradesh, Gujarat region, Telangana, Rayalaseema and Tamil Nadu.

3. April

Thundershower activities over Assam and adjacent States were good during the month.

3.1. Systems in westerlies

(i) The last western disturbance of the previous month moved away eastwards across Western Himalayas on 1st. Besides that eleven other western disturbances moved across north Pakistan, Western Himalayas and neighbourhood during the month. The twelfth western disturbance of the month lay over northeast Afghanistan and adjoining north Pakistan on 30th.

Several other systems in lower tropospheric levels were observed in the westerlies, of which the following ones caused some weather.

(ii) Last month's induced cyclonic circulation over south Pakistan and adjoining southwest Rajasthan became less marked over north Rajasthan and neighbourhood on 2nd evening.

(iii) A cyclonic circulation in the lower tropospheric levels was seen over Gujarat State and neighbourhood on 2nd.

(iv) An induced cyclonic circulation, which was observed over northwest Rajasthan and neighbourhood on 5th, became less marked over north Rajasthan and adjoining Haryana on 7th.

(v) An induced cyclonic circulation was observed over south Pakistan on 8th.

(vi) A cyclonic circulation, which developed over south Pakistan and adjoining west Rajasthan on 24th evening, moved over north Rajasthan and adjoining Haryana on 26th, where it became less marked by the same evening.

(vii) A trough in mid and upper tropospheric westerlies moved away eastwards across Pakistan and north India between 3rd and 9th evening and another across Pakistan, northwest and central India between 20th and 25th.

Northeast India was affected by the following systems :

(viii) The lower tropospheric cyclonic circulation/trough which lay over Sub-Himalayan West Bengal and Sikkim and neighbourhood on the last day of the previous month, moved over Assam and Meghalaya on 3rd, where it became less marked on 5th.

(ix) Another lower tropospheric cyclonic circulation/trough which lay over Sub-Himalayan West Bengal and Sikkim on 7th, was observed over Gangetic West Bengal and adjoining Bihar Plateau on 9th. It persisted there till 14th and became unimportant by next day.

(x) A cyclonic circulation in the lower tropospheric levels lay over Bangla Desh and neighbourhood on 29th where it persisted on 30th.

3.2. Systems in easterlies

Following systems in easterlies were observed during the month :

(i) The seasonal wind discontinuity/trough at 0.9 km asl over the Peninsula was observed on most days during the month.

(ii) A cyclonic circulation upto mid-tropospheric levels which lay over south Tamil Nadu, Sri Lanka and adjoining southwest Bay on 22nd evening became unimportant there on 25th.

(iii) A cyclonic circulation in the lower tropospheric levels lay over Maldives and adjoining Lakshadweep on 23rd and another over southwest Bay and neighbourhood on 26th evening. The former one became unimportant there on 25th while the later one moved over extreme south Peninsula and neighbourhood on 28th, where it became less marked by next day.

Generally widespread rain or thundershowers occurred on 5 to 8 days in Andaman and Nicobar Islands, Assam and adjacent States and Kerala and on 2 to 3 days in Sub-Himalayan West Bengal and Sikkim and hills of west Uttar Pradesh during the month. Rain or thundershowers were also generally widespread on 4 to 6 days in Punjab, Himachal Pradesh and Jammu & Kashmir and on one day each in Rajasthan during the first fortnight of the month. They were scattered or isolated on 15 to 20 days over Assam and Meghalaya, Sub-Himalayan West Bengal and Sikkim, Tamil Nadu and south interior Karnataka, on 4 to 10

days in Arunachal Pradesh, Nagaland, Manipur, Mizoram and Tripura, Gangetic West Bengal, Orissa, Bihar Plateau, west Uttar Pradesh, Haryana, Himachal Pradesh, Jammu & Kashmir, west Rajasthan, Madhya Pradesh, Vidarbha, Telangana, Rayalaseema, north interior Karnataka and Kerala and on a couple of days elsewhere outside Saurashtra and Kutch where weather was mainly dry during the month.

3.3. Rainfall during the month

It was excess in Assam and adjacent States, west Uttar Pradesh, Punjab, Rajasthan, west Madhya Pradesh, Gujarat region and Marathwada; normal in Haryana, Himachal Pradesh, Madhya Maharashtra, Vidarbha and Karnataka; deficient in Andaman and Nicobar Islands, Gangetic West Bengal, Bihar, Jammu & Kashmir, east Madhya Pradesh, Telangana, Rayalaseema, Tamil Nadu and Kerala and scanty over the rest of the country.

Significant amounts (cm) of rainfall were:

- 1st Mangalore AP 5,
- 2nd Coonoor 10, Punalur 7, Tuticorin 6, Kodaikanal 5,
- 5th Shirpur 5,
- 6th Narsampet 8, Kodaikanal 7, Quilon 5,
- 7th Thodupuzha 5,
- 8th Cannanore, Trivandrum, AP 7 each,
- 10th Quazigund 5,
- 11th Pasighat, Cherrapunji 9 each, Silchar 5,
- 12th Tumkur 6,
- 13th Silchar 6,
- 14th Cherrapunji, Silchar 6 each,
- 15th Chaparmukh 5,
- 16th Tadong 9, Gangtok, Pasighat 6 each,
- 17th Mysore 5,
- 23rd Tezpur 5,
- 24th Cherrapunji 21,
- 25th Cherrapunji 21, Car Nicobar, Pashighat 6 each,
- 26th Cherrapunji 13, Parli 8, Palghat, Polavaram 6 each, Pasighat, Chintalapudi 5 each,
- 27th North Lakhimpur 6,
- 28th Polavaram 5,
- 29th Bhagalpur 6, Calcutta AP 5.

3.4. Temperature

Day temperatures were generally below normal in Assam and Meghalaya and Nagaland, Manipur, Mizoram and Tripura during the month. They were also below normal in hills of west Uttar Pradesh, Haryana, Punjab, Himachal Pradesh, Jammu & Kashmir and west Rajasthan, Interior Maharashtra in the first fortnight being appreciably so on a couple of days. They were generally above normal in the rest of India outside east Rajasthan, Gujarat State and Konkan and Goa during the month and in hills of west Uttar Pradesh, Haryana, Punjab, Himachal Pradesh, Jammu & Kashmir, west Rajasthan and

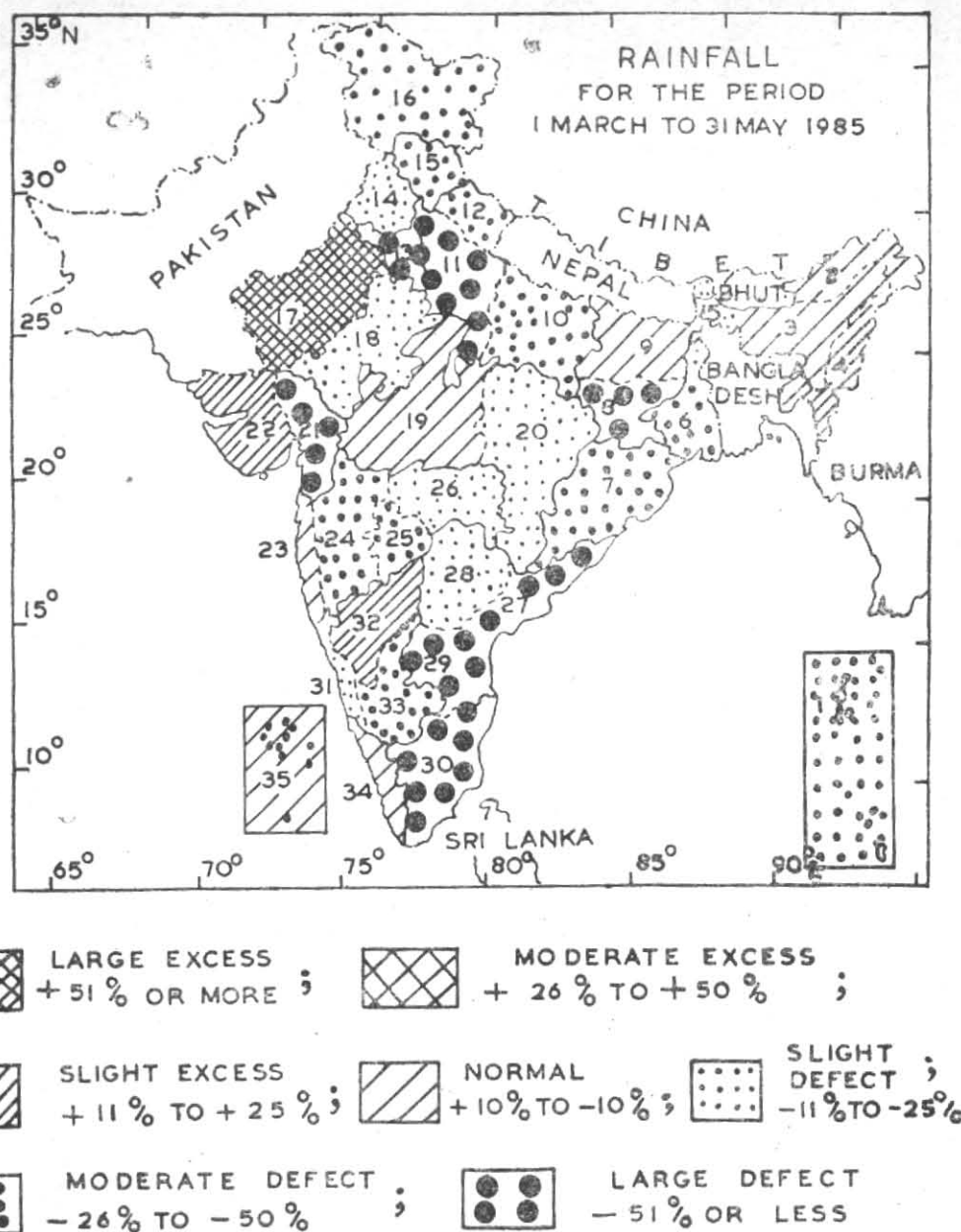


Fig. 2

interior Maharashtra during the second fortnight being appreciably so on 6 to 9 days in Jammu & Kashmir, coastal Andhra Pradesh, Telangana and Tamil Nadu; on 2 to 4 days in Bihar, Uttar Pradesh, Haryana, Punjab, Himachal Pradesh, west Rajasthan and Rayalaseema.

4. May

During the month two cyclonic storms developed, one in the Bay of Bengal and the other in the Arabian Sea. The former one left a trail of devastation in coastal Bangla Desh. Tracks of these storms are given in Fig. 1.

4.1. Cyclonic storms

(i) A cyclonic circulation in the lower tropospheric levels was observed over southeast and adjoining east

central Bay and north Andaman Sea on 18th. Under its influence a depression developed over central Bay on 22nd, which lay centred at 0300 GMT near Lat. 15.5 deg. N and Long. 89.8 deg. E. Moving northwards it intensified into a cyclonic storm in the evening of 23rd and lay centred at 1200 GMT near 17.6 deg. N, 87.5 deg. E. Thereafter, it moved north-northeast to northeastwards and further intensified into a hurricane before crossing Bangla Desh coast. It crossed Bangla Desh coast near Hatia around 2200 GMT of 24th. It weakened into a well marked low pressure area over Assam and Meghalaya by the evening of 25th.

This system caused widespread rainfall over Assam and adjacent States and Gangetic West Bengal on one day each. According to CWC report rivers *Longai* and *Shingla*, tributaries of river *Barak* were in floods on

26th and 27th May. 9 villages in Karimganj district were affected by floods. Also rivers *Juri*, *Gumti* and *Manu* in Tripura were also in floods on 27th. It left a trail of devastation in coastal Bangla Desh.

(ii) A low pressure area, which developed over east central and adjoining west central Arabian Sea on 27th evening, concentrated into a depression over east central Arabian Sea on 28th and lay centred at 0300 GMT near Lat. 15.0 deg. N, Long. 67.0 deg. E. Moving northwards it intensified into a cyclonic storm on 29th afternoon and lay centred at 1200 GMT near Lat. 18.0 deg. N, Long. 68.0 deg. E. Thereafter, it moved north to northwestwards and weakened into a low pressure area over north Arabian Sea on 31st morning, which became less marked by the evening. Under its influence southwest monsoon advanced over Kerala on 28th and over coastal and south interior Karnataka on 30th. Significant amounts (cm) of rainfall were : Alleppey 16, Kasargode, Cannanore 14 each, Kayamkulam 13, Bantwal 12, Mangalore 11, Kottayam, Puttur 7 each on 28th; Vayittiri 13, NAS Cochin 8, Bantwal 7 on 29th.

4.2. Systems in easterlies

The following systems in easterlies affected Peninsula and neighbourhood :

(i) The wind discontinuity at 0.9 km asl over the Peninsula was seen on most days during the first fortnight. Also a wind discontinuity in the same level extending from northwest Madhya Pradesh and adjoining plains of west Uttar Pradesh to Assam and Meghalaya was seen on 2nd and 6th.

(ii) A lower level cyclonic circulation lay over south Tamil Nadu and adjoining Kerala on 6th. It became less marked over Lakshadweep and neighbourhood on 9th evening.

The following cyclonic circulations in the lower tropospheric levels affected south Peninsula :

(iii) Over Kerala and adjoining south Tamil Nadu on 10th, became unimportant there on 11th and another which lay over Maldives and adjoining Lakshadweep on 12th, became less marked on 15th.

(iv) A cyclonic circulation lay over southwest Bay and adjoining south Tamil Nadu and Sri Lanka on 17th. It became less marked over Lakshadweep on 21st. Another cyclonic circulation, which lay over the same area on 20th evening, became less marked there on 22nd.

(v) A well marked low pressure area which lay over southeast Bay on 28th, persisted there on 31st.

4.3. Systems in westerlies

(i) The western disturbance of the last month moved away eastwards across Western Himalayas by 4th. Nine more western disturbances affected Western Himalayas and Pakistan and neighbourhood during the month.

(ii) A cyclonic circulation in the lower levels developed over northwest Rajasthan and adjoining

Pakistan on 10th. It became less marked there by 11th evening.

(iii) A cyclonic circulation in the lower tropospheric levels, which lay over central Pakistan on 24th, moved eastwards and became less marked over Bihar plains and neighbourhood on 28th.

Northeast India and neighbourhood was affected by the following systems in the lower tropospheric levels :

(iv) The cyclonic circulation, which lay over Bangla Desh and neighbourhood on 29th of April, became less marked there on 2nd.

(v) A cyclonic circulation was observed over Bihar plains from 5th to 8th.

(vi) Another cyclonic circulation was observed over west Madhya Pradesh from 8th to 11th. It became less marked over northeast Madhya Pradesh and neighbourhood on 12th.

(vii) A cyclonic circulation, which lay over Bihar Plateau and neighbourhood on 10th, moved over Gangetic West Bengal and neighbourhood on 11th, where it became less marked on 13th.

(viii) Two cyclonic circulations developed over Bihar plains, one on 14th, and the other on 16th, both became less marked over Assam and Meghalaya, the former one on 16th and the later one on 20th.

(ix) A cyclonic circulation, which lay over north Madhya Pradesh and neighbourhood on 17th became less marked over west Madhya Pradesh and adjoining Vidarbha on 19th evening.

Southwest monsoon advanced over Kerala on 28th and over coastal and south interior Karnataka on 30th. Monsoon was active in Kerala on 28th.

Rain or thundershowers were generally widespread on 6 to 13 days in Andaman and Nicobar Islands, Assam and adjacent States and Jammu & Kashmir, on 2 to 5 days in Gangetic West Bengal, Punjab and Himachal Pradesh during the month. They were so on 9 to 10 days in Kerala and Lakshadweep, on 1 to 4 days in Bihar, hills of west Uttar Pradesh, Saurashtra and Kutch, Konkan and Goa, Vidarbha and Karnataka during the second fortnight of the month. Scattered or isolated thundershowers occurred on many days in West Bengal and Sikkim, Bihar and Orissa. In the Peninsula, Andhra Pradesh, Tamil Nadu and interior Karnataka and in central India, east Madhya Pradesh received on several days rain or thundershowers of scattered or isolated nature.

4.4. Rainfall during the month

It was excess in Bihar plains, Jammu & Kashmir, west Rajasthan, east Madhya Pradesh, Saurashtra and Kutch and Vidarbha; normal in Nagaland, Manipur, Mizoram and Tripura, West Bengal and Sikkim, Orissa, east Uttar Pradesh, Punjab, west Madhya Pradesh, Konkan and Goa, Telangana, north interior Karnataka, Kerala and Lakshadweep; deficient in Andaman and Nicobar Islands, Arunachal Pradesh, Assam and Meghalaya, Bihar Plateau, hills of west Uttar Pradesh, Himachal Pradesh, east Rajasthan,

Madhya Maharashtra, Marathwada, Tamil Nadu, coastal and south interior Karnataka. It was scanty over the rest of the country.

Significant amounts (cm) of rainfall were :

- | | | | |
|------|---|------|---|
| 2nd | Quazigund, Batota 6 each, Kalimpong, Kukernag, Askot 5 each, | 22nd | Mansihari 6, Purnea 5, |
| 3rd | Tezpur 6, Gorakhpur 5, | 23rd | Nancowry 5, |
| 4th | Shillong 8, Anandapur (Orissa) 5, | 24th | Alleppey, Cochin AP 13 each, Sherthala 8, Kondul, Kayamkulam 5 each, |
| 8th | kalimpong 5, | 25th | Kondul Nancowry 6 each, Dehra Dun Kayamkulam 5 each, |
| 9th | Askot 5, | 26th | Trivandrum AP 9, Kottayam, Shillong 6 each, |
| 10th | Supaul 5, | 27th | Alleppey, Kayamkulam 8 each, Trivandrum, Cochin AP, Agartala AP 6 each, Kozhikode, Sherthala 5 each, |
| 11th | Berhampore 7, | 28th | Cherrapunji 21, Kayamkulam 15, Kasargode 14, Port Blair 6, |
| 12th | Cooch Behar 10, | 29th | Cherrapunji 26, Cochin AP 9, Pasighat, Imphal 8 each, Cooch Behar and Mangalore 7 each, Tadong, Gangtok 5 each, |
| 13th | Car Nicobar 13, Nancowry 5, | 30th | Cherrapunji 20, Gangtok 9, Tadong 5, |
| 14th | Kelimpong, 7, Kottayam 6, Coonoor 5, | 31st | Dhubri 13, Car Nicobar, Jodhpur city, Chikodi 9 each, Pasighat 8, Cooch Behar 7, K.R. Sagar 5. |
| 15th | Muzaffarpur 7, Tezpur, Kalimpong 6 each, | | |
| 16th | Nagamangala 7, Kothagudum 6, K.R. Sagar 5, | | |
| 18th | Contai, Alleppey 5 each | | |
| 19th | Punalur 7, Car Nicobar, Trivandrum AP 6 each, | | |
| 20th | Port Blair 7, Dhubri, Trivandrum AP, Parli, Puttur 5 each, | | |
| 21st | Malda 8, Chitradurga 7, Udupi 6, Chamoli, Doddaballapur 5 each, | | |

4.5. Temperature

Day temperatures were generally above normal in Uttar Pradesh, Northwest India, Madhya Pradesh, Gujarat State and Peninsular India; being appreciably so on a couple of days during the month. However, they fell below normal in interior Karnataka and Kerala in the last week of the month. They were generally below normal upto 26th of the month in West Bengal and Sikkim and Bihar.