

All India Coordinated Research Project on Agrometeorology

CRIDA, Santoshnagar, Hyderabad – 500 059

Weekly Crop Weather Information during 04th to 10th June 2019

The crop weather conditions in different states as reported by the cooperating centres of AICRPAM

Maharashtra

Vidarbha Region

Dry and very hot weather prevailed and heat wave conditions observed at some places with pre-monsoon rains prevailed at some places in Vidarbha region of Maharashtra state during this week. Maximum temperature across the week was 2.5 °C above normal. Minimum temperature across the week was 0.5 °C below normal. Agriculture operations like summer ploughing (tractor) operations are underway in current fallow fields. Preparatory tillage/cleaning campaign are underway in ensuing kharif fields. Spreading and incorporation of FYM/compost in fields is in progress. Maintenance work of farm pond, contour / drainage lines in fields are being carried out. Nursery sowing of kharif vegetables is being considered. Remaining harvests of summer crops (groundnut/maize), vegetables, mango are in progress. Summer groundnut/summer maize/summer vegetables are harvested. Musk melon/sapota/mango/water melon/Hasta bahar acid lime/cluster bean/okra at harvest stage as per maturity of fruits. No major pests and diseases were noticed.

Marathwada Region

Light rainfall received in scattered places in Marathwada region of Maharashtra state during this week. Maximum temperature was range from 38.5 to 42.6 °C and the minimum temperature was ranges from 21.9 to 27.4 °C. Agriculture operations like land preparation was complete for kharif crop sowing is in progress. Vegetable crops are at vegetative to fruit development stage. No major pests and diseases were noticed.

Konkan Region

Light rainfall received in Konkan region of Maharashtra state during this week. The maximum and minimum temperature ranged from 33.2 to 34.5°C and 22.5 to 25.0 °C, respectively. Agriculture operations like land preparation, sowing of rice nursery, irrigation to newly planted fruit crop at an interval 4 to 5 days and irrigation to vegetables & fruit crop nursery crops are in progress. No major pests and diseases were noticed.

Andhra Pradesh

Mainly dry weather and rain fall received at isolated places of coastal AP and Rayalaseema region of Andhra Pradesh during the week. Agriculture operations like summer ploughing are in progress. Summer groundnut is at flowering stage and sugarcane is at tillering stage. Low intensity of sucking pest in groundnut and wooly aphid and early shoot borer in sugarcane crops were noticed.

Assam

Light rainfall received in Assam state during this week. Daily average maximum temperature was 32.2°C which was 0.5°C above normal and the average daily minimum temperature was 24.9°C which was 0.9 °C above normal for the week. Agriculture operations like land preparation of sali rice, intercultural operation of summer vegetables and sugarcane crops are in progress. Summer vegetables: Flowering stage/Fruiting stage, chili (Bhotjolokia): Fruiting stage. No major pests and diseases were noticed.

Chhattisgarh

Light rainfall received in Chhattisgarh state during this week. Agriculture operations like intercultural operations in vegetables, leafy vegetables sowing and preparation of nursery for other vegetables are going on, need based application of insecticides in vegetables and rice against stem borer and other pests are in progress. Brinjal and tomato are in fruiting and picking stage. Solanaceous vegetables are at flowering/fruiting/picking stage while crucifers are at head formation stage. Low intensity of sucking pest, hopper in tomato, beans, cauliflower, cabbage cowpea and brinjal crops was noticed.

Uttar Pradesh

Eastern Uttar Pradesh

Dry weather prevailed in Eastern Uttar Pradesh region of Uttar Pradesh state during this week. Agriculture operations like summer ploughing, irrigation in standing crops, nursery raising of paddy crops are in progress. Seedling of rice nursery just emerged, spring sugarcane is in vegetative stage, moong, urd just matured, dhaincha, sunhemp just germinated stage. Low intensity of yellow vein mosaic in moong and fruit borer in brinjal was noticed.

Western Uttar Pradesh

Dry weather prevailed in Western Uttar Pradesh region of Uttar Pradesh state during this week. Agriculture operations like nursery sowing of paddy, maize, pigeonpea, harvesting of zaid urd, zaid moong, plucking, marketing and nursery initiation in brinjal / chillies and cutting, marketing leafy vegetable crops are in progress. Zaid Urd and

moong are at dough/maturity stage and vegetables are fruiting stage. Low intensity of thrips in urd moong was noticed.

Gujarat

Dry weather prevailed in Gujarat state during this week. The actual maximum temperature is 2.3 °C and actual minimum temperature is 0.3 °C higher as compared to their normal values. Agriculture operations like irrigation to all summer crops as and when required. Weeding and interculturing in summer crop. Harvest mature crop and store in safe place are in progress. Most of the summer crops are in reproductive growth stage. Pearl millet is in maturity/harvesting stage. No major pests and diseases were noticed.

Haryana

Dry weather prevailed in Haryana state during this week. Agriculture operations like sowing of cotton is in progress and early sown crop is in early vegetative stage. The field preparation and sowing of pigeonpea and green gram crops are in progress. Cotton: Early vegetative, sowing Pigeon pea: Sowing Rice: Nursery raising stage. No major pests and diseases were noticed.

Himachal Pradesh

Light rainfall received in Himachal Pradesh state during this week. The maximum temperature ranged between 32.0 to 35.0°C and minimum temperature ranged between 17.5 to 23.5°C which was almost above normal by 0.7 to 3.6°C and 0.1 to 2.9 °C, respectively. Agriculture operations like arrangement of fodder for their cattle and dairy animals. farmers are preparing their field for kharif crops are in progress. Rice is in leaf development stage and summer vegetables are in vegetative stage. No major pests and diseases were noticed.

Kerala

Light rainfall received in Kerala state during the week. Maximum temperature ranges from 32.2 to 35.4 °C and minimum temperature ranges from 21.8 to 25.3 °C. Agricultural operations like land preparation for paddy and vegetable crop is in progress. arecanut is in flowering stage and banana is in fruiting stage. Moderate intensity of bud rot in coconut, quick wilt in pepper, mealy bugs in coconut, fruit rot in nutmeg and pepper were noticed.

Jammu & Kashmir

Mainly dry weather prevailed in Jammu region of Jammu & Kashmir state during this week. The maximum temperature remained above normal 1.0 to 3.0 °C and was in the range of 38.8 to 44.4 °C and minimum temperatures ranged from 22.4 to 29.8 °C.

Agriculture operations like sowing of maize in intermediate and temperate region. Direct sowing of rice crop. Nursery raising of timely transplanted basmati rice. Land preparation in fallow fields. Picking of matured pod from summer moong and mash crop is in progress. Plant protection measures in vegetable and horticulture crops. Incorporation of FYM in fallow field and incorporation of green manuring are in progress. Early transplanted Paddy crop is at nursery sowing. Summer pulse is at pod formation stage. Summer fodder is at peak vegetative stage. Maize is at six leaf stage in intermediate and temperate zone. Late sown maize is at emergence stage in intermediate and temperate zone. Cucurbits, Tomato, Brinjal and Summer okra is at fruiting stage. Low intensity of downy mildew cucurbits crops were noticed.

Karnataka

North Karnataka

Light rainfall received in isolated places in Northern region of Karnataka state during this week. Agriculture operations like plant protection in horticultural crops, land preparation for kharif sowing are in progress. Light intensity of leaf curl in tomato, root grub in sugarcane and leaf miner in citrus was noticed.

South Karnataka

Light rainfall received in Southern region of Karnataka state during this week. State actual rainfall was 21.9 mm as against the normal of 29.30 mm with (-) 25.4 deviation. Whereas SIK received 31.8 mm of rainfall as against the normal of 23.1 mm leading to (-) 37.6 % deviation. Agriculture operations like summer ploughing, FYM and tank silt application in field. ploughing across the slope will make insitu soil moisture conservation take up land leveling so that more rain water is conserved in the soil are in progress. Kharif crops are in germination stage and summer crops are at harvesting stage. Light intensity of fruit fly in mango was noticed.

Odisha

Light rainfall received in Odisha state during this week. Agriculture operations like Summer ploughing Sowing of green manuring crop Land preparation for direct seeded rice Land preparation for nursery sowing of rice. Post- harvesting stage of summer rice. Harvesting of maize. Harvesting and post-harvesting of ragi. Post -Harvesting of medium pigeon pea. Intercultural operation, irrigation and plant protection of Sugarcane and irrigation. Plant protection and irrigation of chrysanthemum and marigold. Post harvesting of rabi sunflower. Irrigation and plant protection of tube rose, jasmine, marigold. Harvesting of summer groundnut, sunflower and summer pulses. Intercultural operation and irrigation of Jute. Land preparation and sowing of kharif maize, Intercultural operation and irrigation of zinger and turmeric Intercultural operation and irrigation of colocasia crops are in progress. Vegetative stage of sugarcane Maturity to harvesting stage of summer ragi Maturity to harvesting stage of late planted summer

sunflower Harvesting stage of brinjal, okra, cucurbits, cowpea Vegetative stage of colocasia Seedling stage of turmeric, zinger and yam Maturity to harvesting stage of summer pulses Maturity to harvesting stage of late planted summer groundnut Flowering stage of tuberose Flowering stage of jasmine and marigold Vegetative stage of jute. No major pests and diseases were noticed.

Punjab

Mainly dry weather prevailed in Punjab state during this week. The maximum temperature during the week ranged between 40.6 to 44.6 °C and minimum temperature ranged between 24.8 to 28.6 °C. Agricultural operations like sowing of rice nursery completed. irrigate sugarcane at 10-12 days interval and cotton sown are in progress. Cotton in vegetative stage.. No major pests and diseases were noticed.

Rajasthan

Severe heat waves prevailed in the entire Rajasthan state during this week. Dholpur remained hottest in the state with a maximum temperature of 48.0 °C. The maximum temperature range from 41.6 to 43.8°C with mean value of 42.8°C which was 4.3 °C above the normal value. The minimum temperature range from 24.0 to 29.1 °C with mean value of 27.2°C which was 1.0°C below the normal. Agricultural operations like irrigation in forage crops and summer ploughing are in progress. Summer maize is at tasseling stage. No major pests and diseases were noticed.

Tamil Nadu

Light rainfall received in Tamil Nadu state during this week. Maximum temperature is 39.5°C (normal 37.6°C) and minimum temperature is 26.8°C (normal 24.5°C). Agricultural operations like plant protection measures for controlling pests and diseases are in progress. Cotton is in boll development stage. Sorghum is in flowering to grain formation stage. Banana is in vegetative to fruit development stage. Rice is in early tillering stage. Citrus is in fruiting stage. Moderate **Intensity** of leaf hopper, whitefly in cotton, thrips in rice and canker, scab in citrus was noticed.

Uttarakhand

Light rainfall received in Uttarakhand state during the week. Maximum temperature reaches 31.0 °C and minimum temperature reaches 18.6°C. Agricultural operation Sowing of finger millet, amaranth, soybean, horse gram, black gram. Transplanting of paddy (Irrigated). Hoeing and weeding in barnyard millet, pigeon pea crops (Mid to high altitude).Transplanting of tomato, capsicum in mid to high hills are in progress. Maturity in wheat. Bulb growth/development on onion, garlic. Vegetative growth on rainfed potatoes. flowering/fruiting on tomato, cucurbits. fruit maturity of

Peach, Plum, Apricot and fruit development in Apple. No major pests and diseases were noticed.

West Bengal

Light rainfall received in West Bengal state during the week. The maximum temperature ranged between 32.0 to 36.0 °C and minimum temperature ranged between 24.5 to 27.8 °C. Agricultural operation like Aman rice: Land preparation and sowing for early variety. Jute: Intercultural operation. Moong and sesame: Harvesting started. Mango: Harvesting started. Intercultural and harvesting operations for vegetables like brinjal, tomato, bitter gourd are in progress. Jute: Vegetative and branching stage. Sesame: Maturity stage, Summer vegetables and all gourds: Vegetative and fruiting stage. Mango: Harvesting stage. Low intensity of caterpillar in jute was noticed.

Weather during 30th May to 05th June 2019

Significant Weather Features

Advance of southwest monsoon over south Andaman Sea:

- In association with further deepening of south westerlies and increase in rainfall over Andaman Islands, the southwest monsoon further advanced into southernmost parts of Maldives-Comorin area, some more parts of Southwest and Southeast Bay of Bengal, remaining parts of Andaman sea and Andaman Islands and some parts of Eastcentral Bay of Bengal on 30th May 2019. In view of the deepening of cross equatorial flow upto the southern parts of South Arabian sea and further to the north over Bay of Bengal and persistent cloudiness over these regions, the Southwest Monsoon has further advanced into southern most parts of Arabian sea, some more parts of Maldives-Comorin area, Southwest, Southeast and East central Bay of Bengal on 3rd June 2019. In view of the strengthening and deepening of cross equatorial flow and the development of an East-West shear zone in the mid tropospheric levels across South Arabian Sea and Maldives-Comorin area, the Southwest Monsoon has further advanced into some more parts of South Arabian sea, most parts of Maldives-Comorin area and some more parts of Southwest Bay of Bengal on 5th June 2019.
- The Northern Limit of Monsoon (NLM) to passed through Lat. 5°N/Long. 75°E, Lat. 5°N/Long. 80°E, Lat. 10°N/Long. 87°E, Lat. 13°N/Long. 90°E and Lat. 16°N/Long. 94.5°E during 30th May to 2nd June 2019. It passed through Lat. 6°N/Long. 60°E, Lat. 6°N/Long. 70°E, Lat. 6°N/Long. 81°E, Lat. 10°N/Long. 86°E, Lat. 13°N/Long. 89°E and Lat. 17°N/Long. 95°E on 3rd and 4th June 2019 and it passed through Lat. 7°N/Long. 60°E, Lat. 7°N/Long. 70°E, Katunayake (Lat. 7°N/Long. 80°E), Lat. 11°N/Long. 87°E, Lat. 13°N/Long. 89°E and Lat. 17°N/Long. 95°E towards the end of the week, on 5th June 2019. (Fig-1)

Thunderstorm Activity:

- Intense thunderstorm activity had been reported from northeast, east and south peninsular India during the week. Isolated thunderstorm activity had been reported from parts of west, central and northwest India also during the week.

Heavy Rainfall Activity:

- Heavy to Very heavy rain with extremely heavy falls has occurred at isolated places over Assam & Meghalaya on one day during the week.

- Heavy to Very heavy rainfall has occurred at isolated places over Nagaland, Manipur, Mizoram and Tripura one two days and over Assam & Meghalaya one day during the week.
- Heavy rainfall has occurred at isolated places over Kerala and Mahe and Tamil Nadu, Puducherry and Karaikal on 3to 4 days ; over Nagaland, Manipur, Mizoram and Tripura, Rayalaseema, Telangana and Odisha on two days each; over Jharkhand, Andaman & Nicobar islands, Coastal Andhra Pradesh & Yanam and South Interior Karnataka on one day each during the week.

Maximum Temperature & Heat wave:

- Heat Wave to Severe Heat Wave conditions had been reported at most places over West Rajasthan on one day; at some parts over Madhya Maharashtra and West Rajasthan on one day each; at isolated places over south Uttar Pradesh one or two days during the week.
- Heat wave conditions at many places with Severe heat wave conditions at isolated places had been reported over East Madhya Pradesh on 3 days and over Vidarbha on one day; Heat wave conditions at some parts with severe heat wave conditions at isolated places had been reported over West Rajasthan on 3 days, over East Uttar Pradesh on two days and over East Rajasthan on one day during the week. Weather Forecasting Centre.
- Heat wave conditions had been reported at many places over Vidarbha on 4 days , over Punjab and Haryana, Chandigarh & Delhi on two days each and over East Rajasthan on one day; Heat wave conditions had been reported at some parts over West Madhya Pradesh on 3 days, over East Madhya Pradesh, Marathwada and East Rajasthan on two days and over Madhya Maharashtra and Haryana on one day each; Heat wave conditions had been reported at isolated places over East Rajasthan on 4 days, over West Madhya Pradesh and Jharkhand on two days each and over south Uttar Pradesh, Gujarat State, East Madhya Pradesh, Telangana, Himachal Pradesh, North Interior Karnataka, Jammu & Kashmir, Marathwada, Chhattisgarh and Odisha on one day each during the week.
- The highest maximum temperature of 50.8°C had been recorded at Churu (West Rajasthan) on 1st June 2019 over the plains of the country during the week.

Meteorological Analysis

- Last week's trough from East Madhya Pradesh to North Interior Karnataka ran from central parts of south Madhya Pradesh to North Interior Karnataka across west Vidarbha, Marathwada, and Madhya Maharashtra extending up to 0.9 km above mean sea level on 30th May 2019 and has become less marked on 31st May 2019.
- Last week's north-south trough roughly along Longitude 91°E to the north of Latitude 25°N at 2.1 km above mean sea level has become less marked on 30th May 2019.
- Last week's east-west trough extending upto 0.9 km above mean sea level ran from the cyclonic circulation over southwest Uttar Pradesh and neighbourhood to Manipur across East Uttar Pradesh, Jharkhand, Gangetic West Bengal and Bangladesh on 30th May 2019. Last week's cyclonic circulation over East Uttar Pradesh and neighbourhood extending upto 0.9 km above mean sea level has merged with this trough on 30th May 2019. This east-west trough has become less marked on 31st May 2019.
- Last week's cyclonic circulation at 3.1 km above mean sea level over Westcentral and adjoining Northwest Bay of Bengal off north Andhra Pradesh- South Odisha coasts has become less marked 30th May 2019.
- Last week's cyclonic circulation over south Gujarat and neighbourhood between 3.1 & 4.5 km above mean sea level has become less marked on 30th May 2019.
- Last week's cyclonic circulation extending upto 0.9 km above mean sea level over West Rajasthan and adjoining Pakistan lay over northwest Rajasthan and neighbourhood on 30th May 2019 and has become less marked on 31st May 2019.
- A northeast-southwest oriented shear zone between 3.1 and 4.5 km above mean sea level ran from Gulf of Martaban to southern parts of Comorin-Maldives area and last week's cyclonic circulation over Andaman Sea and adjoining Malay Peninsula between 3.1 and 3.6 km above mean sea level has merged with the above shear zone on 30th May 2019. The shear zone with the same orientation between the same levels continued to persist on 31st May 2019 as well as on 1st June 2019 and has become less marked on 2nd June 2019.
- A low pressure area lay over Southwest Arabian Sea off Somalia coast with an associated cyclonic circulation extending upto 5.8 km above mean sea level on 30th May 2019 and it has become unimportant on 31st May 2019.

- A cyclonic circulation extending up 0.9 km above mean sea level lay over southwest Uttar Pradesh and neighbourhood on 30th May 2019. It lay over northeast Uttar Pradesh & neighbourhood extending upto 1.5 km above mean sea level with a trough running from this cyclonic circulation to North Interior Karnataka across East Madhya Pradesh, Vidarbha and Marathwada at 1.5 km above mean sea level 31st May 2019 and 1st June 2019 and both the systems have become less marked on 2nd June 2019.
- A Western Disturbance as a trough in midtropospheric westerlies with its axis at 3.1 km above mean sea level ran roughly along Longitude 55°E to the north of Latitude 32°N on 30th May 2019. It lay as a cyclonic circulation at 3.1 km above mean sea level over Iran & neighbourhood 31st May 2019; It lay as a cyclonic circulation at 3.1 km above mean sea level over north Afghanistan & adjoining Pakistan on 1st June 2019 and has moved away east-northeastwards on 2nd June 2019.
- A north-south trough ran from Rayalaseema to south Tamilnadu at 0.9 km above mean sea level on 30th May 2019 and has become less marked on 31st May 2019.
- A cyclonic circulation between 1.5 and 2.1 km above mean sea level lay over south Chhattisgarh and adjoining Odisha on 30th May 2019 and has become less marked on 31st May 2019.
- A cyclonic circulation between 3.1 and 3.6 km above mean sea level lay over south Pakistan and adjoining areas of Kutch and West Rajasthan on 30th May 2019. It lay over southeast Rajasthan and adjoining Gujarat Region between 3.1 and 4.5 km above mean sea level on 31st May 2019. It persisted over the same region and was seen between 3.1 & 3.6 km above mean sea level on 1st June 2019 and has become less marked on 2nd June 2019.
- An east-west trough ran from Jharkhand to Manipur across Gangetic West Bengal and south Assam at 0.9 km above mean sea level on 31st May 2019 and it has merged with the east-west trough from south Punjab to Manipur across Haryana, south Uttar Pradesh, Jharkhand and Gangetic West Bengal at 0.9 km above mean sea level on 1st June 2019.
- A trough in midtropospheric westerlies ran roughly along Longitude 91°E to the north of Latitude 21°N on 31st May 2019. It persisted along the same Longitude to the north of 21°N and was seen at 3.1 km above mean sea level on 1st June 2019 and has become less marked on 2nd June 2019.

- A cyclonic circulation lay between 1.5 and 2.1 km above mean sea level over Southeast Arabian Sea off Kerala Coast on 31st May 2019; it lay over Lakshadweep area at 1.5 km above mean sea level on 1st June 2019 and has become less marked on 2nd June 2019.
- An east-west trough ran from south Punjab to Manipur across Haryana, south Uttar Pradesh, Jharkhand and Gangetic West Bengal at 0.9 km above mean sea level on 1st June 2019. It ran from the cyclonic circulation over northwest Rajasthan & neighbourhood extending to Manipur across south Uttar Pradesh, Jharkhand and Gangetic West Bengal at 0.9 km above mean sea level on 2nd ; it ran from the cyclonic circulation over northwest Rajasthan & neighbourhood to Mizoram across north Madhya Pradesh, north Chhattisgarh, Jharkhand and West Bengal on 3rd; It ran from the cyclonic circulation over northeast Rajasthan and neighbourhood to Mizoram across south Uttar Pradesh, Bihar, West Bengal, Assam and Meghalaya and extends upto 0.9 km above mean sea level on 4th; it ran from the cyclonic circulation over West Uttar Pradesh & adjoining northwest Madhya Pradesh to Assam across southeast Uttar Pradesh, Jharkhand and West Bengal and extended upto 0.9 km above mean sea level on 5th May 2019.
- A cyclonic circulation lay over north Gangetic West Bengal & adjoining Bangladesh at 1.5 km above mean sea level on 1st June 2019 and has become less marked on 2nd June 2019.
- A Western Disturbance as a cyclonic circulation at 3.1 km above mean sea level lay over West Iran & neighbourhood on 1st May 2019; It lay as a cyclonic circulation at 3.1 km above mean sea level over east Iran and neighbourhood on 2nd; It was seen as a trough at 5.8 km above mean sea level , roughly along Long. 64°E and north of Lat. 32°N on 3rd; it lay as a trough roughly along Long. 66°E and north of Lat. 32°N at 5.8 km above mean sea level on 4th; it continued to lay as a trough at 5.8 km above mean sea level, roughly along Long. 67°E and north of Lat. 32°N on 5th May 2019.
- A cyclonic circulation lay over north Coastal Andhra Pradesh & neighbourhood between 0.9 & 2.1 km above mean sea level on 1st June 2019 and has become less marked on 2nd June 2019.
- A cyclonic circulation lay over Southeast Bay of Bengal & neighbourhood between 2.1 & 5.8 km above mean sea level tilting southwestwards with height on 2nd May 2019; it lay over Southwest Bay of Bengal between 3.1 & 5.8 km above mean sea level tilting southwestwards with height on 3rd; it persisted over the same region and was seen between 3.1 & 3.6 km above mean sea level on 4th & 5th June 2019.

- A cyclonic circulation lay over Lakshadweep and adjoining Southeast Arabian Sea between 3.1 & 4.5 km above mean sea level on 2nd May 2019. It lay over Southeast Arabian sea & adjoining Lakshadweep area between 2.1 & 3.1 km above mean sea level on 3rd and has moved away westwards on 4th June 2019.
- A cyclonic circulation lay over northwest Rajasthan & neighbourhood and extended upto 1.5 km above mean sea level on 2nd May 2019. It lay over Haryana & adjoining northeast Rajasthan extending upto 1.5 km above mean sea level on 3rd; it lay over northeast Rajasthan and neighbourhood extending upto 1.5 km above mean sea level on 4th and over north Haryana & neighbourhood extending upto 0.9 km above mean sea level on 5th June 2019.
- A cyclonic circulation lay over Sub-Himalayan West Bengal & neighbourhood between 2.1 & 5.8 km above mean sea level on 2nd May 2019 and it has merged with the cyclonic circulation over Jharkhand and neighbourhood on 3rd June 2019.
- A cyclonic circulation between 3.6 km and 4.5 km above mean sea level lay over West Central Bay of Bengal off north Andhra Pradesh- south Odisha coasts on 3rd May 2019 and has become less marked on 4th June 2019.
- A cyclonic circulation extending upto 4.5 km above mean sea level lay over Bangladesh & adjoining West Bengal on 3rd May 2019. It lay over north Bangladesh & adjoining Sub-Himalayan West Bengal and Assam and extends upto 2.1 km above mean sea level with a trough aloft roughly along Long 90°E to the north of Lat. 24°N on 4th : both the systems have become less marked on 5th June 2019.
- A cyclonic circulation extending between 1.5 km & 2.1 km above mean sea level lay over Jharkhand and neighbourhood on 3rd May 2019. It lay over western parts of Bihar and neighbourhood at 1.5 km above mean sea level on 4th; it lay over Bihar & adjoining East Uttar Pradesh between 1.5 & 2.1 km above mean sea level on 5th June 2019.
- A trough of low at mean sea level lay over Southeast Arabian sea off Kerala-Karnataka coast on 3rd June 2019 and it persisted over the same region on 4th and 5th June 2019.
- A cyclonic circulation lay over Lakshadweep and neighbourhood at 5.8 km above mean sea level on 4th June 2019 and has become less marked on 5th June 2019.

- A cyclonic circulation lay over Malay Peninsula and neighbourhood between 3.1 and 4.5 km above mean sea level on 4th June 2019 and it persisted over the same region on 5th June 2019.
- A cyclonic circulation extending upto 2.1 km above mean sea level lay over central Pakistan and neighbourhood on 4th June 2019. It persisted over the same region and extended upto 1.5 km above mean sea level on 5th June 2019.
- An east-west shear zone between 3.1 & 4.5 km above mean sea level ran roughly along Lat. 7°N across Maldives-Comorin area on 5th June 2019.
- A cyclonic circulation extending upto 0.9 km above mean sea level lay over West Uttar Pradesh & adjoining northwest Madhya Pradesh on 5th June 2019.

Average rainfall during the week

The All India area weighted rainfall during the week 12.0 mm was 40 below normal (20.1 mm).

The subdivision-wise weekly rainfall distribution is presented in Fig.1. Rainfall was Large excess in 1, excess in 3 normal in 6, deficit in 8, Large deficit in 16 and no rain in 2 out of 36 meteorological sub-divisions.

Cumulative Seasonal rainfall (01st March to 31st May 2019)

The cumulative seasonal rainfall during 01st March to 31st May 2019 over the country as a whole was 99.0 mm which is 25% below normal rainfall of 131.5 mm.

The subdivision-wise seasonal rainfall distribution is presented in Fig. 2. Rainfall was Large excess in 1, excess in 3, normal in 9, deficit in 13 and L. deficit in 10 and no rain in 0 out of 36 meteorological sub-divisions.

State-wise distribution of rainfall in number of districts with large excess, excess, normal, deficient, large deficient and no rainfall during pre monsoon season (01st March to 31st May 2019)

In the country, 8% districts received large excess, 10% districts received excess and 20% districts normal rainfall during pre monsoon season so far. However, 30% districts received deficient, 26% districts received large deficient rainfall and 6% districts received no rainfall and 0 districts received no data. (Table-1).

Weekly rainfall departure (%) at different IMD subdivisions (2019)

During the week under report 1 Sub-divisions viz.; Jammu & Kashmir received large excess rainfall, 3 Sub-division viz.; Bihar, Odisha and Rayalaseema received excess rainfall, 6 Sub-divisions viz.; Jharkhand, Chhattisgarh, Telangana, North Interior Karnataka, South Interior Karnataka and Tamil Nadu & Puducherry received normal

rainfall and remaining 26 Sub-divisions received either deficit / large Bengal, deficit / no rainfall. (Table-2).



SUBDIVISION RAINFALL MAP

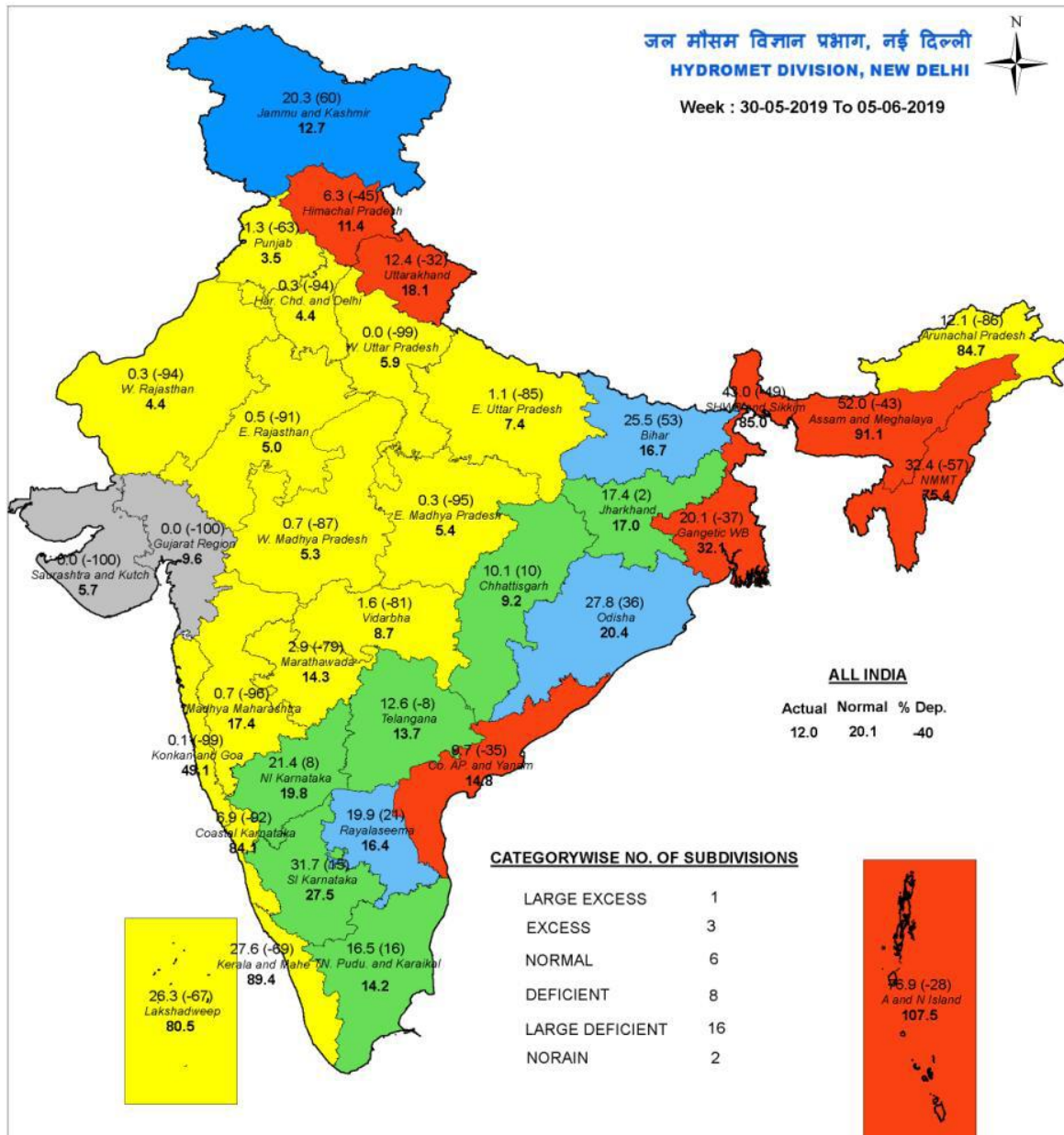
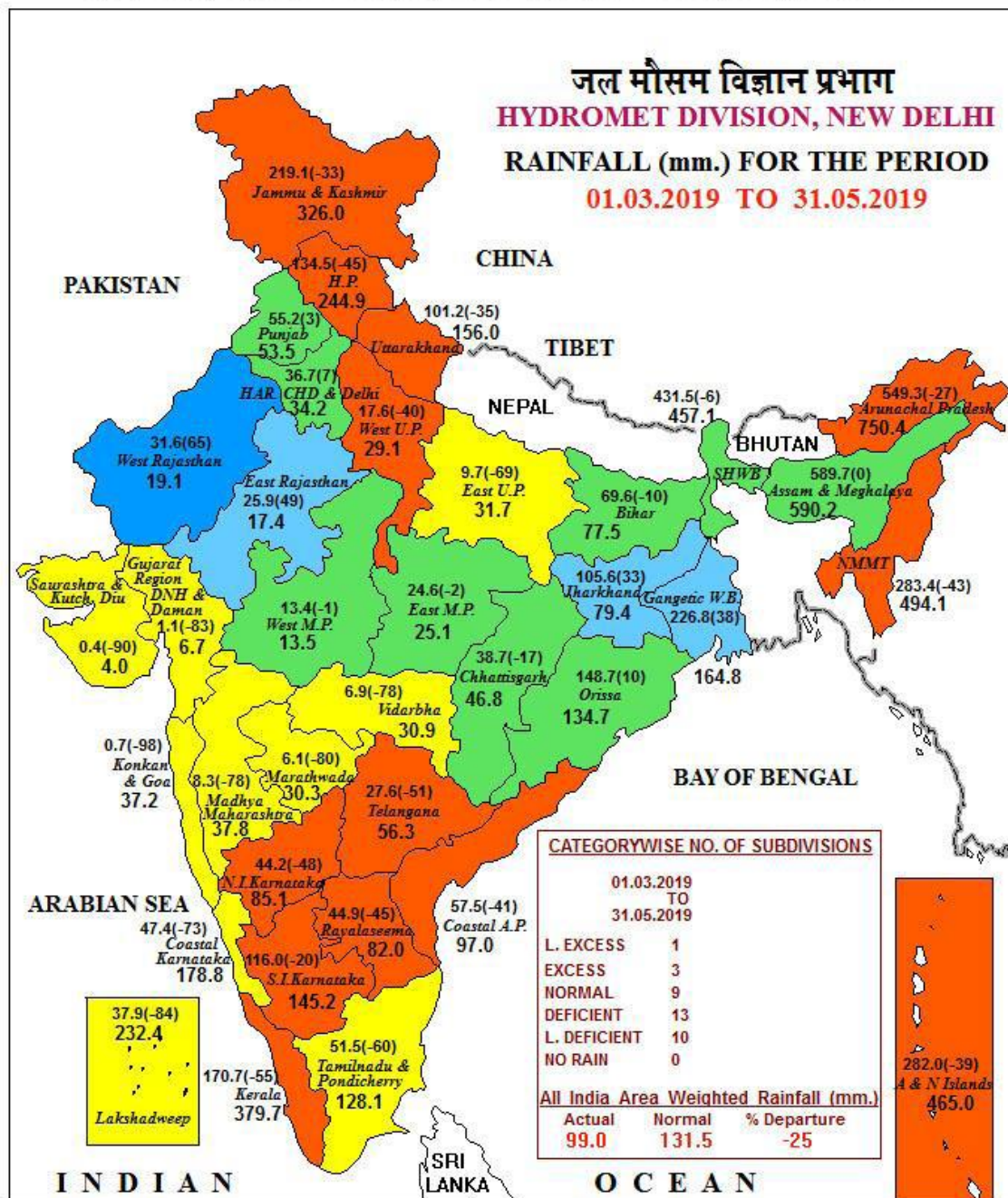


Fig-1

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT



LEGEND: ■ L. EXCESS (+60% OR MORE) ■ EXCESS (+20% TO +59%) ■ NORMAL (+19% TO -19%)
■ DEFICIENT (-20% TO -59%) ■ L. DEFICIENT (-60% TO -99%) ■ NO RAIN (-100%) NO DATA

NOTES:

[a] Rainfall figures are based on operational data.

[b] Small figures indicate actual rainfall (mm.), while bold figures indicate Normal rainfall (mm.)

Percentage Departures of Rainfall are shown in Brackets.

Fig-2

Table 1. State wise distribution of number of districts with large excess, excess, normal, deficient, large deficient, no rainfall and data inadequate shown (01. 03.2019 to 31.05.2019)

S.NO.	STATES	PERIOD FROM : 01. 03.2019 TO 31.05.2019							
		LE	E	N	D	LD	NR	ND	TOTAL
1.	A & N ISLAND (UT)	0	0	0	3	0	0	0	3
2.	ARUNACHAL PRADESH	0	1	4	7	0	0	4	16
3.	ASSAM	0	9	10	6	1	0	1	27
4.	MEGHALAYA	1	0	4	0	0	0	2	7
5.	NAGALAND	0	0	4	5	1	0	1	11
6.	MANIPUR	0	0	1	2	4	0	2	9
7.	MIZORAM	0	0	0	1	3	0	5	9
8.	TRIPURA	0	0	1	3	0	0	0	4
9.	SIKKIM	0	1	2	1	0	0	0	4
10.	WEST BENGAL	3	6	6	3	1	0	0	19
11.	ODISHA	5	8	8	9	0	0	0	30
12.	JHARKHAND	4	8	5	5	1	0	1	24
13.	BIHAR	3	5	7	9	13	0	1	38
14.	UTTAR PRADESH	1	0	6	22	40	3	0	72
15.	UTTARAKHAND	0	0	1	8	4	0	0	13
16.	HARYANA	2	6	7	6	0	0	0	21
17.	CHANDIGARH (UT)	0	0	1	0	0	0	0	1
18.	DELHI	0	0	3	3	3	0	0	9
19.	PUNJAB	2	5	8	5	0	0	0	20
20.	HIMACHAL PRADESH	0	0	6	5	1	0	0	12
21.	JAMMU & KASHMIR	0	1	4	11	3	0	3	22
22.	RAJASTHAN	14	8	7	3	0	1	0	33
23.	MADHYA PRADESH	13	5	13	10	7	3	0	51
24.	GUJARAT	0	0	2	2	8	21	0	33
25.	DADRA & NAGAR HAVELI (UT)	0	0	0	0	0	1	0	1
26.	DAMAN & DIU (UT)	0	0	0	0	0	2	0	2
27.	GOA	0	0	0	0	2	0	0	2
28.	MAHARASHTRA	0	0	0	2	26	4	4	36
29.	CHHATISGARH	2	2	11	10	2	0	0	27
30.	ANDHRA PRADESH	0	1	0	10	2	0	0	13
31.	TELANGANA	0	1	3	13	14	0	0	31
32.	TAMILNADU	0	0	2	9	20	1	0	32
33.	PUDUCHERRY (UT)	0	0	0	0	1	1	2	4
34.	KARNATAKA	1	2	6	14	7	0	0	30
35.	KERALA	0	0	1	7	6	0	0	14
36.	LAKSHADWEEP (UT)	0	0	0	0	1	0	0	1
TOTAL		51	69	133	194	171	37	26	681
CATEGORYWISE DISTRIBUTION OF DISTRICTS OUT OF THE 655 WHOSE DATA RECEIVED		8%	10%	20%	30%	26%	6%		

Table 2.Weekly Rainfall Departure (%) at different IMD subdivisions (2019)

S.No.	Meteorological Sub Division	15 May (20)	22 May (21)	29 May (22)	05 Jun (23)
1	Andaman & Nicobar Islands				
2	Arunachal Pradesh				
3	Assam & Meghalaya				
4	Nagaland, Manipur, Mizoram, Tripura				
5	Sub-Himalayan West Bengal & Sikkim				
6	Gangetic West Bengal				
7	Orissa				
8	Jharkhand				
9	Bihar				
10	East Uttar Pradesh				
11	West Uttar Pradesh				
12	Uttarakhand				
13	Haryana, Chandigarh & Delhi				
14	Punjab				
15	Himachal Pradesh				
16	Jammu & Kashmir				
17	West Rajasthan				
18	East Rajasthan				
19	West Madhya Pradesh				
20	East Madhya Pradesh				
21	Gujarat Region				
22	Saurashtra, Kutch & Diu				
23	Konkan & Goa				
24	Madhya Maharashtra				
25	Marathwada				
26	Vidarbha				
27	Chhattisgarh				
28	Coastal Andhra Pradesh				
29	Telangana				
30	Rayalaseema				
31	Tamil Nadu & Pondicherry				
32	Coastal Karnataka				
33	North interior Karnataka				
34	South interior Karnataka				
35	Kerala				
36	Lakshadweep				

LEGEND:

L. Excess: (+60 % or more)	
Excess: (+20 % to +59 %)	
Normal: (+19 % to -19 %)	
Deficient: (-20 % to -59 %)	
L. Deficient: (-60 % to -99 %)	
No Rain: (-100 %)	
No Data:	