



National Agromet Advisory Service Bulletin

Friday 7th June 2019
(For the period 7th to 12th June 2019)



Issued by
India Meteorological Department

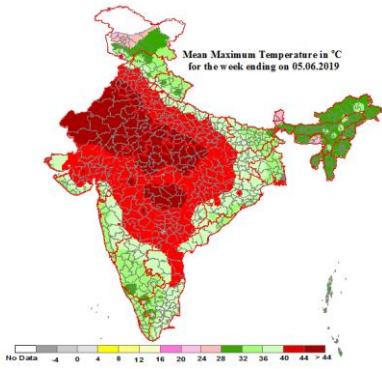
Weblink For

District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

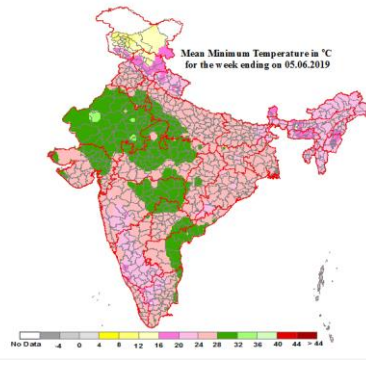
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 05.06.2019

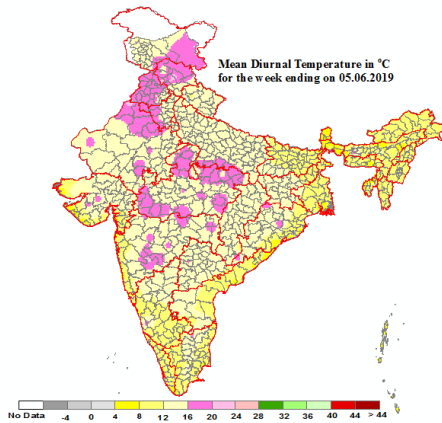
Mean Maximum Temperature (°C) for the week ending on 05.06.2019



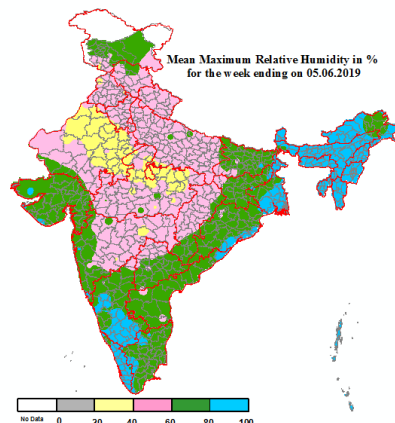
Mean Minimum Temperature (°C) for the week ending on 05.06.2019



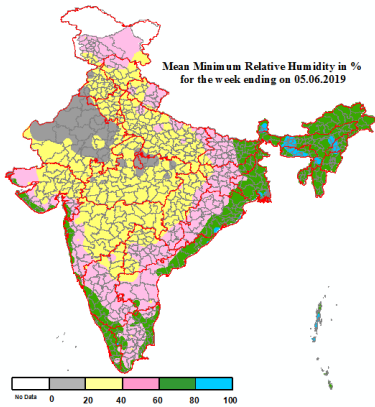
Mean Diurnal Temperature Variation (°C) for the week ending on 05.06.2019



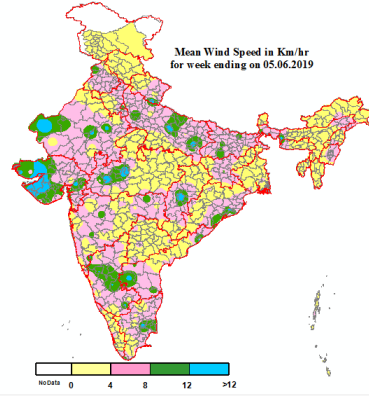
Mean Maximum Relative Humidity (%) for the week ending on 05.06.2019



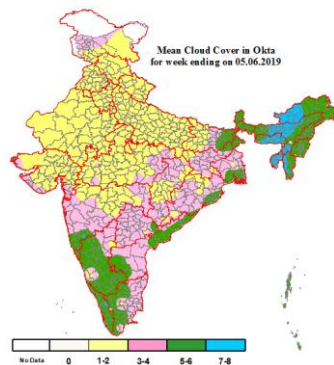
Mean Minimum Relative Humidity (%) for the week ending on 05.06.2019



Mean Wind Speed (km/hr) for the week ending on 05.06.2019

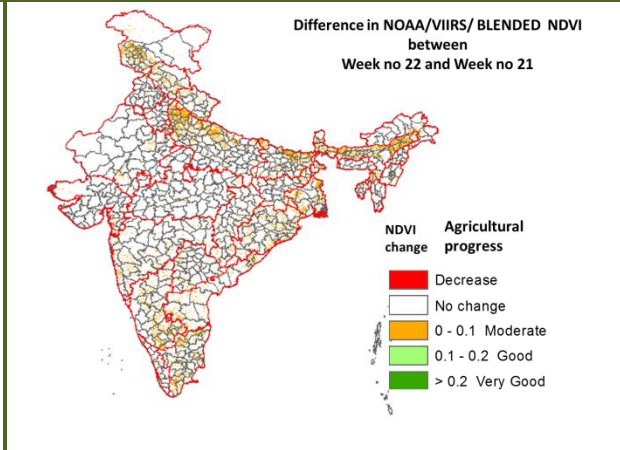
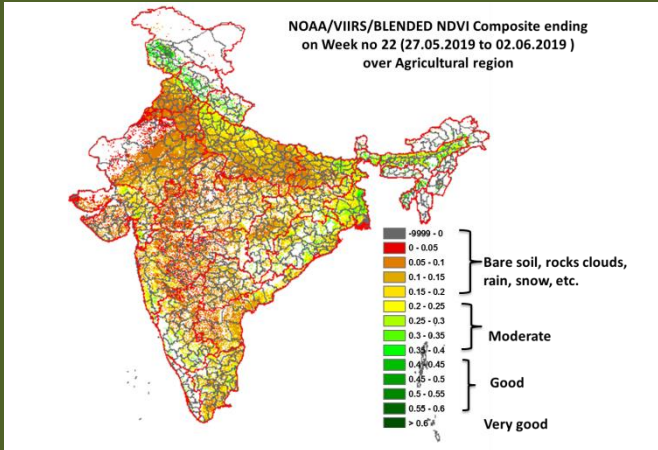


Mean Cloud Cover (okta) for the week ending on 05.06.2019



NOAA/VIIRS/BLENDED NDVI composite for the week number 22 (27.05.2019 to 02.06.2019) over Agricultural regions of India

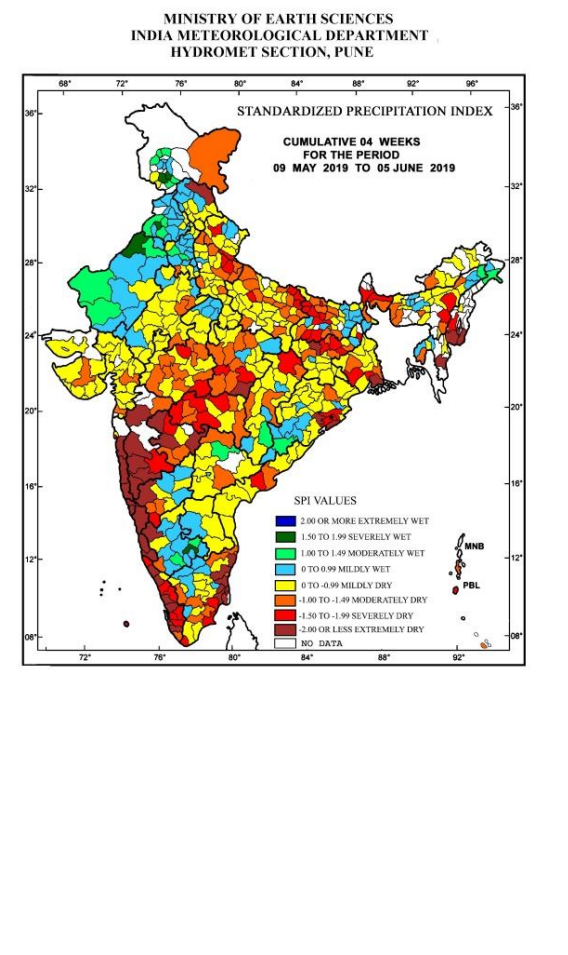
Difference in NOAA/VIIRS/BLENDED NDVI between week number 22 and week number 21



Agriculture vigour is good at a few places over valley region of Jammu & Kashmir and at isolated places over North Eastern States, Himachal Pradesh and Uttarakhand.

Moderate difference in agricultural vigour was noticed at many places over Jammu & Kashmir, Uttar Pradesh, Bihar, Odisha, West Bengal, North Eastern States and Interior Karnataka and Tamilnadu.

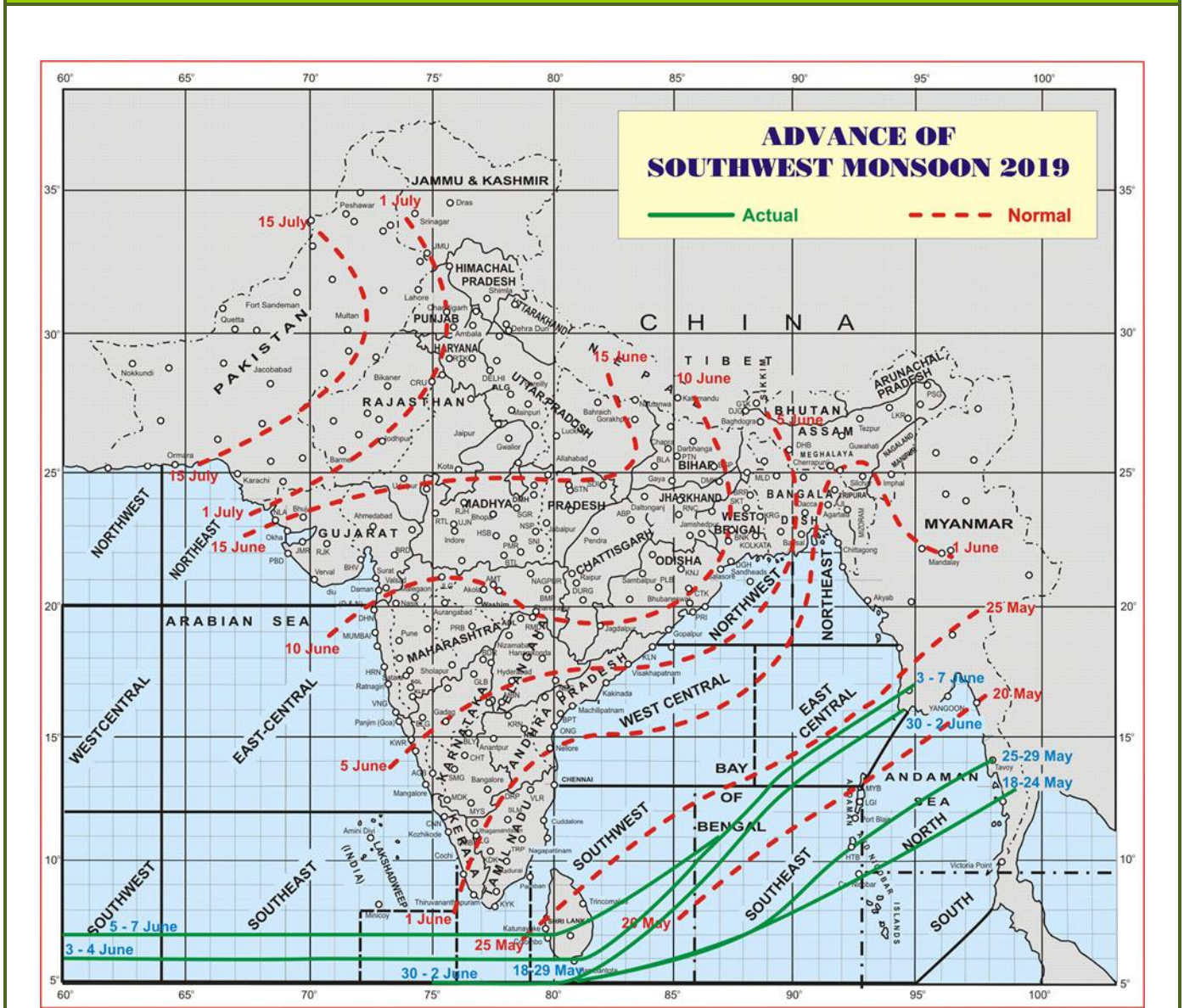
**Standardised Precipitation Index
Cumulative 4 weeks for the period 9th May to 05th June 2019**



- Extremely/severely wet conditions experienced in Reasi, Ramban districts of Jammu; Bangalore Rural district of Karnataka.
- Extremely/Severely dry conditions experienced in few districts of Madhya Pradesh and Uttar Pradesh, East Godavari, Adilabad, Nalgonda districts of Andhra Pradesh, West Kameng districts of Arunachal Pradesh, Cachar, Lakhimpur, Dhubri, Karimganj districts of Assam, East Champaran, Darbhanga, Jamui, Muzaffarpur, Nawada, Rohtas, Samastipur, Sitamarhi, Sheikhpura districts of Bihar, Baroda, Valsad, Rajkot districts of Gujarat, Mahendragarh districts of Haryana, Ladakh (Leh) districts of Jammu, Dharwad, Gadag, Kodagu districts of Karnataka, Trivandrum districts of Kerala, Jalgaon, Osmanabad, Latur, Akola, Bhandara, Gadchiroli, Washim districts of Maharashtra, West Garo Hills, Ri-Bhoi districts of Meghalaya, Keonjhar districts of Orissa, Jhalawar, Sawai Madhopur, Karauli districts of Rajasthan, Chennai, Coimbatore, Dindigul, Sivaganga, Tiruvallur, Vellore, Virudhunagar, Puducherry districts of Tamilnadu & Puducherry, South Tripura districts of Tripura, Cooch Behar, North Dinajpur, Bankura, North 24 Parganas, South 24 Parganas districts of West Bengal, Nicobar, North & Middle and district of Andaman & Nicobar Island, Bokaro, Koderma, Jamtara, Latehar districts of Jharkhand, Haridwar district of Uttarakhand, Jashpur, Raipur, Rajnandgaon districts of Chhatisgarh.
- Moderately dry conditions experienced in most districts of Kerala, West Godavari district of Andhra Pradesh, Darrang, N. C. Hills, Karbi Anglong districts of Assam, Aurangabad, Gaya, Gopalganj, Patna, Saran, Sheohar, Siwan, Vaishal districts of Bihar, Lahaul & Spiti district of Himachal Pradesh, Uttar Kannada, Dakshin Kannada, Udupi, Belgam, Haveri, Shimoga

districts of Karnataka, Betul, Rajgarh, Balaghat, Mandla, Narsinghpur districts of MadhyaPradesh, Mumbai City, Raigad, Ratnagiri, Sindhudurg, Kolhapur districts of Maharashtra

Advance of SouthWest Monsoon 2019



Significant weather features

- ♦ The Northern Limit of Monsoon (NLM) continues to pass 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.
- ♦ The east-west shear zone now runs roughly along Lat. 10°N between 3.1 & 3.6 km above mean sea level across extreme South peninsula. A feeble off shore trough has formed along the west coast and likely to persist there. In association with these favourable conditions, Southwest Monsoon is very likely to set in over Kerala during next 24 hours.
- ♦ A low pressure area is very likely to form over southeast and adjoining eastcentral Arabian Sea off Kerala-Karnataka coast around 9th June. It is likely to move north-northwestwards and intensify gradually.
- ♦ Conditions are likely to become favourable for advance of southwest monsoon into some parts of Northeastern states during next 48 hours.

- ♦ Heat wave to severe heat wave conditions very likely to prevail over Rajasthan, Madhya Pradesh and Vidarbha during next 4-5 days.
- ♦ Fairly widespread rainfall with isolated heavy to very heavy falls very likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 4-5 days.

Weather Forecast for next 5 days valid upto 0830 hours of 12th June 2019

Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.

Maximum temperatures are likely to remain above normal by 2-3°C over some parts of south peninsula during next 3 days. No significant change in maximum temperatures likely over rest of the country during next 3 days and they are likely to rise gradually by 2-3°C thereafter.

5 Day Rainfall Forecast (MID-DAY)

07-June-2019

Met-Sub-Division	07-Jun Today	08Jun Sat	09Jun Sun	10Jun Mon	11Jun Tue
1. Andaman & Nicobar Islands	WS	WS	WS	FWS	FWS
2. Arunachal Pradesh	FWS	FWS	FWS	SCT	SCT
3. Assam & Meghalaya	FWS	FWS	WS	WS	WS
4. N. M. M. & T.	FWS	WS	WS	WS	WS
5. S.H. West Bengal & Sikkim	FWS	FWS	FWS	FWS	FWS
6. Gangetic West Bengal	SCT	SCT	ISOL	ISOL	SCT
7. Odisha	SCT	SCT	ISOL	ISOL	ISOL
8. Jharkhand	ISOL	ISOL	ISOL	ISOL	ISOL
9. Bihar	ISOL	ISOL	ISOL	ISOL	ISOL
10. East Uttar Pradesh	DRY	DRY	DRY	ISOL	ISOL
11. West Uttar Pradesh	DRY	DRY	DRY	ISOL	ISOL
12. Uttarakhand	ISOL	DRY	DRY	ISOL	SCT
13. Haryana, Chd & Delhi	DRY	DRY	DRY	ISOL	ISOL
14. Punjab	DRY	DRY	DRY	ISOL	ISOL
15. Himachal Pradesh	ISOL	DRY	DRY	ISOL	SCT
16. Jammu & Kashmir	ISOL	ISOL	ISOL	FWS	WS
17. West Rajasthan	DRY	DRY	DRY	ISOL	ISOL
18. East Rajasthan	ISOL	DRY	DRY	ISOL	ISOL
19. West Madhya Pradesh	ISOL	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
21. Gujarat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	ISOL	ISOL	SCT	SCT	SCT
24. Madhya Maharashtra	ISOL	ISOL	ISOL	ISOL	ISOL
25. Marathwada	ISOL	ISOL	ISOL	ISOL	ISOL
26. Vidharbha	ISOL	ISOL	ISOL	ISOL	ISOL
27. Chhattisgarh	ISOL	ISOL	ISOL	ISOL	ISOL
28. Coastal A. P. & Yanam	ISOL	ISOL	ISOL	ISOL	ISOL
29. Telangana	ISOL	ISOL	ISOL	ISOL	ISOL
30. Rayalaseema	SCT	SCT	ISOL	ISOL	ISOL
31. T.N.,Puducherry & Karaikal	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	FWS	FWS	FWS	FWS	WS
33. North Interior Karnataka	FWS	ISOL	ISOL	ISOL	SCT
34. South Interior Karnataka	FWS	SCT	FWS	FWS	FWS
35. Kerala & Mahe	WS	WS	WS	WS	WS
36. Lakshadweep	WS	WS	WS	WS	WS

% Station Reporting Rainfall

% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

Weather Warning during next 5 days

07 June (Day 1): ♦ Thunderstorm accompanied with lighting and gusty winds (40-50 kmph) at isolated places very likely over Coastal and Interior Karnataka, Kerala & Mahe & Lakshadweep; with **gusty winds (30-40 kmph)** at isolated places over Vidarbha, Chhattisgarh, Nagaland, Manipur, Mizoram & Tripura, Assam & Meghalaya, Madhya Maharashtra, Marathwada, Telangana, Rayalseema & Coastal Andhra Pradesh and **Thunderstorm accompanied with lighting** at isolated places over Gangetic West Bengal and Odisha.

♦ **Heavy rainfall** at isolated places likely over Assam & Meghalaya, Kerala, Lakshadweep, South Interior Karnataka, Rayalaseema, Coastal Odisha and Nagaland, Manipur, Mizoram & Tripura.

♦ **Heat Wave conditions** in many parts with **severe heat wave** in isolated pockets very likely over Madhya Pradesh and Vidarbha; in some parts with **severe heat wave** in isolated pockets very likely over Rajasthan. **Heat Wave to severe heat wave conditions** in isolated pockets over Uttar Pradesh and heat wave conditions in isolated pockets over Haryana, Chandigarh & Delhi, Chhattisgarh, north Gujarat, Saurashtra & Kutch, Rayalseema, Marathawada and Telangana.

♦ **Squally weather** with winds, speed reaching 35-45 kmph, likely to prevail over southwest Arabian Sea off Somalia coast, Lakshadweep, Maldives area, southeast Arabian Sea, Gulf of Mannar, northwest Bay of Bengal off West Bengal & Odisha coasts. Fishermen are advised not to venture into these areas.

08 Jun (Day 2): ♦ Thunderstorm accompanied with lighting and gusty winds (40-50 kmph) at isolated places very likely over Coastal and North Interior Karnataka and Kerala & Mahe; with **gusty winds (30-40 kmph)** at isolated places over Vidarbha, Chhattisgarh, Nagaland, Manipur, Mizoram & Tripura, Assam & Meghalaya, Madhya Maharashtra, Telangana, Rayalseema, Coastal Andhra Pradesh & South Interior Karnataka and **Thunderstorm accompanied with lighting** at isolated places over Gangetic West Bengal and Odisha.

♦ **Heavy to very heavy rainfall** at isolated places likely over Assam & Meghalaya and heavy rainfall at isolated places likely over Kerala, Lakshadweep, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Coastal Odisha and Nagaland, Manipur, Mizoram & Tripura.

♦ **Heat Wave conditions** in many parts with **severe heat wave** in isolated pockets very likely over Madhya Pradesh and Vidarbha; in some parts with **severe heat wave** in isolated pockets very likely over Rajasthan. **Heat Wave to severe heat wave conditions** in isolated pockets over Uttar Pradesh and heat wave conditions in some parts over Haryana, Chandigarh & Delhi; in isolated pockets over Chhattisgarh, north Gujarat, Saurashtra & Kutch, Marathawada and Telangana.

♦ **Squally weather** with winds, speed reaching 35-45 kmph, likely to prevail over southwest Arabian Sea off Somalia coast, Lakshadweep, Maldives area, south Arabian Sea, Gulf of Mannar, northwest Bay of Bengal off West Bengal & Odisha coasts. Fishermen are advised not to venture into these areas.

09 Jun (Day 3): ♦ Thunderstorm accompanied with lighting and gusty winds (40-50 kmph) at isolated places over Tamilnadu; with **gusty winds (30-40 kmph)** at isolated places likely over Vidarbha, Chhattisgarh & South Interior Karnataka and **Thunderstorm accompanied with lighting** at isolated places over Sub-Himalayan West Bengal & Sikkim and Odisha.

♦ **Heavy rainfall at a few places with very heavy rainfall at isolated places** likely over Lakshadweep; **heavy to very heavy rainfall** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe and **Heavy rainfall** at isolated places likely over Tamilnadu, Coastal & South Interior Karnataka, Andaman & Nicobar Islands and Sub-Himalayan West Bengal & Sikkim.

♦ **Heat Wave conditions** in many parts with **severe heat wave** in isolated pockets very likely over Madhya Pradesh, Rajasthan and Vidarbha; **Heat Wave to severe heat wave conditions** in isolated pockets over Uttar Pradesh; heat wave conditions in some parts over Haryana, Chandigarh & Delhi; in isolated pockets over Chhattisgarh and Telangana.

♦ **Squally weather** with winds, speed reaching 35-45 kmph, likely to prevail over southwest Arabian Sea off Somalia coast, southeast & adjoining eastcentral Arabian Sea off Kerala, Karnataka coasts. Fishermen are advised not to venture into these areas.

10 Jun (Day 4): ♦ **Thunderstorm accompanied with lighting and gusty winds (40-50 kmph)** at isolated places over Tamilnadu; **with gusty winds (30-40 kmph)** at isolated places likely over Jammu & Kashmir, Chhattisgarh and Jharkhand; with dust storm and gusty winds (30-40 Kmph) at isolated places likely over Haryana, Uttar Pradesh & Rajasthan **and Thunderstorm accompanied with lighting** at isolated places over Sub-Himalayan West Bengal & Sikkim and Jharkhand.

♦ **Heavy rainfall at a few places with very heavy rainfall at isolated places** likely over Lakshadweep and Kerala and **heavy rainfall** at isolated places likely over Tamilnadu, Coastal & South Interior Karnataka, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

♦ **Heat Wave conditions** in many parts with **severe heat wave** in isolated pockets very likely over Madhya Pradesh and Vidarbha; **heat wave conditions in some parts with severe heat wave conditions at isolated pockets over Rajasthan** and in isolated pockets over Haryana, Uttar Pradesh, Chhattisgarh and Telangana.

♦ **Squally weather** with winds, speed reaching 35-45 kmph, likely to prevail over southwest Arabian Sea off Somalia coast, southeast & adjoining eastcentral Arabian Sea off Kerala, Karnataka coasts. Fishermen are advised not to venture into these areas.

11 Jun (Day 5): ♦ **Thunderstorm accompanied with lighting and gusty winds (40-50 kmph)** at isolated places over Tamilnadu; **with gusty winds (30-40 kmph)** at isolated places likely over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Chhattisgarh, Gangetic West Bengal and Jharkhand; **with dust storm and gusty winds (40-50 Kmph)** at isolated places likely over Haryana and Punjab; dust storm and gusty winds (30-40 Kmph) over Uttar Pradesh **and thunderstorm accompanied with lighting** at isolated places over Jharkhand.

♦ **Heavy rainfall at a few places with very heavy rainfall at isolated places** likely over Kerala and **heavy rainfall** at isolated places likely over Tamilnadu, Coastal & South Interior Karnataka, Assam & Meghalaya.

♦ **Heat Wave conditions** in many parts with **severe heat wave** in isolated pockets very likely over Madhya Pradesh and Vidarbha; **heat wave conditions to severe heat wave conditions at isolated pockets** over Rajasthan and in isolated pockets over Haryana, Chhattisgarh and Telangana.

♦ **Squally weather** with winds, speed reaching 35-45 kmph, likely to prevail over southwest Arabian Sea off Somalia coast, southeast & adjoining eastcentral Arabian Sea off Kerala and Karnataka coasts. Fishermen are advised not to venture into these areas.

Weather Outlook for subsequent 2 days from 12th to 14th June 2019

♦ Widespread rainfall likely over Southern parts of West Coast, Northeast India and Islands; Fairly widespread rainfall over western Himalayan Region and isolated to scattered rainfall likely over rest of south Peninsula and eastern India.

♦ Dry weather likely over the rest of the country.

Salient advisories

- ♦ **Heat Wave conditions** in many parts with **severe heat wave** in isolated pockets very likely over Madhya Pradesh and Vidarbha; **Heat Wave conditions** in some parts with **severe heat wave** in isolated pockets very likely over Rajasthan during the period, **Heat Wave to severe heat wave conditions** in isolated pockets over Uttar Pradesh and heat wave conditions in isolated pockets over Haryana, Chandigarh & Delhi, Chhattisgarh and Telangana during the period, over north Gujarat, Saurashtra & Kutch, Rayalaseema and Marathawada on 7th & 8th June, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to high

temperature; undertake mulching with straw to conserve soil moisture. Provide shade for young fruit plants for protection from scorching sun.

- As rain/thundershowers likely at most places over Kerala, at many places over **Arunachal Pradesh** from 7th to 9th, at most/many places over **Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura** along with **heavy/ Heavy to very heavy rainfall** at isolated places likely over Assam & Meghalaya during the period, **Heavy to very heavy rainfall** at isolated places likely over Assam & Meghalaya and heavy rainfall at isolated places likely over Kerala, Lakshadweep, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Coastal Odisha and Nagaland, Manipur, Mizoram & Tripura on 8th & 9th, **Heavy rainfall at a few places with very heavy rainfall at isolated places** likely over Lakshadweep and Kerala on 10th & 11th, **heavy rainfall** at isolated places likely over Tamilnadu, Coastal & South Interior Karnataka, Assam & Meghalaya on 10th & 11th and over Nagaland, Manipur, Mizoram & Tripura on 10th June. In the above areas, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in Kerala, Assam & Meghalaya. Keep harvested produce at safer places.
- **Thunderstorm accompanied with lightning and gusty winds (40-50 kmph)** at isolated places very likely over Coastal and North Interior Karnataka and Kerala & Mahe; with **gusty winds (30-40 kmph)** at isolated places over Vidarbha, Chhattisgarh, Nagaland, Manipur, Mizoram & Tripura, Assam & Meghalaya, Madhya Maharashtra, Telangana, Rayalseema, Coastal Andhra Pradesh & South Interior Karnataka and **Thunderstorm accompanied with lightning** at isolated places over Gangetic West Bengal and Odisha on 8th, **Thunderstorm accompanied with lightning and gusty winds (40-50 kmph)** at isolated places over Tamilnadu from 9th to 11th; **with gusty winds (30-40 kmph)** at isolated places likely over Vidarbha, Chhattisgarh & South Interior Karnataka and **Thunderstorm accompanied with lightning** at isolated places over Sub-Himalayan West Bengal & Sikkim and Odisha from 9th to 11th and over Jharkhand on 10th & 11th, **thunderstorm accompanied with gusty winds (30-40 kmph)** at isolated places likely over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Chhattisgarh, Gangetic West Bengal and Jharkhand; **with dust storm and gusty winds (40-50 Kmph)** at isolated places likely over Haryana and Punjab; dust storm and gusty winds (30-40 Kmph) over Uttar Pradesh on 10th & 11th June, provide mechanical support to young fruit plants banana and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane. Avoid application of plant protection measures and fertilizers to the standing crops during strong / squally / gusty winds.
- Utilizing the realised and expected rainfall, undertake land preparation for transplanting of *Virippu* rice in Kerala. In Coastal Karnataka, undertake sowing of drill sown rice crop. In South Interior Karnataka, continue land preparation for sowing of kharif crops like pulses (cowpea, green gram, black gram, horse gram, field bean etc), rice, ragi, sunflower and maize.

- In view of the **heat wave conditions** in some parts with **severe heat wave** in isolated pockets over Rajasthan, Madhya Pradesh and Vidarbha during the period, it is advised to take necessary measures and protect livestock from heat stroke. Keep cattle in sheds and avoid grazing during noon hours. Provide cool drinking water mixed with minerals to livestock at frequent intervals (4 times a day) to avoid dehydration. In poultry sheds water tank and lines may be covered with gunny bags to provide cool water. Foggers and sprinklers may be used to reduce temperature

Detailed Agromet Advisories

SOUTH INDIA [TAMIL NADU, TELANGANA, ANDHRA PRADESH, KARNATAKA, KERALA]

Realised Rainfall: Rainfall occurred in all the districts of Kerala except Ernakulam, Palakkad, Pathanamthitta, Thrissur, Wayanad, Mahe district, Visakhapatnam, Vizianagram district of Coastal Andhra Pradesh, Anantapur, Chittoor district of Rayalaseema, Hyderabad, J. Bhupalpally, Jagtial, Karimnagar, Vikarabad districts of Telangana, Erode, Dharmapuri, Krishnagiri, Nilgiris, Salem, Theni, Tirupur, Vellore districts of Tamilnadu, Dharwad and Gadag districts of North Interior Karnataka, in all districts of South Interior Karnataka except Ballari, Chikkamagaluru, Chitradurga, Davangere, Kolar and Shivamogga districts during the week

Kerala:

- Undertake land preparation for transplanting of Virippu rice. Undertake direct sowing of rice crop and planting of new seedlings of coconut and banana after current spells of heavy rain.
- In Northern Zone, provide adequate drainage in vegetable, ginger, turmeric fields.

Andhra Pradesh:

- In North Coastal Andhra Pradesh, continue sowing of sesame by utilizing the realized rainfall.
- In South Coastal Andhra Pradesh and Rayalaseema, to control sucking pests, spray Monocrotophos @ 1.6 ml./Litre of water.
- In Scarce rainfall Zone of Rayalaseema, prevailing high temperatures may cause damage to the newly planted saplings of banana. Protect by covering with mulch and by providing shade.
- In Southern zone of Andhra Pradesh, undertake land preparation for early kharif rice nurseries.

Telangana:

- In Southern Telangana, undertake land preparation for timely sowing of rained crops.
- In Northern Telangana, provide light irrigation in vegetables.
- In Southern Telangana, the prevailing dry weather conditions are congenial for incidence of sucking pests in vegetables. To control, spray Fipronil @ 2ml or Thiomethoxim @ 0.3g per litre of water. Prevailing weather conditions are congenial for the incidence of Shoot & Fruit Borer in Brinjal. To control, spray Flubendiamide @ 0.4 g or Chlorantriliprole @ 0.2ml per liter of water two times at weekly interval. Prevailing weather conditions are congenial for the incidence of Thrips in Tomato. Monitor the pest, if noticed control it by spraying Dimethoate @ 2 ml per liter of water.

Tamil Nadu:

- In Cauvery Delta Zone, continue nursery sowing of kuruvai season rice.
- In Western Zone, complete picking of summer irrigated cotton.
- In Southern Zone, for control of Gray mould disease in tomato, spray Tebuconazole + Captan @ 100 ml + sticky agent @ 10ml with 10 litres of water. Also white fly on cotton, spray neem seed kernel extract 50 kg & neem oil at 5 ml/l of water (or) Acetamiprid @ 20% SP 100 g/ha.

Karnataka:

- In South Interior Karnataka, continue land preparation for kharif sowing of pulses (cowpea, green gram, black gram, horse gram, field bean etc), rice, ragi, sunflower, maize, minor millets, sugarcane and vegetable crops. It is ideal time for pre-monsoon crops sowing wherever sufficient soil moisture is available in the field. Under mono cropping the long duration crops red gram, castor, maize and under double cropping the short duration crops sesame, groundnut, cowpea and black gram are suggested. Continue harvesting of rice crop.
- In Coastal Karnataka, as there is forecast of rain, undertake sowing of drill sown rice crop. This is the right time for transplanting of arecanut. Continue harvesting of mango fruits.
- In North Interior Karnataka, undertake land preparation for sowing of kharif crops and fresh planting of fruit trees. Undertake sowing of green gram, soybean, groundnut and maize with irrigation facility. After receiving sufficient rainfall, undertake sowing of sunflower, Bt. cotton, green gram, red gram, bajra, maize, sesamum, Navane and groundnut (bunch type) on preference. Intercropping of bajra+ groundnut (bunch) in 2:4 row proportion; bajra + red gram in 2:1 row proportion; groundnut (bunch) + red gram in 3:1 or 4:2 row proportion, red gram + sesamum

in 1:2 or 2:4 row proportion is suggested.

Animal Husbandry

- In Telangana, as the day temperatures are high, farmers are advised to take necessary measures and protect livestock from heat stress. Provide the sheds with light & ventilation along with cool water for drinking. Provide drinking water to livestock at frequent intervals (4 times a day) to avoid dehydration. Provide the sheds with light & ventilation along with cool water for drinking. In poultry sheds water tank and lines may be covered with gunny bags to provide cool water. Foggers and sprinklers will help to reduce temperature. Roof may be covered with coconut tree leaves or grass. White washing of roof and water tank to reduce heat absorption. Provide proper cross ventilation to avoid ammonia accumulation. Pedestal fans may be used to increase air flow. Distribute feed in cooler parts of the day (early morning or late evening).

NORTHEAST INDIA [ARUNACHAL PRADESH, NMM&T, ASSAM, MEGHALAYA]

Realised Rainfall: Rainfall occurred in Changlang, Kurung Kumey, Papumpare, Tawang and Upper Subansari districts of Arunachal Pradesh; Baksa, Barpeta, Cachar, Chirang, Dhemaji, Dhubri, Dibrugarh, Goalpara, Golghat, Hailakandi, Kamrup(Rural), Kamrup(Metro), Karimganj, Kokrajhar, Lakhimpur, Morigaon, Nowgaon, Nalbari, Sonitpur, Sibsagar and Udalgiri districts of Assam; East Garo Hills, East Khasi Hills, Jaintia Hills, Ri-Bhoi, South Garo Hills and West Garo Hills districts of Meghalaya; Aizwal and Kolasib districts of Mizoram; Bishnupur, Chandel and Imphal West districts of Manipur; Dimapur, Longleng, Mon, Paren, Tuensang and Zunheboto districts of Nagaland and all districts of Tripura.

Advisories:

- As rain/thundershowers likely at many places over **Arunachal Pradesh** from 7th to 9th, at most/many places over **Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura** along with **heavy/ Heavy to very heavy rainfall** at isolated places likely over Assam & Meghalaya during the period, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields. Keep harvested produce at safer places.

Arunachal Pradesh:

- Undertake transplanting of rice and sowing of summer vegetables.
- On clear/sunny days, spray Carbendazim @2g/litre water in jhum field to control infestation of leaf blast & leaf spot.

Assam & Meghalaya:

- In Assam, continue nursery bed preparation / sowing of Sali rice after current spells of heavy rain.
- In Hill Zone of Assam, continue land preparation and sowing of pigeon pea and cotton and planting of pineapple, banana, papaya etc. after current spells of heavy rain.
- In Central Brahmaputra Valley of Assam, apply Quinalphos 2ml per litre of water or Deltamethrin 1ml per litre of water against Bihar hairy caterpillar pest at vegetative stage in jute field. Also apply Emamectin Benzoiate 1ml/litre of water or Karate 1 ml/litre of water to control fall army worm in maize crop.
- In Upper and Lower Brahmaputra Valley of Assam, present weather is favourable for early shoot borer infestation in sugarcane crop. Apply Monocrotophos @ 150-200ml in 150 litre of water for 1 bigha crop area after current spells of rain. Shoot borer infestation may be checked by burying or burning the infested canes. Proper earthing up will reduce the early shoot borer infestation.
- In Meghalaya, undertake planting of ginger and turmeric and continue sowing of cucurbits after current spells of heavy rain.

Manipur, Mizoram, Tripura and Nagaland:

- In Nagaland, continue field preparation for TRC/WRC paddy and transplanting for chilli.
- In Manipur, provisions may be made to harvest rain water in the fields for nursery raising or transplanting of kharif rice. Continue land preparation for transplanting of rice seedlings and preparation of nursery for early cauliflower in the upland area. Complete sowing of kharif maize, soybean/ groundnut, black gram at the earliest.
- In Manipur, for Fall Army Worm in maize, spray Beauvevia bassiana @ 3ml/ litre water during evening hours and after 3 days spray Metarhizium anisopliae @ 5ml/litre water after spells of rain.
- In Mizoram, continue sowing of maize, green gram, black gram and planting of ginger and turmeric.
- In Tripura, Boro rice is in harvesting stage and the weather may be disadvantageous for harvesting. For harvesting of crop use power harvester to save time and immediate shift the crop to safer place. . Maintain good drainage to avoid stagnant water in the field of cowpea at pod formation stage. Due to extreme wet condition, incidence of Downy mildew disease may occur on cucumber, ridge gourd, pumpkin etc., spray Carbandazim and Chlorothalonil @ 1.5 gm or Matalaxyl and Mancozeb @ 2gm per liter of water.

Animal Husbandry:

- In Nagaland and Manipur, pig should be vaccinated against all infectious diseases before the monsoon starts.

- In Barak Valley Zone of Assam, the cow shed may be infected by microbes, undertake vaccination for the cattle prior to monsoon season to protect from the disease like Anthrax and Foot Mouth Disease.
- Fishery:
- In Mizoram, as heavy rainfall is forecasted during next 2-3 days, repair damaged dykes of fisheries ponds and take care so that fishes does not escape.
- In Meghalaya, maintain proper drainage system and fix the net in the drainage pipe in the fish pond. Maintain of proper dyke.
- In Arunachal Pradesh, to avoid water turbidity, use grass turving or horticultural crop at embankment/dyke of the earthen fish pond. Broadcast mustard Oil Cake (MOC) @5kg/day over the pond twice daily to feed fish fingerlings.

EAST INDIA [JHARKHAND, BIHAR, ODISHA, WEST BENGAL & SIKKIM, ANDAMAN & NICOBAR ISLANDS]

Realised Rainfall: Rainfall occurred in all districts of Andaman & Nicobar Islands; in Araria, Banka, Bhagalpur, Bhojpur, Katihar, Khagadia, Kishanganj, Madhepura, Madhubani, Nalanda, Purnea, Saharsa, Sitamarhi, Supaul and West Champaran districts of Bihar; in East Singbhum, Ghumla, Lohardagga, Ranchi, Sahebganj, Saraikela and West Singbhum districts of Jharkhand, in Angul, Balasore, Bargarh, Bolangir, Deogarh, Dhenkanal, Jajpur, Jharsuguda, Kalahandi, Kandhamal, Kendrapara, Koraput, Malkangiri, Mayurbhanj, Nawapara, Nawarangpur, Rayagada and Sonepur districts of Odisha; in East Midnapore, Murshidabad, Nadia and South 24 Paraganas districts of Gangetic West Bengal and in all the districts of Sub-Himalayan West Bengal and Sikkim except Jalpaiguri and North Dinajpur. Weather remained mainly dry over rest of the region.

Odisha:

- Taking advantage of the recent rainfall, carry out land preparation for direct sowing of seeds. Thoroughly mix organic manure and compost with the soil. Keeps seeds ready for sowing of kharif crops. Take up planting of yam in the month of June. Complete planting of turmeric & Ginger by 1st week of June.
- To control fruit borer in brinjal, spray Neem based pesticide 1500 ppm @600ml/acre at initial stages. Later on, go for alternate spray of Spinosad 45%SC@70ml/acre and Thiodicarb @300g/acre at 15 days interval.

Bihar:

- Carry out land preparation for long duration rice, kharif maize and kharif onion crops. Postpone harvesting of early sown green gram and black gram as rainfall is expected. Intercultural operation and monitoring of pests is advised in vegetables such as lady's finger, pumpkin, cucumber, sponge gourd, bottle gourd, etc. Continue sowing of turmeric and yam.
- Spray Dimethoate 30 EC @ 2 ml+10 gram sugar /liter of water for infestation of fruit fly in cucurbit crops.

Jharkhand:

- In Jharkhand, complete harvesting/threshing of rice if the weather is clear. Continue land preparation for sowing of kharif crops and early vegetables (long gourd, round gourd, bitter guard, sponge gourd, ridge gourd, cucumber and cowpea). Continue planting of ginger and turmeric. Undertake new planting of mango, guava and litchi.

West Bengal:

- In Sub-Himalayan West Bengal, continue sowing of green manure crops like Dhaincha in the field selected for Aman rice cultivation. Complete harvesting of Boro rice and store the produce in safer places. Continue transplanting of ginger and turmeric. To control chili fruit rot, spray Carbendazim + Mancozeb @ 2.5g/liter of water.
- In Gangetic West Bengal, apply deep summer ploughing and let soil solarisation take place. Cut old branches of jackfruit trees to allow growth of new ones. Collect and destroy the borer affected fruits of bhindi crop and spray Neem oil @ 5ml/litre of water at clear weather conditions.

Andaman & Nicobar Islands:

- In Andaman & Nicobar Islands, prepare the nursery field of paddy and before final preparation of nursery field apply farm yard manure @ 2 t/ha and neem cake @ 500 kg/ha. Transplant already grown vegetable seedlings of brinjal and chilli in upland area or BBF with well drainage facility. Clean the crown of coconut tree to avoid the attack of Rhinoceros beetle in coconut field.

Animal Husbandry:

- In Odisha, do not allow cattle to graze during the hotter parts of the day. Provide cool drinking water. Dairy cows should be showered with water to reduce heat stress.
- In West Bengal, carry out vaccination and de-worming of cattle before the monsoon season.
- In Andaman & Nicobar Islands, keep the day old chicks under light preferably 40 watt bulb during cloudy days and provide clean drinking water.

Fishery:

- In West Bengal, prepare pond for carp cultivation.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Weather remained dry over the region durig the week.

Maharashtra:

- In Konkan region, undertake nursery sowing of rice and nagli. Complete land preparation for sowing of

groundnut. For stone grafting programme in mango, procure fresh mango stones (seed) and sow them on beds. Before sowing they should be thoroughly washed with water and dipped in Carbendazim solution @ 1g per litre of water to control wilt.

- In Madhya Maharashtra, undertake preparatory tillage operations such as ploughing, harrowing, land leveling and bunding as early as possible. Use recommended varieties for better yield – green gram, soybean, pigeon pea. Continue nursery bed preparation for kharif rice and nagli. Apply irrigation to vegetables and orchards. Continue land preparation for groundnut, soybean and jowar. Apply irrigation using drip method in sugarcane fields.
- In Maratwada, undertake land preparation for sowing of kharif crops like cotton, pigeon pea, black gram and groundnut. Also undertake preparation of raised bed for sowing of kharif vegetable crops and intercultural operation like weeding in sugarcane fields.
- In Vidarbha, as heat wave conditions are likely to prevail during next 4-5 days, apply light and frequent irrigation to orchards and vegetables. Continue harvesting of groundnut. Keep the harvested produce in safer place. Apply mulching in orchards. Undertake nursery bed preparation for rice and land preparation for pigeon pea.

Gujarat:

- In South Gujarat, continue nursery sowing of rice crop. Provide drip irrigation in fruit crops, for 1/2 to 3/2 hrs. If drip irrigation is not available provide 12 to 15 litres of water for every graft. Undertake planting of bell pepper, Elephant Foot Yam and Greater Yam. Maintain 2-3 cm water level in rice field. Provide irrigation to leafy vegetable at hourly intervals using fogger.
- In Middle Gujarat, complete harvesting of bajra, sorghum and green gram crops. Undertake land preparation for B.T. Cotton, groundnut and nursery sowing of rice.
- In Saurashtra & Kutch, continue sowing of groundnut crop with irrigation facility. Continue land preparation for sowing of irrigated hybrid cotton and B.T. cotton crop. Keep inputs ready for sowing of cotton, groundnut, sesame, pulses and pearl millet crops. Undertake harvesting of groundnut crop.
- In North Gujarat, undertake harvesting of matured groundnut, pearl millet crops. Continue land preparation for sowing of irrigated hybrid cotton and B.T. cotton crop.
- In South Gujarat, to manage sigatoka disease in Banana crop, spray the crop with Propiconazole @1 ml or Dithane Z-78 @2.5 g. dissolved in one liter of water.

Animal Husbandry

- In Gujarat, shower the animals with cold water two to three times in a day. Put curtains on south-west side of poultry house and sprinkle water on curtains during noon time.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in Bastar, Dantewara, Kondagaon and Narayanpur districts of Chhattisgarh. Weather remained mainly dry over the rest of region during the week.

Advisories:

Madhya Pradesh

- In Malwa Plateau Zone, deep ploughing of fields after harvesting of *rabi* crops is advised so that eggs and pupating stages of insects and weed seeds are destroyed. Field preparation should be done for sowing of pigeon pea and cotton. Farmers are advised to procure good quality seeds from certified source. Prepare the fields and undertake planting of ginger and turmeric.
- In Kymore Plateau and Satpura Hill Zone, undertake field preparation for sowing of vegetables.
- In the Vindhya Plateau Zone, continue harvesting of matured summer moong and urd.
- In Satpura Plateau Zone, due to the prevailing high maximum temperature and hot and dry winds banana and papaya fruits are damaged because of sun scorching. Hence, farmers are advised to cover the fruits by using leaves or Jute bags to protect the fruits from sun scorching. It is also advised to provide wind breaks in west/north-west direction. Optimum moisture level should be maintained in cucurbitaceous crops by light and frequent irrigation as dry conditions may lead to poor pollination and thus drop in yield of the crop.

Chhattisgarh:

- In North Hill Zone, prepare nursery for sowing of long duration rice varieties, undertake summer ploughing for preparing land for kharif crops and also land preparation for vegetables.
- In Chhattisgarh Plain Zone, apply frequent irrigation in banana, papaya and other vegetable crops. Also cover the fruits by using leaves or Jute bags to protect from sun scorching.
- In Bastar Plateau Zone, to control powdery mildew on cucurbits, spray Karathan @1 gm powder dissolved in one liter of water.

Animal Husbandry

- In Madhya Pradesh, in view of the prevailing heat wave conditions, keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Make arrangement of curtains and proper ventilation in poultry house. Vaccinate the poultry birds to prevent Ranikhet disease. (first F-1 in age of 7 days & second R2B in age of 8 weeks)

- In Chhattisgarh, vaccinate animals against Haemorrhagic Septicaemia (H.S.), Black quarter (B.Q.), etc. To avoid dehydration, feed solution of 4-5 teaspoon sugar and one fourth amount of salt every half an hour to dairy animals.

NORTH INDIA [JAMMU & KASHMIR, HIMACHAL PRADESH, UTTARAKHAND, PUNJAB, HARYANA, DELHI, UTTAR PRADESH & RAJASTHAN]

Realised Rainfall: Rain occurred in Anantnag, Badgam, Baramula, Doda, Kulgam, Kupwara and Ramban districts of Jammu & Kashmir and Pithoragarh and Rudrapur districts of Uttarakhand during the week. Weather remained mainly dry/dry over rest of the region.

Jammu & Kashmir:

- In Sub Tropical Zone, undertake sowing of rice. Due to high infestation of fruit and shoot borer in brinjal, clip off shoots/fruits infected with borer and bury them inside the soil. Spray mixture of profenofos + cypermethrin (4:40) @ 1ml/litre of water at 10 days interval after harvesting of fruit to control infestation of borers. To control early blight in tomato, spray mancozeb @ 0.25%. Complete sowing of turmeric. Harvest tender fruits of okra at regular interval. Maintain proper moisture in soil.
- In Intermediate Zone, carry out weeding in rice nursery. Carry out hoeing and weeding operations in vegetable crops. Provide mechanical support for better crop stand in young plants of tomato and cucurbits to avoid losses from gusty winds.

Himachal Pradesh:

- In Mid Hills Sub Humid Zone, spray Cypermethrin @ 200 ml (10EC) or 80 ml (25 EC) per 200 litres of water for the control of anar butterfly on pomegranate.
- In Mid Hills Sub Humid Zone, apply irrigation to all the crops. Undertake sowing of bhindi and arvi.

Punjab, Haryana and New Delhi

- In Punjab, complete sowing of summer moong, summer mash, cowpea and cucurbits. Undertake transplanting of vegetables (tomato, chilli, brinjal, cauliflower). Complete sowing of cotton including Bt cotton or desi Cotton and planting of turmeric. Undertake field preparation for nursery sowing of rice. Irrigate the vegetable and fruit crops.
- In Haryana, continue sowing of cotton, transplanting of matured seedlings of tomato, cauliflower, cabbage in prepared field and complete the sowing of ladyfinger, bottle gourd, cucumber, ridge gourd and summer radish. Undertake field preparation of nursery sowing of rice and land preparation for sowing of pulses i.e. green gram, lobia, moth and pigeonpea. Undertake intercultural/hoeing operation as per requirement of the cotton crop for removal of weed and conserve the soil moisture.
- In Delhi, continue sowing of vegetables, green gram, pigeon pea and cotton. Maintain optimum moisture level in cucurbitaceous crops by light and frequent irrigation. Undertake preparation of nursery for early cauliflower, tomato, chilli and brinjal.

Uttar Pradesh:

- Undertake harvesting of wheat and gram and sowing of spring season sugarcane.
- In East Uttar Pradesh apply irrigation in maize, urad, moong, vegetable and green manure crops. Undertake nursery preparation for Kharif onion.
- In West Uttar Pradesh, carry out land preparation for sowing of maize crop. Undertake harvesting of tomato, chilli, lady finger, bitter melon and cucumber.

Uttarakhand:

- In Hill Zone, stop irrigation to onion and garlic crop few days before harvesting. Undertake transplanting of nursery rice. Carry out hoeing and weeding operations in red gram. Apply mulch for soil moisture conservation in ginger. Carry out earthing up, mulching and weeding operations in potato crop. Carry out staking and mulching operations in vegetables like tomato, brinjal, chilli and capsicum.
- In Bhabar and Tarai Zone, undertake sowing of soybean. Undertake field preparation for nursery sowing of rice. To control blight disease in potato crop in the mid and high hills region, spray mancozeb @ 20g/litre of water. Undertake transplanting of capsicum and brinjal in the polyhouse in mid and high hills and apply irrigation.
- In Sub-Humid Sub-Tropic Zone, undertake nursery sowing of rice. Carry out intercultural operations in sugarcane crop.

Rajasthan:

- In Irrigated North Western Plain Zone and South eastern Humid Plain Zone, undertake nursery preparation of rice.
- In Sub Humid Southern Plain and Aravali Hill Zone, due to increase in temperature, apply irrigation at regular interval in summer vegetables and fruits crops. Also, due to increase in wind velocity stop all tillage operation for avoid the wind erosion.
- In Semi Arid Eastern Plain Zone, undertake field preparation for sowing of irrigated groundnut, planting of fruit trees. Also for blight disease in tomato, spray Mancozeb @ 2 gm or copper Oxichloride @ 3 gm per litre water.
- In Transitional Plain Zone of Inland Drainage, undertake nursery preparation for kharif onion. Also due to increasing temperature and hot wind, irrigate fruit orchard and vegetable crops.

- In Arid Western Plain Zone, undertake field preparation for groundnut sowing.

Apiculture:

- In Himachal Pradesh, during this time, bees collect extra honey and store it. Give extra frames to the colony for more honey accumulation. Save the colony from insects. The colony may be divided to increase the numbers.
- In Jammu and Kashmir, protect colonies from high temperature by shifting to shady areas/ cooler places or cover with wet gunny bags. Bees need water to dilute honey and to cool the hives during hot weather conditions. Keep water trough filled with coarse gravel near the hive as it helps bees to spend more time in collecting nectar and less time for water collection.

Animal Husbandary:

- In Rajasthan, in view of the prevailing heat wave conditions, keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Provide curtains and proper ventilation in poultry house

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