



National Agromet Advisory Service Bulletin

Friday 15th May 2020
(For the period 15th to 19th May 2020)



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India Meteorological Department

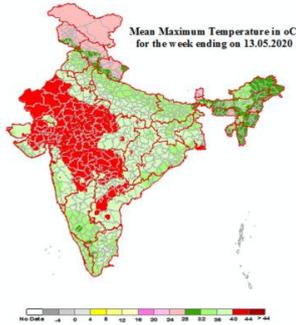
Weblink For

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

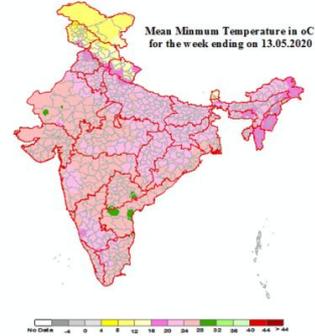
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 13.05.2020

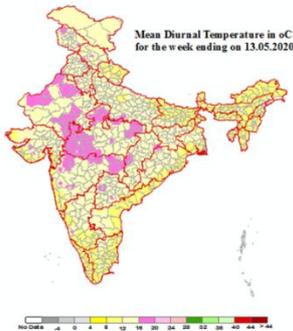
Mean Maximum Temperature (°C) for the week ending on 13.05.2020



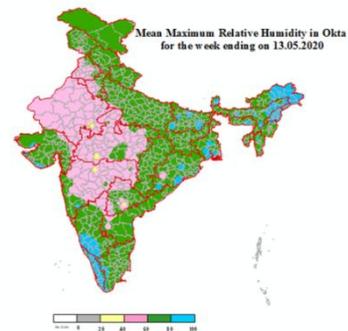
Mean Minimum Temperature (°C) for the week ending on 13.05.2020



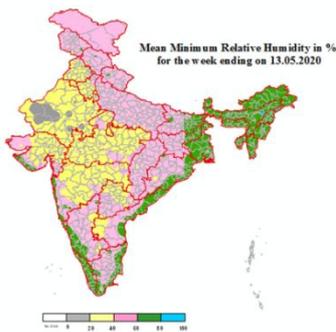
Mean Diurnal Temperature Variation (°C) for the week ending on 13.05.2020



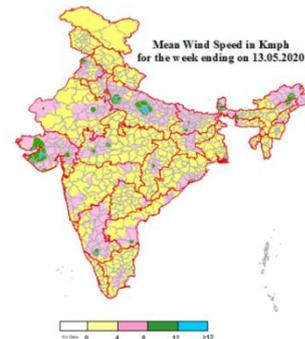
Mean Maximum Relative Humidity (%) for the week ending on 13.05.2020



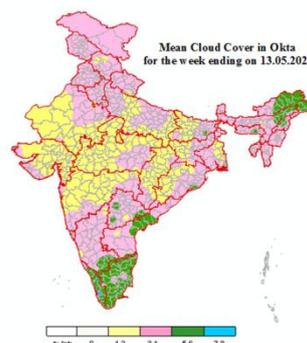
Mean Minimum Relative Humidity (%) for the week ending on 13.05.2020



Mean Wind Speed (km/hr) for the week ending on 13.05.2020

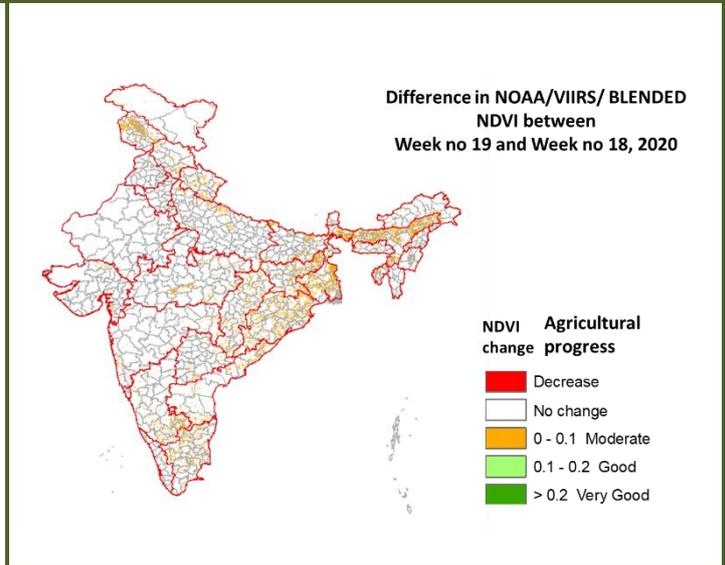
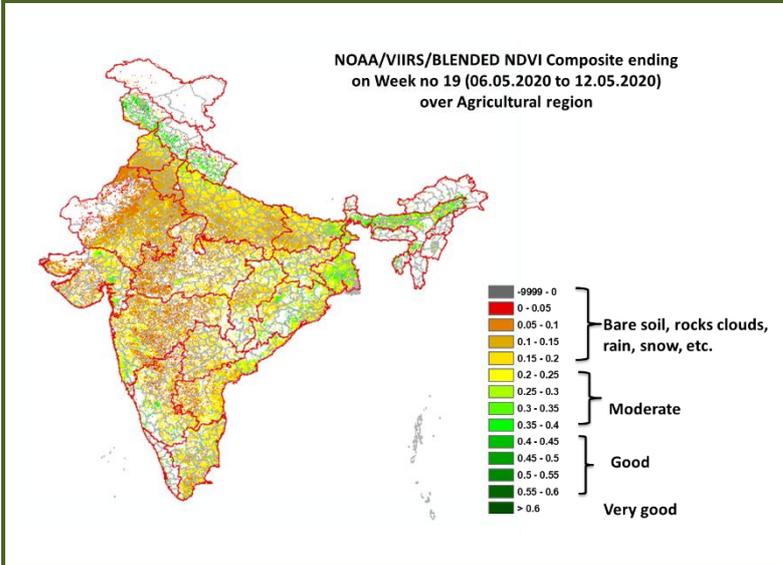


Mean Cloud Cover (okta) for the week ending on 13.05.2020



NOAA/VIIRS/BLENDED NDVI composite for the week number 19 (06.05.2020 to 12.05.2020) over Agricultural regions of India

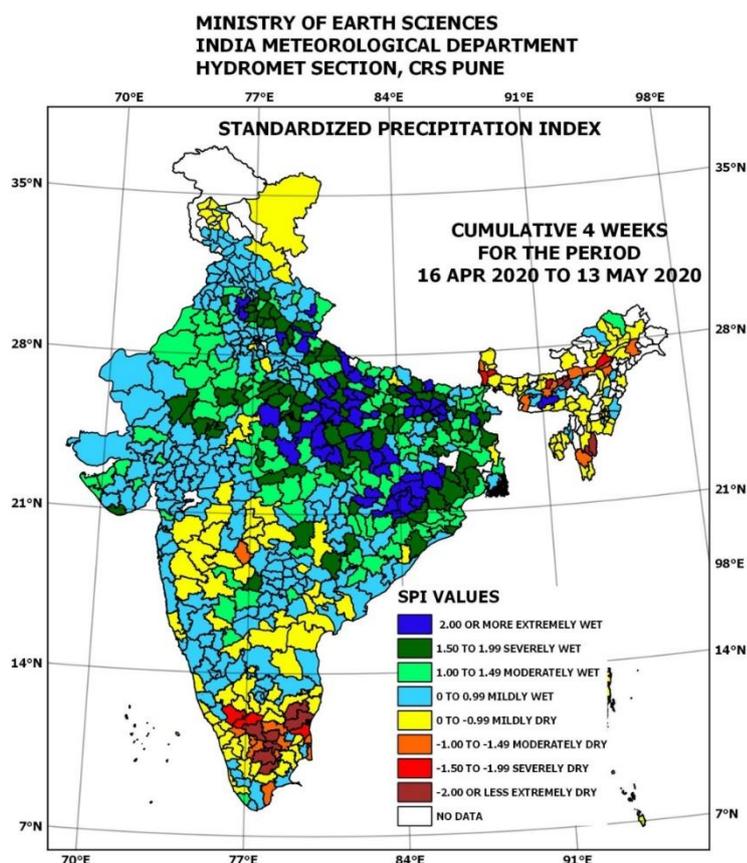
Difference in NOAA/VIIRS/BLENDED NDVI between week number 19, 2020 and week number 18, 2020



Agricultural vigour was good at few places of Valley region of Jammu & Kashmir; isolated places of Himachal Pradesh, Uttarakhand, North Eastern states, Coastal Karnataka & South Interior Karnataka. Rest of the country NDVI could not be captured as *rabi* crops have been harvested and *zaid* crops are under sowing.

Moderate difference in agricultural vigour was observed over most of the places of Valley region of Jammu & Kashmir; at many palces over North eastern states and at few /isolated over rest of the country.

Standardised Precipitation Index Cumulative 4 weeks for the period 16th April to 13th May 2020



- Extremely/ Severely wet conditions exist in Begusarai, Bhabua, Bhagalpur, Bhojpur, East Champaran, Darbhanga, Gopalganj, Jamui, Khagaria, Lakhisarai, Muzaffarpur, Nalanda, Patna, Rohtas, Samastipur, Saran, Sitamarhi, Siwan, Vaishali districts of Bihar; Gir Somnath district of Gujarat; Ambala, Karnal, Kurukshetra, Kaithal districts of Haryana; Sirmaur district of Himachal Pradesh; Bidar district of Karnataka; Bhind, Bhopal, Gwalior, Hoshangabad, Morena, Neemuch, Shivpuri, Ashoknagar, Chhatarpur, Dindori, Katni, Narsinghpur, Panna, Rewa, Sagar, Satna, Shahdol, Sidhi, Tikamgarh, Umaria, Singrauli districts of West Madhya Pradesh; Chandrapur district of Maharashtra; West Khasi Hills district of Meghalaya; Angul, Bargarh, Boudhgarh, Deogarh, Ganjam, Jagatsinghpur, Jharsuguda, Keonjhar, Mayurbhanj, Sambalpur, Sonepur, Sundargarh districts of Orissa; Patiala, Barnala districts of Punjab; Pali, Chittorgarh, Sawai Madhopur, Tonk, Dholpur, Rajsamand districts of Rajasthan; Chandigarh district of Union Territory; Allahabad, Ambedkar Nagar, Bahraich, Banda, Barabanki, Basti, Deoria, Fatehpur, Ghazipur, Gonda, Kanpur City, Kaushambi, Kheri, Lucknow, Pratapgarh, Rae Bareilly, Sultanpur, Sonbhadra, Unnao, Varanasi, Sahuji Maharaj Nagar, Sant Ravidas Nagar, Amethi, Bareilly, Bijnor, Hamirpur, Jalaun, Jhansi, Jyotiba Phule Nagar, Moradabad, Muzaffarnagar, Shahjahanpur, Saharanpur, Sambhal districts of Uttar Pradesh; Malda, Bankura, Murshidabad, West Midnapore districts of West Bengal; Bokaro, Dumka, Koderma, Sahibganj, East Singhbhum, West Singhbhum, Simdega, Seraikela-Khar, Ramgarh districts of Jharkhand; Hardwar, Nainital, Udham Singh Nagar, Bageshwar districts of Uttarakhand; Janjgir, Koriya, Raipur, Surguja, Bijapur, Baloda Bazaar, Balrampur, Surajpur, Kondagaon districts of Chhattisgarh.
- Extremely/Severely dry conditions exist in Darrang, Lakhimpur, Nalbari, Morigaon districts of Assam; Chamrajnagar, Mysore districts of Karnataka; Champhai, Serchhip districts of Mizoram; Cuddalore, Dindigul, Erode, Karur, Madurai, Namakkal, Tiruvannamalai, Viluppuram districts of Tamil Nadu; Darjeeling districts of West Bengal.
- Moderately wet to moderately dry conditions were experienced in remaining districts in the country.

Weather Forecast for next 5 days valid upto 0830 hours of 20th May, 2020

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-below.
- ◆ Maximum Temperatures likely to remain between 40-43°C over some parts of Tamilnadu, Telangana, Rayalaseema and North Interior Karnataka during next 2-3 days. No significant change in maximum temperatures likely over plains of Northwest India during next 24 hours and gradual rise by 2-4°C during subsequent 3 days.
- ◆ No significant change in maximum temperatures likely over rest parts of the country during next 2 days.

5 Day Rainfall Forecast (MID-DAY)

15th May 2020

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

% Station Reporting Rainfall

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

Weather Warning during next five days:

- 15 May (Day 1): ♦ Thunderstorm accompanied with lightning & squall** (speed reaching 50-60 kmph) at isolated places over Andaman & Nicobar Islands and Bihar; **with lightning & gusty winds** (speed reaching 40-50 kmph) at isolated places over Gangetic West Bengal; **with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Rajasthan, Vidarbha, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Marathawada, Madhya Maharashtra, Konkan & Goa, Telangana, Karnataka, Lakshadweep and Kerala & Mahe and Tamilnadu, Puducherry & Karaikal and **with lightning** at isolated places over Madhya Pradesh, Jharkhand, Odisha and Arunachal Pradesh.
- ♦ **Heavy rainfall** very likely at isolated places over Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal & South Interior Karnataka, Kerala & Mahe and Lakshadweep.
 - ♦ **Squally weather** conditions, wind speed reaching 45-55 kmph gusting to 65 likely to prevail over southeast Bay of Bengal and adjoining Central & southwest Bay of Bengal and with wind speed reaching 40-50 kmph gusting to 60 likely to prevail over Maldives , southeast Arabian Sea and Andaman Sea. Fishermen are advised not to venture into these areas.
- 16 May (Day 2): ♦ Thunderstorm accompanied with lightning & squall** (speed reaching 50-60 kmph) at isolated places over Andaman & Nicobar Islands; **with lightning & gusty winds** (speed reaching 40-50 kmph) at isolated places over Gangetic West Bengal; **with lightning & gusty winds** (speed reaching (30-40 kmph) at isolated places over Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Rayalaseema, Karnataka, Lakshadweep and Kerala & Mahe and **with lightning** at isolated places over Madhya Pradesh, Vidarbha, Bihar, Jharkhand, Arunachal Pradesh, Marathawada and Tamilnadu, Puducherry & Karaikal.
- ♦ **Heavy rainfall** very likely at isolated places over Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Coastal & South Interior Karnataka, Lakshadweep and Kerala & Mahe.
 - ♦ **Squally weather** conditions with wind speed reaching 55-65 kmph gusting to 75 kmph likely to prevail over central parts of south Bay of Bengal & adjoining central Bay of Bengal and 45-55 kmph gusting to 65 over Comorin-Maldives area and southeast Arabian Sea and 40-50 kmph gusting to 60 over Andaman Sea and Lakshadweep area. Fishermen are advised not to venture into these areas.
- 17 May (Day 3): ♦ Thunderstorm accompanied with lightning & gusty winds** (speed reaching 40-50 kmph) likely at isolated places over Gangetic West Bengal; **with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Odisha, Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Coastal & South Interior Karnataka, Lakshadweep and Kerala & Mahe and **with lightning** at isolated places over Vidarbha, Bihar, Jharkhand, Marathwada, Konkan & Goa, Rayalaseema, North Interior Karnataka and Tamilnadu, Puducherry & Karaikal.
- ♦ **Heavy rainfall** very likely at isolated places over South Interior Karnataka and Kerala & Mahe.
 - ♦ **Heat wave conditions** likely in isolated pockets over Rajasthan.
 - ♦ **Gale wind** speed reaching 75-85 kmph gusting to 90 kmph likely to prevail over eastcentral and adjoining westcentral & south Bay of Bengal and **Squally** wind speed reaching 40-50 kmph gusting to 60 kmph likely to prevail over Andaman Sea. Fishermen are advised not to venture into these areas.
- 18 May (Day 4): ♦ Thunderstorm accompanied with lightning & gusty winds** (speed reaching 40-50 kmph) likely at isolated places over Gangetic West Bengal; **with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Chhattisgarh, Sub- Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, Assam & Meghalaya, Coastal Andhra Pradesh & Yanam, Lakshadweep and Kerala & Mahe and **with lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan,

Muzaffarabad, Himachal Pradesh, Bihar, Jharkhand, Coastal & South Interior Karnataka and Tamilnadu, Puducherry & Karaikal.

- ◆ **Heavy rainfall** likely at isolated places over Odisha and Kerala & Mahe.
- ◆ **Heat wave conditions** likely in isolated pockets over Rajasthan.
- ◆ **Gale** wind speed reaching 80-90 kmph gusting to 100 kmph likely to prevail over westcentral Bay of Bengal and adjoining areas of eastcentral Bay of Bengal and squally wind speed reaching 45-55 kmph gusting to 65 kmph likely to prevail over along & off north Andhra Pradesh-south Odisha coasts. Fishermen are advised not to venture into these areas and Odisha-West Bengal coasts and those out at sea shall come back.

19 May (Day 5): ◆ **Thunderstorm accompanied with lightning & gusty winds** (speed reaching 40-50 kmph) likely at isolated places over Odisha, Gangetic West Bengal; **with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Chhattisgarh, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamilnadu, Puducherry & Karaikal and Kerala & Mahe and **with lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Himachal Pradesh, Bihar, Arunachal Pradesh and Coastal & South Interior Karnataka.

- ◆ **Heavy to very heavy rainfall** likely at isolated places over Odisha and **heavy rainfall** at isolated places over Assam & Meghalaya, gangetic West Bengal and Kerala & Mahe.
- ◆ **Gale wind speed** reaching 90-100 kmph gusting to 110 kmph likely to prevail over north and adjoining westcentral Bay of Bengal; and 65-75 kmph gusting to 85 kmph along & off north Odisha-West Bengal coasts. Fishermen are advised not to venture into these areas.

Weather Outlook for subsequent 2 days from 20th May to 22nd May, 2020

- ◆ Fairly widespread to widespread rain/ thundershowers likely over Islands, northeast India & adjoining parts of East India. Isolated heavy to very heavy rainfall likely over Gangetic West Bengal on 20th and over on northeast India on 20th & 21st May, 2020.
- ◆ Isolated to scattered rain/ thundershowers likely over parts of south peninsular India.
- ◆ Dry weather likely to prevail over the remaining parts of the country.

Forecast for the 2020 Southwest Monsoon Onset over Kerala

- ◆ This year, the onset of southwest monsoon over Kerala this year is likely to be slightly delayed as compared to normal date of onset. The monsoon onset over Kerala this year is likely to be on 5th June with a model error of ± 4 days.

Salient advisories

- The **Well Marked Low Pressure area** over southeast Bay of Bengal & neighbourhood along with associated cyclonic circulation extending up to mid-tropospheric levels persists. It is very likely to concentrate into a **Depression** over the same region during next 12 hours and further intensify into a **Cyclonic Storm** over central parts of south Bay of Bengal by 16th May evening. It is very likely to move northwestwards initially till 17th and then re-curve north-northeastwards towards north Bay of Bengal during 18th-20th May.
- Conditions are likely to become favourable for advance of Southwest Monsoon into some parts of southeast Bay of Bengal, Andaman Sea and Andaman & Nicobar Islands in next 48 hours.
- **Advisory for Desert Locust:**
In Arid Western Plain Zone of Rajasthan, where there is attack of desert locust in Bikaner and Jaisalmer districts, apply Chloropyriphos (50%) @ 1 ml/litre or (20%) @ 2.5 ml/litre of water in standing crops.
- **As Thunderstorm accompanied with lightning & squall** (speed reaching 50-60 kmph) at isolated places over Bihar on 15th and Andaman & Nicobar Islands on 15th & 16th, **with lightning & gusty winds** (speed reaching 40-50 kmph) at isolated places over Gangetic West Bengal from 15th to 19th and over Odisha on 19th; **with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad, Himachal Pradesh, Rajasthan, Vidarbha, Marathwada and Telangana on 15th, over Konkan & Goa and Karnataka on 15th & 16th, over Madhya Maharashtra from 15th to 17th, over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi on 15th & 17th, over Lakshadweep from 15th to 18th, over Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Kerala & Mahe from 15th to 19th, over Nagaland, Manipur, Mizoram & Tripura from 15th to 17th & 19th, over Tamilnadu, Puducherry & Karaikal on 15th, 18th and 19th, over Coastal Andhra Pradesh & Yanam from 16th to 18th, over Odisha and South Interior Karnataka on 17th, over Andaman & Nicobar Islands from 17th to 19th and over Jharkhand on 19th; **with lightning** at isolated places over Odisha on 15th, over Madhya Pradesh on 15th & 16th, over Jharkhand from 15th to 18th, over Arunachal Pradesh on 15th, 16th & 19th, over Vidarbha and Marathwada on 16th & 17th, over Tamilnadu, Puducherry & Karaikal from 16th to 18th, over Bihar from 16th to 19th, over Konkan & Goa, Rayalaseema and North Interior Karnataka on 17th and over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad, Himachal Pradesh, Coastal & South Interior Karnataka on 18th & 19th; provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As **Heat wave conditions** likely in isolated pockets over Rajasthan on 18th, apply irrigation at regular intervals and increase the frequency of irrigation at critical growth stages; carry out mulching with straw/polythene to conserve soil moisture.
- As **rain/thundershowers** likely at **most places** over Coastal Karnataka, Lakshadweep and Andaman & Nicobar Islands on 15th & 16th, over Kerala & Mahe from 15th to 17th and over Assam & Meghalaya on 16th; **at many places** over North Interior Karnataka and Nagaland, Manipur, Mizoram & Tripura (NMMT) on 15th & 16th, over Arunachal Pradesh on 15th, 16th & 19th, over Assam & Meghalaya on 15th, 17th, 18th & 19th, over Sub-Himalayan West Bengal & Sikkim from 15th to 19th, over Coastal Andhra Pradesh & Yanam on 16th, over South Interior Karnataka on 16th & 17th, over Coastal Karnataka & Lakshadweep on 17th & 18th, over Andaman & Nicobar Islands from 17th to 19th, over Kerala & Mahe on 18th & 19th and over Odisha on 19th; along with **Heavy rainfall** very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura (NMMT) on 15th, over Assam & Meghalaya, Coastal Karnataka, Andaman & Nicobar Islands and Lakshadweep on 15th & 16th, over Kerala & Mahe from 15th to 19th, over South Interior Karnataka from 15th to 17th, over Arunachal Pradesh on 16th, over Odisha on 18th, and over Gangetic West Bengal on 19th, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation,

intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

➤ **Undertake the following operations:**

- sowing of paddy in Problem Area Zone and Northern Zone of Kerala.
- nursery raising for sowing of *Sali* rice in Assam.
- planting of ginger / turmeric in Mizoram.
- land preparation for sowing of baby corn in Odisha.
- nursery preparation for rice in south Gujarat..
- field preparation for planting improved varieties of ginger and turmeric rhizomes in Jhabua Hill Zone of Madhya Pradesh.
- sowing of green manure crops like sunhemp, dhaincha, etc. in Chhattisgarh.
- sowing of ginger and turmeric in Sub-Tropical Zone of Jammu & Kashmir.
- sowing of coriander and fenugreek in Sub Montane and Low Hills Sub Tropical Zone of Himachal Pradesh.
- field preparation for nurseries of rice Western Zone of Haryana.
- sowing of tomato, brinjal, ginger and cucurbitaceous family vegetables like cucumber, pumpkin, bottle guard, etc in East Uttar Pradesh.
- planting of sugarcane and sowing of jowar in Sub Humid Sub Tropic Zone of Uttarakhand.
- nursery sowing of vegetables like chilli, tomato and brinjal in Vidarbha.

Detailed Agromet Advisories

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

Realised Rainfall: Significant rainfall occurred in Dakshina Kannada and Uttara Kannada districts of Coastal Karnataka, Bidar, Gadag and Haveri districts of North Interior Karnataka, Ballari, Chikkamagaluru, Chitradurga, Davangere, Kodagu and Shivamogga districts of South Interior Karnataka; in all districts of Kerala except Kannur, Kasargod, Kozhikode, Mahe, Malappuram and Palakkad; Kanyakumari, Karaikal, Tirunelveli districts of Tamilnadu

Advisories:

- **As Thunderstorm accompanied with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Telangana on 15th, over Karnataka on 15th & 16th, over Lakshadweep from 15th to 18th, over Kerala & Mahe from 15th to 19th, over Tamilnadu, Puducherry & Karaikal on 15th, 18th and 19th, over Coastal Andhra Pradesh & Yanam from 16th to 18th, over South Interior Karnataka on 17th; **with lightning** at isolated places over Tamilnadu, Puducherry & Karaikal from 16th to 18th, over Rayalaseema and North Interior Karnataka on 17th and over Coastal & South Interior Karnataka on 18th & 19th; provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- **As rain/thundershowers likely at most places** over Coastal Karnataka and Lakshadweep on 15th & 16th and over Kerala & Mahe from 15th to 17th; **at many places** over North Interior Karnataka on 15th & 16th, over Coastal Andhra Pradesh & Yanam on 16th, over South Interior Karnataka on 16th & 17th, over Coastal Karnataka & Lakshadweep on 17th & 18th and over Kerala & Mahe on 18th & 19th; along with **Heavy rainfall** very likely at isolated places over Coastal Karnataka and Lakshadweep on 15th & 16th, over Kerala & Mahe from 15th to 19th, over South Interior Karnataka from 15th to 17th, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

Karnataka

- In North Interior Karnataka, prepare land for sowing of *kharif* crops and procure seeds, fertilizers and other required inputs. Undertake harvesting of matured mango and rice. Install 4 pheromone traps/acre in mango orchard for fruit fly monitoring. Provide light irrigation to watermelon crop. Carry out Bahar treatment in pomegranate; spray 1 % Bordo mixture for disinfection of leaves in pomegranate.
- In South Interior Karnataka, incorporate 10 tonnes of FYM into the soil one week prior to transplanting of turmeric. Due to cloudy weather, drizzling /heavy rain along with micronutrient deficiency twister fungal disease is noticed heavily in small onion; to manage, spray Difenconazole @ 1 ml or Thiophanate Methyl @ 1 gm or Tebuconazole @ 1 gm or Nativo @ 0.75 gm / liter of water.
- In Coastal Karnataka, in arecanut, coconut, banana and other crops, mulching with farm waste followed by irrigation is advised. For control of mites, as a precautionary measure, spray Dcofol @ 2.5 ml / liter of water or Sulphur @ 4g/liter of water.

Animal Husbandry

- In Karnataka, apply 4-6 inch thick hay thatch as a roofing material. Water can be used for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature in poultry sheds.

Kerala

- In Problem Area Zone, undertake sowing of paddy. In Onattukara region, the varieties Onam and Chingam

is mostly preferred. For nursery preparation, paddy seeds may be mixed with pseudomonas fluorescence (10g/kg seeds) before sowing.

- In Central Zone, prepare land for ginger and turmeric. To avoid foot rot in ginger, soak the suckers in 0.3% Mancozeb/ Pseudomonas solution for 30 minutes.
- In Southern Zone, carry out nursery preparation for paddy; before sowing, dress seeds with P.fluorecsens @ 10g or with Carbendazim 2 g/kg of seeds.
- In Northern Zone, undertake sowing of (first crop) paddy. To prevent seed borne diseases, mix the seeds with Bavistin (@2g per kg of seeds) or dress the seeds with Pseudomonas @10g/kg of seeds.

Andhra Pradesh

- In North Coastal Andhra Pradesh, continue harvesting rice and maize. Undertake deep summer ploughing to eliminate the soil borne pests and diseases for the forthcoming khariff season.
- In Scarce Rainfall Zone, continue harvesting of rice and maize. Add well rotten farm yard manure in the crop fields after harvest. Undertake summer ploughings which will help in control of perennial weeds, pest and diseases inoculums.
- In Rayalaseem, go for deep ploughing by utilizing the realized rain fall during the month as it will break the hard pans in the soil and it will help to increase the storage capacity of the soil besides that it will expose the vegetative propagules of the cyperus species and pupal stages of the pests and get killed..
- In Nellore district of Andhra Pradesh, prepare paddy nurseries by applying Carbofuran 3G granules @ 160 grams/cent nursery at 10 DAS to prevent the incidence of stem borer and gall midge .

Telangana

- In the state, utilizing the recent rains, farmers are advised to take up summer ploughing to control weeds, hibernating pests and disease spores that may damage kharif crops. Dig the pits for planting new orchards.
- Light irrigation may be provided to vegetables. Spraying of the Potassium nitrate @ 5g /litre is recommended at early hours.
- Prevailing weather conditions are favourable for powdery mildew in bhendi crop. To control, spray Hexaconazole @ 2 ml per litre of water.
- Prevailing weather conditions are favourable for leaf blight in tomato crop. To control, spray Ridomil @ 2 g per litre of water.
- Prevailing weather conditions are favourable for Thrips in chilli. To control, spray Acephate @ 1.5 g per litre of water.

Tamil Nadu

- In Cauvery Delta Zone, blast incidence is being noticed in the summer paddy; spray Carbendazim 200 g/acre or Tricylazole @ 200 ml/acre in 200 litre of water.
- In Western Zone, weather is congenial for early shoot borer attack in sugarcane, apply irrigation frequently and do mulching if rain does not occur.
- In South Zone, weather is congenial for mealy bug in tomato. To control, go for neem oil 0.5% along with teepol 1 ml/litre or Imidacloprid 80.5 SC@ 0.6 ml/litre or Chlorpriphos 20 EC@ 2ml/litre of water.
- In Karaikal and Pondicherry, to control rice stem borer, spray Cartap Hydrochloride 50 % SP @ 1000g/ha or Phosphamidon 40% SL 1250 ml/ha.

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

Realised Rainfall: Rainfall occurred in Anjaw, Changlang, East Siang, Lohit, Lower Dibang Valley, Lower Subansari, Papumpare, Tawang, Tirap, Upper Siang, Upper Subansari, West Kameng and West Siang districts of Arunachal Pradesh; in Baksa, Barpeta, Chirang, Dhemaji, Dhubri, Dibrugarh, Hailakandi, Jorhat, Karimganj, Lakhimpur, Morigaon, Sonitpur, Sibsagar, Tinsukia and Udalgiri districts of Assam; in East Khasi Hills district of Meghalaya; in Mon, Wokha and Zunheboto districts of Nagaland and in North and West Tripura districts of Tripura.

Advisories:

- **As Thunderstorm accompanied with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated

places over Assam & Meghalaya from 15th to 19th, over Nagaland, Manipur, Mizoram & Tripura from 15th to 17th & 19th; **with lightning** at isolated places over Arunachal Pradesh on 15th, 16th & 19th, provide mechanical support to banana, young fruit plants and vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

- As **rain/thundershowers** likely **at most places** over Assam & Meghalaya on 16th; **at many places** over Nagaland, Manipur, Mizoram & Tripura (NMMT) on 15th & 16th, over Arunachal Pradesh on 15th, 16th & 19th and over Assam & Meghalaya on 15th, 17th, 18th & 19th; along with **Heavy rainfall** very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura (NMMT) on 15th, over Assam & Meghalaya on 15th & 16th and over Arunachal Pradesh on 16th, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

Arunachal Pradesh

- In Arunachal Pradesh, undertake transplanting of WRC rice and continue planting of sugarcane, ginger/turmeric. Provide proper support to the banana plants with bamboo or wooden post. Proper drainage in the field is advised.

Assam & Meghalaya

- In Assam, apply 5% Malathion dust @ 20 kg per ha of land to control gandhi bug insect attack in the *Boro* rice at milky stage. Undertake nursery raising for sowing of *Sali* rice.
- In Hill Zone of Assam, continue planting of ginger and banana. Complete transplanting of *Ahu* rice. Undertake gap filling with replanting of dead hills with seedlings of same age of *Ahu* rice.
- In Lower Brahmaputra Valley Zone, apply Malathion 50 EC @ 2 ml per litre of water against fruit fly, aphid and black and red pumpkin beetle in summer vegetables on a clear day.
- In Upper Brahmaputra Valley Zone, to control stem bleeding disease in coconut, it is advised to scrape out the infected portion from the trunk followed by application of Tridemorph (1 ml/litre) or Carbendazim (1 g/litre) and finally cover the wounds with hot coal tar. Spray Deltamethrin (Decis 2.8 EC) @ 1 ml/litre or Malathion 50EC @ 1.5 ml/litre on a clear day to control fruit and shoot borer infestation in brinjal.
- In Barak Valley Zone, due to favorable weather, there is chance of attack of bacterial leaf blight (BLB) in *Boro* rice field; to control, apply 1 kg Potash fertilizer per bigha of land or stop top dressing of nitrogenous fertilizer.
- In Central Brahmaputra Valley Zone, continue sowing of *Olitorius* jute. Carry out harvesting of 70-80% matured pods of summer green gram and black gram. Undertake harvesting matured *Boro* rice.
- In North Bank Plain Zone, in ginger and turmeric field first mulching should be done after planting and to be repeated at 40 days after planting with suitable mulching material like paddy husk and saw dust. To control rhizome (soft) rot disease in ginger, excess rainwater should easily drain out from the field and the affected areas should be drenched with 0.3% Mancozeb 75 WP or Captan. Replanting of dead hills should be done within 7-10 days of transplanting with seedlings of same age of Normal *Ahu* rice.
- In Meghalaya, continue transplanting of 1 month old seedlings of cucurbits, brinjal, chilli, tomato and capsicum; irrigate immediately. Continue sowing of maize. Provide shade and protect the newly grafted plants of *Khasi* Mandarin.

Manipur, Mizoram, Tripura and Nagaland

- In Manipur, continue sowing of soybean, *kharif* maize and groundnut and planting of ginger. Undertake nursery plot preparation for raising *kharif* rice nursery; maintain 5-8 cm water level at Pre-*kharif* rice field. Spray Rogor @ 15ml/15 litres water on a clear day against leaf folder attack in Pre-*kharif* rice.

- In Mizoram, make channels around the field of black gram and vegetable crops to drain out excess water. Continue sowing of *Jhum* rice; intercropping of leguminous crops (cowpea /soybean) at 2-3 rows across the slope in *Jhum* field at desirable interval with rice is advocated. Undertake planting of ginger / turmeric.
- In Tripura, after 25 days of transplanting, weeding and application of Urea as top dressing may be done in *Aus* rice. Maintain moisture in the field of cow pea. To manage the attack of fruit & shoot borer in brinjal crop, apply Cypermethrin @ 1.5ml or Flubendiamide 0.5 ml per litre of water on a clear day.
- In Nagaland, continue sowing of cow pea. Mulch the beds of ginger with green leaves/organic wastes as it is essential to prevent soil splashing and erosion of soil due to heavy rains. It also adds organic matter to the soil and checks weed emergence.

Animal Husbandry

- In Northeastern region, before the onset of monsoon, immunize the farm cattle against FMD (Foot & Mouth Disease), HS (Hemorrhagic Septicemia) and BQ (Black Quarter) diseases after consultation with local veterinary doctor. Vaccinate pig against Swine Fever.

Fishery

- In Assam, as rain water has started to accumulate in the fish pond, farmers are advised to apply 26 kg lime per bigha of water area. Remove unwanted fishes and weeds from the pond. Also, apply 266 kg of fresh cow dung in the fish pond atleast 7-10 days after application of lime.

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

Realised Rainfall: Significant rainfall occurred in Araria, Bhabua, Bhagalpur, Bhojpur, Patna, Purnea, Rohtas and West Champaran districts of Bihar; in Bokaro, Dumka, Giridih, Lohardaga, Pakur and Simdega districts of Jharkhand; in Bargarh, Koraput, Nawapara, and Sonepur districts of Odisha; in all districts of Andaman & Nicobar Islands; in Bankura, Birbhum, Burdwan, Murshidabad, Nadia and Purulia districts of Gangetic West Bengal and in all districts of Sub-Himalayan West Bengal & Sikkim except Darjeeling, Malda and West Sikkim. Weather remained dry/mainly dry over the rest of the region.

Advisories:

- **As Thunderstorm accompanied with lightning & squall** (speed reaching 50-60 kmph) at isolated places over Bihar on 15th and Andaman & Nicobar Islands on 15th & 16th, **with lightning & gusty winds** (speed reaching 40-50 kmph) at isolated places over Gangetic West Bengal from 15th to 19th and over Odisha on 19th; **with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Sub-Himalayan West Bengal & Sikkim over Odisha on 17th, over Andaman & Nicobar Islands from 17th to 19th and over Jharkhand on 19th; **with lightning** at isolated places over Odisha on 15th, over Jharkhand from 15th to 18th, over Bihar from 16th to 19th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- **As rain/thundershowers likely at most places** over Andaman & Nicobar Islands on 15th & 16th; **at many places** over Sub-Himalayan West Bengal & Sikkim from 15th to 19th, over Andaman & Nicobar Islands from 17th to 19th and over Odisha on 19th; along with **Heavy rainfall** very likely at isolated places over Andaman & Nicobar Islands and Lakshadweep on 15th & 16th, over Odisha on 18th and over Gangetic West Bengal on 19th, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

Odisha

- Transplanted summer paddy is at maturity to harvesting (13-15 week) stage in main field; carry out harvesting of paddy and keep the harvested produce at a safe place. Carry out summer ploughing utilizing the recent rains. Carry out sowing of green manure crops like sesbania and sunhemp in medium and low land 6-8 weeks prior to transplanting of rice. Undertake land preparation for sowing of baby corn. Undertake planting of yam and ginger. Apply irrigation in pulses especially at flowering and pod bearing stage. Sugarcane crop is at tillering (11-12 week) stage; plan irrigation at 10 days interval considering the soil moisture and forecasted rainfall. To control early shoot borer attack in young tillers of sugarcane, spray Profenofos 400ml per acre @ 2ml/litre of water on a clear day.

Bihar

- Carry out sowing of green manure crops where harvesting of *Rabi* crops is over. Dry the grains of wheat, pigeon pea and *Rabi* maize; store them at safe place on priority basis. Carry out land preparation for ginger and turmeric; apply 25-30 tonnes of cow dung per hectare land; start sowing from 15th May. Carry out weeding and apply irrigation to summer vegetables. Carry out weeding in late sown green gram and black gram crops; monitor crop for hairy caterpillar; spray Methyl Parathion 50EC@2.0ml or Chlorpyrifos 20 EC@2.5ml per litre of water in case of severe infestation on a clear day.

Jharkhand

- Continue sowing of ginger and elephant foot yam. Carry out digging of pits for new fruit plantations. To enhance the fertility of soil in rice field, sow green manure crops like sunhemp and dhaincha @ 20-25 kg per acre. After harvesting of mature okra, carry out application of urea @ 5-10 kg/ acre. To control fruit & shoot borer in okra, spray neem extract insecticide @ 1.5 to 2 ml / litre of water. To control shoot and fruit borer in brinjal and tomato crops, collect and bury the infested fruits and shoots; spray NSKE 5% 2ml/litre of water or spray Imidachloprid 1 ml or Quinolphos 25 EC @ 1 ml per litre of water on a clear day.

West Bengal

- In Sub-Himalayan West Bengal, carry out weeding and earthing up in maize crop; drain out excess water from the field. Continue planting of turmeric. Do mulching in ginger field to conserve moisture and control weeds. Apply mustard cake @ 500 g per plant in large cardamom plants at flowering stage. (It should be applied once in two years). Carry out immediate harvesting of paddy at 80% maturity; keep the harvested produce at safer place to protect from Norwesters. Drain out excess water from rice and jute fields. To control fall army worm in maize crop, spray Fipronil 1.5 gm/litre of water on a clear day.
- Carry out deep summer ploughing in harvested Boro paddy field to destroy eggs and pupa of insects; sow green manure crops like cluster bean, daincha, etc. in order to fertilize the field and conserve moisture in soil. Prepare fencing for protect betel vine crop from strong wind; for better leaf development, apply mustard cake and Tasko-5. To control fruit borer attack in okra and brinjal, spray Spinosad@1.5ml/litre of water in the afternoon hours on a clear day.

Andaman & Nicobar Islands

- Provide sufficient drainage for vegetable fields to drain out excess water and immediately harvest any produce. Avoid application of fertilizers and pesticides in the vegetable field during next five days. Select good variety nuts of arecanut and coconut and prepare nursery bed with proper drainage.

Animal Husbandry

- Provide appropriate floor space and ventilation to poultry birds; spray water on the roof and interior areas of poultry house to prevent heat stress to birds. Do not allow animals to graze in the open between 11 am to 3 pm; provide sufficient clean drinking water; provide salt sticks to animals to lick at their will; give anti-stress medicines to high yielding cattle; use ectoparasiticides to manage tick menace.

Fishery

- In Odisha, maintain 5 ft depth of water in the fish pond; harvest the fish if it is not possible to maintain

optimum depth of water.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Weather remained dry/mainly dry over the region.

- **Advisories:** As **Thunderstorm accompanied with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Vidarbha and Marathwada on 15th, over Konkan & Goa on 15th & 16th and over Madhya Maharashtra from 15th to 17th; **with lightning** at isolated places over Vidarbha and Marathwada on 16th & 17th and over Konkan & Goa on 17th; provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Maharashtra

- In Konkan, provide mechanical support to newly planted mango saplings and coconut plants in Sindhudurg district. Continue harvesting of matured rice in Ratnagiri, Raigad, Thane and Palghar districts. Keep the harvested produce in safer place. Continue nursery sowing of vegetables like brinjal, chilli and tomato with assured irrigation facilities in Ratnagiri, Raigad, Thane and Palghar districts.
- In Madhya Maharashtra, undertake harvesting of matured *summer* groundnut, onion and mangoes. Keep the harvested produce in safer place. To control spider mites in gerbera, spray Dicofol @ 15 ml per 10 litres of water during clear weather. To control shoot and fruit borer in brinjal, spray 4% Neemark or Chlorpyrifos 20 EC @ 20 ml per 10 liters of water during clear weather. To control fruit borer in tomato, spray 5% Neem Seed Kernel Extract during clear weather.
- In Marathawada, continue harvesting of *summer* groundnut, turmeric and mango. Keep the harvested produce in safer place. Apply drip irrigation in pomegranate orchards. To control stem borer in sugarcane, spray Chlorantraniliprol 18.5 % @ 3 ml Chlorpyrifos 20% EC @ 30 ml per 10 liters of water during clear weather .
- In Vidarbha, continue harvesting of matured rice, sesame, green gram and *summer* groundnut. Keep the harvested produce in safer place. Apply irrigation to vegetables and orchards. Continue harvesting of matured *summer* groundnut, sesame and green gram. Keep the harvested produce in safer place. Undertake nursery sowing of vegetables like chilli, tomato and brinjal.

Gujarat

- In North Gujarat, apply irrigation to pearl millet crop at flag leaves / ear head stages and to vegetable crops. Harvest the matured fruits of citrus, papaya, sapota and pomegranate etc.
- In South Gujarat, continue nursery preparation for rice. Apply irrigation to sugarcane, okra crops and mango orchards. Continue harvesting of okra. Drenching of Chlorpyrifos @ 30 ml/10 litre to avoid termite problem nearby sapota grafts is advised.
- In Saurashtra and Kutch, undertake harvesting of sesame, green gram and black gram crops in time before shattering of seeds. Apply light and frequent irrigation to sesame, groundnut, vegetables crops. Under present weather conditions, severe attack of thrips in chili has been reported; spray Profenofos @ 20 ml with 500 ml of 5 % neem seed extract or neem seed oil 50 ml in 10 litres of water.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Significant rainfall occurred in Bhopal, Panna and Sidhi districts of Madhya Pradesh and in Balod, Baloda Bazar, Bijapur, Dantewada, Dhamtari, Durg, Gariabad, Kanker and Raipur districts of Chhattisgarh. Weather remained dry/mainly dry over the rest of the region.

- **Advisories:** As **Thunderstorm accompanied with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Chhattisgarh from 15th to 19th; **with lightning** at isolated places over

Madhya Pradesh on 15th & 16th; provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.

Madhya Pradesh

- In Jhabua Hills Zone, apply irrigation to summer green gram and black gram crops at 7-10 days interval; carry out picking of mature pods. Prepare field for planting improved varieties of ginger and turmeric rhizomes. Carry out digging of pits for planting young fruit plants; irrigate newly developed orchards by drip method. Give timely irrigation and recommended dose of fertilizers to summer cucurbits, okra, spinach, brinjal, tomato, chilli and cluster bean.
- In the Nimar valley Zone, carry out deep ploughing of fields after harvesting of *Rabi* crops so that eggs, pupating stages of insects and weed seeds are destroyed. To increase production and save water, use drip irrigation for vegetable crops.
- In Vindhya Plateau Zone, continue digging of matured onion and garlic bulbs and store them in a safer place. Continue harvesting of matured fruits of bottle guard, sponge guard, water melon, musk melon, pumpkin, cucumber, etc.; apply irrigation to vegetable crops at regular intervals. To control various borers in green gram, black gram and cucurbitaceous crops, spray Profenophos 50 EC @ 1500 ml / ha in 600-700 litres of water; apply Methyl Parathion 2% dust @ 25 kg/ha is for control of caterpillars. To control of insects and pests in horticulture crops, spray Malathion 2.0ml + Mencozeb 3.0 ml per litre of water.
- In Bundelkhand Zone, undertake seed bed preparation for sowing of kharif onion during this week. Spray N.A.A. @ 10-15 gram per litre of water in cucurbitaceous crops to increase flowering and improve yield. Carry out digging of pits for establishing new orchards. Apply irrigation to *moong* crop; monitor crop for sucking pests; to control, spray Imidacloprid @ 0.5 ml per litre of water.
- In Central Narmada Valley Zone, do not burn the residual waste of wheat crop as it would kill the beneficial bacteria in soil. Apply irrigation to summer green gram and black gram crops according to weather and as per the requirement of the crops. To control of fruit drop in mango, spray Planofix @ 5 ml per pump. In present weather conditions, carry out rouging of viral infested chilli crop; uproot and bury the infected crop; after rouging, spray Imidacloprid @ 0.3 ml per litre of water.

Chhattisgarh

- In Northern Hill Zone Zone, carry out summer ploughing for preparing land for *kharif* crops; after first ploughing, spread FYM or compost in the field and mix it properly in the soil; mix neem or karanj cake in the soil at the time of final land preparation to protect crops against termites. Undertake sowing of green manure crops like sunhemp, dhaincha, etc. @ 20-25 kg seeds per acre to enhance the fertility of the soil of rice field. Apply need-based irrigation to vegetable crops. To manage the attack of stem borer and top borer insects in spring-planted sugarcane crop, remove the infested parts of crop and burn them.
- In Northern Hill Zone, Carry out deep ploughing in the field to prevent soil borne diseases and to destroy weeds and insect eggs. Arrange for high-yield seed varieties of *kharif* crops. Apply frequent irrigation to vegetable crops; harvest matures vegetables regularly. Make pits for new fruit plantations. Remove the dried and yellowish leaves of banana to reduce water requirement during summer season.
- In Bastar Plateau Zone, after harvest of wheat crop, carry out deep ploughing in the field; undertake green manuring by sowing dhaincha seeds at @ of 30-35 kg/ha. Apply frequent irrigation to vegetable crops; harvest matures vegetables regularly. Make pits for new fruit plantations. Arrange seeds of tuber crops like colocasia, turmeric & ginger; undertake sowing of these crops by the end of this month.

Animal Husbandry

- Repair *kachcha* roof of cattle sheds as a safety measure. Provide the green fodder and sufficient water to animals; vaccinate them before the onset of monsoon. Hang wet jute bags in and around animal and poultry

sheds to reduce heat stress.

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

Realised Rainfall : Significant rainfall occurred in Baramula and Doda districts of Jammu & Kashmir and in Haridwar, Nainital, Rudraprayag, Udham Singh Nagar and Uttarkashi districts of Uttarakhand.; in Chandauli, Chitrakoot, Maharajganj and Sant Ravidasnagar districts of East Uttar Pradesh and Bareilly, Hamirpur, Jotiba Phule Nagar, Muzaffarnagar, Pilibhit and Shahjahanpur districts of West Uttar Pradesh. Weather was mainly dry over rest of the region

- **Advisories:** As **Thunderstorm accompanied with lightning & gusty winds** (speed reaching 30-40 kmph) at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad, Himachal Pradesh, Rajasthan, over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi on 15th & 17th; **with lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad and Himachal Pradesh on 18th & 19th; provide mechanical support to banana, young fruit plants and vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm.
- As **Heat wave conditions** likely in isolated pockets over Rajasthan on 18th, apply irrigation at regular intervals and increase the frequency of irrigation at critical growth stages; carry out mulching with straw/polythene to conserve soil moisture.

Jammu & Kashmir

- In Sub-Tropical Zone, undertake threshing of wheat crop and store it in safe place. Undertake threshing of *Rabi* pulses like gram, pea and lentil. Carry out hoeing and weeding operations in green gram. Undertake sowing of ginger and turmeric.
- In Intermediate Zone, continue harvesting of wheat. Store the harvested mustard and *Rabi* pulses in safer place. Complete sowing of maize. Provide mechanical support to young plants of tomato and cucurbits to protect them from gusty winds. Apply irrigation to tomato, brinjal, chilli and capsicum.
- In Cold Arid Zone, complete planting of potato. Complete sowing of leafy vegetables.

Himachal Pradesh

- In Sub Montane and Low Hills Sub Tropical Zone, undertake land preparation for sowing of nursery rice. Procure seeds for sowing maize. Continue sowing of okra, peas, French beans, spinach, radish, turnip and carrot. Continue transplanting of cabbage, cauliflower and broccoli. Carry out weeding operation in potato crop. Carry out intercultural operations in sunflower. Undertake sowing of coriander and fenugreek. Apply mulch in ginger and turmeric.
- In High Hill Temperate Dry Zone, undertake weeding in pea and apply irrigation. Undertake sowing of potato. Spray Mancozeb or Indofil M-45 (@ 25g/10 litres of water) and Carbendazim or Bavistin (@ 10g/10 litres of water) solution in cabbage, cauliflower nursery to protect from root rot.
- In Mid Hills Sub Humid Zone, undertake transplanting of tomato, capsicum and brinjal. Undertake sowing of okra and arvi.

Punjab, Haryana, Delhi

- In Western Zone of Punjab, due to chances of light rain with lightning, hail and gusty winds (speed 40-50 Kmph) at isolated places in next 3-4 days, use hail net, provide mechanical support to young fruit plants, vegetables to prevent due to strong winds, keep already harvested materials at safe places and harvest the onion bulbs. Complete the sowing of paddy nursery during the second fortnight of this month and complete sowing of cotton including Bt cotton or *desi* cotton during this week. Fruit and shoot borer of brinjal may be controlled by spraying Proclaim 5 SG @80g or Coragen 18.5 SC @ 80ml in 100-125 litres of water per acre. Brinjal mite may also be checked by spraying 300 ml Omite 57 EC in 100-150 litres of water per acre

- In Undulating Plain Zone of Punjab, plan sowing of rice, irrigation in sugarcane as per weather and spray the crop with 350 ml of Dursban/Lethal/Massban/Goldban 20 EC (chlorpyrifos) in 400 litres of water per acre with manually operated sprayer to control sap sucking pest black bug on a clear day and direct the spray into the leaf-whorl for most effective control. Control damage of Bihar hairy caterpillar and gram caterpillar in barseem seed crop using recommended pesticides.
- In Western Plain Zone of Punjab, complete the sowing of *desi* cotton. Conserve soil moisture in field by spreading mulch in between cane rows; use rice straw/ wheat straw/ rice husk as mulch. To protect the tomato crop from early blight spray the crop with Indofil M-45 @ 600 g/acre in 200 litres of water.
- In Central Plain Zone of Punjab, harvest fruits of okra, bottle gourd, cucumber, bittergourd, spongegourd, tinda, and summer squash. Complete sowing of Bt cotton or *desi* cotton during the first fortnight and sowing of paddy nursery during the second fortnight of this month. Due to prevailing hot weather conditions, sugarcane crop requires frequent irrigations at 8 to 10 days interval. For attack of black bug in sugarcane, spray 350 ml of Dursban/Lethal/Massban/Goldban 20 EC in 400 litres of water per acre and direct the spray material into the leaf whorl for better results.
- In Western Zone of Haryana, withhold sowing of cotton crop. Keep changing weather in mind before harvesting and threshing of matured wheat and barley crops. Farmers are advised to carry the *Tirpal*/cover material during transportation of threshed wheat/mustard to grain market to avoid the wetting of grains. Manage the straw/ *Bhusa* of wheat crop at the earliest. Keep the *bhusa* in protected & dry area/place to avoid the spreading in the field. Maintain social distancing during wheat harvesting, threshing and other agricultural operations. Undertake field preparation for nurseries of rice crop with application of compost *khad* @ 10 to 12 carts per acre. Deep plough the fields, after harvesting of rabi crops.
- In Eastern Zone of Haryana, maintain social distancing during harvesting and other agricultural operation in all crops. In view of high temperature, harvest mature vegetables during morning and evening hours and keep harvested crops in shadow. Undertake sowing of green gram and cotton during this week. To control shoot and fruit borer in tomato crop, collect and bury the infested fruits and shoots; install pheromone traps @ 2-3 traps per acre; if pest population is high, spray Spinosad 48 EC @ 1 ml /4 litres of water when sky is clear. Monitor lady finger crop against attack of mite; spray Ethion @ 1.5-2 ml/litre of water. Constantly monitor timely sown onion crop against the attack of thrips.
- In Delhi, maintain social distancing during harvesting and other agricultural operation in all crops. Apply light irrigation as per requirement in all vegetable and standing crops during morning hours or evening hours. Undertake sowing of pigeon pea, cotton, green gram, cluster bean, senai, gwar etc during this week. Keeping in view the high temperature, harvest mature vegetables at morning and evening hours and keep harvested crops in shadow. Monitor lady finger crop against attack of mite; if population is high, spray Ethion @ 1.5-2 ml/litre of water when sky is clear. Maintain optimum moisture level in cucurbitaceous crops by application of light and frequent irrigation as dry conditions may lead to poor pollination and drop in yield.

Uttar Pradesh:

- In East Uttar Pradesh, complete the threshing of the wheat immediately. Carry out deep ploughing of fallow fields after crop harvesting. Continue sowing of tomato, brinjal, ginger and cucurbitaceous family vegetables like cucumber, pumpkin, bottle guard, etc. Stop irrigation and let field to dry before digging of garlic and onion. After harvesting of mature okra, apply urea @ 10 kg/ acre. Give top dressing of 1/3rd dose of nitrogen in their spring sugarcane field as per proper moisture in soil. Irrigate mango, guava, lemon, grapes, ber and papaya orchards as per requirements. To control attack of mango fruit fly, use pheromone trap.

- In West Uttar Pradesh, after harvesting and threshing mature crop of wheat, keep grains in a safe place. Apply irrigation to lady finger, cowpea, lobia and pumpkin crops as per the requirement. Carry out weeding in gram and maize crops and apply light irrigation. For stem borer in maize crop, spray Quinalphos 25% EC 2.0 litre / ha or Dimethoate 30% EC 1.0 litre / ha @ in 700-800 litres of water when sky is clear.

Animal Husbandry:

- Give sufficient quantity of grains with green and dry fodder to the animals. Protect cattle from heat and sunstroke. Vaccinate animals against F.M.D. for prevention of sputum and oral disease and against B.Q. for prevention of plant fever. Arrange clean water and balanced diet to poultry birds. To prevent Ranikhet disease in chickens, one-week chickens should be vaccinated with F-1 and four-week chickens with R-2 vaccine.

Uttarakhand

- In Sub Humid Sub Tropic Zone, continue planting of sugarcane. Continue sowing of jowar. To protect brinjal from attack of shoot borer and fruit borer insects, dispose off the infected fruit. Spray Spinosad 48 EC @ 1 ml per 4 litres of water during clear weather condition.
- In Hill Zone, undertake nursery preparation for sowing of rice; treat the seeds before sowing. Carry out weeding and hoeing operation in tomato. Undertake transplanting of capsicum.
- In Bhabar and Tarai Zone, undertake land preparation for nursery sowing of rice. Undertake sowing of red gram. Undertake land preparation for sowing of ginger. On the occurrence of spot on the leaves of tomato and chilly; spray Mancozeb @ 2.5g/litre of water in clear weather condition.

Rajasthan

- In Hyper Arid Partial irrigated zone, continue sowing of cotton; use varieties of R S - 2013, R S - 810, R S T - 9, R S - 875, BikaneriNarma and Maru Vikas (4 kg seed per ha) of American cotton and RG-8, RG-18, RDH-9, HD-23, RG-542 of deshi cotton with 12kg seed per ha.
- In Irrigated North Western Plain Zone, undertake sowing of Bt cotton and American cotton; use recommended varieties of RST-9, RS-810, RS-2013, RS-875, Bikaneri Nerma & Maru Vikas (RajHH-16) for American cotton.
- In Sub Humid Southern Plain and Aravali Hill Zone, start sowing of cotton to take 25-30% more yield as compared to late sown crop. Recommended varieties are Ankur-3224(BG II) and PCH-9605. Sow non-Bt cotton around the field of Bt cotton.
- In Semi Arid Eastern Plain Zone, undertake planting of orchards. Dig 1x1x1 m³ size pits & keep them exposed for 10-15 days. Provide 10-20 kg FYM per pit & apply 100 gm Quinalphos @ 15% per pit before planting.
- In Flood Prone Eastern Plain Zone, chilli crop is affected by leaf curl and mosaic disease. Uproot & burn affected plants to check the spread of disease and spray Dimethoate 30EC @ 1.0 ml per litre water.

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