



National Agromet Advisory Service Bulletin

Friday 08th November 2019

(For the period 8th to 12th November 2019)



Issued by

India Meteorological Department

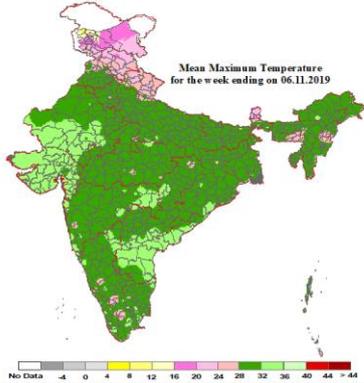
Weblink For

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

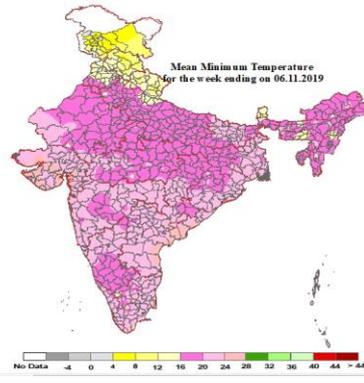
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

spatial distribution of weather parameters for the week ending on 06.11.2019

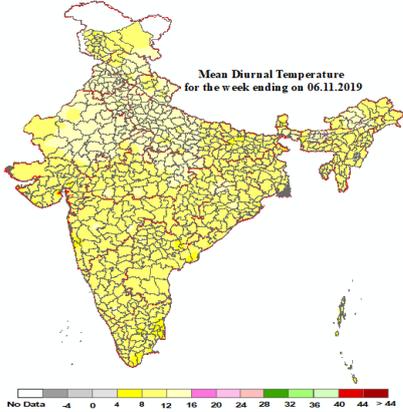
Mean Maximum Temperature (oC) for the week ending on 06.11.2019



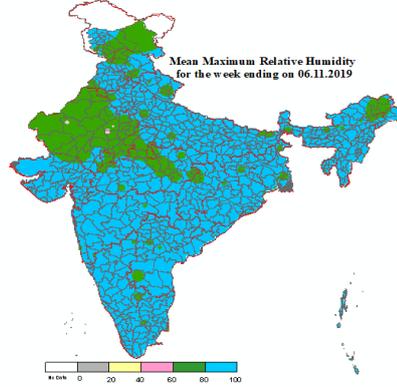
Mean Minimum Temperature (°C) for the week ending on 06.11.2019



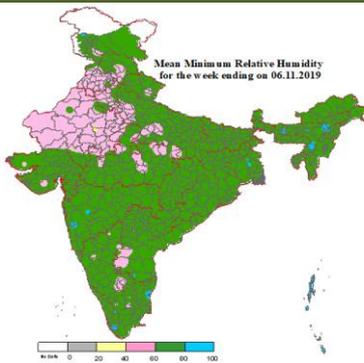
Mean Diurnal Temperature Variation (°C) for the week ending on 06.11.2019



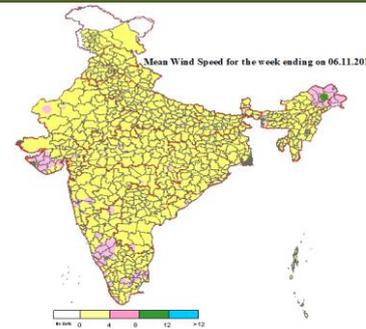
Mean Maximum Relative Humidity (%) for the week ending on 06.11.2019



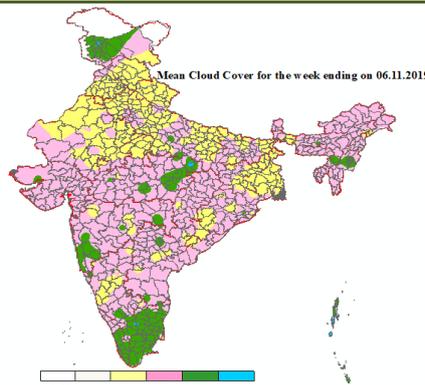
Mean Minimum Relative Humidity (%) for the week ending on 06.11.2019



Mean Wind Speed (km/hr) for the week ending on 06.11.2019

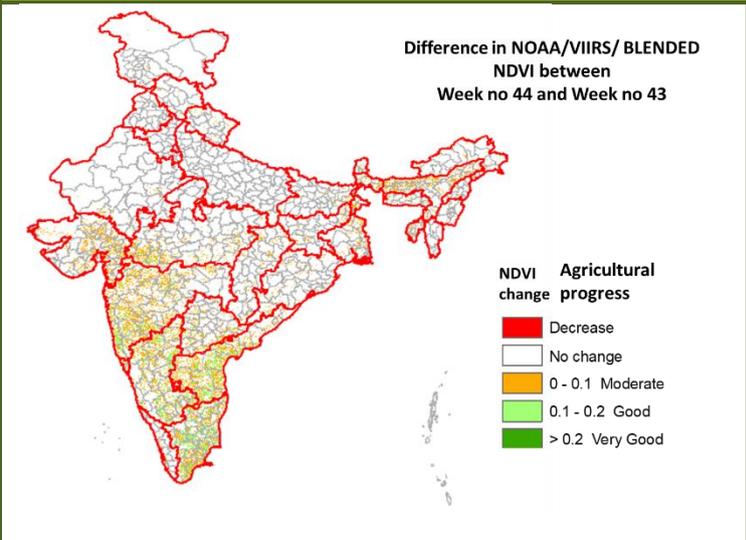
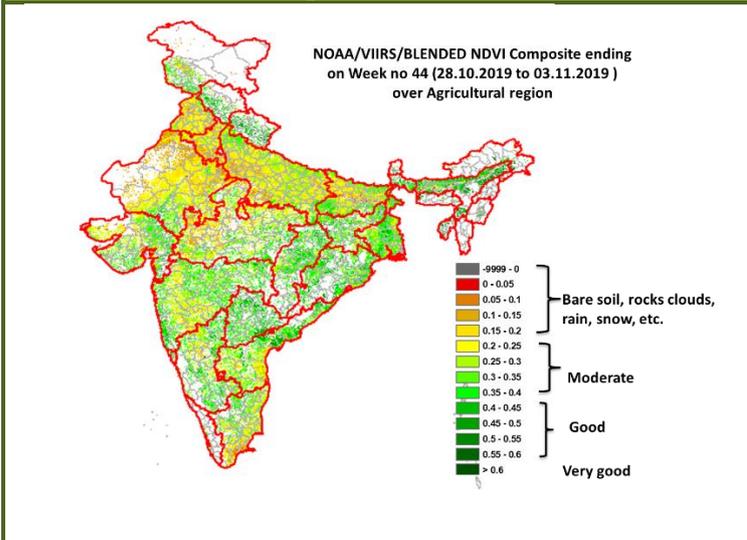


Mean Cloud Cover (okta) for the week ending on 06.11.2019



NOAA/VIIRS/BLENDED NDVI composite for the week number 44 (28.10.2019 to 03.11.2019) over Agricultural regions of India

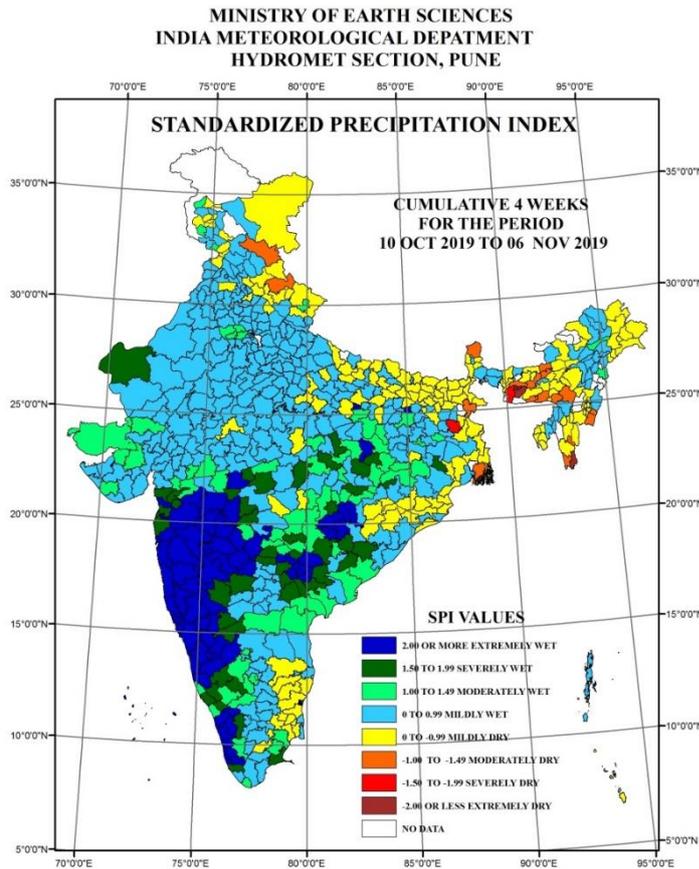
Difference in NOAA/VIIRS/BLENDED NDVI between week number 44 and week number 43



Agriculture vigour was good at most parts of Uttarakhand; many parts of Himachal Pradesh, North Eastern states, North Coastal Andhra Pradesh; at a few places over Sikkim, West Bengal, Jharkhand, Odisha, Chhattisgarh, Karnataka, Telangana and at isolated places of Jammu Division, South Bihar, Madhya Pradesh, East Rajasthan, Gujarat, Vidabhba, North Tamilnadu, Kerala and remaining parts of Andhra Pradesh.

Good difference in agricultural vigour has been observed at many places over West Madhya Pradesh, Maharashtra, Karnataka, andhra Pradesh, Tamilnadu; at a few places over Sikkim, North Eastern States, West Bengal, East Madhya Pradesh, Telangana and at isolated places over Bihar, Jharkhand, Odisha, Chattisgarh & Gujarat.

Standardised Precipitation Index Cumulative 4 weeks for the period 10th Oct to 06th Nov 2019



- Extremely/Severely wet conditions exist in Jahanabad districts of Bihar, Valsad, Dangs, Surat, Navsari, Tapi districts of Gujarat, Uttar Kannada, Dakshin Kannada, Udupi, Bagalkote, Belgam, Bidar, Bijapur, Dharwad, Gadag, Gulbarga, Haveri, Koppal, Bellary, Chikmagalur, Chitradurga, Davangere, Hassan, Kodagu, Mandya, Shimoga districts of Karnataka, Alapuzha, Cannur, Ernakulam, Kottayam, Malappuram, Palakkad, Kollam, Thrissur, Pathanamthitta, Wayanad districts of Kerala, Betul, Harda, Khandwa, Burhanpur, Dindori, Seoni, Shahdol districts of West Madhya Pradesh, Mumbai City, Raigad, Ratnagiri, Thane, Sindhudurg, Mumbai Suburban, Palghar, Ahmednagar, Dhule, Jalgaon, Kolhapur, Nashik, Pune, Sangli, Satara, Sholapur, Aurangabad, Beed, Nanded, Osmanabad, Parbhani, Latur, Jalna, Akola, Buldhana, Washim districts of Maharashtra, Jharsuguda, Koraput, Malkangiri, districts of Orissa, Jaisalmer district of Rajasthan, Coimbatore, Nilgiri, Ramanathapuram districts of Tamilnadu, Dadara & Nagar Haveli districts of U.T, Sant Ravidas Nagar district of Uttar Pradesh, Lakshadweep, East Singhbhum district of Jharkhand, Bastar, Dhamtari, Kanker, Korba, Surguja, Bijapur, Narayanpur, Balod, Baloda Bazaar, Gariabund, Surajpur, Kondagaon districts of Chhattisgarh, North Goa, South Goa districts of Goa, Karimnagar, Khammam, Nalgonda, Nizamabad, Warangal, B.Kothagudem, Jangaon, J. Bhupalpally, Kamareddy, Kumaram Bheem, Mahabubabad, Peddapalle, Rajanna Sircilla, Siddipet, Suryapet, Warangal_Urban, Y.Bhuvanagiri districts of Telangana.
- Extremely to severely dry conditions exists in East Garo Hills, West Garo Hills districts of Meghalaya, Saiha district of Mizoram, Dumka district of Jharkhand.
- Moderately wet to moderately dry conditions were experienced in remaining districts in the country.

Significant Weather Features

- ♦ The **Severe Cyclonic Storm 'Bulbul'** (pronounced as Bul bul) over westcentral & adjoining eastcentral Bay of Bengal moved north-northwestwards with a speed of 10 kmph during past 06 hours, intensified into a **Very Severe Cyclonic Storm** and lay centered at 0530 hours IST of today, the 08th November, 2019, over westcentral & adjoining eastcentral Bay of Bengal, near Latitude 16.9°N and Longitude 87.6°E, about 390 km south-southeast of Paradip (Odisha), 530 km south-southwest of Sagar Islands (West Bengal) and 630 km south-southwest of Khepupara (Bangladesh). It is very likely to intensify further till early morning of 9th November. It is very likely to move nearly northwards till 9th November morning. Thereafter, it is very likely to re-curve northeastwards and cross West Bengal-Bangladesh Coast between Sagar Islands (West Bengal) and Khepupara (Bangladesh), across Sunderban delta during the early hours of 10th November as a Severe Cyclonic Storm with maximum sustained wind speed of 110-120 Kmph gusting to 135 Kmph.
- ♦ Under its influence, light to moderate rainfall at many places with isolated **heavy to very heavy falls** very likely over **north coastal districts of Odisha** on 8th & 9th November, 2019 and light to moderate rainfall at most places **with extremely heavy falls** at isolated places very likely over **coastal districts of West Bengal** on 9th November, 2019.
- ♦ Under the influence of Western Disturbance and its interaction with remnant of cyclone '**Maha**', heavy to very heavy rain/snow at isolated places is very likely over Jammu & Kashmir and heavy over Himachal Pradesh; isolated heavy rainfall at isolated heavy over Punjab, Gujarat region & Saurashtra coasts during next 24 hours.

Weather Forecast for next 5 days valid upto 0830 hours of 13th November 2019

- ◆ Meteorological sub-division wise detailed 5 days rainfall forecast is given in Table-below.
- ◆ Minimum temperature very likely to fall over northwest & adjoining central India by 2-4°C during next 3 days.

5 Day Rainfall Forecast (MID-DAY) 08th November 2019

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

% 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

08 November (Day 1):

- ♦ **Heavy rainfall** very likely at isolated places over Odisha, Gangetic West Bengal, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal.
- ♦ **Thunderstorm accompanied with lightning** very likely at isolated places over Konkan & Goa, Madhya Maharashtra, South Interior Karnataka, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal.
- ♦ **Gale wind**, speed reaching 120-130 kmph gusting to 140 kmph, likely to prevail over westcentral & adjoining eastcentral Bay of Bengal and **Strong wind**, speed reaching 35-45 kmph gusting to 55 kmph prevails along & off Odisha coast. It is likely to increase becoming squally wind speed reaching 45-55 kmph gusting to 65 kmph by afternoon very likely along & off Kendrapara, Jagatsinghpur, Balasore and Bhadrak districts and **Squally wind**, speed reaching 40- 50kmph gusting to 60 kmph, over Puri and Ganjam districts. **Squally wind**, speed reaching 40-50 kmph gusting to 60 kmph very likely over West Bengal coast.
- ♦ **Sea condition** likely to be **very high to phenomenal** over northwest and adjoining westcentral Bay of Bengal; **phenomenal** over westcentral & adjoining eastcentral Bay of Bengal and **rough to very rough** along & off Odisha & West Bengal coasts and north Bay of Bengal.
- ♦ Total suspension of fishing operations over Odisha-West Bengal coasts. Fishermen are advised not to venture into westcentral & adjoining northwest Bay of Bengal and along & off Odisha-West Bengal coasts. Fishermen out at sea are advised to return to the coast.

09 November (Day 2):

- ♦ **Heavy to very heavy rainfall** at a few places **with extremely heavy falls** very likely at isolated places over Gangetic West Bengal; **Heavy to very heavy rainfall** at isolated places over Odisha and **heavy rainfall** at isolated places over Tripura, South Interior Karnataka, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal.
- ♦ **Thunderstorm accompanied with lightning** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, South Interior Karnataka, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal.
- ♦ **Gale wind**, speed reaching 145-155 kmph gusting to 170 kmph, likely over northwest and adjoining Westcentral Bay of Bengal. **Gale wind**, speed reaching 70-80 kmph gusting to 90 kmph, likely along & off Kendrapara, Jagatsinghpur, Balasore and Bhadrak districts and **Squally wind**, speed reaching 40-50kmph gusting to 60 kmph, over Puri and Ganjam districts. and **Gale wind**, speed reaching 110-120 kmph gusting to 135 kmph, likely along & off east Midnapur, North & South 24 Parganas; **Squally wind**, speed reaching 40-60 kmph gusting to 70 kmph also likely over adjoining districts of West Midnapur, Howrah and Hooghly.
- ♦ **Sea condition** likely to be **very high to phenomenal** over northwest and adjoining westcentral Bay of Bengal; **very rough to high** over northeast Bay of Bengal and **high to very high** along & off Odisha & West Bengal coasts.
- ♦ Fishermen are advised not to venture into north Bay of Bengal and along & off Odisha-West Bengal coasts. Fishermen out at sea are advised to return to the coast.

10 November (Day 3):

- ♦ Heavy to very heavy rainfall likely at a few places over Gangetic West Bengal and at isolated places over Assam & Meghalaya, Mizoram & Tripura, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal.
- ♦ Thunderstorm accompanied with lightning at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe and Tamilnadu, Puducherry & Karaikal.
- ♦ Gale wind, speed reaching 110-120 kmph gusting to 135 kmph, likely along & off east Midnapur,

North & South 24 Parganas; Squally wind, speed reaching 40-60 kmph gusting to 70 kmph also likely over adjoining districts of West Midnapur, Howrah and Hooghly.

- ◆ Sea condition likely to be **very rough to high** over northeast Bay of Bengal and **high to very high** along & off Odisha & West Bengal coasts.
- ◆ Fishermen are advised not to venture into north Bay of Bengal and along & off Odisha-West Bengal coasts. Fishermen out at sea are advised to return to the coast.

11 November (Day 4): No warning.

12 November (Day 5): No warning.

Weather Outlook for subsequent 2 days from 13th November to 15th November, 2019

- ◆ Isolated to scattered rain/thundershowers is likely to occur over some parts of south Peninsular India.
- ◆ Isolated rain/snow is likely to occur over Western Himalayan Region.
- ◆ Weather is likely to be dry in remaining parts of the country.

Salient advisories

- Due to the **Very Severe Cyclonic Storm “Bulbul”** over westcentral & adjoining eastcentral Bay of Bengal, Light to moderate rainfall at many places with isolated **heavy to very heavy falls** very likely over **north coastal districts of Odisha** on 8th & 9th November, 2019, Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with heavy to very heavy falls at a few places and extremely heavy falls (≥ 20 cm in 24 hours) at isolated places over North & South 24 Parganas, East and West Medinipur and isolated heavy to very heavy rainfall over Howrah and Hooghly on 9th November 2019, Light to moderate rainfall at most places very likely over coastal districts of West Bengal with heavy to very heavy falls at a few places over North and South 24 Parganas, Nadiya and heavy falls at isolated places over East Medinipur district on 10th November 2019, avoid irrigation, intercultural operation, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safer places.
- In **Coastal districts of West Bengal**, carry out harvesting of matured Aman paddy immediately. Make a heap of harvested crop in the field and cover it with polythene. Where harvesting cannot be done, stop preparation of harvesting for 5 days. In betel garden, cover the Northern part of garden with polythene or cotton cloths. Arrange proper drainage channel for easy draining of water. Keep harvested produce at safer places.
- In **Odisha**:
 - Harvest the early planted medium paddy immediately and keep them in safe place. Thresh the harvested early paddy or cover it with polythene.
 - Go for harvesting of maize, groundnut, pulses immediately. After harvesting of groundnut crop, make bundles. Keep the bundles in such a way that the pods will remain up side and the plants down under sun for drying of pods and thresh them.

- Harvest the vegetables particularly cauliflower, cabbage to avoid silting due to rain
 - Cover vegetable nursery with polythene to protect from heavy rain.
 - Withhold sowing of rabi crops till the cessation of heavy rain.
- **Gale wind**, speed reaching 70-80 kmph gusting to 90 kmph, likely along & off Kendrapara, Jagatsinghpur, Balasore and Bhadrak districts and **Squally wind**, speed reaching 40-50kmph gusting to 60 kmph, over Puri and Ganjam districts. and **Gale wind**, speed reaching 110-120 kmph gusting to 135 kmph, likely along & off east Midnapur, North & South 24 Parganas; **Squally wind**, speed reaching 40-60 kmph gusting to 70 kmph also likely over adjoining districts of West Midnapur, Howrah and Hooghly on **9th**, Gale wind, speed reaching 110-120 kmph gusting to 135 kmph, likely along & off east Midnapur, North & South 24 Parganas; Squally wind, speed reaching 40-60 kmph gusting to 70 kmph also likely over adjoining districts of West Midnapur, Howrah and Hooghly on **10th** November, provide mechanical support to young fruit plants, papaya, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane in Odisha.
- As **Thunderstorm accompanied with lightning** very likely at isolated places over South Interior Karnataka on 8th & 9th, over Kerala, Tamilnadu & Puducherry from 8th to 10th, over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 9th & 10th November, provide mechanical support to young fruit plants, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane. Keep harvested produce at safer places.
- As rain/thundershowers likely at many places over Kerala from 8th to 11th and over Tamilnadu & Puducherry from 8th to 10th along with **Heavy/ Heavy to very heavy rainfall** at isolated places from 8th to 10th November, avoid irrigation, intercultural operation, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safer places.
- Undertake sowing/ transplanting of following *rabi* crops:
- Continue sowing of rapeseed/mustard, lentil and planting of potato in **Assam**.
 - In Southern Telangana zone, continue sowing of rabi redgram, groundnut and castor.
 - In North Interior Karnataka, continue sowing of sunflower, sorghum, chickpea, niger and safflower
 - In North Gujarat, continue sowing of *Rabi* crops viz. mustard, gram and fennel
 - In Madhya Maharashtra, continue sowing of irrigated wheat, gram, chickpea, jowar and safflower. In Marathwada, undertake sowing of gram, wheat, safflower.
 - **In West Uttar Pradesh**, continue sowing of sarson/ rai, gram, lentil, peas, carrot, planting of potato.
 - In Sub Humid Southern Plain and Aravali Hill Zone of **Rajasthan**, continue sowing of mustard, gram, pea and garlic.
 - Undertake sowing of wheat in **Punjab**, sowing of wheat, Bengal gram and lentil in **Madhya Pradesh**.

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

Realised Rainfall : Significant rainfall occurred in Guntur, Nellore and Prakasam district of Andhra Pradesh; J. Bhupalpally, Jagtial, Kamareddy, Karimnagar, Mahabubabad, Mancherial, Nizamabad, Ranjanna Sircilla and Warangal_Urban districts of Telangana; all districts of Coastal Karnataka; in Bidar and Vijayapura districts in North Interior Karnataka and in Citradurga district in South Interior Karnataka; all the districts of Kerala; all the districts of Tamilnadu except Chennai, Dharmapuri, Erode, Karur, Krishnagiri, Namakkal, Puducherry, Salem, Tirupur, Tiruvannamalai and Vellore. Weather remained dry/mainly dry over rest of the region.

Advisories:

- **Thunderstorm accompanied with lightning** very likely at isolated places over South Interior Karnataka on 8th & 9th, over Kerala, Tamilnadu & Puducherry from 8th to 10th November, provide mechanical support to young fruit plants, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane. Keep harvested produce at safer places.
- As rain/thundershowers likely at many places over **Kerala from 8th to 11th and over** Tamilnadu & Puducherry from 8th to 10th along with **Heavy/ Heavy to very heavy rainfall** at isolated places from 8th to 10th November, avoid irrigation, intercultural operation, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep harvested produce at safer places.

Kerala

- In Northern Zone, undertake transplanting the seedlings of cool season vegetables like cauliflower, cabbage etc. after current spells of heavy rain.
- In High Altitude Zone, leaf rust disease may become severe in coffee due to increased relative humidity, apply 0.5% Bordeaux mixture or plant wax 20 EC @ 1-2 ml per litre to control the disease.
- In Problem Area Zone, after torrential rains mahali incidence can be severe in arecanut, spray 1% Bordeaux mixture after current spells of rain.
- In Central Zone, weather is congenial for gall midge attack in mundakan rice nursery. As a prophylactic measure, root of the seedlings may be dipped in 0.02% Chlorpyrifos suspension for 12 hours prior to transplanting.

Andhra Pradesh

- In Southern Zone of Andhra Pradesh, present weather conditions are favourable for leaf spot disease in pulses, groundnut crops. To control, spray Hexaconazole 2 ml./Litre of water.
- In North Coastal Andhra Pradesh, harvest the red rot disease infested sugarcane (81V48, Co 8602) as early as possible. Go for crop rotation in disease infested fields. Undertake broadcasting of pulses i.e., green gram, black gram or sunnhemp in rice field two days before harvesting of rice crop.
- In Scarce rainfall Zone of Rayalaseema, present weather conditions are favourable for helicoverpa, spodoptera, leaf spot and rust incidence in groundnut. To control helicoverpa and spodoptera Spray thiodicarb 200 g (or) Novaluron 200 ml (or) (or) Rinoxypyr 50 ml (or) flubezimidazole 40 ml per litre of water to control the grown up larvae. To control leaf spot spray mancozeb 2 gm+carbendizim 1 gm and to control rust spray chlorothalonil 2 g./L or hexaconazole 1 g/lof water.
- In South Coastal Andhra Pradesh, pigeon pea (arhar) is at flower initiation to flowering stage, spray 5% NSKE as a preventive spray against maruca.

Telangana

- In Southern Telangana zone, continue sowing of safflower and chickpea crops under residual soil moisture conditions.
- In Northern Telangana, continue sowing of Bengal gram, safflower, groundnut, mustard & castor under irrigation situation. Mustard can be sown upto November 1st fortnight.

Tamil Nadu

- In South Zone, undertake sowing for sunflower, minor millet, coriander.
- In High Rainfall Zone, harvest pineapple when the colour of base of the fruit is slightly changed. Also to control sigatoka leaf spot in banana, spray Propiconazole 1 ml /litre + Teepol 0.5 ml /litre of water after current spells of rain.
- In Western Zone, weather is congenial for blotch disease in turmeric, spray blue copper @ 2gm / liter of water after current spells of rain.
- In High Altitude Hilly Zone, foot rot disease in pepper crop, apply neem cake 0.5 kg per vine + swabbing of Bordeaux paste upto 1 m from the ground.

Karnataka

- In Coastal Karnataka, harvest mature crops of paddy and sundry it. Remove infected plants of black pepper and burn them.
- In South Interior Karnataka, take up sowing of chickpea and soybean crops and planting of sugarcane. Undertake nursery sowing of tomato, brinjal, chilli, cabbage, cauliflower, radish, peas, water melon and carrot.
- In North Interior Karnataka, continue sowing of chickpea, soybean, Rabi maize, sorghum, sunflower, safflower, wheat crops. Continue new planting of sugarcane.
- In North Interior Karnataka, cotton crop is at flowering stage. If Jassids /Thrips /Aphids are noticed, spray 0.5 ml Imidacloprid 17.8 SL or 1.5 ml Oxydemton Methyl 25EC or 0.2 g Acetamiprid 20SP or Thiomethoxam 25 WG @ 0.2 g per litre of water..
- In South Interior Karnataka, to manage stem borer in paddy crop at tillering stage, spray Manocrotophos @ 1gm or Chlorophos @ 0.6 gm/litre of water @ 250-300 litre solution per acre on a non rainy day.

Animal Husbandry:

- In Karaikal and Pondicherry, animals may be vaccinated for Foot and Mouth Diseases and Haemorrhagic Septecemia. Openly grazed animals that are drinking pond water should be dewormed. Also in cattle, as a preventive measure for Babesiasis disease, apply Butox @ 2 ml/l of water on cattle and also spray it on the nearby areas of the cattle shed to control ectoparasites.
- In Tamil Nadu, Keep animals' shed clean and vaccinate cattle against FMD, BQ and Haemorrhagic Septcaemia.

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

Realised Rainfall: Rainfall occurred in Ri-Bhoi district of Meghalaya and Mokokchung district of Nagaland. Weather remained mainly dry over rest of the region.

Advisories:

- **Thunderstorm accompanied with lightning** very likely at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 9th & 10th November, provide mechanical support to young fruit plants, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places.

Arunachal Pradesh

- In Arunachal Pradesh, continue transplanting of cole crops and sowing of mustard. Use granular insecticides to protect the seeds of mustard from being carried away by ants. Drain excess water in the field of rice 7-10 days before harvesting to hasten maturity & improve harvesting condition. This would also enable early & easy preparation of field for next *rabi* crop.

Assam & Meghalaya

- In Lower Bramhaputra Valley Zone, continue sowing of lentil, rapeseed/mustard and transplanting of cole crops. Apply Malathion 5% dust @ 3Kg per bigha against rice bug at milking to dough stage of Sali rice. To control Cercospora leaf spot disease in green and black gram crop, spray Carbendazim @ 0.5gm/litre of water on a non rainy day and repeat at an interval of 12-15 days.

- In Central Brahmaputra Valley, continue land preparation/ sowing of wheat, *rabi* maize, rapeseed-mustard, *rabi* pulses, oilseeds and cole crops. Undertake nursery bed preparation and sowing of *boro* rice and harvesting of *Sali* rice.
- In Upper Brahmaputra Valley Zone, continue sowing for rapeseed/ mustard, pea and transplanting of cole crops. Continue planting of potato. Farmers are advised to adopt relay cropping with pea in *Sali* rice fields at about 20-25 days before harvesting *Sali* paddy. Farmers are advised to go for bagging of the banana bunches with muslin cloth or blue polyethylene before fruit set in order to protect the fruits from the attack of banana fruit and leaf scarring beetle. Remove the bags after 60 days of fruit setting or spray Malathion 50 EC (1 ml in 1 litre of water) on the bunches immediately after emergence as preventive measure against the pest.
- In North Bank Plain Zone of Assam, continue land preparation/ sowing of rapeseed-mustard and cole crops and planting of potato. Apply Monocrotophos @3ml/ litre to control rice bug infestation in *Sali* rice. Farmers are advised to adopt relay cropping with pea in the rice field 20-25 days before harvesting *Sali* rice, suitable varieties of pea such as T-136, bonnevillie etc.
- In Hill Zone of Assam, continue harvesting of matured *Sali* rice in clear weather. Areas where paddy crop is about to mature, irrigation should be stopped two weeks before harvesting. Continue nursery sowing of chilli and tomato.
- In Meghalaya, continue nursery raising/ transplanting for cole crops (cabbage, cauliflower, broccoli). Maintain proper water upto 5 cm height upto flowering stage of *Sali/kharif* rice (lowland).

Manipur, Mizoram, Tripura and Nagaland

- In Nagaland, continue harvesting of ginger/turmeric and rice. Provide mulching to conserve moisture in maize field at seedling stage. Do not dry the grains at each time more than 4 - 6 hours otherwise grains will shrivel and break.
- In Manipur, continue harvesting of matured *kharif* rice, soybean, ground nut and rice bean and land preparation/sowing of rapeseed and field pea. Continue planting of potato, nursery sowing of cole crops, onion and sowing of Broad bean/ pea/French bean. Monitor insect pest in the crop field regularly. Mulching may be done to conserve soil moisture. Harvest mature crops before rains. Clean and sundry seeds properly before storage. Store seeds in RC Seed Bin. Farmers are advised to treat the soil for cut worm before nursery sowing of vegetables. Drench the nursery bed with 2.5 ml Cloropyriphos per litre solution. For the control of damping off disease in vegetable crop mix thoroughly with 2-3 g Carbendazim per kg seed.
- In Mizoram, continue nursery raising of brinjal, chilli and early crucifer crops. Before transplanting of broccoli and cabbage the seedlings, go for root dip in Bavistin solution @1 grams per litre of water for ½ hour to check damping off disease.
- In Tripura, continue planting of potato and sowing of sesame. It is now time to conserve moisture into the soil. Adopt intercropping wherever possible. Vegetables along with pulse, grams and oil seeds may be best options. These crops will not only give additional income but also contributed additional nutrient to the soil. Besides it will help to conserve moisture in the field.

Animal Husbandry

- In Assam, to protect poultry from cold, put gunny bags or plastic sheath curtains on the side walls of shed and bedding material should be increased by six inches. Care should be taken not to restrict ventilation.
- In Arunachal Pradesh, vaccination against poultry against Ranikhet and infectious bronchitis.
- In Upper Brahmaputra Valley Zone of Assam, undertake vaccination (RDF1) of the one week old chicks against Ranikhet disease and against Gamboro disease in two weeks old chicks after consultation with local veterinarian.

Fishery

- In Nagaland, in winter months, fish are under stress and may show symptoms like erratic swimming behaviour, not eating, gasping at the surface and others including mortalities. If such symptoms are observed, immediately stop feeding, liming and manuring. Consult an expert for remedial measures.

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

Realised Rainfall: Rainfall occurred in all district of Andaman & Nicobar Islands and in Malkangiri and Koraput districts of Odisha. Weather remained dry/mainly dry over the rest of the region.

Advisories:

- **Gale wind**, speed reaching 70-80 kmph gusting to 90 kmph, likely along & off Kendrapara, Jagatsinghpur, Balasore and Bhadrak districts and **Squally wind**, speed reaching 40-50kmph gusting to 60 kmph, over Puri and Ganjam districts. and **Gale wind**, speed reaching 110-120 kmph gusting to 135 kmph, likely along & off east Midnapur, North & South 24 Parganas; **Squally wind**, speed reaching 40-60 kmph gusting to 70 kmph also likely over adjoining districts of West Midnapur, Howrah and Hooghly on 9th, Gale wind, speed reaching 110-120 kmph gusting to 135 kmph, likely along & off east Midnapur, North & South 24 Parganas; Squally wind, speed reaching 40-60 kmph gusting to 70 kmph also likely over adjoining districts of West Midnapur, Howrah and Hooghly on 10th November, provide mechanical support to young fruit plants, papaya, banana and staking of vegetables to prevent the crops from lodging due to strong winds. Undertake propping up in sugarcane in Odisha.

Odisha

- Due to the Severe Cyclonic Storm Bulbul, light to moderate rainfall at many places with isolated **heavy to very heavy falls** very likely over **north coastal districts of Odisha** on 8th & 9th November, 2019. In view of the above:
- Harvest the early planted medium paddy immediately and keep them in safe place. Thresh the harvested early paddy or cover it with polythene.
 - Go for harvesting of Kharif crops such as maize, groundnut, pulses.
 - After harvesting of groundnut crop, make bundles. Keep the bundles in such a way that the pods will remain up side and the plants down under sun for drying of pods and thresh them.
 - Harvest the vegetables particularly cauliflower, cabbage to avoid silting due to rain
 - Cover vegetable nursery with polythene to protect from heavy rain
 - Pluck the flowers of marigold and rose to avoid quality deterioration.
 - Withhold sowing of rabi crops till the cessation of heavy rain.
- In Western Undulating Zone, the uplands, continue harvesting of mature direct seeded paddy crop. Carry out harvesting of transplanted paddy if 80% of grains are mature. Carry out harvesting of kharif maize, groundnut and pulses. Keep all the harvested produce at a safe, covered place. Take up planting of potato tubers. Undertake sowing of pea. Continue nursery raising of onion, tomato, cabbage and cauliflower.

Bihar

- Harvest the matured rice crop and store it in safe place after threshing. Take up sowing of maize and barseem. Carry out transplanting of new mango plants. Take up sowing of potato, Rabi maize, Rabi onion, etc.
- Spray Chlorpyrifos @ 2ml per litre of water for termite attack in mango plantation.

Jharkhand

- Prepare field for cultivation of mustard, wheat, lentil, pea, chick pea, table pea, field pea, potato, linseed and barley crops. Carry out sowing after necessary seed treatment. Take up nursery sowing of onion. Transplant 3-4 week old seedlings of cabbage and cauliflower in the main field. In the medium lands,

take up harvesting of rice at maturity stage. Carry out intercultural operation in pigeon pea crop and toria crop sown in September.

- For insect control in pigeon pea, spray Monocrotophos @ 1ml and Indoxacarb @ 1ml per 2 litres of water on alternate row twice at an interval of 10 days by alternating the chemical.

West Bengal

- As Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with heavy to very heavy falls at a few places and extremely heavy falls (≥ 20 cm in 24 hours) at isolated places over North & South 24 Parganas, East and West Medinipur, and isolated heavy to very heavy rainfall over Howrah and Hooghly on 9th November 2019, Light to moderate rainfall at most places very likely over coastal districts of West Bengal with heavy to very heavy falls at a few places over North and South 24 Parganas, Nadiya and heavy falls at isolated places over East Medinipur district on 10th November 2019, avoid irrigation, intercultural operation, application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Carry out harvesting of matured Aman paddy immediately. Make a heap of harvested crop in the field and cover it with polythene. Where harvesting cannot be done stop preparation of harvesting for 5 days. In betel garden, cover the Northern part of garden with polythene or cotton cloths. Arrange proper drainage channel for easy removal of water. Keep harvested produce at safer places.
- In Sub-Himalayan West Bengal, take up sowing of spinach after seed treatment with Bavistin or Mancozeb @ 2gram/kg of seeds. Start field preparation for potato, garden pea and cole crops like cabbage and cauliflower. Prepare raised bed for sowing crucifers. Treat the seeds with Carbendazim @ 2g/kg of seed before sowing. Carry out careful rouging and destruction of infected ginger and large cardamom plants. To control leaf folder and case worm of Rice spray Chlorpyrifos @ 2 ml/litre of water. Install pheromone traps @ 5 traps/bigha for fruit fly control in all cucurbitaceous vegetables.

Andaman & Nicobar Islands

- Harvest the matured medium duration rice to avoid lodging due to rain and keep in safe place. Raise nursery of tomato @ 500 g/ha of seeds in pro tray or in raised field with good drainage facility. Place the cut halves of coconut husk in concave direction to avoid contamination and spread of diseases.

Animal Husbandry

- In Bihar, vaccinate animals against FMD. Provide one spoon of salt with food to the animals in morning and evening hours.
- In Odisha, keep the shed clean. Protect animals from cold breeze. Vaccinate and de-worm farm animals.
- In West Bengal, follow proper vaccination schedule for poultry birds like F1 vaccine for 5 days old chicks, Gumbro and IBD vaccine for 12 days old chick and bird-Fowl pox vaccine for 4 to 6 weeks old chicks.
- In Andaman & Nicobar Islands, give “super cox” medicine in water as seasonal outbreak of coccidiosis in 4 weeks of poultry (vanaraja) birds is observed.

Fishery

- In Andaman & Nicobar Islands, place net around the pond and keep open the bunds to remove excess water.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Rainfall occurred in Mumbai city and Raigad; Ahmednagar, Jalgaon, Nasik, Pune and Solapur districts in Madhya Maharashtra; all districts in Marathwada; Akola, Buldhana and Washim districts in Vidarbha and in Dadra & Nagar Haveli, Daman, Navsari and Valsad districts of Gujarat Region and in Diu district in Saurashtra and Kutch. Weather remained dry/mainly dry over the rest of the region.

Advisories:

Maharashtra

- In Konkan, continue harvesting of matured varieties of rice and groundnut during clear weather. Keep the harvested produce in safer place. Continue sowing of horse gram, cowpea and *wal* in fallow lands. To

control anthracnose in new flush of mango, spray 1% Carbendazim @ 10 g per 10 liter of water on a non rainy day. To control midge fly and shoot borer in vegetative flush of mango, spray Lambda cyhalothrin 5% EC @ 6ml or Quinalphos 25%EC @ 25 ml per 10 liter of water on a non rainy day.

- In Madhya Maharashtra, continue harvesting of matured soybean, rice, groundnut and picking of cotton during clear weather. Keep harvested produce in safer place. Continue sowing of irrigated wheat, gram, chickpea, jowar and safflower. To control white fly in sugarcane, spray Lecanicillium lecanii @ 50 ml per 10 liters of water. To control sucking pest in cotton, spray 5% Neemark.
- In Marathawada, Continue harvesting of matured cotton, soybean and picking of cotton. Continue sowing of *rabi* crops like chick pea and wheat. To control leaf spot in turmeric, spray Mancozeb @ 25 g or Carbendazim @ 10 g per 10 liter of water.
- In Vidharbha, drain out excess water (released water from dams) from orchards standing crop and vegetable fields. Continue picking of early sown cotton and harvesting of soybean. Dry the harvested produce in sun. Continue sowing of irrigated wheat (AKW-3722 (Vimal), HD-2380, HD-2189, AKW-1071(Purna), MCS-2496, NIAW-301) upto 25th November. Continue sowing of chickpea (Jaki 9218, Vijay), irrigated chickpea (PKV Kabuli 2, PKV Kabuli 4, Phule Krupa, Virat) with BBF layout upto 15th November with assured irrigation facilities. Undertake intercultural operation like weeding in early sown safflower, orchards and vegetable fields. Continue sowing of *rabi* crops gram and linseed.

Gujarat

- In Saurashtra & Kutch, remove excess water from standing crop fields. Undertake sowing of Rabi crops at optimum soil moisture conditions.
- In North Gujarat, continue land preparation/sowing of mustard, gram, fennel and carrot crops. Carry out regular picking of cotton bolls. Take up land preparation for sowing of potato. Carry out threshing of groundnut, sesame, pearl millet, maize, green gram and cowpea.
- In South Gujarat, undertake sowing of wheat, sorghum and Rabi pulses like gram, Indian bean, pea and lentil.
- In Middle Gujarat, continue land preparation for sowing of *rabi* crops. Complete harvesting of rice and pearl millet crops.

Animal Husbandry:

- In Gujarat Provide 6-8 kg good quality dry roughage with 15-20 kg green fodder to the animals. Provide 30-35 g mineral mixture in daily diet.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in Bijapur and Dantewara districts of Chhattisgarh. Mainly dry/dry weather prevailed in rest of the region.

Advisories:

Madhya Pradesh

- In West Madhya Pradesh, undertake land preparation for sowing of wheat. Use Improved Varieties of Seed. Seed treatment in wheat may be done by seed inoculation with Azotobactor or Azospirillum and PSB culture each 5 gm./kg seed. Undertake sowing of gram and lentil after Seed treatment. For Gram and Lentil by Fungicide premixed combination of Thiram 1.5 gm. +Carbendazim 1.5 gm. /kg seed followed by seed inoculation through rhizobium and PSB culture. Preparation of nursery bed for Rabi vegetable crops. Treated seeds to be sown in line i.e. Tomato, Brinjal, Chilli, Cabbage and cauliflower etc.
- In Satpura Plateau Zone, for sowing of wheat and gram, preparation of field should be done by doing 2-3 ploughing followed by planking to conserve moisture. Farmers are also advised for sowing of wheat varieties like JW-3211 and JW-3336 (tolerance to high temperature) etc.
- In Jhabua Hill Zone, to control of sucking pests in vegetable, spray Tiomithoxim 0.35 – 0.5 gm/litre of water (5.0-7.5 gm/ pump) . To control of shoot and fruit borer in tomato, brinjal, chilli, okra spray Triazofos @ 800 ml/ha.

Chhattisgarh

- In Chhattisgarh Plain Zone, continue harvesting of matured rice crop. Undertake land preparation for sowing of chickpea. Undertake nursery sowing of Winter vegetables like cauliflower, cabbage and kholkhol. Improve varieties should be selected. Preparation for nursery sowing of tomato, brinjal, chillies and capsicum can be done and seed treatment by Thiram should be done @ 2 gram/ kg. seed.
- In Northern Hill Zone, complete harvesting of matured mung, urd, maize, rice, groundnut, finger millet etc. Farmers are advised to plough the land immediately after harvesting of different kharif crops and sow rabi crops like toria, mustard, green pea and potato immediately Undertake land preparation for sowing of chickpea. Start transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal.
- In Bastar Plateau Zone, in the rice crop, for monitoring of yellow stem borer, install pheromone traps 10 nos. per acre. Undertake sowing of pea.

Animal Husbandry

- In Madhya Pradesh, cattle sheds should be kept dry. Vaccinate the cow and buffaloes for FMD disease and vaccinate goats with ETV vaccine. Vaccinate the chicks at 7 days (F1) and at 6 weeks with R2B.

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

Realised Rainfall : Significant rainfall occurred in Kupuwara district of Jammu & Kashmir. Dry weather prevailed over the districts of the region.

Advisories:

Jammu & Kashmir

- In Sub Tropical Zone, undertake harvesting of semi-fine rice cultivars which have attained maturity in clear weather. Continue sowing of mustard. Undertake sowing of pea, chickpea and lentil. Undertake sowing of winter potato.
- In Intermediate Zone, undertake land preparation for sowing of wheat. Carry out weeding and hoeing operation in 3 weeks old toria crop. Undertake sowing of mustard. Undertake sowing of early peas. Carry out earthing up in cole crops. Undertake nursery sowing of late cauliflower and onion crops.

Himachal Pradesh

- In Sub-Montane and Low Hills Sub Tropical Zone, continue transplanting of onion, carry out weeding and hoeing operations in vegetable crops like tomato, chilli, capsicum and brinjal. Undertake sowing of turnip and raddish. Undertake sowing of potato.
- In High Hill Temperate Dry Zone, carry out ploughing operations in the field after harvesting oats. To prevent aphids on apple trees, spray Malathion 200 ml/200litres of water, 20-25 days before harvesting.
- In Mid Hills Sub Humid Zone, to protect the cole crops from grass hopper; spray Melathian @15ml in 15 litres of water. To protect tomato from late blight disease; spray Redomil Gold & Saimokjnal Mancozeb (Carzate M-8) @37.5 g in 15 litres of water at in interval of 7-10 days. Continue sowing of onion and garlic.

Punjab, Haryana and New Delhi

- In Punjab, undertake sowing of wheat, broccoli, Chinese cabbage, radish, spinach transplanting of mid-season cauliflower. should be done in dry and sunny day only. Undertake harvesting of the paddy crop and picking of cotton.
- In Undulating Plain Zone, undertake sowing of timely sown wheat varieties.
- In Haryana, undertake land preparation for sowing mustard and chickpea crops and prepare field for wheat/barley crops. Undertake harvesting of paddy crop.
- In Delhi, undertake sowing of mustard, gram, pea, lentil, transplanting of onion seedling in the prepared fields and planting of early potato. Undertake transplanting of mature seedlings of cauliflower, cabbage, broccoli and tomato. Undertake preparation of fields for sowing of wheat, transplanting of marigold in raised bed and sowing of gladiolus in prepared fields.
- In Western Zone, due to chances of light rain/thundershowers during next 3-4 days, to control brinjal

shoot and fruit borers, spray 3-4 times at 14-days interval using 100-125 litres of water/acre with 80 ml Coragen 18.5 SC (chlorantraniliprole).

Uttar Pradesh

- **In East Uttar Pradesh**, complete harvesting of rice crop. Prepare field for sowing of wheat after harvesting of rice. Best time for sowing of wheat is 15-30 Nov. Continue sowing of Mustard, Bengal gram, lentil, vegetable pea. Undertake planting of Potato at a row distance of 45-60 cm and 15-20 cm distance from tuber to tuber. Undertake sowing of vegetable pea varieties like Arkel, Azad P-1, Azad P-3.
- **In West Uttar Pradesh**, continue harvesting and threshing of mature crops like urad / moong, maize and paddy etc. Undertake sowing of Wheat. Undertake weeding in the rapeseed crop 15-20 days after sowing. Continue sowing of rabi crops like pea, mustard, chickpea and lentil etc. Continue transplanting of medium duration variety of capsicum, tomato, cabbage, Tomato, Brinjal and Chilli. Undertake sowing of Potato. Continue planting of horticultural crops viz, papaya, mango, guava etc. Undertake sowing the berseem, oat, rijaka for green fodder use. Undertake transplanting of tomato, cauliflower, chilli, cabbage, brinjal, capsicum etc.

Uttarakhand

- In Bhabar and Tarai Zone, continue sowing of wheat. Complete harvesting of soybean. Undertake earthing up in potato crop. Undertake transplanting of cabbage and cauliflower seedlings. Mulching should be done to conserve the moisture after hoeing in pea, radish, cabbage and cauliflower crops.
- In Sub-Humid Sub-Tropic Zone, maintain optimum soil moisture in the long duration rice crop during grain formation period. Complete sowing of autumnal sugarcane crop. Complete sowing of mustard crop. Undertake field preparation for transplanting of tomato, brinjal, chilli and capsicum.
- In Hill Zone, continue sowing of wheat, harvesting of matured vegetable pea. Undertake field sanitization before sowing of onion nursery. Use light trap during night to protect cucurbits from pests. Continue sowing of mustard, radish, carrot, fenugreek, coriander and garlic. In red gram, spray Indoxacarb 15.8EC @ 0.5 ml/litre of water to control fruit borer insect

Rajasthan

- In Flood Prone Eastern Plain Zone, undertake sowing of barley and sowing of lentil.
- In Sub Humid Southern Plain Zone, complete sowing of gram and undertake field preparation for sowing of wheat.
- In Semi Arid Eastern Plain Zone, harvest groundnut and cotton crops at physiological maturity for getting better pods and lint yield. Undertake sowing for gram and mustard, field preparation for wheat and barley. Also to control fruit fly in ber, spray of 1 ml/ 3 lit water of Imidacloprid or Thiomethoxam or Fenvelrate or 1ml/lit water of Dimethoate at pea size stage and repeat it at an interval of 15 days.
- In Irrigated North Western Plain Zone, undertake sowing of mustard, gram and barley.
- In Arid Western Plain Zone, start field preparation for wheat and cumin.

Animal Husbandry

- **In East Uttar Pradesh**, Vaccinate cattles to prevent Foot and Mouth disease and provide balance feed to them. Provide light for about 14-16hrs in poultry.
- **In west Uttar Pradesh**, vaccinate the goat to control PPR disease. Increase light duration in poultry house.

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