



National Agromet Advisory Service Bulletin

Friday 6th December 2019

(For the period 6th to 10th December 2019)



Issued by

India Meteorological Department

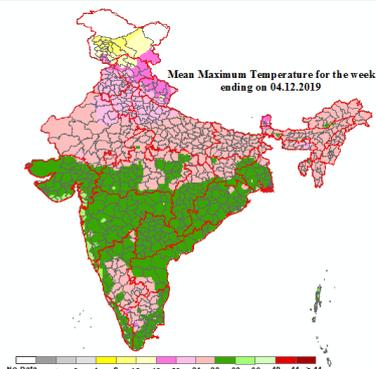
Weblink For

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

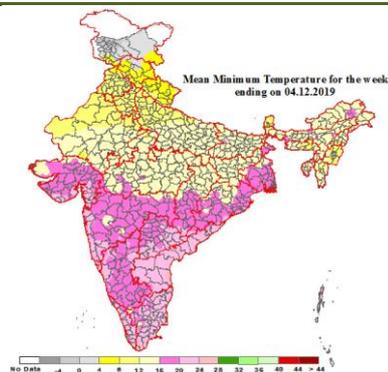
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 04.12.2019

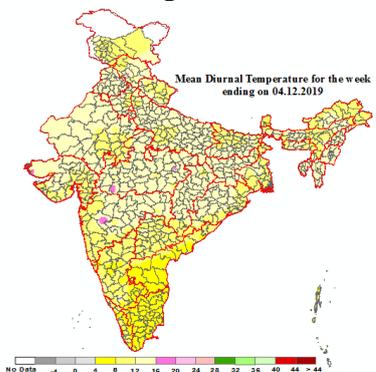
Mean Maximum Temperature (°C) for the week ending on 04.12.2019



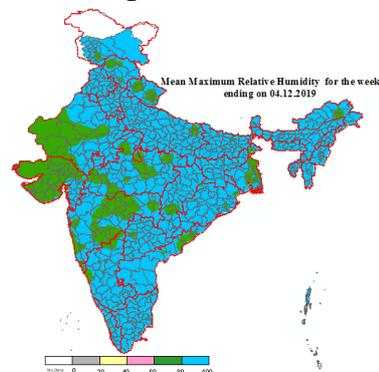
Mean Minimum Temperature (°C) for the week ending on 04.12.2019



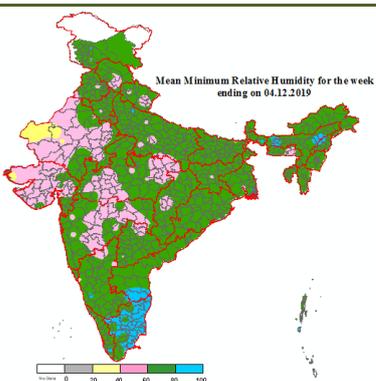
Mean Diurnal Temperature Variation (°C) for the week ending on 04.12.2019



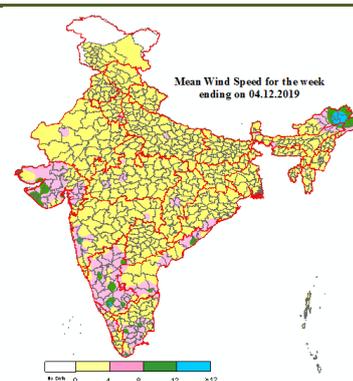
Mean Maximum Relative Humidity (%) for the week ending on 04.12.2019



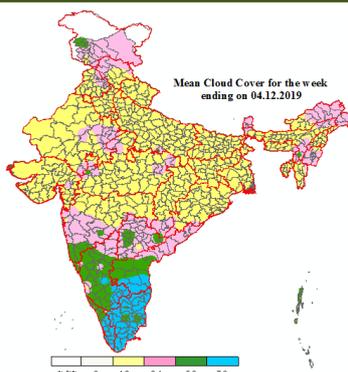
Mean Minimum Relative Humidity (%) for the week ending on 04.12.2019



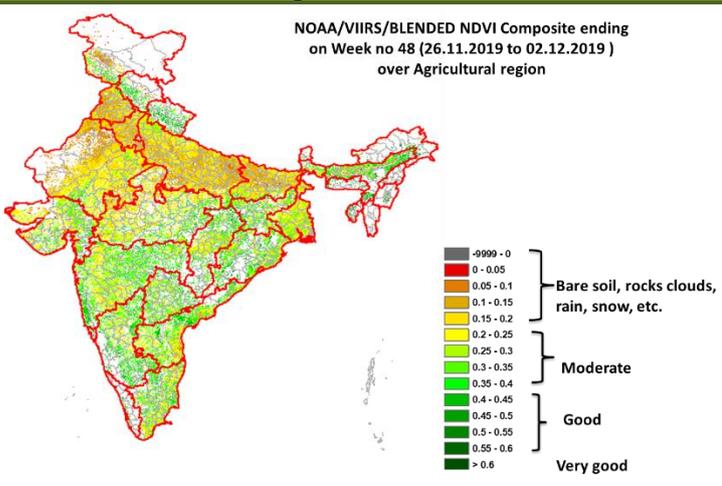
Mean Wind Speed (km/hr) for the week ending on 04.12.2019



Mean Cloud Cover (okta) for the week ending on 04.12.2019

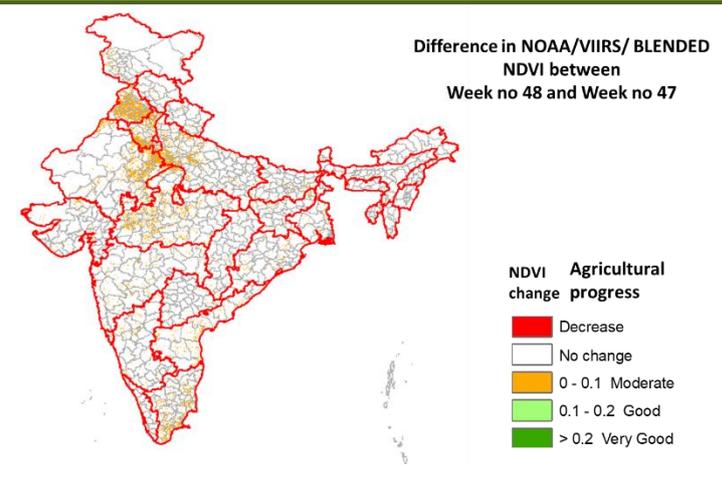


NOAA/VIIRS/BLENDED NDVI composite for the week number 48 (26.11.2019 to 02.12.2019) over Agricultural regions of India



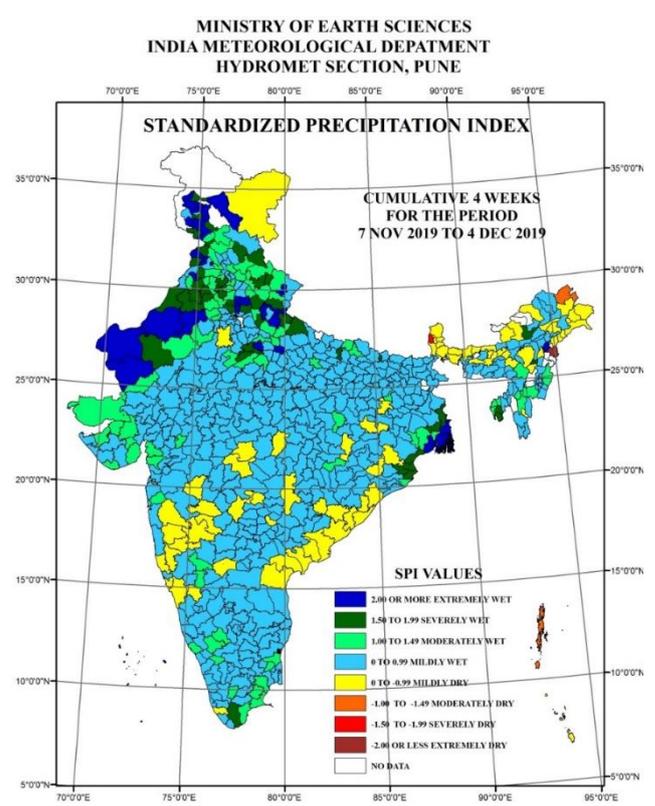
Agriculture vigour was good at many parts of Uttarakhand; few parts of North Eastern states, Chhattisgarh, Odisha, Andhra Pradesh, Karnataka, Konkan & Telangana and at isolated places in Sub Himalayan West Bengal, Sikkim, Jharkhand, Kerala, Vidarbha, Gujarat, Himachal Pradesh & East Madhya Pradesh.

Difference in NOAA/VIIRS/BLENDED NDVI between week number 48 and week number 47



Moderate difference in agricultural vigour has been observed at many places over Punjab and at few places over Haryana, East Rajasthan, Uttar Pradesh, Madhya Pradesh & Tamilnadu.

**Standardised Precipitation Index
Cumulative 4 weeks for the period 7th Nov to 4th Dec 2019**



- Extremely/Severely wet conditions exist in Papumpara district of Arunachal Pradesh; Sheohar district of

Bihar; Sirsa, Sonapat, Kaithal, Panipat, Fatehabad districts of Haryana; Kinnaur, Kullu districts of Himachal Pradesh; Anantnag, Baramula, Doda, Jammu, Reasi, Udhampur, Badgam, Kupwara, Pulwama, Srinagar, Kargil, Ramban, Samba, Bandipore, Kulgam, Rajouri districts of Jammu; Mumbai Suburban districts of Maharashtra; Mokokchung, Dimapur districts of Nagaland; Balasore, Bhadrak, Jajpur, Kendrapara districts of Orissa; Amritsar, Bhatinda, Gurdaspur, Kapurthala, Mansa, Patiala, Moga, Faridkot, Tarn Taran districts of Punjab; Barmer, Bikaner, Churu, Sri Ganganagar, Jaisalmer, Jodhpur, Hanumangarh, Dholpur districts of Rajasthan; Tirunelveli districts of Tamilnadu; South Tripura districts of Tripura; Diu (Union territory); Kannauj, Kheri, Sant Kabir Nagar, Agra, Baghpat, Bareilly, Bijnor, Firozabad, Meerut, Moradabad, Muzaffarnagar, Pilibhit, Sambhal districts of Uttar Pradesh; Hooghly, East Midnapore, Nadia, North 24 Parganas, South 24 Parganas, Kolkata districts of West Bengal; Nainital, Garhwal Tehri, Udham Singh Nagar, Rudraprayag, Bageshwar districts of Uttarakhand.

- Moderately dry conditions exist in Dibang Valley district of Arunachal Pradesh; South Andaman, North & Middle Andaman districts of Andaman & Nicobar Islands.
- Extremely / Severely dry conditions exist in Tuensang district of Nagaland; West Sikkim district of Sikkim.
- Moderately wet to mildly dry conditions were experienced in remaining districts in the country.

Weather Forecast for next 5 days valid upto 0830 hours of 11th December 2019

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- ◆ No significant change in minimum temperatures over most parts of the country during next 2-3 days except Gujarat state where minimum temperature is likely to fall by 2-3°C after 24 hours.
- ◆ Shallow to Moderate fog in isolated pockets very likely over Bihar and Jharkhand during next 2-3 days and over northeastern states during forecast period.

5 Day Rainfall Forecast (MID-DAY) 6th December 2019

Met-Sub-Division	06-Dec Today	07Dec Sat	08Dec Sun	09Dec Mon	10Dec Tue
1. Andaman & Nicobar Islands	ISOL	ISOL	ISOL	ISOL	ISOL
2. Arunachal Pradesh	DRY	DRY	DRY	DRY	DRY
3. Assam & Meghalaya	DRY	DRY	DRY	DRY	DRY
4. N. M. M. & T.	DRY	DRY	DRY	DRY	DRY
5. S.H. West Bengal & Sikkim	DRY	DRY	DRY	DRY	DRY
6. Gangetic West Bengal	DRY	DRY	DRY	DRY	DRY
7. Odisha	DRY	DRY	ISOL	DRY	DRY
8. Jharkhand	DRY	DRY	DRY	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	DRY	DRY	DRY	DRY	DRY
13. Haryana, Chd & Delhi	DRY	DRY	DRY	DRY	DRY
14. Punjab	DRY	DRY	DRY	DRY	DRY
15. Himachal Pradesh	DRY	DRY	DRY	DRY	DRY
16. Jammu & Kashmir	DRY	DRY	DRY	DRY	ISOL
17. West Rajasthan	DRY	DRY	DRY	DRY	DRY
18. East Rajasthan	DRY	DRY	DRY	DRY	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
21. Gujarat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	ISOL	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	DRY	DRY	DRY
24. Madhya Maharashtra	DRY	DRY	DRY	DRY	DRY
25. Marathawada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	DRY	DRY	DRY	DRY	DRY
27. Chhattisgarh	DRY	DRY	DRY	DRY	DRY
28. Coastal A. P. & Yanam	ISOL	ISOL	ISOL	ISOL	ISOL
29. Telangana	DRY	DRY	DRY	DRY	DRY
30. Rayalaseema	DRY	ISOL	ISOL	ISOL	DRY
31. T.N.,Puducherry & Karaikal	ISOL	SCT	ISOL	ISOL	ISOL
32. Coastal Karnataka	DRY	DRY	DRY	DRY	DRY
33. North Interior Karnataka	DRY	DRY	ISOL	DRY	DRY
34. South Interior Karnataka	DRY	ISOL	ISOL	ISOL	DRY
35. Kerala & Mahe	ISOL	ISOL	ISOL	ISOL	DRY
36. Lakshadweep	SCT	SCT	ISOL	DRY	DRY

% 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

6 December (Day 1): ♦ Heavy rainfall very likely at isolated places over South Coastal Tamilnadu.

- **Thunderstorm** accompanied with **lightning** very likely at isolated places over Tamilnadu, Puducherry & Karaikal.
- **Cold wave condition** very likely at isolated places in Punjab.
- **Dense fog** very likely in isolated pockets over Punjab, Haryana, West Uttar Pradesh, south Assam & Meghalaya and Tripura.
- **Gale wind** (wind speed 65-75 kmph gusting to 85 kmph) very likely to prevail over southwest Arabian sea and along & off Somalia coast. **Squally weather** very likely to prevail over Comorin area and Gulf of Mannar.
- **Very rough to high** sea Condition very likely to prevail over Southwest Arabian sea and along & off Somalia coast. Fishermen are advised not to venture into southwest Arabian sea and along & off Somalia coast, Comorin area and Gulf of Mannar.

07 December (Day 2): Thunderstorm accompanied with **lightning** very likely at isolated places over Tamilnadu, Puducherry & Karaikal.

- **Cold wave condition** very likely at isolated places in Punjab.
- **Dense fog** very likely in isolated pockets over Punjab, Haryana and West Uttar Pradesh.
- **Squally weather** very likely to prevail over Comorin area. Fishermen are advised not to venture into Comorin area.

08 December (Day 3): Dense fog very likely in isolated pockets over Punjab and Haryana.

09 December (Day 4): No Weather Warning.

10 December (Day 5): No Weather Warning.

Weather Outlook for subsequent 2 days from 11th December to 13th December, 2019

- ♦ Associated with an active Western Disturbance over north Indian region, scattered to fairly widespread thunderstorm activity accompanied by hailstorm or heavy rain at isolated places is likely over north & central India on 11th & 12th December.
- ♦ Weather likely to be dry over remaining parts of the country.

Salient advisories

- As **Thunderstorm** accompanied with **lightning** very likely at isolated places over Tamilnadu, Puducherry & Karaikal on 6th & 7th December, provide mechanical support to young fruit plants, banana and carry out staking of vegetables as well as propping up in sugarcane to prevent crops from lodging due to strong winds. Keep harvested produce at safer places.
- As **Cold wave condition** very likely at isolated places in Punjab on 6th & 7th December, apply light and frequent irrigation /sprinkler irrigation in standing crops in the evening to protect the crops from cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/gunny bags.
- **Dense fog** very likely in isolated pockets over south Assam & Meghalaya & Tripura on 6th, over Punjab and Haryana from 6th to 8th, over West Uttar Pradesh on 6th & 7th December, monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for early blight disease. If symptoms are noticed, undertake plant protection measures.

- Undertake sowing/ transplanting of following *rabi* crops:
 - In North Coastal Zone of Andhra Pradesh, undertake sowing of ragi, green gram, black gram, groundnut, sesamum, horse gram and maize.
 - In Telangana, continue nursery sowing of short duration *rabi* rice.
 - In Coastal Karnataka, undertake land preparation for sowing of green gram, sesame and black gram crops.
 - In Central Brahmaputra Valley Zone, continue sowing of wheat, maize, *rabi* pulses and oilseeds crops; continue nursery bed preparation/ sowing of *boro* rice,
 - In Odisha, carry out nursery raising/transplanting of tomato, cabbage, cauliflower and onion; sowing of groundnut, sesame, sunflower, mustard etc.
 - In Gangetic West Bengal, undertake sowing of wheat.
 - In Middle Gujarat, continue sowing of wheat and planting of potato.
 - In Madhya Pradesh, continue sowing of wheat, gram, pea and lentil. Prepare nursery for tomato, brinjal, chilli, cauliflower, cabbage, spinach, fenugreek, garlic, radish, pea, carrot, etc.
 - In Chhattisgarh, continue sowing of chickpea and mustard; nursery raising of onion and transplanting of cauliflower, cabbage, chilli, tomato, brinjal, etc.
 - In Jammu & Kashmir, complete sowing of wheat.
 - In Punjab, continue sowing of wheat, radish, spinach, etc. and transplanting of mid-season cauliflower.
 - In Uttar Pradesh, continue sowing wheat, barley, gram, vegetable pea and lentil.
 - In Semi-Arid Eastern Plain Zone of Rajasthan, continue sowing of wheat, barley, fenugreek and cumin.

Detailed Agromet Advisories

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

Realised Rainfall : Significant rainfall occurred in Kerala except Kozhikode, Tamilnadu, in Chittoor, Cuddapah, Nellore & Prakasam districts of Andhra Pradesh, in Chikkamagaluru, Chitradurga, Hassan, Kodagu districts of South Interior Karnataka. Weather remained mainly dry over rest of the region.

Advisories:

- As **Thunderstorm** accompanied with **lightning** very likely at isolated places over Tamilnadu, Puducherry & Karaikal on 6th & 7th December, provide mechanical support to young fruit plants, banana and carry out staking of vegetables as well as propping up in sugarcane to prevent crops from lodging due to strong winds. Keep harvested produce at safer places.

Kerala

- In High Altitude Zone, provide propping to standing banana crop as there is chance of high wind speed.
- In Southern Zone, weather is congenial for rice bug attack in paddy field, apply fish amino acid 20ml/litre of water either before 9am or after 3pm in an encircling manner from outer to inner side.
- In Problem Area Zone, weather is congenial for sigatoka disease in banana, cut and remove the severely affected leaves and apply Propiconazole 1ml/ litre of water.
- In Central Zone, weather is congenial for incidence of bacterial leaf blight in *Mundakan* paddy, spray 6 g of Streptocycline in 30 litre of water.
- In Northern Zone, to control powdery mildew on cucurbits, spray Akomin (@3ml/L) on both surfaces of the leaves, thrice at 15 days interval. Remove and burn out the infested leaves.

Andhra Pradesh

- In North Coastal Zone, under take sowing of ragi, greengram, blackgram, groundnut, sesamum, horse gram and maize. In maize before sowing undertake seed treatment with chlorantraniliprole + Thiamethoxam 6 ml/ kg of seed to control fall armyworm damage at initial crop stages.
- In Southern Zone, due to excess rains received, wait for the optimum soil moisture to attain before sowing of

groundnut as there is chance of occurrence of seedling rot due to excess moisture. The present weather conditions are favourable for pod borers in redgram. To control spray chlorpyrifos 2.5 ml/L (or) quinolphos @ 2 ml/L (or) acephate @ 1.5 g./L of water

- In Scarce Rainfall Zone of Rayalaseema, pinch off the top leaves before transplanting rice in the main field for controlling incidence of stem borer. Make alley ways of 20 cm wide @ 2m interval after transplanting and it will allow air circulation in the field and helps to reduce pest and disease incidence. Apply Oxadiargil 35 gm at 3-5 DAT for weed control
- In Krishna Godavari Zone, undertake sowing of rabi maize. Install Pheromone traps @4/acre. Border crop with sorghum and inter crop with cowpea (few rows).

Telangana

- Take up sowing of rice nurseries with short duration varieties for rabi season. Cover the entire nursery bed in the night with polythene sheets or tarpaulin sheets and remove in the morning to avoid the effect of cool temperatures on germination and growth of nursery. Irrigate the nursery with water in night time and remove water in early morning to speed up nursery growth in cold weather conditions.
- Prevailing weather conditions are congenial for the incidence of Grain Discoloration in late sown kharif rice. To control, spray Dicofol @ 5ml + Propiconazole @ 1 ml or Spiromesifen @ 1 ml + Propiconazole @ 1 ml per litre of water.
- Prevailing weather conditions are congenial for maruca and helicoverpa in redgram. Spray chlorpyrifos @2.5 ml or novaluron @ 0.75 ml along with Dichlorvos @ 2ml per liter of water.

Tamil Nadu

- In Western Zone, weather is congenial for multiplication of brown plant hopper in rice, spray Phasalone 1500 ml /ha or Chlorpyrifos 1250ml/ha or Imidacloprid 100 to 125ml/ha or Dichlorvos 400ml/ha at the base of the stem on a non rainy day.
- In High Altitude Hilly Zone, to prevent cut worm infestation in hill vegetable crops, light traps can be fixed and operated from 7 pm to 10 pm to attract adults.
- In South Zone, prevailing weather is conducive for Sorghum midge in sorghum. Apply any one of the following on 3rd and 18th day after panicle emergence, Malathion 5 D 25 kg/ha (or) Neem seed kernel extract 5% (or), spray Malathion 50 EC in 500 lit of water on a non rainy day.

Karnataka:

- In Coastal Karnataka, undertake land preparation for sowing of green gram, sesame, black gram crops. Continue picking of matured cotton bolls and harvesting of arecanut.
- In South Interior Karnataka, complete harvesting of matured groundnut, maize, ragi, sugarcane and onion crops in clear weather. Complete sowing of horse gram, green gram, black gram, cowpea, field bean, jowar, chickpea crops. Undertake harvesting of arecanut.
- In North Interior Karnataka, undertake picking of cotton bolls. Carry out intercultural operations in sorghum and wheat crop. Complete sowing of chickpea, wheat, sunflower and harvesting of maize. Carry out nipping in earlier sown chick pea crop. Apply irrigation in pigeon pea crop.
- In South Interior Karnataka, due to low temperature during night followed by morning dew, the pod borer incidence noticed in the red gram crop; if the pod borer is in big size spray NPV 0.75 ml / liter of water.

Animal Husbandry:

- In Karnataka, Ectoparasites nuisance in cattle can be effectively managed by using Flumethrin(1%).
- In Southern Zone of Tamil Nadu, due to chill wind, the young animals may suffer from cold stress. To prevent this the young animals should be housed in warmer shelter. Also vaccinate livestock against FMD by taking their livestock to the nearby veterinary dispensary.

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

Realised Rainfall: Significant rainfall occurred in West Siang district of Arunachal Pradesh and mainly dry/dry weather prevailed in rest of the region during the week.

Advisories:

- **Dense fog** very likely in isolated pockets over south Assam & Meghalaya & Tripura on 6th December, monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for early blight disease. If symptoms are noticed, undertake plant protection measures.

Arunachal Pradesh

- In Arunachal Pradesh, continue sowing of mustard, maize and pea. Continue planting of potato and transplanting of cole crops.

Assam & Meghalaya

- In Central Brahmaputra Valley, continue sowing of wheat, maize, pulses and oilseeds crops. Continue nursery bed preparation/ sowing of *boro* rice. Take up transplanting of tomato. In Lower Brahmaputra Valley Zone, continue sowing of lentil and wheat.
- In Upper Brahmaputra Valley Zone, continue nursery bed preparation/ sowing of *Boro* rice. Farmers who have not completed planting of potatoes, should preferably select late grown varieties like Kufri Sindhuri, Kufri Megha etc. for planting within mid of December. Apply Imidachloropid (1ml/5 litres of water) or Thiomethoxam (1g/3 litres water) to control aphid, hoppers and white fly infestation in chilli crop.
- In Barak Valley Zone, continue sowing of rapeseed/mustard and planting of potato. Undertake sowing of tomato and rajmah. Spray Malathion 50 EC @ 1.5ml/litre to protect the cole crops from leaf eating caterpillars.
- In North Bank Plain Zone of Assam, carry out harvesting of Sali paddy. Go for land preparation and sowing of Rabi pulses like lentil, rajmah, pea and lathyrus. Take up sowing of winter vegetables like cabbage, cauliflower, knolkhol, brinjal, radish and carrot. Continue nursery bed preparation/sowing of Boro rice. Continue sowing of rapeseed-mustard and planting of potato.
- In Hill Zone of Assam, farmers are advised to go for bagging of the banana bunches with muslin cloth or polyethylene before fruit set in order to protect the fruits from the attack of banana fruit and leaf scarring beetle.
- In Meghalaya, carry out transplanting for cole crops (cabbage, cauliflower, broccoli) and undertake sowing of pea, coriander, palak, radish and carrot. Carry out harvesting of Sali/kharif rice (lowland) and make the field ready for Rabi crops. Go for regular harvest of Khasi Mandarin and guava fruits.

Manipur, Mizoram, Tripura and Nagaland

- In Nagaland, provide support to the French bean crop with cane frames.
- In Manipur, continue sowing of rapeseed, lentil and field pea. Continue planting of potato and transplanting of cole crops and onion. Carry out harvesting of 9 months old ginger and turmeric crops. Carry out land preparation for sowing of broad bean, French bean and pea crops.
- In Mizoram, to manage northern leaf blight disease in maize, spray approach (Methoxy-acrylates) @ 2g/litre of water. To manage rhizome rot disease in ginger and turmeric, provide adequate drainage and apply Trichoderma harzianum @ 50 g/bed along with FYM/ neem cake or apply Ridomil @ 2 g/litre of water.
- In Tripura, prepare field for sowing of Rabi crops after harvesting of rice. Farmers may cultivate potato, Gram, Lentil, Pea, etc. under assured irrigation facilities. Seeds of pulse crops must be treated with Rhizobium culture before sowing.

Animal Husbandry

- In Assam, to protect poultry from cold, put gunny bags or plastic sheath curtains on the side walls of shed and increase bedding material by six inches. Care should be taken not to restrict ventilation.
- In Arunachal Pradesh, vaccinate poultry against Ranikhet disease and infectious bronchitis.
- In Nagaland, use incandescent bulbs, plastic sheets, jute sacks and plastic sacks to protect poultry birds from cold winds.

Fishery

- In Central Brahmaputra Valley, to protect the fish population against various bacterial diseases prevalent in winter season, apply Potash @ 4-5 mg/litre of water or Sukrena WS @ 1 litre per bigha of water.

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

Realised Rainfall: Significant rainfall occurred in Nicobar district of Andaman & Nicobar Islands. Weather remained dry/mainly dry over the region.

Advisories:

Odisha

- Complete harvesting /threshing of medium duration rice. Continue picking of matured cotton bolls. Continue sowing of mustard, groundnut, sesame, sunflower, pea, wheat, green gram, black gram and sweet corn. Continue planting of potato crop, transplanting of cabbage, cauliflower, knolkhol, onion, brinjal, tomato, chilli and

capsicum. Continue planting of carrot, radish, garlic, legumes etc. Undertake sowing of greens like spinach, amaranths, coriander etc.

Bihar

- Complete sowing of wheat, maize, mustard, chick pea, lentil, gram, potato, pea and transplanting of brinjal, tomato, chilli, late sown cauliflower and cabbage. Undertake transplanting of onion seedlings. Carry out earthing-up in potato crop where crop has attained a height of 15-22 cm. Thinning and weeding is advised in timely sown mustard crop. Complete harvesting/threshing of rice crop.

Jharkhand

- Complete the sowing of wheat, potato, Bengal gram, lentil, field pea, mustard, linseed, barley, mustard crop. Complete nursery sowing of onion. Continue transplanting of cabbage, cauliflower, and tomato. Minimum temperature is gradually decreasing; to avoid the adverse effect of low temperature on different crops / vegetables, maintain the soil moisture in the field and apply irrigation at a regular interval.
- There is possibility of attack of early blight disease in potato crop; spray the fungicide Saaf @ 2 gm / litre of water or Redomyl @ 1.5 gm /litre of water as and when symptoms appear.

West Bengal

- In Sub-Himalayan West Bengal, complete the harvesting of rice, large cardamom and Mandarin orange. Continue sowing of white mustard, garden pea, wheat crops and panting of potato, cole crops. Install pheromone traps @ 5 traps/bigha for fruit fly control in all cucurbitaceous vegetable crop fields. Carry out sowing of lentil after harvesting of rice crop.
- In Gangetic West Bengal, continue harvesting of *Aman* rice. Undertake sowing of wheat crop. Continue nursery preparation for brinjal, tomato, chili in upland area. Carry out planting of potato, transplanting of late variety seedlings of cauliflower, cabbage, broccoli, tomato and sowing of French beans. Continue field preparation for sowing of mustard.
- In Sub-Himalayan West Bengal, to prevent leaf blight in black gram, spray Mancozeb 63% W.P + Carbendazim 12% W.P @ 2g/liter of water.

Andaman & Nicobar Islands

- Undertake sowing of field bean and transplanting of 35 days old seedlings of chilli. Prepare basin around the coconut and arecanut plants and harvest rain water.
- Remove the fruit borer infected fruits in bhendi and cucurbits and destroy it.

Animal Husbandry

- In Bihar, to control external parasites in animals, provide Butocus medicine.
- In Andaman & Nicobar, keep the poultry birds (day old chicks) under light, preferably of 60 watt bulb at 1 ft above the floor.
- In West Bengal, make arrangements to protect livestock from cold winds. Make use of bulbs to maintain proper temperature in the poultry house.

Fishery

- In Odisha, there is a possibility of “EUS” disease in fish; apply ‘Cifax’ @ 400 ml mixed with 40 litres of water in one acre pond area as a preventive measure.
- In West Bengal, clean the aquatic weed from the bottom of fish pond.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Dry weather prevailed over the region.

Advisories:

Maharashtra

- In Konkan, continue nursery bed preparation for *summer* rice and land preparation for sowing of groundnut. Apply irrigation to crops like horse gram, cowpea and Kadava Wal. To control attack of hopper in mango inflorescence, leaf and fruits, spray Thiophenate methyl and Carbendanzim 1% @ 1 g per liter water and also to control aphids in watermelon, spray Dimethoate 30% EC @10 ml per 10 liter of water.
- In Madhya Maharashtra, continue sowing of rabi crops like wheat and gram. Continue harvesting of matured rice and picking of cotton.
- In Marathwada, continue picking of cotton. Undertake Sara method of sowing for late sowing of wheat. Also apply irrigation and undertake top dressing with Nitrogen @ 50 kg / ha in early sown wheat. Apply irrigation to vegetables and orchards. To control leaf spot disease in turmeric, spray Mancozeb @ 25 g or Carbendazim @ 10 g

per 10 liters of water.

- In Vidharbha, continue harvesting matured varieties of rice and picking of cotton. Continue sowing of late irrigated wheat (varieties: PDKV-Sardar (AKAW-4210-6), AKW 1071(Purna), AKAW-4627) and gram. Continue picking of cotton. Dry the harvested produce under the sun. To control telya (oily spot) in pomegranate, spray Copper oxychloride @ 25 g + Streptomycin sulphate @ 5 g or Bronopol @ 5 g per 10 litres of water.

Gujarat

- In Middle Gujarat, continue sowing of wheat and planting of potato crop.
- In South Gujarat, complete sowing of corn, pulses (Indian Bean, gram, green gram) crops. Continue planting of sugarcane and sweet potato. Complete nursery preparation for chili, brinjal and transplanting of bell pepper. Undertake mulching in sugarcane and vegetable crops to conserve soil moisture.
- In North Gujarat, continue harvesting of matured fruits of custard apple, pomegranate, aonla and picking of matured bolls of cotton. Complete sowing of mustard, gram, wheat, cumin, fenugreek, fennel, potato, carrot, cabbage, brinjal and tomato crops.
- In Saurashtra & Kutch, complete sowing of mustard, chickpea, wheat, sorghum, coriander, cumin, fenugreek, carrot, planting of potato and transplanting of onion crop. Do not over irrigate garlic crop.
- In Soth Gujarat, the atmospheric condition is favourable for sucking pest in cotton; apply foliar spray of Acetamiprid 20 SP @ 2gm/10 litres of water and for spotted boll worm spray Fenvalerate 20% SC @5ml/10 litres of water.

Animal Husbandry:

- In Gujarat, to protect animals from cold winds, keep cattle indoors at night time.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Dry weather prevailed over the region during the week.

Advisories:

Madhya Pradesh

- In Malwa Plateau Zone, continue sowing of wheat and chickpea. Continue planting of mango, guava and citrus fruits in new orchards. In cotton crop areas where jassid and white fly infestation has crossed ETL, apply Imidachloprid 17.8 SL @ 3 ml/10 litre or Thiamethoxam 25 WG @ 2g/ 10 litre or Acetamiprid 20 SP @ 3g/10 litres of water. Also, install pheromone traps @ 5/ha for monitoring pink bollworm.
- In Vindhya Plateau Zone, continue sowing of improved wheat varieties after necessary seed treatment. Take up sowing of gram and lentil. Prepare nursery bed for rabi crops like onion, tomato, brinjal, chilli, cabbage and cauliflower.
- In Central Narmada Valley Zone, continue land preparation and sowing of wheat, gram and mustard. Take up raising of tomato, brinjal, chilli and cucurbit vegetables.
- In Bundelkhand, continue sowing of wheat. Continue raising onion nursery. Monitor the timely-sown mustard, pea, chickpea and lentil crops for pest and disease infestation.
- In Jhabua Hill Zone, continue sowing of wheat, gram and mustard. Prepare nursery for winter vegetables like tomato, brinjal, chilli, cauliflower, cabbage, spinach, fenugreek, garlic, radish, pea, carrot etc. To control leaf eating caterpillar in guava, ber, custard apple, citrus fruits, etc., spray Trizophos @ 2 ml/litre of water.

Chhattisgarh

- In Chhattisgarh Plain Zone, continue nursery sowing of cabbage, cauliflower and knolkhol. Continue nursery sowing of tomato, brinjal, chilli and capsicum after seed treatment by Thiram @ 2 gram/ kg seeds. Prepare the fields for sowing of rabi crops and go for sowing of chickpea, safflower, linseed and lentil in time.
- In Northern Hill Zone, continue sowing of chickpea and mustard. Take up sowing garlic. Go for nursery raising of onion seedlings. Start transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal, etc. and directly sowing the seed of radish, turnip, spinach, carrot, etc. after treatment with fungicide.
- In Bastar Plateau Zone, continue sowing of wheat, moong, urad, sunflower, lathyrus, gram, safflower, lentil, pea, etc.

Animal Husbandry

- In Chhattisgarh, provide concentrate feed to milch animals mixed with dry & green fodder.

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

Realised Rainfall : Significant rainfall occurred in Gurdaspur, Kapurthala districts of Punjab; Panipat and Sonapat districts of Haryana, in Chamba, Hamirpur, Kangra and Kullu districts of Himachal Pradesh; all the districts of Jammu & Kashmir except Bandipore, Baramulla, Kargil, Kathua, Leh and Poonch. Significant rainfall also occurred in Almora, Chamoli, Garhwal Pauri, Garhwal Tehri, Nainital, Rudraprayag and Udham Singh Nagar districts of Uttarakhand. Dry weather prevailed over rest of the region.

Advisories:

- **Dense fog** very likely in isolated pockets over Punjab and Haryana from 6th to 8th, over West Uttar Pradesh on 6th & 7th December, monitor the standing crops for incidence and spread of pest & diseases and monitor tomato and potato crops for early blight disease. If symptoms are noticed, undertake plant protection measures.
- **As Cold wave condition** very likely at isolated places in Punjab on 6th & 7th December, apply light and frequent irrigation /sprinkler irrigation in standing crops in the evening to protect the crops from cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/gunny bags.

Jammu & Kashmir

- In Sub Tropical Zone, in chick pea, apply 2 litres of Chlorpyrifos 20EC mixed with 25kg of dry sand and broadcast followed by hoeing, if attack of cutworm is observed. Carry out thinning operation in oil seeds like gobi sarson and mustard. Postpone irrigation as there is sufficient moisture in soil.
- In Intermediate Zone, complete sowing of wheat. Install yellow sticky traps @ 40/hectare to control attack of aphids in toria. In case of severe attack, apply Dimethoate 30 EC/ Rogor @ 1 ml/litre of water. Carry out hoeing and weeding operations in mustard. Undertake transplanting of onion and planting of garlic.

Himachal Pradesh

- In High Hill Temperate Dry Zone, start digging pits for new apple plantations.
- In Mild Hills Sub-Humid Zone, whitewash apple tree stems with lime and Copper sulphate to protect from various fungal diseases. To protect the pomegranate plants from direct sun shine which may cause canker disease, white wash the stem up to first branch and also on branches of sunny side with the solution of 15 kg white wash + 5 kilogram copper sulphate +2 litres linseed oil in 50 litres of water. Carry out pruning in cherry trees.
- In Mid Hills Sub Humid Zone, undertake transplanting of onion nursery in the well prepared field so that the rain water may be used for irrigation.
- In Sub-Montane and Low Hills Sub Tropical Zone, carry out intercultural operations in rabi crops. Carry out weeding and hoeing operations in tomato, chilli, capsicum and brinjal.

Punjab, Haryana and New Delhi

- In Punjab, continue sowing of wheat, broccoli, Chinese cabbage, radish, spinach, etc. and transplanting of mid-season cauliflower. Harvest (for mill purpose) early maturing varieties of sugarcane. Complete transplanting of tomato seedlings in the first fortnight of this month. Provide polythene sheet/Sarkanda/Kahi/ rice straw to protect the plants from frost.
- In Undulating Plain Zone, continue sowing of timely sown wheat varieties. Undertake transplanting of nursery of tomato, brinjal. Complete nursery sowing of onion. Complete sowing of peas and hand hoeing should be done to control weeds in orchards.
- In Western Zone of Haryana, considering the dry weather and favourable temperature, complete sowing of late sown wheat and barley crop. Undertake intercultural operations for conserving the moisture and removing weeds in mustard crop and regularly check the mustard crop for pest population. Apply irrigation, weeding and thinning in mustard and chickpea crop.
- In Eastern Zone of Haryana, undertake intercultural operations, thinning and weeding in timely sown mustard crop. Apply light irrigation in wheat, barley, mustard and winter vegetables.
- In Delhi, continue sowing of gram, pea and 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. Continue sowing of wheat, transplanting of marigold in raised bed and sowing of gladiolus in prepared fields. Irrigate wheat at CRI stage. Undertake thinning and weeding of timely sown mustard and monitoring the crop against attack of painted bug.
- In Eastern Zone of Haryana, infestation of juice sucking insect and early blight is noticed in potato, spray 1% Metasystoic and 0.25% Mancojal in 100 litter of water with some sticky substance like that T-Pole of 50 to 100 ml.

Uttar Pradesh

- In East Uttar Pradesh, farmers are advised to planting of potato, sowing of pea, garlic, coriander, Spinach, carrot, beat root, turnip, radish, transplanting of Cauliflower, cabbage, Tomato, Chilli, Garlic, Onion etc. as earlier as possible on optimum soil moisture and apply organic manures before sowing of crops. Undertake weeding and thinning in standing crop of Bengal gram, mustard etc. Undertake sowing of improved barley varieties using 80 kg seed/ha in irrigated condition at optimum moisture condition. Irrigation will be done after 30-35 days of sowing.
- In West Uttar Pradesh, there is a possibility of outbreak of painted bug in the rapeseed crop. To control it, spray Monocrotophos 36% SL at the rate of 500 ml / ha or Chlorpyrifos 20% EC at the rate of 1 liter / ha solution in 400-800 liters of water. Undertake weeding and hoeing in gram from 30 to 35 days after sowing. In normal sown potato crop, after hoeing, do light irrigation in the fields and apply urea as top dressing.

Uttarakhand

- In Bhabar and Tarai Zone, carry out hoeing operation in wheat crop. Carry out hoeing and weeding in barley crop. Apply light irrigation in toria and yellow mustard during grain filling stage. Undertake transplanting of onion seedlings. Undertake sowing of garlic. Carry out weeding and hoeing operations in cabbage and cauliflower. Apply light irrigation frequently in potato to save it from frost.
- In Hill Zone, complete sowing of wheat. Postpone irrigation in onion as proper soil moisture is available in the field.
- In Sub-Humid Sub-Tropic Zone, apply light irrigation in wheat crop at crown root initiation stage. Apply light irrigation in potato as per requirement and carry out weeding operation 4-5 days after applying irrigation. Carry out weeding and thinning operations in mustard.

Rajasthan

- In Southern Humid Plain Zone, undertake sowing of maize.
- In Arid Western Plain Zone, undertake transplanting of mature seedlings of onion crop.
- In Flood Prone Eastern Plain Zone, undertake sowing of wheat. Continue sowing of barley and lentil.
- In Semi-Arid Eastern Plain Zone, carry out sowing of wheat, barley, fenugreek and cumin. Also leaf curl & Mosaic diseases may affect papaya crop. At the initial appearance of this disease, uproot & burn the affected plants & to check further spread of disease spray Dimethoate 30EC or Methyl Demeton 25 EC @ 1.0 ml per litre water.
- In Sub Humid Southern Plain and Aravali Hill Zone, weather is conducive for powdery mildew disease in peas, cauliflower, cabbage, reddish, spray Karathane 1 ml / litre of water or other sulfur based fungicides for controlling of powdery mildew.

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