



National Agromet Advisory Service Bulletin

Friday 18th January 2019
(For the period 18th to 23rd January 2019)



Issued by
India Meteorological Department

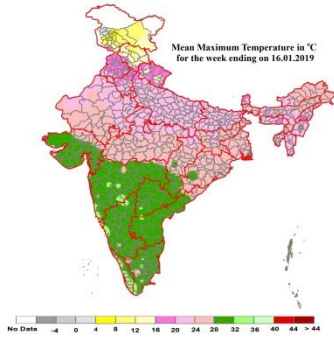
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District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

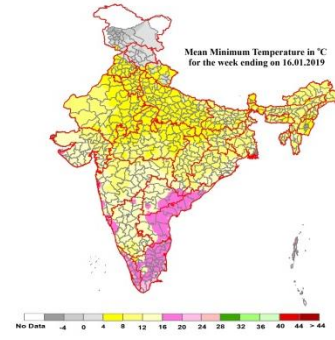
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 16.01.2019

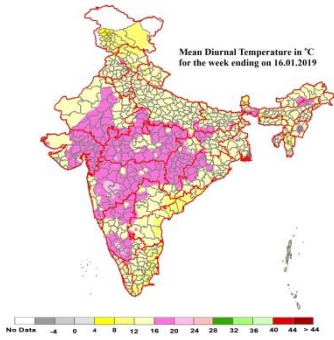
Mean Maximum Temperature (°C) for the week ending on 16.01.2019



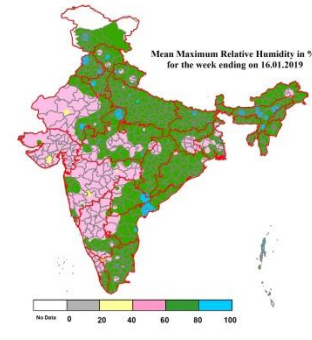
Mean Minimum Temperature (°C) for the week ending on 16.01.2019



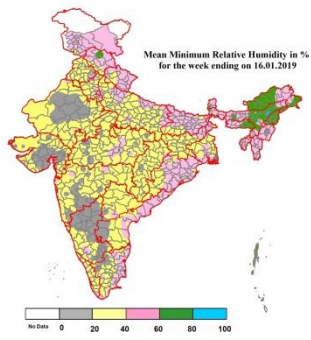
Mean Diurnal Temperature Variation (°C) for the week ending on 16.01.2019



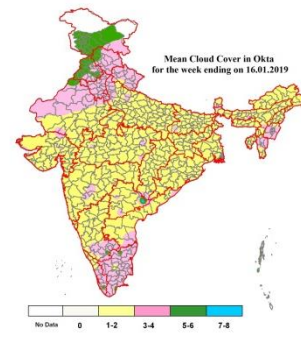
Mean Maximum Relative Humidity (%) for the week ending on 16.01.2019



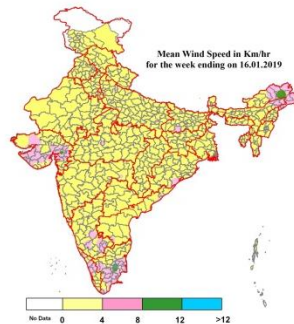
Mean Minimum Relative Humidity (%) for the week ending on 16.01.2019

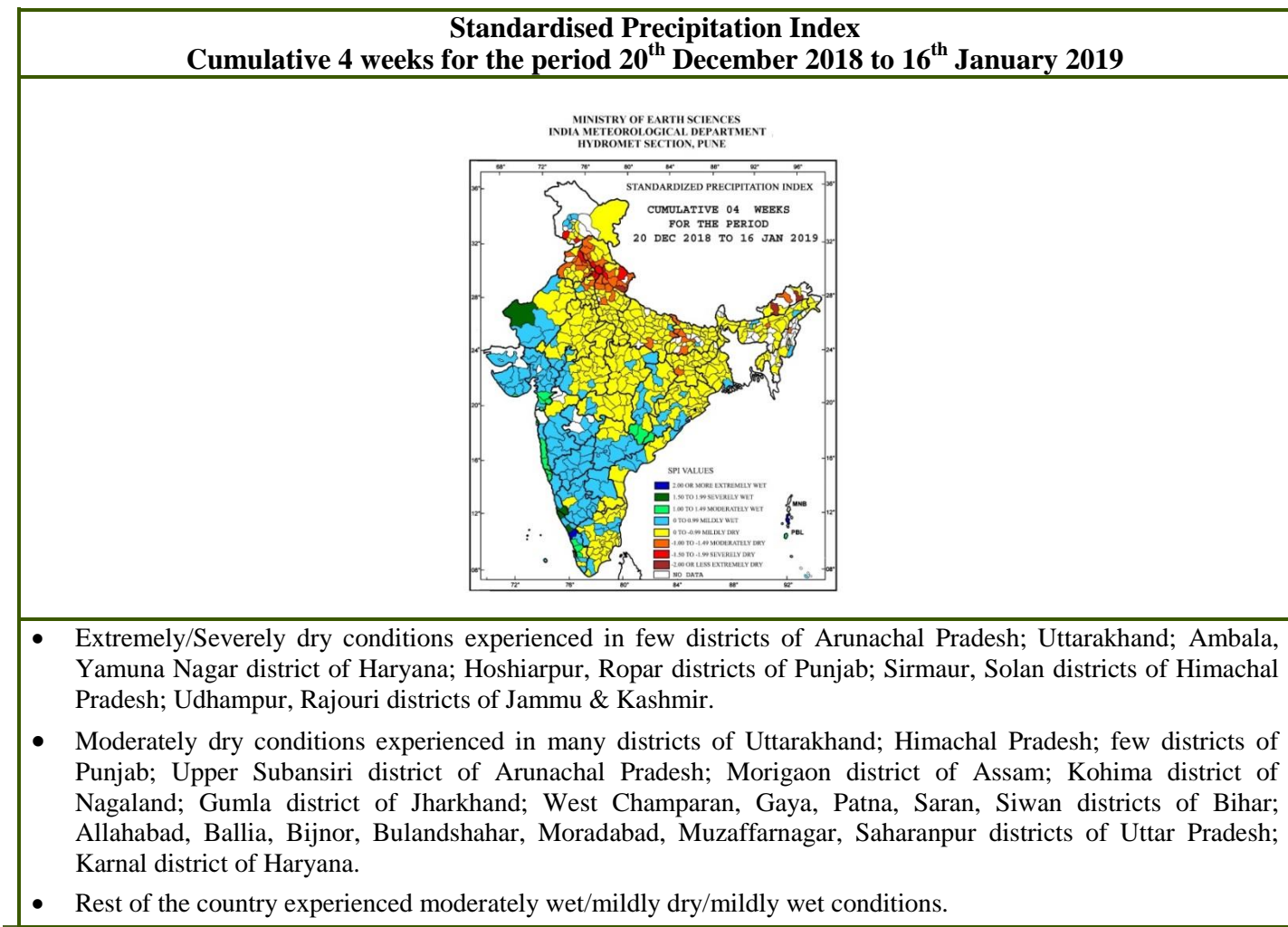
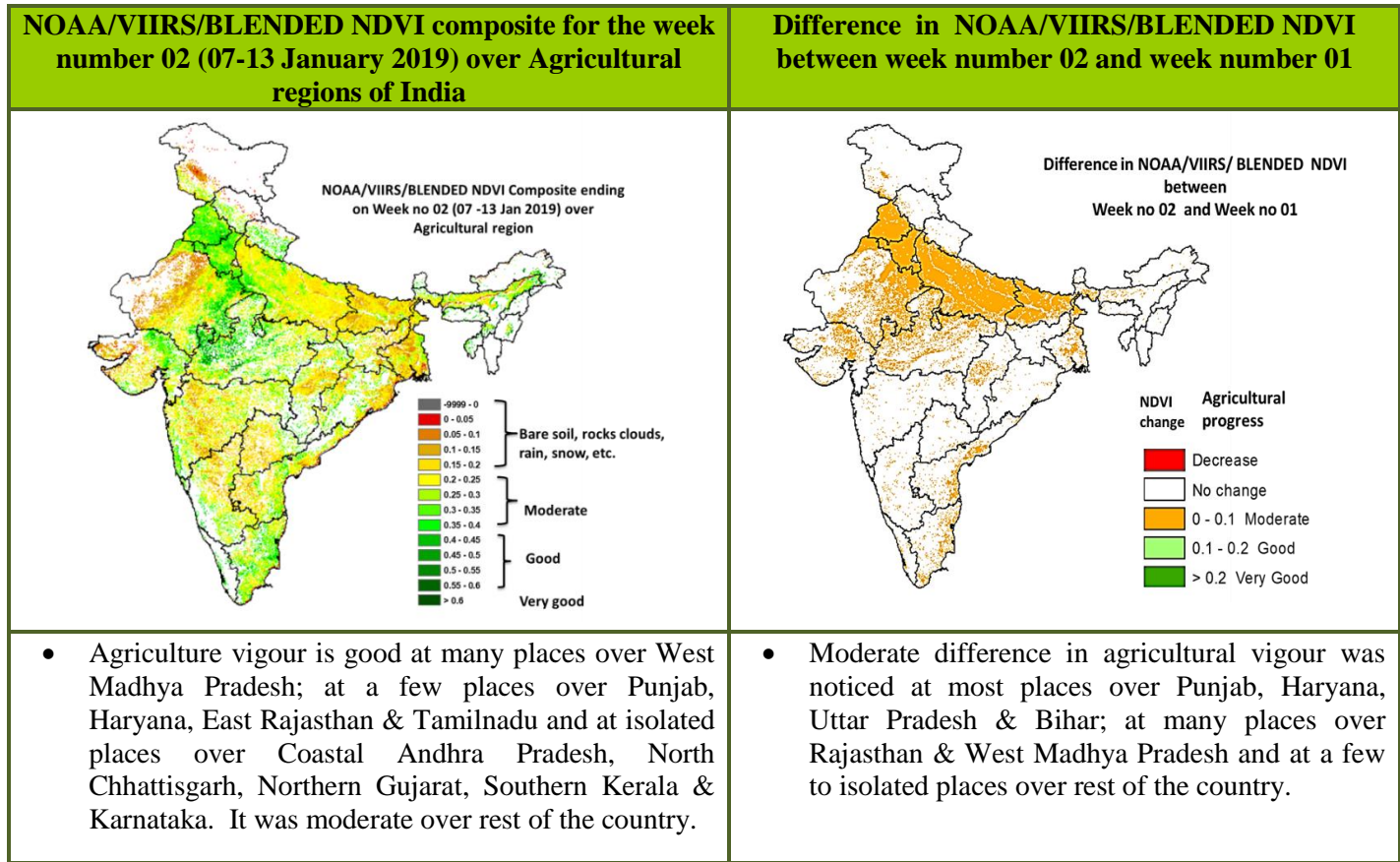


Mean Cloud Cover (okta) for the week ending on 16.01.2019

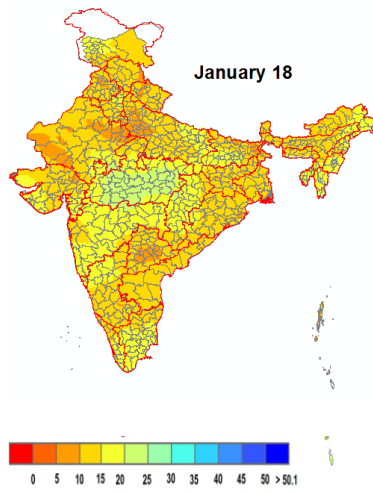


Mean Wind Speed (km/hr) for the week ending on 16.01.2019

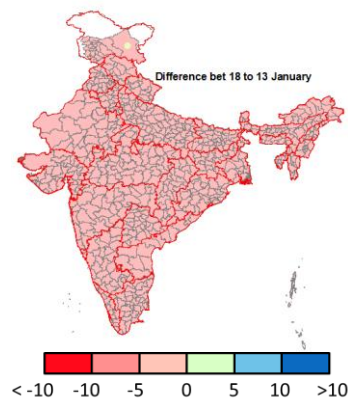
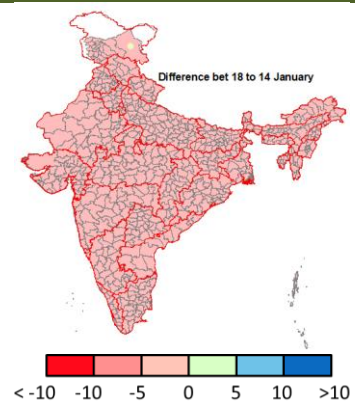
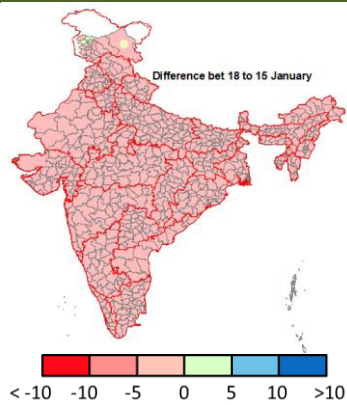
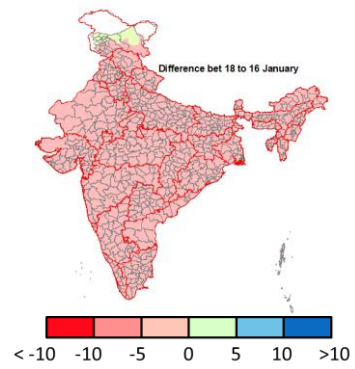
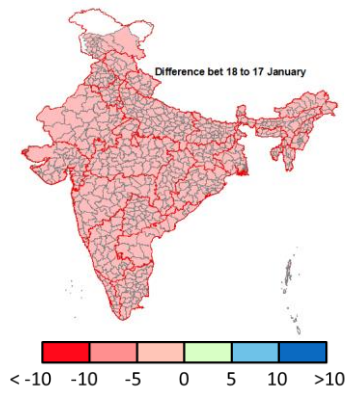




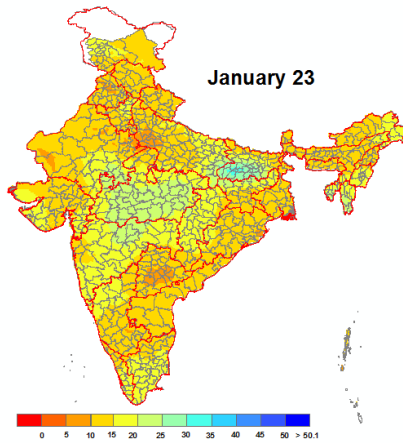
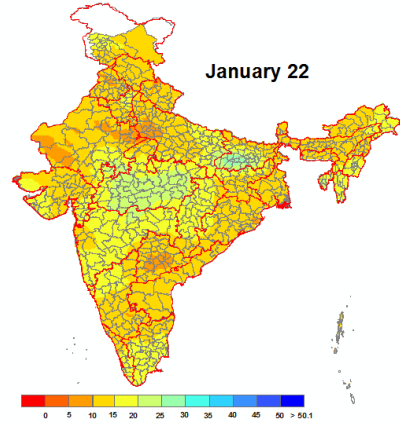
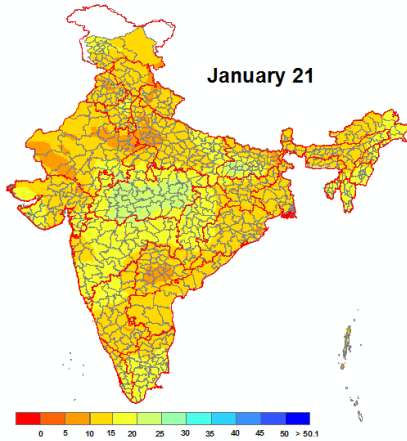
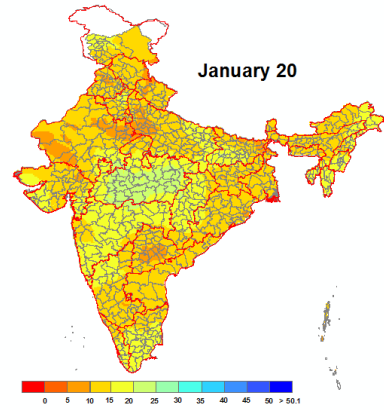
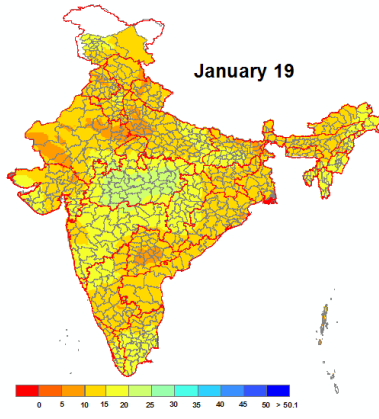
Daily Soil Moisture (mm) for 18th January 2019 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 19th to 23rd January 2019 (ending at 0830 IST)
for 60 cm depth**



Weather Forecast for next 5 days valid upto 0830 hours of 23rd January 2019

- Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- Shallow to moderate fog very likely at isolated places in morning hours over northeastern states during next 5 days and over Bihar, Coastal Andhra Pradesh and Telangana, during next 2 days.
- No significant change in night minimum temperatures over eastern India during next 2 days and gradual rise by 1-2°C thereafter. Rise in minimum temperatures by 2-3°C over Gujarat and Maharashtra during next 3 days and over northwest India from 20th January.

5 Day Rainfall Forecast (Mid-day) 18th January 2019

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

- **18 January (Day 1):** Cold wave conditions at isolated pockets very likely over Punjab, Haryana, Chandigarh, East Madhya Pradesh and interior Odisha. Ground frost conditions at isolated places very likely over Punjab, Haryana, Chandigarh and East Madhya Pradesh. Dense fog at isolated places in the morning hours very likely over Punjab and Haryana, Chandigarh & Delhi and West Uttar Pradesh.

- **19 January (Day 2):** No Weather Warning.
- **20 January (Day 3):** Heavy rain/snow at isolated places very likely over Jammu & Kashmir. Hailstorm at isolated places very likely over Jammu division, lower regions of Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh and West Rajasthan.
- **21 January (Day 4):** Heavy rain/snow at a few places with very heavy rain/snow at isolated places likely over Jammu & Kashmir and heavy to very heavy rain/snow likely at isolated places over Himachal Pradesh. Heavy rain at isolated places over likely over northern parts of Haryana & Chandigarh and Punjab. Hailstorm at isolated places likely over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and north Rajasthan.
- **22 January (Day 5):** Heavy to very heavy rain/snow at isolated places likely over Himachal Pradesh and heavy rain/snow at isolated places likely over Jammu & Kashmir and Uttarakhand.

Weather Outlook for subsequent 2 days from 23rd to 25th January 2019

- Reduction in rainfall activity over northwest India.
- Scattered to fairly widespread rain/snow likely over Western Himalayan Region and isolated to scattered rain over the plains of northwest India.
- Isolated rainfall is likely over Andaman & Nicobar Islands and northern parts of central India and adjoining northern plains.
- Dry weather likely over the rest of the country.

Salient Advisories

- As rain/snow likely at most places over **Uttarakhand** on 21st and 22nd, at most/many places over **Jammu & Kashmir** from 19th to 22nd, over **Himachal Pradesh** from 20th to 22nd, rain/thundershowers at most places over **Punjab, Haryana, Chandigarh & Delhi** on 21st and 22nd, at many places over **West Uttar Pradesh** on 22nd, along with heavy rain/snow at a few places with very heavy rain/snow at isolated places likely over **Jammu & Kashmir** on 21st, heavy to very heavy rain/snow at isolated places over **Himachal Pradesh** on 21st and 22nd, heavy rain/snow at isolated places very likely over Jammu & Kashmir on 20th and 22nd and over Uttarakhand on 22nd, heavy rain at isolated places likely over northern parts of Haryana & Chandigarh and Punjab on 21st January, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in crop fields in Jammu & Kashmir, Himachal Pradesh and Uttarakhand.
- As cold wave conditions at isolated pockets along with ground frost conditions at isolated places very likely over **Punjab, Haryana, Chandigarh** and over **East Madhya Pradesh**, cold wave conditions at isolated pockets very likely over **interior Odisha** on 18th January, apply light and frequent irrigation/sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from cold winds, cover young fruit plants with straw/polythene sheets/gunny bags. Provide frequent light irrigation in rice nursery to avoid low temperature injury to seedlings.
- As hailstorm at isolated places very likely over Jammu division, lower regions of **Himachal Pradesh** and **West Rajasthan** on 20th, over **Uttarakhand, Punjab, Haryana** and **Chandigarh** on 20th and 21st, over **Jammu & Kashmir, Himachal Pradesh, West Uttar Pradesh, Delhi** and **north Rajasthan** on 21st January, use hail net for orchard crops to protect from mechanical damage. Provide support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep cattle indoor.
- As dense fog at isolated places in the morning hours very likely over **Punjab** and **Haryana, Chandigarh & Delhi** and **West Uttar Pradesh** on 18th January, monitor the standing crops for incidence and spread of pest and diseases, potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake

appropriate plant protection measures.

- In **Jammu & Kashmir**, prevailing weather is congenial for the infestation of yellow rust in wheat crop. Farmers are advised to keep strict vigil on the crop for incidences of disease. If observed, apply Propiconazole (Tilt) 25 EC @ 0.1 % (1ml/litre of water) after current spells of rain.

Detailed Agromet Advisories

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

- **Realised Rainfall:** Weather remained dry over the region during the week.
- **Advisories:**
 - **Kerala:**
 - In pepper gardens, inter cultural operations can be done without causing injury to the plants. Manuring of pepper vines may be done in basins taken around the plant, 10-15 cm deep and 30-40 cm radius, depending upon the growth of the plants. Provide enough sunlight on the vines by pruning shade trees. Spray pseudomonas 10-15 g/litre of water.
 - Adopt phyto-sanitary measures in the banana fields. Remove all the diseased and rotten leaves. Suckers removed after harvesting should be stored after cleaning. To improve the disease resistance, drench the basin with Pseudomonas @ 20g per litre of water. Apply lime 0.5 kg/pit 10-15days before planting Spray Sampoorna KAU multi mix @10g/litre in areas where micronutrient availability is low(banana at 2 month stage). Apply fertilizers @ 250g Urea, 285g Rock phosphate, 350g Potash, 500 g MgSO₄ and 2 kg lime per plant.
 - In High Altitude Zone, this is the right time for harvesting of rice. Plough the field after the harvest for taking next crop and allow the stubbles to decay. Select short duration varieties for the summer crop
 - In Central Zone, there is a chance of fruit fly in vegetables, remove and destroy affected and decayed fruits. Use special pheromone traps like cue lure (6 nos/Acre) for vegetable fruit fly along with Thulasi/fruit traps. If the attack is not reduced, spray mixture of 2 ml Malathion and 10 g jaggery in one litre of water during flowering and fruit initiation stage.
 - In Southern Zone, there is a chance of leaf rot in coconut , cut & remove affected leaves, spray 1% Bordeaux mixture / 2% Pseudomonas fluorescens.
 - **Andhra Pradesh:**
 - In Coastal Andhra Pradesh, weather is congenial for incidence of powdery mildew on pulses (blackgram and greengram). Spray wettable sulphur @ 3 g/Hexaconazole @ 2 ml per litre of water or Carbendazim@ 200 gm or Thiophanate Methyl @ 200 g per acre twice at 10 days interval.
 - In Rayalaseema, weather is congenial for incidence of sucking pest in groundnut. Spray Monochrotophos @1.6 ml or Imidacloprid @ 0.3ml or Dimethoate @ 2 ml per litre of water.
 - **Telangana:**
 - In Telangana, rice crop should be maintained weed free up to 45 DAT. Spray herbicides Butachlor @1- 1.5 litre or pretilachlor @ 500 - 600 ml or Oxadiargyl @ 35-40 g or Bensulfuron Methyl (0.6%)+ pretilachlor(6.0%)4 kg mixed with 20 kg sand keeping thin film of water.
 - In Telangana, weather is congenial for incidence of maruca and helicoverpa on redgram. To control, maruca - spray Chlorpyrifos @ 2.5 ml or Novaluron @ 0.75 ml along with Dichlorvos @ 1.0 ml per litre of water. If Helicoverpa is noticed, arrange 10-15 bird perches per acre to facilitate picking up of larvae or arrange 4 pheromone traps per acre to monitor the pest or spray 5 % NSKE to kill the eggs and early instar larvae.
 - **Tamil Nadu:**
 - In High Rainfall Zone, irrigation should be given to all horticultural crops due to higher temperature coupled with low relative humidity. Hook out the beetles in coconut using a long iron rod and kill them. Keep 3 Naphthalene balls/palm with 100g sand at the crown of the tree once in 45 days to control the rhinoceros beetle.
 - In Cauvery Delta Zone, in *Samba* paddy fields, this is the right time to sow the rice fallow pulses under waxy condition. For minimizing the incidence of sucking pests, treat the seeds with Imidachloprid 70 WS @ 2 ml/kg of seeds.
 - In Western Zone, due to high relative humidity and low minimum temperature, sooty mould diseases may occur in mango. Spray Phosphamidon @ 2ml/ litre + 5% maida. Since minimum temperature is low, irrigation may be given to all crops during late evening hours
 - In South Zone, low cloud cover and moderate to high humidity are conducive for the incidence of head borer in sun flower. To control the pest, spray 5% Neem oil or 5% Neem Seed Kernal extract before egg laying.
 - **Karnataka:**
 - In South Interior Karnataka, keep inputs ready for sowing of summer ragi crop. Continue nursery preparation

for summer rice crop and planting of sugarcane. Continue harvesting of matured red gram crop. In Coastal Karnataka, spray Neem oil @ 3 ml/ litre in small trees of coconut against whitefly.

- In North Interior Karnataka, for the management of tur podfly in pigeon pea, spray the crop with Thiamethoxam @0.5 g or Imidacloprid @ 0.5 ml/litre of water.
- In South Interior Karnataka, to manage sucking pests and powdery mildew in mango, spray Carbaryl @ 4 g or Melathion @ 2 ml and wettable Sulphur @ 3 g or Carbendizeme @ 2 g dissolved in /liter of water. Repeat the same spray, if necessary at an interval of 15 days. As a precautionary measure, spray Carbendizim + Mancozeb (SAAF) @ 2.0 g/litre of water followed by (after 15 days) Chlorothalanil @ 2 g/ litre of water against leaf spot in banana.
- **Animal Husbandry**
 - In Karnataka, vaccinate the livestock for Black Quarter and foot and mouth diseases. Maintain the optimum room temperature in sericulture, poultry and dairy unit by providing electric bulb. Ensure proper cross ventilation to avoid Ammonia accumulation in poultry.
 - In Tamilnadu, due to chillness, there are chances of reduced weight of the livestock, farmers could offer some extra concentrate to the maintaining body weight, provide good lighting, ventilation and provide dry bedding to protect the young animals from chillness. Night temperature is below 22°C in Western Zone of Tamilnadu, hence, poultry farmers are advised to protect the birds by hanging jute bags in the side walls of the poultry shed. In Southern Zone, farmers are advised to prevent chick from Ranikeht disease, vaccinate 6 Week old chicks and RDVK vaccination confers immunity for 1 to 3 years.

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

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
 - **Arunachal Pradesh:**
 - There is chance of attack of white rust/downy mildew disease in mustard at flowering/pod formation stage. Spray Bavistin @ 1 g per litre of water. In present weather condition there is high probability of attack of late blight in potato. Spray Mancozeb @ 2 g/4 litres of water.
 - **Assam:**
 - Continue transplanting of the *Boro* rice seedlings in the main field, which have attained 5-6 leaf stage. Gap filling may be done within 7 to 10 days after transplanting. Continue sowing of okra. Apply irrigation in the *boro* rice fields to maintain standing water of 5±2 cm depth.
 - Prevailing weather (temperature and humidity) is favourable for development of late blight disease in potato and tomato. Therefore farmers are advised to spray the crop with Mancozeb @ 0.25% (25 g in 10 litres of water) as prophylactic measures against late blight. Farmers are advised to go for earthing up operation in potato at stolon and tuber formation stages. If there is heavy infestation of weed, go for one or two intercultural operation.
 - Due to low temperature coupled with heavy fog, there is chance of attack of saw fly and aphid in the field of rapeseed/mustard at vegetative stage. Spray Chloropyr iphos 20 EC or Dimethoate 30 EC or Ragor @ 2 ml per litre of water. Due to favourable weather, there is chance of infestation of pod borer in pea crop. To control this pest spray Dichlorovos 100EC @ 0.5ml/litre of water.
 - In Central Bramhaputra Valley Zone of Assam, spray Quinolphos/Chloropyriphos @ 2 ml/litre water in the evening hours against infestation of cutworm on wheat crop at CRI stage.
 - In Hill Zone of Assam, monitor onion crop against infection of purple blotch. Spray Diethane M -45 @ 3 grams per litre of water with sticky material (Tipol 1g/litre).
 - **Meghalaya:**
 - Continue nursery raising of tomato and capsicum. Undertake harvesting of cole crops (cabbage, cauliflower, broccoli), ginger and turmeric.
 - **Manipur:**
 - Apply Dichlorovos @ 0.5ml/litre of water or Imidachlorpid @ 2ml/5 litres of water or Dithane M 45 @ 2g/litre of water against early blight in tomato. Spray Pyrethrum @ 2ml/litre of water against aphids attack in rapeseed/mustard at vegetative to early flowering stage on the infected patches. For organic control against aphid, sprays that consist of Azadirachtin, neem oil or Pyrethrin may be used.
 - **Mizoram:**
 - Continue harvesting of pulses.
 - Apply Carbaryl 0.2 per cent or Malathion 0.15 per cent suspension containing sugar or jeggery at 10 g/litre at fortnightly intervals on citrus fruits at flowering and fruit initiation stage.
 - **Tripura:**
 - Undertake transplanting of *Boro* rice. Transplanting should be done @ 2-3 seedlings per hill at a spacing of 20 X 15 cm and a thin layer of water (1 - 2 cm) should be maintained in the main field up to 10 days after

transplanting.

- Maintain moisture in the field of toria, sesame and lentil through irrigation. Mulching is essential to retain the moisture for longer period with the locally available material.
- There is chance of attack of leaf blight in maize field. Spray Matalaxyl 1000 g / Mancozeb 2 g/litre at 10 days interval after first appearance of the disease. Also spray Mancozeb (Indofil M-45) @ 2.5gm per litre of water against fungal diseases like blight in the potato field at least twice at an interval of 10 days.
- **Nagaland:**
 - Undertake harvesting of cabbage/ winter vegetables timely as it may split if not harvested in time.
 - Weeding should be done frequently in Assam lemon field and daily monitoring should be done for aphid.
- **Animal Husbandry**
 - In Central Bramhaputra Valley Zone of Assam, in winter protect poultry birds from cold by using electric bulb (300Watt for 100 sq.feet) to prevent Coryza disease. In case of lacrimation and swelling of the head, treat the fowl with Sulphur drugs.
 - In North Eastern States, to protect poultry birds from cold winds, gunny bags or plastic sheath curtains should be installed on the side walls of shed house and bedding material (litter) should be increased by six inches. Care should be taken not to restrict ventilation. Undertake vaccination against ranikhet disease in poultry during this period. Dew appearing grasses/herbs should not be given to goat/sheep as fodder.
- **Fishery**
 - To protect the fish population against various bacterial diseases in winter season, apply Potash @ 4-5 mg/litre of water , Sukrena WS @ 1 litre per bigha of water, Lime in required doses.

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

- **Realised Rainfall:** Rainfall occurred in Nicobar district of Andaman & Nicobar Islands during the week. Weather remained dry over rest of the region.
- **Advisories:**
 - **Odisha:**
 - As cold wave conditions at isolated pockets very likely over interior Odisha on 18th January, apply light and frequent irrigation/sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from cold winds, cover young fruit plants with straw/polythene sheets/gunny bags.
 - Paddy crop is at sowing to three week stage in nursery. Provide frequent light irrigation in nursery to avoid low temperature injury to seedlings. Cotton crop is at boll bursting stage. Pick out cotton from matured burst bolls and dry the produce under sun properly. Arhar crop is at seed maturity to harvesting (twenty six to twenty seven weeks) stage. Continue harvesting the matured arhar pods. Go for nursery raising late duration varieties of cole crops. Provide mulching in carrot field to protect crop from direct exposure of sunlight and to conserve moisture. Complete the transplanting of 8-10 week old onion seedlings. Irrigate wheat crop at crown root initiation (CRI) stage. Current weather is favourable for sowing of sunflower utilizing stored soil moisture. Seeds must be sown after soaking in water for 12 hours for better germination. Before sowing, treat the seeds with Thiram @3 g/kg seed.
 - Fruit borer may infest cabbage, cauliflower and tomato. Spray Fipronil 5% SL 400 ml or Emamectin Benzoate 5% SG 80 g or Indoxacarb 14.5% SC 200 ml mixing in 200 litres of water per acre crop. For cut worm in pulses, place 2-3 Pheromone traps per ha and spray Chloropyriphos 20 E.C. @ 5ml or Profenophos 50 E.C. @ 2 ml per litre of water.
 - **Bihar:**
 - Complete the transplanting of onion seedlings in small beds. Apply irrigation to late sown wheat crop which is at 21-25 days (Crown Root Initiation) stage. Give 2nd irrigation at 40-45 days stage of wheat crop. Apply 30kg nitrogen per hectare after irrigation. Irrigate Rabi maize crop. In present weather conditions, transplant healthy seedlings of late varieties of cabbage, cauliflower, knolkhol etc. on ridges. at 50-55 days and apply 50 kg Nitrogen per hectare. Irrigate potato crop at 10-15 days interval.
 - In the mustard crop, spray Dithane-M-45 @ 2 g/litre of water for white rust and Rogor 30 EC @ one litre per hectare in 1000 litres of water against painted bug and aphid. Monitor infestation of fruit borer in tomato crop. In severe case of infestation, spray Indoxacarb 14.5 SC@1ml/2.5 liters of water or Spinosad 48 EC @ 1ml/4 liters of water. Spray Chloropyriphos 20 EC @ 2.5-3 ml per liter of water for cut worm infestation in potato crop.
 - **Jharkhand:**
 - Raise nursery of summer rice and cultivate summer maize. Carry out transplanting of onion. After weeding, apply irrigation in 40 - 45 (timely sown) and 22 - 25 (late sown) days old wheat crops and broadcast urea @ 22 kg per acre. Harvest the timely sown rapeseed crop when siliqua turns into bright yellow colour. Sun-dry the harvested crop for 2-3 days before threshing. Early sown toria is at maturity stage. Harvest the crop on a sunny day when siliqua become bright yellow. Prepare field for transplanting cucurbits vegetable like long

gourd, round gourd, bitter guard, sponge gourd, cucumber, water melon and musk melon. Early to medium duration variety of potato matures within 80-120 days. Stop irrigation to such crops and remove the upper leaves/parts (Dehauling) of the crop, before 7 – 10 days of digging.

- Timely sown pulse crops like pea, lentil, gram etc. are at pod formation stage. If the crops are attacked by pod borer insect, spray insecticide Monocrotophos @ 1 ml per litre of water immediately. It is the time of bearing flowers in mango and litchi tree. Spray insecticide like Monocrotophos 36 E.C. @ 2 ml per litre of water and mix the fungicide Bavistin in the solution @ 1 gm per litre of solution as a preventive measure against various disease and insects. For vigorous flowering and fruiting PGR Meeraulan @ 1 ml per liter of solution may be added in the solution.

- **West Bengal:**

- In Sub-Himalayan West Bengal, provide irrigation to mustard, garden pea, cole crops and potato. Carry out pruning of dry and overcrowded branches of Mandarin orange trees. Carry out weeding, earthing up operations in ginger and turmeric fields.
- In Gangetic West Bengal, prepare main field and start transplanting 35 days old paddy seedlings. Carry out thinning in mustard crop and maintain plant spacing at 12-15 cm.
- In Sub-Himalayan West Bengal, to avoid browning and hollow heart in cabbage and cauliflower crops, apply Borax 20% @ 2g/litre of water. To control aphid in Lab bean crop, apply ash in case of lower infestation and Thiometoxam 0.3 SG @1g/3 litres of water in case of heavy infestation.
- In Gangetic West Bengal, spray Acephate-75% Wettable Powder @ 0.75g/litre of water for mites and thrips in potato. Low temperature favours yellow rust disease in wheat crop. To control, spray Mancozeb 75 Wettable Powder @ 2ml/litre of water.

- **Andaman & Nicobar Islands:**

- As rain/thundershowers likley at many places over Andaman & Nicobar Islands on 18th January, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- In Andaman Islands, transplant 40 to 45 days old seedling of brinjal at a spacing of 75 x 60 cm by making ridges of 25 cm height. Do earthing up and hand weeding in cowpea at 20 to 25 days after sowing.
- In Nicobar Islands, clean the crown of coconut tree, as well as community garden to avoid breeding and growth of insects and fungal pest.

- **Animal Husbandry**

- In Bihar, falling trend of temperatures may adversely affect the milk production of milch animals. Farmers are advised to give protein enriched diets to the animals. Keep Animals in warm places at night.
- In Odisha, clean the shed and deworm the animals. Give them mineral mixture along with salt regularly and provide wheat grains, jaggery etc. @ 10%-20% in the daily ration during winter season to meet the energy requirement of the animals.
- In Jharkhand, vaccinate cattle against FMD and pigs against swine fever. To treat Fowl Cholera and pullorum disease poultry birds should be given Oxytetracycline @ 1gm /litre water.
- In West Bengal, protect livestock against FMD and poultry birds against Ranikhet disease.
- In Andaman & Nicobar Islands, provide mineral mixture @ 25 g per day for 3 weeks to the pregnant cows.

- **Fisheries**

- In Odisha, apply 'Cifax' @ 400 ml mixed with 40 litre of water in one acre pond area as a preventive measure against EUS disease. Feed the fishes daily with oil cake bran mixture at the rate of 2-3 % of their total biomass.
- In West Bengal, apply less amount of floating food. Clear the surroundings for direct sunlight. Stir the fishes with net once a week. Apply 8-10 kg lime mixed with water per bigha pond area.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Weather remained dry over the region during the week.

- **Advisories:**

- **Maharashtra:**

- In South Konkan, maintain water level 5 cm in *rabi* rice. In North Konkan, apply irrigation in rice nursery.
- In Madhya Maharashtra, apply irrigation to standing crops like gram, sorghum and wheat, orchards and vegetables. Continue planting of sugarcane and sowing of summer groundnut. To minimize water stress in gram, spray 2 % urea or potassium nitrate.
- In Marathwada, continue land preparation for planting of sugarcane. Stop irrigating turmeric crop 15 days before harvesting.
- In West Vidarbha, continue sowing of groundnut with assured irrigation facilities. Apply irrigation to wheat and chickpea. Undertake sowing of summer vegetables as per availability of water.
- In East Vidarbha, continue transplanting of 22-25 days old summer rice seedlings. Apply irrigation to standing

crops like mustard and wheat. Undertake harvesting of pigeonpea.

- In Konkan, to control aphids and leaf miner in pulse crops (kulthi, chavli), spray Dimethoate @ 1 ml/litre of water at an interval of 15-20 days.
- In Marathwada, to control fall armyworms in maize crop, spray Thiamethoxam 12.6 % + Lambda Cyhalothrin 9.5 % @ 50 ml per acre.
- **Gujarat:**
- In South Gujarat, continue nursery sowing of summer rice and planting of sugarcane crop. Apply irrigation in gram (pod formation stage). Two sprays of Potassium Nitrate 1.5% at 15 days interval in mango is advised to get early flowering. Undertake hand weeding in onion crop.
- In Middle Gujarat, carry out the hand weeding in chickpea crop.
- In North Gujarat, undertake picking of matured clusters of castor. Apply irrigation in wheat (milking stage) and castor crops. Carry out the intercultural operations in mustard, castor crops.
- In Saurashtra & Kutch, apply irrigation to wheat (milking stage), garlic and chick pea (pod formation stage) crops. Continue harvesting of pigeon pea and picking of matured clusters of castor.
- In South Gujarat, spray Fenvalerate @ 20 ml in 10 liters of water in chickpea at the stage of 50% flowering and 50% pod formation for effective control of pod borer.
- In Middle Gujarat, if infestation of leaf curl virus is noticed in potato, eradicate diseased plant with tubers; apply organic fertilizers. Spray Dimethoate @ 10 ml /10 litres of water for control of aphid.
- In North Gujarat, weather is congenial for outbreak of late blight in the potato crop; for effective control, spray Metalaxil MZ (Redomel gold) @ 20 g/10 liters of water.
- **Animal Husbandry**
- In Gujarat, protect the animals from cold wind; keep them inside the shed at night time. Provide adlib warm water to lactating animals. In poultry, keep the chicks warm by providing artificial light in the poultry sheds and use curtain at the windows. Give balanced feed to the poultry birds.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather remained dry over the region during the week.

- **Advisories:**

- **Madhya Pradesh:**

- As cold wave conditions at isolated pockets along with ground frost conditions at isolated places very likely over East Madhya Pradesh on 18th January, apply light and frequent irrigation/sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from cold winds, cover young fruit plants with straw/polythene sheets/gunny bags.
- In East Madhya Pradesh, apply irrigation in gram and mustard. Apply 2nd irrigation in wheat and undertake application of remaining dose of nitrogenous fertilizer. Continue earthing up and application of nitrogenous fertilizer followed by irrigation in potato. In view of low temperature, apply light irrigation in vegetables and undertake mulching in orchards. Continue harvesting of matured pods of green pea.
- In West Madhya Pradesh, in view of low temperature, apply light irrigation in vegetables, garlic, gram and mustard. Apply 1st irrigation at CRI stage in late sown wheat and 2nd irrigation in normal sown wheat followed by top dressing of urea @ 20 to 25 kg/acre. Continue harvesting of matured pods of green pea. In Jhabua Hill Zone, continue harvesting of green chilli, okra, beans, cucurbits and fenugreek.
- In Satpura Plateau Zone, to control late and early blight in potato, spray Mencozeb @ 2.5g/litre of water.
- In Jhabua Hill Zone, to control attack of sucking pest in mustard, spray Thiamethoxam or Acetamidiprid @ 0.35-0.45 g/litre of water.
- In Vindhya Plateau Zone, there is possibility of outbreak of thrips due to cloudy weather in the garlic crop. For control, spray Chloropyriphus 20 EC @ 1.5 litres per hectare.

- **Chhattisgarh:**

- Continue transplanting of onion. Continue intercultural operations in transplanted vegetables and apply nitrogenous fertilizers. Continue seedling preparation of cucurbits in polythene bags. Apply 2nd irrigation in wheat and undertake weeding. Apply irrigation in potato at an interval of 7-10 days. Continue field preparation for planting of sugarcane. Undertake intercultural operations in November sown sugarcane.
- In Bastar Plateau Zone, continue field preparation for planting of *rabi* colocasia and bunda. Apply irrigation in wheat and chickpea. Undertake field preparation for planting of sugarcane.
- In Plain Zone, for control of pod borer in pigeon pea, spray Indoxacarb @ 300 g/ha dissolved in 500 litres of water.
- In Bastar Plateau Zone, for the control of aphids in mustard crop, spray Methyl Demeton or Dimethoate @ 0.05% at evening hours.
- **Animal Husbandry**
- In Madhya Pradesh, newly borne calves should be protected from cold. For this floor should be covered with paddy straw litter which provides a thermal mulch. All milk animals should be kept in specially protected and

safe cattle sheds during night. Provide 4-5 hours light in poultry houses during night.

- In Chhattisgarh, due to decrease in temperature and its possible adverse effects, dairy farmers are advised to keep the animals in the cattle shed with concrete/brick roof. Give protein enriched diet to the animals. In poultry house hang gunny bags to protect the birds from cold.

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

- **Realised Rainfall:** Rainfall/snow occurred in Kullu district of Himachal Pradesh, Baramulla, Ganderbal, Kulgam and Kupwara districts of Jammu & Kashmir during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As rain/snow likely at most places over Uttarakhand on 21st and 22nd, at most/many places over Jammu & Kashmir from 19th to 22nd, over Himachal Pradesh from 20th to 22nd, rain/thundershowers at most places over Punjab, Haryana, Chandigarh & Delhi on 21st and 22nd, at many places over West Uttar Pradesh on 22nd, along with heavy rain/snow at a few places with very heavy rain/snow at isolated places likely over Jammu & Kashmir on 21st, heavy to very heavy rain/snow at isolated places over Himachal Pradesh on 21st and 22nd, heavy rain/snow at isolated places very likely over Jammu & Kashmir on 20th and 22nd and over Uttarakhand on 22nd, heavy rain at isolated places likely over northern parts of Haryana & Chandigarh and Punjab on 21st January, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in crop fields in Jammu & Kashmir Himachal Pradesh and Uttarakhand.
 - As cold wave conditions at isolated pockets along with ground frost conditions at isolated places very likely over Punjab, Haryana and Chandigarh on 18th January, apply light and frequent irrigation/sprinkler irrigation in the evening to protect the crops from cold injury. To protect young fruit plants from cold winds, cover young fruit plants with straw/polythene sheets/gunny bags.
 - As Dense fog at isolated places in the morning hours very likely over Punjab and Haryana, Chandigarh & Delhi and West Uttar Pradesh on 18th January, monitor the standing crops for incidence and spread of pest and diseases, potato, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake appropriate plant protection measures.
 - As hailstorm at isolated places very likely over Jammu division, lower regions of Himachal Pradesh and West Rajasthan on 20th, over Uttarakhand, Punjab, Haryana and Chandigarh on 20th and 21st, over Jammu & Kashmir, Himachal Pradesh, West Uttar Pradesh, Delhi and north Rajasthan on 21st January, use hail net for orchard crops to protect from mechanical damage. Provide support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep cattle indoor.
 - **Jammu & Kashmir:**
 - In Sub Tropical Zone, undertake transplanting of onion crop. Undertake routine monitoring of zinc deficiency in normal sown wheat crop. If young to middle leaves develop yellow patches between the mid-vein and edge of the leaf and extend lengthways towards the tip and base of the leaf, farmers are advised to spray 0.2% Zinc Sulphate hepta hydrate ($ZnSO_4 \cdot 7H_2O$) after current spells of heavy rain.
 - In Intermediate Zone, continue light weeding and hoeing in vegetables after current spells of heavy rain. Postpone 2nd top dressing of urea in normal sown wheat.
 - In Valley Temperate Zone, provide drainage channels in vegetable fields to avoid water logging. Land under poly houses may be prepared for raising early kharif crops nursery. Poly bags may be filled with mixture of garden soil, sand and vermicompost or well rotten FYM for raising cucurbits seedlings under protected conditions.
 - Prevailing weather is congenial for the infestation of yellow rust in wheat crop. Farmers are advised to keep strict vigil on the crop for incidences of disease. If observed, apply Propiconazole (Tilt) 25 EC @ 0.1 % (1ml/litre of water) after current spells of rain.
 - **Uttarakhand:**
 - In Bhabar and Tarai Zone, continue weeding and hoeing in sugarcane crop and pulses after current spells of rain. Undertake raising of fruit crops like-apple, pear, plum, wall nut etc.
 - In Hill Zone, continue sowing of pea, coriander, fenugreek, cumin after current spells of heavy rain. Install beekeeping box in mustard field to enhance pollination. Carry out thinning and weeding operations in mustard crop after current spells of heavy rain. To save the young fruit plants from frost, it should be covered with the plastic sheet with proper circulation of wind and light.
 - In Sub-Humid Sub-Tropic Zone, due to possibility of rainfall, postpone irrigation in timely sown wheat. Carry out earthing-up in potato if crop has attained a height of 15-22 cm. Continue harvesting of leafy vegetables after current spells of heavy rain.
 - In present weather conditions, monitor the mustard crop constantly for attack of aphids. In early stage cut and destroy the infested part of the plant.

▪ **Himachal Pradesh:**

- In High Hill Temperate Dry Zone, while making apple beds, add cow's compost, superphosphate and murate of potash.
- In Sub-Montane and Low Hills Sub-Tropical Zone, add mulch material in space between two rows of vegetables crops to conserve soil moisture and maintain the soil temperature.
- In Sub-Montane and Low Hills Sub-Tropical Zone, to control pod borer in the gram crop, install Pheromone trap @ 3-4 traps per acre if flowering has reached 10-15%. Install "T" shaped bird perches in and around crop field to control the insect population after current spells of rain.

▪ **Punjab, Haryana & Delhi:**

- In Punjab, to protect young fruit plants from cold, cover young fruit plants/vegetables with Sarkanda/rice straw/polythene sheets/gunny bags. Continue thinning and weeding in late sown mustard. Continue sowing of sunflower. Complete transplanting of tomato seedlings. Undertake sowing of long duration varieties of sunflower. Complete sowing of spring potato in the 2nd fortnight of this month.
- In Haryana, continue transplanting of matured seedlings of tomato, cauliflower, & cabbage in prepared field.
- In Delhi, continue planting of winter sugarcane at optimum soil moisture for better seed germination. Continue transplanting of onion. Continue transplanting of cauliflower, cabbage, broccoli and tomato. Continue sowing of spinach, coriander, fenugreek. Continue preparation of seedling of early cucurbitaceous crops in small polythene bags in poly houses.
- In Punjab, check aphid damage in mustard and if aphid population is above ETL, spray 40 g Actara 25 WG or 400 ml of Rogor 30 EC or 600 ml Dursban/Coroban 20 EC in 80-125 litres of water per acre. For control of late blight of potato, spray Indofil M-45/Markzeb/Kavach @ 500-700 g in 250-350 litres of water per acre after current spells of rain.
- In Haryana, due to high humidity and foggy weather there may be increase in the infestation of aphid and there is also increase in the chances of infestation of early blight/burning effect of leaves in the potato and tomato, monitor the mustard, potato and tomato. Also there may be increase in the infestation of white rust and Alternaria blight in the mustard crop, spray 600 gram Mancozeb (Dithane or Indophil M-45) mixed in @ 250 to 350 liter water per acre after current spells of rain.
- In Delhi, monitor timely sown onion crop against attack of thrips, spray Imidacloprid @ 0.5 ml per litre of water with sticky material (Tipol 1.0 g/litre) after current spells of rain.

▪ **Uttar Pradesh:**

- Continue harvesting of mature sugarcane crop. Undertake transplanting of onion. Distance should be 15 to 10 cm in onion crop. Continue weeding in maize 40-45 days after second thinning and pruning schedule. Undertake planting of spring Sugarcane.
- In West Uttar Pradesh, continue thinning and weeding in late sown mustard crop. Continue transplanting of onion seedling. Seedling should not be older than six weeks. Weather is suitable for growing of carrot seed crop in this week. Continue transplanting of mature seedlings of tomato, cauliflower, cabbage, knolkhol and broccoli crop. Continue sowing of spinach, coriander, fenugreek. Continue sowing of garlic in raised bed.
- In East Uttar Pradesh, due to prevailing foggy weather condition, there is chances of attack of late blight in potato crop, for control, spray Indofil-M-45/Kavach /Antracol @ 500-700 g per acre or Blitox @ 750-1000 g per acre in 250-350 litres of water per acre at weekly interval 2-3 times on a non rainy day.
- In West Uttar Pradesh, in wheat crop if termites are noticed, apply mixture of 20 kg sand with Chlorpyrifos 20 EC @ 2 litre of water in evening hours on a non rainy day.

▪ **Rajasthan:**

- In Arid Western Plain Zone, in timely sown wheat, provide 3rd irrigation to standing crop 55 days after sowing on late jointing stages and also provide 2nd irrigation to the barley 65-70 days after sowing. In late sown wheat, provide 2nd irrigation to standing crop 40 days after sowing on tillering stages, also top dress with urea @ 66 kg/ha in standing wheat crop along with 2nd or 3rd irrigation and also top dress remaining dose of urea along with 2nd irrigation in barley.
- In Semi Arid Eastern Plain Zone, this is the right ime for raising nursery for summer tomato, keep crop geometry at 50x30-45 cm² distance. Sow hybrid tomato at 90x45 cm² crop geometry. Use 60 kg Nitrogen, 80 kg Phosphorus and 60 kg Potash per hectare. In hybrid tomato, use 180 kg Nitrogen, 120 kg Phosphorus and 80 kg Potash per hectare along with 300 quintal FYM.
- In Sub Humid Southern Plain and Aravali Hill Zone, Irrigation should be done after 65-70 days in wheat at jointing and booting stage and flowering in barley. Also there is a possibility of pod borer infestation in gram crop so spray of Monocrotophos @ 36 SL 1.0 litre per hectare by dissolve with water.
- In Flood Prone Eastern Plain Zone, farmers are advised to carry out regular weeding in wheat crop, spray a solution of Metasulfuron methyl @ 4g ai/ha in 500 litre water to control broad leaved weed and Sulfosulfuron @ 25g ai/ha in 250-300 litre water/ha for both grassy and broad leaved weed.

• **Animal Husbandary**

- In Mid Hills Sub-Humid Zone of Himachal Pradesh, protect the animals from cold. See to it that the get proper

sunlight. The animals which are in the last trimester of the pregnancy require special care. Give them 2.5-3.0 kg feed with 30 gram mixture of minerals.

- In Punjab and Haryana, in view of cold wave conditions at isolated places, keep animals inside the sheds during night and provide dry bedding to protect them from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy to cope up with the cold condition. Animals should be given mineral mixture along with salt regularly and wheat grains, jaggery etc. may be provided @ 10%-20% in the daily ration during winter season to meet the energy requirement of the animals, 10% extra dry matter should be provided over and above the total requirement to fulfill the extra energy requirement in winter. In Poultry, keep the chicks warm by providing artificial light in the poultry sheds.
- **Apiculture**
- In Jammu & Kashmir, the temperature has fallen, so give the winter packing immediately to colonies. Check the colonies for nectar and give artificial food to honey bees as there is scarcity of flowers during these days. Keep the colonies in sun on clear day.
- **Poultry**
- In Jammu & Kashmir, cover the poultry shed with gunny bags in order to protect the birds from cold weather. Proper ventilation should be maintained in poultry rooms. There should be a good source of light and heat in poultry houses. Proper hygiene should be maintained. Well-insulated windows can act as a sun trap during winters. Adequate clean drinking water should be available all the time.

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