



# *National Agromet Advisory Service Bulletin*



*Friday 16<sup>th</sup> November 2018*  
*(For the period 16<sup>th</sup> to 21<sup>st</sup> November 2018)*



*Issued by*  
*India Meteorological Department*

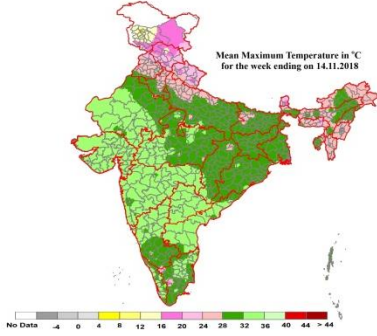
**Weblink For**

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

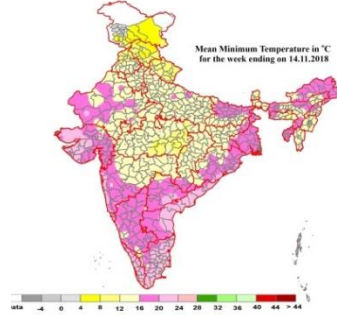
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

**Spatial distribution of weather parameters for the week ending on 14.11.2018**

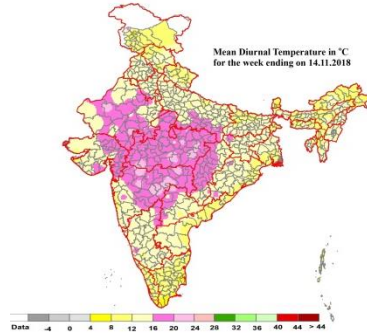
**Mean Maximum Temperature (°C) for the week ending on 14.11.2018**



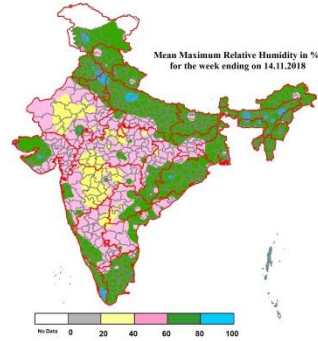
**Mean Minimum Temperature (°C) for the week ending on 14.11.2018**



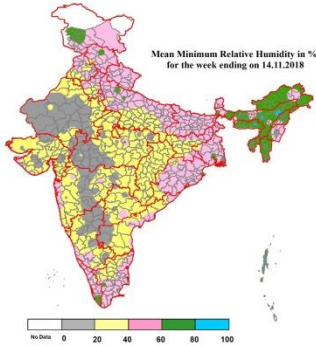
**Mean Diurnal Temperature Variation (°C) for the week ending on 14.11.2018**



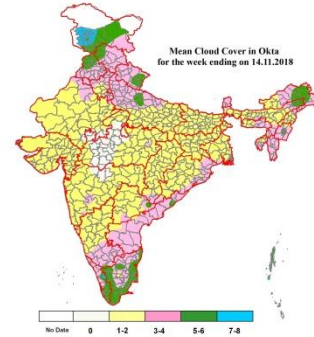
**Mean Maximum Relative Humidity (%) for the week ending on 14.11.2018**



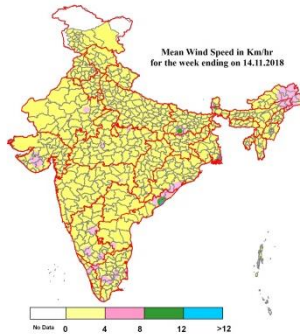
**Mean Minimum Relative Humidity (%) for the week ending on 14.11.2018**



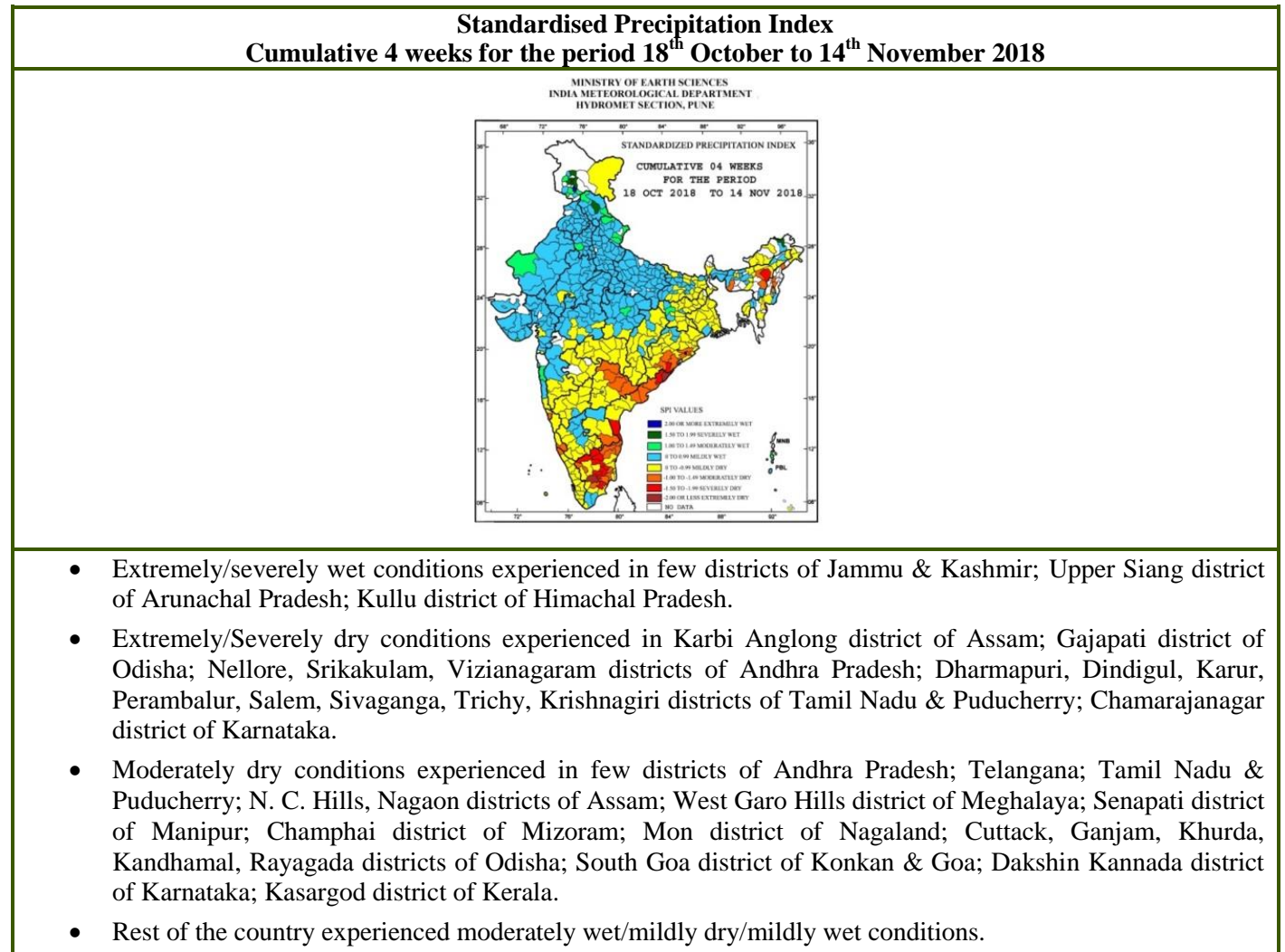
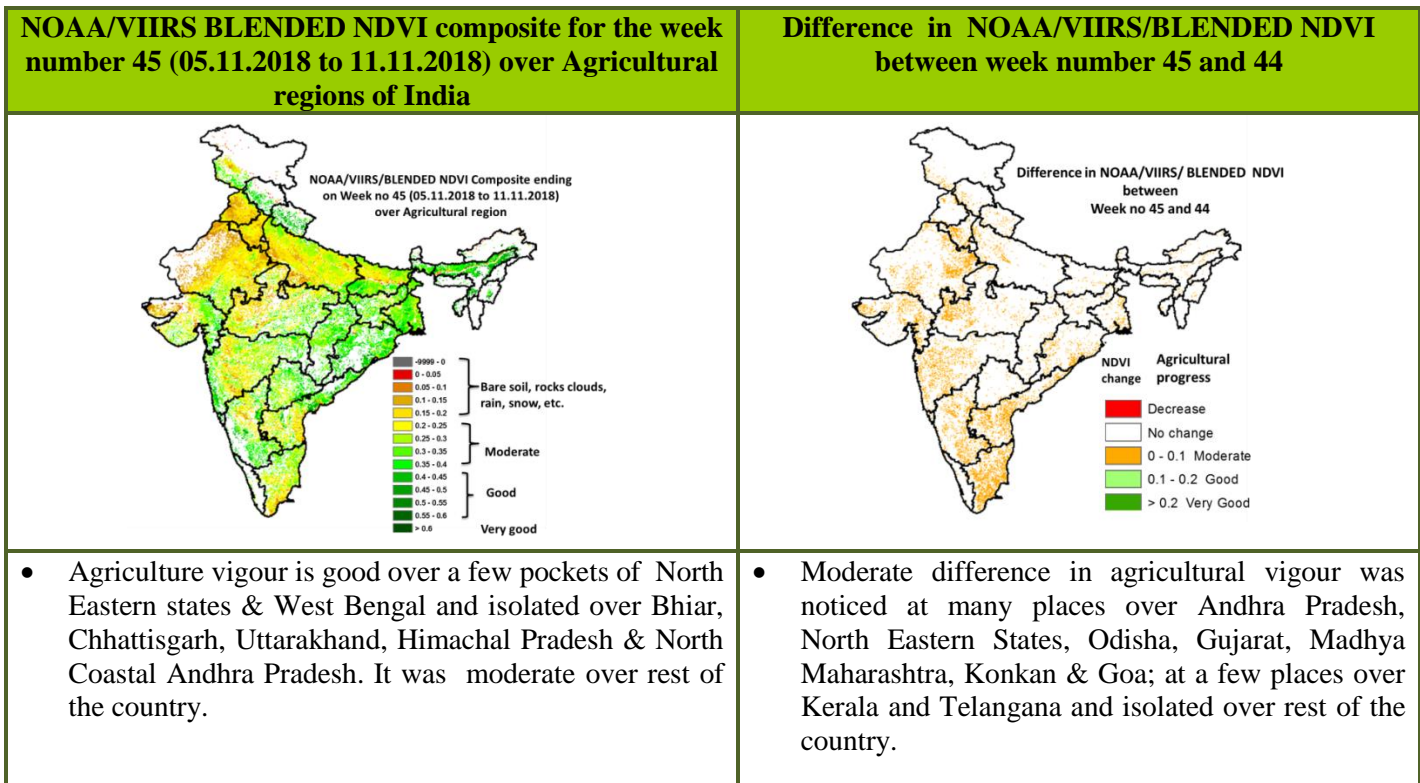
**Mean Cloud Cover (okta) for the week ending on 14.11.2018**



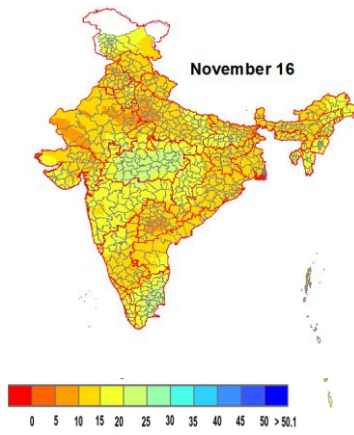
**Mean Wind Speed (km/hr) for the week ending on 14.11.2018**



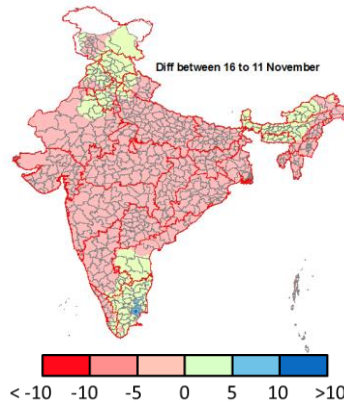
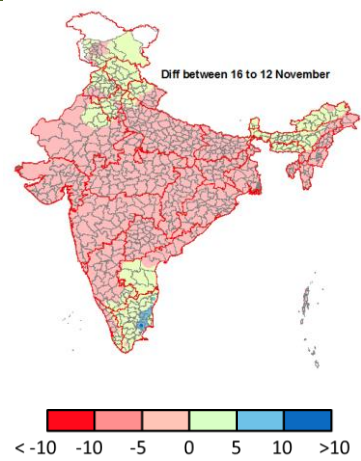
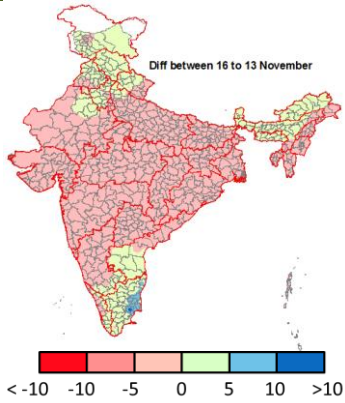
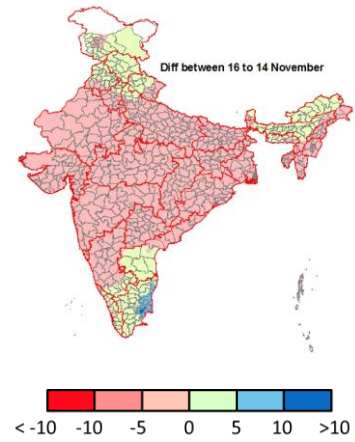
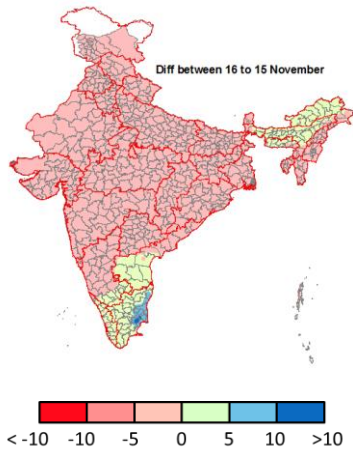




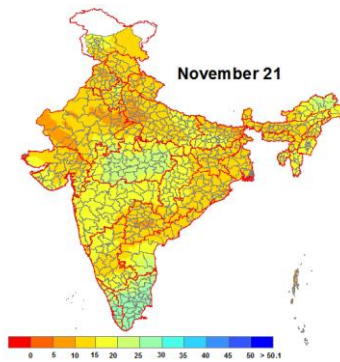
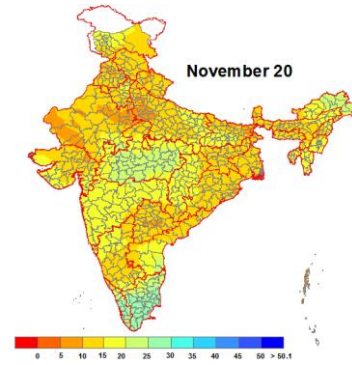
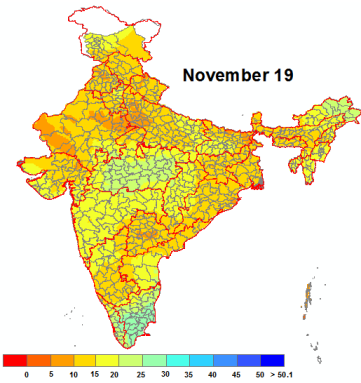
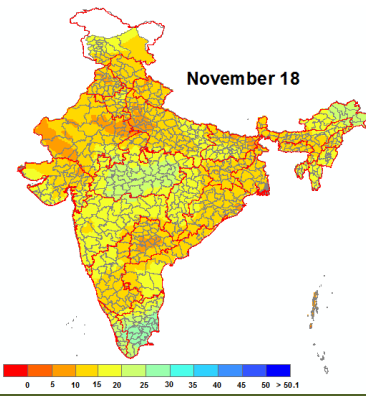
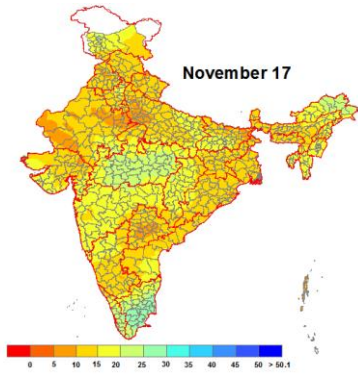
# Daily Soil Moisture (mm) for 16<sup>th</sup> November 2018 (ending at 0830 IST) for 60 cm depth



## Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 17<sup>th</sup> to 21<sup>st</sup> November 2018 (ending at 0830 IST)  
for 60 cm depth**



## Cyclonic Storm 'GAJA'

- The Cyclonic Storm 'GAJA' over coastal Tamilnadu moved nearly westwards, and lay centred at 0830 hours IST of today, the 16<sup>th</sup> November 2018, over interior Tamilnadu near latitude 10.4°N and longitude 78.5°E, about 95 km west of Atiramapattinam and 110 km east-northeast of Kodaikanal. It is very likely to move nearly westwards and weaken into a deep depression during next 03 hours.
- The remnant of the above system after landfall is likely to emerge as a low pressure area over Southeast Arabian Sea around 17<sup>th</sup> November. It is likely to become more marked and move westwards during subsequent 24 hours.

## Weather Forecast for next 5 days valid upto 0830 hours of 21<sup>st</sup> November 2018

- Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- Shallow to moderate fog in the morning hours likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 4-5 days.
- No significant change in minimum temperature likely over Northwest India during next 24 hours. They are likely to rise by 2-3°C over parts of northwest India there after. No significant change in minimum temperature likely over the rest of the country during next 2-3 days.

### 5 Day Rainfall Forecast (Mid-day) 16<sup>th</sup> November 2018

Met-Sub-Division	16-Nov Today	17Nov Sat	18Nov Sun	19Nov Mon	20Nov Tue
1. Andaman & Nicobar Islands	FWS	WS	FWS	SCT	SCT
2. Arunachal Pradesh	WS	SCT	ISOL	DRY	DRY
3. Assam & Meghalaya	SCT	ISOL	ISOL	DRY	DRY
4. N. M. M. & T.	ISOL	DRY	DRY	DRY	DRY
5. S.H. West Bengal & Sikkim	ISOL	ISOL	ISOL	ISOL	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	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	ISOL	ISOL	DRY
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	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	ISOL	ISOL	ISOL
24. Madhya Maharashtra	DRY	DRY	ISOL	ISOL	ISOL
25. Marathawada	DRY	DRY	DRY	DRY	DRY
26. Vidharbha	DRY	DRY	DRY	DRY	DRY
27. Chhattisgarh	DRY	DRY	DRY	DRY	DRY
28. Coastal Andhra Pradesh	ISOL	ISOL	ISOL	ISOL	ISOL
29. Telangana	ISOL	DRY	DRY	DRY	DRY
30. Rayalaseema	ISOL	ISOL	ISOL	ISOL	ISOL
31. Tamilnadu & Puducherry	WS	SCT	FWS	FWS	WS
32. Coastal Karnataka	ISOL	ISOL	SCT	SCT	SCT
33. North Interior Karnataka	ISOL	ISOL	ISOL	ISOL	ISOL
34. South Interior Karnataka	SCT	SCT	SCT	SCT	SCT
35. Kerala	WS	FWS	FWS	FWS	FWS
36. Lakshadweep	FWS	WS	FWS	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

- **16 November (Day 1):** Heavy rain at a few places with very heavy rain at isolated places very likely over interior Tamilnadu and heavy to very heavy rain at isolated places over Kerala. Gale wind speed reaching 65-75 kmph gusting to 85 kmph likely over central parts of Tamilnadu during next 03 hours. It would gradually decrease becoming Squally wind speed reaching 50-60 kmph gusting to 70 kmph over these areas during subsequent 06 hours. strong winds speed reaching 30-40 kmph gusting to 50 kmph likely over reaming parts of Tamilnadu, Kerala, Southeast Arabian Sea along & off Kerala Coast, Comorin area and Gulf Mannar. Sea condition is likely to be high to very high over southwest Bay of Bengal and along & off Tamilnadu & Puducherry coast and Palk Strait during next 09 hours. Fishermen are advised not to venture into these areas during this period. Moderate to dense fog is very likely at isolated places over Assam & Meghalaya.
- **17 November (Day 2):** Heavy rain very likely at isolated places over Lakshadweep. Squally weather very likely over southeast Arabian Sea, Lakshadweep area and along & off Kerala coast. Fishermen are advised not to venture into these areas.
- **18 November (Day 3):** Squally weather is likely over central parts of south Bay of Bengal. Squally wind speed reaching 35-45 kmph gusting to 55 kmph likely over Southeast Arabian Sea & Lakshadweep area. Fishermen are advised not to venture into the above mentioned areas.
- **19 November (Day 4):** Heavy rain likely at isolated places over coastal Tamilnadu & Puducherry. Squally wind speed reaching 35-45 kmph gusting to 55 kmph likely over Southeast Arabian Sea. Squally weather is likely over southwest Bay of Bengal. Fishermen are advised not to venture into the above mentioned areas.
- **20 November (Day 5):** Heavy to very heavy rain likely at isolated places over Tamilnadu & Puducherry. Squally weather is likely over southwest Bay of Bengal. Fishermen are advised not to venture into this area.

### Weather Outlook for subsequent 2 days from 21<sup>st</sup> to 23<sup>rd</sup> November 2018

- Fairly widespread to widespread rainfall likely over Tamilnadu and adjoining south peninsular India with intense rainfall activity over Tamilnadu.
- A fresh Western Disturbance is likely to cause Isolated to scattered precipitation over western Himalayan region.
- Isolated rainfall likely over the Islands.
- Dry weather likely over the rest of the country.

### Salient Advisories

- The Cyclonic Storm 'GAJA' over coastal Tamilnadu moved nearly westwards, and lay centred at 0830 hours IST of today, the 16th November 2018, over interior Tamilnadu near latitude 10.4°N and longitude 78.5°E, about 95 km west of Atiramapattinam and 110 km east-northeast of Kodaikanal. It is very likely to move nearly westwards and weaken into a deep depression during next 03 hours.
- As gale wind speed reaching 65-75 kmph gusting to 85 kmph likely over central parts of **Tamilnadu** during next 03 hours. It would gradually decrease becoming Squally wind speed reaching 50-60 kmph gusting to 70 kmph over these areas during subsequent 06 hours. strong winds speed reaching 30-40 kmph gusting to 50 kmph likely over reaming parts of Tamilnadu, Kerala, Southeast Arabian Sea along & off Kerala Coast, Comorin area and Gulf Mannar. Sea condition is likely to be high to very high over southwest Bay of Bengal and along & off Tamilnadu & Puducherry coast and Palk Strait during next 09 hours. Fishermen are advised not to venture into these areas during this period.
- As squally weather very likely over **southeast Arabian Sea, Lakshadweep** area and along & off **Kerala coast** on 17<sup>th</sup>, over central parts of south Bay of Bengal on 18<sup>th</sup>. Squally wind speed reaching 35-45 kmph gusting to 55 kmph likely over Southeast Arabian Sea on 18<sup>th</sup> and 19<sup>th</sup> & over Lakshadweep area on 18<sup>th</sup>. Squally weather is likely over southwest Bay of Bengal on 19<sup>th</sup> and 20<sup>th</sup> November. Fishermen are advised not to venture into these areas.
- As rain/thundershowers likely at most/many places over **Kerala** during the period, over **Tamil Nadu** on 16<sup>th</sup>, 18<sup>th</sup> to 20<sup>th</sup>, along with heavy rain at a few places with very heavy rain at isolated places very likely over interior Tamilnadu and heavy to very heavy rain at isolated places over Kerala on 16<sup>th</sup>, heavy to very heavy/heavy rain

likely at isolated places over coastal Tamilnadu & Puducherry on 19<sup>th</sup> and 20<sup>th</sup> November, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Provide support to banana to avoid lodging as high wind is anticipated. Keep harvested produce at safe places.

- As rain/thundershowers likely at most/many places over **Andman & Nicobar Islands** from 16<sup>th</sup> to 18<sup>th</sup> November, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safe places.
- As moderate to dense fog is very likely at isolated places over **Assam & Meghalaya** on 16<sup>th</sup> November, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.

### *Detailed Agromet Advisories*

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

- **Realised Rainfall:** Rainfall occurred in Ernakulum, Kollam and Pathanamthitta districts of Kerala, Cuddalore, Kanyakumari, Kariakal, Nagapattinam and Tiruvarur districts of Tamil Nadu, Dakshin Kannada district of Coast Karnataka during the week. Weather remained mainly dry/dry over the rest of the region.
- **Advisories:**
  - As rain/thundershowers likely at most/many places over Kerala during the period, over Tamil Nadu on 16<sup>th</sup>, 18<sup>th</sup> to 20<sup>th</sup>, along with heavy rain at a few places with very heavy rain at isolated places very likely over interior Tamilnadu and heavy to very heavy rain at isolated places over Kerala on 16<sup>th</sup>, heavy to very heavy/heavy rain likely at isolated places over coastal Tamilnadu & Puducherry on 19<sup>th</sup> and 20<sup>th</sup> November, avoid irrigation, intercultural operation and 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 safe places.
  - As gale wind speed reaching 65-75 kmph gusting to 85 kmph likely over central parts of Tamilnadu during next 03 hours. It would gradually decrease becoming Squally wind speed reaching 50-60 kmph gusting to 70 kmph over these areas during subsequent 06 hours. strong winds speed reaching 30-40 kmph gusting to 50 kmph likely over reaming parts of Tamilnadu, Kerala, Southeast Arabian Sea along & off Kerala Coast, Comorin area and Gulf Mannar. Sea condition is likely to be high to very high over southwest Bay of Bengal and along & off Tamilnadu & Puducherry coast and Palk Strait during next 09 hours. Fishermen are advised not to venture into these areas during this period.
  - As squally weather very likely over southeast Arabian Sea, Lakshadweep area and along & off Kerala coast on 17<sup>th</sup>, over central parts of south Bay of Bengal on 18<sup>th</sup>. Squally wind speed reaching 35-45 kmph gusting to 55 kmph likely over Southeast Arabian Sea on 18<sup>th</sup> and 19<sup>th</sup> & over Lakshadweep area on 18<sup>th</sup>. Squally weather is likely over southwest Bay of Bengal on 19<sup>th</sup> and 20<sup>th</sup> November. Fishermen are advised not to venture into these areas.
  - **Kerala:**
    - In High Altitude Zone, short duration vegetable crops like Amaranthus, cow pea etc. can be cultivated in the interspaces of newly planted banana crop. Spray 1% Bordeaux mixture as a prophylactic measure to control leaf spot in banana after current spells of rain.
    - In Northern zone, drench the coconut palm basin (2m radius) with 40 litres of 1% Bordeaux mixture or soil drenching of Hexaconazole/contaf 25ml/25 litre of water once in 4 months.
    - In Central Zone, complete transplanting of rice. Yellowing is observed in pepper, for control, soil drenching with 2g Kocide per one litre of water, followed by a foliar spray and soil drenching with 20 g of pseudomonas per litre of water, after two weeks is recommended. Undertake plant protection methods after current spells of rain.
  - **Andhra Pradesh:**
    - In Rayalaseema, complete sowing of chickpea under sufficient soil moisture condition.
    - In South Coastal Andhra Pradesh, in the present weather condition, hoppers may attack the rice crop. Spray Boprophezis @ 1.6 ml or Acepate 1.5 g or Phimetrogen 0.6 g per liter of water.
    - In Rayalaseema, prevailing conditions are favorable for incidence of spotted pod borer and helioverpa in red gram. Farmers are advised to go for spraying of NSKE @ 5ml/litre to control egg laying and for controlling of larvae spraying of Chlorpyrifos 2 ml/lit + Nuvan 1 ml/litre of water.



- **Telangana:**
  - Continue sowing of rabi Maize, Groundnut, Bengal gram, coriander, mustard & safflower in Northern Telangana zone.
  - The prevailing weather conditions are congenial for incidence of sucking pests in vegetables in South Telangana zone. To control, spray Fipronil @ 2ml or Thiomethoxim @ 0.3g per litre of water.
- **Tamil Nadu:**
  - As heavy rain is expected during next three days, provide adequate drainage facilities in the standing crop fields to avoid water stagnation due to heavy rainfall and avoid application of fertilizer, insecticide and weedicide due to heavy rains. Provide support to banana to avoid lodging as high wind is anticipated.
  - In Southern Zone, for Paddy crop applying of Organic inputs is essential at this time, mix 2kg Azospirillum /ha and 2kg Phosphobacteria /ha or 4kg Azophos inoculants with 25 kg FYM and 25 kg of soil and broadcast the mixture uniformly in the main field before transplanting.
  - In High altitude hilly zone, to control nematode in carrot crop, apply Paecilomyces Lilacinus @ 10 kg/ha at the time of sowing along with well decomposed farm yard manure. Also farmers are advised to provide support to banana to avoid lodging as high wind is anticipated.
  - In Western Zone, because of the present level minimum temperature and high rainfall, Zinc deficiency may appear in samba transplanted rice. Spray ZnSO<sub>4</sub> 0.5% along with 1% urea twice after current spells of rain and repeat at 10 days interval.
- **Karnataka:**
  - In South Interior Karnataka, continue harvesting of matured sugarcane, maize cobs, groundnut crops and arecanut. Protect the harvested onion and other harvested produce from rain. Complete sowing of sunflower, chickpea, safflower, field bean, cowpea, ragi, maize, Bengal gram, finger millet, horse gram, green gram, black gram crops.
  - In North Interior Karnataka, complete sowing of sorghum, Bengal gram, sunflower, chickpea, safflower and irrigated wheat. Continue picking of cotton bolls.
  - In Coastal Karnataka, complete harvesting of fully matured rice crop and sundry the produce. Continue picking of cotton.
  - In South Interior Karnataka, due to cloudy weather there is chance of incidence of thrips and mites in chilli crop; to control, spray Roger @ 1.7 ml + Dicotal @ 2.5 ml/litre of water. Due to congenial weather condition, rice crop is affected by sheath blight and earhead blight; to control, spray Carbendizim 50 wP @ 1g + Tebuconazole @ 0.4 g/litre of water on a non rainy day.
  - In Coastal Karnataka, spray 1% Bordeaux mixture to areca nut plantation against nut root disease on a non rainy day.
- **Animal Husbandry**
  - In Tamil Nadu, keep the animals tied inside the shed during heavy rain and high wind. Strength of animal sheds should be ensured. Do not shelter the animals under tree or old shed. Avoid stagnation of water nearby animal shed to prevent vector born diseases to the animals and due to the expected rainfall, farmers are advised to safeguard the dry fodders for their livestock.
  - Due to recent cyclone storm GAJA, the poultry farmers in Namakkal and Erode districts and adjoining districts are requested to take immense care of their birds in the raised platform as well as in deep litter to prevent any loss of birds by carefully covering the sides with curtains. They are also cautioned to prepare sufficient feed in advance for three subsequent days and store such feed in safe and dry places.
  - In Karnataka, maintain the optimum room temperature in Sericulture, Poultry and Dairy unit by providing electric bulb for creating warm room temperature.

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

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
  - As moderate to dense fog is very likely at isolated places over Assam & Meghalaya on 16<sup>th</sup> November, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.
  - **Arunachal Pradesh:**
    - As rain/thundershowers likely at most places over Arunachal Pradesh on 16<sup>th</sup> November, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
    - Continue harvesting of soybean and kharif rice after current spells of rain. Continue sowing of pea/gram in rice fallow and transplanting of rabi vegetables.
  - **Assam:**
    - Continue planting of potato. Select sandy loam soil rich in organic matter for cultivation of potato. Transplant seedlings of cauliflower, knolkhol, tomato, brinjal and radish in the main field at 30-35 DAS. Continue sowing of rapeseed and mustard, pea, lentil. Continue land preparation and sowing of wheat; undertake harvesting of

Sali rice and nursery bed preparation/sowing of Boro rice in Assam.

- Due to favourable weather incidence and spread of Gundhi bug is observed in Sali rice at milking stage. Since clear with rain free weather is predicted in the coming 5 days, spray Malathion 5% dust @ 3kg per bigha to control the pest.
- **Meghalaya:**
- Continue transplanting of cole crops, root crops and cucurbits. Avoid irrigation in ginger and turmeric fields at rhizome maturity stage.
- Spray Hexaconazole @ 1ml/litre of water at 15 days interval for control of sheath blight and sheath rot in Sali paddy.
- **Manipur:**
- Complete harvesting of rice. Take up sowing of mustard and rapeseed just after harvesting of rice, pea, lentil, soybean, groundnut, black gram, rice bean etc. undertake nursery raising to land preparation for transplanting of onion.
- **Mizoram:**
- Continue harvesting of Upland rice, sowing of radish and leafy mustard and nursery preparation of tomato, crucifer, onion, brinjal and chilli.
- Due to high humidity the problem of citrus canker get aggravated in acid lime leading to excessive fruit drop. Spray copper oxychloride 180 gms with Streptomycin 6 gms in 60 liters of water to control canker.
- **Tripura:**
- Continue harvesting of maize and Aman rice. Continue transplanting of *rabi* legumes like toria, sesame, lentil and planting of potato. Complete transplanting of cabbage, cauliflower, radish and brinjal. Keep cucurbit. Keep field weed free.
- Attack of Downy Mildew may occur in Pointed gourd, Cucumber and other Cucurbit. Apply combination of Cymoxanil and Mancozeb @ 2gm per litre of water. Repeat the application at least twice at 5 days interval.
- **Nagaland:**
- Complete transplanting of vegetable crops like cabbage, tomato, radish and broccoli. Undertake harvesting of TRC/WRC rice.
- In the present weather conditions monitor cabbage caterpillar in cabbage. Hand picking and destruction of egg mass and young larvae or apply 4% Neem Seed Kernel Extract (NSKE) and spray 0.05 % Malathion or quinalphos in heavy infestation.
- **Animal Husbandry**
- In Assam, the weather condition is favourable for infestation of round worm, flukes and tapeworms in cattle. De-worming may be done under recommendation and supervision of authorized practitioner.
- 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.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - **Odisha:**
  - Short duration paddy is at grain maturity to harvesting stage. Drain out water from the field and carry out harvesting of matured crop. Carry out hoeing and weeding in rain-fed mustard and early planted potato fields. Go for pyra cropping of lathyrus, green gram, black gram and green pea at saturated condition in field. Undertake sowing of high yield varieties of garlic. Complete the planting of high yield varieties of pineapple. Harvest mature cobs of maize. Cotton crop is at boll development to boll bursting (eighteen to twenty week) stage. Pick out cotton from matured bursted bolls. Complete the field preparation for transplanting cole crops and tomato. Continue land preparation for wheat. Present weather conditions are favourable for proper germination of linseed, gram and pea. Take up sowing as Paira or sole depending upon moisture status of the soil. Undertake sowing of high yield varieties of garlic. Take up sowing of *rabi* groundnut, sunflower, mustard and toria after necessary seed treatment. Continue sowing of onion in nursery bed @ 4 kg seeds/acre after treatment with Captan @ 2g/kg seeds. Go for sowing of lentil, field pea and chickpea @ 20 kg/acre up to November end. Harvest mature groundnut crop without delay. Taking the advantage of store soil moisture due to recent rain, start land preparation and sowing of mustard and toria crop to get optimum yield.
  - Spray Flubendiamide 48% SC 50ml with 200liters of water per acre crop area for pod borer infestation in arhar. Spray 400ml Profenophos 50% EC @2ml/litre of water per acre crop area in dry weather condition for semi-looper and spodoptera in castor crop.
  - To control fruit and shoot borer in brinjal, spray Neem based pesticide 1500 ppm @ 600ml/acre at initial

stages. Later on go for alternate spray of Spinosad 45%SC@70ml/acre and Thiodicarb @2 50g/acre at 15 days interval.

▪ **Bihar:**

- Continue land preparation for timely sowing of rabi crops such as lentil, pea, rai, toria, garlic, coriander, sunflower, rajma and methi. Continue nursery sowing of rabi onion. Continue land preparation and sowing of Rabi maize, kidney beans and planting potato. Continue land preparation/sowing of wheat (varieties PBW-343, PBW-443, K-9107, HD-2733, HD-2824, HUW-206, HUW-468, K-307, CBW-38, DBW-39) and gram (varieties Pusa-256, KPG-59 (Udai), and Pusa-372). In the areas where paddy crop is about to mature, irrigation should be stopped two weeks before harvesting. After harvesting, crop should be dried in the field for 2-3 days and thereafter threshing should be done. Grains should be properly dried to right moisture level before storing.
- Monitor cutworm in 15-20 days old maize, pea, lentil and kidney beans crop. For management, flood the field to bring the caterpillars out of cracks so that they are picked up by birds. In case of severe damage, spray Chlorpyrifos 20 EC @ 2.5 ml per liter of water. For sucking insect/pests such as white fly, leaf hopper and aphid in vegetables crop, spray Imidacloprid 17.8 % SL @ 0.3ml/liter of water.

▪ **Jharkhand:**

- Raise cauliflower, cabbage, chilli, tomato, etc. in nursery bed and transplant mature seedlings in the main field. Go for the cultivation of short duration vegetables like- Bodi, Frenchbean and leafy vegetables and low water requirement vegetables like- tomato, brinjal, capsicum, rainy season cauliflower, potato and onion by adopting water conservation techniques like- mulching and drip method. For fruits sapling plantation, recommended varieties are: custard apple - Arka sahan; banana- Behula, Robusta, G-9; papaya-Pusa delicious, Pusa dwarf, Kurg honey dew, Pusa nanha and guava- Allahabad safeda, Lucknow 49, Arka mridula, Lalit, Arka amulya. Continue sowing of wheat with varieties like Birsa Genhu 3, K 8027, H D R 77 etc. Treat the seeds first with fungicide followed by insecticide keeping 5-6 hours of gap between the treatments.
- For control of leaf blight in pulse crop, spray Indofil M 45 @ 2 g per litre of water. For leaf eating insects in vegetable crops, spray Imidachlorpid @ 1g or Kung fu @ 2 ml per liter of water. For control of mites, jassids and hoppers in Okra, Chilli and cucurbitaceous crops, apply neem oil having concentration of 1500 ppm @ 3 ml per litre of water or chemicals like Omites or Rogar @ 2ml per litre of water.

▪ **West Bengal:**

- In Sub-Himalayan West Bengal, continue harvesting of soybean. Continue field preparation for planting of potato, garden pea and cole crops. Carry out careful roguing and destruction of infected plants in ginger and turmeric fields. Continue sowing of lentils after harvesting of Aman rice. Continue sowing of winter vegetable seeds in the nursery bed. Before sowing treat the seed bed with fungicide Copper-oxychloride @ 4g/litre of water.
- In Gangetic West Bengal, continue harvesting of mature rice crop. After harvesting, dry the crop in the field for 2-3 days and thereafter threshing should be done. In the areas where paddy crop is about to mature, irrigation should be stopped two weeks before harvesting. Medium and long duration varieties may be harvested after 15<sup>th</sup> November depending upon maturity of the crop. After the harvest of rice crop, field should be ploughed with one deep ploughing followed by 2-3 general ploughings and planking to get the well pulverized seedbed for sowing of wheat, mustard or potato crops. Carry out land preparation for lentil crop. Prepare upland for planting of onion. Complete the sowing of gram and pea at the earliest. Continue transplanting of seedlings of cauliflower, cabbage, broccoli and tomato on raised beds. Continue sowing of rabi onion, rabi garlic, coriander, fenugreek, turnip, spinach and radish.
- In Sub-Himalayan West Bengal, for control of mealy bug attack in Aman paddy, spray Chlorpyrifos @ 2 ml/litre of water. For collection and destruction of fruit fly in cucurbit crops, place pheromone traps @ 2 per bigha. To control downey mildew of cucurbits, spray Metaloxy + Mancozeb @ 2.5 g/litre of water. For Aphid, hoppers, white fly and thrips in chilli crop, apply Imidacloprid 17.8 SL @ 1ml/5 litres or Thiomithoxam 0.3 SG @ 1g/3 litres of water.
- In Gangetic West Bengal, collect and destroy the affected fruits and plant parts. Spray Neem Seed Kernal Extract solution @ 50 ml/litre of water Spray Acephate @ 1 g per litre of water for white fly in cabbage, cauliflower and tomato.

▪ **Andaman & Nicobar Islands:**

- As rain/thundershowers likely at most/many places over Andman & Nicobar Islands from 16<sup>th</sup> to 18<sup>th</sup> November, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safe places.
- In the Andaman Islands, keep open the bunds in rice main field and vegetable field to drain out excess rainwater.

• **Animal Husbandry**

- In Odisha, provide clean drinking water to cattle and keep the sheds clean. Don't allow urine or excreta to deposit in and around the shed to prevent flies. Provide vaccination at regular interval.



- In Jharkhand, keep animals in a covered shed/area during night to protect them from a sudden drop in temperature. Keep the animal bedding dry. Vaccinate against FMD, Haemorrhagic Septicaemia (HS), Black Quarter (BQ), Enteroxemia during this month. Increase the number of bulbs or provide hot air blower to maintain room temperature in poultry houses.
- In West Bengal, vaccinate cattle against FMD. Keep the cow shed clean and dry. Vaccinate poultry birds against Ranikhet disease. Goat kids lose body energy very rapidly when exposed to cold or wet environment and may become weak or die. Ensure good management practices and feeding during this season. Mix essential salts with animal feed. Follow proper vaccination for poultry birds, For 5 days old chick-F1 vaccine; for 12 days old chick Gumbro and IBD vaccine and for 4-6 weeks old bird-Fowl pox vaccine etc. Considering the fall in night temperatures, keep the new born chicks under bulb.
- In Andaman & Nicobar Islands, provide mineral mixture @ 0.10 gm/kg feed to the poultry birds grown under backyard condition.
- **Fisheries**
- In Odisha, according to the acidity, apply lime @ 250-500 Kg/Ha. Agitate water for better growth of fish. Provide false netting for better growth of fish.
- In Jharkhand, during the winter season, fish may get infected with Red spot disease or Epizootic Ulcerative Syndrome (EUS). Prepare, in plastic buckets, a solution of CIFAX or AQUANEEM 10X @ 1 liter in 100 liter of water mixed thoroughly and spray in equal proportions everywhere in the ponds and lakes. It is useful both for the eradication of "EUS" disease and as a preventive measure. The mixture has to be made.
- In West Bengal, apply cow dung @ 100kg/bigha monthly basis in fish culture pond to enhance the growth of phytoplankton which will be consumed by fish.

### WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Weather remained mainly dry/dry over the region.
- **Advisories:**
  - **Maharashtra:**
    - In South Konkan, continue harvesting of early varieties of rice. Undertake land preparation for sowing of *rabi* rice. Undertake preparatory tillage operations for *rabi* groundnut. Continue sowing of *kulthi*, *chavli* and *wal*. In North Konkan, undertake land preparation for *rabi* season rice nursery and groundnut. Apply irrigation to grafts, sapling and vegetable nurseries. If seedlings of brinjal and chill crops are ready for transplanting, transplant the seedlings on ridges and furrow with spacing of 60 X 60 cm. Dip the seedling for 5 minute in Dimethoate solution @ 1ml per litre of water before transplanting. Provide irrigation immediately after transplanting.
    - In Madhya Maharashtra, continue picking of cotton. Continue harvesting of matured *kharif* rice. Delayed harvesting of matured rice may result in grain cracking into small pieces. Complete sowing of wheat. Apply protective irrigation to pigeonpea as per requirement.
    - In Marathwada, continue picking of cotton. For late sowing of wheat crop use 125 to 150 kg / ha seed rate. Undertake thinning in 10 to 15 days old safflower crop by keeping plant to plant distance of 20 cm. 4 Apply protective irrigation to vegetables and orchards. Apply protective irrigation with the help of sprinkler irrigation system in *rabi* groundnut and chickpea crop.
    - In West Vidarbha, undertake picking of cotton and keep the produce in dry place. Also apply protective irrigation to the crop. Apply protective irrigation to pigeon pea, chickpea, safflower, vegetables and orchards. Undertake top dressing of nitrogen @ 40 kg per hectare to 25-30 days old irrigated *rabi* sorghum. Ensure adequate soil moisture at top dressing. Apply top dressing of nitrogen fertilizer @ 40 kg N/ha to 30 days old maize crop at adequate soil moisture under protective irrigation. In East Vidarbha, undertake sowing of gram, wheat and linseed. Continue harvesting of matured early varieties of rice.
    - In Madhya Maharashtra, to control army worms in *rabi* jowar, dust the crop with 1.5% Quinalphos dust or 5% Malathion dust @ 20 kg per acre preferably in the morning when there is no wind. To control aphid, spray the crop with Dimethoate @ 10 ml or Imidachloprid @ 4 ml per 10 liters of water.
  - **Gujarat:**
    - In Saurashtra & Kutch, continue sowing of wheat, garlic, chickpea, mustard, coriander and cumin crops and transplanting of cabbage crop. Continue picking of matured cotton bolls.
    - In South Gujarat, undertake sowing of wheat, sorghum, gram, green gram, Indian bean, pea and lentil crops. Carry out intercultural operations in pigeon pea crop. Apply irrigation in fruit and vegetable crops as per need.
    - In North Gujarat, undertake sowing of cumin, wheat, potato and fenugreek crops. Continue sowing of gram and transplanting of cabbage crops. Continue picking of matured cotton bolls.
    - In Middle Gujarat, undertake sowing of maize, wheat, and coriander crops. Continue picking of matured cotton bolls. Apply irrigation in cluster bean crop as per need.
    - In Saurashtra & Kutch, under present weather condition, to prevent dropping of squares, flowers and immature bolls of cotton crop, spray 30 PPM Naphthalene Acetic Acid solution (Planofix 7.5 ml/10 liters of water).

Weather condition is favorable for outbreak of fruit fly pest in ber; to control, spray of Canithione 50 E.C. @ 10 ml or Malathione 50 E.C. @ 20 ml in 10 litres of water.

- **Animal Husbandry**
- In Gujarat, provide ad lib warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress.

### CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather remained dry over the region during the week.
- **Advisories:**
  - **Madhya Pradesh:**
    - In East Madhya Pradesh, continue sowing of gram, lentil and linseed. Continue planting of potato. Continue nursery preparation for *rabi* vegetables. Continue sowing of pea and mustard. Continue sowing of carrot, beetroot, radish, spinach, fenugreek etc. Continue sowing of wheat and garlic.
    - In West Madhya Pradesh, continue sowing of wheat and gram. Continue sowing of mustard and rapeseed. Continue harvesting of green chilli, okra and cucurbit crops. Continue sowing of garlic. Undertake planting of sugarcane. Undertake planting of potato.
    - In Satpura Plateau Zone, in brinjal, tomato and bhindi crops attack of fruit borer has been observed, to control use Pheromone Trap @ 20 Nos/ha.
    - In Central Narmada Valley Zone, to control Purple blotch attack in onion crop, apply Copper Oxy Chloride @ 40 g and Streptocyclin @ 2 g per 15 litres of water.
  - **Chhattisgarh:**
    - Continue harvesting of matured rice crop. Continue sowing of lathyrus or linseed crops. Undertake planting of potato and garlic and seed bed preparation for onion. Undertake sowing of wheat and gram. Undertake transplanting of cauliflower, tomato, brinjal, chilli etc. in the main field. In Plain Zone, continue nursery sowing of tomato, brinjal, chilli and capsicum.
    - In Bastar Plateau Zone, continue harvesting of matured rice. Undertake sowing of wheat and gram. Continue nursery preparation for *rabi* vegetables. Continue sowing of linseed, safflower and Lathyrus crops.
- **Animal Husbandry**
  - In Madhya Pradesh, provide clean and fresh water two times a day. Provide 35-40 gm mineral mixture per animal as supplement & green fodder 25 kg/cattle/day.
  - 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.

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

- **Realised Rainfall:** Weather remained mainly dry/dry over the region during the week.
- **Advisories:**
  - **Jammu & Kashmir:**
    - Provide drainage channels in the fields of *rabi* crops like wheat, oats, lentils and gram wherever there is probability of water accumulation during winter months.
    - In Valley Temperate Zone, postpone all field operations in vegetable crops till soil becomes workable. Maintain adequate drainage in the fields and nursery.
    - For mushroom cultivation, casing should be properly sterilized. Maintain the temperature of the room 22 -24 degree Celcius for 2- 3 days after casing and then lower the temp to 15-18 degree Celcius for cropping period. To keep the room humid, sprays the walls n floor of mushroom house with water.
  - **Uttarakhand:**
    - Undertake land preparation for sowing of wheat in sub humid sub tropic zone. Continue harvesting and threshing of late sown rice crop. Transplant the nursery of late varieties of winter vegetables. Pick the mature fruits in standing crop of ridge gourd/pumpkin, brinjal from time to time. Mulching (using dry grass/leaves) should be done in Hill zone between rows in cabbage crop to conserve soil moisture.
  - **Himachal Pradesh:**
    - Complete sowing of mustard, gram and lentil in lower areas. Undertake sowing of wheat if optimum soil moisture is available. Carry out Weeding and hoeing operations in tomato, chilli, capsicum and brinjal crops for optimum growth.
  - **Punjab, Haryana & Delhi:**
    - In Punjab, continue land preparation and sowing of raya and wheat. Continue harvesting of matured maize, green gram. Continue planting of early varieties of potato and pea. Complete sowing of spinach, radish, turnip and carrot. Continue planting of early varieties of sugarcane. Continue planting of seedlings of onion. Undertake transplanting of tomato. Continue picking of matured cotton bolls. Undertake harvesting of matured

rice.

- In Haryana, continue intercultural operations in vegetables. Continue field preparation for sowing of mustard. Continue harvesting of timely sown bajra, guar, green gram, black gram and picking up of matured cotton bolls. Undertake sowing of mustard, barley, gram, wheat, berseem and oats.
- In Delhi, continue harvesting of matured rice. Continue planting of winter sugarcane at optimum soil moisture for better seed germination. Continue sowing of gram and sowing of garlic on raised bed. Continue sowing early mustard, pea and planting of early potato. Continue transplanting of onion. Continue sowing of sarsonsaag, radish, spinach, coriander. Continue transplanting of cauliflower, cabbage, broccoli and tomato. Continue sowing of carrot on raised bed. Continue field preparation for sowing of wheat.
- In Undulating Plain Zone, due to hot & humid weather may increase infestation of hairy caterpillar in moong & mash. Spray Ekalux 25 EC (Quinalphos) @ 500 mL/acre in 80-100 L of water. Dry weather may increase whitefly population in pulses, spray 600 mL of Trizophos 40 EC or 250 mL of Rogor 30 EC. Weather conditions will be congenial for Plant hoppers and grasshopper which can be controlled by spraying the crop with 40 ml Confidor or Crocodile 17.8 SL or 800 ml of Ekalux/ Quinguard/ Quinalmass 25 EC or one litre Coroban/Dursban 20 EC in 100 litres of water. High humid condition may lead to infection of fruit rot and die back in chilli, spray the crop with 750g of Indofil M-45 or Blitox in 250 litres of water/acre at 10 days interval.
- In Haryana, due to fall in night temperature keep the animals under shed. Provide 50 grams iodized salt and 50 to 100 grams mineral mixture daily with animal feed/fodder to keep them healthy.
- **Uttar Pradesh:**
  - In East Uttar Pradesh, continue land preparation for sowing of pea, garlic, coriander, spinach, radish, fenugreek, fennel etc. Continue sowing of mustard, gram. Undertake sowing of lentil, pea, sugarcane, potato, ginger and turmeric.
  - In West Uttar Pradesh, continue harvesting of rice as weather is favourable. Carry out harvesting of bajra and jowar. Continue sowing of recommended wheat varieties. Apply light irrigation to late-sown toria crop. Undertake timely sowing of recommended varieties of mustard, pea, gram, potato and winter vegetables like radish, carrot, fenugreek, coriander, etc. Take up nursery raising of recommended onion varieties. Carry out transplanting of matured seedlings of brinjal, cabbage, cauliflower, tomato and capsicum. Continue sowing of lentil. Sowing of garlic can be done in raised bed.
- **Rajasthan:**
  - In Southern Humid Plain Zone, irrigation may be applied in sugarcane and vegetable crops as per need. Farmers are also advised to go for sowing of rabi maize.
  - In Arid Western Plain Zone, weather conditions are becoming favourable for sowing of mustard and gram. Therefore, arrange seed, fertilizer and chemicals for seed treatment for sowing. Also, harvest mature groundnut and undertake sowing of garlic. Undertake field preparation and sowing of wheat and barley as this is the best optimum time of sowing for wheat and barley when average daily temperature remains between 20-25° C.
  - In East Rajasthan, continue field preparation for sowing of barley. Continue sowing of radish and carrot. Continue nursery preparation for rabi vegetables like chilli, brinjal, tomato, cabbage and cauliflower. Continue sowing of early pea, gram and mustard. Continue planting of fruit crops like mango, plum, pomegranate, aonla etc. Continue harvesting of matured maize, black gram, green gram and soybean.
  - This is the right time for sowing of wheat and barley in Sub Humid Southern Plain and Aravali Hill Zone, For control for termities in field, use of Quinolphos 1.5% dust 25 kg/ha before last tillage operation.
- **Animal Husbandary**
  - In Jammu & Kashmir, animals should never be allowed to graze in early morning hours as the pastures are laced with frost. Animals should be provided with dry bedding to provide insulation from cold floor. Give salt, mineral and vitamin mixture to animals as dried forage is lacking adequate quantity of these. Provide adequate shelter during night to avoid cold stress.
  - In Uttar Pradesh, vaccinate cattle against FMD and BQ. Provide them clean drinking water. Keep poultry houses clean.
- **Floriculture**
  - In Jammu & Kashmir, while doing weed eradication it is very important to be careful that plant roots are not injured in any way. Spray bavistin or DM-45 @ 1gm/litre or 2g/litre respectively on Chrysanthemum at bud initiation stage during clear weather to control fungal diseases. Carry out hoeing & staking. Disbudding in standard cultivar is recommended. Carry out pruning in rose at post flowering stage to remove old flowering shoots so as to enhance the growth of new shoots. Continue transplanting of marigold and winter season annuals into main field during clear weather. Undertake planting of gladiolus in field.

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