



# *National Agromet Advisory Service Bulletin*

*Friday 18<sup>th</sup> May 2018*  
*(For the period 18<sup>th</sup> to 23<sup>rd</sup> May 2018)*



*Issued by*  
*India Meteorological Department*

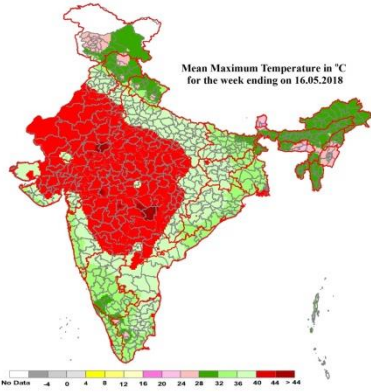
**Weblink For**

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

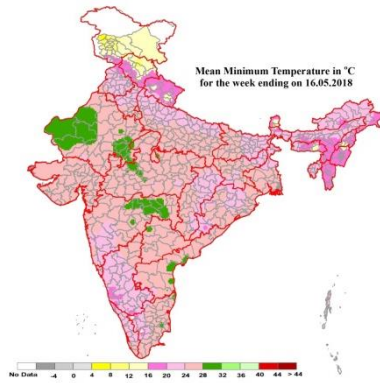
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

**Spatial distribution of weather parameters for the week ending 16.05.2018**

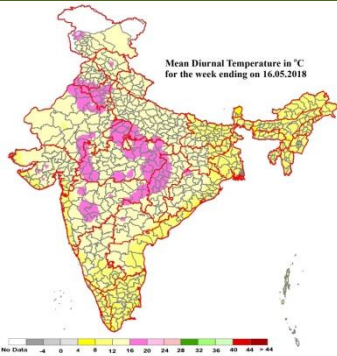
**Mean Maximum Temperature (°C) for the week ending 16.05.2018**



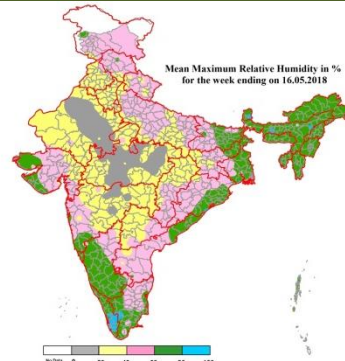
**Mean Minimum Temperature (°C) for the week ending 16.05.2018**



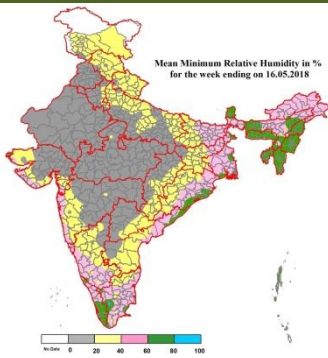
**Mean Diurnal Temperature Variation (°C) for the week ending 16.05.2018**



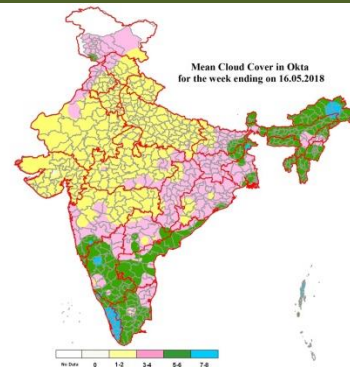
**Mean Maximum Relative Humidity (%) for the week ending 16.05.2018**



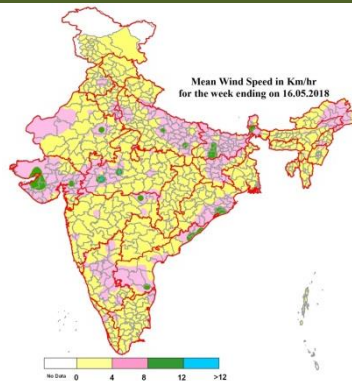
**Mean Minimum Relative Humidity (%) for the week ending 16.05.2018**



**Mean Cloud Cover (okta) for the week ending 16.05.2018**



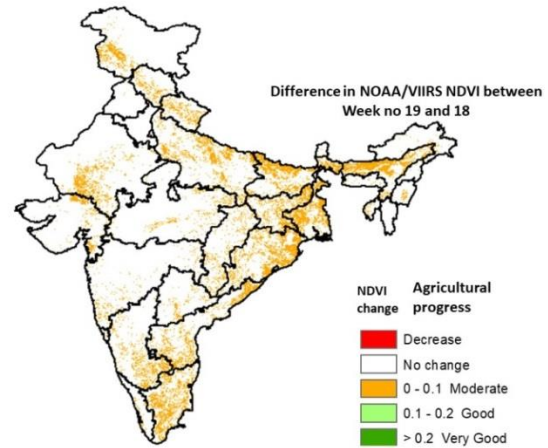
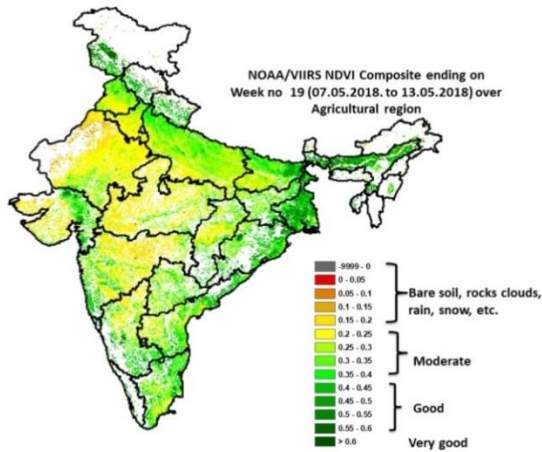
**Mean Wind Speed (km/hr) for the week ending 16.05.2018**





**NOAA/VIIRS NDVI composite ending on 13<sup>th</sup> May 2018 over Agricultural regions of India**

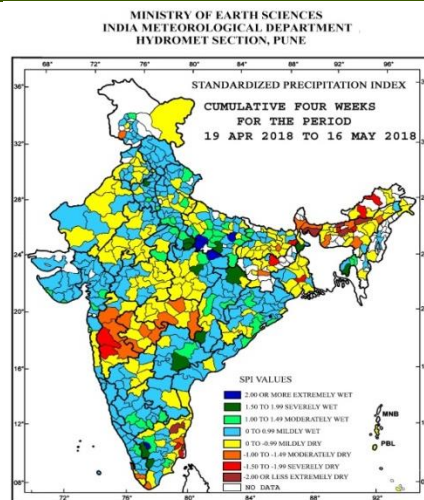
**Difference in NOAA/VIIRS NDVI between 6<sup>th</sup> May and 13<sup>th</sup> May 2018**



- Agriculture vigour is good over West Bengal and adjoining Assam and moderate over Indo-gangetic plains, East coast and western coast of Maharashtra, some parts of Gujarat, parts of Tamil Nadu, Coastal Andhra Pradesh and Odisha and Telangana.

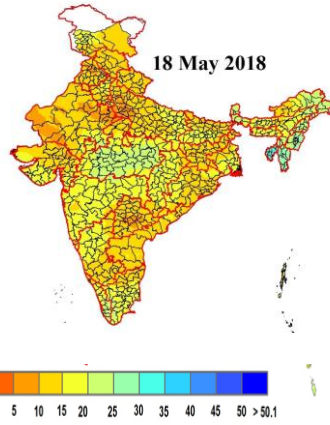
- Moderate progress of agricultural vigour was observed over many parts of the country

**Standardised Precipitation Index  
Cumulative 4 weeks for the period 19<sup>th</sup> April to 16<sup>th</sup> May 2018**

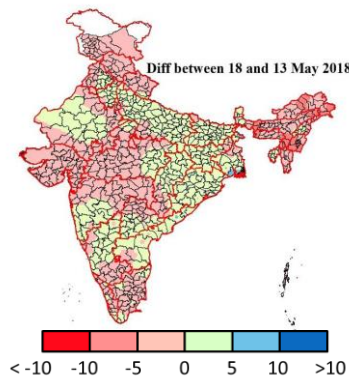
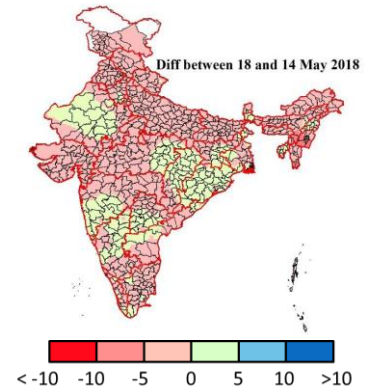
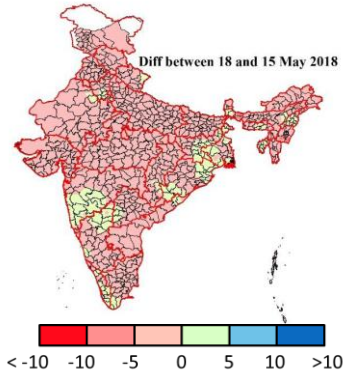
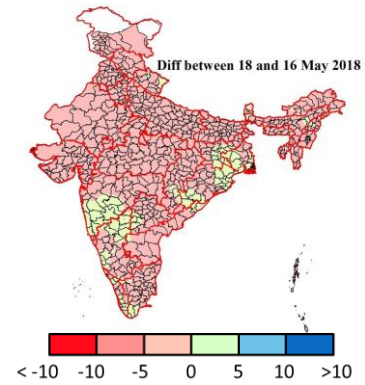
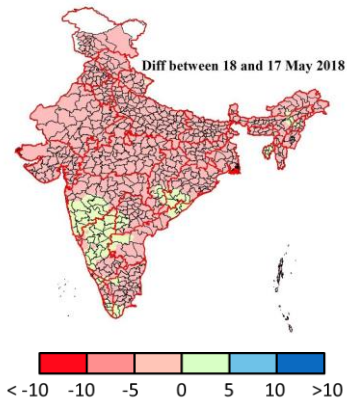


- Extremely/severely wet conditions experienced in South Tripura district of Tripura; Malda district of West Bengal; Allahabad, Azamgarh, Banda, Fatehpur, Hamirpur, Mahoba districts of Uttar Pradesh; Kaithal district of Haryana; Katni, Rewa districts of Madhya Pradesh; Surguja, Bijapur districts of Chhattisgarh; Nalgonda district of Telangana; Coimbatore, Theni, Tirupur districts of Tamil Nadu & Puducherry.
- Extremely/Severely dry conditions experienced in few districts of Arunachal Pradesh; Assam; Cooch Behar, Hooghly districts of West Bengal; Giridih district of Jharkhand; Katihar district of Bihar; Pune, Satara districts of Maharashtra; Nagapattinam, Tiruvannamalai, Tiruvarur, Ariyalur districts of Tamil Nadu & Puducherry.
- Moderately dry conditions experienced in many districts of Meghalaya; few districts of Maharashtra; Darrang, Jorhat, Udalguri districts of Assam; Darjeeling, Jalpaiguri districts of West Bengal; Ranchi district of Jharkhand; Monghyr district of Bihar; Rajouri, district of Jammu & Kashmir; Cuddalore, Kanyakumari, Karaikal districts of Tamil Nadu & Puducherry; Kolla district of Kerala.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

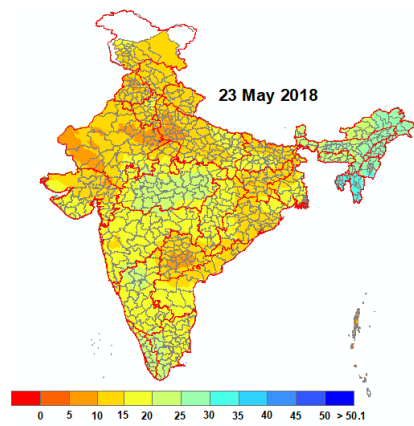
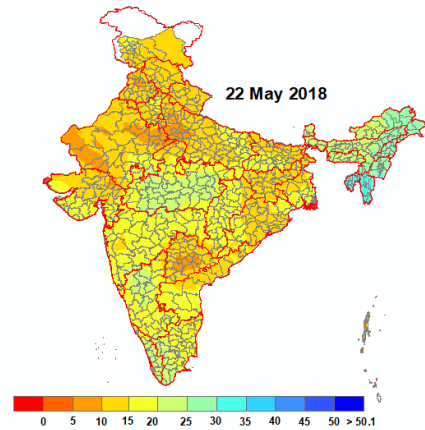
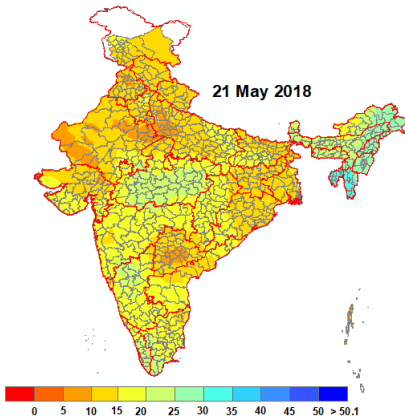
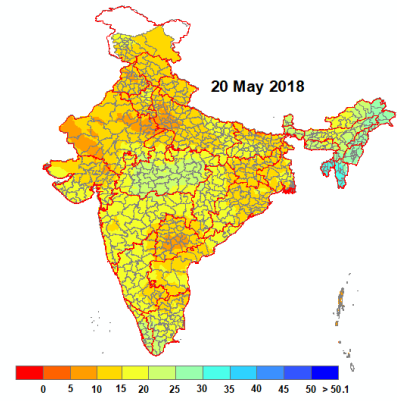
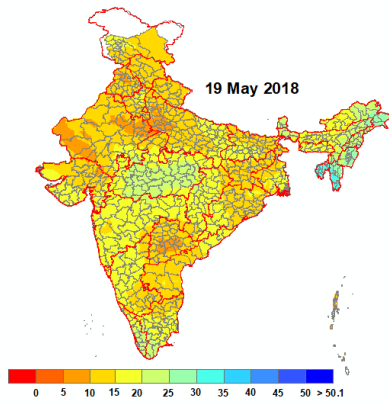
Daily Soil Moisture (mm) for 18<sup>th</sup> May 2018 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 19<sup>th</sup> May to 23<sup>rd</sup> May 2018 (ending at 0830 IST)  
for 60 cm depth**



## Weather Forecast for next 5 days valid upto 0830 hours of 23<sup>rd</sup> May 2018

- Meteorological subdivision wise detailed 5 days rainfall forecast is given in Table below.
- No significant change in maximum temperature over West Madhya Pradesh during next 24 hours and rise by 2-3°C thereafter and no significant change in maximum temperature over the rest of the country during next 3 days.
- No significant change in maximum temperature over rest of the country during next 3 days.

### 5 Day Rainfall Forecast (Mid day) 18<sup>th</sup> May 2018

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

#### % 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 May (Day 1):** Thunderstorm accompanied with squall very likely at isolated places over Uttar Pradesh, East Rajasthan, Nagaland, Manipur, Mizoram & Tripura. Thunderstorm accompanied with gusty winds very likely at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Madhya Pradesh, Vidarbha, Chhattisgarh, West Bengal & Sikkim, Odisha, Assam & Meghalaya, Madhya Maharashtra, Konkan & Goa, Andhra Pradesh, Karnataka, Tamilnadu, Kerala and Lakshadweep. Thunderstorm/ Dust storm very likely West Rajasthan. Heat wave conditions at some parts with severe heat wave at one or two pockets over Vidarbha; heat wave conditions at one or two pockets over West Rajasthan, Madhya Pradesh and Gujarat. Heavy to very heavy rain at a isolated places over Nagaland, Manipur, Mizoram & Tripura and heavy rain at isolated places over Assam & Meghalaya, South Interior Karnataka, Kerala and Lakshadweep. Gale winds speed reaching 75-85 kmph gusting to 95 kmph is very likely around the centre of the cyclone covering Gulf of Aden and adjoining areas of westcentral and southwest Arabian sea during next



12 hrs and gradually decrease thereafter becoming 65-75kmph gusting to 85 kmph during subsequent 12 hours. Fishermen are advised not to venture into Gulf of Aden and adjoining areas of westcentral and southwest Arabian sea during the next 48 hours.

- **19 May (Day 2):** Thunderstorm accompanied with squall very likely at isolated places over Uttar Pradesh. Thunderstorm accompanied with gusty winds very likely at isolated places over Jammu & Kashmir, Himachal Pradesh, Haryana, Chandigarh & Delhi, East Rajasthan, Assam & Meghalaya, Coastal Andhra Pradesh, Coastal Karnataka, South Interior Karnataka, Tamilnadu, Kerala and Lakshadweep. Thunderstorm/Dust storm very likely West Rajasthan. Heat wave conditions at some parts with severe heat wave at one or two pockets over Vidarbha; heat wave conditions at one or two pockets over West Rajasthan, Madhya Pradesh and Gujarat. Heavy rain at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal Karnataka, South Interior Karnataka, Kerala and Lakshadweep. Gale winds speed reaching 75-85 kmph gusting to 95 kmph is very likely around the centre of the cyclone covering Gulf of Aden and adjoining areas of westcentral and southwest Arabian sea during next 12 hrs and gradually decrease thereafter becoming 65-75 kmph gusting to 85 kmph during subsequent 12 hours. Fishermen are advised not to venture into Gulf of Aden and adjoining areas of westcentral and southwest Arabian sea during the next 48 hours.
- **20 May (Day 3):** Thunderstorm accompanied with squall very likely at isolated places over Gangetic West Bengal. Thunderstorm accompanied with gusty winds very likely at isolated places over Bihar, Odisha, South Interior Coastal Karnataka and Kerala. Heat wave conditions at some parts with severe heat wave at one or two pockets over Vidarbha. Heavy rain at isolated places over Nagaland, Manipur, Mizoram & Tripura and South Interior Karnataka.
- **21 May (Day 4):** Thunderstorm accompanied with gusty winds very likely at isolated places over Sub-Himalayan West Bengal & Sikkim.
- **22 May (Day 5):** Thunderstorm accompanied with gusty winds very likely at isolated places over Sub-Himalayan West Bengal & Sikkim.

#### **Weather Outlook for subsequent 2 days from 23<sup>rd</sup> to 25<sup>th</sup> May 2018**

- Scattered to fairly widespread rain/thundershowers likely over northeast India; scattered over south peninsular India and Isolated over East India.
- Dry weather likely over remaining parts of the country.

#### **Salient Advisories**

- As thunderstorm accompanied with squall very likely at isolated places over **Uttar Pradesh** on 18<sup>th</sup> and 19<sup>th</sup>, over **East Rajasthan** on 18<sup>th</sup>, over **Gangetic West Bengal** on 20<sup>th</sup>, thunderstorm accompanied with gusty winds very likely at isolated places over **Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi** on 18<sup>th</sup> and 19<sup>th</sup>, over **East Rajasthan** on 19<sup>th</sup>, over **West Bengal & Sikkim** on 18<sup>th</sup>, over **Odisha** on 18<sup>th</sup> & 20<sup>th</sup>, over **Bihar** on 20<sup>th</sup>, over **Sub-Himalayan West Bengal & Sikkim** on 20<sup>th</sup> & 21<sup>st</sup> over **Nagaland, Manipur, Mizoram & Tripura** on 18<sup>th</sup>, over **Assam & Meghalaya** on 18<sup>th</sup> and 19<sup>th</sup>, over **Madhya Pradesh, Chhattisgarh, Vidarbha, Madhya Maharashtra, Konkan & Goa** on 18<sup>th</sup>, over **Tamil nadu** on 18<sup>th</sup> and 19<sup>th</sup>, over **Kerala** from 18<sup>th</sup> to 20<sup>th</sup>, over **Andhra Pradesh and Karnataka** on 18<sup>th</sup>, over **South Interior Karnataka** on 19<sup>th</sup> and 20<sup>th</sup>, over **Coastal Andhra Pradesh and Coastal Karnataka** on 19<sup>th</sup> May, thunderstorm/duststorm very likely at isolated places over **West Rajasthan** on 18<sup>th</sup> and 19<sup>th</sup>, provide support to young fruit plants and vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safe places.
- As rain/thundershowers likely at many places over **Jammu & Kashmir** on 18<sup>th</sup> and 19<sup>th</sup> and over **Himachal Pradesh** on 18<sup>th</sup>, over **Andaman & Nicobar** islands from 18<sup>th</sup> to 20<sup>th</sup> and 22<sup>nd</sup> and over **Sub-Himalayan West Bengal & Sikkim** on 18<sup>th</sup> & 22<sup>nd</sup> May, rain/thundershowers likely at most/many places over **Nagaland, Manipur, Mizoram & Tripura** during the period, at many places over **Assam & Meghalaya** from 20<sup>th</sup> to 22<sup>nd</sup> and over **Arunachal Pradesh** on 21<sup>st</sup> and 22<sup>nd</sup> May, along with heavy to very heavy/heavy rain at a

isolated places over **Nagaland, Manipur, Mizoram & Tripura** from 18<sup>th</sup> to 20<sup>th</sup>, heavy rain at isolated places over **Assam & Meghalaya** on 18<sup>th</sup> and 19<sup>th</sup> May, rain/thundershowers likely at many places over **Kerala** on 19<sup>th</sup>, over **South Interior Karnataka** from 19<sup>th</sup> to 22<sup>nd</sup>, over **Coastal Karnataka** on 18<sup>th</sup> and 19<sup>th</sup> May, along with heavy rain very likely at isolated places over South Interior Karnataka from 18<sup>th</sup> to 20<sup>th</sup>, over Kerala on 18<sup>th</sup> and 19<sup>th</sup> and over Coastal Karnataka on 19<sup>th</sup> May, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Avoid water logging in ginger, turmeric, pulses and vegetable fields in Nagaland, Manipur, Mizoram & Tripura.

- As heat wave conditions very likely at one or two pockets over **West Rajasthan, Madhya Pradesh, Vidarbha** and **Gujarat** on 18<sup>th</sup> and 19<sup>th</sup>, heat wave conditions at some parts with severe heat wave at one or two pockets over **Vidarbha** on 20<sup>th</sup> May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave conditions, undertake mulching with straw/polythene to conserve soil moisture. In South Gujarat, apply light and frequent irrigation in groundnut and pulse crops. Provide drip irrigation in fruit crops. Undertake mulching in crop fields to conserve soil moisture. Protect banana bunch with plastic sheets.
- As gale winds speed reaching 75-85 kmph gusting to 95 kmph is very likely around the centre of the cyclone covering Gulf of Aden and adjoining areas of westcentral and southwest Arabian sea during next 12 hrs and gradually decrease thereafter becoming 65-75 kmph gusting to 85 kmph during subsequent 12 hours. Fishermen are advised not to venture into Gulf of Aden and adjoining areas of westcentral and southwest Arabian sea during the next 48 hours.
- In view of the prevailing heat wave conditions in **West Rajasthan, Madhya Pradesh, Vidarbha** and **Gujarat**; grazing/feeding of cattle/goats may be done during morning/evening hours. Keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Also provide balanced feed & adopt vaccination schedule. Also provide mineral mixture and fresh and clean water to poultry birds. Make arrangement of curtains and proper ventilation in poultry house. Vaccinate the poultry birds to prevent Ranikhet disease.

#### *Detailed Agromet Advisories*

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

- **Realised Rainfall:** Rainfall occurred in Anantnag, Bandipore, Baramula, Ganderbal, Kulgam, Kupwara, Ramban districts of Jammu & Kashmir, Azamgarh, Fatehpur, Gazhipur, Gorakhpur, Maharajganj districts of East Uttar Pradesh, Bareilly district of West Uttar Pradesh during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with squall very likely at isolated places over Uttar Pradesh on 18<sup>th</sup> and 19<sup>th</sup>, over East Rajasthan on 18<sup>th</sup>, thunderstorm accompanied with gusty winds very likely at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi on 18<sup>th</sup> and 19<sup>th</sup>, over East Rajasthan on 19<sup>th</sup>, thunderstorm/duststorm very likely at isolated places over West Rajasthan on 18<sup>th</sup> and 19<sup>th</sup>, provide support to young fruit plants and vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safe places.
  - As rain/thundershowers would occur at many places over Jammu & Kashmir on 18<sup>th</sup> and 19<sup>th</sup> and over Himachal Pradesh on 18<sup>th</sup> May, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
  - As heat wave conditions very likely at one or two pockets over West Rajasthan on 18<sup>th</sup> and 19<sup>th</sup> May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat



wave conditions, undertake mulching with straw/polythene to conserve soil moisture.

▪ **Jammu & Kashmir:**

- Continue land preparation and nursery raising of early transplanted rice (var. IET-1410, K-39, Ratna, PC-19, Jaya). Treat seed with Carbendazim or Bavistin @ 2gm/kg before nursery raising. Continue sowing of maize, okra, French bean.
- Continue nursery sowing of vegetables in trenches and polyhouses in Cold Arid Zone. Continue sowing of cucurbit seeds in poly bags for early nursery raising inside polyhouse. Continue land preparation for sowing of vegetables in open field.
- Apply Carbaryl @ 2g/litre or Cypermethrin @ 1ml/litre of water during clear weather against pumpkin beetle in cucurbits after current spells of rain.

▪ **Uttarakhand:**

- Undertake preparation of nursery bed for rice. Continue harvesting of matured wheat, pulses and vegetables in clear weather. Continue intercultural operations in spring sugarcane.
- Continue transplanting of capsicum and brinjal in the polyhouse in mid and high hills and planting of turmeric, ginger and arbi.

▪ **Himachal Pradesh:**

- Continue sowing of bhindi, planting of arvi etc. Continue nursery preparation of summer vegetables, raising of seedlings of cucurbits in polythene bags in poly house. Continue transplanting of vegetables like tomato, capsicum, gourd, chilli etc. in the well prepared fields. Undertake preparation of rice nursery.
- Spray Mancozeb @ 600g/200 litres of water in apple orchards to control the apple scab diseases after current spells of rain.

▪ **Punjab, Haryana & Delhi:**

- In Punjab, continue sowing of Bt. cotton and desi cotton, transplanting of chilli. Continue harvesting of matured vegetables. Procure the recommended varieties i.e. PR 126, PR 124, PR 123, PR 122, PR 121, PR 116, PR 114, PR 115, PR 113 etc. for *kharif* rice and undertake nursery sowing after 20<sup>th</sup> May. Apply irrigation in moong, mash, vegetables and orchards.
- In Haryana, continue sowing of cotton. Farmers are advised to prepare the land and sowing of green gram, Lobia, moth and Pigeon pea. Continue field preparation for rice nurseries.
- In Delhi, continue field preparation for sowing of pigeonpea and cotton. Continue harvesting of matured vegetables. Apply light irrigation in vegetables and standing crops.
- In Delhi, to control shoot and fruit borer in brinjal and tomato crops, infested fruits and shoots should be collected and buried inside the soil. If pest population is high, spray Spinosad 48 EC @ 1 ml/4 litres of water.

▪ **Uttar Pradesh:**

- Continue deep ploughing in vacant fields. Apply irrigation in vegetables. Continue field preparation for rice nursery. Continue field preparation for sowing of pigeonpea and cotton. Continue intercultural operations in cucurbit crops and sugarcane.
- Continue harvesting of matured barley, wheat and vegetables. Continue digging up of matured tubers of onion.

▪ **Rajasthan:**

- Farmers are advised to procure good quality cotton seeds from certified source for sowing in coming week.
- Apply irrigation in summer groundnut, vegetables, orchards, sugarcane and moong. Continue sowing of cotton. Continue picking up of matured vegetables and cucurbits. Continue digging up of matured tubers of onion.
- For control of stem and fruit borer in okra, spray Malathion 2 ml or Thioron 1 ml in one litre water.

• **Animal Husbandry**

- In Jammu & Kashmir, add calcium supplement in the diet of dairy animals and heifers especially feed rice straw these days to prevent calcium deficiency and intestinal blockage. Sheep and goats need to be vaccinated against Sheep and Goat pox.
- In Punjab, keep the animals under sheds during noon time and provide fresh drinking water to save the animals from summer heat and stress.
- In Rajasthan, take care of domestic animals, keep them in shades during noon hours and make arrangement for plenty of drinking water with minerals.

• **Apiculture:**

In Jammu & Kashmir, harvest honey from the bee colony. Migrate bee colonies to flora rich areas. Avoid antibiotics. For protection against ants, put the legs of apiary into water so that ants could not attack the apiary.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman and Nicobar Islands except Nicobar, Angul, Bhadrak, Cuttack, Deogarh, Dhenkanal, Gajapati, Ganjam, Jajpur, Khurda, Mayrbhanj Nayagarh, Puri and

Sambalpur districts of Odisha, Gopalganj, Madhepura, Madhubani, Muzaffarpur, Purnea, Samastipur, Sheohar, Siwan, Supaul and West Champaran districts of Bihar, Sahebganj district of Jharkhand, Bankura, Burdwan, Kolkata, 24 Pargana (N), 24 Pargana (S) and Midnapore districts of Gangetic West Bengal, all districts of Sub-Himalayan West Bengal except Cooch Behar during the week. Weather remained mainly dry/dry over rest of the region.

• **Advisories:**

- As thunderstorm accompanied with squall very likely at isolated places over Gangetic West Bengal on 20<sup>th</sup>, thunderstorm accompanied with gusty winds very likely at isolated places over West Bengal & Sikkim on 18<sup>th</sup>, over Odisha on 18<sup>th</sup> & 20<sup>th</sup>, over Bihar on 20<sup>th</sup> and over Sub-Himalayan West Bengal & Sikkim on 20<sup>th</sup> & 21<sup>st</sup> May, it is advised to provide support to young fruit plants, banana and vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safe places.
- As rain/thundershowers very likely at many places over Andaman & Nicobar islands from 18<sup>th</sup> to 20<sup>th</sup> and 22<sup>nd</sup> and over Sub-Himalayan West Bengal & Sikkim on 18<sup>th</sup> & 22<sup>nd</sup> May, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Keep harvested produces at safer places.
- **Odisha:**
  - Continue sowing of summer pulses and planting of summer vegetables like cucurbits and lady's finger. Apply mulches to non paddy crops and fruit crops to maintain/conservate moisture in the soil. Complete harvesting of mustard and potato.
  - Increased temperature may favour the egg laying of stem borer in rice in the main field. To attract the butterflies, place 4 Pheromone traps/acre, collect the adults and destroy them by burning them under soil or by burying.
  - Increased difference between daily maximum and minimum temperature favours the infestation of blast in main field. Spray 1 g Beam/litre water for control on a non rainy day.
- **Bihar:**
  - Continue sowing of summer maize varieties such as Suwan, Deoki, Ganga 11, Shaktiman-1, 2, 3, 4 and sowing of green gram and black gram utilizing the expected rainfall.
  - Continue sowing of vegetables like lady's finger, pumpkin, cucumber, sponge gourd *etc.*
  - Undertake land preparation and planting of turmeric and ginger. Application of 25-30 tones of cow dung per hectare is advised during land preparation.
  - Monitoring is advised in cucurbitaceous crops for infestation of red pumpkin beetle. If population of red pumpkin beetle exceeds economic threshold level, spraying of Dichlorvos 76EC @1 ml/litre of water is advised under clear sky condition.
- **Jharkhand:**
  - Maintain optimum water level in summer rice fields at milky stage. Continue planting of ginger and elephant foot yam.
  - Summer rice crop is at milky stage and Gundhi Bug infestation is more likely to be pronounced at this stage. Hence, dusting of Quinalphos 1.5 per cent dust @ 10 kg per acre during evening time is recommended during evening time or establish pheromone trap @ 3-4 nos./acre. Prevailing temperature favours Blast disease occurrence hence, spraying of Tricyclazole @ 6 g per 10 liter of water is recommended.
- **West Bengal:**
  - In the Sub-Himalayan West Bengal, provide proper drainage facility in ginger and turmeric fields. Continue transplanting of round chilli in the raised beds and provide proper drainage. Undertake land preparation for soybean cultivation. Undertake planting of elephant foot yam.
  - In Gangetic West Bengal, carry out thinning operation in jute field to maintain plant population. For anthracnose in mango, spray Thiodophenol Methyl @1g/litre of water before 1 month of harvest. Prepare strong fencing for protect the crop from strong wind and apply mustard cake and Tasko-5 for better leaf development. Carry out harvesting of groundnut in clear weather.
  - In Sub-Himalayan West Bengal, to control maize Cob borer, spray Bt. @ 1.5g/litre of water & Neem oil 10,000ppm @3ml/liter of water alternately at evening hours at 7days interval. To control Bhindi Yellow vein mosaic virus, spray Imidachloropid @ 2 ml/liter of water. Use of sex pheromone trap @ 4 trap/bigha for fruit fly control of pointed gourd on a non rainy day.
- **Andaman & Nicobar Islands:**
  - Prepare the land and sow green manure crop dhaincha @ 20 kg/ha of seed before onset of monsoon rain. Sow leafy vegetables like Marsa and poi in beds and covered with banana leaves till germination. Make basin around the coconut and sow sunnhemp @ 50g/basin as green manure crop.
- **Animal Husbandry**
  - In Jharkhand, in view of the prevailing high temperature, avoid grazing /feeding of cattle/goats during noon hours. Keep animals under shade or in sheds during noon hours and provide plenty of fresh cool water mixed with minerals for drinking. Also, provide balanced feed with ample concentrates and adopt necessary vaccination schedule. Make arrangement of curtains and proper ventilation in poultry houses. Put curtains on

south-west side of poultry house and sprinkle water on the curtains during noontime. Also, cover the roof of the poultry house with grass or gunny bags. In poultry house, control the temperature using fogger.

- Feed the cattle at morning and evening time. Avoid mung mash and mustard cake in their food and supply arhar or black gram mash and sesame or linseed cake. Avoid grazing cattle during afternoon hours for protecting them from lightning due to Norwesters.
- In Andaman & Nicobar Islands, deworm all the livestock like cow, goat and pig with the single dose of Albendazole @ 7.5 mg/kg of body weight.
- **Fisheries**
- In Odisha, fish farmers, in case have stocked fingerlings in the pond for fish culture, they should monitor the quality and level of water, so also temperature. In case of water temperature goes above 30<sup>0</sup> C or water level goes below 1 m. depth, farmers are advised to go for early harvest and discontinue fish seed production and culture activity.
- In West Bengal, apply lime @ 30kg/bigha in old ponds for decrease the salinity of water due to rising temperature and decreased water level.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Arunachal Pradesh except Dibang Valley, East Kameng, Upper Subansari and West Kameng, in all districts of Assam except Baksa, Dhemaji, Dhubri, Jorhat, Kamrup (Metro), Kamrup (Rural), Karbi Anglong, Morigaon, N C Hills, Nalbari, Sibsagar, Sonitpur and Udalgiri, in all districts of Meghalaya, in Aizawl, Lunglei and Serchip districts of Mizoram, Churachandpur, Imphal East, Imphal West, Senapati and Thoubal districts of Manipur, Dimapur, Kiphire, Kohima, Mon and Phek districts of Nagaland and in all districts of Tripura during the week. Weather remained mainly dry over rest of the region.
- **Advisories:**
  - As rain/thundershowers would occur at most/many places over Nagaland, Manipur, Mizoram & Tripura during the period, at many places over Assam & Meghalaya from 20<sup>th</sup> to 22<sup>nd</sup> and over Arunachal Pradesh on 21<sup>st</sup> and 22<sup>nd</sup> May, along with heavy to very heavy/heavy rain at a isolated places over Nagaland, Manipur, Mizoram & Tripura from 18<sup>th</sup> to 20<sup>th</sup>, heavy rain at isolated places over Assam & Meghalaya on 18<sup>th</sup> and 19<sup>th</sup> May, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Avoid water logging in ginger, turmeric, pulses and vegetable fields in Nagaland, Manipur, Mizoram & Tripura.
  - As thunderstorm accompanied with squall very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura on 18<sup>th</sup>, thunderstorm accompanied with gusty winds over Assam & Meghalaya on 18<sup>th</sup> and 19<sup>th</sup> May, provide support to banana, young fruit plants and vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safe places.
  - **Arunachal Pradesh:**
  - Continue transplanting of healthy seedlings of summer vegetables to main field from nursery. Provide proper drainage facility in the fields of Boro rice, Jhum rice, pea, toria, mustard and summer vegetable. Undertake sowing of larger cardamom in primary nursery bed at 2cm depth & 10cm apart with mulching & regular irrigation.
  - **Assam:**
  - Continue harvesting of matured Boro rice, green gram/black gram and summer vegetables in clear weather. Carry out land preparation/sowing for maize crop. Continue transplanting of normal Ahu paddy. Undertake planting of fruit crops like pineapple, papaya, banana, etc. Undertake harvesting of okra. Carry out land preparation/seed collection/nursery sowing for Sali rice. Undertake planting of Assam lemon and banana. Complete the sowing of Bao rice and planting of ginger/turmeric. Due to continuous rainfall during last couple of days may result in complete wash out of seeds/seedlings of jute. Farmers are advised for re-sowing of Oiltorius varieties if already sown and emerged seedlings are washed away after the forecasted spells of heavy rain.
  - Due to increase in RH and probable increase in temperature in the coming days, there may be attack of 'blast' disease in Ahu rice @ panicle initiation/heading stage. To control, spray Bavistin @ 1 gm per litre of water under fair weather conditions. Gandhi bug attack may be seen in Boro rice at milky stage. For effective control of Gandhi bug, apply 5% Malathoin dust @ 20 kg per ha of land. Spray Carbendazim @ 1.0 gram per litre for incidences of powdery mildew disease in cucurbitaceous crops and late pea.
  - **Meghalaya:**
  - Continue sowing of cucurbits like cucumber, pumpkin, bottle gourd, ash gourd, squash, French bean and cowpea. Continue land preparation and sowing of maize varieties Vijay Composite, DA 61A, RCM 75, 76, Vivek Hybrid 25, Vivek, QPM-1, etc. Continue transplanting of chilli and brinjal crops.
  - **Manipur:**
  - Continue land preparation for sowing of soybean, groundnut and kharif maize after forecasted spells of heavy rain. Maintain optimum water depth of 5-8cm in the rice field. Drain out excess water that is accumulated in



paddy field due to rain. Undertake planting of colocasia and transplanting of lime/lemon. Carry out land preparation/seed collection for raising kharif rice nursery.

▪ **Mizoram:**

➤ Carry out weeding in rice and maize fields on a non rainy day. Undertake harvesting of mature potato, capsicum, chilli and brinjal crops in clear weather.

▪ **Tripura:**

➤ Avoid stagnation of water in maize, cowpea, urad and green gram fields. Weeding and thinning may be done in Jhum rice after current spells of rain.

➤ In Tripura, weather is conducive for fruit & shoot borer in summer brinjal and tomato. To manage the attack, spray Cypermethrin @ 1.5 ml or Flubendiamide @ 0.5 ml per liter of water after current spells of rain. There may be attack of Gandhi Bug in Boro rice at flowering stage. To manage the attack, apply Imidacloprid 2 ml per liter of water after current spells of rain

▪ **Nagaland:**

➤ Continue sowing of summer vegetables. Continue transplanting of King chilli. Undertake weeding and earthing up in maize after current spells of rain.

• **Animal Husbandry**

➤ Vaccinate pigs against FMD & swine fever and cattle/sheep/goat against FMD, Hemorrhagic Septicaemia, Black Quarter. Vaccinate poultry birds against coccidiosis and Ranikhet diseases. Bird flu like disease infection in poultry and duck has been observed in some districts of lower Assam. Consult immediately with veterinary doctor.

• **Fishery**

➤ Collect healthy fingerlings from authentic sources as there is enough water in the fish pond. Remove the unwanted fishes and predator by repeated netting before leaving the new fingerling in the fish pond.

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

• **Realised Rainfall:** Rainfall occurred in North Goa and South Goa districts of Konkan & Goa. Weather remained dry/mainly dry over the region during the week.

• **Advisories:**

➤ As heat wave conditions very likely at one or two pockets over Vidarbha and Gujarat on 18<sup>th</sup> and 19<sup>th</sup>, at some parts with severe heat wave at one or two pockets over Vidarbha on 20<sup>th</sup> May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave conditions, undertake mulching with straw/polythene to conserve soil moisture.

▪ **Maharashtra:**

➤ As thunderstorm accompanied with gusty winds very likely at isolated places over Vidarbha, Madhya Maharashtra, Konkan & Goa on 18<sup>th</sup> May, provide support to young fruit plants and vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safe places.

➤ In South Konkan, continue nursery bed preparation for kharif rice. For rice and nagli nursery, prepare raised beds of 120 cm width at the base and 90 cm width at the top and 8 to 10 cm height. For stone grafting programme in mango, procure fresh mango stones (seed) and sow them on beds. Before sowing wash them thoroughly with water and dip in Carbendazim solution @ 1g per litre of water to control seedborne disease like wilt. Undertake mulching with grass in mango orchards in lateritic soil to avoid water loss. Also provide support to newly planted grafts and provide proper shade to the grafts and apply irrigation to nursery grafts. Harvest the mature mango fruits before 10 hours in the morning and after 16 hours in the evening, harvest the fruits at 80 to 85 % maturity. Keep the harvested fruits in shade to prevent spongy tissue disease and from heat.

➤ In Madhya Maharashtra, apply irrigation to vegetables and orchards during evening hours. Continue land preparation operations like ploughing in fallow lands for *kharif* season. Undertake nursery bed preparation for *kharif* rice in western ghat regions. Complete harvesting of summer crops.

➤ In Marathwada, complete harvesting of matured groundnut as early as possible, dry the harvested crop in shade before storage. Keep harvested produce in safer place. Complete harvesting of mango as early as possible during early morning or at evening hours. Keep harvested produce in safer place. Cover the banana bunches with green shade net to protect from bright sunshine. Also prepare artificial windbreaks around banana plantation. Undertake land preparation for *kharif* crops in fallow lands.

➤ In Vidarbha, continue harvesting of early varieties of rice, dry the harvested crop in sun and thresh it. Do not apply any insecticides/fungicides 8 days before harvesting of matured rice crop. Keep harvested produce in safer place. Undertake nursery bed preparation for *kharif* rice. Continue harvesting of matured summer crops like groundnut.

▪ **Gujarat:**

➤ In South Gujarat, apply light and frequent irrigation in groundnut and pulse crops. Provide drip irrigation in

fruit crops. Undertake mulching in crop fields to conserve soil moisture. Protect banana bunch with plastic sheets. Undertake nursery sowing for rice (NAUR-1, GNR-2 (Costal area) GNR-3, GNR-4, GNR-5, GNR-6 (Long duration), Jaya, Gurjari, GR-5, 7, 8, 9, IR-28, Purna and GAR-13)) under irrigation facility. Continue sowing of cluster bean, cowpea, non Bt. cotton along with Bt. cotton as a refuse. Undertake planting of tuber crops and harvesting of matured mango fruits.

- In North Gujarat, continue land preparation for sowing of irrigated hybrid cotton and B.T. cotton; keep the inputs ready for sowing (hybrid cotton - G. cot. 6, 8, 10 and approved varieties of B.T. cotton). Apply irrigation in groundnut (pod development stage), green gram (pod development stage) and vegetable, flower crops. Continue harvesting of citrus, papaya, sapota, pomegranate etc. Construct the bund in advance to reduce soil erosion and plan for khetTalavadi (farm ponds) to collect runoff water.
- In Middle Gujarat, undertake harvesting of matured summer rice. Apply irrigation in green gram, pomegranate, sapota, lemon and papaya orchards. Cover papaya fruits using gunny bags; decrease the interval between two irrigations in pearl millet and vegetable crops.
- In Saurashtra & Kutch, apply light and frequent irrigation by drip system to vegetable (flowering), groundnut (pod development) crops and mango, citrus and sapota orchards. Do not carry out intercultural operations at pegging stage in groundnut. Continue harvesting of matured sesame (before seed shattering), green gram and black gram in time in Saurashtra. Continue weeding in vegetable crops.
- In North Gujarat, spray 10-15 ppm solution of NAA to prevent fruit dropping in mango.
- **Animal Husbandry**
- In Gujarat, put curtains on south-west side of poultry house and sprinkle water on curtains during noon time. Keep animals under shade during noon hours and provide clean drinking water.

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

- **Realised Rainfall:** Rainfall occurred in Durg districts of Chhattisgarh during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with gusty winds very likely at isolated places over Madhya Pradesh and Chhattisgarh on 18<sup>th</sup> May, provide support to young fruit plants and vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safe places.
  - **Madhya Pradesh:**
    - As heat wave conditions very likely at one or two pockets over Madhya Pradesh on 18<sup>th</sup> and 19<sup>th</sup> May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave conditions, undertake mulching with straw/polythene to conserve soil moisture.
    - In West Madhya Pradesh, apply irrigation in vegetables, orchards, green gram, black gram, maize and groundnut. Continue seed bed preparation for sowing of *kharif* onion. Continue intercultural operations in vegetables. Continue harvesting of matured vegetables. Continue harvesting of moong and urad. Undertake deep ploughing in vacant fields.
    - In East Madhya Pradesh, apply irrigation in maize, groundnut, sugarcane, summer moong, urad and cucurbits. Continue harvesting of matured vegetables. Undertake harvesting of matured moong and urad. Undertake intercultural operations in sugarcane. Due to hot and dry winds banana and papaya fruits are damaged because of sun scorching, cover the fruits by using leaves or Jute bags to protect the fruits from sun scorching.
    - In West Madhya Pradesh, for control of sucking pest in moong & urad spray Thiamethoxam @ 0.3 gm/litre of water. For attack of red pumpkin, whitefly in cucurbit crops; spray Triazophos 40 E.C. @ 2.0 ml per litre of water.
  - **Chhattisgarh:**
    - Apply irrigation in summer moong, sugarcane, vegetables as per soil moisture condition. To conserve soil moisture farmers are advised for deep summer ploughing in their vacant fields. Keep inputs ready for *kharif* crops. Continue harvesting of matured vegetables. Undertake nursery preparation for rice. Treat seed with Carbendazim (2 gm/kg of seed) fungicide before sowing in nursery. Undertake harvesting of matured summer rice, mango and litchi.
- **Animal Husbandry**
  - In West Madhya Pradesh, grazing /feeding of cattle/goats may be done during morning/ evening hours. Keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking . Also provide mineral mixture and fresh and clean water to poultry birds. Vaccinate the poultry birds to prevent Ranikhet disease.
  - In Chhattisgarh, poultry farmers are advised to cover their poultry house with mat and keep it wet so that inner temperature may be kept normal. Provide plenty of drinking water to cattle. Buffaloes should be kept in water-filled pond for at least half an hour every day.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala except Kollam, in Srikakulam, Vishakhapattanam and Vizianagaram districts of Coastal Andhra Pradesh, Nalgonda, Warangal districts of Telangana, Coimbatore, Dindigul, Erode, Kanyakumari, Karur, Namakkal, Nilgiris, Sivaganga, Theni, Tirunelveli, Tirupur, Trichy and Virudhnagar districts of Tamilnadu, in all districts of Coastal Karnataka, all districts of South Interior Karnataka except Bellary and Chamarajanagar, in Bagalkote, Belagavi, Dharwad, Gadag, Haveri districts of North Interior Karnataka during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with gusty winds very likely at isolated places over Tamil nadu on 18<sup>th</sup> and 19<sup>th</sup>, over Kerala from 18<sup>th</sup> to 20<sup>th</sup>, over Andhra Pradesh and Karnataka on 18<sup>th</sup>, over South Interior Karnataka on 19<sup>th</sup> and 20<sup>th</sup>, over Coastal Andhra Pradesh and Coastal Karnataka on 19<sup>th</sup> May, provide support to banana, young fruit plants and vegetables to avoid lodging. Undertake propping in sugarcane.
  - As rain/thundershowers would occur at many places over Kerala on 19<sup>th</sup>, over South Interior Karnataka from 19<sup>th</sup> to 22<sup>nd</sup>, over Coastal Karnataka on 18<sup>th</sup> and 19<sup>th</sup> May, along with heavy rain very likely at isolated places over South Interior Karnataka from 18<sup>th</sup> to 20<sup>th</sup>, over Kerala on 18<sup>th</sup> and 19<sup>th</sup> and over Coastal Karnataka on 19<sup>th</sup> May, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
  - As gale winds speed reaching 75-85 kmph gusting to 95 kmph is very likely around the centre of the cyclone covering Gulf of Aden and adjoining areas of westcentral and southwest Arabian sea during next 12 hrs and gradually decrease thereafter becoming 65-75 kmph gusting to 85 kmph during subsequent 12 hours. Fishermen are advised not to venture into Gulf of Aden and adjoining areas of westcentral and southwest Arabian sea during the next 48 hours.
  - **Kerala:**
    - Undertake preparation of nurseries for Viruppu paddy. Cultivate ginger, Turmeric, Banana, Mulberry and Tuber crops as intercrops in coconut plantations. Continue planting of coconut seedlings and 3-4 months old banana suckers (varieties like Robusta, Poovan, Njalipoovan, Palayankodan, etc). Undertake planting of vegetables like brinjal, chilli, bhindi, bitter gourd, Amaranthus, etc. Apply green leaf mulching in the ginger field. Provide shade to pepper and vegetable crops.
    - Fix rain guard for rubber trees during the month. Remove weeds from rubber plantations before fertilizer application. Apply 10:10:10 mixture 450 g/ for tapping plants. Prepare land for new planting as well as replanting of young plants. Undertake planting of three budded setts of sugarcane in trenches at a spacing of 90 cm between rows.
    - Due to the changing weather pattern, there is a chance of sigatoka disease in banana. As a precaution, Spray Pseudomonas 10-20 g per 1 liter of water. In case of severe attack spray 1 gm Bavistin by mixing it with gum in 1 litre of water on lower surface of leaf. To control rhinoceros beetle in the coconut plantation by physical control. In case of severe attack, apply Sevin.
  - **Andhra Pradesh:**
    - Maintain 5cm water from grain hardening to maturity stage in paddy crop. Continue summer ploughing followed by land preparation for pre-kharif crops like sesamum, bajra, mesta, etc. Continue summer ploughing for rain-fed sugarcane.
    - For the control of stem borer in paddy, spray Chlorpyrifos @ 2.5ml (or) Acephate 1.5 g (or) Cartap Hydrochloride 2.0g per litre of water. For the control of fruit fly in mango orchards, erect pheromone traps or IIHR traps @ 8-10/acre at 3-6 feet from ground level. To control thrips in summer groundnut at early vegetative stage, spray Monocrotophos @ 1.6 ml per litre of water.
  - **Telangana:**
    - Prevailing dry weather conditions are favorable for the incidence of fruit fly in mango. To trap the flies in the container, hang the plastic containers with mixture of Methyl Eugenol @ 2 ml + Carbofuran 3G @ 3g per litre of water in the orchard. If leaf blight: incidence is noticed in tomato crop at flowering to harvesting stage, spray COC @ 3 g/litre of water. For leaf hopper incidence in bhindi crop at flowering to harvesting stage, spray Imidacloprid @ 1 ml/litre of water.
  - **Tamil Nadu:**
    - Undertake field preparation followed by sowing of Chithiraipattam rainfed groundnut. Provide drainage to late season sugarcane setts to avoid sett rot. Continue planting of turmeric rhizomes. Prevailing high wind speed may damage banana crop. Provide support to five months or older banana plants and propping in sugarcane. Carry out weeding and earthing up @ 45 DAS in rice fallow cotton. Cover banana bunches with transparent polythene sleeves (4%) at maturity stage to increase the quality. Fix polythene rain guard to the trunk of the rubber tree above the tapping panel. So that tapping can be done during rainy season also.
    - To control the incidence of sucking pest in the vegetable crops, spray 5 % Neem seed kernel extract. To control shoot and fruit borer in Brinjal, apply Emamectin Benzoate 5 SG @ 200 g/ha. Prevailing weather is favorable for mite incidence in irrigated sorghum at vegetative stage. To control, spray Dicofol 18.5 EC 1500



ml/ ha or wettable sulphur 3.75 kg/ha under the surface of leaves.

▪ **Karnataka:**

- In South Interior Karnataka, continue land preparation and strengthen the bund with fodder grass which will facilitate conservation of rainwater due to pre-monsoon showers. Continue pre-monsoon sowing of short duration crops like cowpea (TVX-944, KBC-1), green gram (PS-16, PDM-84,178), black gram (Karagao-3, T-9, Rashmi (LBG-625), horse gram, field bean, groundnut (TMV-2, JL-24, KCG-6), sesame (Navile-1, T-7) and ragi (Indof-9, GPU-48) crops utilizing the realized rainfall. Continue sowing of ginger and turmeric.
  - In North Interior Karnataka, undertake land preparation for sowing of kharif crops. Keep inputs ready for sowing of soybean (JS-335), green gram (BGS-9), black gram (DU-1) and red gram (TS-3R) crops. Continue harvesting of fully matured fruits of sapota, chikku and matured chili. Undertake the repairing of bunds and check dam so as to reduce the run-off to check the soil erosion.
  - In Coastal Karnataka continue harvesting of ripened cashewnut. Apply irrigation in arecanut, coconut and black pepper gardens either in furrow or by drip irrigation as per need; each coconut tree requires 60-70 liters of water per day. Clean all drainage channels.
  - Agro forestry on the bund involving Melia dubia (Hebbevu), Silver oak and Causurina is recommended for sustainable income under abnormal extreme rainfall events.
  - In Coastal Karnataka, infestation of die back in arecanut is noticed; spray Indofil M 45 @1.5 ml/litre + Dimethoate @1.5 ml/litre for control.
- **Animal Husbandry**
- In Tamil Nadu, Feed the calves with 30 gms of mineral mixture per day. Also, de-worm calves as per regular schedule with the support of nearby veterinarian.
  - In Telangana, prevailing weather conditions are congenial for the occurrence of blue tongue disease in sheep and goat and Foot and mouth disease in cattle and Buffaloes. To prevent the diseases, vaccinate the animals. To protect the poultry birds from high temperature, arrange fans and foggers in sheds, cover the sheds with paddy straw and arrange sprinklers. Feed with wet mash to increase the feed intake and provide cool water for drinking.
  - In Karnataka, allow animals for grazing early in morning or later in evening. Provide dry fodder after uniform mixing with 2% urea and 10% molasses or jaggery to improve palatability for the livestock. Due to increase in day temperature (40-43 degree C) feed intake may decrease in poultry birds; maintain optimum temperature by applying 4-6 inch thick hay thatch as a roofing material.

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