



National Agromet Advisory Service Bulletin

Friday 24th July 2020
(For the period 24th to 28th July 2020)



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India Meteorological Department

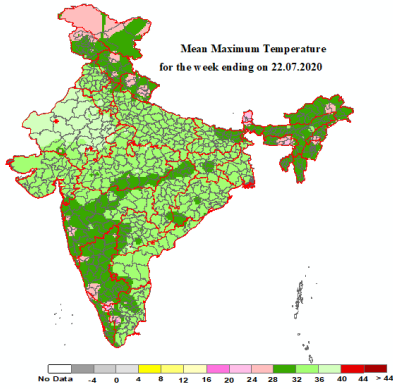
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District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

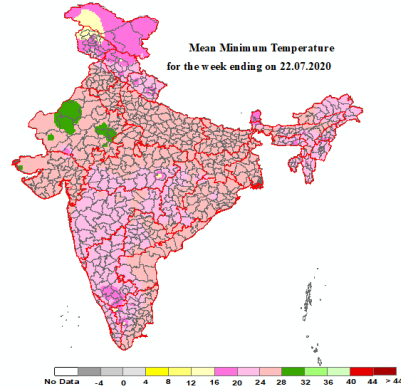
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 22.07.2020

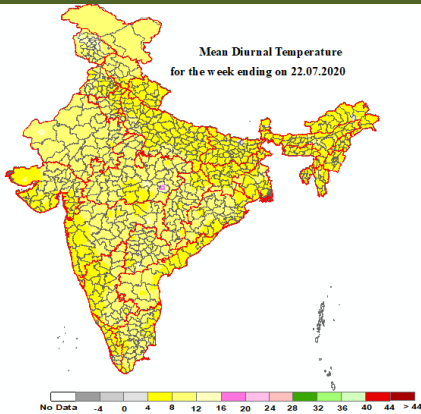
Mean Maximum Temperature (°C) for the week ending on 22.07.2020



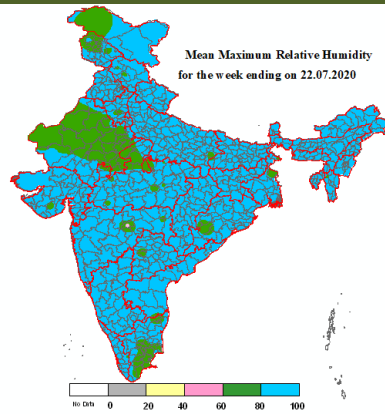
Mean Minimum Temperature (°C) for the week ending on 22.07.2020



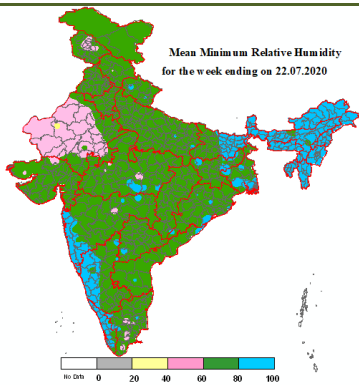
Mean Diurnal Temperature Variation (°C) for the week ending on 22.07.2020



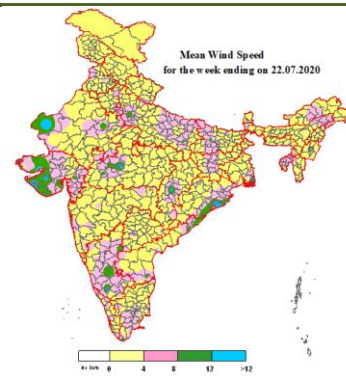
Mean Maximum Relative Humidity (%) for the week ending on 22.07.2020



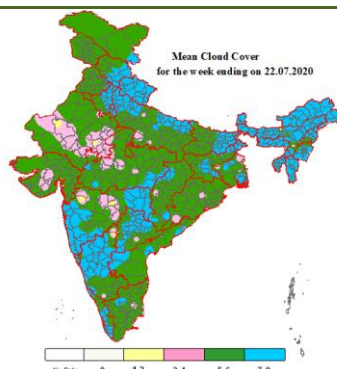
Mean Minimum Relative Humidity (%) for the week ending on 22.07.2020



Mean Wind Speed (km/hr) for the week ending on 22.07.2020

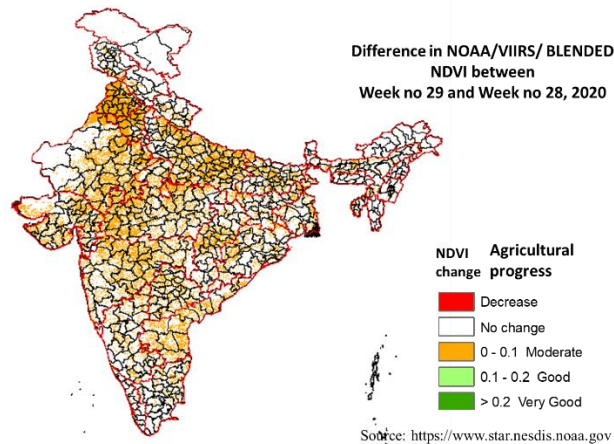
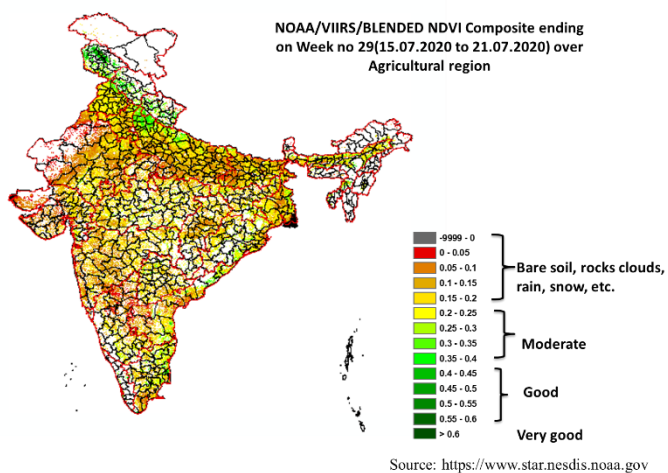


Mean Cloud Cover (okta) for the week ending on 22.07.2020



NOAA/VIIRS/BLENDED NDVI composite for the week number 29(15.07.2020 to 21.07.2020) over Agricultural regions of India

Difference in NOAA/VIIRS/BLENDED NDVI between week number 29, 2020 and week number 28, 2020



Agricultural vigour was good at many parts of the valey region of Jammu & Kashmir; few places in Jammu region of Jammu & Kashmir, Himachal Pradesh, Uttarkhand, North Eastern States & West Uttar Pradesh adjoining Uttarakhand and at isolated places of Sikkim, Coastal Andhra Pradesh & Tamilnadu. Rest of the country NDVI could not be captured due to cloud cover as well as land preparation / sowing for khariff season is under progress

Good difference in agricultural vigour was observed over isolated places of Punjab, Himachal Pradesh, Uttarakhand, Bihar, Gangetic West Bengal, Interior pockets of Odisha, Madhya Pradesh, Gujarat, Andhra Pradesh, Karnataka, Kerala and North Eastern States.

Weather Forecast for next 5 days valid upto 0830 hours of 29th July, 2020

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-1.
- ◆ No significant change in temperatures very likely over most parts of the country during next 3-4 days.
- ◆ **Thunderstorm accompanied with lightning** very likely at isolated places over Uttarakhand from 24th to 28th, over East Uttar Pradesh, Gujarat State, Marathwada, Vidarbha, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema and Karnataka on 24th, over Rajasthan, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra and Tamil Nadu Puducherry & Karaikal on 24th & 25th, over Madhya Pradesh and Chhattisgarh on 24th & 28th, over Jharkhand and Assam & Meghalaya from 24th to 27th, over Uttar Pradesh from 25th to 28th, over West Madhya Pradesh and Interior Karnataka on 25th, over Sub-Himalayan West Bengal & Sikkim on 26th, over West Bengal & Sikkim and Bihar on 27th and over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, East Rajasthan on 27th & 28th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm/dust storm.

5 Day Rainfall Forecast (MID-DAY)

24-July-2020

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

24 July (Day 1):

July (Day 1): ♦ Heavy to very heavy rainfall at isolated places very likely over Nagaland, Manipur, Mizoram & Tripura, East Rajasthan, Coastal Karnataka and north Madhya Maharashtra and **heavy rainfall** at isolated places over Uttarakhand, East Uttar Pradesh, West Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Odisha, Arunachal Pradesh, Assam & Meghalaya, Gujarat State, Konkan & Goa, Marathwada, Telangana, Rayalaseema, Interior Karnataka, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal.

- **Thunderstorm accompanied with lightening** very likely at isolated places over Uttarakhand, East Uttar Pradesh, Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gujarat State, Madhya Maharashtra, Marathwada, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Karnataka and Tamil Nadu, Puducherry & Karaikal.
- **Strong Wind** (speed reaching 50-60 kmph) very likely over Southwest & adjoining Westcentral Arabian Sea. **Squally weather** (wind speed reaching 40-50 kmph) over Southeast Arabian sea, Lakshadweep-Maldives areas and along & off Kerala-Karnataka-south Maharashtra coasts. Fishermen are advised not to venture into Sea over these areas.

25 July (Day 2): ♦ Heavy to very heavy rainfall at isolated places very likely over Gujarat State and **heavy rainfall** at isolated places over Uttarakhand, Uttar Pradesh, Rajasthan, West Madhya Pradesh, Chhattisgarh, Arunachal Pradesh, Assam & Meghalaya, Konkan & Goa, Madhya Maharashtra, Coastal Karnataka and Kerala & Mahe.

- **Thunderstorm accompanied with lightening** very likely at isolated places over Uttarakhand, Uttar Pradesh, Rajasthan, West Madhya Pradesh, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Interior Karnataka and Tamil Nadu, Puducherry & Karaikal.
- **Strong Wind** (speed reaching 50-60 kmph) very likely over Southwest & adjoining Westcentral Arabian Sea. **Squally weather** (wind speed reaching 40-50 kmph) over Eastcentral Arabian sea and along & off Karnataka-Maharashtra coasts. Fishermen are advised not to venture into Sea over these areas.

26 July (Day 3): ♦ Heavy rainfall at isolated places very likely over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Bihar, Assam & Meghalaya, Gujarat State and Konkan & Goa.

- **Thunderstorm accompanied with lightening** very likely at isolated places over Uttarakhand, Uttar Pradesh, Jharkhand, Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya.
- **Strong Wind** (speed reaching 50-60 kmph) very likely over Southwest & adjoining Westcentral Arabian Sea. **Squally weather** (wind speed reaching 40-50 kmph) over Eastcentral Arabian sea and along & off Maharashtra-south Gujarat coasts. Fishermen are advised not to venture into Sea over these areas.

27 July (Day 4): ♦ Heavy to very heavy rainfall at isolated places likely over Uttarakhand, Uttar Pradesh, Bihar and Assam & Meghalaya; **heavy rainfall** at isolated places over Himachal Pradesh, Haryana, Chandigarh & Delhi, Madhya Pradesh, West Bengal & Sikkim, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura.

- **Thunderstorm accompanied with lightning** likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Rajasthan, Bihar, Jharkhand, West Bengal & Sikkim and Assam & Meghalaya.
- **Strong Wind** (speed reaching 50-60 kmph) likely over Southwest & adjoining Westcentral Arabian Sea. Fishermen are advised not to venture into Sea over these areas.

28 July (Day 5): ♦ Heavy to very heavy rainfall at isolated places with extremely heavy falls at isolated places likely over Assam & Meghalaya; **heavy to very heavy rainfall** at isolated places over Uttarakhand, Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura and **heavy rainfall** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, East Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, Gangetic West Bengal, Andaman & Nicobar Islands, Coastal Andhra Pradesh & Yanam and Telangana.

- **Thunderstorm accompanied with lightning** likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Andaman & Nicobar Islands, Assam & Meghalaya, Telangana and Rayalaseema.
- **Strong Wind** (speed reaching 50-60 kmph) likely over Southwest & adjoining Westcentral Arabian Sea. Fishermen are advised not to venture into Sea over these areas.

Weather Outlook for subsequent 2 days from 29th to 31st July, 2020

- ♦ Fairly widespread to widespread rainfall/thundershowers likely over Northeast, East & Central India and over Uttar Pradesh. Isolated heavy to very heavy falls are also likely over Uttar Pradesh, Bihar and over parts of Northeast India.
- ♦ Isolated to scattered rainfall over South & West India and over West Rajasthan, Haryana, Chandigarh & Delhi, Punjab, Himachal Pradesh and Jammu & Kashmir, Ladakh, Gilgit-Baltistan and Muzaffarabad.

Salient advisories

- **Strong Wind (speed reaching 50-60 kmph)** very likely over Southwest & adjoining West central Arabian Sea from 24th to 28th; along with **Squally weather (wind speed reaching 40-50 kmph)** over Southeast Arabian sea, Lakshadweep-Maldives areas and along & off Kerala-Karnataka-south Maharashtra coasts on 24th, over East central Arabian sea and along & off Karnataka-Maharashtra coasts on 25th and over East central Arabian sea and along & off Maharashtra-south Gujarat coasts on 26th, fishermen are advised not to venture into the Sea over these areas.
- **Thunderstorm accompanied with lightening** very likely at isolated places over Uttarakhand from 24th to 28th, over East Uttar Pradesh, Gujarat State, Marathwada, Vidarbha, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema and Karnataka on 24th, over Rajasthan, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra and Tamil Nadu Puducherry & Karaikal on 24th & 25th, over Madhya Pradesh and Chhattisgarh on 24th & 28th, over Jharkhand and Assam & Meghalaya from 24th to 27th, over Uttar Pradesh from 25th to 28th, over West Madhya Pradesh and Interior Karnataka on 25th, over Sub-Himalayan West Bengal & Sikkim on 26th, over West Bengal & Sikkim and Bihar on 27th and over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, East Rajasthan on 27th & 28th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm/dust storm.
- As **rain/thundershowers** likely at **most places** over Uttar Pradesh, Andaman & Nicobar Islands and Arunachal Pradesh on 27th & 28th, over Sub-Himalayan West Bengal and Konkan & Goa from 24th to 28th, over Assam & Meghalaya on 24th, 25th, 27th & 28th, over Nagaland, Manipur, Mizoram & Tripura on 24th, 27th & 28th, over Jharkhand, Marathwada, Vidarbha, Telangana, Interior Karnataka, Kerala & Mahe and Lakshadweep on 24th, over Bihar on 24th, 27th & 28th, over Uttarakhand from 25th to 28th, over Madhya Maharashtra on 24th & 25th, and over Coastal Karnataka on 24th & 25th; at **many places** over East Uttar Pradesh, Andaman & Nicobar Islands and Arunachal Pradesh from 24th to 26th, over Assam & Meghalaya on 26th, over Nagaland, Manipur, Mizoram & Tripura on 25th & 26th, over Gangetic West Bengal on 24th, 27th & 28th, over Odisha on 24th, over Bihar on 25th & 26th, over East Uttar Pradesh from 24th to 26th and over West Uttar Pradesh on 26th, over Uttarakhand on 24th, over Punjab on 28th, over Haryana on 27th & 28th, over Himachal Pradesh from 25th to 28th, over East Rajasthan on 24th & 25th, over East Madhya Pradesh on 24th, 25th, 27th & 28th, over West Madhya Pradesh from 24th to 28th, over Gujarat State from 24th to 25th, over Madhya Maharashtra on 26th & 27th, over Marathwada on 25th & 26th, over Vidarbha on 25th & 28th, over Chhattisgarh on 24th & 28th, over Andhra Pradesh & Yanam on 24th, over Telangana on 28th, over Coastal Karnataka from 26th to 28th, over North Interior Karnataka on 25th, over South Interior Karnataka on 28th and over Kerala & Mahe and Lakshadweep on 25th & 28th along with **Heavy to very heavy rainfall** at isolated places with **extremely heavy falls** at isolated places likely over Assam & Meghalaya on **28th**; with **Heavy to very heavy rainfall** at isolated places very likely over Nagaland, Manipur, Mizoram & Tripura, East Rajasthan, Coastal Karnataka and north Madhya Maharashtra on **24th**, over Gujarat State on **25th**, over Uttarakhand, Uttar Pradesh, Bihar and Assam & Meghalaya on **27th**, over Uttarakhand, Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on **28th** and **heavy rainfall** at isolated places over Uttarakhand, East Uttar Pradesh, West Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Odisha, Arunachal Pradesh, Assam & Meghalaya, Gujarat State, Konkan & Goa, Marathwada, Telangana, Rayalaseema, Interior Karnataka, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal on **24th**, over

Uttarakhand, Uttar Pradesh, Rajasthan, West Madhya Pradesh, Chhattisgarh, Arunachal Pradesh, Assam & Meghalaya, Konkan & Goa, Madhya Maharashtra, Coastal Karnataka and Kerala & Mahe on 25th, over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Bihar, Assam & Meghalaya, Gujarat State and Konkan & Goa on 26th, over Himachal Pradesh, Haryana, Chandigarh & Delhi, Madhya Pradesh, West Bengal & Sikkim, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on 27th, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, East Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, Gangetic West Bengal, Andaman & Nicobar Islands, Coastal Andhra Pradesh & Yanam and Telangana on 28th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

➤ **Undertake the following operations:**

- sowing of cotton, groundnut, sesame and sunflower in North Interior Karnataka; sowing of jowar, cowpea, red gram, green gram, black gram, horse gram, ragi and field bean crops in South Interior Karnataka and planting of Black pepper and transplanting of Arecanut in Coastal Karnataka.
- sowing/transplanting of rice in High Altitude Zone of Kerala.
- sowing of cotton, soybean, red gram, green gram, etc. in North Telangana.
- transplanting of Sali rice in Assam & Meghalaya.
- transplanting of Kharif rice in Sub-Himalayan West Bengal, Odisha, Bihar and Jharkhand.
- transplanting of Aman rice in Gangetic West Bengal and Tripura.
- sowing of pigeon pea, black gram, cucurbits and nursery sowing of chilli and early cauliflower in South Gujarat and sowing of pigeon pea, cowpea, cluster bean and sesame in North Gujarat.
- sowing of lobiya, spinach, Amaranthus, and lady's finger in Malwa Plateau Zone of Madhya Pradesh.
- sowing of pigeon pea, soybean, maize, etc. in the Northern Hill Zone of Chhattisgarh.
- transplanting of rice seedlings in Sub-Tropical Zone of Jammu & Kashmir and in Sub Montane and Low Hills Sub Tropical Zone of Himachal Pradesh.
- transplanting of rice and sowing of okra, cucumber, bottle gourd, sponge gourd, pumpkin, etc. in Central Plain Zone of Punjab.
- sowing of cucumber, pumpkin, bottle gourd, bitter gourd, watermelon, cabbage, etc. and transplanting of brinjal, chilli and early cauliflower in East Uttar Pradesh.
- sowing of guar, moth bean, green gram, pearl millet, sorghum and castor in Rajasthan.
- nursery sowing of *rangada* onion, continue transplanting of vegetables like tomato, chilli and brinjal in Maharashtra.

Detailed Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in all the districts except Prakasam, Sirkakulam, Visakhapatnam, Vizianagram districts of Andhra Pradesh; in Mahabubabad, Nalgonda, Warangal_Rural & Y. Bhuvangiri of Telangana; in all the districts of Kerala except Thiruvananthapuram and in Coimbatore, Dharmapuri, Erode, Karaikal, Krishnagiri, Namakkal, Nilgiris, Salem, Tirupur, Tiruvannamalai in Tamilnadu, Puducherry & Karaikal; in all districts of Karnataka.
- **Advisories: Thunderstorm accompanied with lightning** very likely at isolated places over Coastal

Andhra Pradesh & Yanam, Telangana, Rayalaseema and Karnataka on 24th, over Tamil Nadu Puducherry & Karaikal on 24th & 25th, over Interior Karnataka on 25th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm/dust storm.

- As **rain/thundershowers** likely at **most places** over Telangana, Interior Karnataka, Kerala & Mahe and Lakshadweep on 24th and over Coastal Karnataka on 24th & 25th; at **many places** over over Andhra Pradesh & Yanam on 24th, over Telangana on 28th, over Coastal Karnataka from 26th to 28th, over North Interior Karnataka on 25th, over South Interior Karnataka on 28th and over Kerala & Mahe and Lakshadweep on 25th & 28th along with **Heavy to very heavy rainfall** at isolated places very likely over Coastal Karnataka on **24th** and **heavy rainfall** at isolated places over Telangana, Rayalaseema, Interior Karnataka, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal on **24th**, over Coastal Karnataka and Kerala & Mahe on **25th**, over Coastal Andhra Pradesh & Yanam and Telangana on **28th**, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Karnataka

- In Karnataka, drain out excess water from standing crop fields.
- In North Interior Karnataka, carry out thinning in black gram, green gram and soybean crops, intercultural operations in red gram and transplanting of brinjal and tomato seedlings. Continue sowing of cotton, groundnut, sesame and sunflower. Continue transplanting of rice. Incidence of jowar army worm is noticed in some of the jowar growing belts of bidar district. For its effective management, spray the crop with Emamectin Benzoate @0.4 gram of or chloroantriliniprole @0.2ml / litre of water in clear weather.
- In South Interior Karnataka, continue transplanting of rice where seedlings are ready. Provide adequate drainage to remove excess of water from the ginger and turmeric fields. Carry out intercultural operation in red gram, ragi and groundnut crops. Continue sowing of jowar, cowpea, red gram, green gram, black gram, horse gram, ragi, field bean crops. It is right time to plant the forage crops for livestock. Spray neem based insecticides @2ml/litre of water in maize crop against fall army worm.
- In Coastal Karnataka, undertake weeding in rice. Continue planting of Black pepper and transplanting of Arecanut. As a precautionary measure, undertake pruning of banana leaves severely affected by leaf spot/sigatoka and destroy them followed by spraying with Hexaconazole or Difencanazole @ 1.0 ml/ litre of water.

Animal Husbandry

- In Karnataka, do not allow sheep and goat to graze on young misty grass in early morning hours. This may lead to Enterotoxemia (ET) in unprotected animals.

Kerala

- In High Altitude Zone, undertake sowing/transplanting of rice. Apply organic manure@ 5T, 90 kg Factomphos and 15 kg urea per hectare as basal dose.
- In Problem Areas Zone, to control leafspot in cow pea, spray 20g Pseudomonas in supernatant liquid of cow dung.
- In Central Zone, there is a chance of mites on paddy leaves; spray 3g wettable sulphur per litre of water on lower sides of the leaves.
- In Southern Zone, weather is congenial for sigatoka in banana; remove and destroy severely infected and completely dried leaves; spray Mancozeb 3 g/litre of water at 4-5 times at 2-3 weeks interval.
- In Northern Zone, weather is congenial for wilt disease in black pepper, spray Redomil (@2g/litre of water)

or Copper oxy chloride (@3g/litre of water).

Andhra Pradesh

- In Visakhapatnam district, farmers who have not yet raised the paddy nursery, may continue direct sowing of rice by selection of varieties RGL 2537, MTU 1075 MTU 1121 or MTU 1061.
- In Ananthpur and Kurnool districts, utilizing the rainfall continue sowing of rainfed crops like groundnut, redgram, castor, sorghum and bajra.
- In East Godavari district, in horticultural crops drain the excess water, spray Blitox on trunk/ stem and drench at root zone @ 3g/l. This will avoid the rotting of stem & root of the crops.
- In Guntur district, undertake sowing of rice nurseries. Undertake sowing of direct sown of medium duration.
- In Krishna district, drain out excess water from cotton because it causes wilt in 15-20 days aged seedlings. To control the spread of the wilt disease, drench the plants with Copper Oxy Chloride@ 3 gm per liter of the water.
- In Prakasam district, by utilizing realized rainfall continue sowing of redgram based on soil type for light soils, medium duration varieties should be selected like PRG 176, PRG 158 LRG and ICPL 84031 . If heavy textured soils, medium to long duration varieties to be adopted LRG 41, LRG 52, ICPL 87119, BSMR 786.
- In Chittoor district take up Kharif crops sowings (groundnut, redgram and millets etc.,) up to the end of this month.
- In Y.S.R.(Kadapa) district, prevailing weather conditions are favourable for the incidence of sucking pests in cotton. For control, apply Monocrotophos and water in 1:4 ratio with a soft brush on tender part of the stem for 30 days old crop.
- In Vizainagaram district, to avoid sucking pests in early growth stages of cotton, go for stem application with Monocrotophos (or) Imidachloprid in 1:4 ratio (1 ml insecticide in 4ml of water) at 20,40,60 days after sowing.

Telangana

- In Northern Telangana, complete sowing of rainfed crops like cotton, soybean, Redgram, Greengram etc. Take up the rice nurseries using Telangana Sona. Do not sow cotton and soybean in light soils under rainfed conditions.
- In Southern Telangana, undertake rice nurseries of short duration varieties. Prevailing weather conditions are congenial for the incidence of sucking pests in cotton, to prevent the pests, apply Monocrotophos and water in 1:4 ratio with a soft brush on tender part of the stem for 30 days old crop.

Tamil Nadu

- In Cauvery Delta Zone, the prevailing weather condition is conducive for stem borer infection, apply Chlorpyrifos 20 EC 500 ml/ acre or Profenophos 50 EC 400 ml/ acre.
- In Western Zone, prevailing weather condition is conducive for the cercospora leaf spot in groundnut Monitor the disease incidence and if crop is already infected, spray Chlorothalonil @ 2 g per litre of water. If, leaf minor is observed spray Imidacloprid @ 0.5ml /litre of water.
- In High Altitude Hilly Zone, for management of root knot nematode in carrot crop, farmers are advised to apply of Pacilomyces 8 kg/acre as basal application.
- In Southern Zone, due to the prevailing weather condition, there is incidence of leaf roller in bhendi; collect and destroy rolled leaves and spray Phosalone 35 EC 2 ml/litre of water.
- In High Rainfall Zone, at shooting stage of banana, use transparent polythene sleeves (4%) to cover the bunches to increase the quality.

Animal Husbandry:

- In Tamil Nadu, due to increase in day temperature, animals should not be allowed for grazing during hot part of the day, provide cool drinking water and shade to the animals to reduce heat stress. Also due to the prevailing weather condition, the hoof disorder disease may spread widely in cattle. Although it affects all livestock, the adult cows are affected more. Bacteria enter into any ulcers in the foot through damp dung and mud. Hence, the hoofs should be periodically trimmed. If the symptoms found, immediately contact nearby veterinary clinic for further treatment.

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

Realised Rainfall: Rainfall occurred in all districts of Arunachal Pradesh, Meghalaya and Tripura; all districts except Darrang, Morigaon and Nowgaon districts of Assam; all districts except Chhimituipui, district of Mizoram; Bishnupur, Imphal West and Tamenglong districts of Manipur and Mokokchung, Phek and Zunheboto districts of Nagaland.

Advisories:

- **Thunderstorm accompanied with lightening** very likely at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, on 24th & 25th, over Assam & Meghalaya from 24th to 27th, provide mechanical support to banana, young fruit plants and vegetables to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm/dust storm.
- As **rain/thundershowers** likely at **most places** over Arunachal Pradesh on 27th & 28th, over Assam & Meghalaya on 24th, 25th, 27th & 28th, over Nagaland, Manipur, Mizoram & Tripura on 24th, 27th & 28th; at **many places** over Arunachal Pradesh from 24th to 26th, over Assam & Meghalaya on 26th, over Nagaland, Manipur, Mizoram & Tripura on 25th & 26th, along with **Heavy to very heavy rainfall** at isolated places with **extremely heavy falls** at isolated places likely over Assam & Meghalaya on **28th**; with **Heavy to very heavy rainfall** at isolated places very likely over Nagaland, Manipur, Mizoram & Tripura on **24th**, over Assam & Meghalaya on **27th**, over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on **28th** and **heavy rainfall** at isolated places over Arunachal Pradesh, Assam & Meghalaya on **24th**, over Arunachal Pradesh, Assam & Meghalaya on **25th**, over Assam & Meghalaya on **26th**, over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on **27th**, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.
- **Arunachal Pradesh**
- In Arunachal Pradesh, complete transplanting of rice seedlings at the earliest as sufficient water is there in the field; maintain proper drainage in field/nursery to avoid flooding due to continuous rain. If the previously transplanted crop is damaged due to flood, undertake immediate fresh transplantation whenever water level lowered. Monitor the ginger crop against rhizome rot disease and avoid water stagnation around the crop. Due to continuous rain, the condition become favorable for leaf-blast and leaf-spot disease in Jhum rice at tillering stage. On clear/sunny days, spray Carbendazim @2g/litre water in Jhum field to control heavy infestation of leaf blast & leaf spot.
- **Assam & Meghalaya**
- In Hill Zone of Assam, continue sowing of cotton, pigeon pea, sesame and nursery sowing of cauliflower. Continue nursery sowing / transplanting of high yielding varieties of *Sali* rice. Spray Malathion (0.1%) to control sap sucking insects (aphids/mealy bug/scales) in Khasi Mandarin. Drainage system should be

improved to prevent rhizome rot in ginger and turmeric. The affected areas may be drenched with 0.3% Mancozeb 75 WP @ 2g/l of water. Due to increase in relative humidity there is chance of Sigatoka leaf spot disease in banana crop. Spray 1% Bordeaux mixture after cutting the severely affected leaves and burning it if infestation is above ETL.

- In Lower Brahmaputra Valley Zone, continue transplanting of *Sali* rice. Due to recurring flood in some parts of the region, if the flood water as well as the stagnation water in the field do not recede within this week, undertake sowing of short duration rice varieties like Luit, Kapilee and dishang in advance and the seeds may be directly sown in the field during the month of August after flood water recedes from the field. Due to heavy rain, it is advised to postpone the land preparation for Arhar cultivation in main field. If sowing of seeds of Arhar has already been done in high land situation, it is advised to ensure proper drainage to remove the excess water from the main field. Continue sowing of sesame after heavy spell of rain. Undertake harvesting of *Capsularis* jute at small pod stage in order to get optimum yield and good quality fibre.
- In Upper Brahmaputra Valley Zone, continue transplanting of *Sali* rice seedlings of short and medium duration varieties in the areas which are not affected by flood. Transplanting of recommended varieties having an extended transplanting period (more than 60 days) like Gitesh and Prafulla can be continued. In heavily flood affected areas, high lands should be selected for raising of community nurseries to meet the seedling requirement of the farmers when water level in the fields subside. To prevent lodging of sugarcane crops due to incessant rainfall, it is advised to provide mechanical support to the crops by using bamboo sticks or tying 4 to 5 canes together with their leaves.
- In Barak Valley Zone, continue transplanting of *Sali* rice in the areas (medium land) have not affected by flood and sowing of sesame and pigeon pea. Flood or submerged like situation has been observed in some low land areas; farmers are advised to withhold transplanting of *Sali* rice in the flood affected low land areas till the fair-weather condition. If, due to flood water, nursery raising of rice crop was not possible, farmers can go for sowing of semi dwarf varieties like Pankaj (145-150 days duration) and Lakhimi (140-150 days duration), tall varieties like Swarnaprova (115-120 Days duration), late *Sali* varieties like Manohar *Sali* and Andrew *Sali* (can be sown from mid-July to first week of August) and direct Seeded late *Sali* varieties like Luit, Kapilee and Dishang (90-95 days duration) in month of July. Remove excess water from the ginger field and maintain proper drainage facilities in the field. To control Rhizome rot disease in ginger, drench the affected area with 0.3% Mancozeb 75 WP @ 2g/litre of water.
- In Central Brahmaputra Valley Zone, continue transplanting of seedlings of *Sali* paddy variety. In flash flood affected areas seedlings becomes very soft and tendered. Therefore, don't apply Urea at the time of transplanting and only Potash and super Phosphate can be used for those seedlings. Continue sowing of sesamum and Arhar after current spell of rain. Continue harvesting of early and timely sown *Capsularis* jute preferably at pre-flowering stage (120 days after sowing) to get better quality fibre at the earliest and kept in the field in standing position for 3-4 days before retting for proper defoliation.
- In North Bank Plain Zone, complete transplanting of long duration *Sali* paddy variety by the end of July. To facilitate easy puddling and transplanting, farmers should arrange to inundate their field by construction of new bunds or repairing of old bunds. Use 21-25 days old seedlings and adopt closer spacing of 15 cm X 15 cm for transplanting with the late sown seedlings. In flood affected areas, undertake sowing of semi dwarf varieties of *Sali* rice of like Pankaj (145-150 days duration) and Lakhimi (140-150 days duration); tall varieties like Swarnaprova (115-120 days duration); late *Sali* varieties like Manohar *Sali* and Andrew *Sali* (can be sown from mid July to first week of August); direct seeded late *Sali* varieties like Luit, Kapilee and Dishang (90-95 days duration). If there is total damage of seedlings or rice crop in the main field, undertake sowing of seeds for replanting with medium to short duration varieties in nursery bed within 1st week of August. Initiative should be taken for raising community nursery sowing for late planting with old seedlings of the varieties if there is more than 50% damaged.

Undertake late and staggered planting with the old seedlings of the varieties like Profulla and Gitesh if the field is heavily damaged. Farmers also undertake direct seeding with the photo insensitive short duration variety of Sali rice. Adopt submergence tolerance varieties for repeat flood prone areas. Farmers are advised to go for stripping and propping operation in sugarcane crop i.e. mechanical support to the crop so that heavy rainfall & strong wind cannot damage the crop from lodging. To control red rot disease of sugarcane water stagnation in the field should be avoided and rouging of the affected plants should be practiced.

- In Meghalaya, continue nursery main field preparation/transplanting of *Sali* rice. Ensure proper drainage system in the ginger/turmeric and vegetable crop field. Spray Azadirachtin 1500 ppm @ 5ml/ litre of water inside the whorls against Fall Army Worm incidence in maize when weather is clear. Do staking with bamboo structure for support in cucurbit crops.

Manipur, Mizoram, Tripura and Nagaland

- In Manipur, complete transplanting of *kharif* rice and continue harvesting of *pre-kharif* rice. Complete sowing of soybean and groundnut. To prevent Leaf Spot disease in ginger, apply Bordeaux mixture (5:5:50) after 4–5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
- In Mizoram, undertake sowing of soybean. Continue harvesting of tomato and matured cobs of maize. Spray Tricyclozole 0.6 g/litre of water against leaf blast disease in rice in clear/dry day. Maintain minimum water level (4-5 cm) in the field of rice. Also advised to make bund around the field to conserve soil moisture.
- In Tripura, continue transplanting of Aman rice. Due to substantial decrease in sunshine hours with occasional rain there is chance of attack of Bacterial Leaf Blight in Aman rice; to manage the attack, apply Streptocyclin 0.6 ml per litre of water. Collection of Gundhi bugs by hand netting is suggested in Jhum rice. Maintain good drainage facilities in maize and groundnut field.
- In Nagaland, complete transplanting of 21-28 days old seedling of TRC/WRC rice in the main field by the end of July. Undertake harvesting of cow pea and maize. In soybean, ensure proper drainage and provide mulching with crop residues/green leaves to prevent already sown seeds, germinating seeds and topsoil from being washed away. Ensure proper drainage to prevent soft rot and bacterial wilt in ginger. For banana rhizome weevil attack in banana, prune the side suckers every month. Pheromone lure can be used for monitoring as well as trapping of banana of rhizome weevil. Install trap at low reep density at 2/acre.

➤ Animal Husbandry

- In Northeastern states, carry out immunizations against BQ, HS, Foot and mouth disease as well as anthrax diseases in livestock like cows, buffaloes, goats and pigs. Also carry out vaccination (RDF1) against Ranikhet disease in one week old chicks and against Gamboro disease in two weeks old chicks. During the monsoon season, animals should not be fed with water submerged rotten grasses.

Fishery

- In Assam, due to flood water, fish pond may be submerged or going to be submerged; farmers are advised to surround the fish pond with the nylon net immediately so that the growing fishes do not escape from the fish pond.

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

Realised Rainfall: Significant rainfall occurred in all districts of Andaman & Nicobar Islands, in all districts of Bihar; in all district of Jharkhand except Garhwa, Khunti & Ramgarh; in Angul, Bargarh, Deogarh, Dhenkanal, Jajpur, Jharsuguda, Kandhamal, Koraput, Nawarangpur, Rayagada & Sambalpur districts of Odisha; in all districts of Sub-Himalayan West Bengal & Sikkim and in all districts of Gangetic West Bengal

except South Dinajpur. Weather remained dry/mostly dry over the rest of the region.

Advisories:

- **Thunderstorm accompanied with lightning** very likely at isolated places over over Jharkhand from 24th to 27th, over Sub-Himalayan West Bengal & Sikkim on 26th and over West Bengal & Sikkim and Bihar on 27th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm/dust storm.
- As **rain/thundershowers** likely at **most places** over Andaman & Nicobar Islands on 27th & 28th, over Sub-Himalayan West Bengal from 24th to 28th, over Jharkhand on 24th, over Bihar on 24th, 27th & 28th; at **many places** over Andaman & Nicobar Islands from 24th to 26th, over Gangetic West Bengal on 24th, 27th & 28th, over Odisha on 24th, over Bihar on 25th & 26th, along with **Heavy to very heavy rainfall** at isolated places very likely over Bihar on 27th, over Bihar and Sub-Himalayan West Bengal & Sikkim, on 28th and **heavy rainfall** at isolated places over Bihar, Jharkhand, Gangetic West Bengal and Odisha on 24th, over Bihar on 26th, over West Bengal & Sikkim on 27th, over Jharkhand, Gangetic West Bengal and Andaman & Nicobar Islands on 28th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Odisha

- In North Central Plateau Zone, farmers opting for SRI method may sow 2 kg of seeds in 40 sq. mt. area for transplanting in one acre land; broadcast seeds and cover them with thin layer of FYM; seedlings are ready for transplanting in 10-12 days. Carry out planting of mango saplings in the months of July and August.
- In West Central Table Land Zone, carry out transplanting of rice seedlings; dip the roots of the seedlings in Chloropyiphos solution for 6-8 hours (10 ml Chloropyriphos in 10 litres of water). Undertake sowing of non-paddy crops like ragi, maize, arhar, green gram, black gram, cowpea, guar, sesame, groundnut, castor and tuber crops. Niger varieties like Deomali, Alasi-1, Utkal Niger 150 can be sown in the month of August. Grow vegetables like tomato, brinjal, okra, runner beans, etc.
- In Mid-central Table Land Zone, for low land paddy, treat rice seedlings with Chloropyrophos @ 1 ml/litre of water before transplanting; maintain 3 to 5 cm standing water in the transplanted paddy field; to control weed growth in the paddy field apply Bensulfuronmethyle +Pretilachlor @ 4 kg/ acre along with 10 kg of sand. Rust disease is likely to appear in cowpea; spray Chlorothalonil @2g/litre of water.

Bihar

- In North East Alluvial Zone, taking advantage of recent rains, undertake transplanting of rice seedlings. Undertake sowing of kharif onion nursery after seed treatment with Captan or Thiram @ 2 gram/kg seeds in upland area. Nursery sowing of chilli, early cauliflower and tomato after seed treatment is advised in upland.
- In South Bihar Alluvial Zone, continue transplanting of 21-25 days old seedlings of long, medium and short duration and scented rice variety in prepared field. Complete sowing of kharif okra and early variety of brinjal, chilli, cauliflower for seedlings. Continue transplanting of kharif onion.

Jharkhand

- In Central & North Eastern Plateau Zone, undertake transplanting of 15 days old rice seedlings (10-12 days old in case of SRI method); wash the mud from root thoroughly and dip the root in Chloropyriphos insecticide @ 1ml/litre of water for 12 hours before transplanting. Continue sowing of high-yield variety of groundnut, til and cowpea. Prepare field for sowing of moong and urad. Carry out weeding, interculturaling and earthing up in 30 days standing pigeon pea crop.

West Bengal

Sub-Himalayan West Bengal:

- In Hill Zone, complete transplanting kharif rice in the main field. Complete sowing of soybean. Complete harvesting of maize. Maintain adequate drainage facility in ginger and turmeric fields.
- In Old Alluvial Zone, complete transplanting of 25-30 days old rice seedlings; clip the tip of leaves before transplanting to prevent pests and disease. In case seed bed is damaged due to flood, prepare a fresh seed bed on high ground with short duration rice varieties. Undertake sowing of early cauliflower in nursery bed; treat seeds with Bavistin or Mancozeb before sowing.

Gangetic West Bengal:

- In Coastal Saline Zone, prepare main field for late-sown Aman paddy by ploughing and mixing dhaincha plants; arrange proper bunding surrounding the main field. Arrange to drain out excess water from betel vine gardens; ensure free movement of air; pluck rotten leaves and destroy them.
- In Red & Laterite Soil Zone, complete transplanting of rice seedlings in main field; plant 3-4 healthy seedlings per hill. Direct seeded paddy is at tillering stage; ensure proper bunding to hold water in the field. Drain out excess water from vegetable fields.
- In New Alluvial Zone, prepare nursery bed for sowing of early cauliflower; carry out transplanting if seedlings are ready.

Andaman & Nicobar Islands

- Prepare main field of rice by levelling and cleaning of bunds and maintain bund height at 25 to 30 cm. Plant pine apple suckers in upland area by digging 25 to 30 cm deep pits; maintain close spacing to avoid erosion. Transplant black pepper vines grown in nursery bed or polythene bags and fill the pits with compost or farm yard manure. Plant suitable fodder saplings in upland area as the soil condition is conducive.
- Farmers are advised to harvest, store and effectively use rain water as deficit in rainfall (Less than normal rainfall) is expected during next week.

Animal Husbandry

- Vaccinate cattle against FMD, Anthrax, Black Quarter (*Dakaha*) and *Galghontu* diseases. Diarrhea due to indigestion of fresh green grass should be treated with Neblon powder and Sulpha bolus along with restricted feeding of excess amount of green grass; animals should be given pure and fresh drinking water. Provide clean and hygienic water treated with potassium permanganate (1 ppm) to the poultry birds to avoid gastrointestinal infection.

Fishery

- Complete the pond preparation as soon as possible.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Significant rainfall occurred in all districts of Maharashtra; in Anand, Banaskantha, Bharuch, Chhota Udepur, Dadra Nagar Haveli, Dahod, Gandhinagar and Kheda districts of Gujarat Region, in Jamnagar, Junagadh and Porbandar districts of Saurashtra & Kutch. Weather remained mainly dry over rest of the districts of Gujarat.

Advisories:

- **Thunderstorm accompanied with lightening** very likely at isolated places over Gujarat State, Marathwada, Vidarbha on 24th, over Madhya Maharashtra on 24th & 25th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm/dust storm.
- As **rain/thundershowers** likely at **most places** over Marathwada, Vidarbha on 24th, over Madhya Maharashtra on 24th & 25th; at **many places** over Gujarat State from 24th to 25th, over Madhya Maharashtra

on 26th & 27th, over Marathwada on 25th & 26th, over Vidarbha on 25th & 28th, along with **Heavy to very heavy rainfall** at isolated places very likely over north Madhya Maharashtra on 24th, over Gujarat State on 25th and **heavy rainfall** at isolated places over Vidarbha, Gujarat State, Konkan & Goa, Marathwada on 24th, over Konkan & Goa, Madhya Maharashtra on 25th, over Gujarat State and Konkan & Goa on 26th, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Maharashtra

- **In Konkan**, maintain 5 cm water level in rice fields in Sindhudurg, Ratnagiri, Raigad, Thane and Palghar districts. In Sindhudurg district, arrange for proper drainage of water in groundnut fields and undertake weeding operations in 20 days groundnut during clear weather. In Sindhudurg district, to control new flush of mangoes from hoppers, spray with Dimethoate 25 EC @ 12 ml per 10 litres of water during clear weather.
- **In Madhya Maharashtra**, maintain 2-5 cm water level in rice fields. Undertake intercultural operation like weeding in early sown pigeon pea, green gram and black gram during clear weather. To control shootfly in soybean, spray Chlorantriliniprole 18.5 SC @ 2.5 ml per 10 litres of water during clear weather. Undertake sowing of 5 lines or 20% non-Bt cotton around Bt cotton to prevent the attack of bollworm on Bt cotton. To control leaf roller in groundnut, spray Cypermethrin 25 EC @ 4 ml per 10 litres of water during clear weather. Undertake nursery sowing of *rangada* onion. To control stem fly in finger millet, spray Dimethoate 30 EC @ 900 ml per ha in 500 litres of water during clear weather.
- **In Marathwada**, due to heavy rainfall at isolated places during last week, drain out excess water from standing *kharif* crops, orchards and vegetable fields. Continue transplanting of vegetables like tomato, chili and brinjal. To control sucking pest (white fly, sugarcane pyrilla) in sugarcane, spray Chlorpyrifos 20 % @ 30 ml per 10 litres of water during clear weather.
- **In Vidarbha**, undertake transplanting of 4 to 6 weeks old seedlings of chilli, tomato, brinjal and cauliflower. Maintain 5 cm water level in the rice fields. To control aphids/ jassids in cotton, spray 5% neem extract. Undertake intercultural operations like hoeing and hand weeding in tur during clear weather. Undertake gap filling 7 to 8 days old sesame during clear weather.

Gujarat

- In North Gujarat, continue thinning and gap filling in cotton, green gram and groundnut. Carry out intercultural operations in green gram, pearl millet and maize crops. Continue sowing of pigeon pea, cowpea, cluster bean and sesame. Carry out the planting of sapling in new orchard. Undertake transplanting/sowing of vegetable crops viz. chilli, brinjal, bhindi, cluster bean and cowpea under sufficient moisture condition.
- In Saurashtra and Kutch, carry out transplanting for tomato, chili, brinjal and early cauliflower where seedlings are ready. Undertake intercultural operations in cotton, sesame, pearl millet, green gram, black gram, cow pea at *vapsa* condition. Apply supplementary dose of nitrogenous fertilizer to cotton and other crops. Spray DDVP 76 EC 10 ml or Quinalphos @20 ml in 10 liters of water for control of leaf miner in lemon orchards.
- In South Gujarat, maintain 2-3 cm water level in rice field. Spray 1.5% Potassium Silicate at tillering and panicle initiation stage. Continue sowing of pigeon pea at 120 cm row spacing with two rows of soybean or green gram as intercrop for obtaining higher yield. Continue sowing of black gram, cucurbits and nursery sowing of chilli and early cauliflower.
- In Middle Gujarat, continue transplanting of rice and vegetable (chili, brinjal and tomato). Carry out thinning and gap filling in cotton crop.
- **Animal Husbandry**
- In Gujarat, spray phenyl in the animal shed to avoid flies and mosquitoes. Give stored fodder with mineral mixture.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in all districts of East Madhya Pradesh except Chhatarpur, Sagar and Shahdol, in all districts of West Madhya Pradesh except Agar, Alirajpur, Dhar, Guna, Mandsur, Rajgarh, Sehore, Shajapur and Vidisha districts of West Madhya Pradesh and in all districts of Chhattisgarh except Bastar, Bemetara, Kabirdham, Kanker, Kondagaon, Mungeli and Rajnandgaon districts.

- **Advisories: Thunderstorm accompanied with lightening** very likely at isolated places over over Madhya Pradesh and Chhattisgarh on 24th & 28th, over West Madhya Pradesh on 25th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm/dust storm.
- As **rain/thundershowers** likely at **many places** over East Madhya Pradesh on 24th, 25th, 27th & 28th, over West Madhya Pradesh from 24th to 28th, over Chhattisgarh on 24th & 28th, along with **heavy rainfall** at isolated places over Madhya Pradesh and Chhattisgarh on **24th**, over West Madhya Pradesh and Chhattisgarh on **25th**, over Madhya Pradesh on **27th**, over Madhya Pradesh and Chhattisgarh on **28th**, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Madhya Pradesh

- In Kymore and Satpura Hill Zone, to control of weeds in 15-25 DAS soybean crop, spray weedicide i.e. Imazethapyr/ Quizalofop ethyl / Quizalofop-p-terfuryl/ Fenoxaprop-p-ethyl @ 1 litre/ha or Chlorimuron ethyl @ 36 g/ha at sufficient moisture in field. To control of stem borer, leaves eating caterpillar and sucking pest, spray pre mixed Thiomethazam + Lambda Cyhalothrin @ 125 ml/ha.
- In Jhabua Hills Zone, in maize, after weed control, give 1/3 dose of recommended nitrogen fertilizer in form of urea. Prepare drainage channels in proper distance for drainage of excess rain water in soybean and maize crop fields. Prepare field for cultivation of rainy season vegetables in raised furrow and poly-mulching method.
- In Malwa plateau Zone, undertake weeding in soybean and avoid water logging in the fields. Farmers are advised sowing of lobiya, spinach, amaranthus, and ladyfinger.
- In Bundelkhand Zone, continue planting of ginger and colocasia crops; select improved varieties and treat the seeds with fungicide before sowing. Continue nursery sowing of tomato, chilli, brinjal, etc. Carry out planting of new orchards of papaya, mango, lemon etc.

Chhattisgarh

- In Chhattisgarh Plain Zone, in the upland areas where rainfall has been less, rice crop early varieties like Tulsi, Aditya, Kalinga-3, Samleshwari, Vanprabha, Indira R-1 (Rajeshwari), Indira Barani Dhan-1 should be selected and sown in lines. Complete sowing of arhar. In early duration varieties of arhar, row to row distance should be maintained 60 cms and plant to plant distance should be maintained 15cms. Medium duration varieties are sown at a distance of 90 cms x 20 cms.
- In Northern Hill Zone, complete sowing of kharif crops like pigeon pea, soybean, maize, etc. Carry out intercultural operation in tomato, brinjal, chilli, okra and other vegetable crops.
- In Bastar Plateau Zone, complete sowing of maize. Carry out planting of tuber crops like colocasia, jimikand, ginger and turmeric by the end of June. Prepare vegetable nursery on a 15cm high raised bed; sow the seeds after seed treatment against rotting diseases; provide thin net around the nursery as a protection against vector diseases. Continue sowing of minor millet (Kodo) and finger millet.

Animal Husbandry

- In Madhya Pradesh, to control of ectoparasites in cattle apply malathion or cypermethrin @ 3.0ml/l of water in the

body of cattles. Spray phenyl @ 5.0 ml/l in the floor of cattle shed. Provide 50 gm mineral mixture per animal for supplement the nutrient requirement and green fodder 25 kg/cattle/day and concentrate mixture as per their requirement.

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

- **Realised Rainfall** : Significant rainfall occurred in all the districts of Himachal Pradesh except Kinnaur and Lahaul & Spiti; in Jammu, Kathua, Rajouri, Reasi and Udhampur districts of Jammu & Kashmir and in all the districts of Uttarakhand except Almora; in all districts of East Uttar Pradesh except Ambedkar Nagar, Chandauli, Faizabad, Farrukhabad, Kanpur City, Kanpur Dehat, Kaushambi, Mirzapur, St. RavidasNagar, Unnao and Varanasi districts; in all districts of West Uttar Pradesh except Auraiya, Baghpat, GB Nagar, Gaziabad, Jalaun, KanshiramNagar, Mahoba, Mathura and Rampur districts; Dausa, Dholpur, Dungarpur, Karauli, Pratapgarh, Sawai Madhopur districts in East Rajasthan; Hanumangarh, Jaisalmer, Jalore, Jodhpur, Nagaur, Sri Ganganagar districts in West Rajasthan; in all districts of Punjab except Fatehgarh Saheb, Hoshiarpur, Ludhiana, Mansa, Nawanshahr, Mohali; in all districts of Haryana except Ambala, Mahendergarh, Mewat, Panchkula, Rewari and in all districts of Delhi.
- **Advisories: Thunderstorm accompanied with lightening** very likely at isolated places over Uttarakhand from 24th to 28th, over East Uttar Pradesh on 24th, over Rajasthan on 24th & 25th, over Uttar Pradesh from 25th to 28th and over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, East Rajasthan on 27th & 28th, provide mechanical support to banana, young fruit plants and vegetables and carry out propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safer places. Keep cattle/goats indoor during thunderstorm/dust storm.
- As **rain/thundershowers** likely at **most places** over Uttar Pradesh on 27th & 28th and over Uttarakhand from 25th to 28th; at **many places** over East Uttar Pradesh from 24th to 26th, over East Uttar Pradesh from 24th to 26th and over West Uttar Pradesh on 26th, over Uttarakhand on 24th, over Punjab on 28th, over Haryana on 27th & 28th, over Himachal Pradesh from 25th to 28th, over East Rajasthan on 24th & 25th along with **Heavy to very heavy rainfall** at isolated places very likely over East Rajasthan on **24th**, over Uttarakhand, Uttar Pradesh on **27th & 28th** and **heavy rainfall** at isolated places over Uttarakhand, East Uttar Pradesh, West Rajasthan on **24th**, over Uttarakhand, Uttar Pradesh, Rajasthan on **25th**, over Himachal Pradesh, Uttarakhand, Uttar Pradesh on **26th**, over Himachal Pradesh, Haryana, Chandigarh & Delhi on **27th**, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, East Rajasthan on **28th**, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep harvested produce at safer places.

Jammu & Kashmir

- In Sub-Tropical Zone, continue transplanting of rice seedlings. Drain out excess water from maize fields. Carry out weeding and hoeing in pulses. Carry out weeding in turmeric. Complete the sowing of the mixed fodder crops (maize+ cow pea+charri) & bajra.
- In Cold Arid Zone, carry out regular and timely pruning in tomatoes, cucumbers, brinjal and capsicum. Harvest fruits of every crop once they attain size and colour. This would help other fruits to grow and develop earlier. Apply irrigation and avoid water stress.
- In Intermediate Zone, carry out hoeing and weeding in rice 15 days after transplanting. Carry out weeding in maize at regular intervals to keep the crop free of weeds at least up to 40 days after sowing to avoid yield loss. Undertake sowing of pulses after optimum soil moisture condition is attained. Ensure proper staking in

tomato and cucurbits.

- In Valley Temperate Zone, carry out weeding, hoeing and earthing up operation in maize.

Himachal Pradesh

- In Sub Montane and Low Hills Sub Tropical Zone, continue transplanting of rice seedlings. Continue weeding and other intercultural operations in pulses. Continue intercultural operations in pea, turnip, carrot, spinach, okra, French beans and sunflower.
- In Mild Hills Sub Humid Zone, use well decomposed FYM 10-12 ton/acre in the cucurbitaceous crops field at the time of ploughing. Maintain optimum soil moisture in cucurbitaceous crops as dry conditions may lead to poor pollination and thus drop in yield of the crop. In case of whitefly infestation on cucumber, spray Imidacloprid @ 100ml/200 litres of water.
- In Mid Hills Sub Humid Zone, to control the fruit rot disease in tomato and blight & fruit rot in capsicum, apply Diethane M-45 or Mass M-45 @ 250 g/100 litres of water OR Blitox/ Masstox-50 @300g/100 litres of water at an interval of 7-10 days.
- In High Hill Temperate Dry Zone, carry out weeding in cucumber and tomato in polyhouse and in pea and barley in the fields.

Punjab, Haryana, Delhi

- In Western Zone of Punjab, complete transplanting of rice in the main field. Undertake sowing of okra varieties Punjab Suhawani and Punjab-8 which are tolerant to yellow vein mosaic virus. Do not irrigate the crop during the period and drain the excess water from okra, lemon and brinjal field. Undertake planting of evergreen fruit plants such as citrus, mango, litchi, guava, loquat, ber. It is also suitable time for the transplanting of papaya seedlings in the fields. Regularly monitor cotton crop for infestation of whitefly; if population reaches 6 whiteflies per leaf in the upper canopy, spray with 80g Ulala 50 WG (flonicamid) or 200g Polo in 125-150 litres of water/acre on clear days.
- In Western Plain Zone of Punjab, complete transplanting of CSR 30, Pusa Basmati 1509, Basmati 370 and Basmati 386 during the second fortnight of July. Avoid rain water to stagnate in the main field as crop is highly sensitive to standing water and may develop bacterial stalk rot.
- In Undulating Plain Zone of Punjab, irrigate rice/basmati as per weather conditions and apply fertilizers, weedicides and other chemicals as per weather during the period. Remove excess rain water immediately after heavy rainfall from sugarcane, maize, black gram and tomato. Remove excess rain water from mango orchard and new plantation area.
- In Central Plain Zone of Punjab, undertake transplanting of CSR 30, Basmati 370, Basmati 386 and Pusa Basmati 1509 during the period. Undertake sowing of okra and cucurbits such as cucumber, bottle gourd, sponge gourd, pumpkin, etc. Undertake planting new evergreen fruit plants such as citrus, mango, litchi, guava, papaya, sapota etc.
- In Western Zone of Haryana, due to possibility of light to moderate rain along with moderate wind during the period, farmers are advised to keep vigil before doing agricultural operations and interculturing in the field. Considering possibility of rain, continue transplanting of rice and complete soon as possible. Drain out the excess rain water in the cotton crop. Due to favourable weather condition there may chance for infestation of jassids in cotton crop, keep vigil during the period. Considering possibility of rain, withhold the irrigation to vegetables/fruits plants and drain out the excess rain water. Undertake transplanting of fruit crops from the certified nursery.
- In Eastern Zone of Haryana, due to possibility of light to moderate rain withhold irrigation and spraying in cotton, maize and vegetables crops. In early and timely sown rice crops, at 15 days after transplanting, carry out first weeding by paddy weeder (paddy weeding-machine) and second weeding 15 days after that. In this weather condition, monitor chilli crop against attack of mite and jassid.
- In Delhi, maintain social distancing during picking of vegetables and other agricultural operations.

Undertake transplantation of 20-25 days old paddy seedlings in prepared fields. Undertake sowing of bajra, maize. Undertake proper arrangement for drainage in all vegetables, pulse, maize and nurseries of the crops. Farmers are also advised not to apply irrigation and any type of spray in the crops. Conserve rain water in the paddy fields. Undertake transplanting of chilli, brinjal and early cauliflower in raised bed and maintain proper drainage in the field.

Uttar Pradesh:

- In East Uttar Pradesh, continue transplanting of brinjal, chilli and early cauliflower. Farmers are advised to give top dressing of urea in spring sugarcane. Continue sowing of cucurbitaceous vegetables like cucumber, pumpkin, bottle gourd, bitter gourd, watermelon, cabbage, etc. Undertake intercultural operation in mung/urd field and in soybean after 25-30 days after sowing. Apply 35-40 kg Nitrogen (76-87 kg Urea) 50 days after sowing in Okra crop as final dose. Spray Blitox 0.3% (3 gm/litre of water) for protection of Red dust disease and shooty moulds in Mango and Litchi.
- In West Uttar Pradesh, raise nursery of crops such as brinjal, chilli, tomato and early cauliflower. Add 40 kg of nitrogen per hectare to turmeric 30-40 days after sowing. Continue sowing of cowpea, jowar, maize, groundnut, moong, urd, millet for green fodder. Provide proper drainage in all vegetables.

Uttarakhand

- In Sub Humid Sub Tropic Zone, complete transplanting of rice as soon as possible. Drain out excess water from sugarcane field. To prevent falling of autumnal sown sugarcane, tie 3- 4 plants of sugarcane crop. Drain out excess water from fodder sorghum.
- In Bhabar and Tarai Zone, carry out weeding and hoeing operations in maize. Drain out excess water from tomato fields. Carry out hoeing and weeding operation in rice fields.
- In Hill Zone, install pheromone traps/light traps/yellow strips in the rice fields for control of pest infestation. Strengthen the bunds. Avoid water logging and carry out weeding in ginger. Continue plantation of lemon. Continue harvesting of early varieties of apples.

Rajasthan

- In Flood Prone Eastern Plain Zone, undertake sowing of pearl millet, castor and sorghum.
- In Transitional Plain Zone of Inland Drainage, undertake sowing of guar and moth bean.
- In Arid Western Plain Zone, for the planting of fruits plants pit of 1m x 1m x 1m size with mixing 20 kg FYM, 1kg SSP and 100gm Quinalphos powder should ready.
- In Irrigated North Western Plain Zone, farmers are advised to complete sowing of kharif crops. For control of termite in sugarcane, use Imidacloprid (17.8 SL) @ 125 ml or Chloropyriphos (20 EC) 1.25 litre per bigha with irrigation water.
- In Sub Humid Southern Plain and Aravalli Hill Zone, undertake sowing of guar and green gram.
- In Semi-Arid Eastern Plain Zone, to protect crops from the attack of white grub, use Imidacloprid 17.8 SL @ 300 ml per hectare mixed with 80-100 kg soil and give irrigation.

Animal Husbandry:

- Give animals medicine to kill stomach worms. Keep animals clean and protect them from fly and mosquitoes.

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