



National Agromet Advisory Service Bulletin

Friday 17th July 2020
(For the period 17th to 21st July 2020)



Issued by
India Meteorological Department

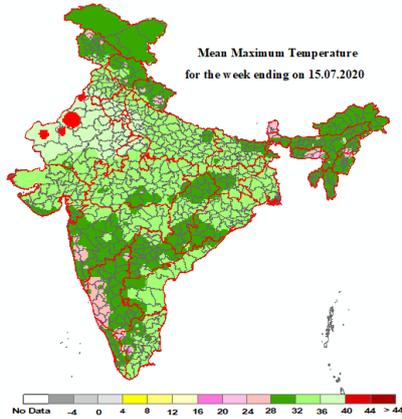
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District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

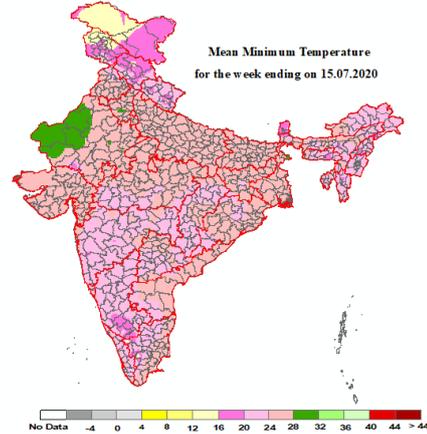
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

spatial distribution of weather parameters for the week ending on 15.07.2020

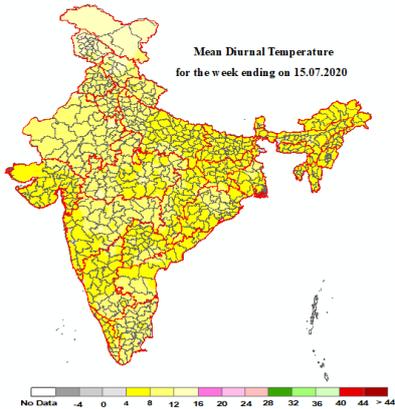
Mean Maximum Temperature (°C) for the week ending on 15.07.2020



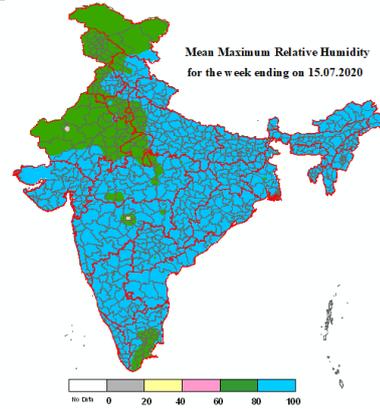
Mean Minimum Temperature (°C) for the week ending on 15.07.2020



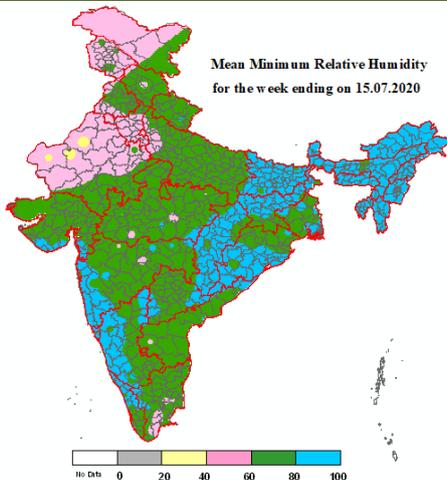
Mean Diurnal Temperature Variation (°C) for the week ending on 15.07.2020



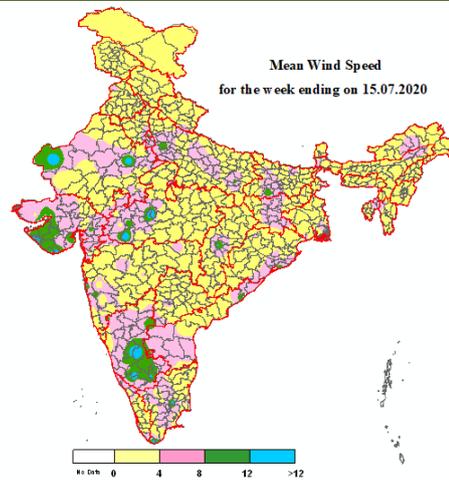
Mean Maximum Relative Humidity (%) for the week ending on 15.07.2020



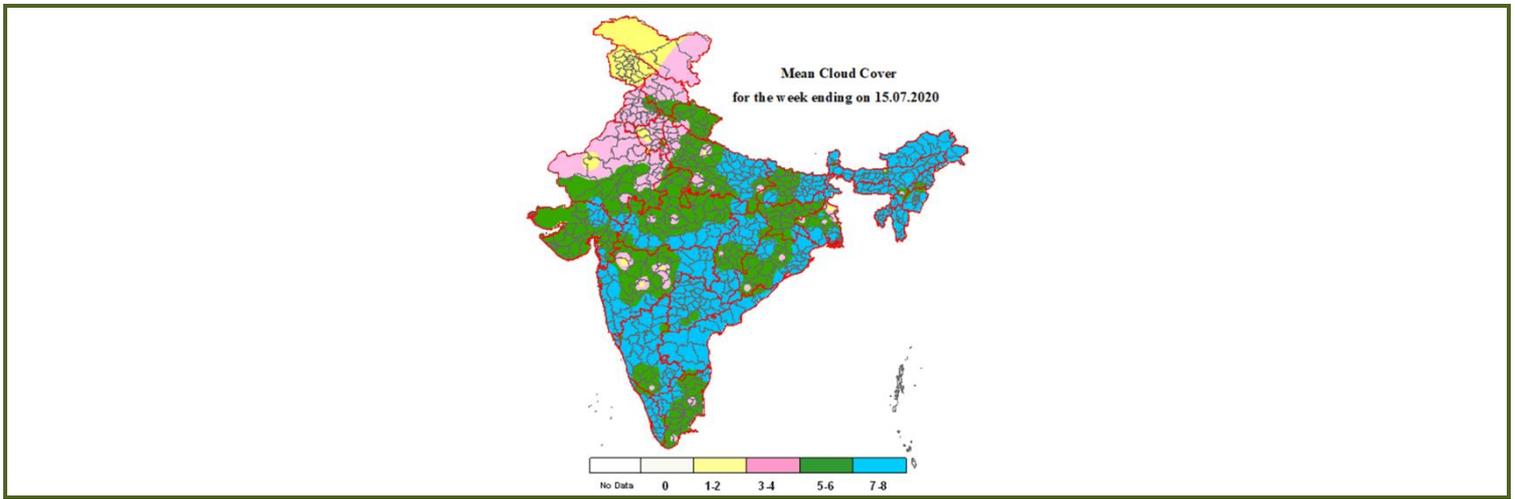
Mean Minimum Relative Humidity (%) for the week ending on 15.07.2020



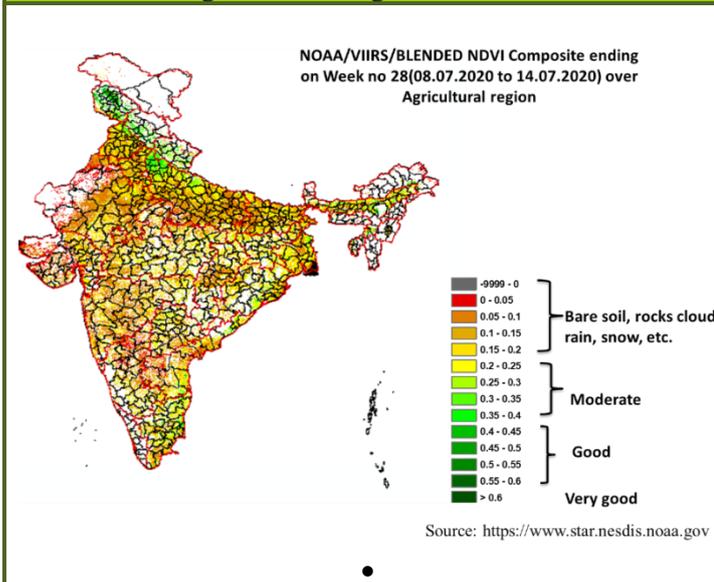
Mean Wind Speed (km/hr) for the week ending on 15.07.2020



Mean Cloud Cover (okta) for the week ending on 15.07.2020

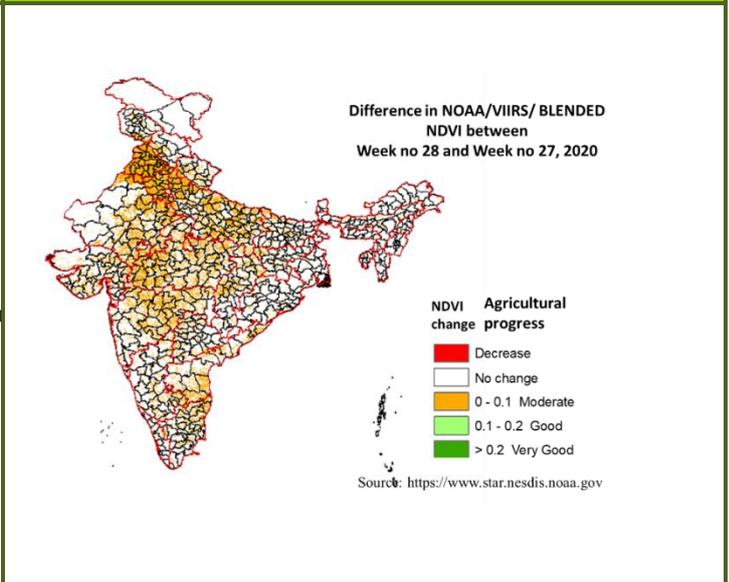


NOAA/VIIRS/BLENDED NDVI composite for the week number 28(08.07.2020 to 14.07.2020) over Agricultural regions of India



Agricultural vigour was good at most parts of the valey region of Jammu & Kashmir; few places in Jammu region of Jammu & Kashmir, Himachal Pradesh, Uttarkhand and at isolated places of West Uttar Pradesh adjoining Uttarakhand, North Eastern States, Tamilnadu & Kerala . 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

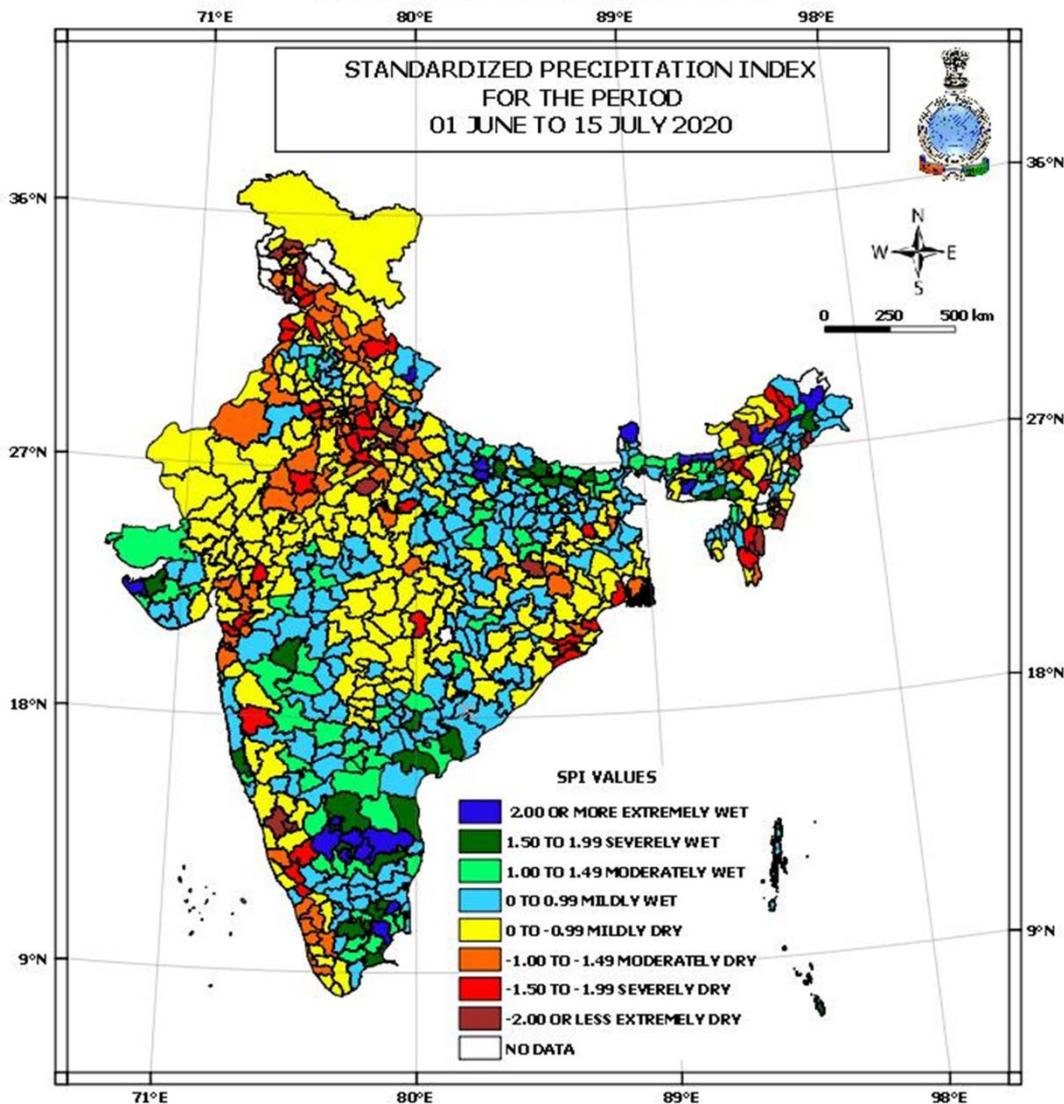
Difference in NOAA/VIIRS/BLENDED NDVI between week number 28, 2020 and week number 27, 2020



Good difference in agricultural vigour was observed over isolated places of Uttarakhand, Madhya Pradesh, Odisha, Jharkhand, South Interior Karnataka and Kerala

**Standardised Precipitation Index
Cumulative for the period 1st June to 15th July 2020**

**MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, CRS PUNE**



- Extremely/Severely wet conditions exist in Guntur, Nellore, West Godavari, Anantapur, Chittoor districts of Andhra Pradesh; Lower Dibang Valley, Papumpara districts of Arunachal Pradesh; Tinsukia, Dhemaji, Baksa, Chirang districts of Assam; East Champaran, Darbhanga, Gopalganj, Muzaffarpur, Supaul districts of Bihar; Jamnagar, Devbhumi Dwarka districts of Gujarat; Bangalore Rural, Bangalore Urban, Kolar, Tumkur, Chickballapur districts of Karnataka; Sindhudurg, Aurangabad districts of Maharashtra; East Garo Hills, East Khasi Hills districts of Meghalaya; Dindigul, Perambalur, Pudukkottai, Ramanathapuram, Trichy, Vellore, Ariyalur districts of Tamilnadu; Ambedkar Nagar, Basti, Gorakhpur districts of Uttar Pradesh; Nicobar district of Andaman & Nicobar Islands; North Sikkim district of Sikkim; Bageshwar district of Uttarakhand; Mahabubabad district of Telangana.
- Extremely/Severely dry conditions exists in East Kameng, Tirap, West Siang districts of Arunachal Pradesh; Nagaon, Morigaon districts of Assam; Dahod, Navsari, Tapi districts of Gujarat; Bhiwani district of Haryana; Anantnag, Baramula, Jammu, Kathua, Udhampur, Srinagar, Ramban, Bandipore, Kulgam districts of Jammu; Hassan, Kodagu, Shimoga districts of Karnataka; Wynad district of Kerala; Gwalior district of West Madhya Pradesh; Satara, Gondia districts of Maharashtra; Chandel, Imphal East districts of Manipur; Aizwal, Champhai, Lunglei, Serchhip districts of Mizoram; Tuensang, Paren districts of Nagaland; Bhadrak, Cuttack, Khurda, Puri districts of Orissa; Amritsar, Hoshiarpur, Tarn Taran districts of Punjab; Tonk districts of Rajasthan; Daman districts of Union Territory; Farrukhabad, Agra, Aligarh,

Badaun, Bulandshahar, Etah, Jyotiba Phule Nagar, Mathura, Mahoba districts of Uttar Pradesh; East Midnapore districts of West Bengal; Deoghar, Gumla districts of Jharkhand; Uttarkashi district of Uttarakhand; South Delhi district of Delhi.

- Moderately wet to moderately dry conditions were experienced in remaining districts in the country.

Weather Forecast for next 5 days valid upto 0830 hours of 22nd July, 2020

- ◆ **Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.**
- ◆ 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 a few places over Bihar during 18th-19th July and at isolated places over Punjab, Haryana, Chandigarh & Delhi and Coastal Andhra Pradesh & Yanam during next 5 days; over Himachal Pradesh, Uttarakhand during 18th-20th; over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad, Gangetic West Bengal during 19th-20th; over Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Telangana, Rayalaseema on 17th; over Bihar on 17th, 20th & 21st; over Jharkhand during 18th-21st; over Sub-Himalayan West Bengal & Sikkim during 18th-19th; over Odisha on 19th and over Assam during 17th-19th July.

5 Day Rainfall Forecast (Mid-Day)

17th July 2020

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

% 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:

17 July (Day 1):

- **Heavy to very heavy rainfall** very likely at isolated places over Uttarakhand, Konkan & Goa, Coastal & South Interior Karnataka and Kerala & Mahe and **heavy rainfall** at isolated places over southeast Rajasthan, Sub-Himalayan West Bengal & Sikkim, south coastal Odisha, Andaman & Nicobar Islands, Gujarat state, Nagaland, Manipur, Mizoram & Tripura, Arunachal Pradesh, Assam & Meghalaya, Madhya Maharashtra, Tamilnadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Telangana and Lakshadweep.
- **Thunderstorm accompanied with lightning** at isolated places over north Haryana, Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Bihar, Assam & Meghalaya, Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema.
- **Strong Wind** (speed reaching 45-55 kmph) very likely over Southwest and Westcentral Arabian Sea. **Squally weather** (wind speed reaching 40-50 kmph) over North, Southeast and Eastcentral Arabian Sea along & off south Gujarat-Maharashtra-Karnataka-Kerala coasts and Lakshadweep area. Fishermen are advised not to venture into Sea over these areas.

18 July (Day 2):

- **Heavy to very heavy rainfall** very likely at isolated places over Uttarakhand, Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Assam & Meghalaya and **heavy rainfall** at isolated places over Himachal Pradesh, Haryana, Chandigarh & Delhi, northwest Madhya Pradesh, Bihar, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Telangana, Coastal Karnataka and Kerala & Mahe.
- **Light to moderate thunderstorm accompanied with lightning** very likely at a few places over Bihar. **Thunderstorm accompanied with lightning** at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Rajasthan, Jharkhand, Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya.
- **Strong Wind** (speed reaching 45-55 kmph) very likely over Southwest and Westcentral Arabian Sea. **Squally weather** (wind speed reaching 40-50 kmph) along & off south Gujarat coast. Fishermen are advised not to venture into Sea over these areas.

19 July (Day 3):

- **Heavy to very heavy rainfall** at a few places with extremely heavy falls at isolated places over Sub-Himalayan West Bengal & Sikkim; **heavy to very heavy rainfall** with extremely heavy falls at isolated places over Arunachal Pradesh and Assam & Meghalaya; **Heavy to very heavy rainfall** at isolated places likely over Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh and Bihar and **heavy rainfall** at isolated places over Himachal Pradesh, northeast Rajasthan, north Madhya Pradesh, Gangetic West Bengal, Odisha, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Telangana, Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.
- **Light to moderate thunderstorm accompanied with lightning** very likely at a few places over Bihar. **Thunderstorm accompanied with lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Rajasthan, Jharkhand, West Bengal & Sikkim, Odisha and Assam & Meghalaya.
- **Strong Wind** (speed reaching 45-55 kmph) very likely over Southwest and Westcentral Arabian Sea. Fishermen are advised not to venture into Sea over these areas.

20 July (Day 4):

- **Heavy to very heavy rainfall** at a few places with extremely heavy falls at isolated places over Sub-Himalayan West Bengal & Sikkim; **heavy to very heavy rainfall** with extremely heavy falls at isolated places over Arunachal Pradesh and Assam & Meghalaya; **Heavy to very heavy rainfall** at isolated places likely over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Bihar and Nagaland, Manipur, Mizoram & Tripura and **heavy rainfall** at isolated places over East Madhya Pradesh, Jharkhand, Gangetic West Bengal, Odisha, Rayalaseema, South Interior Karnataka, Tamilnadu, Puducherry & Karaikal and Lakshadweep.
- **Thunderstorm accompanied with lightning** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Rajasthan, Bihar, Jharkhand and Gangetic West Bengal.
- **Strong Wind** (speed reaching 45-55 kmph) likely over Southwest and Westcentral Arabian Sea. Fishermen are advised not to venture into Sea over these areas.

21 July (Day 5):

- **Heavy to very heavy rainfall** with **extremely heavy falls** likely at isolated places over Assam & Meghalaya and Sub- Himalayan West Bengal & Sikkim; **Heavy to very heavy rainfall** at isolated places over Himachal Pradesh, Bihar, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura; **heavy rainfall** at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Jharkhand, Gangetic West Bengal, Odisha and Coastal Andhra Pradesh.
- **Thunderstorm accompanied with lightning** at isolated places over Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Rajasthan, Bihar and Jharkhand.
- **Strong Wind** (speed reaching 45-55 kmph) likely over Southwest and Westcentral Arabian Sea. Fishermen are advised not to venture into Sea over these areas.

Weather Outlook for subsequent 2 days from 22nd to 24th July, 2020

- ◆ Fairly widespread to widespread rainfall/thundershowers likely over entire country except over Andaman & Nicobar Islands, Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Saurashtra & Kutch, Rajasthan, Madhya Maharashtra, Marathwada, West Madhya Pradesh and Tamilnadu, Puducherry & Karaikal where isolated to scattered rainfall/thundershowers likely. Isolated heavy to very heavy falls are likely over eastern parts of Central India and Northeast India.

Salient advisories

- **Strong Wind (speed reaching 45-55 kmph)** very likely over Southwest and Westcentral Arabian Sea from 17th to 21st with **Squally weather (wind speed reaching 40-50 kmph)** over North, Southeast and Eastcentral Arabian Sea along & off south Gujarat-Maharashtra-Karnataka-Kerala coasts and Lakshadweep area on 17th and along & off south Gujarat coast on 18th, fishermen are advised not to venture into Sea over these areas.
- **As Thunderstorm** accompanied with lightning likely at isolated places over north Haryana, West Madhya Pradesh, Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema on 17th, over Uttar Pradesh and East Rajasthan from 17th to 21st, over Bihar on 17th, 20th & 21st, over Assam & Meghalaya from 17th to 19th, over Himachal Pradesh and Uttarakhand from 18th to 20th, over Punjab, Haryana Chandigarh & Delhi and Jharkhand from 18th to 21st, over Sub-Himalayan West Bengal & Sikkim on 18th, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad on 19th & 20th, over West Bengal & Sikkim on 19th, over Odisha on 19th and over Gangetic West Bengal on 20th, with **Light to moderate thunderstorm** accompanied with lightning very likely at a few places over Bihar on 18th & 19th, 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/sheep indoor during thunderstorm.
- **As rain/thundershowers likely at most places** over Arunachal Pradesh, Assam & Meghalaya, Nagaland Manipur Mizoram & Tripura (NMMT), Sub-Himalayan West Bengal & Sikkim, Uttarakhand and Lakshadweep from 17th to 21st, over Konkan & Goa, Coastal Karnataka and Kerala & Mahe from 17th to 20th, over South Interior Karnataka on 17th, over East Uttar Pradesh from 18th to 21st, over Punjab, Haryana Chandigarh & Delhi, West Uttar Pradesh and Bihar from 19th to 21st and over Himachal Pradesh, Jharkhand and Gangetic West Bengal on 20th & 21st; **at many places** over Gujarat State and Andaman & Nicobar Islands on 17th, over Gangetic West Bengal on 17th & 19th, over Odisha and East Madhya Pradesh from 19th to 21st, over Jharkhand on 18th & 19th, over Bihar and West Uttar Pradesh on 18th, over Himachal Pradesh from 17th to 19th, over Jammu Kashmir & Ladakh on 20th & 21st, over East Rajasthan on 19th, over West Madhya Pradesh from 18th to 20th, over Konkan & Goa, Coastal Karnataka and Kerala & Mahe on 21st, over Madhya Maharashtra and Marathwada on 17th & 18th, over Vidarbha, Coastal Andhra Pradesh & Yanam, Telangana and North Interior Karnataka from 17th to 21st, over Chhattisgarh and South Interior Karnataka from 18th to 21st and over Rayalaseema on 17th & 21st, with **Heavy to very heavy rainfall** very likely at isolated places over Uttarakhand from 17th to 20th, over Konkan & Goa, Coastal & South Interior Karnataka and Kerala & Mahe on 17th, over Uttar Pradesh from 18th to 20th, over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya on 18th, over Arunachal Pradesh on 18th & 21st, over Punjab and Haryana, Chandigarh & Delhi on 19th & 20th, over Bihar from 19th to 21st, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad on 20th and over Himachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on 20th & 21st and **heavy rainfall** at isolated places over southeast Rajasthan, Sub-Himalayan West Bengal & Sikkim, south coastal Odisha, Andaman & Nicobar Islands, Gujarat State, Arunachal Pradesh, Assam & Meghalaya and Madhya Maharashtra on 17th, over Nagaland, Manipur, Mizoram & Tripura from 17th to 19th, over Tamil Nadu Puducherry & Karaikal on 17th, 19th & 20th, over Coastal Andhra Pradesh & Yanam on 17th, 18th & 21st, over Telangana from 17th to 19th, over Lakshadweep on 17th & 20th, over Himachal Pradesh, Konkan & Goa and Kerala & Mahe on 18th & 19th, over Haryana, Chandigarh & Delhi on 18th & 21st, over northwest Madhya Pradesh, Bihar and Coastal Karnataka on 18th, over northeast Rajasthan and north Madhya Pradesh on 19th, over Gangetic West Bengal and Odisha from 19th to 21st, over East Madhya Pradesh, Rayalaseema and South Interior Karnataka on 20th, over Jharkhand on 20th & 21st and over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Uttarakhand, Punjab and Uttar Pradesh on 21st; along with **Heavy to very heavy rainfall** at a few places with extremely heavy falls at isolated places over Sub-Himalayan West Bengal & Sikkim on 19th & 20th and **heavy to very heavy rainfall with extremely heavy falls at isolated places** over Arunachal Pradesh on 19th & 20th, over Assam & Meghalaya from 19th to 21st and over Sub-Himalayan West Bengal & Sikkim on 21st, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

▪ **Undertake the following operations:**

- transplanting of rice and arecanut in Coastal Karnataka and rice, brinjal and tomato seedlings North Interior Karnataka.
- transplanting of rice and sowing of red gram in Chittoor district of Andhra Pradesh.
- transplanting of Sali rice and sowing of sesamum in Barak Valley Zone of Assam.
- preparation of main field for rice and sowing of arhar, okra and pumpkin in Odisha.
- sowing of kharif okra and early varieties of brinjal, chilli, cauliflower in Bihar
- land preparation for transplanting of kharif rice in Sub-Himalayan West Bengal.
- sowing of pearl millet and transplanting of chili, brinjal and early cauliflower in Saurashtra & Kutch.
- field preparation for sowing of kharif onion, lobia, spinach, Amaranthus and lady's finger Malwa Plateau Zone of Madhya Pradesh.
- sowing of kharif crops like rice, soybean, arhar, sesamum, maize, urad, moong and groundnut, etc. in Chhattisgarh.
- transplanting of rice seedlings in Sub-Tropical and Intermediate Zones of Jammu & Kashmir.
- transplanting of rice seedlings in Sub Montane and Low Hills Sub Tropical Zone of Himachal Pradesh.
- transplanting of early Basmati rice and sowing of moong in Punjab.
- transplanting of rice and sowing of cucurbits Haryana.
- transplanting of rice seedlings and sowing of pigeon pea, green gram, black gram, arhar, maize, kharif sunflower, bajra, soybean, groundnut, jowar, guwar, lobia and fodder sorghum in East Uttar Pradesh.
- sowing of pearl millet, sorghum, green gram, cowpea, cluster beans, sesame and moth bean in Rajasthan.
- transplanting of rice seedlings and planting of adsali sugarcane in Madhya Maharashtra and transplanting of rice seedlings and vegetables like chilli, brinjal, tomato in East Vidarbha.

Detailed Agromet Advisories

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

Realised Rainfall: Significant rainfall occurred in all districts of Coastal Karnataka, in all districts except Raichur and Vijayapura districts of North Interior Karnataka, in Bangalore Rural, Bangalore Urban, Chikaballapur, Chikkamagaluru, Kolar, Kodagu, Ramanagara and Shivamogga districts of South Interior Karnataka; in all districts of Telangana except Anantapur in Rayalaseema, M. Malkajgiri and Sangareddy districts; in all districts of Kerala except Alappuzha, Kollam, Malappuram, Pathanamthitta, Thiruvananthapuram districts; in all districts of Tamilnadu except Dharmapuri, Kanyakumari, Karaikal, Karur, Nagapattinam, Perambalur, Ramanathapuram, Theni, Tirunelveli, Tirupur, Toothukudi, Villupuram districts.

- **Advisories:** As **Thunderstorm** accompanied with lightning likely at isolated places over Coastal Andhra

Pradesh & Yanam, Telangana and Rayalaseema on 17th, 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/sheep indoor during thunderstorm.

- As **rain/thundershowers** likely **at most places** over Lakshadweep from 17th to 21st, over Kerala & Mahe from 17th to 20th, over South Interior Karnataka on 17th; **at many places** over Coastal Karnataka and Kerala & Mahe on 21st, over Coastal Andhra Pradesh & Yanam, Telangana and North Interior Karnataka from 17th to 21st, over South Interior Karnataka from 18th to 21st and over Rayalaseema on 17th & 21st, with **Heavy to very heavy rainfall** very likely at isolated places over Coastal & South Interior Karnataka and Kerala & Mahe on 17th and **heavy rainfall** at isolated places over Tamil Nadu Puducherry & Karaikal on 17th, 19th & 20th, over Coastal Andhra Pradesh & Yanam on 17th, 18th & 21st, over Telangana from 17th to 19th, over Lakshadweep on 17th & 20th, over Kerala & Mahe on 18th & 19th, over Coastal Karnataka on 18th, over Rayalaseema and South Interior Karnataka on 20th, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

Karnataka

- In Coastal Karnataka, undertake transplanting of rice. Carry out intercultural operation in maize and cotton crops during clear weather. Undertake planting of Black pepper and transplanting of Arecanut. Set up one Rhinolure pheromone trap for half hectare area to trap and kill the beetles in coconut gardens.
- In North Interior Karnataka, carry out thinning in black gram, green gram and soybean crops, intercultural operations in maize and transplanting of brinjal and tomato seedlings. Continue sowing of cotton, groundnut and sunflower. Undertake transplanting of rice.
- In South Interior Karnataka, carry out intercultural operation in red gram, ragi and groundnut crops. Continue transplanting of rice where seedlings are ready. Continue sowing of jowar, cowpea, red gram, green gram, black gram, horse gram, ragi, field bean.
- **Animal Husbandry**
- In Karnataka, for control of biting fly, hang the alovera plant in the animal shed. For breathing problem in hen, give multivitamin syrup @ 200 to 250 ml / 50 liters of water for 200 to 300 hens or Enflox vet BC @ 0.5 ml/lit. water for 2 to 3 days.

Kerala

- In Problem Area Zone, to control bud rot in coconut, small perforated sachets containing 2g of Mancozeb may be tied to the top of leaf axil. When it rains a small quantity of fungicide is released from the sachets to the leaf base, thus protecting the palm.
- In Central Zone, chance of Anthracnose disease in Cowpea, as a prophylactic measure, apply 1% Bordeaux mixture or spray pseudomonas 20 gm per litre of water on clear days.
- In Southern Zone, seedlings of paddy with 30 days after transplanting should be sprayed with KAU Sampoorna multimix @ 10 gm litre on clear days.
- In Northern Zone, if stem borer attack is seen in paddy, apply Takumi ® @3g per 10L of water on clear days.
- In High Altitude Zone, attack of fruit fly will be severe in bitter gourd and snake gourd, setting of fruit traps will help to reduce the attack.

Andhra Pradesh

- In Visakhapatnam district, farmers who have not yet raised the paddy nursery, can go for direct sowing by selection of varieties RGL 2537, MTU 1075 MTU 1121 or MTU 1061 by this cost of cultivation will reduce and crop will mature 10 days earlier than transplanted rice or go for dry seeding seed treatment with Carbendazim @ 3 g/kg seed.
- In Ananthpur and Kurnool districts, utilizing the rainfall continue sowing of rainfed crops like groundnut,

redgram, castor, sorghum and bajra.

- In East Godavari district, undertake transplanting of rice which is 18-22 days for short duration varieties, 25-30 days for medium duration varieties and 35-40 days for long duration varieties.
- In Guntur district undertake sowing of kharif rainfed crop maize, groundnut, bajra, jowar and cotton. Drain out excess water from early sown cotton which is 15-20 days old.
- In West Godavari district Cultivate non-lodging and submergence tolerant paddy varieties like MTU 1161, MTU 1064, MTU 1140, MTU 1172, Swarna sub –1 in flood prone areas. Complete sowing of maize, green gram and black gram.
- In Krishna district, continue nursery sowing of rice.
- In Prakasam district by utilizing realized rainfall continue sowing of redgram , cotton & green gram.
- In Chittoor district, continue transplanting of rice and sowing of redgram.
- In Nellore district present weather conditions are favourable for paddy leaf folder in rice. To control spray Monocrotophos @ 1.6 ml (or) Chlorpyrifos @ 2 ml/litre of water on clear days.
- In Y.S.R.(Kadapa) undertake sowing of rainfed crops like groundnut, cotton, redgram, castor, sorghum and bajra, wherever sufficient moisture available

Telangana

- In Northern Telangana, complete sowing of rainfed crop like cotton, soybean, Redgram, Greengram etc. Take up the rice nurseries using Telangana Sona 15th July onwards. 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 Western Zone, prevailing weather is conducive for Thrips in rice nursery, spray Thiomethaxam 25WG 0.5 gm/lit or Imidachloprid 17.8 SL 0.5 ml/litre on clear days.
- In Cauvery Delta zone, to control thrips damage in rice nursery, apply Thiamethoxam 25WG @ 40g/ acre on clear days.
- In Southern zone, the prevailing weather condition is conducive for incidence of citrus canker disease, spray of Streptomycin sulphate 500-1000 ppm; or Phytomycin 2500 ppm or Copper oxychloride 0.2% at fortnight intervals. Prune badly infected twigs before the onset of monsoon.
- In South Zone, weather is congenial for incense of Onion thrips in small onion, To control, spray 5gm of Thiamethoxam + 10ml sticky agent with 10litres of water on clear days.
- In Hilly zone, in potato crop, growers are advised to adopt foliar spray of Mespiquat chloride 5% AS at 45 days after planting to restrict the excessive vegetative growth and to increase the yield.

Animal Husbandry:

- In Tamilnadu, farmers who have not vaccinated their goat against Enterotoxaemia last month should vaccinate the goats strictly this month.

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

Realised Rainfall: Rainfall occurred in all districts except East Kameng district of Arunachal Pradesh; all districts of Assam & Meghalaya, Tripura and Mizoram; all districts except Chandel district of Manipur; all

districts except Tuensang district of Nagaland..

Advisories:

- **As Thunderstorm** accompanied with lightning likely at isolated places over Assam & Meghalaya from 17th to 19th, 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/sheep indoor during thunderstorm.
- As **rain/thundershowers** likely **at most places** over Arunachal Pradesh, Assam & Meghalaya, Nagaland Manipur Mizoram & Tripura (NMMT) from 17th to 21st with **Heavy to very heavy rainfall** very likely at isolated places over Assam & Meghalaya on 18th, over Arunachal Pradesh on 18th & 21st, over Nagaland, Manipur, Mizoram & Tripura on 20th & 21st and **heavy rainfall** at isolated places over Arunachal Pradesh, Assam & Meghalaya on 17th, over Nagaland, Manipur, Mizoram & Tripura from 17th to 19th; along with **heavy to very heavy rainfall with extremely heavy falls at isolated places** over Arunachal Pradesh on 19th & 20th, over Assam & Meghalaya from 19th to 21st, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

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. Monitor the ginger crop against rhizome rot disease and avoid water stagnation around the crop.

Assam & Meghalaya

- In Hill Zone of Assam, continue planting of ginger, papaya, pineapple and banana and sowing of fodder crops (bajra, sorghum maize, lobia). Continue sowing of cotton, pigeon pea and nursery sowing of cauliflower. Spray Phosphamidon @ 400-500 ml/ ha in 800 litres of water against stem borer infestation in sugarcane when sky remains clear. Continue nursery sowing / transplanting of high yielding varieties of *Sali* rice. Spray Carbendazim @ 1.0 gram per litre for powdery mildew disease in cucurbitaceous crops and late pea if infestation is above ETL when sky remains clear.
- In Lower Brahmaputra Valley Zone, continue transplanting of *Sali* rice. 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.
- In Upper Brahmaputra Valley Zone, continue transplanting of *Sali* rice seedlings. In chronically flood affected areas, timely transplanting of the *Sali* rice seedlings in the main field may not be possible. Under such condition, the practice of double transplanting is advocated. In this method, the seedlings of traditional or improved long duration varieties (150 days or more) should initially be transplanted in upland or medium land areas during early part of July with closer spacing of 20 × 10 cm. After recession of flood, about one month old hills are uprooted and required number of tillers may be finally re-transplanted in the main field. In areas where the *Sali* rice was totally damaged due to flood during June, it is advised to undertake sowing of seeds of varieties Monoharsali, Salpona, Prasadbhog, Gobindabhog or very short duration varieties like Luit, Kapilee and Dishang for raising seedlings. 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 and sowing of sesamum. Attack of Papaya mealy bug on papaya fruit can be controlled by dusting of Chlorpyrifos 1.5% dust or Malathion 5% dust around the healthy plants; also destruct ant colonies with drenching of Chlorpyrifos 20 EC @ 2 ml/litre. 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% Mencozeb 75 WP @ 2g/litre of water.

- In Central Brahmaputra Valley Zone, continue transplanting of long duration Sali paddy variety at the end of July. 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 flood affected areas, don't go for long duration paddy varieties for sowing in flood affected areas as sowing time is already over these varieties. If water does not recede up to mid-July, short duration varieties can be sown up to last part of July. Go for direct sowing of very short duration varieties (90 to 100 days duration) up to 8-10 September in case of flood up to August. Initiative should be taken for raising community nursery for late planting with old seedlings of the varieties like Profulla and Gitesh (If more than 50% damaged). Undertake sowing of wet seeding of sprouted seeds of short to medium duration varieties and direct seeding with the photo insensitive short duration variety like Luit. Adoption of submergence tolerance varieties like Jalashree, Jalkuwari, Ranjit sub-1, Bahadur Sub-1 and Swarna Sub-1 for flash flood prone areas is recommended.
- In North Bank Plain Zone, continue transplanting of long duration Sali paddy variety at the end of July. For facilitate easy puddling and transplanting, farmers should arrange to inundate their field by construction of new bunds or repairing of old bunds. The farmers are suggested to 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 Sali rice 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); direct seeded late Sali varieties like Luit, Kapilee and Dishang (90-95 days duration).if there is the total damage of seedlings or crops of rice 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 sowing/ transplanting of *Sali* rice. Drain out the field for some time (2-3 days) to facilitate the tillering. 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, continue main field preparation and transplanting of *kharif* rice. Undertake sowing of soybean and groundnut. To control Fall Army worm in maize, manual destruction of egg masses and caterpillars may be done; extracts from neem seed or leaves are found effective against Fall Army Worm. Spray Edifenphos @ 0.1% against blast disease in Jhum rice at maximum tillering stage when the sky is clear.
- In Mizoram, apply Tricyclazole 0.6g/litre of water or Bavistin@ 2.0 ml/litre of water against rice blast disease for better control of the disease in upland rice during sunny days. Undertake harvesting of tomato

and matured cobs of maize. Due to high humidity and minimum temperature during night, there is chance of rust attack in groundnut; farmers are advised to apply Mancozeb @ 2.0 g/litre of water or Hexaconazole @ 1.0 ml/litre of water during sunny days.

- In Tripura, continue transplanting of Aman rice. Due to substantial decrease in sunshine hours with occasional rain there is chance of attack of Yellow stem borer in *Aman* rice; to manage the attack, spray Validamycin 3L @ 2.5 ml or Hexaconazole 5 EC @ 2.0 ml or Propiconazole 25 EC @ 1 ml per litre of water. Also collection of Gundhi bugs by hand netting is suggested in Jhum rice. Maintain good drainage facilities in maize and groundnut field.
- In Nagaland, continue transplanting of 21-28 days old seedling of TRC/WRC rice in the main field. Complete sowing of soybean and groundnut. In ginger, remove the affected clumps and drench the affected and surrounding beds with Mancozeb 0.3% against soft rot disease. Spray Edifenphos @ 0.1% against blast disease in Jhum rice at maximum tillering stage when the sky is clear.

Animal Husbandry

- In Northeastern states, carry out immunizations against Brucellosis and Anthrax diseases in cattle & buffaloes. Also carry out vaccination (RDF1) against Ranikhet disease in one week old chicks and against Gamboro disease in two weeks old chicks.
- In Lower Brahmaputra Valley Zone and Barak Valley Zone of Assam, due to ongoing flood condition, shift the domestic animal such as cow, buffalo, goat, pig etc. in the high land or elevated area for the safety measure. If any malady symptom is shown in the animal then immediately consult with the veterinary doctor for proper treatments. Prevailing hot and humid weather condition may lead to gastrointestinal parasites infection to the poultry. Clean sanitary conditions of poultry sheds are very much important.
- In Upper Brahmaputra Valley Zone, during monsoon season the calves are infected more by the worms; it is advised to give Piperzine or Mebendazole at recommended dose in consultation with veterinary doctor. Prevent the livestock from feeding on rotten grasses during and after flood. Instead, feed the animals with tree leaves, green grasses and concentrates along with vitamins and mineral supplements.

Fishery

- In Northeastern states, repair and construct dykes, which accounts for a proper slope and will help in drainage. Construction of a proper outlet channel is required to drain out excess water due to heavy rainfall. Maintain optimum water level to avoid the algal bloom. Do periodical netting at interval of 15 days to know the health status of the existing fish stock.
- In Lower, Central and Upper Brahmaputra Valley Zones of 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 North & Middle Andaman and South Andaman districts of Andaman & Nicobar Islands, in all districts of Bihar except Arwal; in all district of Jharkhand except Saraikela; in all districts of Odisha except Puri; in all districts of Sub-Himalayan West Bengal & Sikkim and in all districts of Gangetic West Bengal except East Midnapore. Weather remained dry/mostly dry over the rest of the region.

Advisories:

- **As Thunderstorm** accompanied with lightning likely at isolated places over Bihar on 17th, 20th & 21st, over Jharkhand from 18th to 21st, over Sub-Himalayan West Bengal & Sikkim on 18th, over West

Bengal & Sikkim on 19th, over Odisha on 19th and over Gangetic West Bengal on 20th, with **Light to moderate thunderstorm** accompanied with lightning very likely at a few places over Bihar on 18th & 19th, 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/sheep indoor during thunderstorm.

- As **rain/thundershowers** likely **at most places** over Sub-Himalayan West Bengal & Sikkim from 17th to 21st, over Bihar from 19th to 21st and over Jharkhand and Gangetic West Bengal on 20th & 21st; **at many places** over Andaman & Nicobar Islands on 17th, over Gangetic West Bengal on 17th & 19th, over Odisha from 19th to 21st, over Jharkhand on 18th & 19th, over Bihar on 18th, with **Heavy to very heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim on 18th, over Bihar from 19th to 21st and **heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim, south coastal Odisha, Andaman & Nicobar Islands on 17th, over Gangetic West Bengal and Odisha from 19th to 21st, over Jharkhand on 20th & 21st; along with **Heavy to very heavy rainfall** at a **few places** with extremely heavy falls at isolated places over Sub-Himalayan West Bengal & Sikkim on 19th & 20th and **heavy to very heavy rainfall with extremely heavy falls** at **isolated places** over over Sub-Himalayan West Bengal & Sikkim on 21st, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

Odisha

- In West Central Table Land Zone, utilizing past rain, complete the sowing of direct seeded rice. Prepare main field for transplanting rice seedlings. Undertake sowing of arhar, okra and pumpkin.
- In Western Undulating Zone, paddy seedlings are at 'germination to three-week' stage in nursery; prepare the main field and carry out transplanting of three-week-old seedlings. Maintain proper drainage in arhar, groundnut and maize crop-fields.
- East and South-Eastern Coastal Plain Zone, undertake sowing of groundnut after seed treatment with Carbendazim 50 % WP @ 2-gm or Carboxin 37.5 % + Thiram 37.5% D.S WP (Vitavax power/Vaccinator Power) @ 3-gm/kg of seeds; treat seeds with recommended species of Rhizobium bacterial culture @ 20 gm/kg of seeds 1 hour before sowing; apply 35 kg DAP and 4-kg Urea and 26 kg MOP per acre in the furrows before sowing as basal fertilizer. Undertake sowing of ragi, sesame, cotton and okra. Carry out planting of cashew nut saplings.

Bihar

- In North West Alluvial Plain Zone, as medium to heavy rainfall has happened at many places over North Bihar districts and in view of good rainfall in coming days, farmers are advised to prepare the bunds in fields so that rain water can be collected for paddy transplanting. Undertake planting of healthy suckers of banana and mango saplings. Continue sowing of pigeon pea in upland areas.
- In South Bihar Alluvial Zone, make arrangements for storing rain water at one portion in the field; this water can be used for irrigation to crops at suitable time during dry spell. Undertake planting of disease-free, healthy saplings of mango, litchi and guava during July. Complete sowing of kharif okra and early varieties of brinjal, chilli, cauliflower. Carry out transplanting of kharif onion.

Jharkhand

- In North and Central Eastern Plateau Zone, undertake transplanting with suitable seedlings of long duration varieties for first phase in low land (Don-1) if sufficient water is available for puddling. In fallow field of medium land, undertake sowing of minimum duration variety (which matures in 80-90 days) of maize. Weather is conducive for the attack of Tikka or leaf spot disease in groundnut crop; spray fungicide Kavach @ 2 g per litre of water during clear weather as and when the symptoms appear on clear days.
- Central & North Eastern Plateau Zone, prepare nursery bed by ploughing the field 3-4 times; apply 10

quintal FYM at the time of field preparation; for every 100 sq. m area apply 2.2 kg urea, 6.25 kg SSP, 1.6 kg MoP; before sowing treat the seeds with Carbendazim @ 2g per kg seeds. Present weather is conducive for occurrence of blast and leaf spot in nursery seedlings; to control, spray Endofil M-45 @2g/litre of water or Beam (Tricyclazole) @ 6 g/10 litres of water. Continue sowing of high-yield variety of groundnut. Prepare field for sowing of moong and urad. Complete sowing of maize.

West Bengal

Sub-Himalayan West Bengal:

- In Hill Zone, complete transplanting kharif rice in the main field. Undertake sowing of soybean; apply well rotten FYM @ 70-80 kg decimal-1, Urea @ 250-300 g decimal-1, MOP @ 1.5-2.0 Kg decimal1, SSP @ 150-200 g decimal-1; mix FYM and fertilizers well and follow line sowing. Complete harvesting of maize.
- In Old Alluvial Zone, complete transplanting of 25-30 days old rice seedlings; apply only 1/3rd of the total urea, full doses of super phosphate (SSP) and potash (MOP) at the time of final puddling; 60-70 kg fresh Azolla may be incorporated in field after transplanting which will reduce the use of Nitrogen.

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. Undertake sowing of tomato and brinjal in ridge furrow system for making saplings; carry out transplanting at the end of August.
- In New Alluvial Zone, undertake sowing of kharif soybean in medium and high lands; treat seeds with Carbendazim or thiram @ 2 g / Kg seeds or with Trichoderma viride @4g / Kg seeds or Pseudomonas fluorescens @10g/Kg seeds.

Andaman & Nicobar Islands

- Open the bunds and maintain thin film of water in the paddy nursery. Keep open the field bunds of vegetable to avoid damages due to water logging. Plant pineapple suckers on the embankment of ponds to reduce soil erosion.

Animal Husbandry

- In Bihar, vaccinate cattle against Anthrax, Black Quarter (Dakaha) and Galghontu diseases.
- In Andaman & Nicobar Islands, keep the goat in dry and higher place to avoid pneumonia as moderate to heavy rainfall is expected.

Fishery

- In Odisha, harvest the fish and drain out excess water; apply mahua oil cake 2.5t/ha with 1 m depth of water to kill the predators and weed fishes in perennial ponds.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Significant rainfall occurred in all districts except Anand, Banaskantha, Chhota Udepur, Dahod and Mahisagar districts of Gujarat Region, in all districts except Porbandar and Surendranagar districts of Saurashtra & Kutch; in all districts of Maharashtra except Dhule.

Advisories:

- As **rain/thundershowers** likely **at most places** over over Konkan & Goa from 17th to 20th; **at many places** over Gujarat State on 17th, over Konkan & Goa on 21st, over Madhya Maharashtra and Marathwada on 17th & 18th, over Vidarbha from 17th to 21st, with **Heavy to very heavy rainfall** very likely at isolated places over Konkan & Goa on 17th and **heavy rainfall** at isolated places over Gujarat State and Madhya Maharashtra on 17th, over Konkan & Goa on 18th & 19th, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

Maharashtra

- In Konkan, maintain 2-5 cm water level in the fields. Continue transplanting of 30 days old finger millet seedlings. Apply 1st split dose of nitrogen @ 35kg (urea) per acre to 6 weeks turmeric in Ratnagiri, Raigad, Thane, Palghar districts)
- In Madhya Maharashtra, continue sowing of kharif crops like cotton, soybean, jowar, groundnut, black gram, green gram and pigeon pea. Continue transplanting of 21-25 days old rice seedlings. Undertake nursery sowing of onion (varities : Phule Samarth and Baswant 780). Continue transplanting of rice (21-25 days old) and finger millet (30 days old) seedlings.
- In Marathwada, continue sowing of kharif crops like soybean, groundnut, green gram and black gram. Farmers are advised to wait for sowing in (Hingoli district: Vasmat taluka; Jalna district: Jalna taluka, Osmanabad district : Lohara, Paranda, Tuljapur, Umarga talukas and Parbhani district : Gangakhed taluka) till receipt of sufficient rainfall. To control white grub in sugarcane, apply metarhizium anisopliae @ 4 kg per acre during clear weather.
- In East Vidharbha, continue sowing of kharif crops like cotton, pigeon pea, green gram and black gram. Undertake gap filling in early sown cotton to maintain optimum plant population. Continue transplanting of 21-25 days old rice seedlings. Continue sowing of kharif crops like cotton, pigeon pea and soybean.

Gujarat

- In South Gujarat, continue transplanting rice seedlings and sowing of pigeon pea at 120 cm row spacing with two rows of soybean or green gram as intercrop for obtaining higher yield. Undertake sowing of black gram, cucurbits and nursery sowing of chilli and early cauliflower. Provide proper drainage to remove excess water from sugarcane crop fields.
- In North Gujarat, carry out thinning and gap filling in cotton and groundnut. Continue sowing of pearl millet, green gram, maize, pigeon pea, cowpea, cluster bean and sesame. Continue harvesting of matured fruits of mango, lemon and pomegranate; plan for new plantation of horticultural crops. Prepare nursery bed for raising seedlings of kharif vegetable crops like chilli, tomato, brinjal etc.
- In Middle Gujarat, continue transplanting of rice and vegetable (chili, brinjal and tomato). Carry out thinning and gap filling in cotton crop. Continue picking of matured vegetables and fruits.
- In Saurashtra and Kutch, carry out intercultural operations in cotton, sesame, pearl millet, green gram, black gram, cow pea at *vapsa* condition. Continue sowing of pearl millet and transplanting of chili, brinjal and early cauliflower. Constant monitoring of the chilli crop against attack of mites is advised; if population is found more, spray Ethion @ 1.5-2 ml/litre of water in clear weather.

Animal Husbandry

- In Gujarat, keep animals indoors during rainfall period. Keep fodder in safe place to avoid spoilage due to rainfall.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in all districts of Chhattisgarh, in all districts of East Madhya Pradesh except Damoh, Chhatarpur, Chindwara, Jabalpur, Katni, Narsinghpur, Panna, Sagar, Satna, Tikamgarh. Rainfall occurred in Burhanpur, Datia, Gwalior, Rajgarh, Ratlam and Shivpuri districts of West Madhya Pradesh.

- **Advisories: As Thunderstorm** accompanied with lightning likely at isolated places over West Madhya Pradesh on 17th, 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/sheep indoor during thunderstorm.
- As **rain/thundershowers** likely **at many places** over East Madhya Pradesh from 19th to 21st, over West Madhya Pradesh from 18th to 20th, over Chhattisgarh from 18th to 21st, with **heavy rainfall** at isolated places over northwest Madhya Pradesh on 18th, over north Madhya Pradesh on 19th, over East Madhya Pradesh on 20th, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

Madhya Pradesh

- In Malwa plateau Zone, undertake weeding in soybean and avoid water logging in the fields. Farmers are

advised for field preparation for sowing of *kharif* onion, lobiya, spinach, amaranthus and ladyfinger.

- In Kymore and Satpura Hill Zone, continue nursery raising of medium and short duration varieties of rice. Nursery bed must be 5-6 inch height, 4 feet width Seed rate required is 5 kg/hectare. Seed treatment must be done with Carbendazim 2-3 gram per kg seed. Apply FYM and compost in the nursery beds.
- In Jhabua Hills Zone, complete sowing of maize, black gram and soybean crops. Seed treated with 2.0 gm thiarom + 1.0 gm Carbendazim per kg of seed after that treated with rhizobium culture & PSB culture @ 5.0 gm/ kg seed each before sowing of crop. Prepare field for cultivation of rainy season vegetables in raised furrow and poly-mulching method.
- In Kymore Plateau Zone, complete sowing of short/medium duration varieties of soybean and early maturing/medium term pigeon pea.
- 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, complete sowing of kharif crops like rice, soybean, arhar, sesamum, maize, urad, moong and groundnut etc. The sowing should be done in lines. Seed treatment should be done before sowing. Granular fertilizers should be applied in line sowing. Undertake transplanting of rice. At the time of transplanting, 2-3 seedlings should be transplanted per hill. The spacings should be maintained 15 cms x10 cms (early vars) and should be 20 cms x 10 cms (for medium to late duration vars)
- In Northern Hill Zone, continue sowing of kharif crops like pigeon pea, soybean, maize, groundnut, etc. Carry out intercultural operation in tomato, brinjal, chilli, okra and other vegetable crops.
- In Bastar Plateau Zone, continue transplanting of rice using SRI or biasi method. Continue sowing of maize up to the first fortnight of July. 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, carry out vaccination of animals against the Black Quarter, Anthrax and other disease as per advice of animal experts. Vaccinate poultry birds to prevent Ranikhet disease (first F-1 in age of 7 days & second R2B in age of 8 week). 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 Chamba, Kinnaur, Lahaul & Spiti and Shimla; in Kathua and Samba districts of Jammu & Kashmir and in all the districts of Uttarakhand; in all districts of East Uttar Pradesh except Banda, Farrukhabad, Hardoi, Jainpur, Kanpur Dehat, Kaushambi, RaiBareilly, Sonbhadra and Unnao districts. Rainfall occurred in Baghpat, Bijnor, Firozabad, Jalaun, Mahamayanagar, Mainpuri, Muzaffarnagar, Pilibhit, Saharanpur, Shahjahanpur and Shamli districts of West Uttar Pradesh; in Banswara, Dausa, Dungarpur, Jhunjhunu, Sikar, Sirohi in East Rajasthan, Churu in West Rajasthan; in Chandigarh; in all districts except Bhatinda, Ferozepur, Mansa, Moga and Taran Taran districts of Punjab; in Ambala, Hissar, Kaithal, Jind, Kurukshetra, Karnal, Panchkula, Panipat, Sonapat and Yamunanagar districts of Haryana.

- **Advisories: As Thunderstorm** accompanied with lightning likely at isolated places over Uttar Pradesh and East Rajasthan from 17th to 21st, over Himachal Pradesh and Uttarakhand from 18th to 20th, over Punjab, Haryana Chandigarh & Delhi from 18th to 21st, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan

& Muzaffarabad on 19th & 20th, 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/sheep indoor during thunderstorm.

- As **rain/thundershowers** likely **at most places** over Uttarakhand from 17th to 21st, over East Uttar Pradesh from 18th to 21st, over Punjab, Haryana Chandigarh & Delhi, West Uttar Pradesh from 19th to 21st and over Himachal Pradesh on 20th & 21st; **at many places** over West Uttar Pradesh on 18th, over Himachal Pradesh from 17th to 19th, over Jammu Kashmir & Ladakh on 20th & 21st, over East Rajasthan on 19th, with **Heavy to very heavy rainfall** very likely at isolated places over Uttarakhand from 17th to 20th, over Uttar Pradesh from 18th to 20th, over Punjab and Haryana, Chandigarh & Delhi on 19th & 20th, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad on 20th and over Himachal Pradesh on 20th & 21st and **heavy rainfall** at isolated places over southeast Rajasthan on 17th, over Himachal Pradesh on 18th & 19th, over Haryana, Chandigarh & Delhi on 18th & 21st, over northeast Rajasthan on 19th, over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Uttarakhand, Punjab and Uttar Pradesh on 21st, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables. Avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested products at safe places. Keep the cattle under shed during heavy rainfall.

Jammu & Kashmir

- In Sub-Tropical Zone, continue transplanting of rice seedlings. Complete sowing of maize and pulses. Carry out earthing up operation in turmeric.
- In Cold Arid Zone, carry out earthing up operation in potato. Carry out proper staking in tomato for better growth and yield. Continue sowing of maize.
- In Intermediate Zone, complete transplanting of rice. Undertake intercultural operations in maize on a non rainy day. Ensure proper staking in tomato and cucurbits.
- In Valley Temperate Zone, carry out weeding, hoeing and earthing up operation in maize. Carry out hand weeding in rice, 18 to 20 days after transplanting. Carry out weeding in 25-30 days old kharif pulses. Continue land preparation for fresh plantation of saffron.

Himachal Pradesh

- In Sub Montane and Low Hills Sub Tropical Zone, continue transplanting of rice seedlings. Carry out hoeing and weeding in maize crop. Continue weeding and other intercultural operations in pulses. Carry out intercultural operations in pea, turnip, carrot, spinach, okra, French beans and sunflower. Install bird perches in tomato, pea, brinjal and gram to control fruit borer insect. Install pheromone trap @ 2-3 traps per acre of crop field for monitoring the fruit borer.
- In High Hill Temperate Dry Zone, carry out weeding in cucumber and tomato in polyhouse and in pea and barley in the fields. To control cutworms in potato, do drenching of Chloropyrifos 20 EC 3ml/litre of water.
- In Mild Hills Sub Humid Zone, to control black rot in apple trees, spray the trees with Propineb or Zineb @ 600 g / 200 litres of water.
- In Mid Hills Sub Humid Zone, continue sowing of radish and turnip. Undertake transplanting of cabbage. Apply Nitrogen fertilizer in tomato, capsicum, gourds crops and brinjal etc. To control fruit borer & leaf spot diseases in tomato, spray Redomil gold 25 gram /10 litres of water.

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 early Basmati and sowing of moong. Avoid

rain water to stand in the main crop as it is highly sensitive to standing water and promotes bacterial stalk rot.

- In Undulating Plain Zone of Punjab, complete transplanting of rice/basmati by this week. Irrigate sugarcane as per weather. Remove excess rain water immediately after heavy rainfall from sugarcane and maize. Remove excess rain water from chilli field to avoid any adverse effect on crop.
- 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 pants 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 in the field. Due to possibility of light to moderate rain in the region, farmers are advised to withheld the sowing of kharif crops. Continue transplanting of rice. Drain out the excess rain water in the cotton crop.
- In Eastern Zone of Haryana, due to possibility of light to moderate rain withhold irrigation and spraying in 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. Undertake sowing of cucurbits.
- 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 where water facilities are available. Undertake sowing of bajra, maize. Undertake field preparation for sowing of kharif onion, lobiya, spinach, Amaranthus, ladyfinger. Constantly monitor lady finger, chilli and cucurbitaceous crop against attack of mites and jassids. Spray Phosmite @ 1.5 - 2 ml per litre of water to control mites and spray Imidacloprid 17.8 SC @ 0.5 ml/litre of water against jassids when sky is clear.

Uttar Pradesh:

- In East Uttar Pradesh, continue transplanting of rice seedlings in main fields. Continue sowing of pigeon pea, green gram and black gram, arhar, maize, kharif sunflower, bajra, soybean, groundnut, jowar, guwar, lobia and fodder sorghum. Continue transplanting of brinjal, chilli and early cauliflower. Farmers are advised to give top dressing of urea in spring sugarcane. Farmers are also advised sowing of cucurbitaceous vegetables like cucumber, pumpkin, bottle gourd, bitter gourd, watermelon, cabbage, etc.
- In West Uttar Pradesh, continue transplanting of 20-25 days old paddy seedlings. Continue sowing of maize, black gram, groundnut and sesame. Prepare field for transplanting of kharif onion, early cauliflower and cabbage. Do first weeding - hoeing to maize crop after 15-20 days of sowing. Continue sowing of cowpea, jowar, maize, groundnut, moong, urd, millet for green fodder. Provide proper drainage in all vegetables. Do earthing up in the sugarcane crop.

Animal Husbandry:

- Give animals medicine to kill stomach worms. Proper arrangement may be made to protect animals from rain. Keep animals clean and protect them from fly and mosquitoes.

Uttarakhand

- In Bhabar and Tarai Zone, carry out weeding and hoeing operations in soybean and maize. Drain out excess water in brinjal and capsicum fields.
- In Sub Humid Sub Tropic Zone, drain out excess water from sugarcane field. Undertake sowing of maize at optimum soil moisture conditions.
- In Hill Zone, undertake sowing of radish and coriander. Carry out thinning in pulses. Carry out weeding, hoeing and gap filling in finger millets. Avoid water logging in tomato. Undertake plantation of lemon. Undertake harvesting of early varieties of apples.

Rajasthan

- In Transitional Plain of Luni basin, undertake sowing of pearl millet, sesame and moth bean.

- In Irrigated North Western Plain, complete sowing of kharif crops bajara, guar and moth. 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 Internal Drainage Dry Zone, undertake field preparation for kharif crop sowing.
- In Semi Arid Eastern Plain Zone, complete sowing of pearl millet, green gram, sorghum, cow pea and cluster bean. To control leaf curl & mosaic in Papaya, uproot and burn the affected plants and spray Methyl Demeton 25 EC @ 1 ml per litre water.
- In Flood Prone Eastern Plain Zone, undertake field preparation for sowing of til and bajara.
- In Sub Humid Southern Plain Zone, avoid sowing of maize after 15th July. After 15th July sowing of pulses can be done in place of maize.
- In Humid Southern Plain Zone, in black gram and soybean, as soon as the color of the leaves appears bright yellow, destroy the diseased plants and destroy them Spray of acetamiprid 20 s.p. @ 0.5 g / litre on clear days.

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