



National Agromet Advisory Service Bulletin

Friday 19th June 2020
(For the period 19th to 23rd June 2020)



Issued by
India Meteorological Department

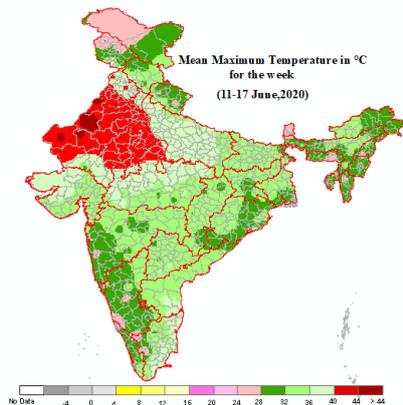
Weblink For

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

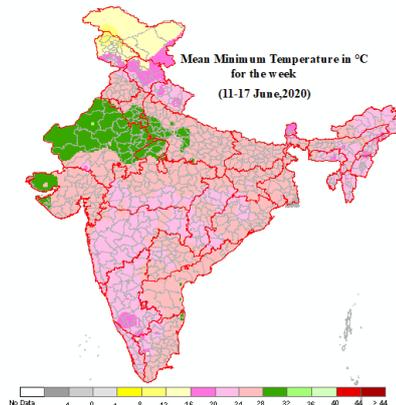
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 17.06.2020

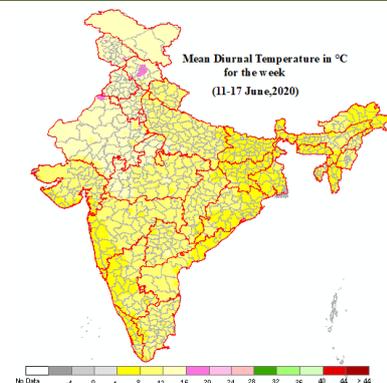
Mean Maximum Temperature (°C) for the week ending on 17.06.2020



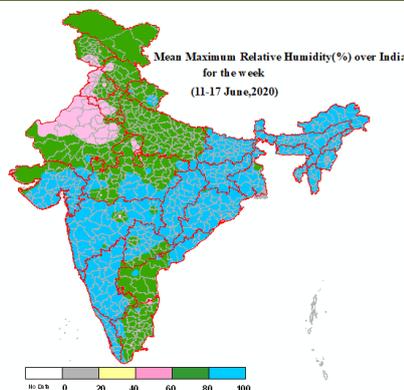
Mean Minimum Temperature (°C) for the week ending on 17.06.2020



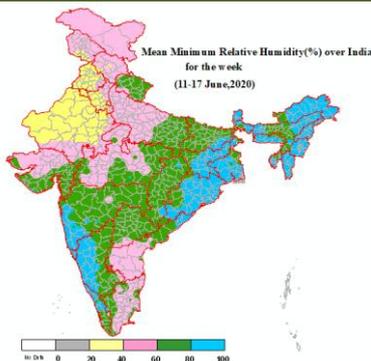
Mean Diurnal Temperature Variation (°C) for the week ending on 17.06.2020



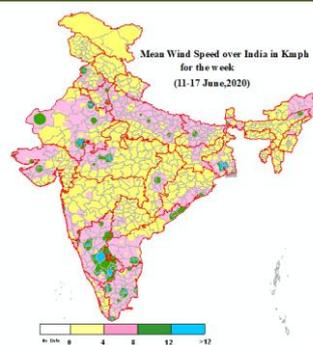
Mean Maximum Relative Humidity (%) for the week ending on 17.06.2020



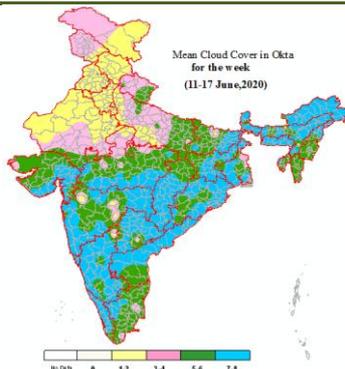
Mean Minimum Relative Humidity (%) for the week ending on 17.06.2020



Mean Wind Speed (km/hr) for the week ending on 17.06.2020

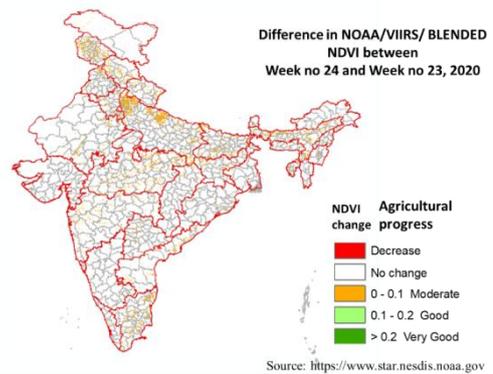
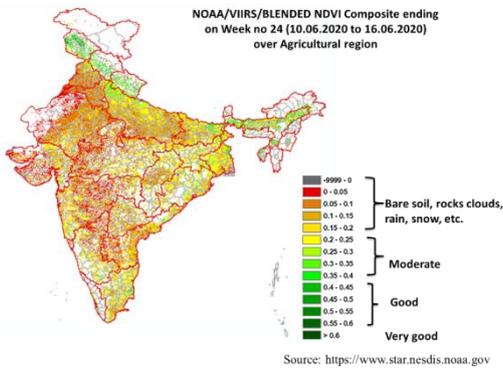


Mean Cloud Cover (okta) for the week ending on 17.06.2020



NOAA/VIIRS/BLENDED NDVI composite for the week number 24 (10.06.2020 to 16.06.2020) over Agricultural regions of India

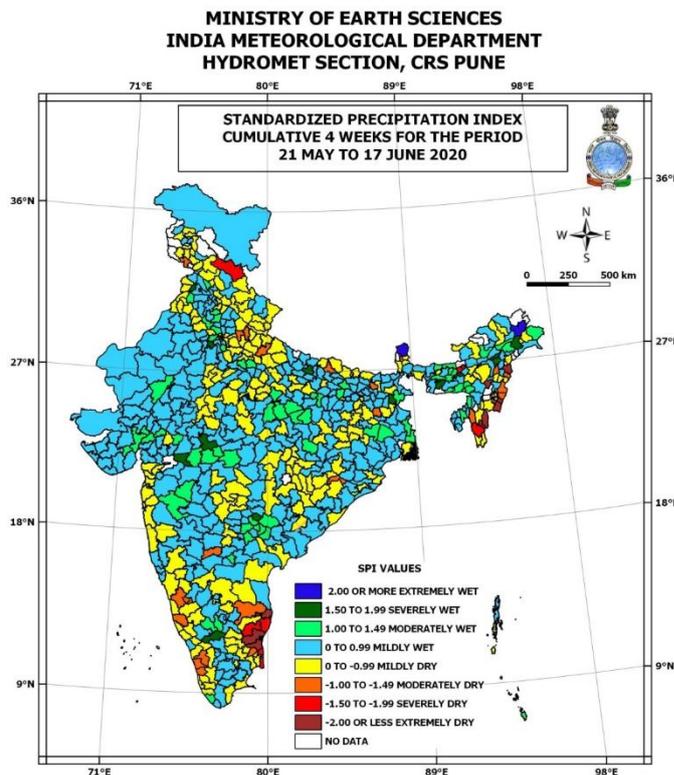
Difference in NOAA/VIIRS/BLENDED NDVI between week number 24, 2020 and week number 23, 2020



Agricultural vigour was good at few places of Valley region in Jammu & Kashmir and at isolated places of Uttarakhand, Himachal Pradesh, & North Eastern states. 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 Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sub Himalayan West Bengal and North Eastern states

**Standardised Precipitation Index
Cumulative 4 weeks for the period 21st May to 17th June 2020**



- Extremely/ Severely wet conditions exist in Lower Dibbang Valley district of Arunachal Pradesh; Jorhat, Tinsukia, Kamrup Metro districts of Assam; Rewari district of Haryana; Chamarajanagar district of

Karnataka; Barwani, Dewas districts of West Madhya Pradesh; East Garo Hills district of Meghalaya; Kapurthala district of Punjab; Basti district of Uttar Pradesh; Kolkata district of West Bengal; North Sikkim district of Sikkim; Sahibganj district of Jharkhand; Peddapalle district of Telangana.

- Extremely/Severely dry conditions exist in Darrang districts of Assam; Lahaul & Spiti district of Himachal Pradesh; Chandel district of Manipur; Champhai, Lunglei, Serchhip districts of Mizoram; Tuensang, Parem districts of Nagaland; Chennai, Cuddalore, Kanchipuram, Nagapattinam, Tiruvallur, Tiruvannamalai, Viluppuram districts of Tamilnadu.
- 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 24th June, 2020

- Meteorological sub-division wise detailed 5 days precipitation forecast is given in following table.
- Heat Wave conditions very likely at a few places over West Rajasthan and in isolated pockets over East Rajasthan during next 24 hours and in isolated pockets over West Rajasthan during subsequent 24 hours.
- No significant change in maximum temperatures likely over remaining parts of the country during next 3 days.

5 Day Rainfall Forecast (MID-DAY)

19-June-2020

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

19 June (Day 1):

- **Heavy to very heavy rainfall with extremely heavy falls** at isolated places very likely over Meghalaya; **Heavy to very heavy rainfall** at isolated places over Assam, Sub-Himalayan West Bengal & Sikkim and Konkan & Goa and **heavy rainfall** at isolated places over East Uttar Pradesh, East Rajasthan, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra and Coastal Karnataka.
- **Thunderstorm accompanied with lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi and Telangana and **with lightning** at isolated places over Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Gujarat state and Coastal Karnataka.
- **Heat wave** conditions very likely at a few places over West Rajasthan and in isolated pockets over East Rajasthan.
- **Duststorm/Thunderstorm accompanied with lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over East Rajasthan and
- **Duststorm** at isolated places over West Rajasthan.
- **Strong Wind** (wind speed reaching 50-60 kmph) very likely over Southwest & adjoining Westcentral Arabian Sea. **Squally Weather** (wind speed reaching 40-50 kmph) along & off Gujarat coast. Fishermen are advised not to venture into sea over these areas.

20 June (Day 2):

- **Heavy to very heavy rainfall** at isolated places very likely over Chhattisgarh, Bihar, Jharkhand and Odisha and **heavy rainfall** at isolated places over East Uttar Pradesh, East Madhya Pradesh, West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Coastal Karnataka and Kerala & Mahe.
- **Thunderstorm accompanied with lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, East Rajasthan and Telangana and **with lightning** at isolated places over Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Gujarat state and Coastal Karnataka.
- **Heat wave** conditions very likely in isolated pockets over West Rajasthan.
- **Strong Wind** (wind speed reaching 50-60 kmph) very likely over Southwest & adjoining Westcentral Arabian Sea; (wind speed reaching 40-50 kmph) over Eastcentral Arabian Sea. Fishermen are advised not to venture into sea over these areas.

21 June (Day 3):

- **Heavy to very heavy rainfall** at isolated places very likely over East Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Odisha and Kerala & Mahe and **heavy rainfall** at isolated places over Uttarakhand,

West Madhya Pradesh, Vidarbha, West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Rayalseema, Coastal Karnataka and Tamilnadu, Puducherry & Karaikal.

- **Thunderstorm accompanied with lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over Punjab, Haryana, Chandigarh & Delhi and East Rajasthan and **with lightning** at isolated places over Uttar Pradesh, Bihar and Jharkhand.
- **Strong Wind** (wind speed reaching 50-60 kmph) likely over Southwest & adjoining Westcentral Arabian Sea; (wind speed reaching 40-50 kmph) over Eastcentral Arabian Sea. Fishermen are advised not to venture into sea over these areas.

22 June (Day 4):

- **Heavy to very heavy rainfall** at isolated places likely over Coastal Karnataka and Kerala & Mahe and **heavy rainfall** at isolated places over Uttarakhand, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Odisha, Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Coastal Andhra Pradesh & Yanam, South Interior Karnataka and Tamilnadu, Puducherry & Karaikal.
- **Thunderstorm accompanied with lightning & gusty wind (speed reaching 30-40 kmph)** likely at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and East Rajasthan and **with lightning** at isolated places over East Uttar Pradesh, Bihar and Jharkhand.
- **Duststorm/Thunderstorm** likely at isolated places over West Rajasthan.
- **Strong Wind** (wind speed reaching 50-60 kmph) likely over Southwest & adjoining Westcentral Arabian Sea; (wind speed reaching 40-50 kmph) over Eastcentral Arabian Sea. Fishermen are advised not to venture into sea over these areas.

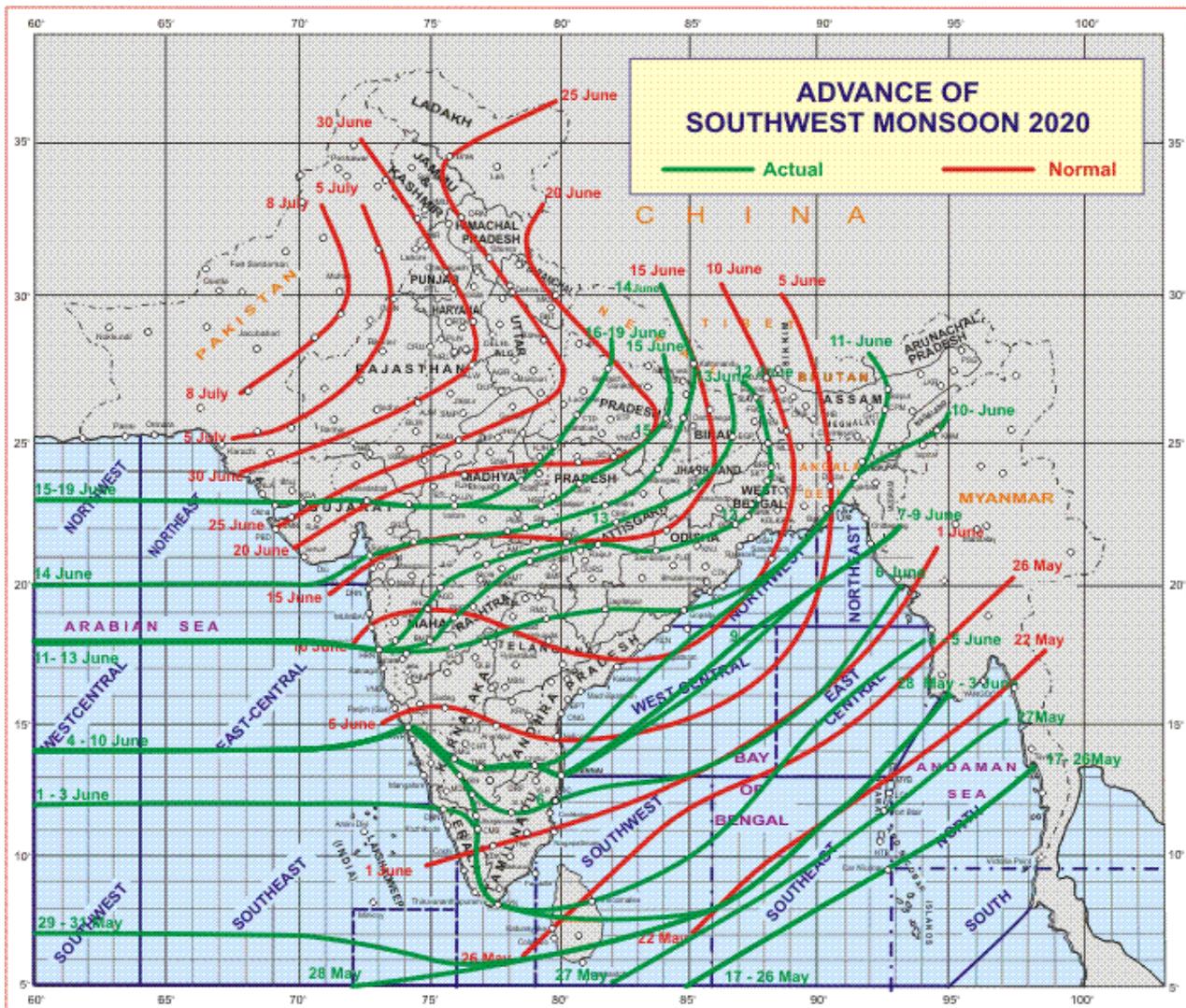
23 June (Day 5):

- **Heavy to very heavy rainfall** at isolated places likely over Uttarakhand and Coastal Karnataka and **heavy rainfall** at isolated places over Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Telangana, South Interior Karnataka, Tamilnadu, Puducherry & Karaikal and Kerala & Mahe.
- **Thunderstorm accompanied with lightning & gusty wind (speed reaching 30-40 kmph)** likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit- Baltistan & Muzaffarabad, Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and East Rajasthan and **with lightning** at isolated places over Himachal Pradesh, East Uttar Pradesh and Jharkhand.
- **Duststorm/Thunderstorm** likely at isolated places over West Rajasthan.
- **Strong Wind** (wind speed reaching 50-60 kmph) likely over Southwest & adjoining Westcentral Arabian Sea and (wind speed reaching 40-50 kmph) over Eastcentral Arabian Sea. Fishermen are advised not to venture into sea over these areas.

Weather Outlook for subsequent 2 days from 24th June to 26th June, 2020

- Fairly widespread to widespread rain/thundershowers with isolated heavy to very heavy rainfall likely over Northeast India, plains of Northwest India, north Madhya Pradesh and along southern parts of West Coast and Lakshadweep.
- Scattered to fairly widespread rainfall likely over rest parts of the country except over West Rajasthan, Punjab and Gujarat state where isolated to scattered rainfall is likely.

Advance of SouthWest Monsoon 2020



- The Northern Limit of Monsoon (NLM) continues to pass through Lat. 23°N/Long. 60°E, Kandla, Ahmedabad, Indore, Raisen, Khajuraho, Fatehpur, Bahraich and Lat. 28°N/Long. 81.5°E.

- **Strong Wind** (wind speed reaching 50-60 kmph) very likely over Southwest & adjoining Westcentral Arabian Sea along with **Squally Weather** (wind speed reaching 40-50 kmph) along & off Gujarat coast on 19th; and with **Strong Wind** (wind speed reaching 50-60 kmph) very likely over Southwest & adjoining Westcentral Arabian Sea; (wind speed reaching 40-50 kmph) over Eastcentral Arabian Sea from 20th to 23rd, fishermen are advised not to venture into sea over these areas.. Fishermen are advised not to venture into sea over these areas.

Salient advisories

- **As Thunderstorm accompanied with lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad on 19th, 20th & 23rd, over Uttarakhand and Telangana on 19th & 20th, over Punjab, Haryana, Chandigarh & Delhi from 19th to 23rd, over East Rajasthan from 20th to 23rd and over West Uttar Pradesh on 22nd & 23rd, **with lightning** at isolated places over Himachal Pradesh on 19th & 23rd, over Uttar Pradesh from 19th to 21st, over Madhya Pradesh, Chhattisgarh, Gujarat state and Coastal Karnataka on 19th & 20th, over Bihar from 19th to 22nd, over Jharkhand from 19th to 23rd and over East Uttar Pradesh on 22nd & 23rd, **along with Duststorm/Thunderstorm accompanied with lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over East Rajasthan with **Duststorm** at isolated places over West Rajasthan on 19th along with **Dust storm/ Thunderstorm** over West Rajasthan on 22nd & 23rd, 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 Heat wave** conditions very likely at a few places over West Rajasthan and in isolated pockets over East Rajasthan on 19th and over West Rajasthan on 20th, apply irrigation to summer vegables and cotton crop at regular intervals and increase the frequency of irrigation at critical growth stages; carry out mulching with straw/polythene to conserve soil moisture.
- **As rain/thundershowers likely at most places** over Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Nagaland Manipur Mizoram & Tripura, Sub-Himalayan West Bengal & Sikkim, Konkan & Goa, Coastal Karnataka and Lakshadweep from 19th to 23rd, over Bihar & Jharkhand from 19th to 22nd, over Gangetic West Bengal from 19th to 21st, over Chhattisgarh and Kerala & Mahe from 20th to 23rd, over East Madhya Pradesh from 21st to 23rd, over Odisha on 21st & 23rd, over Uttarakhand and Vidarbha on 22nd & 23rd, **at many places** over Chhattisgarh and Kerala & Mahe on 19th, over East Madhya Pradesh on 19th & 20th, over Odisha on 19th, 20th & 23rd, over Madhya Maharashtra on 19th, 22nd & 23rd, over Uttarakhand on 20th & 21st, over Telangana from 20th to 23rd, over Vidarbha and Rayalaseema on 21st, over West Madhya Pradesh, Coastal Andhra Pradesh & Yanam and South Interior Karnataka from 21st to 23rd, over Gangetic West Bengal, East Uttar Pradesh, Marathwada and North Interior Karnataka on 22nd & 23rd and over West Uttar Pradesh and Himachal Pradesh on 23rd, along with **Heavy to very heavy rainfall with extremely heavy falls** at isolated places very likely over Meghalaya on 19th; **Heavy to very heavy rainfall** at isolated places over Assam, Sub-Himalayan West Bengal & Sikkim and Konkan & Goa on 19th, over Chhattisgarh on 20th, over Bihar, Jharkhand and Odisha on 20th & 21st, over East Madhya Pradesh on 21st, over Kerala & Mahe on 21st & 22nd, over Coastal Karnataka on 22nd & 23rd and over Uttarakhand on 23rd; **heavy rainfall** at isolated places over Gangetic West Bengal, Odisha, Madhya Maharashtra on 19th, over East Uttar Pradesh on 19th & 20th, over Coastal Karnataka on 19th to 21st, over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura from 19th to 23rd, over Bihar, Jharkhand on 19th & 22nd, over Madhya Pradesh, Chhattisgarh on 19th, 22nd & 23rd, over East Rajasthan on 19th & 23rd, over East Madhya Pradesh on 20th, West Bengal & Sikkim on 20th & 21st, over Assam & Meghalaya and Konkan & Goa from 20th to 23rd, over Kerala & Mahe on 20th & 23rd, over West Madhya Pradesh and Rayalseema on 21st, over Uttarakhand on 21 & 22nd, over Vidarbha and Tamilnadu, Puducherry & Karaikal from 21st to 23rd, over Odisha and Andaman & Nicobar Islands on 22nd, over Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam

and South Interior Karnataka on 22nd & 23rd, and over Uttar Pradesh and Telangana on 23rd, 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:**

- sowing of maize, drill sowing of rice and sowing of ginger and turmeric in Coastal Karnataka and sowing of cowpea, green gram, black gram, horse gram, field bean, maize, groundnut crops, tomato, chilli, brinjal, radish, ladies finger, beans, watermelon, carrot, onion and planting of mango, banana, sapota & guava in South Interior Karnataka.
- Transplanting of paddy seedlings at 4 to 5 leaf stage in Central Zone of Kerala.
- sowing of sorghum, bajra, groundnut, maize, redgram, ragi and maize in North Coastal Zone of Andhra Pradesh.
- seed bed preparation of Sali rice for timely transplanting in Lower Brahmaputra Valley Zone of Assam.
- field preparation for sowing of cotton, arhar, maize and paddy in upland in Odisha.
- sowing of dry seeded long duration paddy in Gangetic West Bengal.
- nursery preparation of rice, brinjal, tomato and sowing of cucurbits, green gram, black gram, pigeon pea and cotton crops in South Gujarat.
- sowing of maize, black gram and soybean in Jhabua Hills Zone of Madhya Pradesh.
- sowing of kharif crops like pigeon pea, soybean, maize, groundnut, etc. and nursery preparation for paddy in Northern Hill Zone of Chhattisgarh.
- transplanting of rice and sowing of kharif pulses in Valley Temperate Zone of Jammu & Kashmir.
- sowing of French bean and bitter gourd in Mid Hills Sub Humid Zone of Himachal Pradesh.
- transplanting of rice in Central Plain Zone of Punjab.
- preparation of nurseries of paddy and early chilli and sowing of pigeon pea in Eastern of Zone of Haryana.
- preparation of paddy nurseries and sowing of pigeon pea, green gram and black gram in Uttar Pradesh.
- Land preparation for transplanting of rice seedlings in Uttarakhand.
- Field preparation for sowing kharif crops like pearl millet, sorghum, maize, cluster bean, etc in Rajasthan.
- transplanting of rice seedlings, brinjal and chilli and sowing of groundnut and vegetables like okra in Konkan Zone of Maharashtra.

Detailed Agromet Advisories

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

Realised Rainfall: Significant rainfall occurred in all the districts of Kerala; in Coimbatore, Nilgiris districts of Tamilnadu; all the other districts except Anantapur & Chittoor districts of Andhra Pradesh; all districts except Jogulamba, Gadwal & Mahabubnagar districts of Telangana; all districts of Coastal Karnataka, in all districts except Dharwad, Gadag, Raichur and Yadgir districts of North Interior Karnataka and in Chikkamagaluru, Hassan, Kodagu and Shivamogga districts of South Interior Karnataka. Weather remained mainly dry over rest of the districts of Karnataka.

Advisories:

- **As Thunderstorm accompanied with lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over Telangana on 19th & 20th **with lightning** at isolated places over Coastal Karnataka 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 indoor during thunderstorm/dust storm.
- As **rain/thundershowers** likely **at most places** over Coastal Karnataka and Lakshadweep from 19th to 23rd, over Kerala & Mahe from 20th to 23rd, **at many places** over Kerala & Mahe on 19th, over Telangana from 20th to 23rd, over Rayalaseema on 21st, over Coastal Andhra Pradesh & Yanam and South Interior Karnataka from 21st to 23rd and over North Interior Karnataka on 22nd & 23rd, along with **Heavy to very heavy rainfall** at isolated places over Kerala & Mahe on 21st & 22nd and over Coastal Karnataka on 22nd & 23rd; **heavy rainfall** at isolated places over Coastal Karnataka on 19th to 21st, over Kerala & Mahe on 20th & 23rd, over Rayalaseema on 21st, over Tamilnadu, Puducherry & Karaikal from 21st to 23rd, over Coastal Andhra Pradesh & Yanam and South Interior Karnataka on 22nd & 23rd and over Telangana on 23rd, 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, drain out excess water from crop fields. Undertake sowing of maize, drill sowing of rice and cotton dibbling. Continue sowing of ginger and turmeric.
- In North Interior Karnataka, undertake sowing of green gram, black gram, soybean, sorghum, red gram crops under sufficient moisture condition. In shallow black soil and red soils, sowing of green gram, red gram, bajra, sesamum, Niger, Navane and groundnut (bunch type), horsegram, castor may be taken up on preference. In medium deep and deep black soils, sowing of green gram, red gram, bajra, Navane and groundnut (bunch type), castor, onion, chili may be taken up on preference. To make efficient use of available soil and water resources and to get higher returns, intercropping systems of bajra + groundnut (bunch) in 2:4 row proportion; bajra + red gram; bajra + castor; bajra + groundnut (bunch type) may be taken up. Use short duration varieties of red gram for sowing. Grow 4-6 lines of fodder jowar, bajra, & maize on the edge of main field where cowpea, green gram & black gram crops are grown as main crops, to protect the crop from sucking pests.
- In South Interior Karnataka, under sufficient moisture condition undertake sowing of cowpea, green gram, black gram, horse gram, field bean, maize, groundnut crops, tomato, chilli, brinjal, radish, ladies finger, beans, watermelon, carrot, onion and planting of mango, banana, sapota & guava. Under mono cropping, the long duration crops red gram, castor and maize and under double cropping, the medium to short duration crops groundnut, cowpea and black gram are suggested.

Kerala

- In High Altitude Zone, this is the ideal time for planting cardamom. Apply green leaf mulching in ginger, to prevent soil erosion and to increase the organic matter content in the soil.
- In Problem Areas Zone, to control sigatoka leaf spot disease in banana, cut and remove all severely affected leaves and spray Propiconazol 1ml/ litre of water after current spell of rain.
- In Northern Zone, this is a suitable time for transplanting of coconut seedlings.
- In Central Zone, transplant paddy seedlings at 4 to 5 leaf stage. The root of seedlings should be soaked for 30 minutes in a solution of Pseudomonas culture @10g per one litre of water for one kg of seeds to control sheath blight, sheath rot, leaf spot disease etc.

- In Southern Zone, for micronutrient deficiency control in vegetables and other similar crops, spray KAU Sampoorana Multimix @ 5 gram/ litre by an interval of 15 days.

Andhra Pradesh

- In North Coastal Andhra Pradesh, utilizing the realized rainfall, undertake sowing of sorghum, bajra, groundnut, maize, redgram, ragi and maize.
- In East Godavari district, as there is a moderate rainfall forecast during this week, provide good drainage to both rice and vegetable nurseries and main field crops to avoid lodging and root & stem rot diseases. Stacking in vegetables can minimize the losses of heavy rainfall in vegetables.
- In Scarce Rainfall Zone, undertake nursery sowing of rice with assured irrigation.
- In Guntur and Krishna districts, undertake sowing of green manure crops like janumu, pillipesara, jeeluga by utilizing the realized rainfall.
- In Chittoor district, undertake sowing of paddy nurseries; apply Carbofuran 3g granules @ 150 g per cent nursery 1 week prior to pulling of the nursery.

Telangana

- All the districts of the state except Narayanpet district have received cumulative rainfall of more than 50-60 mm. By utilizing the already received and forecasted rainfall for next five days, farmers are advised to take-up sowing of redgram, cotton, jowar, soybean, green gram etc., as rainfed crops.
- Farmers are advised to raise rice nurseries of long duration varieties wherever sufficient water is available.
- By taking advantage of the present rains, take-up sowing of sunhemp and dhaincha as in-situ green manure crop preceding rice. Sow green gram as catch crop preceding rice depending on the availability of release of water.
- Don't sow the paddy nurseries using Telangana Sona (RNR 15048) in the month of June.
- Do not sow cotton and soybean in light soils under rainfed conditions.
- Sow greengram, soybean after seed treatment with Carbendazim @ 2.5 g and Carbosulfan @ 30 g per kg of seed.
- Take-up sowing of redgram + cotton (1:4 or 1:6) ratio and redgram + jowar (1:4) ratio and redgram + soybean (1:7) ratio as intercrop.

Tamil Nadu

- In Southern Zone, weather is congenial for micronutrient deficiency in guava trees. A combined spray should be given containing ZnSO₄, MgSO₄ and MnSO₄ @ 0.5% and CuSO₄ and FeSO₄ @ 0.25 % plus Teepol @ 1ml per 5 litre of solution on new flush, one month after, flowering and fruit set stages of guava.
- In Western Zone, this is optimum time for sowing of irrigated maize and sunflower.
- In Cauvery Delta Zone, to control the reduced crop growth in rice due to prevailing weather condition, apply 10 kg Muriate of Potash as top dressing and 0.5% Zinc sulphate as foliar spray.
- In South Zone, prevailing weather condition is conducive for incidence of citrus canker disease; spray Streptomycin Sulphate 500-1000 ppm or Phytomycin 2500 ppm or Copper Oxochloride 0.2% every fortnight.
- In North Western Zone, to improve the bulb yield of onion, give foliar spraying with arka microbial consortia @ 20 g / liter of water.
- In Karaikal & Pondicherry, to prevent early shedding of buds and squares in cotton spray 40 ppm NAA (40 mg of Naphthalene Acetic Acid in one litre of water) at 60 and 90 DAS on the crops.
- In High altitude hilly zone, weather is suitable for sowing of ginger crop, before sowing of tuber, seeds should be treated with pseudomonas 5 gram/1 kg of seeds to break seed dormancy and to improve the germination of seeds.

Animal Husbandry

- In Karnataka, keep animals indoor during rainfall. Vaccinate the cow against the Black Quarter disease.
- In Tamil Nadu, farmers are advised to withdraw the feed for the poultry during hot part of the day to avoid heat stroke; provide cool drinking water.

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

Realised Rainfall: Rainfall occurred in all districts of Meghalaya and Tripura; all districts except Anjaw, Lohit, Lower Subansari and Tawang of Arunachal Pradesh; all districts except Darrang, and Karbi Anglong of Assam; all districts except Champhai and Chhimituipui, of Mizoram; Bishnupur, Churachandpur, Imphal West, Senapati, Tamenglon and Ukhrul district of Manipur; all districts of Nagaland except Paren.

Advisories:

- As **rain/thundershowers** likely at **most places** over Arunachal Pradesh, Assam & Meghalaya, Nagaland Manipur Mizoram & Tripura from 19th to 23rd, along with **Heavy to very heavy rainfall with extremely heavy falls** at isolated places very likely over Meghalaya on 19th; **Heavy to very heavy rainfall** at isolated places over Assam on 19th; **heavy rainfall** at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura from 19th to 23rd, over Assam & Meghalaya from 20th to 23rd, 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, spray Chloropyrifos @ 1-1.5ml/litre of water twice at 7-10 days interval for stem borer infestation in maize crop after current spell of rain. Spray Alphamethrin 10 % EC @ 2 ml/litre of water against Fall Army worm (FAW) in maize crop; destroy the infected plant or plant part by deep burying in the soil. Neem oil 5 ml/litre water (0.5%) can be sprayed to control FAW after current spell of rain. Undertake field preparation for sowing/transplanting of rice. Provide mulching to ginger with crop residue or dry leaves to retain the soil moisture; however, make sure to avoid water stagnation when rain by providing proper drainage channel in the field

Assam & Meghalaya

- In Hill Zone of Assam, continue planting of ginger, papaya, pineapple and banana and sowing of fodder crops (bajra, sorgum maize, lobia). Continue sowing of cotton 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.
- In Lower Brahmaputra Valley Zone, complete nursery seed bed preparation of Sali rice for timely transplanting and proper utilization of the rainfall and undertake main field preparation. The stem borer attack in sugarcane during the summer period can be checked by burying/ burning of infested canes; for effective control, apply Monocrotophos or Endosulfan @ 150-200ml in 150 litres of water for 1 bigha crop area when rainfall recedes. Undertake harvesting of matured cobs of maize and sowing of soybean.
- In Upper Brahmaputra Valley Zone, continue sowing of *Sali* rice in the nursery beds and main field preparation for transplanting of *Sali* rice. Undertake transplanting of papaya. Proper sanitation along with disposal of the fallen fruits will reduce the infestation of the sucking pests like fruit sucking moth in citrus; baiting with Malathion 50 EC (1 ml in 1 litre of water) with molasses (1%) and fruit juice help in controlling the pest.

- In Barak Valley Zone, as soil moisture is available in the field, complete the preparation of nursery bed at the earliest for sowing of Sali rice. In chronically flood affected areas, high lands should be selected for raising of community nursery to meet the seedling requirement when flood recedes. To control Yellow Vein Mosaic in okra, spray insecticides like Dimethoate or Oxydemeton Methyl; the first spray should be given within 20 days after emergence of seedlings and altogether 5-6 sprays are required to get a disease free crop; spraying should be done in sunny day.
- In Central Brahmaputra Valley Zone, farmers of flash flood affected areas are advised to collect submergence tolerant varieties of *Sali* rice which have ability to survive under water for 10-15 days; undertake sowing of seeds in nursery bed during early part of June. Undertake main field preparation for transplanting of *Sali* paddy for very low lying areas due to sufficient water accumulated in the field. For low lying areas, undertake transplanting of seedlings when its height becomes 15 cm with 3 to 4 leaves. Continue harvesting of matured *Boro* rice after current spell of rain; already harvested crop should immediately be transported to a safer place to avoid post harvest loss.
- In North Bank Plain Zone, continue sowing of *Sali* rice in the nursery beds. Present weather condition is favorable for shoot borer attack in sugarcane crop. To control the pest, burying or burning of the infested canes along with proper earthing up is advocated. Also weather is favourable for hairy caterpillar in jute; farmers are advised to pick the egg masses of hairy caterpillar and caterpillars by hand and destroy by putting them in Kerosenized water.
- In Meghalaya, continue nursery sowing of *Sali* rice and main field preparation for transplanting of *Sali* rice. Spray Azadirachtin 1500 ppm @ 5ml/ litre of water inside the whorls against Fall Army Worm incidence in maize when weather is clear. Ensure proper drainage system in the ginger/turmeric and vegetable crop field.

Manipur, Mizoram, Tripura and Nagaland

- In Manipur, continue sowing of soybean, *kharif* maize, groundnut, black gram and rice bean and planting of ginger. Continue nursery raising of *kharif* rice; maintain 5-8 cm water level at Pre-*kharif* rice field at flowering stage. Community based rice nursery may be raised to avoid loss of nursery due to flooding. To control Fall Army worm in maize, manual destruction of egg masses and caterpillars may be done. Pheromone traps @ 4/ha for monitoring and 10/ ha for mass trapping of adult insects may be done. Spray Emamectin Benzoate 5% SG @6/15 litre water if infestation is above ETL. Spray Dichlorovos 76% EC @ 1ml/ litre of water if hairy caterpillar infestation in soybean/ groundnut is above ETL after current spell rain.
- In Mizoram, undertake repairing of the bunds of main field for maintaining the proper water level (10-15 cm) in the rice field. Excess water must be drain out to the pond
- In Tripura, continue nursery raising of *Aman* rice and sowing of groundnut in upland and medium upland. Complete the sowing of maize in upland and medium upland. Complete sowing of *Aus* rice; maintain 2-3 cm of water in the field; field to field irrigation should be avoided; after 30 days of transplanting, maintain 2 to 5cm of water.
- In Nagaland, continue nursery sowing of rice. Undertake field preparation for sowing of soybean and groundnut. Ensure proper drainage to prevent soft rot and bacterial wilt in ginger; application of neem oil may be done as a prophylactic measure against various insect pests. Cover tubers of potato by a layer of soil to protect tubers against greening.

Animal Husbandry

- In Northeastern region, immunize the farm cattle against FMD (Foot & Mouth Disease), HS (Hemorrhagic Septicemia) and BQ (Black Quarter) diseases after consultation with local veterinary doctor. Vaccinate pig against Swine Fever. De-worming must be done in pig at the beginning of the rainy season

Fishery

- In Northeastern region, repair damaged dykes of fisheries ponds and take care so that fishes does not escape. Maintain outlet pipe from the pond so that excess water pass away and the water level is maintain.
- In Tripura, fish cultivation might get affected by heavy rain in low lying areas. Drain out excess water and apply lime 48 kg per kani followed by FYM, 300 to 350 kg per kani after 15 days of application of lime.

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

Realised Rainfall: Significant rainfall occurred in all districts of Andaman & Nicobar Islands, in Araria Aurangabad, Banka, Begusarai, Bhagalpur, Bhojpur, East Champaran, Gaya, Jahanabad, Jamui, Khagadia, Kishanganj, Lakhisarai, Madhepura, Monghyr, Muzaffarpur, Nalanda, Nawada, Patna, Purnea, Rohtas, Samstipur, Saran, Sheikpura, Sitamarhi, Supaul and West Champaran districts of Bihar; in all district of Jharkhand except Deoghar and Gumla; in all districts of Odisha except Bhadrak and in all districts of West Bengal & Sikkim. Weather remained dry/mostly dry over the rest of the region.

- **Advisories: As Thunderstorm accompanied with lightning** very likely at isolated places over over Bihar from 19th to 22nd and over Jharkhand from 19th to 23rd, 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, over Bihar & Jharkhand from 19th to 22nd, over Gangetic west Bengal from 19th to 21st, over Odisha on 21st & 23rd, **at many places** over Odisha on 19th, 20th & 23rd and over Gangetic West Bengal on 22nd & 23rd, along with **Heavy to very heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim on 19th, over Bihar, Jharkhand and Odisha on 20th & 21st; **heavy rainfall** at isolated places over Gangetic West Bengal, Odisha, on 19th, over Bihar, Jharkhand on 19th & 22nd, over West Bengal & Sikkim on 20th & 21st, over Odisha and Andaman & Nicobar Islands on 22nd and over Sub-Himalayan West Bengal & Sikkim on 22nd & 23rd, 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

- Taking the advantage of recent rains, start field preparation for sowing of cotton, arhar, maize and paddy in upland. Weather is congenial for nursery sowing of rice under irrigated condition; 10 decimal area is sufficient for nursery sowing for one acre planting; plough and pulverize the land thoroughly; make 6 inches raised beds of 3 ft width and convenient length; keep 1 ft wide channel between 2 beds for irrigation and drainage; apply 40 baskets of FYM, 12 kg Super Phosphates and 2 kg MOP to the beds; use 25 kg of seeds/acre; before sowing, treat the seeds with fungicide. Undertake sowing rice where direct seeding is practiced; incorporate FYM or compost @ 2000 Kg/acre; apply 26 kg DAP and 20 kg MoP per acre during last ploughing; sow the short duration varieties @ 25-30 kg/acre behind the plough maintaining 15-20 cm row to row distance. Prepare nursery bed for sowing brinjal; choose a new site for nursery bed every season; sow seeds after proper seed treatment; cover the nursery bed with paddy straws or dry leaves for better germination.

Bihar

- Undertake nursery sowing for medium duration of rice varieties such as Sita, Santosh, Saroj, Rajshri, Prabhat, Rajendra suhasni, Rajendra kasturi and Rajendra bhagwati in North Bihar; before sowing, treat

seeds with Carbendazim@2.0 g/kg seed; carry out weeding in 10-12 days old paddy nursery. Undertake sowing of kharif vegetables such as lady's finger, pumpkin, cucumber, sponge gourd, bottle gourd, etc. Undertake sowing of kharif onion on raised beds after seed treatment with Captain or Thiram @ 2 g/kg of seeds. Continue sowing of maize. Continue harvesting of matured pods of summer moong and matured mango/litchi fruits. To protect summer vegetables from leaf feeder/fruit borer, spray Dimethoate 30 EC @1-1.5ml/litre of water on clear days.

Jharkhand

- Continue land preparation for timely (15 to 30 June) sowing of direct seeded upland rice; complete sowing of upland rice by 30th June; apply 2 tonnes of FYM during field preparation; direct seeding should be done behind the plough by applying 30-40 kg Urea, 50 kg SSP & 20 kg MoP; before sowing, treat the seeds with Bavistin @ 2g/kg seeds. Continue sowing of maize, arhar, marua and groundnut. Undertake sowing of pigeon pea; before sowing, treat seeds with Thiram @ 2.5 gm or Carbendazim @ 1 gm per kg of seeds and for better production, treat with Rhizobium and PSB. Start preparation for establishing new fruit orchards. Farmers having assured irrigation facility may proceed for raising of rice seedlings; raise the seedlings phase wise (3-4 phases) at an interval of 3-4 days so that suitable seedlings may be available at the time of transplanting; mix 100 kg compost, 2.5 kg Urea, 6 kg Single Super Phosphate and 1.5 kg Muriate of Potash in the soil of 100 sq. meter area; use 16 to 18 kg seeds for transplanting in 1 acre of land.

West Bengal

- In Sub-Himalayan West Bengal, undertake nursery bed preparation for raising kharif rice; soak the seeds in water for 24 hrs and treat them with Bavistin @ 2 g per kg of seeds. Do not allow water stagnation in the seedbed for a long time. Rice seedlings will be ready for transplant at 21 days of age; for transplanting, prepare the main field by ploughing. To control stem rot of jute, spray Copper oxychloride @ 3-4 g/litre of water; for management of sucking pest infestation, spray Dinoteferun 20% SG @ 1g/litre of water + 0.5ml/litre sticker.
- In Gangetic West Bengal, in Coastal Saline Zone, undertake sowing of dry seeded long duration paddy after proper tillage operation like ploughing, weeding, etc.; before sowing, treat seeds properly with Diethane M-45; choose from medium duration varieties MTU-7029, MTU1001, Pratiksha, etc. and long duration varieties CR1017, CR1018, CR1019, Sabita, etc. Make pits for planting saplings of mango, guava and coconut. In New Alluvial Zone, prepare nursery for chilli, kharif cucurbits, brinjal and early cauliflower (maturing in the month of September).

Andaman & Nicobar Islands

- Treat the paddy seed with Carbendazim 2 g/kg of seeds before keeping for germination. Do weeding in vegetable field and keep open the bunds to drain out excess rain water. Transplant 30 to 40 days old seedlings of brinjal and chilli in upland area or BBF with well drainage facility. Green manure crop like cowpea can be grown in coconut as cover crop and incorporate into the soil.

Animal Husbandry

- In Bihar, if green fodder is not available for animals, administer Vitamin A injections. The jowar grown in the summer contains some poisonous elements which can be harmful for the animals; provide fresh and cool water 2-3 times daily before feeding jowar (sown in April and harvested in June) to animals.
- In Andaman & Nicobar Islands, keep the day old chicks inside the shelter and keep the floor dry of poultry shed.

Fishery

- In A&N Islands, select IMC brooders with oozing milt and egg; use hormone injection ovaprim @ 0.5 ml/kg for female and 0.2 ml/kg of male.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Rainfall occurred in all districts of Konkan and Goa, **Madhya Maharashtra, Marathwada and Vidarbha** ; all districts except Banaskantha, Daman and Tapi districts of Gujarat Region, in all districts except Devbhoomi Dwarka, Jamnagar, Kutch and Morbi districts of Saurashtra & Kutch. Weather remained mainly dry over remaining districts of Gujarat.

Advisories:

- **As Thunderstorm accompanied with lightning** very likely at isolated places over Gujarat state 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 indoor during thunderstorm/dust storm.
- **As rain/thundershowers likely at most places** over Konkan & Goa from 19th to 23rd, **at many places** over Madhya Maharashtra on 19th, 22nd & 23rd, over Vidarbha on 21st and over Marathwada on 22nd & 23rd, along with **Heavy to very heavy rainfall** at isolated places over Konkan & Goa on 19th; **heavy rainfall** at isolated places over Madhya Maharashtra on 19th, over Konkan & Goa from 20th to 23rd, over over Vidarbha 21st to 23rd, 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, very heavy/ heavy rains are expected during next 4-5 days, farmers are advised to dig deep furrow on all four sides of the rice and finger millet nurseries where seedlings have emerged for drainage of excess water. Undertake transplanting of rice seedlings. Undertake sowing of groundnut. Arrange adequate drainage facilities in orchards and vegetable fields. Drain out excess water from orchards, vegetable fields and already sown rice, finger millet nurseries. Due to heavy rainfall during last week, if there is damage in rice nursery, then use sprouted rice seeds in raised nurseries. Undertake sowing of vegetables like okra and transplanting of brinjal and chilli.
- In Madhya Maharashtra, continue nursery sowing of rice and transplanting of 21-25 days old rice seedlings. Undertake sowing of *kharif* crops like cotton, groundnut, soybean, black gram and green gram and pigeon pea where good rainfall has occurred and there is good soil moisture condition. In Marathwada, continue preparatory tillage operations like ploughing in fallow lands and keep the inputs ready for *kharif* sowing and undertake *kharif* sowing after receipt of 75 to 100 mm of rainfall.
- In Marathwada, undertake sowing of *kharif* crops like cotton, pigeon pea, soybean, groundnut, green gram and black gram at vapsa condition. The places in Marathwada (Beed district : Beed, Dharur talukas, Hingoli district : Vasmat talukas, Jalna district : Jalna, Ghansangvi, Mantha, Partur talukas, Latur district : Jalkot, Chakur, Nilnga, Udgir talukas, Nanded district: Ardhapur, Biloli, Deglur, Hadgaon, Kandhar, Kinwat, Loha, Osmanabad talukas, district : Osmanabad, Lohara, Paranda, Tuljapur, Umarga talukas and Parbhani district : Gangakhed, Jintur, Puran, Sonpeth talukas) farmers are advised to wait for sowing in these talukas till receipt of 75 mm rainfall.
- In Vidarbha, Undertake sowing of *kharif* crops like cotton, soybean, pigeon pea, green gram and black gram after receipt of sufficient rainfall (about 75-100 mm monsoon rainfall). Avoid sowing under insufficient soil moisture condition. Undertake nursery sowing of rice.

Gujarat

- In South Gujarat, continue nursery preparation of rice, brinjal, tomato and undertake sowing of cucurbits. Undertake sowing of green gram, black gram, pigeon pea and cotton crops, where sufficient rain occurred. Continue planting of Greater Yam, Elephant Foot Yam and Tannia.
- In Saurashtra and Kutch, carry out sowing of groundnut, cotton, sesame, pearl millet, green gram, black

gram and cowpea in time, wherever sufficient rainfall for sowing is received. Procure good quality seeds for sowing of pigeon pea. Continue nursery preparation for tomato, chilli, brinjal and early cauliflower and sowing of cucurbits, ladyfinger, cluster bean, kidney bean, cowpea, tur, Amaranthus, fodder maize and fodder sorghum.

- In North Gujarat, continue land preparation for sowing of pearl millet, hybrid cotton & B.T. cotton; undertake sowing wherever sufficient rain occurred. Continue new plantation of horticultural crops. Store harvested produce of groundnut, green gram and sesame at safe place. Carry out picking of matured pods/fruits of vegetables.
- In Middle Gujarat, carry out nursery preparation for rice and vegetable crops like chilli, tomato, brinjal, etc. Continue land preparation for .undertake sowing where sufficient rain occurred ;sowing of pearl millet

Animal Husbandry

- In Gujarat, keeping in view of forecasted weather, do not keep the animal under tree due to possibility of thunderstorm accompanied with lightning. Under present weather condition keep animals in sheds.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in all districts of Chhattisgarh except Durg and in all districts of Madhya Pradesh except Ashoknagar, Bhind, Bhopal, Damoh, Datia, Guna, Gwalior, Jabalpur, Katni, Mandsaur, Morena, Panna, Rajgrh, Rewa, Sagar, Shajapur, Sheopur Kalan, Shivpuri, Tikamgarh and Umaria. Weather remained mainly dry over rest of the region.

- **Advisories: As Thunderstorm accompanied with lightning** very likely at isolated places over Madhya Pradesh and Chhattisgarh 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 indoor during thunderstorm/dust storm.
- As **rain/thundershowers** likely at **most places** over over Chhattisgarh from 20th to 23rd, over East Madhya Pradesh from 21st to 23rd, **at many places** over Chhattisgarh on 19th, over East Madhya Pradesh on 19th & 20th and over West Madhya Pradesh from 21st to 23rd, along with **Heavy to very heavy rainfall** at isolated places over Chhattisgarh on 20th, over East Madhya Pradesh on 21st; **heavy rainfall** at isolated places over Madhya Pradesh, Chhattisgarh on 19th, 22nd & 23rd, over East Madhya Pradesh on 20th and over West Madhya 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.

Madhya Pradesh

- In Jhabua Hills Zone, undertake sowing of maize, black gram and soybean crops. Make proper drainage channels in ginger/turmeric and vegetable fields as well as in vegetable nurseries.
- In the Nimar Valley Zone, apply well decomposed FYM @ 10 t/ha or poultry manure @ 2.5 t/ha before the last harrowing. For sowing of soybean, ensure the availability of seed treatment material like Penflifen + Trifloxystrobin (1ml/ kg seed) or Thiram + Carboxin (3 g/kg seed) as well as seed inoculation with Brady rhizobium japonicum and PSM cultures both @ 5 g/kg seed, Trichoderma 10 g/kg seeds. Also procure Thiamethoxam 30 FS (10 ml/kg seed) or Imidachloprid 48 FS (1.25 ml/kg seed) for seed treatment for prevention of Yellow Mosaic Virus disease in soybean.
- In Vindhya Plateau Zone, arrange all inputs for preparing paddy nursery for cultivation of transplanted rice. Undertake sowing of soybean after receiving at least 10 cm of rain; soybean may be sown by Ridge furrow

method and BBF method for better germination and safe drainage. This is the right time for field preparation of cucurbitaceous vegetable crops; prepare raised bed or thala for sowing of bottle gourd, pumpkin, cucumber, bitter gourd and ridge gourd; undertake sowing after receiving rains.

- In Bundelkhand Zone, make a pond in the field and repair bunds to collect rain water during monsoon. Undertake preparing the seed bed of tomato, chilli, brinjal, etc. for kharif season. Carry out digging of pits for establishing new orchards. Continue sowing of ginger and colocasia crops; select improved varieties and treat the seeds with fungicide before sowing.

Chhattisgarh

- In Chhattisgarh Plain Zone, undertake sowing of rice using common practices like biasi and transplanting; in addition, SRI technique and rice crop line seeding can also be adopted. Treat seeds with 17 % salt solution and in this manner good seeds should be selected; use clean water and sundry seeds; subsequently, treat seeds with Saaf super @ 2 g/ Kg of healthy seeds. Prepare field for sowing of soybean, maize and groundnut crops. Prepare seedlings for kharif vegetables; seeds of Pumpkin, Bitter guard & Bottle guard must be sown in the back yard; vegetable nursery should be sown in 15 cms high raised beds; protect nursery with white agronet (mosquito net) to prevent viral diseases; sowing should be done after seed treatment with fungicides against stem rot diseases; repair drainage channels and keep them in well maintained condition.
- In Northern Hill Zone, undertake sowing of kharif crops like pigeonpea, soybean, maize, groundnut, etc. Undertake nursery preparation for paddy; treat seeds with fungicide Carbendazim (2 gm/kg of seeds) before sowing in nursery.
- In Bastar Plateau Zone, undertake sowing of pigeon pea from 25th June to 15th July; sowing should be done in line. Undertake sowing of minor millet (Kodo) and finger millet.

Animal Husbandry

- Vaccinate the animal against Haemorrhagic septicaemia and Black quarter diseases; vaccinate poultry birds against Ranikhet disease (first F-1 at age of 7 days & second R2B at age of 8 weeks). Wheat, gram and lathyrus straw should be stored in safe place for feeding to animals.

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

Realised Rainfall : Significant rainfall occurred in Bageshwar, Champawat, Dehradun, Pithoragarh and Rudrapur districts of Uttarakhand; Ambedkar Nagar, Bahraich, Balrampur, Banda, Barabanki, Basti, Chandauli, Faizabad, Gonda, Gorakhpur, Kaushambi, Maharajganj, Sant Kabirnagar, Sant Ravidas Nagar, Shravasti, Sidharthnagar, Sultanpur and Varanasi districts of East Uttar Pradesh and Pilibhit district of West Uttar Pradesh; Banswara, Dungarpur, Pratapgarh, Udaipur districts in East Rajasthan.

Advisories

- **As Thunderstorm accompanied with lightning & gusty wind (speed reaching 30-40 kmph)** very likely at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad on 19th, 20th & 23rd, over Uttarakhand on 19th & 20th, over Punjab, Haryana, Chandigarh & Delhi from 19th to 23rd, over East Rajasthan from 20th to 23rd and over West Uttar Pradesh on 22nd & 23rd, **with lightning** at isolated places over Himachal Pradesh on 19th & 23rd, over Uttar Pradesh from 19th to 21st and over East Uttar Pradesh on 22nd & 23rd, **along with Duststorm/Thunderstorm accompanied with lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over East Rajasthan with **Duststorm** at isolated places over West Rajasthan on 19th along with **Dust storm/ Thunderstorm** over West Rajasthan on 22nd & 23rd, 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 Heat wave** conditions very likely at a few places over West Rajasthan and in isolated pockets over East Rajasthan on 19th and over West Rajasthan on 20th, apply irrigation to summer vegetables and cotton crop at regular intervals and increase the frequency of irrigation at critical growth stages; carry out mulching with straw/polythene to conserve soil moisture.
- As **rain/thundershowers** likely **at most places** over Uttarakhand on 22nd & 23rd, **at many places** over Uttarakhand on 20th & 21st, over East Uttar Pradesh on 22nd & 23rd and over West Uttar Pradesh and Himachal Pradesh on 23rd, along with **Heavy to very heavy rainfall** at isolated places over Uttarakhand on 23rd; **heavy rainfall** at isolated places over East Uttar Pradesh on 19th & 20th, over East Rajasthan on 19th & 23rd, over Uttarakhand on 21 & 22nd, over Uttar Pradesh on 23rd, 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 Valley Temperate Zone, undertake transplanting of rice. Undertake sowing of kharif pulses. Undertake harvesting of rabi spinach and turnip. Provide strong supports to climbing vines of cucurbits. Staking may be done in tomato to provide support to the plant. Hand pollination may be done in bottle gourd to improve yield. Regular weeding should be done to maintain weed free conditions in all vegetable crop fields.
- In Sub-Tropical Zone, carry out weeding in rice. Continue land preparation for sowing of maize. Continue land preparation for sowing of bitter melon, sponge melon and rainy season okra. Install pheromone traps in tomato @ 2/kanal along with spray of neem oil @ 3ml/litre to control fruit borer.
- In Intermediate Zone, undertake land preparation for transplanting of rice. Continue sowing of maize. Provide mechanical support for better crop stand in young plants of tomato and cucurbits to avoid losses from gusty winds.

Himachal Pradesh

- In Mild Hills Sub Humid Zone, apply mulch in pear orchards to conserve soil moisture. Install pheromone traps @ 3-4 traps per acre for monitoring of the pest population for diamond backmoth in cole crops, pod borer in pea and fruit borer in tomatoes.
- In Mid Hills Sub Humid Zone, undertake hoeing and weeding operations in vegetables and other standing crops. Apply second dose of Nitrogen fertilizer in tomato, capsicum, cauliflower, cabbage and carrot in high hills. To protect the pomegranate fruit from fruit borer disease, spray Quinalphos @400 g/ 200 litres of water. Undertake sowing of fodder crops like bajra, maize and jowar.
- In Sub Montane and Low Hills Sub Tropical Zone, spray herbicide to control weeds in maize. Undertake sowing of fodder crops like maize, cowpeas and soybean in irrigated areas. Carry out weeding in pea, turnip, spinach and carrot. Carry out picking of tea leaves at 8-10 days interval to maintain the quality and productivity.
- In High Hill Temperate Dry Zone, carry out weeding in pea and barley and apply irrigation.

Punjab, Haryana, Delhi

- In Western Zone of Punjab, due to mainly dry weather conditions with partly cloudy sky in next 2-3 days and chances of light rain thereafter, irrigate the rice, cotton and standing vegetable crops as per need. Complete sowing of direct seeded rice. Monitor cotton crop for whitefly infestation during the period. Provide mechanical support to vegetables to achieve good yield. Spray Proclaim 5 SG @80g or Coragen 18.5 SC @ 80ml in 100-125 litres of water per acre to control fruit and shoot borer in brinjal.
- In Undulating Plain Zone of Punjab, apply need-based irrigation as per weather to paddy and basmati nursery during the period. Apply need based irrigation to sugarcane. Spray sugarcane crop with 350 ml of

Dursban/Lethal/Massban/Goldban 20 EC (chlorpyrifos) in 400 litres of water per acre with manually operated sprayer on a clear day to control sap sucking pest black bug; direct the spray into the leaf-whorl for most effective control.

- In Central Plain Zone of Punjab, undertake transplanting of rice. Apply need based irrigation to paddy nursery. Complete direct sowing of rice during these days. Sugarcane crop requires frequent irrigations at 8 to 10 days interval during summer period on a clear day. Apply light and frequent irrigations to fruit plants such as pear, citrus, late bearing peach.
- In Western Zone of Haryana, keeping the view of dry and hot weather, apply irrigation to timely sown American cotton/Bt cotton, existing/standing paddy nursery, planted vegetable crops and fruits plants (at morning and evening hrs). Undertake sowing of recommended certified seeds of UPAS 120 of pigeon pea. Complete the sowing of leafy vegetable, lady's finger, bottle gourd, cucumber, ridge gourd and summer radish at the earliest.
- In Eastern Zone of Haryana, maintain social distancing during agricultural operations. Undertake preparation of paddy nurseries, sowing of pigeon pea and preparation of nursery for early chilli. Carry out weeding in sugarcane crop. Avoid irrigation in okra and bottle gourd. To control shoot and fruit borer in tomato crops, infected fruits and shoots should be collected and buried inside the soil; if pest population is high, spray Spinosad 48 EC@1 ml/4 litres of water when the sky is clear.
- In Delhi, maintain social distancing during picking of vegetables and other agricultural operation in all crops. Undertake preparation of nursery of rice, early cauliflower, tomato, chilli and brinjal. Undertake sowing of green gram, black gram and pigeon pea. Keeping in view the temperature, harvest mature vegetables at morning and evening hours and keep harvested crops in shadow.

Uttar Pradesh:

- In **East Uttar Pradesh**, undertake preparation of paddy nurseries; for one hectare of crop field 800-1000 square metre nursery is sufficient; before sowing, treat seeds with Captan 2g /kg of seeds. Undertake sowing of pigeon pea, green gram and black gram. Farmers are advised for preparation of nursery for early cauliflower, tomato, chilli and brinjal. Apply 40kg Nitrogen, 60 kg Phosphate and 40 kg Potash during sowing of maize. Farmers are advised to avoid irrigation & spraying of herbicides, pesticides or any other chemicals in sugarcane field during this week as rainfall is forecast. Avoid irrigation and maintain drainage facilities in all vegetable crops.
- In **West Uttar Pradesh**, prepare the fields for raising paddy nursery with seeds of improved varieties. Prepare nursery for nursery of crops sown in kharif season such as chilli, tomato, etc. Keeping in view of forecasted high temperature, farmers are advised for harvesting of mature vegetables at morning and evening hours and keep harvested crops in shade. Farmers are advised to protect banana, citrus, mango and kinoo orchards against hot winds by physical barrier and frequent irrigation. For prevention of fall army moth in sugarcane crop, spray 800 ml of Quinalfos 25 EC or 750 ml of Profenophos 40% + Cypermethrin 4% in 625 liters of water per hectare on clear days.

Uttarakhand

- In Bhabar and Tarai Zone, undertake land preparation for transplanting of rice seedlings. Complete sowing of soybean. Continue transplanting of capsicum in polyhouse. Continue nursery sowing of cauliflower.
- In Sub Humid Sub Tropic Zone, undertake land preparation for transplanting of rice. Avoid irrigation in sugarcane crop. Avoid irrigation in vegetables.
- In Hill Zone, undertake harvesting of onion and garlic. Undertake transplanting of brinjal, tomato, capsicum and chilli. Continue harvesting of matured tomatoes. Undertake nursery sowing of cauliflower. Undertake transplanting of rice. Continue intercultural operations like hoeing, weeding and gap filling in barnyard

millet.

Rajasthan

- In Flood Prone Eastern Plain Zone, make necessary field preparation for timely sowing of kharif crops. Prepare field by deep ploughing. Procure certified and good quality seed, fertilizers, agro-chemicals and other inputs in advance.
- In Hyper arid Partial Irrigated zone, prepare land for sowing of groundnut in the month of June.
- In Transitional Plain Zone of Inland Drainage, undertake sowing of bajra.
- In Semi Arid Eastern Plain Zone, for the sowing of kharif crops like pearl millet, sorghum, maize, cluster bean, etc., arrange seeds, fertilizers & chemicals in advance so that timely sowing of these crops can be done at the onset of monsoon.
- In Arid Western Plain Zone, prepare nursery for tomato crop. To control termite attack in cotton, apply Chlorpyrifos 20 EC @ 4 litres per hectare with irrigation.
- In Irrigated North Western Plain Zone, planting of tomato seedlings should be done at a distance of 75 X 75 cm in the field.
- In Sub Humid Southern Plain and Aravali Hill Zone, undertake field preparation for sowing of Kharif crops like maize, soybean, groundnut, sorghum, green gram and black gram.

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