



National Agromet Advisory Service Bulletin

Friday 31st July 2020

(For the period 31st July to 04th August 2020)



Issued by

India Meteorological Department

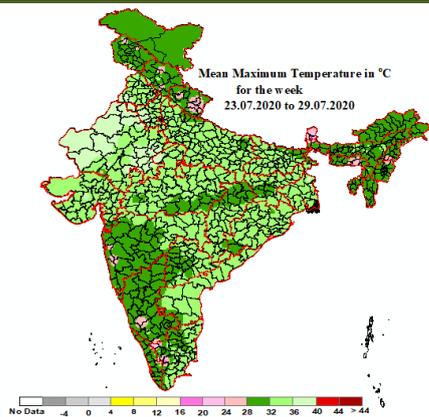
Weblink For

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

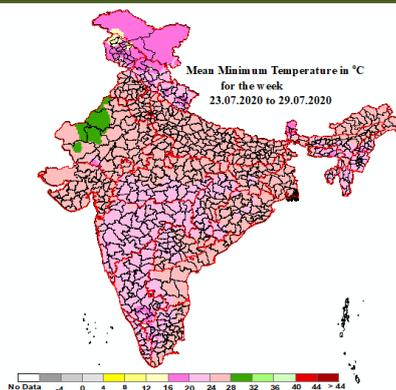
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 29.07.2020

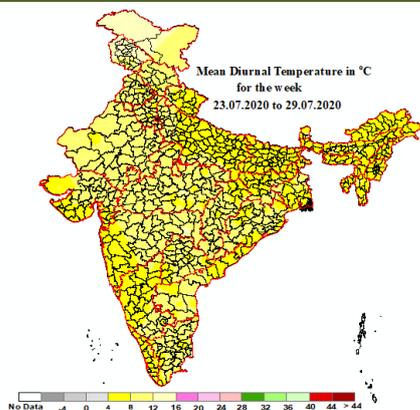
Mean Maximum Temperature (°C) for the week ending on 29.07.2020



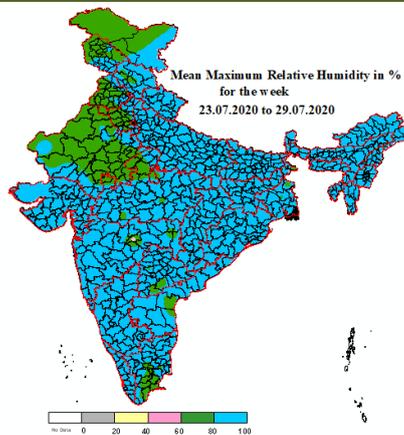
Mean Minimum Temperature (°C) for the week ending on 29.07.2020



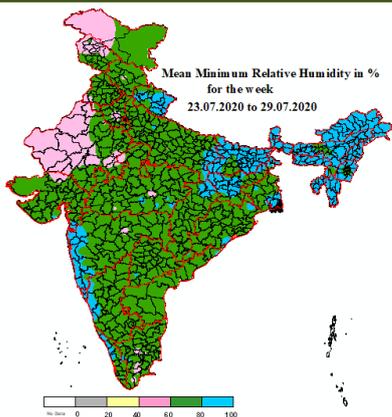
Mean Diurnal Temperature Variation (°C) for the week ending on 29.07.2020



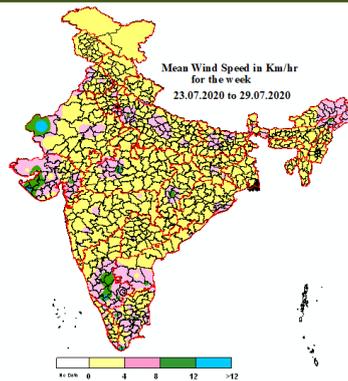
Mean Maximum Relative Humidity (%) for the week ending on 29.07.2020



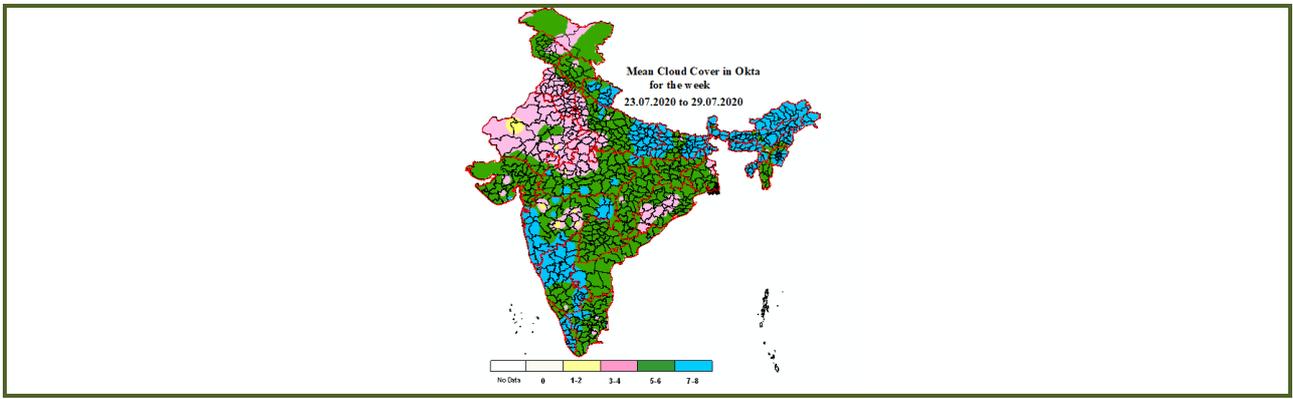
Mean Minimum Relative Humidity (%) for the week ending on 29.07.2020



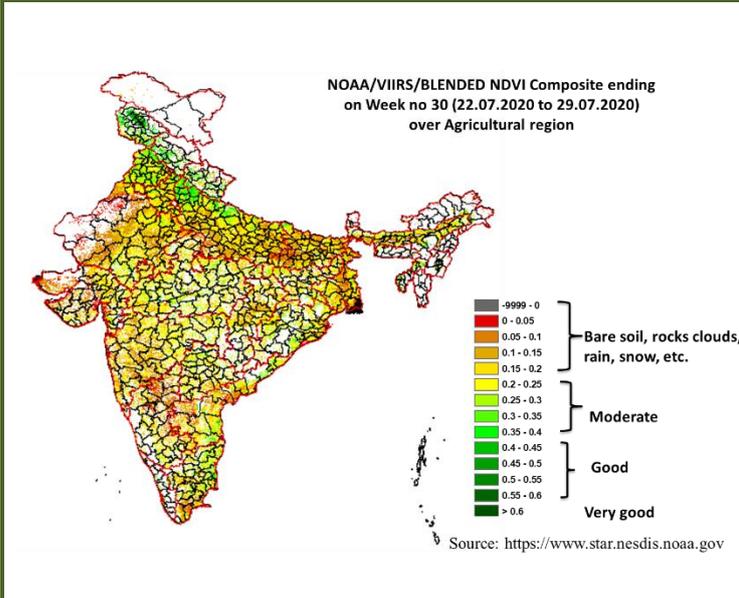
Mean Wind Speed (km/hr) for the week ending on 29.07.2020



Mean Cloud Cover (okta) for the week ending on 29.07.2020

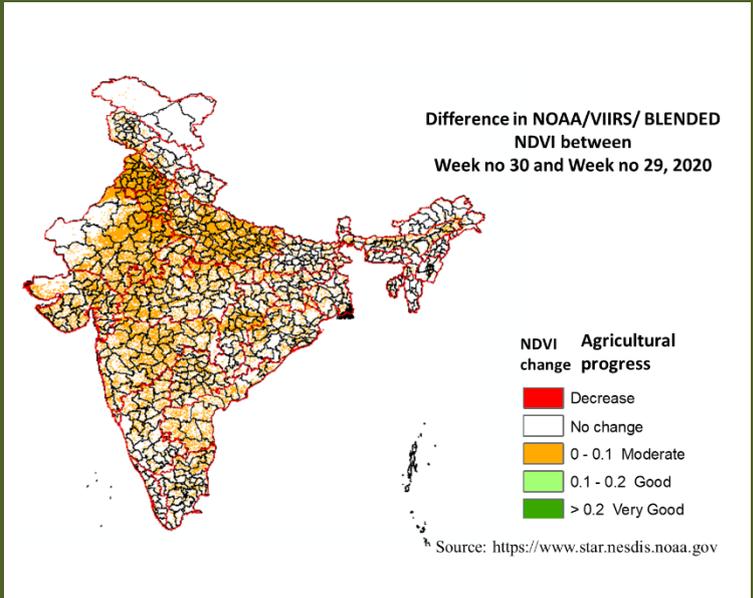


NOAA/VIIRS/BLENDED NDVI composite for the week number 30 (22.07.2020 to 29.07.2020) over Agricultural regions of India



Agricultural vigour was good at many parts of Jammu & Kashmir; few places in Himachal Pradesh, Uttarakhand and at isolated places of Western Uttar Pradesh, North Eastern states, Nellore district of South Coastal Andhra Pradesh, Tamilnadu & Kerala. Rest of the country NDVI could not be captured due to cloud cover as well as sowing of khariff season is under progress.

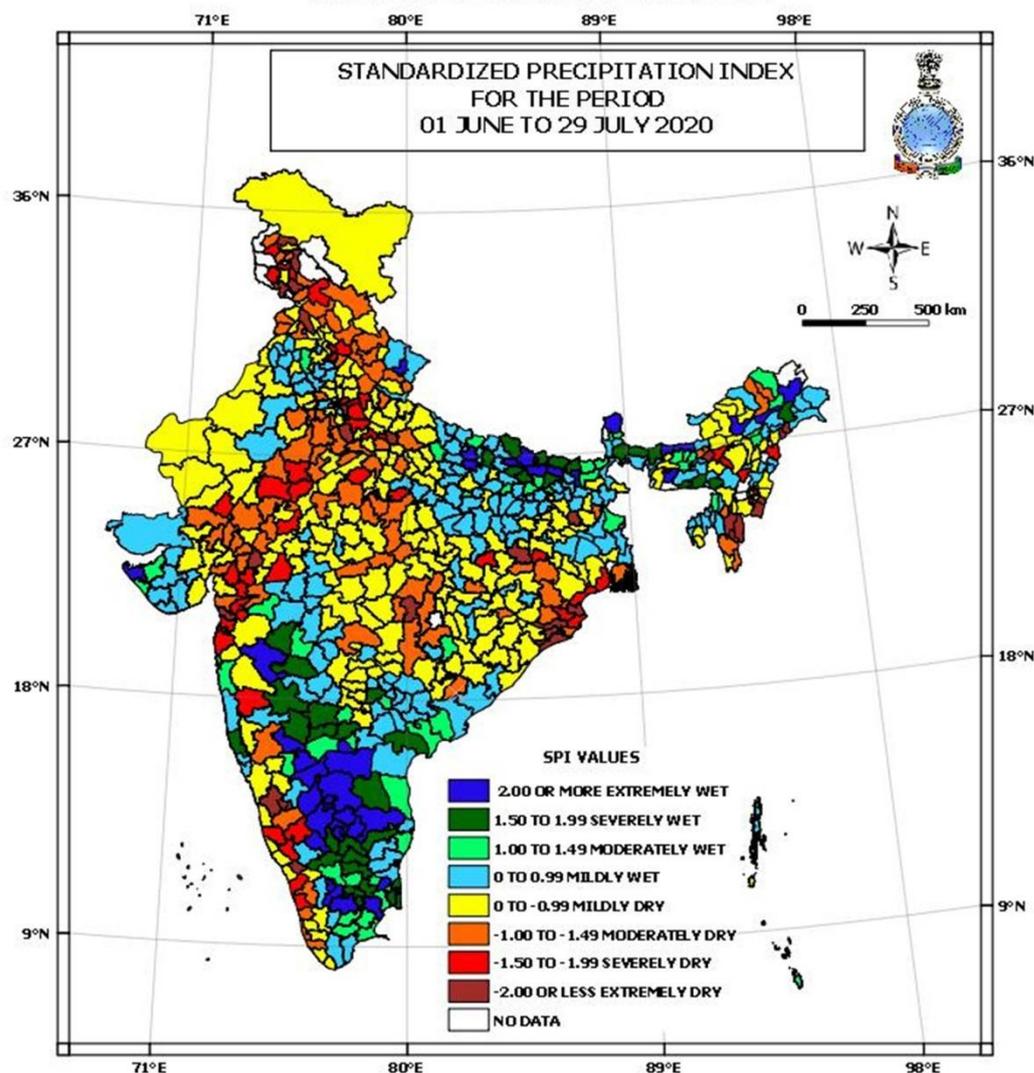
Difference in NOAA/VIIRS/BLENDED NDVI between week number 30, 2020 and week number 29, 2020



Good difference in agricultural vigour was observed over isolated places of Punjab, Jammu & Kashmir, Himachal Pradesh, Uttarakhand, North Eastern states, Odisha, Chattisgarh, Telangana, Coastal Andhra Pradesh, Interior Karnataka, Konkan, South Madhya Maharashtra, Madhya Pradesh, Gujarat and adjoining East Rajasthan.

**Standardised Precipitation Index
for the period 1st June to 29th July 2020**

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



- Extremely/ Severely wet conditions exist in Guntur, Anantapur, Chittoor, Cuddapah, Kurnool districts of Andhra Pradesh; Lower Dibang Valley, Papumpara districts of Arunachal Pradesh; Kokrajhar, Tinsukia, Dhemaji, Baksa, Chirang districts of Assam; East Champaran, West Champaran, Darbhanga, Gopalganj, Madhepura, Madhubani, Muzaffarpur, Samastipur, Saran, Sitamarhi, Sheohar, Siwan, Supaul districts of Bihar; Devbhumi Dwarka district of Gujarat; Bagalkote, Bijapur, Gulbarga, Koppal, Yadgir, Bangalore Rural, Bangalore Urban, Bellary, Chamarajanagar, Chitradurga, Kolar, Mandya, Tumkur, Ramanagara, Chickballapur districts of Karnataka; Sindhudurg, Ahmednagar, Sholapur, Aurangabad, Beed districts of Maharashtra; East Garo Hills, East Khasi Hills districts of Meghalaya; Dharmapuri, Dindigul, Karur, Nagapattinam, Pudukkottai, Salem, Trichy, Tiruvarur, Vellore, Krishnagiri, Ariyalur, Tirupur districts of Tamilnadu; Ambedkar Nagar, Basti, Gorakhpur districts of Uttar Pradesh; Jalpaiguri districts of West Bengal; North Sikkim district of Sikkim; Bageshwar district of Uttarakhand; Mahbubnagar, Jogulamba Gadwal, Siddipet districts of Telangana.
- Extremely/Severely dry conditions exist in Tirap district of Arunachal Pradesh; Nagaon, Morigaon districts of Assam; Baroda, Valsad, Dangs, Dahod, Narmada, Navsari, Tapi, Chhota Udepur districts of Gujarat; Ambala, Panchkula districts of Haryana; Chamba, Sirmaur districts of Himachal Pradesh; Anantnag, Baramula, Jammu, Udhampur, Srinagar, Ramban, Bandipore, Kulgam, Rajouri districts of

Jammu; Dakshin Kannada, Hassan, Kodagu, Shimoga districts of Karnataka; Malappuram, Thrissur, Wyanad districts of Kerala; Dhar, Gwalior, Mandsaur districts of West Madhya Pradesh; Palghar, Satara, Gondia districts of Maharashtra; Bishnupur, Chandel, Imphal East districts of Manipur; Aizwal, Champhai, Serchhip districts of Mizoram; Tuensang, Parem districts of Nagaland; Balasore, Bhadrak, Cuttack, Jajpur, Kendrapara, Khurda, Puri districts of Odisha; Hoshiarpur district of Punjab; Bhilwara, Bundi, Sirohi, Tonk districts of Rajasthan; Dadara & Nagar Haveli, Daman districts of Union Territory; Farrukhabad, Aligarh, Bulandshahar, Etah, Gautam Budha Nagar, Ghaziabad, Jyotiba Phule Nagar, Mathura, Mahoba districts of Uttar Pradesh; East Midnapore districts of West Bengal; Deoghar, Gumla, Khunti districts of Jharkhand; Surguja districts of Chhatisgarh.

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

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

- ◆ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-1.
- ◆ No significant change in temperatures very likely over most parts of the country during next 3-4 days.

5 Day Rainfall Forecast (MID-DAY)

31-July-2020

Met-Sub-Division	31-Jul Today	01Aug Sat	02Aug Sun	03Aug Mon	04Aug Tue
1. Andaman & Nicobar Islands	WS	WS	WS	WS	WS
2. Arunachal Pradesh	FWS	FWS	SCT	SCT	SCT
3. Assam & Meghalaya	WS	FWS	FWS	FWS	FWS
4. N. M. M. & T.	FWS	FWS	SCT	FWS	FWS
5. S.H. West Bengal & Sikkim	WS	WS	WS	FWS	FWS
6. Gangetic West Bengal	SCT	SCT	SCT	FWS	FWS
7. Odisha	SCT	SCT	FWS	WS	WS
8. Jharkhand	FWS	FWS	SCT	FWS	WS
9. Bihar	WS	FWS	SCT	FWS	WS
10. East Uttar Pradesh	FWS	FWS	FWS	FWS	FWS
11. West Uttar Pradesh	FWS	FWS	FWS	FWS	FWS
12. Uttarakhand	WS	WS	WS	WS	WS
13. Haryana, Chd & Delhi	SCT	SCT	ISOL	ISOL	SCT
14. Punjab	SCT	SCT	ISOL	ISOL	SCT
15. Himachal Pradesh	FWS	FWS	FWS	FWS	FWS
16. J & K and Ladakh	SCT	SCT	SCT	ISOL	ISOL
17. West Rajasthan	SCT	ISOL	ISOL	ISOL	ISOL
18. East Rajasthan	SCT	SCT	SCT	SCT	SCT
19. West Madhya Pradesh	SCT	SCT	FWS	FWS	FWS
20. East Madhya Pradesh	ISOL	SCT	FWS	FWS	WS
21. Gujarat Region	SCT	SCT	FWS	FWS	FWS
22. Saurashtra & Kutch	SCT	SCT	FWS	FWS	FWS
23. Konkan & Goa	WS	WS	WS	WS	WS
24. Madhya Maharashtra	SCT	FWS	FWS	WS	WS
25. Marathwada	FWS	SCT	SCT	FWS	FWS
26. Vidharbha	ISOL	SCT	FWS	FWS	WS
27. Chhattisgarh	SCT	FWS	FWS	WS	WS
28. Coastal A. P. & Yanam	SCT	SCT	FWS	FWS	WS
29. Telangana	FWS	FWS	FWS	WS	WS
30. Rayalaseema	FWS	SCT	SCT	SCT	FWS
31. T.N.,Puducherry & Karaikal	SCT	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	WS	WS	WS	WS	WS
33. North Interior Karnataka	WS	FWS	FWS	FWS	WS
34. South Interior Karnataka	WS	WS	WS	FWS	WS
35. Kerala & Mahe	WS	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:

31 July (Day 1):

◆ **Heavy to very heavy rainfall** with extremely heavy falls very likely at isolated places over Assam & Meghalaya; Heavy to very heavy rainfall at isolated places over Uttarakhand, Sub-Himalayan West Bengal & Sikkim, Konkan & Goa, Coastal Karnataka and Kerala & Mahe and heavy rainfall at isolated places over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Himachal Pradesh, Punjab, Uttar Pradesh, East Rajasthan, Bihar, Andaman & Nicobar Islands, Arunachal Pradesh, Gujarat State, Marathwada, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Interior Karnataka and Tamilnadu, Puducherry & Karaikal.

◆ **Thunderstorm accompanied with lightning** at isolated places very likely over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Uttarakhand, Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Odisha, Assam & Meghalaya, Madhya Maharashtra, Marathwada, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Karnataka and Tamilnadu, Puducherry & Karaikal.

◆ **Strong Wind** (speed reaching 45-55 kmph) very likely over Southwest & adjoining Central Arabian Sea. **Squally weather** (wind speed reaching 40-50 kmph) over along & off Kerala-Karnataka coasts and Lakshadweep-Maldives areas. Fishermen are advised not to venture into these areas.

01 August (Day 2):

◆ **Heavy to very heavy rainfall** very likely at isolated places over Konkan & Goa and Coastal Karnataka; and heavy rainfall at isolated places over Himachal Pradesh, Uttarakhand, West Uttar Pradesh, East Rajasthan, Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, Assam & Meghalaya, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam and Kerala & Mahe.

◆ **Thunderstorm accompanied with lightning** at isolated places very likely over Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Odisha, Assam & Meghalaya, Madhya Maharashtra, Marathwada and Tamilnadu, Puducherry & Karaikal.

◆ **Strong Wind** (speed reaching 45-55 kmph) very likely over Southwest & adjoining West Central Arabian Sea along & off Maharashtra coast. **Squally weather** (wind speed reaching 40-50 kmph) over Southeast Arabian sea along & off Kerala-Karnataka coasts and Lakshadweep-Maldives areas. Fishermen are advised not to venture into these areas.

02 August (Day 3):

◆ **Heavy to very heavy rainfall** very likely at isolated places over Andaman & Nicobar Islands, Madhya Maharashtra, Konkan & Goa, Coastal & South Interior Karnataka and heavy rainfall at isolated places over Uttarakhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha, Gujarat State, Coastal Andhra Pradesh & Yanam, North Interior Karnataka and Kerala & Mahe.

◆ **Thunderstorm accompanied with lightning & squall (speed 50-60 kmph)** very likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places very likely over Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Sub-Himalayan West Bengal & Sikkim and Odisha.

◆ **Strong Wind** (speed reaching 50-60 kmph) very likely over Southeast Arabian sea along & off Kerala-Karnataka coasts and Lakshadweep-Maldives areas and southeast & adjoining eastcentral Bay of Bengal and Andaman sea;(speed reaching 45-55 kmph) Southwest & adjoining West Central Arabian Sea, along & off Maharashtra coast. Fishermen are advised not to venture into these areas.

03 August (Day 4):

◆ **Heavy to very heavy rainfall** likely at a few places over Konkan & Goa and at isolated places over Andaman & Nicobar Islands, Gujarat Region, Madhya Maharashtra and Coastal Karnataka and heavy rainfall at isolated places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha,

Chhattisgarh, Odisha, Nagaland, Manipur, Mizoram & Tripura, Saurashtra & Kutch, Coastal Andhra Pradesh & Yanam, Telangana, South Interior Karnataka and Kerala & Mahe.

◆ **Thunderstorm accompanied with lightning & squall (speed 50-60 kmph)** likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places likely over Uttarakhand, Uttar Pradesh, Jharkhand, Sub-Himalayan West Bengal & Sikkim and Nagaland, Manipur, Mizoram & Tripura.

◆ **Strong Wind** (speed reaching 50-60 kmph) likely over Southeast Arabian sea along & off Kerala-Karnataka coasts and Lakshadweep-Maldives areas and southeast & adjoining eastcentral Bay of Bengal and Andaman sea;(speed reaching 45-55 kmph) Southwest & adjoining West Central Arabian Sea, along & off Maharashtra coast. Fishermen are advised not to venture into these areas.

04 August (Day 5):

◆ **Heavy to very heavy rainfall** at a few places **with extremely heavy falls** at isolated places likely over Konkan & Goa and **heavy to very heavy rainfall** at isolated places over Chhattisgarh, Odisha, Gujarat Region, Madhya Maharashtra and Coastal Karnataka and heavy rainfall at isolated places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Bihar, Jharkhand, Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Saurashtra & Kutch, Marathwada, Coastal Andhra Pradesh & Yanam, Telangana, Interior Karnataka and Kerala & Mahe.

◆ **Thunderstorm accompanied with lightning & squall (speed 50-60 kmph)** likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places likely over Uttar Pradesh, Jharkhand, Gangetic West Bengal, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

◆ **Strong Wind** (speed reaching 50-60 kmph) likely over Southeast Arabian sea along & off Kerala-Karnataka coasts and Lakshadweep-Maldives areas and southeast & adjoining eastcentral Bay of Bengal and Andaman sea;(speed reaching 45-55 kmph) Southwest & adjoining Central Arabian Sea, along & off Maharashtra coast. Fishermen are advised not to venture into these areas.

Weather Outlook for subsequent 2 days from 05th to 07th August, 2020

Fairly widespread to widespread rainfall/thundershowers likely over the country except over Northwest, Northeast & South Peninsular India where isolated to scattered rainfall is likely. Isolated heavy to very heavy rainfall is likely over West coast and eastern parts of central India and adjoining east India.

Salient advisories

- **Strong Wind** (speed reaching 45-55 kmph) very likely over Southwest & adjoining West Central Arabian Sea along & off Maharashtra coast, **Squally weather** (wind speed reaching 40-50 kmph) over Southeast Arabian sea along & off Kerala-Karnataka coasts and Lakshadweep-Maldives areas on 1st August, **Strong Wind** (speed reaching 50-60 kmph) very likely over Southeast Arabian sea along & off Kerala-Karnataka coasts and Lakshadweep-Maldives areas and southeast & adjoining eastcentral Bay of Bengal and Andaman sea;(speed reaching 45-55 kmph) Southwest & adjoining West Central Arabian Sea, along & off Maharashtra coast from 2nd to 4th August . Fishermen are advised not to venture into these areas.
- **Thunderstorm accompanied with lightning** at isolated places very likely over Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Odisha, Assam & Meghalaya, Madhya Maharashtra, Marathwada and Tamilnadu, Puducherry & Karaikal on 1st, **Thunderstorm accompanied with lightning & squall (speed 50-60 kmph)** very likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places very likely over Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Sub-Himalayan West Bengal & Sikkim and Odisha on 2nd , **Thunderstorm accompanied with lightning & squall (speed 50-60 kmph)** likely at isolated places over

Andaman & Nicobar Islands and **with lightning** at isolated places likely over Uttarakhand, Uttar Pradesh, Jharkhand, Sub-Himalayan West Bengal & Sikkim and Nagaland, Manipur, Mizoram & Tripura on 3rd, **Thunderstorm accompanied with lightning & squall (speed 50-60 kmph)** likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places likely over Uttar Pradesh, Jharkhand, Gangetic West Bengal, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 4th August, 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. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.

- As **rain/thundershowers** likely at **most/many places** over Andaman & Nicobar Islands, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim, Uttar Pradesh, Himachal Pradesh, Uttarakhand, Konkan & Goa, Telangana, Karnataka, Kerala & Mahe during the period, over Bihar & Jharkhand, Nagaland, Manipur, Mizoram & Tripura from 1st, 3rd & 4th, over Madhya Maharashtra from 1st to 4th, over Gujarat, Madhya Pradesh, Chhattisgarh and Odisha from 2nd to 4th, **along with Heavy to very heavy rainfall** very likely at isolated places over Konkan & Goa and Coastal Karnataka; and heavy rainfall at isolated places over Himachal Pradesh, Uttarakhand, West Uttar Pradesh, East Rajasthan, Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, Assam & Meghalaya, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam and Kerala & Mahe on 1st, **Heavy to very heavy rainfall** very likely at isolated places over Andaman & Nicobar Islands, Madhya Maharashtra, Konkan & Goa, Coastal & South Interior Karnataka and heavy rainfall at isolated places over Uttarakhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha, Gujarat State, Coastal Andhra Pradesh & Yanam, North Interior Karnataka and Kerala & Mahe on 2nd, **Heavy to very heavy rainfall** likely at a few places over Konkan & Goa and at isolated places over Andaman & Nicobar Islands, Gujarat Region, Madhya Maharashtra and Coastal Karnataka and heavy rainfall at isolated places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Odisha, Nagaland, Manipur, Mizoram & Tripura, Saurashtra & Kutch, Coastal Andhra Pradesh & Yanam, Telangana, South Interior Karnataka and Kerala & Mahe on 3rd, **Heavy to very heavy rainfall** at a few places **with extremely heavy falls** at isolated places likely over Konkan & Goa and **heavy to very heavy rainfall** at isolated places over Chhattisgarh, Odisha, Gujarat Region, Madhya Maharashtra and Coastal Karnataka and heavy rainfall at isolated places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Bihar, Jharkhand, Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Saurashtra & Kutch, Marathwada, Coastal Andhra Pradesh & Yanam, Telangana, Interior Karnataka and Kerala & Mahe on 4th August, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

➤ **Undertake the following operations:**

- transplanting of ragi in South Interior Karnataka.
- transplanting of rice in Vizianagaram and Ananthpur districts of Andhra Pradesh.
- transplanting of *Sali* rice in Assam & Meghalaya.
- transplanting of *Kharif* rice in Sub-Himalayan West Bengal, Odisha, Bihar and Jharkhand.
- transplanting of *Aman* rice in Gangetic West Bengal and Tripura.
- transplanting of rice, chilli and tomato in Middle Gujarat and sowing of pigeon pea, cowpea, cluster bean and sesame in North Gujarat.
- sowing of cucumber, pumpkin, bottle gourd, bitter gourd, watermelon, cabbage, etc. and transplanting of brinjal, chilli and early cauliflower in East Uttar Pradesh.

- sowing of guar, moth bean, green gram, pearl millet, sorghum and castor in Rajasthan.
- nursery sowing of *rangada* onion and transplanting of vegetables like tomato, chilli and brinjal in Maharashtra.

Detailed Agromet Advisories

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

Realised Rainfall: Significant rainfall occurred in all the districts of Andhra Pradesh except Krishna, Nellore, Prakasam, Visakhapatnam, Cuddapah districts, rainfall occurred in all the districts of Telangana except Hyderabad, J. Bhupalpally, Mahabubnagar & Nagarkurnool districts; in all districts of Coastal Karnataka, in all districts of North Interior Karnataka except Belagavi, Dharwad and Haveri districts, in all districts of South Interior Karnataka except Bengaluru Rural, Bengaluru Urban, Chamarajanagar, Hasan, Kodagu, Musuru, Ramanagara Shivamogga and Tumakuru districts; in all districts of Tamilnadu except Chennai, Erode, Kanyakumari, Madurai, Puducherry, Ramanathapuram, Sivaganga, Theni, Tirunelveli, Tiruvallur, Tiruvannamalai, Toothukudi, Villupuram, Virudhunagar.

- **Advisories: Thunderstorm accompanied with lightning** at isolated places very likely over Tamilnadu, Puducherry & Karaikal on 1st August, 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. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoors during thunderstorm.
- **As rain/thundershowers** likely at **most/many places** over Telangana, Karnataka, Kerala & Mahe during the period **along with heavy rainfall at isolated places** over Coastal Andhra Pradesh & Yanam and Kerala & Mahe on 1st, **Heavy to very heavy rainfall** very likely at isolated places over Coastal & South Interior Karnataka and heavy rainfall at isolated places over Coastal Andhra Pradesh & Yanam, North Interior Karnataka and Kerala & Mahe on 2nd, **Heavy to very heavy rainfall** likely at isolated places over Coastal Karnataka and heavy rainfall at isolated places over Coastal Andhra Pradesh & Yanam, Telangana, South Interior Karnataka and Kerala & Mahe on **03rd**, **heavy to very heavy rainfall** at isolated places Coastal Karnataka and heavy rainfall at isolated places over Coastal Andhra Pradesh & Yanam, Telangana, Interior Karnataka and Kerala & Mahe on **04 August**, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

Karnataka

- In South Interior Karnataka, continue transplanting of rice and ragi where seedlings are ready. Carry out intercultural operation in red gram, ragi and groundnut crops. Under double cropping, sowing of the medium to short duration crops like ragi, maize, Foxtail Millet, Little Millet, Kodo millet is advised. Continue sowing of jowar, cowpea, red gram, green gram, black gram, horse gram, field bean crops. Due to cloudy weather, there is chance of blast infection in rice nursery; to manage, spraying of fungicide Carbendazim @ 1gm/liter or Tricyclozool @ 0.6 gm/litre of water is advised.
- In North Interior Karnataka, carry out thinning in black gram, green gram and soybean crops, intercultural operations in red gram, black gram, sorghum crops and transplanting of rice, brinjal and tomato seedlings. Complete sowing of cotton, groundnut, sesame and sunflower. To manage sucking pests in green gram, take up spraying of Acetamaprid @ 0.25 gram or Flunicamide @ 0.25 ml or Thiomethoxam @ 0.2 gram/liter of water in clear weather.

- In Coastal Karnataka, continue planting of Black pepper and transplanting of Arecanut. For control of leaf folder in rice, spray Chloropyriphos or Quinalphos @ 2ml / litre of water. Set up Rhinolure pheromone trap to trap and kill the beetles in coconut gardens.

Animal Husbandry

- In Karnataka, for milch animals regularly follow schedule of 1 kg feed + 50 g mineral mixture per 2 litres of milk yield. Feed animals with a mixture of green grass + hay + minerals + dry feed like a khichri.

Kerala

- In Problem Areas Zone, undertake transplanting of seedlings of brinjal of 3-4 weeks old. Apply 2 Kg of CaCO₃/cent before 10 days of planting. Soil drenching of Copper Oxy Chloride 3 gm/litre water for wilt disease.
- In Northern Zone, weather is congenial for blast disease in paddy, spray Fujione or Nativo (@ 2ml/litre of water).
- In Central Zone, during rainy season, there is a chance of Anthracnose disease in Cowpea. As a prophylactic measure, apply 1% Bordeaux mixture or spray Copper Oxychloride 3 gram per one litre of water.
- In Southern Zone, weather is congenial for sigatoka disease in banana, Remove and destroy severely infected and completely dried leaves. Spray Mancozeb 3 g/lt at 4-5 times at 2-3 weeks interval.
- In High Altitude Zone, undertake direct sowing/transplanting of rice. Also to control soft rot in ginger, drench the soil with 1% Bordeaux mixture/0.3% Mancozeb. Apply green leaf mulching to prevent soil erosion and to increase the organic matter content in the soil.

Andhra Pradesh

- In Vizianagaram and Ananthpur districts, undertake transplanting of rice by clipping of leaf tips before transplantation to avoid infestation of stem borer and leaf folder.
- In Kurnool districts, drain out excess water from the cotton because excess moisture in the soil causes wilt in 15-20 days aged seedlings. To control the spread of the wilt disease, drench the plants with Copperoxy chloride @ 3 gm per liter of the water.
- In East Godavari district, continue transplanting of rice.
- In Guntur district, undertake sowing of Redgram (Wilt resistant - ICPL-87119 (Asha), ICP 8863 (Maruti), LRG 52 SMD resistant - ICPL 87119, BSMR 853, BSMR 736) by treating with Captan/ Thiram / Mancozeb / Ccarbendazim 2.5 g per kg seed and Imidacloprid 600 FS @ 5 ml or thiamethoxam 70 WS 5g /kg seed 24-48 hours before sowing to protect the crop from sucking pests and diseases upto 15-20 days after sowing.
- In Prakasam district in Red gram crop , immediately after sowing or the next day of sowing to control weeds in the field , spray pendimethalin 30% of 1.0 -1.5 litres or alachlor of 50% of one litre per one acre of land.
- In Chittoor district undertake transplanting of rice and apply preemergence herbicides like Pretilachlor @ 500 ml. /acre or Oxadiargyl @ 35-50 g. /acre at 3-5 days after transplanting by mixing in 20 kg sand/acre keeping thin film of water in the field.
- In Y.S.R.(Kadapa) district, continue sowing of cotton. Farmers strictly advised to sow refugee crop (non-Bt/redgram) around the Bt cotton to avoid buildup resistance against Bt in bollworms. Avoid the cultivation of cotton in light red soils without irrigation facilities.
- In Nellore district, Present weather conditions are favourable for spodoptera in groundnut (or) to control eggs and first and second instar larvae spray 5% Neem oil or Qinolphos 400 ml (or) Chlorpyriphos @ 500 ml 200 litre per acre.

Telangana

- In Northern Telangana, prevailing weather conditions are favourable for stem girdler in soybean crop.

Spray acephate @ 1.5 g/lit or Profinophos @ 2ml/lit or Chlorantiniliprole @ 0.3ml per litre of water.

- In Southern Telangana, Farmers are advised to complete the sowings of rice nurseries of short duration varieties and Telangana Sona (RNR 15048) by 31st July. Apply Carbofuran 3G @ 1 kg/200 sq.m. (5 cents) to rice nurseries one week before pulling nursery.

Tamil Nadu

- In Cauvery Delta Zone, the prevailing weather condition is conducive for stem borer infection in rice. To control, apply Chlorpyrifos 20 EC 500 ml/ acre or Profenophos 50 EC 400 ml/ acre.
- In Western Zone, sowing of irrigated Maize may be continued. Land preparation may be initiated for irrigated winter Cambodia cotton to be sown on August 15. Weather is congenial for purple blotch disease in Onion. Spray Azoxystrobin @ 1ml/litre of water.
- In High Altitude Hilly Zone, prevailing weather condition is congenial for powdery mildew disease incidence in beans crop, spray of wettable Sulphur @ 2 gram/ liter of water or soil application of 10 kg of Sulphur/acre.
- In Southern Zone, due to the prevailing weather condition, there is incense of Leaf roller in Bhendi. The Symptoms of damage are the caterpillar roll the leaves, scrapping the chlorophyll content and feed inside and Defoliates. Collect and destroy rolled leaves and spray Phosalone 35 EC 2 ml/litre of water.
- In High Rainfall Zone, at shooting stage of banana, use transparent polythene sleeves (4%) to cover the bunches to increase the quality.
- In South Zone, weather is congenial for stem borer incidence in rice, spray Chlorantraniliprole 18.5% SC 150 ml/ha and Azadirachtin 0.03% 1000 ml/ha.

Animal Husbandry:

- In Tamilnadu, due to the prevailing weather condition, there are chances for infection of external-parasites on your goats and sheep. To remove and control the parasites, apply Butox solution (2ml in one litter water) externally on your sheep & goats.

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

Realised Rainfall: Rainfall occurred in all districts except Dibang Valley district of Arunachal Pradesh; all districts except Darrang, Morigaon and Nowgaon districts of Assam; all districts of Meghalaya; Kolasib, Lawngtlai, Lunglei, Mamit and Saiha districts of Mizoram; all districts except Chandel and Senapati districts of Manipur; all districts except Kephire and Longleng districts of Nagaland and South Tripura and West Tripura districts of Tripura.

Advisories:

- **Thunderstorm accompanied with lightning** at isolated places very likely over Assam & Meghalaya, on 1st, over Nagaland, Manipur, Mizoram & Tripura on 3rd, over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 4th August, 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. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at **most/many places** over Assam & Meghalay during the period, and over Nagaland, Manipur, Mizoram & Tripura on 1st, 3rd & 4th, **along with heavy rainfall at isolated places** over Assam & Meghalaya on 1st, over Nagaland, Manipur, Mizoram & Tripura on 3rd, **over Arunachal Pradesh, Assam & Meghalaya on 4th August**, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. advised to arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of

pulses, maize and vegetables.

Arunachal Pradesh

- In Arunachal Pradesh, 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. Due to continuous rain, the condition become favorable for leaf-blast disease in Jhum rice at knee height/tasselling stage. On clear/sunny days, spray of Spencer @ 1 gram per litre or Carbendazim @ 2 gram per litre of water. Undertake harvesting of matured cobs of maize.

Assam & Meghalaya

- In Hill Zone of Assam, continue sowing of pigeon pea, sesame and nursery sowing of cauliflower. Continue transplanting of high yielding varieties of *Sali* rice. Spray Malathion (0.1%) to control sap sucking insects (aphids/mealy bug/scales) in Khasi Mandarin. Drainage system should be improved to prevent rhizome rot in ginger and turmeric. The affected areas may be drenched with 0.3% Mancozeb 75 WP @ 2g/l of water. Due to increase in relative humidity there is chance of Sigatoka leaf spot disease in banana crop. Spray 1% Bordeaux mixture after cutting the severely affected leaves and burning it if infestation is above ETL.
- In Lower Brahmaputra Valley Zone, continue transplanting of *Sali* rice of 25 days old seedlings of short and medium duration varieties. Due to recurring flood in some parts of the region, continue sowing of short duration rice varieties like Luit, Kapilee and dishang in advance and the seeds may be directly sown in the field during the month of August after flood water recedes from the field. Due to heavy rain, it is advised to postpone the land preparation for Arhar cultivation in main field. If sowing of seeds of Arhar has already been done in high land situation, it is advised to ensure proper drainage to remove the excess water from the main field. Continue sowing of sesame and Arhar after heavy spell of rain. Spray Quinalphos 25 EC @ 2 ml per litre of water or Monocrotophos 40 EC @ 4 ml per litre of water against stem borer and case worm attack in *Sali* rice at tillering stage during the rain free weather.
- In Upper Brahmaputra Valley Zone, continue transplanting of *Sali* rice seedlings of short and medium duration varieties in the areas which are not affected by flood. Transplanting of recommended varieties having an extended transplanting period (more than 60 days) like Gitesh and Prafulla can be continued. In heavily flood affected areas, high lands should be selected for raising of community nurseries to meet the seedling requirement of the farmers when water level in the fields subside. To prevent lodging of sugarcane crops due to incessant rainfall, it is advised to provide mechanical support to the crops by using bamboo sticks or tying 4 to 5 canes together with their leaves.
- In Barak Valley Zone, complete transplanting of *Sali* rice. Continue sowing of sesame, early cauliflower and pigeon pea. Due to flood water, if raising of nursery rice crop was not possible, go for sowing of direct Seeded Late *Sali* varieties like LUIT, KAPILEE and DISHANG (90-95 days duration). Due to favourable weather, there may be attack of rice hispa in some pockets of rice field. Spray Quinolphos 25EC @2000 ml/ha as soon as 2 adults per hill is observed. Rainy season is most susceptible for mosaic and leaf curl disease in papaya plant. To control the disease either rouge out the affected plant or spray with Rogar @ 0.1% on non rainy days.
- In Central Brahmaputra Valley Zone, continue transplanting of seedlings of *Sali* rice. If flood water does not recede, undertake 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). When planted with relatively aged seedlings, the farmers were to be suggested to use more number of seedlings (4-5 seedlings per hill) with closer spacing of 20 cm x 15 cm and ensure application of at least recommended dose of fertilizer. Undertake wet seeding of sprouted seeds (@75-80 kg/ha) of short to medium duration varieties like Disang, Luit, (100 days) Kapili, Kalong (120 days). 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.

- Continue sowing of sesamum and Arhar after current spell of heavy 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. Undertake nursery bed preparation and sowing of early cauliflower. To avoid damage of seedlings due to rainy season, farmers should apply portable transparent Polythene shade on bed of nursery seedlings. For flood prone areas farmers should go for portable nursery bed in wooden boxes, thermocol boxes and portable seedling tray for raising of seedlings of different vegetables like brinjal, cabbage, cauliflower, broccoli etc. within mid August.
- In North Bank Plain Zone, undertake sowing of *kharif* sesame under optimum soil moisture conditions. In flood affected areas, undertake sowing of semi dwarf varieties of Sali rice of like Pankaj (145-150 days duration) and Lakhimi (140-150 days duration); tall varieties like Swarnaprova (115-120 days duration); late Sali varieties like Manohar Sali and Andrew Sali (can be sown from mid July to first week of August); direct seeded late Sali varieties like Luit, Kapilee and Dishang (90-95 days duration). If there is total damage of seedlings or rice crop in the main field, undertake sowing of seeds for replanting with medium to short duration varieties in nursery bed within 1st week of August. Initiative should be taken for raising community nursery sowing for late planting with old seedlings of the varieties, if there is more than 50% damaged. Undertake late and staggered planting with the old seedlings of the varieties like Profulla and Gitesh if the field is heavily damaged. Farmers also undertake direct seeding with the photo insensitive short duration variety of Sali rice. Adopt submergence tolerance varieties for repeat flood prone areas. Farmers are advised to go for stripping and propping operation in sugarcane crop i.e. mechanical support to the crop so that heavy rainfall & strong wind cannot damage the crop by 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 transplanting of *Sali* rice. Ensure proper drainage system in the ginger/turmeric and vegetable crop field. Spray Azadirachtin 1500 ppm @ 5ml/ litre of water inside the whorls against Fall Army Worm incidence in maize when weather is clear. Do staking with bamboo structure for support in cucurbit crops. Avoid stagnation of rain water at the base of ginger. Spray Trichoderma Harzianum or any Copper Oxychloride fungicides @ 4g/litre of water at weekly interval against rhizome rot disease in ginger. Spraying neem oil @ 2ml/liter of water is a preventive measure against shoot borer in ginger.

Manipur, Mizoram, Tripura and Nagaland

- In Manipur, spray Dithane M-45 @ 2ml/ litre water to control Tikka disease in groundnut. Spray Hexaconazole 5% EC @2ml/ litre of water against rust in soybean. Monitor water level in the rice crop field. Construct proper drainage system to avoid flooding in rice crop field. Drain out water to avoid water logging in the maize/ black gram/ ginger field.
- In Mizoram, continue sowing of soybean. Continue harvesting of tomato and matured cobs of maize. Spray Streptocycline @ 0.6g/ litre water to control the disease bacterial leaf blight disease in rice. Apply Monocrotophos 2.0 ml/litre of water during sunny days or Pesto-neem @ 15-20 g/plant and cover with soil for better if attack of disease is above ETL.
- In Tripura, continue transplanting of Aman rice. Maintain good drainage facilities in maize and groundnut field.
- In Nagaland, complete transplanting of 21-28 days old seedling of TRC/WRC rice in the main field by the end of July. As transplanting is going on for paddy, leaf tip clipping should be done to remove the eggs of stem borer, release Trichogramma egg parasitoids @50,000 ha after 30 days of transplanting to control stem borer, leaf folder and case worm attack. Apply neem oil spray on alternate basis as to protect Naga

King chillis against white flies, aphids and other leaf eating caterpillars and use of sticky trap against sap sucking insects. Undertake harvesting of cow pea and maize. Ensure proper drainage to prevent soft rot and bacterial wilt in ginger. To improve the disease resistance in banana crop, drench the basin with Pseudomonas (bio-control agent) @20g/litre water cautiously on a rain free condition. Cut off the severely affected leaves due to Sigatoka leaf spot disease and burn it. Followed by spraying 1% Bordeaux mixture @1g/litre water on rain free weather. Repeat 4-5 sprayings at 2 weeks intervals depending on the severity of the disease.

Animal Husbandry

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

Fishery

- In Assam, due to flood water, fish pond may be submerged or going to be submerged; farmers are advised to surround the fish pond with the nylon net immediately so that the growing fishes do not escape from the fish pond.
- In Central Brahmaputra Valley Zone of Assam, farmers interested in rice fish farming should select field having capacity to hold water continuously to a depth of 30cm for several months. The land should be selected keeping in view that it will not be over flooded. The paddy field should have strong dyke of around 40-50cm height.

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

Realised Rainfall: Significant rainfall occurred in all districts of Andaman & Nicobar Islands, in all districts of Bihar except Araria, Arwal, Bhabua, Jamui, Nalanda, Nawada, Rohtas and Sheikhpura; in all district of Jharkhand except Chatra and Deogarh; in all districts of Odisha except Balasore, Bhadrak, Jagatsingpur, Jajpur, Kendrapara and Malkangiri; in all districts of Sub-Himalayan West Bengal & Sikkim and in all districts of Gangetic West Bengal except Malda. Weather remained dry/mostly dry over the rest of the region.

Advisories:

- **Thunderstorm accompanied with lightning** at isolated places very likely over Jharkhand, Odisha on 1st, **Thunderstorm accompanied with lightning & squall (speed 50-60 kmph)** very likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places very likely over Jharkhand, Sub-Himalayan West Bengal & Sikkim and Odisha on 2nd, **Thunderstorm accompanied with lightning & squall (speed 50-60 kmph)** likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places likely over Jharkhand, Sub-Himalayan West Bengal & Sikkim on 3rd, **Thunderstorm accompanied with lightning & squall (speed 50-60 kmph)** likely at isolated places over Andaman & Nicobar Islands and **with lightning** at isolated places likely over Jharkhand, Gangetic West Bengal on 4th August, 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. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at **most/many places** over Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, during the period, over Bihar & Jharkhand from 1st, 3rd & 4th, over

Odisha from 2nd to 4th, along with heavy rainfall at isolated places over Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands on 1st, over Odisha, on 2nd, **Heavy to very heavy rainfall** likely at isolated places over Andaman & Nicobar Islands and heavy rainfall at isolated places over Odisha on 3rd, **heavy to very heavy rainfall** at isolated places over Odisha and heavy rainfall at isolated places over Bihar, Jharkhand, Andaman & Nicobar Islands, on 4th August, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops, arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

Odisha

- In Western Undulating Zone, rice seedlings are two to four-week stage in nursery; prepare main field for transplanting seedlings at three-four-week stage of seedlings. Continue beushaning in direct seeded rice. Make arrangement to drain out water from the cotton, maize, arhar crop field.
- In Eastern Ghat High Land Zone, carry out transplanting of 25 - 30 days old rice seedlings; root dipping should be done with Chloropyriphos solution (1 ml/litre of water) for reducing insect attack. Undertake sowing of ragi in plain and uplands. Undertake sowing of maize and planting of ginger and yam.
- In North Western Plateau Zone, prepare a fine seed bed by cultivation; make strips of 6 inch height and 3 ft wide with length as per the land availability and make a 30 cm width water channel between the strips; for 10 decimal apply 40 baskets of FYM, 12 kg SSP and 2 kg MOP; transplant 4-5 leaf seedlings at 21-15 DAS and maintain a thin layer of water. In well drained upland, undertake sowing of pulses like greengram, Arhar and blackgram.

Bihar

- In North West Alluvial Zone, carry out transplanting of rice seedlings on priority basis. Complete sowing of pigeon pea in uplands. Weather conditions are congenial for planting of mango saplings in the orchards; choose different varieties of mango based on maturity (ripening) period.
- In South Bihar Alluvial Zone, continue transplanting of 21-25 days old seedlings of long, medium and short duration and scented rice variety in prepared field. Remove excess water from maize field.

Jharkhand

- In Central & North Eastern Plateau Zone, undertake transplanting of 15 days old rice seedlings (10-12 days old in case of SRI method); wash the mud from root thoroughly and dip the root in Chloropyriphos insecticide @ 1ml/litre of water for 12 hours before transplanting. Continue sowing of high-yield variety of groundnut, til and cowpea. Prepare field for sowing of moong and urad. Undertake planting of young saplings of mango, guava and litchi.
- In North and Central Eastern Plateau, transplanting of rice seedlings in medium land; if sufficient water is not available for puddling, collect rain water flowing from upland as runoff as the good amount of rain is expected during next few days. If the seedlings are more than 30 days, then upper part of the seedlings may be pruned (about 10 cm) one day before transplanting and dip them in fertilizer solution for overnight. Complete sowing of pigeon pea (arhar), black gram (urad), jowar, finger millet (marua), fodder, etc. during favourable weather condition at an early date.

West Bengal

Sub-Himalayan West Bengal:

- In Hill Zone, after transplanting of rice apply pre-emergence herbicide Butachlor (50 EC) @ 700 -800 ml per acre within 3-5 days after transplanting in standing water. Maintain proper drainage channels and manage weeds in the field.
- In Old Alluvial Zone, immediately harvest their jute crop, keep jute bundles in the field for 3 to 4 days for leaf shedding, as leaves after decomposition will add organic matter and some amount of plant nutrients in the soil.
- In Terai Zone, due to continuous heavy rainfall and water stagnation the vegetable crops like brinjal,

pointed gourd, bottle gourd, ridge gourd, chili, etc. suffer from rotting; make proper drainage channels to drain out water; avoid spraying and application of fertilizer till the clear sky. If rice seedbed is also underwater and expected to be damaged, prepare seedbed in trays (if possible) in some raised structure. The farmers who had already completed their transplanting are advised to maintain drainage.

Gangetic West Bengal:

- In Coastal Saline Zone, carry out transplanting of seedlings of late-sown Aman paddy by ploughing the main field at a depth of 12-15 cm; puddle properly and apply organic manure @ 7 quintal/bigha during puddling; check the bunds of paddy field. Turmeric and ginger crops are at rhizome bearing stage; raise the bed level and drench the soil around the rhizome with 0.4% Copper oxychloride @ 5 litres/sq. mt.
- In Red & Laterite Soil Zone, complete transplanting of rice seedlings in main field; plant 3-4 healthy seedlings per hill. Go for direct seeded rice of short duration varieties in medium upland areas.
- In New Alluvial Zone, start preparing land for sowing of kharif green gram and black gram or *Kalai*; sowing treat the seed with Carbendazim or Thiram @ 2 g/ kg 24 hrs or talc formulation of *Trichoderma viride* @4 g/kg; and then treat with biofertilizer *Rhizobium* @ 25 g/ kg seeds.

Andaman & Nicobar Islands

- Open the bunds and maintain thin film of water in the paddy nursery as good amount of rainfall is expected. Farmers are advised to harvest, store and effectively use rain water as deficit in rainfall (less than normal rainfall) is expected during next week. Avoid pesticide application during next five days and harvest the mature vegetables and take it to the nearby market. Harvest the mature banana and provide support to the fruit bearing banana and papaya tree as wind speed may rise to 41 km/h. Clean the coconut tree and garden; use *sesbania* around coconut tree as green manure.

Animal Husbandry

- Provide protein enriched diet to the animals. Mineral mixture @ 40-50gm /animal should be given. Hygiene should be maintained at the place where animals are kept. Keep the goat in dry and higher place to avoid pneumonia as moderate to heavy rainfall is expected.
- “Eso” is a very harmful disease that spreads during monsoon; follow proper vaccination for “Eso” at 2-month age of calf at 6 months interval, for swelling at throat at 3 months age of calf at 6 months interval and for black quarter at 4-month age at 1-year interval.

Fishery

- In West Bengal, apply the required quantity of calcium carbonate or lime in the submerged ponds. Check the overflow of water as fishes may drain out with overflowed water. Use fishing net in the possible exit points. Don't use excess feed to avoid water pollution.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Significant rainfall occurred in all districts of Gujarat Region except Anand, Banaskantha, Chhota Udepur, Dahod, Mahisagar, Narmada, Panchmahal, Patan and Vadodara districts, in all districts of Saurashtra & Kutch except Botad, Diu, Gir Somnath, Junagadh, Kutch, Morbi and Surendranagar districts; in all districts of Maharashtra except Sangli.

Advisories:

- **Thunderstorm accompanied with lightning** at isolated places very likely over Vidarbha on 1st & 2nd August, over Madhya Maharashtra, Marathwada on 1st August, 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. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at **most/many places** over Konkan & Goa during the period, over Madhya Maharashtra from 1st to 4th August, over Gujarat State from 2nd to 4th, **along with Heavy to very heavy rainfall** very likely at isolated places over Konkan & Goa on 1st, **Heavy to very heavy rainfall** very likely at isolated places over Madhya Maharashtra, Konkan & Goa and heavy rainfall at isolated places over Gujarat State on 2nd, **Heavy to very heavy rainfall** likely at a few places over Konkan & Goa and at isolated places over Gujarat Region, Madhya Maharashtra and heavy rainfall at isolated places over

Vidarbha, Saurashtra & Kutch on **03**, **Heavy to very heavy rainfall** at a few places **with extremely heavy falls** at isolated places likely over Konkan & Goa and **heavy to very heavy rainfall** at isolated places over Gujarat Region, Madhya Maharashtra and heavy rainfall at isolated places over Vidarbha, Saurashtra & Kutch, Marathwada on **04 August**, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Advised to arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

Maharashtra

- **In Konkan**, maintain water level of 2.5 to 5 cm by bunding rice field also drain out excess water from rice field . In Sindhudurg district, arrange for proper drainage of water in groundnut fields and undertake weeding operations in 20 days old groundnut crop during clear weather. To control blue beetle in rice, spray Quinalphos 25 EC @ 40 ml per 10 liters of water during clear weather. Arrange for draining out excess water from vegetable crops
- **In Madhya Maharashtra**, maintain water level up to 1 to 2 cm after transplanting up to stabilization of seedlings and 2 to 3 cm during the primary growth stage of seedlings in rice fields. Drain out excess water from all kharif crops and carry out hoeing and weeding in all kharif crops during clear weather. Undertake intercultural operation like weeding in the field at vapasa condition during clear weather. To maximize yield of soybean keep the field weed free upto 30-45 days after sowing . To control of shoot borer in maize apply 10% Phorate granules @ 10Kg per hectare in the field during clear weather. Frequent rains and high humid condition is favorable for occurrence of tikka and rust disease in groundnut , to control spray Mancozeb 25 g + 25 g Bavistin by mixing in 10 liters of water during clear weather.
- **In Marathwada**, management practices should be done to drain out excess amount of water from all *kharif* crops, orchards and vegetable fields. Due to cloudy weather along with increasing humidity leaf spot disease is observed in soybean crop, for management of leaf spot on soybean take a spray of Tebuconazole 10 % WP + Sulphur 65 % WG @ 10 gm per 10 liter of water during clear weather condition. Due to excess rainfall yellowing of leaves is observed in turmeric crop spray 0.5 to 1 % Ferrous sulphate or EDTA Chelated mix Micronutrient Grade (II) @ 500 g per 100 liter of water during clear weather condition. Due to continues rainfall, cloudy weather, increasing humidity bacterial blight in tomato is observed for management take a spray of Copper oxychloride 25 gm + Streptocyclin 1gm per 10 liter of water during clear weather condition.
- **In Vidarbha**, undertake intercultural operations during clear weather for management of weeds and to improve soil aeration in all *kharif* crops. Undertake transplanting of 4 to 6 weeks old seedlings of chilli, tomato, brinjal and cauliflower during clear weather. Maintain 2- 3cm water level in the transplanted rice fields. If incidence of Army worm observed in rice nurseries, spray Dichlorvos 76 EC 12.5 ml in per 10 liter of water. Undertake intercultural operations like hoeing and hand weeding in tur, cotton and soybean during clear weather. For surveillance and control of pink boll worm incidence, erect 5 phermone traps/ha in cotton fields.

Gujarat

- In Middle Gujarat, carry out gap filling and weeding in cowpea and pearl millet crops. Continue transplanting of rice, chili and tomato. Select improved varieties for new plantation of banana crop and carry out planting.
- In North Gujarat, sowing of castor as an intercrop with bunch groundnut is more beneficial than mono-cropping. Carry out intercultural operations in cotton, maize, cluster bean, pigeon pea, cow pea and sesame crops.
- In South Gujarat, maintain 2-3 cm water level in rice field. Give support to newly planted mango grafts. Take plant protection measures for control of red & black pumpkin beetle. Continue sowing of pigeon pea with two rows of soybean or green gram as intercrop.
- In Saurashtra and Kutch, undertake transplanting of onion, tomato, chili, brinjal and early cauliflower where seedlings are ready. Undertake intercultural operations in cotton, sesame, pearl millet, green gram, black gram,

cow pea at *vapsa* condition. Spray Ferrous Sulphate 100 gram & citric acid @10 gram/10 litre of water to cure yellowing of leaves in groundnut crop.

Animal Husbandry

- In Gujarat, provide adequate food and keep the animal shed clean.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in all districts of East Madhya Pradesh except Damoh, Katni, Satna, Seoni, Shahdol and Tikamgarh, in all districts of West Madhya Pradesh except Bhopal, Datia, Dewas, Dhar, Indore, Mandasaur, Rajgarh and Vidisha districts of West Madhya Pradesh and in all districts of Chhattisgarh except Durg and Rajnandgaon districts.

- **Advisories: Thunderstorm accompanied with lightning** at isolated places very likely over Madhya Pradesh, Chhattisgarh on 1st & 2nd August, 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. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.
- As **rain/thundershowers** likely at **most/many places** over Madhya Pradesh, Chhattisgarh **from 2nd to 4th, along with** heavy rainfall at isolated places over Madhya Pradesh, Chhattisgarh on 2nd & 3rd, **heavy to very heavy rainfall** at isolated places over Chhattisgarh and heavy rainfall at isolated places over Madhya Pradesh on **04th August**, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

Madhya Pradesh

- In Central Narmada valley Zone, undertake hand weeding in soybean and maize. Clean the basins of old fruit trees.
- In Kymore and Satpura Hill Zone, to control of weeds in 15-25 DAS soybean crop, spray weedicide i.e. Imazethapyr/ Quizalofop ethyl / Quizalofop-p-terfuryl/ Fenoxaprop-p-ethyl @ 1 lit/ha or Chlorimuron ethyl @ 36 g/ha at sufficient moisture in field. To control of stem borer, leaves eating caterpillar and sucking pest, spray pre mixed Thiomethazam + Lambda Cyhalothrin @ 125 ml/ha.
- In Jhabua Hills Zone, in maize, after weed control, give 1/3 dose of recommended nitrogen fertilizer in form of urea. Prepare drainage channels in proper distance for drainage of excess rain water in soybean and maize crop fields. Prepare field for cultivation of rainy season vegetables in raised furrow and poly-mulching method.
- In Bundelkhand Zone, complete 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 Northern Hill Zone, complete the transplanting operation of rice as early as possible. If the seedlings are overaged (more than 30 - 35 days) then, plant 4 to 5 seedlings at a distance of 15 cm (row to row) and 10 cm (plant to plant). In the transplanted rice fields, water should be stored up to 5 cm, more than that will cause low tillering. In rice under broadcasting situation, biasi should be done at 30-35 DAS followed by saghan chalai as per availability of sufficient moisture. Farmers are advised Weeding/ Intercultural operation in maize before broadcasting of urea. Apply 10 - 15 grains of furadon (insecticides) in each leaf sheath if the crops are attacked by stem borer.

- In Chhattisgarh Plain Zone, in the upland areas where rainfall has been less, rice crop early varieties like Tulsi, Aditya, Kalinga-3, Samleshwari, Vanprabha, Indira R-1 (Rajeshwari), Indira Barani Dhan-1 should be selected and sown in lines. In early duration varieties of arhar, row to row distance should be maintained 60 cms and plant to plant distance should be maintained 15cms. Medium duration varieties are sown at a distance of 90 cms x 20 cms.
- In Bastar Plateau Zone, complete 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, vaccinate cattle to prevent from Haemorrhagic Septicaemia and Black Quarter diseases. Vaccinate the goat to control PPR disease.

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

- **Realised Rainfall** : Significant rainfall occurred in all the districts of Himachal Pradesh except Kinnaur, Kullu and Lahaul & Spiti; in Doda, Jammu, Kathua, Rajouri, Reasi, Samba and Udhampur districts of Jammu & Kashmir and in all the districts of Uttarakhand except Almora and Uttarkashi; Ajmer, Baran, Bharatpur, Chittorgarh, Dungarpur, Jaipur, Kota, Rajsamand, Sikar in East Rajasthan; Churu, Pali, Sri Ganganagar in West Rajasthan; Rainfall occurred in all districts of East UP except Allahabad, Amethi, Banda, Chitrakoot, Kanpur Dehat, Kaushambi, Lucknow, Mirzapur, Sant RavidasNagar, Shrawasti, Sitapur, Sultanpur, Unnao and Varanasi districts; in all districts of West UP except Aligarh, Bagpat, Bulandshahar, Firozabad, GB Nagar, Gaziabad, Hapur, Jhansi, Jotiba Phule Nagar, Mahamayanagar, Mathura, Meerut, Moradabad, Muzaffarnagar, Rampur, Saharanpur, Sambhal and Shamli districts; in all district of Delhi except Central and North West Delhi; in Gurgaon, Jhajjar, Jind district of Haryana; in Gurdaspur and Ropar districts of Punjab.

- **Advisories: Thunderstorm accompanied with lightning** at isolated places very likely over Uttarakhand, Uttar Pradesh on 1st August, **Thunderstorm accompanied with lightning** at isolated places very likely over Uttarakhand, Uttar Pradesh on 2nd , 3rd, **Thunderstorm accompanied with lightning** at isolated places likely over Uttar Pradesh on 4th August, provide mechanical support to 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. Farmers are advised to avoid standing in the open or working in the field during thunderstorm period. Keep cattle/goats indoor during thunderstorm.

- As **rain/thundershowers** likely at **most/many places** over Uttar Pradesh, Himachal Pradesh, Uttarakhand during the period, **along with** heavy rainfall at isolated places over Himachal Pradesh, Uttarakhand, West Uttar Pradesh, East Rajasthan on 1st, over Uttarakhand, Uttar Pradesh on 2nd, over Himachal Pradesh, Uttarakhand, Uttar Pradesh on 03rd , over Himachal Pradesh, Uttarakhand, Uttar Pradesh on 04 **August**, avoid irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. advised to arrange for adequate drainage to avoid water stagnation in the crop fields. Drain out excess water from the fields of pulses, maize and vegetables.

Jammu & Kashmir

- In Sub-Tropical Zone, carry out weeding operation in okra. Give proper support to the cucurbits plants. Avoid direct contact of cucurbits fruit with soil. Remove infected brinjal fruits and shoots, if noticed in field and bury them. Monitor the rice crop for attack of thread worm. If observed, apply Carbofuran 3G @ 20kg/ha.
- In Cold Arid Zone, use shade nets on greenhouses to avoid intense solar stress. Carry out regular and timely

pruning in tomatoes, cucumbers, brinjal and capsicum. Feed the plants after each harvest. Harvest fruits in every crop once they attain size and colour. This would help other fruits to grow and develop earlier. Apply irrigation and avoid water stress.

- In Intermediate Zone, carry out intercultural operations in maize. Undertake sowing of pulses after optimum soil moisture condition is attained. To control rice hispa, apply Chlorpyrifos @ 2 ml/litre of water or Cypermethrin @ 2 ml/litre of water.
- In Valley Temperate Zone, carry out weeding in kharif pulses. Undertake land preparation for fresh plantation of saffron. Ensure deep ploughing to depth of 30 cm. In existing saffron fields first hoeing should be accompanied with racking. Avoid hoeing during wet weather to save corm rot. To avoid corm injury, mechanical hoeing to depth of 2-3 inches should be preferred over manual hoeing.

Himachal Pradesh

- In Sub Montane and Low Hills Sub Tropical Zone, carry out hoeing and weeding operations in maize crop. Install bird perches in tomato, pea, brinjal and gram crops to control fruit borer insect. Install pheromone trap @ 2-3 traps per acre of crop field for monitoring the fruit borer. Continue intercultural operations in pea, turnip, carrot, spinach, okra, French beans and sunflower.
- In Mild Hills Sub Humid Zone, install pheromone traps @ 3-4 traps per acre for monitoring pest population of diamond black moth in cole crops, pod borer in pea and fruit borer in tomato crop. Use well decomposed FYM 10-12 ton/acre in the cucurbitaceous crops field at the time of ploughing. Maintain optimum soil moisture in cucurbitaceous crops as dry conditions may lead to poor pollination and thus drop in yield of the crop. In case of whitefly infestation on cucumber, spray Imidacloprid @ 100ml/200 litres of water.
- In High Hill Temperate Dry Zone, for prevention of root rot disease in peas, spray Bavistin (Carbendazim) 1 gram / litre of water.
- In Mid Hills Sub Humid Zone, carry out hoeing and weeding operations in okra, capsicum and tomato. To control the scab in apple, spray Propinab (600 g) @ 200 litres of water. To control the pre mature leaf fall and alternaria blight in apple, apply Metiram 55% + Pyraclostrobin 5% WG (200g) @ 200 litres of water.

Punjab, Haryana, Delhi

- In Western Zone of Punjab, drain out excess water from the crop fields. Due to prevailing humid weather conditions, farmers are advised to regularly monitor rice crop for fungal disease and cotton crop for infestation of whitefly and jassid. 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, due to heavy rainfall, para wilt has been observed at a few places, it may be further aggravated therefore; spray cobalt chloride @ 10 mg/ liter of water on the affected plants only.
- In Undulating Plain Zone of Punjab, weather remained congenial for attack of rice hispa on the transplanted crop, spray 800 ml Ekalux 25 EC (quinalphos) or 1.0 litre Dursban 20 EC (chlorpyrifos) in 100 litres of water per acre with a manually operated sprayer to control hispa. Weather is favourable for attack of maize borer. Use trichocards twice having 40,000 eggs of *Corcyra cephalonica* parasitized by *Trichogramma chilonis* per acre to control borer damage
- In Central Plain Zone of Punjab, complete transplanting of basmati varieties 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. In view of rainfall, apply only need based irrigation to cotton crop. To prevent the incidence of mealy bug on cotton crop, remove all the weeds growing around the crop fields and regularly monitor the crop. If symptoms of fungal foliar leaf spots is observed, spray the crop with 200 ml of Amistar Top in 200 litres of water per acre.
- In Western Zone of Haryana, due to possibility of rainy conditions, farmers are advised to withhold irrigation, chemical spray in crops and keep arrangements for drain out excess amount of rain water from fields.

- In Eastern Zone of Haryana, remove sugarcane infected by top borer from the field and spray systemic insecticide on the insect and drain out stagnant water from the field. Keeping weather in mind, this is a suitable time for sowing of spinach.
- In Delhi, maintain social distancing during picking of vegetables and other agricultural operations. Undertake proper arrangement for drainage in all vegetables, pulse, maize and nurseries of the crops and avoid irrigation and any type of spray in the crops. Undertake weeding and hoeing in the standing crops and vegetables. Undertake transplanting of chilli, brinjal and early cauliflower in raised bed and maintain proper drainage in the field. Undertake transplanting or direct sowing of onion in the prepared fields and maintain proper drainage in the fields.

Uttar Pradesh:

- **In East Uttar Pradesh**, continue sowing of cucurbitaceous vegetables like cucumber, pumpkin, bottle gourd, bitter gourd, watermelon etc. Undertake intercultural operation in mung/urd field and in soybean after 25-30 days after sowing. Continue transplanting of tomato, brinjal, chilli, cauliflower, cabbage etc. Undertake weeding in standing crop fields of early sown paddy, brinjal, chilli and early cauliflower. After weeding in paddy, top dressing of urea should be done. Farmers are advised for sowing of guar, amaranthus and ladyfinger. This is the best time for plantation of Guava, Mango, Anola, Jackfruit and lime for new orchard.
- **In West Uttar Pradesh**, continue raising nursery of crops such as kharif onion, cabbage, brinjal, chilli, tomato and early cauliflower. If Khaira disease is visible in paddy, then spray 20-25 kg zinc sulphate and 2.5 kg lime in 800 liters of water for its control. Top dressing of urea at the rate of 50 to 60 kg per hectare at 25 to 30 days after transplanting of paddy is advised. In maize crop, first weeding-hoeing should be done after 15-20 days and second weeding-hoeing after 35-40 days. After weeding 20 to 25 days sowing of groundnut crops, do light hoeing after adding 100 kg of gypsum per hectare.

Animal Husbandry:

- There is possibility of foot and mouth disease and langra fever in cow/buffalo hence advised for vaccination at the earliest. Protect the poultry from moisture and dampness and provide proper lighting and maintain proper cleanliness.

Uttarakhand

- In Sub Humid Sub Tropic Zone, complete transplanting of rice as soon as possible. To prevent falling of autumnal sown sugarcane, tie 3- 4 plants of sugarcane crop. Drain out excess water from fodder sorghum.
- In Bhabar and Tarai Zone, carry out weeding and hoeing operations in soybean. Postpone irrigation in maize. Drain out excess water from tomato, capsicum and brinjal fields.
- In Hill Zone, carry out hand weeding in rice. Maintain proper water level. Use light traps in the field for control of pest infestation. Remove grassy weeds surrounding the rice fields to prevent build up of leaf folder. Drain out excess water from capsicum field.

Rajasthan

- In Flood Prone Eastern Plain Zone, sow daincha (sesbania) in fallow land for green manuring purpose.
- In Arid Western Plain Zone, okra crop may be affected by yellow vein mosaic viral disease. In this disease leaves and fruit become yellow. For the control of disease, spray Acetamiprid @ 0.3-0.5 ml per liter water.
- In Irrigated North Western Plain Zone, farmers are advised to monitor cotton fields regularly to check the appearance of white fly, if white fly population reach above economic threshold level (8-12 white fly/leaf), spray neem based (Nimbosidin 5 ml + liquid soap 1 ml per litre water) pesticides.
- In Sub Humid Southern Plain and Aravali Hill Zone, to control yellow mosaic of papaya virus, spray Imidacloprid 8 ml in 15 lit water and after 4 days spray Saaf 2 g per lit and repeat twice.
- In Semi Arid Eastern Plain Zone, this is suitable time of sowing of rainy season cucurbits like Khira, bottle gourd, ridge gourd, bitter gourd & cucumber. Treat seeds with Carbendazim 50 W.P. @ 2 gm per kg of seeds.

The Agromet Products in this Bulletin are generated by Agrimet Division, weather forecast issued by NWFC, New Delhi and Agromet Advisories are prepared based on the DAAS Bulletins issued by different Agrometeorological Field Units.