



National Agromet Advisory Service Bulletin

Friday 5th July 2019

(For the period 5th July to 9th July 2019)



Issued by

India Meteorological Department

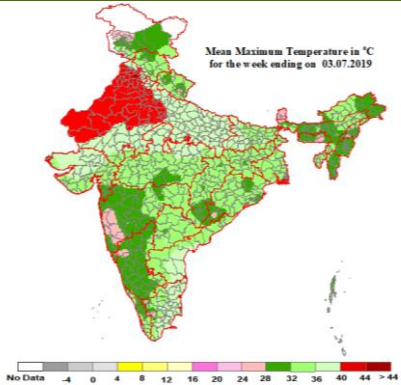
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District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

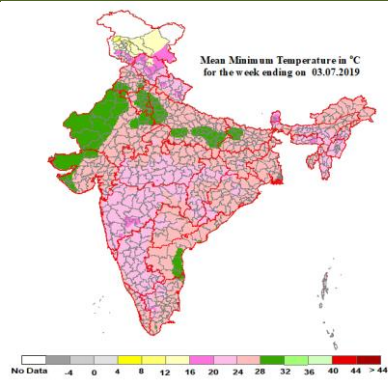
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending on 03.07.2019

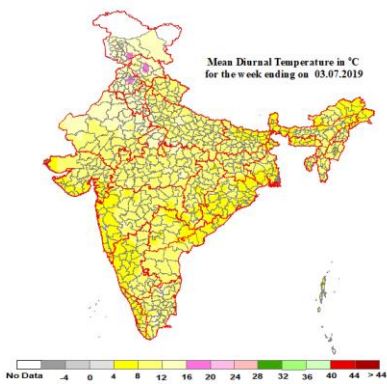
Mean Maximum Temperature (°C) for the week ending on 03.07.2019



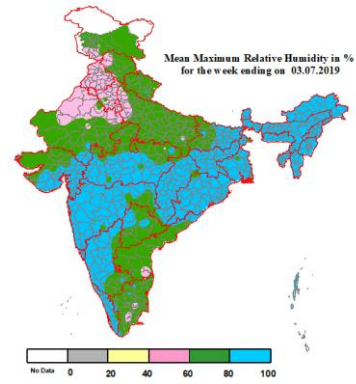
Mean Minimum Temperature (°C) for the week ending on 03.07.2019



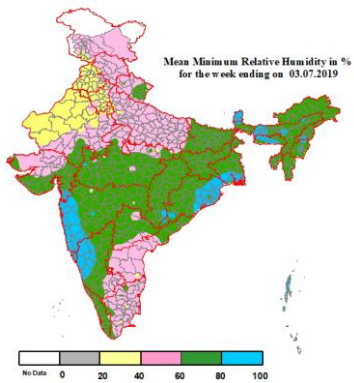
Mean Diurnal Temperature Variation (°C) for the week ending on 03.07.2019



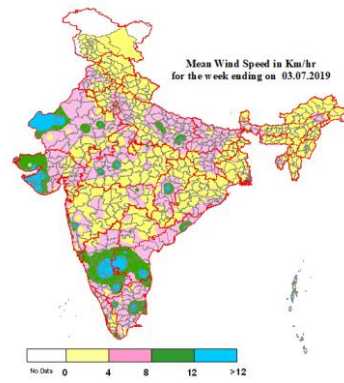
Mean Maximum Relative Humidity (%) for the week ending on 03.07.2019



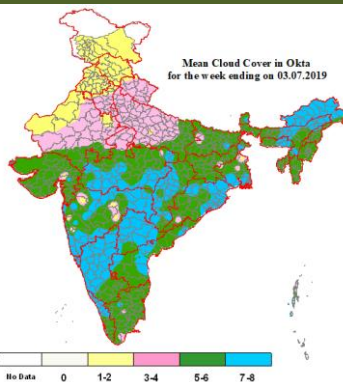
Mean Minimum Relative Humidity (%) for the week ending on 03.07.2019



Mean Wind Speed (km/hr) for the week ending on 03.07.2019

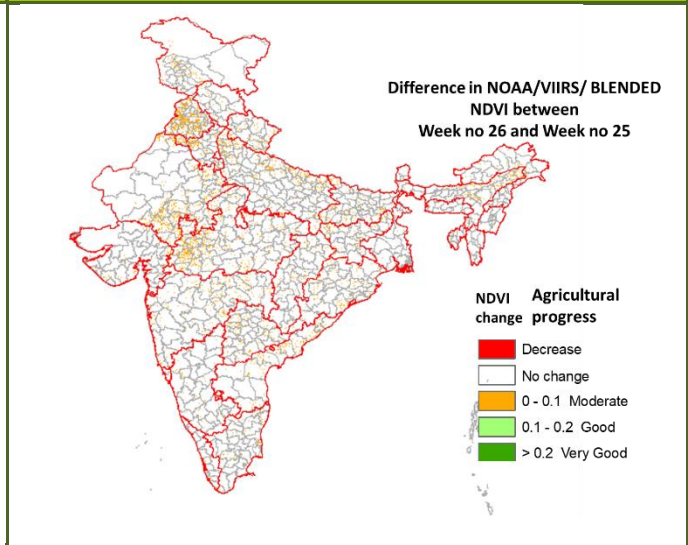
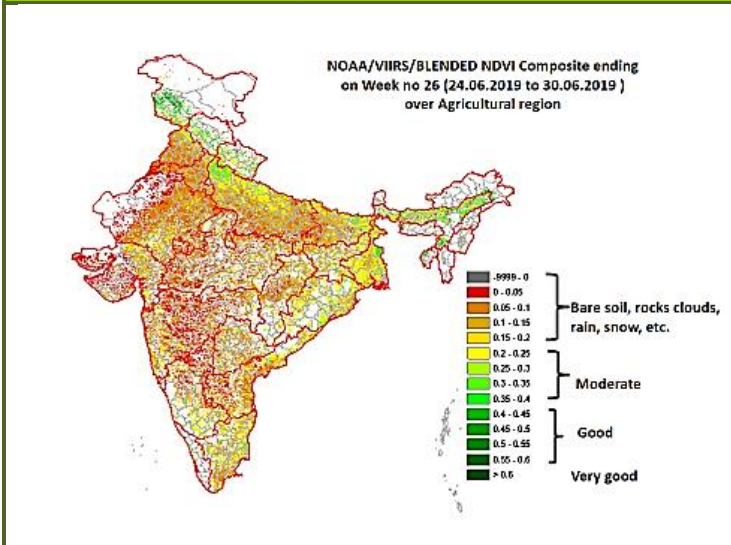


Mean Cloud Cover (okta) for the week ending on 03.07.2019



NOAA/VIIRS/BLENDED NDVI composite for the week number 26 (24.06.2019 to 30.06.2019) over Agricultural regions of India

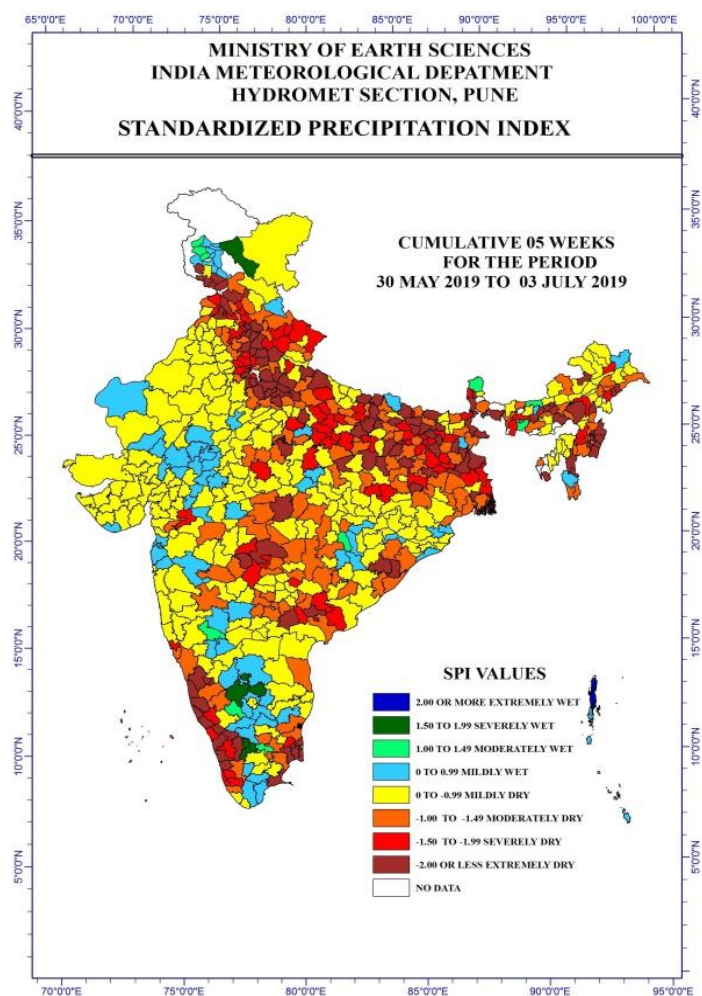
Difference in NOAA/VIIRS/BLENDED NDVI between week number 26 and week number 25



Agriculture vigour is good at many places over valley region of Jammu & Kashmir and at isolated places over North Eastern States, Himachal Pradesh and Jammu Division of Jammu & Kashmir.

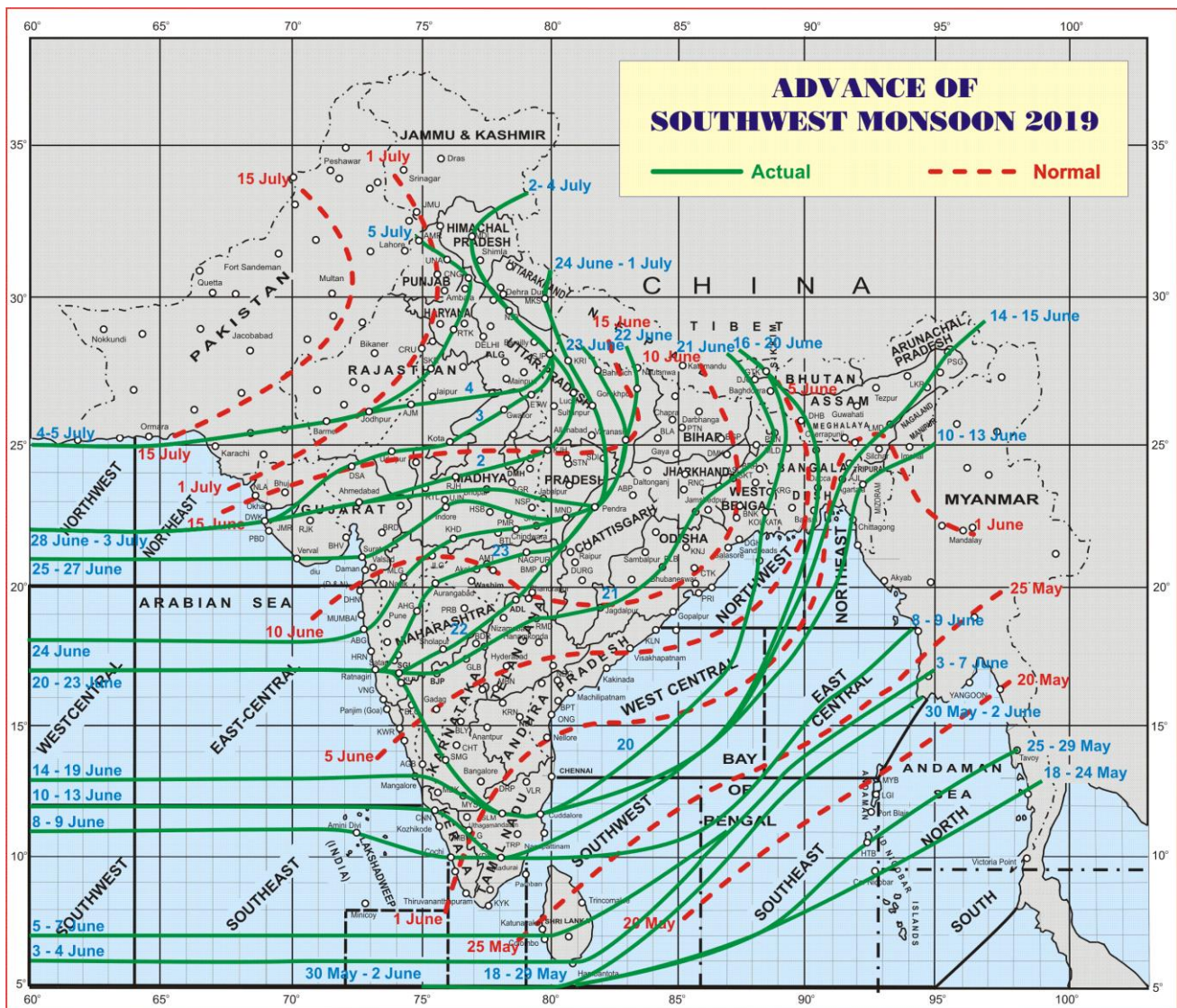
Moderate difference in agricultural vigour was noticed at a few places over Punjab, East Rajasthan & West Madhya Pradesh.

**Standardised Precipitation Index
Cumulative 5 weeks for the period 30th May to 03rd July 2019**



- Extremely/severely wet conditions experienced in Kargil district of Jammu & Kashmir, Tirupur district of Tamilnadu, North & Middle Andaman district of Andaman & Nicobar islands.
- Moderately wet conditions exists in Baksa district of Assam, Baramula, Badgam, Kupwara districts of Jammu & Kashmir, Bagalkote, Mandya districts of Karnataka, East Garo Hills district of Meghalaya, Karur district of Tamilnadu, North Sikkim district of Sikkim, Dhamtari districts of Chhattisgarh.
- Extremely/Severely dry conditions exists in West Godavari districts of Andhra Pradesh, East Siang, Lower Subansiri, Tirap districts of Arunachal Pradesh, Darrang, Kamrup, Karbi Anglong, Golaghat districts of Assam, Aurangabad, Begusarai, Bhagalpur, East Champaran and Jahanabad districts of Bihar.
- Moderately/ mildly dry conditions experienced in remaining districts in the country.

Advance of SouthWest Monsoon 2019



- Southwest monsoon has further advanced into some more parts of Rajasthan, remaining parts of Uttar Pradesh, Himachal Pradesh, Uttarkhand and Jammu & Kashmir and some parts of Punjab, Haryana, Chandigarh and entire Delhi.
- Northern Limit of Monsoon (NLM) passes through Lat. 25°N/Long. 60°E, Lat. 25°N/Long. 65°E, Barmer, Jodhpur, Sikar, Rohtak, Chandigarh, Una and Amritsar.
- Conditions are becoming favourable for further advance of Southwest Monsoon into remaining parts of Haryana, Punjab and some more parts of Rajasthan during next 72 hours.

Weather Forecast for next 5 days valid upto 0830 hours of 10th July 2019

- ♦ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table below.
- ♦ No significant change in maximum temperatures likely over major parts of the country during next 2-3 days.

**5 Day Rainfall Forecast (MID-DAY)
5th July 2019**

Met-Sub-Division	05-Jul Today	06Jul Sat	07Jul Sun	08Jul Mon	09Jul Tue
1. Andaman & Nicobar Islands	FWS	FWS	FWS	FWS	WS
2. Arunachal Pradesh	FWS	WS	WS	WS	WS
3. Assam & Meghalaya	FWS	WS	WS	WS	WS
4. N. M. M. & T.	WS	WS	WS	WS	WS
5. S.H. West Bengal & Sikkim	FWS	FWS	WS	WS	WS
6. Gangetic West Bengal	FWS	FWS	WS	WS	FWS
7. Odisha	WS	WS	FWS	FWS	FWS
8. Jharkhand	FWS	WS	WS	WS	WS
9. Bihar	FWS	WS	WS	WS	WS
10. East Uttar Pradesh	FWS	WS	WS	WS	WS
11. West Uttar Pradesh	FWS	FWS	FWS	WS	WS
12. Uttarakhand	WS	WS	WS	WS	WS
13. Haryana, Chd & Delhi	FWS	FWS	FWS	WS	WS
14. Punjab	SCT	SCT	FWS	FWS	FWS
15. Himachal Pradesh	FWS	FWS	WS	WS	WS
16. Jammu & Kashmir	FWS	SCT	SCT	FWS	FWS
17. West Rajasthan	ISOL	ISOL	ISOL	ISOL	ISOL
18. East Rajasthan	WS	FWS	SCT	ISOL	ISOL
19. West Madhya Pradesh	WS	FWS	SCT	SCT	FWS
20. East Madhya Pradesh	WS	WS	WS	WS	WS
21. Gujarat Region	FWS	FWS	SCT	SCT	SCT
22. Saurashtra & Kutch	SCT	ISOL	ISOL	ISOL	ISOL
23. Konkan & Goa	WS	WS	WS	WS	WS
24. Madhya Maharashtra	FWS	SCT	SCT	FWS	FWS
25. Marathwada	ISOL	ISOL	ISOL	SCT	SCT
26. Vidharbha	FWS	FWS	SCT	SCT	FWS
27. Chhattisgarh	WS	WS	WS	WS	FWS
28. Coastal A. P. & Yanam	FWS	FWS	SCT	SCT	SCT
29. Telangana	FWS	SCT	SCT	SCT	SCT
30. Rayalaseema	ISOL	ISOL	ISOL	ISOL	ISOL
31. T.N.,Puducherry & Karaikal	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	WS	WS	WS	WS	WS
33. North Interior Karnataka	FWS	FWS	FWS	FWS	FWS
34. South Interior Karnataka	FWS	FWS	FWS	FWS	FWS
35. Kerala & Mahe	WS	WS	FWS	SCT	FWS
36. Lakshadweep	FWS	SCT	SCT	FWS	FWS

% Station Reporting Rainfall

% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

Weather Warning during next 5 days

5 July (Day 1): ♦ **Heavy rainfall at a few places with very heavy rainfall** at isolated places very likely over Uttarakhand; **Heavy to very heavy rainfall** at isolated places over East Rajasthan, Coastal Karnataka, Odisha, Konkan & Goa, Gujarat region and Madhya Pradesh; and **heavy rainfall** at isolated places over Tamilnadu, Puducherry & Karaikal, South Interior Karnataka, Coastal Andhra Pradesh & Yanam, Telangana, Madhya Maharashtra, Vidarbha, Chhattisgarh, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, West Rajasthan, Gangetic West Bengal, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

♦ **Thunderstorm accompanied with gusty winds and lightning** very likely at isolated places over Rajasthan and Punjab and **with lightning** over Bihar and Jharkhand.

♦ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are very likely to prevail over westcentral & adjoining southwest Arabian Sea; Gujarat, Maharashtra coast; Odisha, West Bengal, north & adjoining westcentral Bay of Bengal and Andaman Sea.

06 July (Day 2): ♦ **Heavy to very heavy rainfall** at isolated places over Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Odisha, Coastal Karnataka, Konkan & Goa, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and **heavy rainfall** at isolated places over South Interior Karnataka, Gujarat region, Madhya Pradesh, Chhattisgarh, Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Rajasthan, Gangetic West Bengal Bihar, Jharkhand, Odisha and Arunachal Pradesh.

♦ **Thunderstorm accompanied with gusty winds and lightning** very likely at isolated places over Rajasthan and **with lightning** over Bihar and Jharkhand.

♦ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are very likely to prevail over westcentral & adjoining southwest Arabian Sea; Gujarat, Maharashtra coast; Odisha, West Bengal, north & adjoining westcentral Bay of Bengal and Andaman Sea.

07 July (Day 3): ♦ **Heavy to very heavy rainfall with extremely heavy falls** at isolated places very likely over Assam & Meghalaya; **Heavy rainfall at a few places with very heavy rainfall** at isolated places over Uttarakhand and East Uttar Pradesh; **Heavy to very heavy rainfall** at isolated places over Coastal Karnataka, Konkan & Goa, Himachal Pradesh, West Uttar Pradesh and Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura; **heavy rainfall** at isolated places over South Interior Karnataka, Punjab, Haryana, Chandigarh & Delhi, East Madhya Pradesh, West Bengal & Sikkim, Bihar and Jharkhand.

♦ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are very likely to prevail over westcentral & adjoining southwest Arabian Sea; Odisha, West Bengal, north & adjoining westcentral Bay of Bengal and Andaman Sea.

08 July (Day 4): ♦ **Heavy to very heavy rainfall with extremely heavy falls** at isolated places likely over Assam & Meghalaya; **Heavy rainfall at a few places with very heavy rainfall** at isolated places very likely over East Uttar Pradesh; **Heavy to very heavy rainfall** at isolated places over Coastal Karnataka, Konkan & Goa, East Madhya Pradesh, Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, West Uttar Pradesh and Nagaland, Manipur, Mizoram & Tripura and **heavy rainfall** at isolated places over South Interior Karnataka, Jammu & Kashmir, Punjab, Sub-Himalayan West Bengal & Sikkim, Bihar, Jharkhand and Arunachal Pradesh.

♦ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are likely to prevail over westcentral & adjoining southwest Arabian Sea.

09 July (Day 5): ♦ **Heavy rainfall at a few places with very heavy rainfall** at isolated places very likely over Konkan & Goa and East Uttar Pradesh; **Heavy to very heavy rainfall** at isolated places over Coastal Karnataka, East Madhya Pradesh, Haryana, Chandigarh & Delhi, West Uttar Pradesh and Assam & Meghalaya and **heavy rainfall** at isolated places over South Interior Karnataka, Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura.

♦ **Rough to very rough sea conditions** (with wind speed reaching 40-50 kmph) are very likely to prevail over westcentral & adjoining southwest Arabian Sea.

Weather Outlook for subsequent 2 days from 10th to 12th July 2019

- ◆ Widespread rainfall with isolated heavy/very heavy falls likely over northern plains, northeast India and along the West coast.
- ◆ Scattered to Fairly widespread rainfall likely over the rest of the country outside west Rajasthan, Gujarat and southeast peninsular India where isolated rainfall is likely.

Salient advisories

- Utilizing the reliased and expected rainfall:
 - Continue transplanting of *Virippu* rice in **Kerala**.
 - In **Coastal Karnataka**, continue transplanting of rice. In **South Interior Karnataka**, complete sowing of groundnut, maize, red gram, cowpea, green gram, black gram, horse gram, field bean etc, ragi, sesame, sunflower, cotton, castor, minor millets crops where sufficient rain occurred and undertake transplanting of rice crop where seedlings are ready. In **North Interior Karnataka**, undertake sowing of groundnut, green gram, black gran, jowar, soybean, pigeon pea, sunflower, Bt. cotton, bajra, maize, sesamum, soybean, and crops in areas which received sufficient rain.
 - In Southern Zone of **Andhra Pradesh**, undertake transplanting of rice. In **North Telangana**, continue nursery sowing of medium and short duration varieties of rice upto 15th July.
 - In **Assam**, continue field preparation for transplanting of *Sali* rice.
 - In **Konkan**, continue transplanting of rice seedlings (20 to 22 days old) and nagli (30 days old) after current spell of heavy rain. Drain out excess water from rice nursery. Drain out excess water from groundnut fields. In Maratwada, undertake sowing of pearl millet after receipt of sufficient amount of rainfall. In Vidarbha, in areas with sufficient realized rain fall, undertake sowing of kharif crops like pigeon pea, cotton, green gram, black gram and soybean and in areas with insufficient soil moisture condition, undertake sowing after receipt of sufficient rainfall.
- In **Odisha**, continue nursery raising for *Kharif* rice and sowing of cotton, maize, arhar, groundnut. Undertake transplanting of 25 to 30 days old seedlings of rice in Bihar. Continue sowing of soybean, maize and groundnut in **Chhattisgarh**. In **Madhya Pradesh**, continue nursery sowing of early and medium duration varieties of rice and continue sowing of soybean and maize. In **South Gujarat**, undertake land preparation for transplanting of rice seedlings.
- As rain/thundershowers likely at most places over **Uttarakhand**, at most/many places over **Uttar Pradesh**, **Himachal Pradesh**, **Haryana**, **Chd & Delhi** during the period, at many places over **East Rajasthan** on 5th& 6th, over **Punjab** from 7th to 9th and over **Jammu & Kashmir** on 5th, 8th & 9th July along with **heavy rainfall at a few places with very heavy rainfall** at isolated places very likely over Uttarakhand; **Heavy to very heavy rainfall** at isolated places over East Rajasthan on 5th, **Heavy to very heavy rainfall** at isolated places over Himachal Pradesh, Uttarakhand, East Uttar Pradesh on 6th July; avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in Uttarakhand and Himachal Pradesh.
- **As thunderstorm accompanied with gusty winds and lightning** very likely at isolated places over **Rajasthan** on 5th & 6th and over **Punjab** on 5th July, it is advised to provide mechanical support to young fruit plants, staking of vegetables to prevent the crops from lodging due to strong winds.

Detailed Agromet Advisories

Realised Rainfall: Rainfall occurred in Idukki, Malappuram and Wayanad districts of Kerala, Chennai and Karaikal districts in Tamilnadu, all districts of Coastal Karnataka, in Belagavi, Dharwad, Haveri districts of North Interior Karnataka, in Chikkamagaluru, Davangere, Kodagu and Shivanogga districts of South Interior Karnataka, East Godavari district in Andhra Pradesh ; Adilabad, B. Kothagudem, J. Bhupalpally, Jagtial, Jangaon, Kamareddy, Karimnagar, Kumaram Bheem, M. Malkajgiri, Mancherial, Medak, Nirmal, Nizamabad, Peddapalle, Ranjanna Sircilla, Siddipet, Warangal_Rural and Warangal_Urban districts of Telangana during the week. Weather remained mainly dry over rest of the region during the week

Advisories:

- As rain/thundershowers likely at most places over Coastal Karnataka and at many places over North & South Interior Karnataka during the period, at most/many places over Kerala from 5th to 8th and 9th July, at many places over Coastal Andhra Pradesh on 5th & 6th and over Telangana on 5th July along with heavy to very heavy rainfall at isolated places over Coastal Karnataka during the period, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields Coastal Karnataka.

Kerala:

- Continue transplanting of *Virippu* rice and complete sowing of direct sown paddy crop. Continue planting of new seedlings of coconut and banana.
- In Northern Zone, undertake planting of coconut seedlings.
- In Problem Area Zone, high humid and water stagnated condition is highly favourable for the incidence of whitefly attack in coconut, spray organic emulsion Nimbecidine @ 2ml/lit or Verticilliumlecani1*109 ml spore count for the effective control of white fly pest.
- In Central Zone, there is a chance of Quick wilt disease in Pepper due to high relative humidity, apply Trichoderma or Pseudomonas culture in soil or 1% Bordeaux mixture can be sprayed on the leaves and small branches.

Andhra Pradesh:

- In Southern Zone of Andhra Pradesh, undertake transplanting of rice with recommended package of practices and weed control.
- In North Coastal Andhra Pradesh, undertake sowing of groundnut and land preparation for direct dry rice.
- In Scarce rainfall Zone of Rayalaseema, undertake land preparation for sowing of groundnut and take up sowing only after receiving 50mm rainfall for red soils and 75 mm rainfall for black soils. Also prepare the land for sowing of red gram.
- In Krishna Godavari Zone of Andhra Pradesh, continue nursery preparation for sowing of rice and land preparation for sowing of Pre-Kharif Pulses and rainfed sugarcane

Telangana:

- In Southern Telangana, continue sowing of rainfed crops like soybean, jowar, maize, greengram, cotton etc., only after receiving cumulative rainfall of 50-60 mm in light soils and 60-75 mm in heavy soils. Undertake redgram as intercrop in Maize and cotton.
- In Northern Telangana, continue nursery sowing of medium and short duration varieties of rice upto 15th July. Farmers are advised not to take up sowing of cotton and soybean in light soils under rainfed conditions.
- In Southern Telangana, the prevailing weather conditions are congenial for incidence sucking pests in vegetables. To control, spray Dimethoate @ 2 ml or Acephate @ 1.5 g per litre of water. Undertake nursery sowing of Tomato, Brinjal and Chillies and direct sowing of Gourds, Beans and Bhendi with assured irrigation.

Tamil Nadu:

- In Cauvery Delta Zone, undertake transplanting of kuruvai season rice.
- In Western Zone, high relative humidity may cause leaf spot in turmeric and downy mildew in cucurbits and onion, spray Mancozeb 1 kg/ha.
- In Coastal Zone, as an alternate crop for kuruvai rice, transplanting of ragi (TRY 1) can be done utilizing a seed rate of 5 kg/ha in clay textured soil and direct sowing may be done in coarse textured soil.
- In Southern Zone, to prevent boll shedding in cotton, nip the terminal portion of the main stem followed by Spray 40 ppm NAA at 60 and 90 days after sowing on the crop.

Karnataka:

- In South Interior Karnataka, complete sowing of groundnut, maize, red gram, cowpea, green gram, black gram, horse gram, field bean, ragi, sesame, sunflower, cotton, castor, minor millets crops where sufficient rain occurred and continue transplanting of rice seedlings. Postpone sowing operation where soaking/sufficient rainfall is not received. Intercropping of groundnut + red gram in 8:2 proportions and groundnut+ castor in 8:2 proportions is suggested for good income.
- In Coastal Karnataka, continue transplanting of rice. Continue sowing of maize, cotton, planting ginger and turmeric after current spells of heavy rain.
- In North Interior Karnataka, continue sowing of groundnut, green gram, black gram, jowar, soybean, pigeon pea, sunflower, Bt. cotton, bajra, maize, sesamum crops where sufficient rain occurred. Intercropping of bajra+ groundnut (bunch) in 2:4 row proportion; bajra + red gram in 2:1 row proportion; groundnut (bunch) + red gram in 3:1 or 4:2 row proportion, red gram + sesamum in 1:2 or 2:4 row proportion is suggested.

Animal Husbandry

- In Karnataka, keep cattle in shed during heavy rainfall period.

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

Realised Rainfall : Rainfall occurred in all districts except Anjaw of Arunachal Pradesh; all districts in Assam except Darrang; all districts of Meghalaya; in all districts except Mamit of Mizoram; Bishnupur, Imphal West and Tamenglong districts of Manipur; Dimapur, Kohima, Longleng, Mokokchung, Mon, Paren, Tuensang and Zunheboto districts of Nagaland and Dhalai and North Tripura districts of Tripura.

Advisories:

- As rain/thundershowers likely at most/many places over **Arunachal Pradesh, Assam & Meghalaya**, at most places over **Nagaland, Manipur, Mizoram & Tripura** during the period along with heavy/heavy to very heavy rainfall at isolated places likely over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 5th, 6th & 9th, **Heavy to very heavy rainfall with extremely heavy falls** at isolated places likely over Assam & Meghalaya on 7th & 8th July; avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.

Arunachal Pradesh:

- Continue transplanting of *kharif* rice.
- To control infestation of leaf blast & leaf spot in *jhum* rice, spray Carbendazim @2g/litre of water after current spells of rain.

Assam & Meghalaya:

- In Assam, continue the main field preparation and transplanting of *Sali* paddy.
- In Hill Zone of Assam, continue sowing of pigeon pea and cotton after current spells of heavy rain.
- In Lower and Upper Brahmaputra Valley Zone of Assam, undertake land preparation for sowing of pigeon pea and sowing of sesame after current spells of heavy rain.
- In Barak Valley Zone of Assam, due to hot weather and high relative humidity there is chance of Brown spot and Blast diseases attack in nursery bed. To control these fungal disease spray Carbendazim + Mancozeb @ 2.5 g per litre of water and maintain the sanitation of nursery bed and remove the stagnation water.
- In Central Brahmaputra Valley of Assam, continue sowing of arhar. Harvesting and retting of jute should be done preferably at pre-flowering stage (120days after sowing) to get better quality fibre. At present the water temperature in the retting tanks is ideal for retting of jute. Early and timely sown capsularis jute may be harvested during this week and kept in the field in standing position for 3-4 days before retting for proper defoliation.
- In North Bank Plain Zone of Assam, to control red rot disease in sugarcane, avoid water stagnation in the field and removing of the affected plants should be practiced. To control Rhizome rot disease in ginger and turmeric, drench the affected area with 0.3% Mencozeb 75 WP @ 2g/l of water after current spells of rain.
- In Meghalaya, undertake transplanting of low land Sali rice. Maintain proper drainage in the field of ginger, turmeric and maize fields.

Manipur, Mizoram, Tripura and Nagaland:

- In Nagaland, continue nursery raising of RC/WRC rice. Undertake main field preparation for transplanting of rice and sowing of groundnut.
- In Manipur, continue main field preparation and transplanting of kharif rice.
- In Mizoram, to manage Northern leaf blight disease in maize at cob formation stage, spray Approach (Methoxy-acrylates) @ 2 g/litre of water after current spells of rain.
- In Tripura, complete transplanting of Aus rice and maintain 2 to 5cm of water after 30 days of transplanting. Complete the sowing of maize and groundnut. Maintain good drainage to avoid stagnant water in the field of cowpea at pod formation stage.
- In Tripura, there is chance of infestation of sheath blight due to humid weather in Jhum rice at panicle initiation stage. Spray Surf @ 1 gm per litre of water to control the attack of sheath blight.
- In Tripura, in areas where nursery sowing of Aman rice is delayed, to avoid further delay, it is advised to go for direct sowing of Aman rice. Comparatively short duration variety like Gomati may be preferred.

Animal Husbandry:

- In Assam, immunizations against FMD, HS and BQ in cattle & buffaloes and swine fever in pigs may be carried out during monsoon season. During monsoon season the calves are infected more by the worms. To reduce the problem, it is advised to give Piperzine or Mebendazole at recommended dose in consultation with veterinary doctor.
- In Barak Valley Zone of Assam, vaccinate the poultry with R2B @ 0.5 ml against Ranikhet disease by eye drop route. Changing weather condition could lead to viral diseases to the birds. So farmers may provide sufficient water with 1% salt and mineral mixture. Farmers are also advice to clean the sanitary condition of poultry. Provide balanced feed, fresh water.
- **Fishery:**
- In Upper Bramhaputra Valley Zone of Assam, to control ulcer disease in fish, apply Oxytetracycline @ 25-75 mg/ kg of feed for 6 days.
- In Barak Valley Zone of Assam, provide locally available fish feed like rice bran and mustard cake in ratio of 1: 1 can be given @ 2% of the body weight with mineral mixture which prevent the fishes from various diseases.

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

Realised Rainfall: Rainfall occurred in all districts of Andaman & Nicobar Islands; in Banka, Bhagalpur, Darbhanga, East Champaran, Gaya, Gopalganj, Jamui, Monghyar, Muzaffarpur, Nalanda, Nawada, Patna, Purnea, Sheikhpura, Sheohar, Sitamarhi, Sewan, Vaishali and West Chamaparan districts of Bihar; in all districts of Jharkhand except Garhwa, Godda and Pakur; in all districts of Odisha except Rayagada; in all districts of Gangetic West Bengal except Bankura and Howrah and in all districts of Sub-Himalayan West Bengal and Sikkim except Malda and North Dinajpur. Weather remained mainly dry over rest of the region.

Advisories:

- **Thunderstorm accompanied with gusty winds and lightning** at isolated places very likely over Bihar and Jharkhand on 5th & 6th July, provide mechanical support to banana, young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds.
- As rain/thundershowers likely at most/many places over Sub-Himalayan West Bengal and Sikkim, Gangetic West Bengal, Bihar, Jharkhand and Odisha during the period along with heavy rainfall at isolated places likely over Sub-Himalayan West Bengal and Sikkim, Bihar and Jharkhand from 7th to 9th, over Gangetic West Bengal from 5th to 7th July; avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in Sub-Himalayan West Bengal, Sikkim, Bihar and Jharkhand.

Odisha:

- Direct seeded rice is at germination to one week seedling stage. Drain out excess water from the fields to avoid submergence of seeds and seedlings. Prepare land for nursery raising of Kharif paddy after the rain stops. Complete the sowing of arhar and ragi. Go for sowing of non-paddy crops like groundnut, sesame, cowpea, etc. and vegetables like lady's finger, cowpea, cauliflower, cluster bean, etc. in rain-fed upland. Cotton, groundnut and maize crops are at sowing to germination stage. Make adequate drainage channels in the field to avoid water stagnation.

- To minimize infestation of top shoot borer in sugarcane, spray Lamba cyhalothrin @2ml/litre of water. Apply plant protection measures on a non rainy day.

Bihar:

- Undertake transplanting of 25 to 30 days old paddy seedlings. Continue land preparation for sowing of kharif maize and onion.
- Regular monitoring of pests is advised in vegetables crops. To control leaf feeder/fruit borer in summer vegetables, spray Di-methoate 30 EC @1-1.5 ml/liter of water. Apply plant protection measures on a non rainy day.

Jharkhand:

- Undertake direct seeding of rice, sowing of maize and groundnut with short or medium duration varieties. For kharif transplanted rice, make a nursery above the ground level. Sow paddy seeds phase-wise (3-4 phases at the interval of 4-5 days). To prevent water stagnation in the nursery bed, construct channels around the seed bed for drainage. Keeping in mind of irregularities of rainfall, farmers may prefer cultivation of crops having least water requirement like arhar, urd (blackgram), marua (finger millet), jowar, bajra, soybean, etc. Remove excess water from ginger, turmeric and yam fields. Utilizing the rainfall, go for plantation of new fruit orchards.

West Bengal:

- In Sub-Himalayan West Bengal, provide drainage in Mandarin orange, ginger and turmeric fields. Avoid irrigation to okra crop. Take up sowing of early cauliflower seeds in nursery bed after seed treatment with Bavistin or Mancozeb. Undertake field preparation for transplanting of Aman rice.
- For management of sucking pest infestation on jute, spray Dinoteferun 20% SG @ 1g/litre of water + 0.5ml/litre sticker. Undertake plant protection measures after current spells of rain.
- In Gangetic West Bengal, protect paddy nursery with proper drainage channels to remove excess water from the field. Carry out main field preparation. Give proper bunding to hold the water in the field.
- Collect and destroy okra fruits affected by fruit borer. Spray Neem oil @50ml/litre of water at clear weather condition. Undertake plant protection measures after current spells of rain.

Andaman & Nicobar Islands:

- In Andaman & Nicobar Islands, open the bunds and maintain thin film of water in the paddy nursery. Keep open the bunds of vegetables field to avoid damages due to water logging. Plant pineapple suckers on the embankment of ponds to reduce soil erosion. Clean the crown of coconut tree to avoid the attack of Rhinoceros beetle in coconut field.

Animal Husbandry:

- In Bihar, vaccinate cattle against Anthrax, BQ and HS diseases.
- In West Bengal, vaccinate cattle against FMD, BQ and HS. If domestic animals do not have access to green fodder, give them Vitamin A injections as per the requirement.
- In Andaman & Nicobar Islands, provide well ventilated shelter to animals and poultry birds in day time. Put some barrier at south-west side at night to avoid direct wind to the animals. Provide deworming treatment to pig with the consultation of local veterinary doctors.

Fishery:

- In Jharkhand, stop fishing and complete the resurrection of pond. Manage for breeding of major carp fish. Go for the preparation of nursery pond for fingerling.
- In Odisha, maintain 5 ft water depth in the pond wherever it is possible. Apply CaO @ 40 kg/ ac.m size of pond to maintain the clarity of water.
- In West Bengal, go for putting the fingerling of carp in the pond. If oxygen deficiency is observed, stir the pond water by wheel. Apply lime for cleaning the water.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

Realised Rainfall: Rainfall occurred in Anand, Bharuch, Chhota Udepur, Dangs, Narmada, Navsari, Panchmahal, Patan, Surat, Tapi, Vadodara and Valsad districts of Gujarat Region, in Amreli, Bhavnagar, Gir Somnath district of Saurashtra & Kutch, all the districts of Konkan and in Madhya Maharashtra except Nandurbar and Solapur, in Marathawada except Osmanabad and all the districts of Vidarbha. Weather remained mainly dry over rest of the the region.

Advisories:

- As rain/thundershowers likely at many places over Gujarat region on 5th & 6th, at most places over Konkan & Goa during the period, at many places over Madhya Maharashtra on 5th, 8th & 9th and over Vidarbha

on 5th, 6th & 9th July along with **Heavy to very heavy rainfall** at isolated places very likely over Konkan & Goa on 7th to 9th July, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in Konkan & Goa.

Maharashtra:

- In Konkan region, continue transplanting of rice seedlings (20 to 22 days old) and nagli (30 days old) after current spell of heavy rain. Drain out excess water from rice nursery. Undertake sowing of groundnut. Drain out excess water from groundnut fields. Undertake plant protection measures like fertilizer application after current spell of heavy rain and drain out excess water from vegetable fields. Drain out excess water from vegetable fields. Provide mechanical support to cucurbitaceous crops.
- In Madhya Maharashtra, undertake nursery sowing of rice. Continue nursery sowing of rice and nagli. Undertake sowing of kharif crops like groundnut, soybean and jowar at vapsa condition. To control sap sucking pest in vegetables, spray Thiamethoxam 25 WG @ 2 g 10 litres of water on a non rainy day. Undertake sowing of kharif pearl millet, pigeon pea, cotton and soybean at vapsa condition. For control of red mites in pomegranate, spray Dicofol 18.5 EC @ 15 ml or Abamectin 1.8 EC @ 4 ml in 10 liters of water on a non rainy day.
- In Maratwada, undertake sowing of pearl millet after receipt of sufficient amount of rainfall.
- Undertake intercultural operations like weeding in orchards and sugarcane fields.
- In Vidarbha, in areas with sufficient realized rain fall, undertake sowing of kharif crops like pigeon pea, cotton, green gram, black gram and soybean and in areas with insufficient soil moisture condition, undertake sowing after receipt of sufficient rainfall. Continue nursery sowing of kharif vegetables like chilli, tomato and brinjal etc. Undertake sowing of vegetables crops like bhendi, cucumber, bitter gourd, pumpkin and tinda etc.

Gujarat

- In Middle Gujarat, undertake land preparation for transplanting of rice, tobacco and vegetable crops (tomato, chili, etc) and undertake transplanting where seedlings are ready. Undertake sowing of pearl millet, groundnut crops where sufficient rainfall occurred.
- In Saurashtra & Kutch, continue sowing of groundnut, cotton, sesame, pulses and pearl millet crops in Saurashtra and after receipt of sufficient rainfall in Kutch. Continue transplanting of vegetable (tomato, chilli, brinjal and early cauliflower) crops where seedlings are ready. Continue sowing of lady's finger, cluster bean, kidney bean, cowpea, tur, amaranthus etc. and cucurbits.
- In South Gujarat, arrange for proper drainage in the nurseries of brinjal, tomato, chilli and early cauliflower. Undertake land preparation for transplanting of rice seedlings. Continue sowing of pigeon pea, green gram and black gram crops where sufficient rainfall occurred. Undertake new plantation of banana. Provide drainage facility in heavy rainfall area.
- In North Gujarat, undertake sowing of groundnut, pearl millet, sesame, green gram and sorghum crops with sufficient rainfall.

Animal Husbandry

- In Gujarat, provide 30-35 gm mineral mixture in daily diet of animals. Care should be taken in rainy days for cattle and stored dry fodder.

CENTRAL INDIA [M.P., CHHATTISGARH]

Realised Rainfall: Rainfall occurred in all districts of Chhattisgarh, in all districts of Madhya Pradesh except in Panna, Rewa, Singurli and Tikamgarh districts East Madhya Pradesh and Asoknagar, Datia, Morena and Sheopur Kalani districts in West Madhya Pradesh.

Advisories:

- Rain/thundershowers likely at most/many places over Chhattisgarh and at most places over East Madhya Pradesh during the period, at most/many places over West Madhya Pradesh on 5th, 6th & 9th along with **Heavy to very heavy rainfall** at isolated places very likely over East Madhya Pradesh on 8th & 9th July, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in East Madhya Pradesh.

Madhya Pradesh

- In Jabhua Hill and Satpura Plateau Zone, undertake sowing of soybean and maize. The Soybean may be sown by Ridge-Bed-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. Seed may be sown after receiving rains application of recommended doses of Farm Yard Manure and chemical fertilizer.

- In Satpura Plateau Zone, farmers are advised to follow the line sowing through seed drill for the crops like soybean, maize, arhar, urad and moong crops after proper seed treatment.
- In Central Narmada Valley Zone, continue nursery sowing of rice early and medium duration varieties of rice. Undertake land preparation and sowing of soybean and maize. Farmers are advised to start digging of pit of appropriate size and distance for new orchard establishment.
- In Malwa Plateau Zone, continue field preparation and sowing of pigeon pea and cotton. Farmers are advised to procure good quality seeds from certified source. Prepare the fields and undertake planting of ginger and turmeric.
- **Chhattisgarh:**
- In North Hill Zone, prepare nursery for sowing of long duration rice varieties and undertake land preparation and sowing of vegetables. Undertake digging of pit for the planting of fruit crops i.e. Papaya, Guava, Mango, Litchi, and Pomegranate etc.
- In Chhattisgarh Plain Zone, continue nursery sowing and direct seeding of rice crop, rice seeds should be treated with 17 % salt solution before sowing. Undertake field preparation and sowing of soybean, maize, groundnut crops.
- **Animal Husbandry:**
- In Madhya Pradesh, there is a possibility of spread of foot and mouth disease in animals for control, vaccinate the animals. Vaccinate the Goat to control PPR disease.
- In Chhattisgarh, vaccinate animals against Hemorrhagic Septicaemia (H.S.), Block quarter (B.Q.), etc. To avoid dehydration, feed solution of 4-5 teaspoon sugar and one fourth amount of salt every half an hour to dairy animals.

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

- **Realised Rainfall:** Rainfall occurred in Dehradun districts of Uttarakhand, Banswara, Bhilwara, Bundi, Jhalawar, Kota, Pratapgarh, Rajsamand, Sawai Madhopur of East Rajasthan, Bahraich and Kushinagar districts of East and Lalitpur district of West Uttar Pradesh during the week. Weather remained mainly dry over rest of the region.
- **Advisories:**
- **Thunderstorm accompanied with gusty winds and lightning** very likely at isolated places over Rajasthan on 5th & 6th and over Punjab on 5th July, it is advised to provide mechanical support to young fruit plants, staking of vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds.
- As rain/thundershowers likely at most places over Uttarakhand, at most/many places over Uttar Pradesh, Himachal Pradesh, Haryana, Chd & Delhi during the period, at many places over East Rajasthan on 5th & 6th, over Punjab from 7th to 9th and over Jammu & Kashmir on 5th, 8th & 9th July along with **Heavy rainfall at a few places with very heavy rainfall** at isolated places very likely over Uttarakhand; **Heavy to very heavy rainfall** at isolated places over East Rajasthan on 5th, **Heavy to very heavy rainfall** at isolated places over Himachal Pradesh, Uttarakhand, East Uttar Pradesh on 6th July; avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in Uttarakhand and Himachal Pradesh.
- **Jammu & Kashmir:**
- In Valley Temperate Zone, apply first top dose of urea @ 2.7 kg per kanal 20 to 25 days after transplanting of rice. Apply top dose of urea in maize crop. Complete sowing of kharif pulses. Continue harvesting of rabi pulses like lentils, pea and red gram. Continue harvesting of oilseeds. Hand pollination may be done in bottle gourd. Carry out weeding in all the vegetable crops on a non rainy day. Harvest radish, kale and cabbage seed crops when 75% of seed pods matures.
- In Sub Tropical Zone, continue transplanting of rice. Undertake direct sowing of rice crop. Continue sowing of maize. Carry out earthing up operation in turmeric. Fruit fly attack in cucurbits can be minimized by pheromone traps during clear weather.
- In Intermediate Zone, undertake transplanting of rice. Plant 2-3 seedlings per hill, 3 to 5 cm deep in the soil. Undertake sowing of maize after sufficient rainfall. Continue intercultural operations like weeding and hoeing in tomato, brinjal and chilli on a non rainy day.

- In Cold Arid Zone, apply irrigation at regular interval in wheat and barley to maintain proper soil moisture. Carry out regular pruning of extra foliage in tomato for larger and good quality fruits.

Himachal Pradesh:

- In Sub-Montane and Low Hills Sub-Tropical Zone, undertake land preparation for transplanting of rice. Carry out intercultural operations in pulses on a non rainy day. In Mid Hills Sub Humid Zone, undertake rain water harvesting.
- In High Hill Temperate Dry Zone, carry out weeding operation in pea, barley and potato crops.

Punjab, Haryana and New Delhi

- In Punjab, continue transplanting of vegetables (tomato, chilli, brinjal, cauliflower). Complete sowing of cotton including Bt cotton or desi Cotton and planting of turmeric. Continue transplanting of rice. Complete the sowing of mash and moong. Undertake necessary intercultural operations in the cotton fields to keep the field free from weeds.
- In Haryana, continue sowing of cotton, transplanting of matured seedlings of tomato, cauliflower, cabbage in prepared field and complete the sowing of ladyfinger, bottle gourd, cucumber, ridge gourd and summer radish. Continue transplanting of rice and land preparation for sowing for pulses i.e. green gram, lobia, moth.
- In Delhi, undertake transplanting of nursery for early cauliflower, tomato, chilli, brinjal whose seedlings are ready and land preparation of rice. Undertake sowing of soybean, maize and short duration varieties of pigeon pea. Undertake sowing of cucurbits. Constant monitoring of lady finger, chilli and cucurbitaceous crops against attack of mite and jassid, are advised. If noticed, spray of Phosmite @ 1.5 - 2 ml per litre of water to control mite and spray Dimethoate 30 EC @ 2 ml/liter of water against jassid.
- In Western Plain Zone of Punjab, monitor cotton fields for leaf curl infection and for white fly infestation.

Uttar Pradesh

- In East Uttar Pradesh, utilizing the realized and expected rainfall, farmers are advised to complete transplantation of paddy. This is proper and favorable time for planting of Turmeric. For the orchards of the guava, add 20-25 kg cow dung and 50 gms of heptachlor in the soil extracted from the pit and fill it again. For mango, amla and berry orchards add 30 kg of cow dung, 250 grams of single super phosphate and 50-100 g heptachlor in the soil extracted from the pit and fill it again. Continue sowing of maize and sorghum after current spells of heavy rain. Prepare nursery for kharif onion, tomato and cauliflower crops.
- In West Uttar Pradesh, continue transplanting of Paddy. Continue sowing of maize and sorghum. Thinning, weeding and hoeing should be done for pigeon pea. continue harvesting of matured crops of green gram/black gram. Pick up mature fruits on standing crop like brinjal, chilly.

Uttarakhand:

In Hill Zone, continue transplanting of rice. Carry out staking and mulching operations in tomato, chilli, capsicum, brinjal and cucurbitaceous crops in flowering/ fruiting stage. Carry out gap filling, weeding and hoeing operations in red gram, finger millets, soybean, black gram and maize after current spells of rain. Undertake planting of lemon saplings.

In Bhabar and Tarai Zone, complete sowing of soybean. Undertake nursery sowing of rice. To control the leaf spot disease in cucurbitaceous crops, spray mancozeb @ 2.5g/litre of water.

In Sub-Humid Sub-Tropic Zone, undertake transplanting of rice. Undertake planting of mango and amla plants.

Rajasthan:

- In Arid Western Plain Zone, undertake sowing of cucurbit vegetables and field preparation and sowing of moong, jowar, maize, groundnut, cotton and vegetables.
- In Flood Prone Eastern Plain Zone, undertake planting of ber, aonla, falsa, and pomegranate and agroforestry tree saplings.
- In Sub Humid Southern Plain and Aravali Hill Zone, undertake sowing of maize, groundnut and soybean
- In Semi-Arid Eastern Plain Zone, undertake planting of fruit crops like mango, plum, pomegranate, Aonla and field preparation for sowing of Green gram, Cowpea, Moth, Maize, Sorghum and Pearl millet.

Animal Husbandry:

Vaccinate cattle and buffalos against diseases during the rainy season.

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