



# *National Agromet Advisory Service Bulletin*

*Friday 20<sup>th</sup> July 2018*  
*(For the period 20<sup>th</sup> to 25<sup>th</sup> July 2018)*



*Issued by*  
*India Meteorological Department*

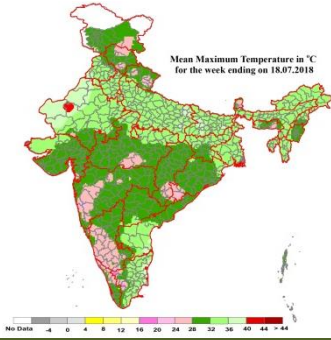
**Weblink For**

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

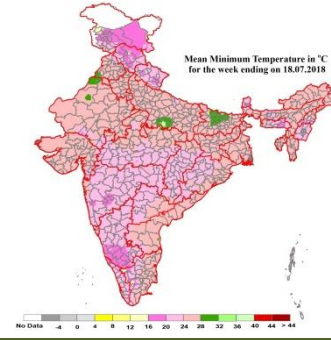
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

**Spatial distribution of weather parameters for the week ending on 18.07.2018**

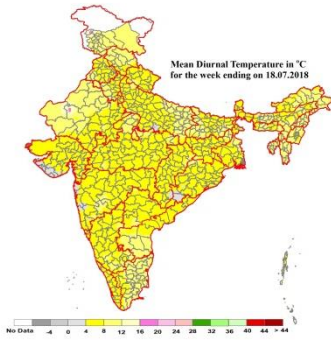
**Mean Maximum Temperature (°C) for the week ending on 18.07.2018**



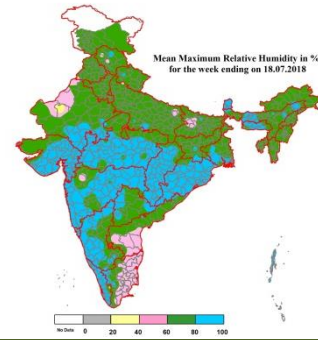
**Mean Minimum Temperature (°C) for the week ending on 18.07.2018**



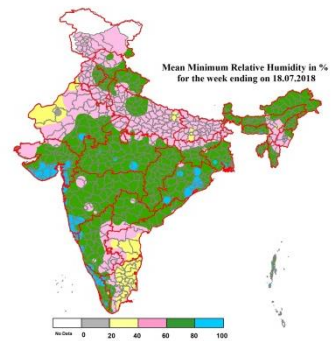
**Mean Diurnal Temperature Variation (°C) for the week ending on 18.07.2018**



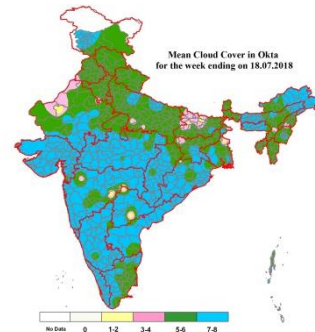
**Mean Maximum Relative Humidity (%) for the week ending on 18.07.2018**



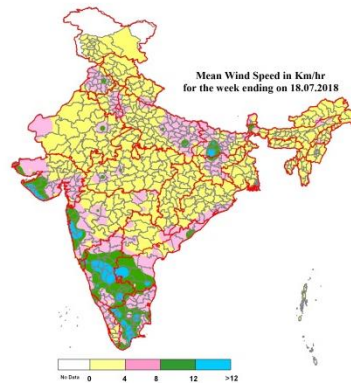
**Mean Minimum Relative Humidity (%) for the week ending on 18.07.2018**



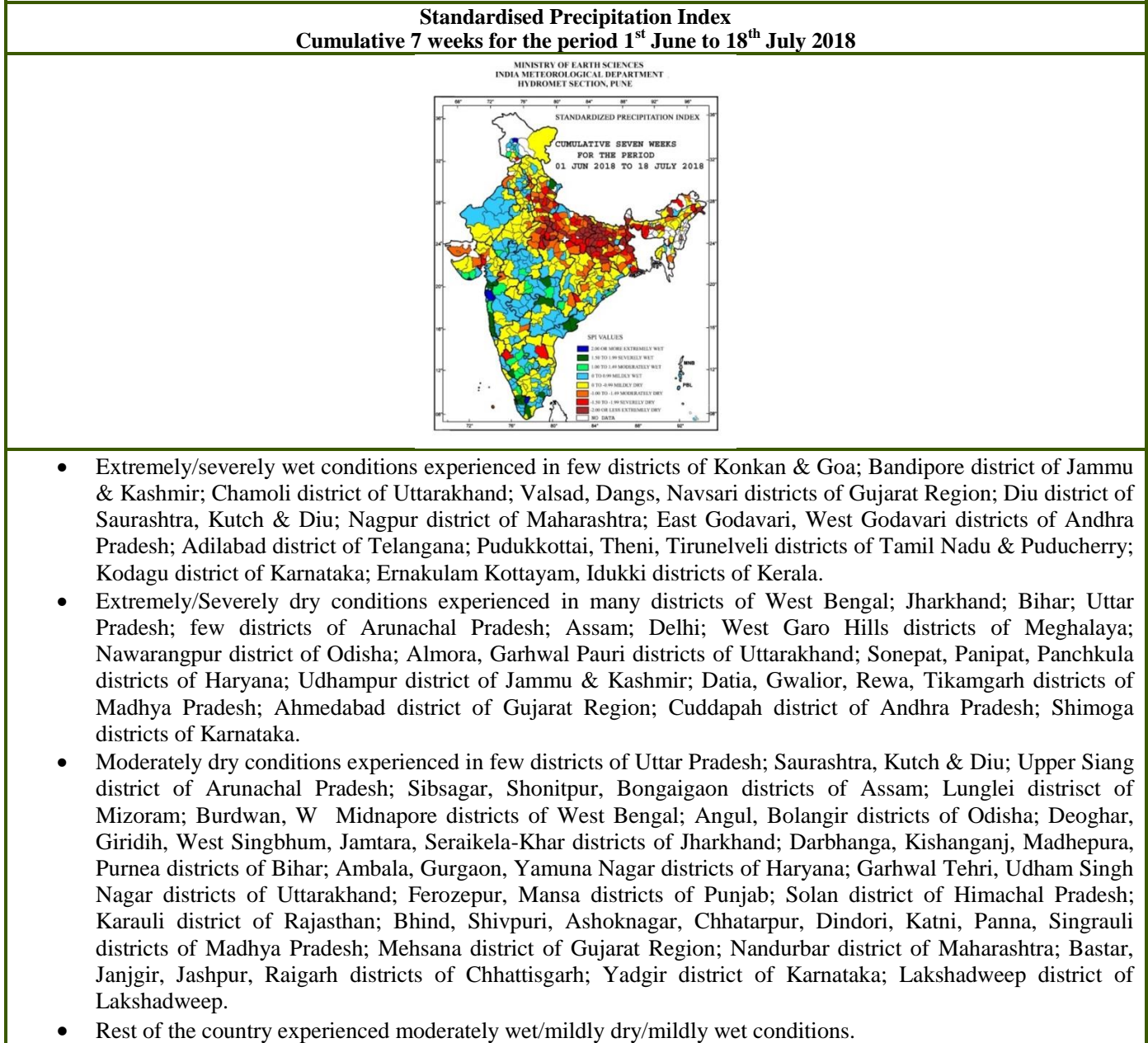
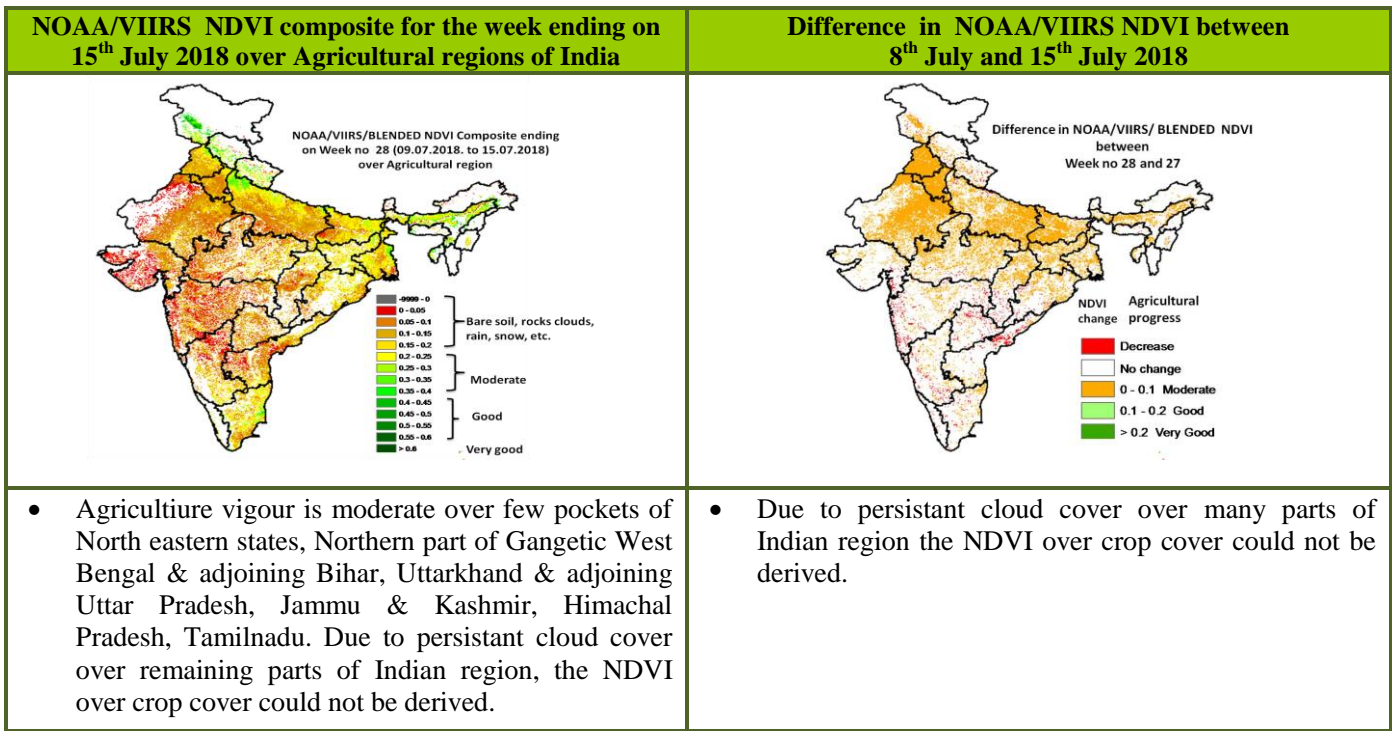
**Mean Cloud Cover (okta) for the week ending on 18.07.2018**



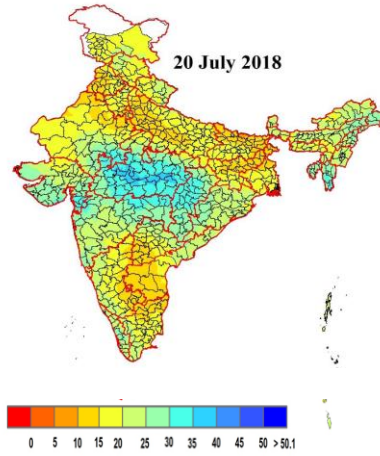
**Mean Wind Speed (km/hr) for the week ending on 18.07.2018**



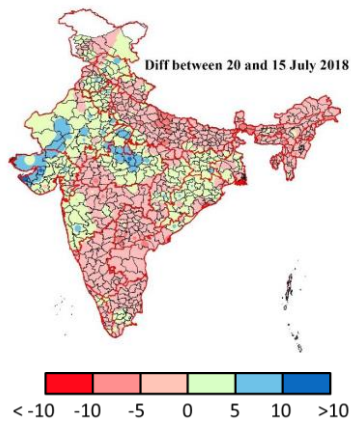
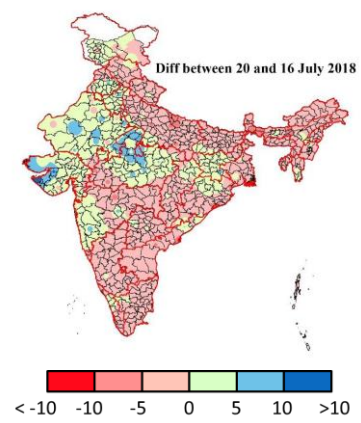
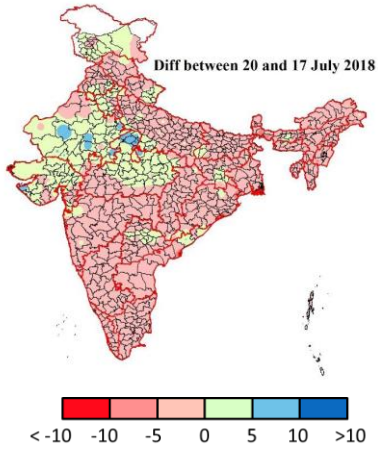
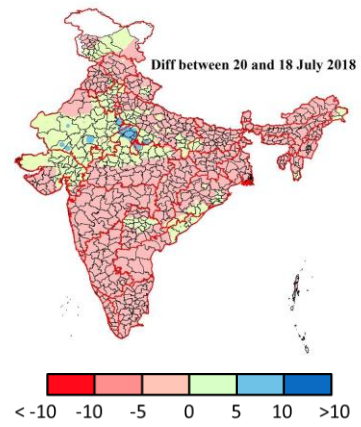
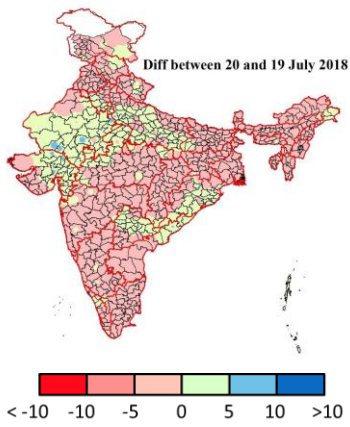




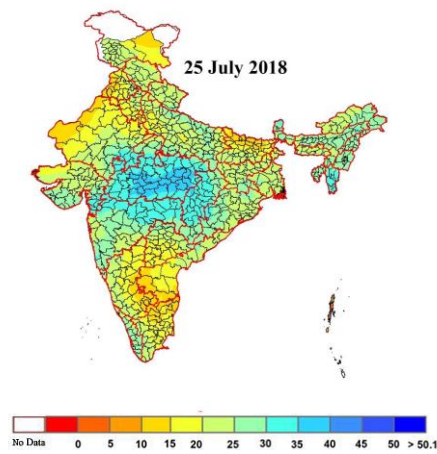
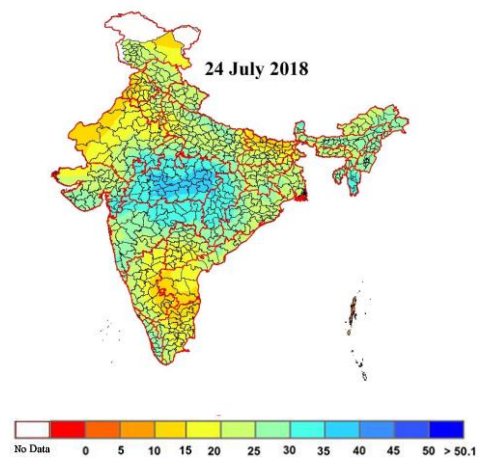
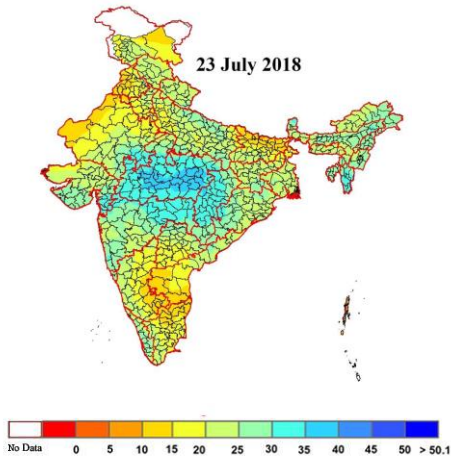
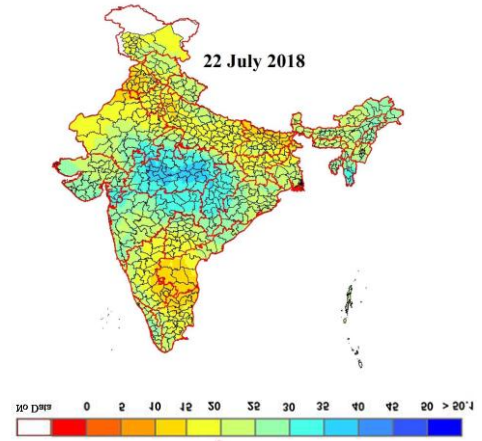
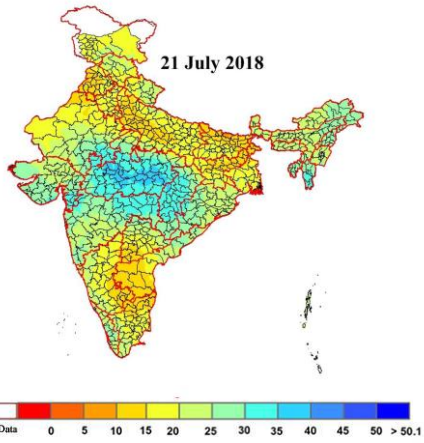
**Daily Soil Moisture (mm) for 20<sup>th</sup> July 2018 (ending at 0830 IST) for 60 cm depth**



**Difference of Soil Moisture (mm) for 60 cm depth**



**Forecasted Soil Moisture (mm) from 21<sup>st</sup> July to 25<sup>th</sup> July 2018 (ending at 0830 IST)  
for 60 cm depth**



## Weather Forecast for next 5 days valid upto 0830 hours of 25<sup>th</sup> July 2018

- Meteorological subdivision wise detailed 5 days rainfall forecast is given in Table below.
- No significant change in maximum temperatures over most parts the country during next 3-4 days.

### 5 Day Rainfall Forecast (Mid day) 20<sup>th</sup> July 2018

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

- **20 July (Day 1):** Heavy to very heavy rain with extremely heavy fall at isolated places very likely over Odisha, Telangana and north coastal Andhra Pradesh; heavy to very heavy rain at isolated places over East Rajasthan, West Madhya Pradesh, Konkan & Goa and Chhattisgarh; heavy rain at isolated places over Haryana, Chandigarh & Delhi. West Uttar Pradesh, Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal, West Rajasthan, Gujarat Region, Coastal & South Interior Karnataka, Ghats regions of Tamilnadu, Kerala and Madhya Maharashtra.

Squally wind speed reaching 35-45 kmph gusting to 55 kmph is very likely over Andaman & Nicobar Islands and along & off West Bengal & Odisha coasts. Fishermen are advised not to venture into sea along & off these areas.

- **21 July (Day 2):** Heavy to very heavy rain at a few places with extremely heavy fall at isolated places very likely over Odisha; heavy to very heavy rain with extremely heavy fall at isolated places very likely over Vidharbha, Chhattisgarh and Telangana; heavy to very heavy rain at isolated places over Uttarakhand, Haryana, Chandigarh & Delhi, West Uttar Pradesh, Gangetic West Bengal, Konkan & Goa and Coastal Andhra Pradesh and heavy rain



at isolated places over Himachal Pradesh, Punjab, East Uttar Pradesh, East Rajasthan, East Madhya Pradesh, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gujarat Region, Madhya Maharashtra. Coastal & South Interior Karnataka, Ghat regions of Tamilnadu and Kerala. Squally wind speed reaching 35-45 kmph gusting to 55 kmph is very likely over along & off West Bengal & Odisha coasts. Fishermen are advised not to venture into sea along & off these areas.

- **22 July (Day 3):** Heavy to very heavy rain at a few places with extremely heavy fall at isolated places very likely over Uttarakhand; heavy rain at a few places with very heavy rain at isolated places Himachal Pradesh; heavy to very heavy rain at isolated places over Punjab, West Uttar Pradesh, East Madhya Pradesh, Vidarbha, Chhattisgarh, Odisha, Konkan & Goa, Coastal & South Interior Karnataka and Kerala and heavy rain at isolated places over Jammu Division of Jammu & Kashmir, Haryana, Chandigarh & Delhi, East Rajasthan, West Madhya Pradesh, Jharkhand, Madhya Maharashtra, Marathwada and Telangana. Squally wind speed reaching 345 kmph gusting to 55 kmph is very likely over along & off West Bengal & Odisha coasts. Fishermen are advised not to venture into sea along & off these areas.
- **23 July (Day 4):** Heavy to very heavy rain at isolated places over Uttarakhand, West Madhya Pradesh, Madhya Maharashtra, Konkan & Goa, Coastal & South Interior Karnataka and Kerala and heavy rain at isolated places over Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Rajasthan, East Madhya Pradesh, Vidarbha, Chhattisgarh and Marathwada.
- **24 July (Day 5):** Heavy to very heavy rain at isolated places over Uttarakhand, East Rajasthan, Madhya Maharashtra, Konkan & Goa, Coastal & South Interior Karnataka & Kerala and heavy rain at isolated places over Jammu & Kashmir, Himachal Pradesh, Punjab, West Madhya Pradesh and Gujarat region.

#### Weather Outlook for subsequent 2 days from 25<sup>th</sup> to 27<sup>th</sup> July 2018

- Fairly widespread to widespread rainfall likely along west coast and over northwest, Northeast, East & adjoining Central India and Andaman Islands.
- Isolated to scattered rainfall over the rest of the country.

#### Salient Advisories

- Squally wind speed reaching 35-45 kmph gusting to 55 kmph is very likely over **Andaman & Nicobar Islands** on 20<sup>th</sup> and along & off **West Bengal & Odisha coasts** from 20<sup>th</sup> to 22<sup>nd</sup> July. Fishermen are advised not to venture into sea along & off these areas.
- In view of the heavy to very heavy rainfall at a few places with extremely heavy rain at isolated places very likely over **Odisha** on 20<sup>th</sup> and 21<sup>st</sup> July, undertake transplanting of rice after the current spells of heavy rain. Provide adequate drainage in rice nurseries, maize, groundnut and vegetable fields in Odisha to avoid water stagnation.
- In **Kerala**, heavy rain during the week caused floods in Kottayam, Idukki, Ernakulam, Alappuzha and Pathanamthitta districts. Drain out excess water from *virippu* rice fields, banana, coconut and arecanut and other plantation crops in these districts.
- In view of heavy rain and floods in **South Gujarat** and **Saurashtra**, in Dangs, Valsad, Navsari, Junagarh, Gir Somnath and Amreli districts, drain out excess water from already sown crop fields. Drain out excess water from the maize, sugarcane, green gram, black gram, ginger, turmeric and vegetable crop fields in South Gujarat.
- Utilising the realized and expected rainfall, complete sowing of crops like red gram, green gram, cowpea, moth, pearl millet, sesame, sorghum, maize & cluster bean in **East Rajasthan**. In **West Rajasthan**, continue sowing of pearl millet, cluster bean, moong and moth bean crops. Continue transplanting of rice in **Himachal Pradesh** and **Uttarakhand**. Continue sowing of maize, soybean and groundnut in **East Madhya Pradesh**, continue transplanting of rice and continue sowing of soybean, til, red gram, maize, groundnut in **Chhattisgarh**. Continue nursery sowing of *Aman* rice in **Gangetic West Bengal**. Continue sowing of sesame,

soybean, urad bean and cowpea in uplands and undertake transplanting of rice in **Jharkhand**.

- Undertake/continue sowing/ ransplanting of following *kharif* crops:
  - Continue transplanting of 21-25 days old kharif rice seedlings in **Manipur**.
  - In **Coastal Karnataka**, continue transplanting of rice.
  - In **South Interior Karnataka**, continue nursery preparation for rice (MTU-1010, Rashi) and ragi (Indaf-5&9, MR-6, GPU-28&66, KMR-301). Complete sowing of groundnut, red gram, foxtail millet, Little millet, Khodo millet, ragi (direct sowing), castor, cotton, cowpea, green gram, black gram, horse gram, field bean, sesamum, jowar crops.
  - In **North Interior Karnataka**, complete sowing of soybean, green gram, black gram (DU-1, DBGV-5), red gram (TS-3R), groundnut (G 2-52, GPBD-4, GPBD -5 (rainfed), HD-86, TAG-24 (irrigated) and maize (Arjun, GH-0727).
  - In **Coastal Andhra Pradesh**, continue transplanting of rice in Srikakulam, Vizianagaram, East and West Godavari, Krishna and Guntur districts utilizing the realized and expected rainfall.
  - Farmers in Kadapa, Kurnool, Ananthapuram districts in **Royalaseema** are advised to take up sowing of rainfed groundnut only after receipt of sufficient rainfall.
  - In **Telangana**, continue sowing of soybean, jowar, maize, redgram, greengram, cotton.
  - In **Tamil Nadu**, continue transplanting of *kuruvai* rice.

#### *Detailed Agromet Advisories*

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

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala, all districts of Coastal Karnataka, Belagavi, Bidar, dharwad and Haveri districts of North Interior Karnataka, Chikamangaluru, Davangere, Kodagu, Mysuru and Shivamogga districts of South Interior Karnataka, all districts of Coastal Andhra Pradesh except Prakasham and Vishakapatnam, all districts of Telangana except Jogulamba Gadwa, Kamareddy and M. Malkajgiri, in Coimbatore, Kanniyakumari, Nilgiris, Theni and Thirunelveli districts of Tamil Nadu and Puducherry during the week. Weather remained mainly dry over rest of the region.
- **Advisories:**
  - As rain/thundershowers likely at most places over Kerala, Coastal Karnataka during the period, at most/many places over Telangana from 20<sup>th</sup> to 22<sup>nd</sup>, at many places over Coastal Andhra Pradesh and South Interior Karnataka on 20<sup>th</sup> and 22<sup>nd</sup>, along with heavy to very heavy rain with extremely heavy fall at isolated places very likely over Telangana on 20<sup>th</sup> and 21<sup>st</sup>, over North coastal Andhra Pradesh on 20<sup>th</sup>, heavy to very heavy rain at isolated places over Coastal Andhra Pradesh on 21<sup>st</sup>, over Coastal & South Interior Karnataka and Kerala from 22<sup>nd</sup> to 24<sup>th</sup>, heavy rain at isolated places over Coastal & South Interior Karnataka, Ghats regions of Tamilnadu and Kerala on 21<sup>st</sup> and 22<sup>nd</sup>, over Telangana on 22<sup>nd</sup> July, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
  - **Kerala:**
    - In Kerala, heavy rain during the week caused floods in Kottayam, Idukki, Ernakulam, Alappuzha and Pathanamthitta districts. Drain out excess water from *virippu* rice fields, banana, coconut and arecanut and other plantation crops in these districts. Provide enough sunlight on the pepper vines by pruning shade trees.
    - If severe attack of sheath blight in paddy at tillering stage is noticed, spray Bavistin (200g/acre) or Carbendazim 50 WP 500 g/ ha or Vitavax (200g/acre). Spot spray Takumi @ 3 g per 10 litres of water if leaf folder attack in paddy is severe.
    - Bud rot disease is seen in coconut palms due to continuous rainfall. Small perforated sachets containing 2 g of Mancozeb may be tied to the top of leaf axil as a preventive measure. To control fruit and shoot borer in bhindi crop, apply Sevin (50%) 4 g/litre of water. To control fruit fly use fruit fly trap containing jiggery syrup + banana+ pineapple extract. In Banana, if infestation of pseudostem weevil is noticed, spray 2.5 ml of Chlorpyrifos or 2 ml of Quinalphos per one litre of water in leaf axils and by inserting the nozzle through the boreholes made by the larvae. In Coffee plantation, leaf rust disease may become severe due to increase in relative humidity. Apply 0.5% Bordeaux mixture. Undertake plant protection methods after the current spells of rain.
  - **Andhra Pradesh:**
    - In Coastal Andhra Pradesh, continue transplanting of rice in Srikakulam, Vizianagaram, East and West



Godavari, Krishna and Guntur districts utilizing the realized and expected rainfall. Maintain shallow water depth of 2 cm at the time of transplanting. In North Coastal Andhra Pradesh, continue sowing of cotton, groundnut, bajra, korra and red gram. Carry out earthing up after 120 DAS and provide propping to sugarcane.. Initial puddling at least 15 days before transplanting to a depth of 15 cm depth is enough. In direct sown paddy cultivation, drain out excess water for healthy growth and more number of tillers.

- In Rayalaseema, continue sowing of groundnut in Chittoor district. Sow redgram @ 7:1 or field bean @ 10:1 as intercrop with groundnut. Undertake sowing of redgram, castor, korra and bajra after necessary seed treatment. Farmers of Kadapa, Kurnool, Ananthapuramu districts are advised to take up sowing of rainfed groundnut only after receipt of sufficient rainfall. They are advised to treat the seed with Imidacloprid @ 2ml/kg and Tebuconazole @ 1g/kg of seed before sowing.
- Carry out whorl application of Carbofuron 3 G granules @ 3 kg/acre for control of stem borer in maize. For pink borer in maize, spray Monocrotophos 36 SL @320 ml or Chlorantriliprole 20 SC @60 ml per acre at 10-12 days old crop. Spray 320 ml of Monocrotophos or Triazophos 400 ml or Acetamiprid 40 grams per acre for controlling thrips infestation and spray 5% neem seed kernel extract at 20 DAS for Whitefly in green/black gram. To control leaf mite incidence in paddy at tillering stage, spray prophenophos @ 2 ml per litre of water. Present weather conditions are favourable for sucking pest incidence in groundnut. To control, spray Monocrotophos @ 1.6 ml or Imidachloprid @ 0.3 ml per litre of water.

#### ▪ **Telangana:**

- In view of the heavy to very heavy rain with extremely heavy fall at isolated places very likely over Telangana on 20<sup>th</sup> and 21<sup>st</sup>, take up sowing of Maize, Castor, Redgram and Sunflower, sowing of paddy nurseries of Telangana Sona (RNR 15048) and other short duration rice varieties after the current spells of heavy rain.
- The prevailing weather conditions are congenial for incidence of sucking pests in vegetables. To control, spray Fipronil @ 2ml or Thiomethoxim @ 0.3g per litre of water after current spells of rain. Prevailing weather conditions are favorable for development of leaf spot disease in Bhendi, Tomato, Brinjal. To Control, spray Propineb @ 2g per liter of water after current spells of rain. The prevailing weather conditions may cause leaf blight in cotton crop. Spray Carbendazim + Mancozeb @ 2.5 g/litre of water after current spells of rain.

#### ▪ **Tamil Nadu:**

- For kuruvai season transplanting of rice, apply 35 kg urea, 125 kg single super phosphate, 8.5 kg muriate of potash and 200 kg gypsum per acre as basal to the main field. Use rice seedlings at 18 to 22 days after sowing for transplanting in the main field. Before transplanting dip the root portion of the seedlings in biofertilizer slurry @ 1 kg each of Azospirillum and phosphobacteria or 2 kg of Azophos for 15 to 30 minutes. Adopt a spacing of 15 x 10 cm in conventional transplanting. In SRI, transplant 14 days old seedlings at 25 x 25 cm spacing using SRI marker. Provide support to banana plants and sugarcane. Best period for sowing gourds vegetable is July 20th- 30th. Hence, dig pits by utilizing the anticipated rainfall. Undertake planting of rooted cuttings of pepper. This season is suitable for cultivation of small onion. Treat seeds with Trichoderma viride @ 3 g /kg of seed bulbs 12 hours prior to sowing.
- Due to prevailing weather conditions, there may be incidence of fruit fly in snake gourd and bitter gourd crops. Place pheromone traps (12/ha) and apply Malathion or Dimethoate @ 2ml/litre of water.
- Occurrence of stem borer is being noticed in the kuruvai paddy. To control this pest, spray Chloriphyriphos @ 500 ml/200 litre of water for one acre. To control the incidence of sucking pest in the vegetable crops, spray neem seed kernal extract 5%.

#### ▪ **Karnataka:**

- In Coastal Karnataka, drain out excess water from standing crop fields. Continue transplanting of rice. Undertake intercultural operations in 25-35 days old maize and cotton crops. Complete sowing of turmeric, ginger and planting of arecanut seedlings.
- In South Interior Karnataka, continue nursery preparation for rice (MTU-1010, Rashi) and ragi (Indaf-5&9, MR-6, GPU-28&66, KMR-301). Complete sowing of groundnut, red gram, foxtail millet, Little millet, Khodo millet, ragi (direct sowing), castor, cotton, cowpea, green gram, black gram, horse gram, field bean, sesamum, jowar crops. Intercropping of groundnut + red gram and groundnut + castor in 8:2 proportion is suggested for good income. Undertake thinning operation for better availability of scarce soil moisture to the reduced population of crop plants. Continue intercultural operations in green gram, sesame, maize and red gram after current spells of rain.
- In North Interior Karnataka, undertake intercultural operations in standing crops to conserve soil moisture. In shallow black and red soils, complete sowing of bajra, sorghum, groundnut (spreading), sunflower, maize, chilli + desi cotton , desi cotton, pigeonpea, niger, sesamum, bajra + pigeonpea (2:1 rows) Navane/Savi + pigeonpea (2:1 rows) and in medium deep black soils (both kharif and rabi cropping areas) sowing of spreading groundnut, chilli+onion+ desi cotton under sufficient moisture condition. Sow the crops in rows across the slope to facilitate better conservation of moisture in the soil. To make efficient use of available soil and water resources and to get higher returns, in light and medium black soils, 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 advised. Prepare ridges and furrows and compartment bunds in the lands reserved for *rabi* sowing so as to conserve moisture in the soil which will be helpful for the *rabi* crops.

- In South Interior Karnataka, there is a possibility of occurrence of purple blotch and bulb rot in onion; spray Chlorothonil @ 2 g/litre and drench with Arbandazim @2 g/litre of water after current spells of rain.
- In North Interior Karnataka, in 10-15 days old black gram, green gram and soybean crops, there is chance of infestation of *Agromyzid* fly; apply 0.3 ml Imidacloprid 17.8 SL or 0.2 g Thiamethoxam 25WG insecticide dissolved in 1 litre of water on a non rainy day.
- **Animal Husbandry**
  - In Telangana, apply Butox solution (2ml in one litter water) externally to remove ecto-parasites in sheep & goats.
  - In Tamil Nadu, protect cattle against Hemorrhagic Septicaemia disease in the rainy season. Protect chicks from Ranikhet disease.
  - In South Interior Karnataka, maintain optimum room temperature in silkworm and poultry rearing houses.

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

**Realised Rainfall:** Rainfall occurred in Lohit, Lower Dibang Valley, Papumpare, Tawang, Tirap, Upper Siang, West Kameng and West Siang districts of Arunachal Pradesh, all districts of Assam except Darrang, Dhemaji, Dhubri, Jorhat, Kokrajhar and Nagaon, in East Khasi, South Garo and West Garo districts of Meghalaya, Aizwal, Champhai, Kolasib, Lunglei and Serchhip districts of Mizoram, Dimapur, Mon and Wokha districts of Nagaland, all districts of Tripura during the week. Weather remained mainly dry over rest of the region.

● **Advisories:**

- As rain/thundershowers likely at many places over Assam & Meghalaya on 22<sup>nd</sup> and 23<sup>rd</sup>, over Nagaland, Manipur, Mizoram & Tripura on 21<sup>st</sup> and 22<sup>nd</sup> and over Arunachal Pradesh on 23<sup>rd</sup> and 24<sup>th</sup>, along with heavy rain at isolated places over Assam & Meghalaya on 21<sup>st</sup>, over Nagaland, Manipur, Mizoram & Tripura on 20<sup>th</sup> and 21<sup>st</sup> July, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- **Arunachal Pradesh:**
  - Carry out weeding in jhum rice. Harvest mature pods of French bean, black gram and green gram. Carry out weeding in okra crop.
  - For management of rice blast in jhum, apply need based foliar spray of Tricyclazole 75WP@ 0.6g/litre or Propiconazole 25EC @1ml/litre of water or Carbendazim 50WP @1g/litre of water at 15 days intervals during clear/dry days or using proper stickers. Spray Malathion @ 3ml per litre of water using proper sticker or during clear/dry days for aphids/fruit flies in cucurbits.
- **Assam:**
  - Undertake transplanting of 25-30 days old Sali rice seedlings. Dip the root portion in 0.02% solution of Chlorpyrifos 20 EC (1 ml/litre of water) along with 1% urea (10g/litre of water) for 3 hours as protective measure against stem borer, gall midge and hoppers. Undertake sowing of cucurbits as the current weather is favourable for the sowing of popular hybrids of Bottle Gourd- Pusa Naveen, Pusa Samridh; Bitter Gourd- Pusa Visesh, Pusa-2 Mosumi; Pumpkin-Pusa Visvash, Pusa Vikash, etc. Proper arrangement for water drainage should be done. Provide mechanical support to sugarcane to prevent lodging. Carry out earthing up in turmeric plantation. Continue sowing of pigeon pea (variety: T-21) during this month. Provide mechanical support to sugarcane crop. Provide proper drainage in the *Olitorius* jute and turmeric fields. Continue sowing of recommended high yielding sesamum varieties such as SP 1181 (Madhavi), Gauri, Vinayak, ST-1683, Punjab Til No. 1 etc.
  - If there is the total damage of seedlings or crops in the main field, farmers are advised to go for sowing seeds for replanting with medium to short duration varieties like - Monohar Sali, Salpona, Prasadbhog, Gobin bhog etc in nursery bed within 1st week of August. In partially affected fields, drain excess water and apply 1/3rd N2 + 50% K2O as top dressing during the tillering stage.
  - Spray Carbendazim @1gm per litre of water to control blast disease in Sali paddy seedlings. Powdery mildew attack may be seen in bitter gourd, ash gourd and bottle gourd crops. Spray Bavistin @ 0.1% to control the disease. Undertake plant protection measures after current spells of rain.
- **Meghalaya:**
  - Prepare raised nursery bed of size 10m (length) × 1.25m (width) × 10cm (height) with 20-30cm wide channel between the two seed beds for lowland Sali/kharif rice HYVs like Shahsarang -1, Lampnah, IR 64, Ranjit, RCPL 1-412, RCPL 1-410, RCPL 1- 411 & local varieties like Mendri, Manipuri, etc. Continue field preparation for upland kharif rice. Continue sowing of okra seeds on raised bed at spacing 45x30cm. Use bamboo sticks for staking in French bean, cow pea and cucurbit crops. Provide drainage in ginger, turmeric and other vegetable crops.

- For soft rot in ginger and turmeric crops, drench the plot with Dithane M-45 (2.5g/litre of water) or Trichoderma based formulation and Pseudomonas 4g/litre of water after current spells of rain.
- **Manipur:**
- Carry out transplanting of 21-25 days old kharif rice seedlings to the main field. Prepare nursery bed for early cauliflower. Sow cauliflower seeds of early varieties like Early Himlata, White shot, etc. Carry out weeding in maize, soybean, groundnut, black gram and rice bean crops.
- For grown up turmeric plants, spray Dithan M45 @ 2 to 2.5 ml/litre of water as prophylactic measures after current spells of rain.
- **Mizoram:**
- Undertake raising seedlings of Khasi Mandarin, acid lime, star fruit, plum and peach. Transplant seedlings in secondary bed or polythene bags at 4-6 leaves stage. Carry out land preparation for sowing kharif pulses like green gram, black gram and rajma. Carry out earthing up in Jhum rice, chilli, cowpea, okra and maize fields on a non rainy day and provide proper drainage. Undertake planting of ginger and turmeric crops after treating rhizomes with Thiram @ 4 g per kg seeds. Apply irrigation to coffee plants every alternate day upto 6 weeks before harvesting as it will help improve fruit retention, fruit development and the fruit quality. Undertake planting of rubber at newly established place.
- In chilli and cucurbitous crops, apply Carbaryl 0.2 per cent or Malathion 0.15 per cent suspension containing sugar or jaggery at 10 g/litre of water at fortnightly intervals at flowering and fruit initiation against fruit fly/pumpkin beetle after current spells of rain.
- **Tripura:**
- Complete the sowing of maize. Aman paddy in lowland condition is going to suffer from water logging condition. Submersible Aman paddy variety may be chosen for such fields. The seedlings just after transplanting may also suffer under water logging condition. Keep seedling in seedbed for longer period and transplant them after they grow up. Go for community nursery raising and also keep alternative nursery ready for use in case of crop failure. Raised bed planting may be opted for maize and groundnut in upland. Growing of maize and groundnut in medium and lowland must be avoided.
- Cloudy and humid weather is conducive for the attack of Leaf Curl disease in Summer Brinjal, Chilly etc. To manage the attack, apply Imidachloprid @ 2ml per liter of water.
- **Nagaland:**
- Undertake nursery preparation for sowing of TRC/WRC paddy. Undertake sowing of soybean. Maintain proper drainage in ginger/turmeric field. Cucurbit vines are very delicate. Take care not to damage vines, which reduce the quality of fruit.
- Remove infested okra and brinjal fruits and shoots regularly and destroy them. Bees are essential for pollination, so be mindful when using insecticides to kill pests. If you must use, apply only in late afternoon or early evening when the blossoms are closed for the day.
- **Animal Husbandry**
- Keep the poultry houses clean and provide balanced feed and clean drinking water to birds. Vaccinate poultry birds against Coccidiosis, Ranikhet and Gamboro diseases. Provide turmeric powder @ 1spoon/2 lit of water to poultry birds for prevention against *Ranikhet* disease. Select improved variety like Kamrupa, Vanraja, Rainbow rooster etc. for backyard poultry rearing. These improved species can lay more number of eggs within a short period of time.
- Carry out periodic cleaning of cowsheds along with the feeding pans during the rainy season to prevent fungal and bacterial infections. Vaccinate pigs against FMD & swine fever and cattle/sheep/goat against FMD, Hemorrhagic Septicaemia, Black Quarter, etc. Give Dairy animals a balanced feed so that their milk production capacity is enhanced. De-worming of animals should be carried out.
- Vaccinate all newly born piglets against swine fever.
- **Fishery**
- Increase in water level in the pond due to continuous rainfall may lead to overflow and destruction of embankments. This may cause escape of fish from pond. Raise nylon nets around the pond to prevent escaping of fish. Bamboo piling may be used to protect these earthen dykes from erosion during rainy season.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman and Nicobar Islands, Bokaro, East Singhbhum, Gumla, Jamtara, Khunti, Lohardaga, Pakur, Ramgarh, Ranchi, Saraikela, Simdega and West Singhbhum districts of Jharkhand, all districts of Odisha, all districts of Sub-Himalayan West Bengal & Sikkim except Malda, North Dinajpur and South Dinajpur, all district of Gangetic West Bengal except Birbhum and Murshidabad during the week. Weather remained mainly dry over rest of the region.
- **Advisories:**
  - As rain/thundershowers likely at most/many places over Odisha during the period, over Gangetic West



Bengal from 20<sup>th</sup> to 23<sup>rd</sup> and over Jharkhand from 21<sup>st</sup> to 23<sup>rd</sup>, at many places over Andaman & Nicobar islands during the period and over Sub-Himalayan West Bengal & Sikkim from 22<sup>nd</sup> to 24<sup>th</sup> July along with heavy to very heavy rain at a few places with extremely heavy fall at isolated places over Odisha on 20<sup>th</sup> & 21<sup>st</sup> July, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in rice nurseries, maize, groundnut and vegetable fields in Odisha to avoid water stagnation.

- Squally wind speed reaching 35-45 kmph gusting to 55 kmph is very likely over Andaman & Nicobar Islands on 20<sup>th</sup> and along & off West Bengal & Odisha coasts from 20<sup>th</sup> to 22<sup>nd</sup> July. Fishermen are advised not to venture into sea along & off these areas.

- **Odisha:**

- As heavy to very heavy rainfall is expected during next three days, undertake transplanting of rice after the current spells of heavy rain. Apply pre-emergence weedicide Bensulfuron methyl+Pretilachlor@10kg/ha or Pyrazosulfuron ethyl @20g a.i./ha at 3 to 4 days after transplanting.
- Weed infestation is noticed in direct seeded rice at tillering stage. To control all categories of weeds at two to three leaf stage, spray Bispyribac sodium 10%SC or Penoxsulam21.7%SC @20g a.i. ha-1 in 500 litres of water after current spells of rain.
- Wrapping and propping should be done in 4-5 months old in medium and late duration varieties of sugarcane. To control early shoot borer, spray Chloropyriphos or Quinalphos @ 400 ml/ac in 200 litres of water after cessation of rain.

- **Bihar:**

- Undertake transplanting of rice with seedling of 25-28 days old. Before transplanting, apply 1.5-2 kg Urea, 5-6 kg SSP and 1Kg MOP per kattha to field for proper growth and development of the crop. As in many area, there is a chance of broad and narrow leaf weed infestation, therefore farmers are advised to apply Butachlor 50 EC or Pretilachlor 50 EC @ 1.5 kg a.i. / ha within 2-3 days after transplanting. Maintain 2-3 cm of water in the field before spraying.
- Farmers are advised hand weeding in early sown kharif maize on non rainy days and also apply Topramizon@ 40 g ai/ha or Atrazine @ 1.5 kg ai/ha as early control of weeds.
- Undertake nursery sowing of early cauliflower, tomato, chilli and brinjal on raised bed of the field. Seed should be treated with Captan @ 2 g/kg of seed. Farmers are advised to apply 10-15 tonnes of cow dung and also apply 60 kg N, 50 kg Phosphorus and 40 kg potassium per hectare before final preparation of beds.
- In present weather condition, there is a chance for the attack of Bihar hairy caterpillar / Semilooper in Jute crops, farmers are advised to spray Dichlorvos 76% or Acephate 75wp @ 500 ml/ ha on a non rainy day for control.

- **Jharkhand:**

- Utilizing the expected rainfall, complete transplanting of medium and low land rice. Timely sown dhainch or sunnhemp green manure crop is presently at 30-35 days old hence, right time for insitu incorporation. Incorporate the chopped green manure crop in the soil for rotting and by doing this fertilizer will be made available through out the growing season.
- Continue sowing of soybean, sesame, urad bean and cowpea in uplands. Undertake cultivation of sweet potato with improved varieties with ridge and furrow method.
- Present weather is conducive for the occurrence of Leaf folder and Hairy caterpillar in groundnut. Hence, farmers are advised for spraying Chlorpyriphos @ 1 ml per lt of water by mixing Teepol @ 0.5 ml for leaf folder and in case of early stage of Hairy caterpillar, spray Dichlorvos @ 0.5 ml per lt of water and in later stage Quinalphos @ 2 ml per liter of water or provide wooden perch for predatory birds to control it. Undertake plant protection methods after current spells of rain.

- **West Bengal:**

- In the Sub-Himalayan West Bengal, provide proper drainage facility in soybean, round chilli, ginger and turmeric fields. Carry out weeding in large cardamom field. Provide irrigation to rice seedbeds. Continue harvesting of mature cobs of maize in clear weather. Harvest Jute if 120 days age has reached. After harvesting, make bundles and keep them in standing position in the field for leaf shedding. Insert 2-3 dhaincha plant in each bundle to accelerate the process of retting. Keep the basal plant portion submerged in water.
- In Gangetic West Bengal, Prepare area with low land for transplanting by ploughing at a depth of 12-15 cm and puddle the Field. Apply 7quintal organic manure per bigha in main field. Check the bund around the field. Where seedlings are ready for transplanting, start transplanting immediately. Start sowing of tomato seeds. Select some hybrid variety of tomato for sowing like Avinash-2, 448 etc. Transplant seedlings at the end of August on comparatively upland area with proper drainage channel.
- In Sub-Himalayan West Bengal, for the management of cucurbitaceous fruit fly population, use pheromone traps along. For management of brinjal fruit & shoot borer, spray Coragen 18.5% E.C @ 0.5 ml/litre of water after clipping off all the infested twigs, flowers, buds, fruits etc. after current spells of rain. To control of chilli leaf curl, spray Imidachloropid @ 0.2ml/liter of water after current spells of rain. To reduce early infestation in

the rice main field, spray Neem oil 0.03% @ 5ml/liter of water in the evening hours in the nursery.

- In Gangetic West Bengal, collect and destroy the affected bhindi fruits. Spray Neem oil @ 30ml/litre of water at clear weather condition.
- **Andaman & Nicobar Islands:**
- Undertake transplanting of 25 to 30 days old of medium duration paddy seedlings. Store rain water in the rice main field. Plant pine apple suckers in upland area by digging 25 to 30 cm depth and maintain close spacing to avoid soil erosion. Plant suitable fodder saplings in upland area as the soil condition is conducive. Set up Rhinolure pheromone traps in coconut field.
- **Animal Husbandry**
- In West Bengal, vaccinate/treat cattle against HS and black quarter. Avoid grazing animals during mid noon and after noon hours. Vaccinate goats against Peste des Petits Ruminants (PPR) before onset of monsoon. Vaccinate poultry birds against Ranikhet disease. Keep cattle shed clean during rainy season by using bleaching powder or calcium carbonate. Protect animals from diseases caused due to excessive rainy conditions and de-worm them at this time.
- In Bihar, animals must be vaccinated for FMD, HS and BQ namely Trivac vaccine administered dose @ 2.5-3ml S/C per animal is recommended.
- In Odisha, vaccinate the calves above 6 months against Bajabajia and Sahana diseases.
- **Fisheries**
- In West Bengal, fish should be stocked @ 1,000-1,500 numbers of fish fingerlings in one bigha pond for grow out fish culture.
- In Odisha, purchase fish seeds from a reliable fish seed producer and stock 3000 nos. of advance fingerlings of more than 8cm size per one acre of water area. In case of three species combination, the stocking numbers should be for Catla-900, Rohu-1200 and Mrigal-900. In case of six species combination, the stocking numbers should be for Catla-800, Rohu-1200, Mrigal-500, Common carp-300, Grass carp-100 and Silver carp-100. In any situation, the average water depth of the pond should not be less than 5ft level.

### WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa, Marathwada and Vidarbha, all districts of Madhya Maharashtra except Ahmadnagar and Solapur, all district of Gujarat Region except Mehsana, all districts of Saurashtra & Kutch except Kutch during the week. Weather remained mainly dry over rest of the region.
- **Advisories:**
  - As rain/thundershowers likely at most places over Konkan & Goa during the period, at many places over Madhya Maharashtra and Vidarbha during the period, over Marathwada from 22<sup>nd</sup> to 24<sup>th</sup>, over Gujarat Region on 20<sup>th</sup>, 21<sup>st</sup> and 24<sup>th</sup> and over Saurashtra & Kutch on 20<sup>th</sup> and 24<sup>th</sup>, along heavy to very heavy rain with extremely heavy fall at isolated places very likely over Vidarbha on 21<sup>st</sup>, heavy to very heavy rain at isolated places over Konkan & Goa during the period, over Vidarbha on 22<sup>nd</sup>, over Madhya Maharashtra on 23<sup>rd</sup> and 24<sup>th</sup>, heavy rain at isolated places over Madhya Maharashtra from 20<sup>th</sup> to 22<sup>nd</sup>, over Vidarbha on 23<sup>rd</sup>, over Marathwada on 22<sup>nd</sup> and 23<sup>rd</sup>, over Gujarat Region on 20<sup>th</sup>, 21<sup>st</sup> and 24<sup>th</sup> July, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
  - **Maharashtra:**
  - In South Konkan, complete transplanting of rice seedling. Drain out excess water from rice field wherever necessary. Continue transplanting of *nagli*. Transplanting should be done by dibbling method at a distance of 20 cm X 15 cm. In North Konkan, Continue transplanting of 22-25 days old rice seedling. Drain out excess water from rice field wherever necessary. Continue transplanting of 30 days old *nagli* seedling. Transplant seedlings at spacing of 20x15 cm. by 'Thomba' method. Prepare Thomba across the slope. Drain out excess water from orchards and vegetable fields.
  - In Madhya Maharashtra, drain out excess water from *kharif* crops such as soybean, pearl millet, cotton, pigeon pea and maize, vegetables and orchards in Jalgaon district. Continue transplanting of 21 -25 days old seedling. Drain out excess water from the rice field. Undertake gap filling in pigeon pea. Also undertake thinning to maintain optimum plant population.
  - In Marathwada, drain out excess water from *kharif* crops in Aurangabad, Jalna, Parbhani, Hingoli and Nanded districts.
  - In West Vidarbha, drain out excess water from standing crops wherever necessary. Complete sowing of cotton, For late sowing select early varieties of deshi and American cotton with slightly higher 20-25% more than recommended seed rate and reduce fertilizer dose by 25 % for cotton. Seed treatment with Azotobactor and PSB @ 25 gm per kg of seed is advisable. Undertake intercultural operations (weeding/hoeing) in early sown crops at optimum soil moisture for timely control of weeds.
  - In East Vidarbha, continue transplanting of 22 to 25 days old rice seedling (12 to 15 cm tall). Transplanting of

rice may be carried out with a spacing of 20 x 15 cm with placement of seedling 2.5 to 3.5 cm. deep and transplant 3 plants per hill and for hybrid rice 1 plant per hill. Drain out excess water from standing crops wherever necessary. Undertake drenching with Copper oxychloride @ 25 g per 10 liter of water on raised nursery bed of vegetables after current spells of rain.

- In Vidarbha, for surveillance and control of pink boll worm incidence, erect 15 to 20 pheromone traps in the village near vicinity of cotton field, cotton procurement centre and ginning factory.
- **Gujarat:**
  - In South Gujarat, drain out excess water from the maize, sugarcane, green gram, black gram, ginger, turmeric and vegetable crop fields. Continue transplanting of rice. Continue sowing of pigeon pea, green gram, black gram, cowpea and castor crops after current spells of heavy rain.
  - In North Gujarat, avoid water logging condition in cotton, groundnut and sesame. To increase crop yield, adopt intercropping cotton with green gram or cowpea. Continue sowing of black gram, green gram, cowpea, cluster bean, transplanting/sowing of vegetable crops and planting of saplings of new orchards after current spells of heavy rain. Carry out hand weeding in groundnut, pearl millet, sesame crops to conserve soil moisture at vapsa condition. In established orchards, carry out intercultural operations and undertake sowing of short duration pulses crops as intercrop.
  - In Middle Gujarat, drain out excess water from groundnut, black gram and green gram crop fields to facilitate aeration to the crops. Carry out hand weeding and resume intercultural operations in black gram, green gram and cotton at vapsa condition. Continue sowing of pearl millet after current spells of heavy rain. Continue main land preparation for transplanting of rice.
  - In Saurashtra & Kutch, in Junagarh, Gir Somnath and Amreli districts, drain out excess water from already sown crop fields. Continue sowing of green gram, black gram, cowpea, pigeon pea, maize, sorghum and transplanting/sowing of tomato, chili, brinjal, bhindi and cluster bean after receding of flood water and at optimum soil moisture condition. Undertake planting of saplings of new orchards and adopt intercropping of pulses in orchards. Carry out intercultural operations in groundnut, sesame, pearl millet crops at vapsa condition.
- **Animal Husbandry**
  - In Gujarat, spray phenyl in the animal shed to avoid flies, mosquitoes and protect livestock during rain. Provide 30-35 gm mineral mixture in daily diet.

#### CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Rainfall occurred in all districts of East Madhya Pradesh except Tikamgarh, all districts of West Madhya Pradesh, all districts of Chhattisgarh during the week.
- **Advisories:**
  - As rain/thundershowers likely at most/many places over Madhya Pradesh and Chhattisgarh during the period, along with heavy to very heavy rain with extremely heavy fall at isolated places very likely over Chhattisgarh on 21<sup>st</sup>, July, heavy to very heavy/heavy rain at isolated places over West Madhya Pradesh on 20<sup>th</sup>, 22<sup>nd</sup>, 23<sup>rd</sup> and 24<sup>th</sup>, over East Madhya Pradesh on 21<sup>st</sup>, 22<sup>nd</sup> and 23<sup>rd</sup>, over Chhattisgarh on 20<sup>th</sup>, 22<sup>nd</sup> and 23<sup>rd</sup> July, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
  - **Madhya Pradesh:**
    - In West Madhya Pradesh, complete sowing of red gram, maize, green gram, black gram, pearl millet and soybean. Continue transplanting of brinjal, chilli, tomato, early cauliflower and *kharif* onion. Undertake transplanting of rice. Provide proper drainage facility in pulses and oilseed fields.
    - In Malwa Plateau Zone, continue transplanting of new saplings of fruit plants. If germination of soybean is poor gap filling should be done.
    - In East Madhya Pradesh, continue sowing of *kharif* crops like sorghum, sesame, maize, soybean and groundnut. Continue sowing of okra and cucurbits. Continue transplanting of brinjal, chilli and tomato. Continue transplanting of rice. Continue seed bed preparation for onion. Undertake sowing of Kodo, Kutki and ramtil. In Kymore Plateau and Satpura Hill Zone, continue direct sowing of rice.
    - In West Madhya Pradesh, to control stem rot disease in ginger and turmeric, spray Blitox 50 @ 2.5gm/litre solution after current spells of rain.
  - **Chhattisgarh:**
    - Continue sowing of *kharif* crops like soybean, til, red gram, maize, groundnut. Continue sowing of okra, cucurbits and transplanting of vegetables. Continue line sowing of rice. Continue transplanting of rice. Continue planting of banana, papaya, mango, guava etc. Undertake nursery sowing of brinjal, early tomato, chilli and onion in upland areas. Provide proper drainage facility in pulses and oilseed fields.
- **Animal Husbandry**
  - In Madhya Pradesh, cattle should be kept in shade and provide clean and fresh water two times a day.



Vaccinate the cattle for control of FMD and HS disease.

- In Chhattisgarh, carry out vaccination of animals against Black Quarter, Anthrax and other disease.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Himachal Pradesh except Lahaul & Spiti, in Gurdaspur, Hoshiarpur, Jalandhar, Ludhiana, Nawasahar, Patiala, Ropar and Sangrur district of Punjab, Chandigar, Jind, Katihal, Karnal, Mahendragarh, Mewat and Rewari districts of Haryana, in all districts of Delhi except South West and West Delhi, in Jammu, Kathua, Kulgam, Rajouri, Ramban, Reasi and Udhampur districts of Jammu & Kashmir, all districts of East Uttar Pradesh except Azamgarh, Ballia, Basti, Deoria, Faizabad, Gazipur, Gonda, Kaushambi, Kheri, Lucknow, Mau, Mirzapur, Sahuji Maharajpur, Sant Kabirnagar, Sidharthnagar and Varanasi, in Agra, Aligarh, Bagpat, Bareilly, Bijnor, Bulandsahar, Etah, Firozabad, Ghaziabad, Hamirpur, Lalitpur, Moradabad, Pilibhit and Shahjahanpur districts of West Uttar Pradesh, all districts of Uttarakhand except Garhwal Pauri, Garhwal Tehri and Haridwar, all districts of East Rajasthan except Bharatpur, Jhunjhunu and Karauli, all districts of West Rajasthan except Barmer, Hanumangarh, Jaisalmer and Sri Ganganagar during the week. Weather remained mainly dry over rest of the region.
- **Advisories:**
  - As rain/thundershowers likely at most places over Uttarakhand, West Uttar Pradesh, Haryana, Chandigarh & Delhi during the period, at most/many places over Himachal Pradesh and East Rajasthan during the period, over Punjab from 21<sup>st</sup> to 24<sup>th</sup>, over Jammu & Kashmir from 22<sup>nd</sup> to 24<sup>th</sup>, at many places over East Uttar Pradesh on 21<sup>st</sup>, 22<sup>nd</sup> and 24<sup>th</sup>, along with heavy rain at a few places with very heavy rain at isolated places over Himachal Pradesh on 22<sup>nd</sup>, heavy to very heavy rain at a few places with extremely heavy fall at isolated places very likely over Uttarakhand on 22<sup>nd</sup>, heavy to very heavy rain at isolated places over East Rajasthan on 20<sup>th</sup> and 24<sup>th</sup>, over Uttarakhand on 21<sup>st</sup>, 23<sup>rd</sup> and 24<sup>th</sup>, over Haryana, Chandigarh & Delhi on 21<sup>st</sup>, over West Uttar Pradesh on 21<sup>st</sup> and 22<sup>nd</sup>, over Punjab on 22<sup>nd</sup>, heavy rain at isolated places over Haryana, Chandigarh & Delhi on 20<sup>th</sup>, 22<sup>nd</sup> and 23<sup>rd</sup>, over East Rajasthan from 21<sup>st</sup> to 23<sup>rd</sup>, over West Uttar Pradesh on 20<sup>th</sup> and 23<sup>rd</sup>, over East Uttar Pradesh on 21<sup>st</sup>, over Jammu Division of Jammu & Kashmir on 22<sup>nd</sup> July, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
  - **Jammu & Kashmir:**
    - Due to chances of moderate to heavy rainfall, farmers are advised to bund their paddy fields for in situ storage of rain water. Continue transplanting of rice seedlings which have attained 4-6 leaves (varieties: China-1039, IET-1410, Ratna, PC-19, SJR-5 & Jaya) after receipt of rain. Drain out excess water from transplanted fields. Do not allow water to stagnate in maize field as maize is highly susceptible to stagnant water. Drain out excess water from already sown vegetable and fodder crop field. Postpone intercultural operations and application of fertilizers and pesticides till weather gets clear.
    - Weather is congenial for attack of stemborer on paddy. If observed apply Carbofuron 3G @ 20 kg/ha in standing water and do not drain or irrigate the field for 72 hrs after application after current spells of rain.
    - Weather is congenial for the attack of alternaria blight and phytophthora on vegetable crops. If symptoms observed, spray Mancozeb or Mancozeb + Metalaxil @ 2 gm/litre of water after current spells of rain.
  - **Uttarakhand:**
    - Continue transplanting of ready paddy seedlings having 4-5 leaves. In hilly regions, continue sowing of radish, mustard, coriander, turnip and spinach (Pusa Harit). Proper drainage should be maintained in the tomato, brinjal and capsicum crop field. Evergreen fruit plants like mango, guava, lemon, papaya, litchi etc should be planted during the month. Urad varieties like Pant urd 19, Pant urd 35 & Pant urd 31 and moong varieties like Pant moong 4 & Pant moong 5 should be selected for sowing in the second fortnight of July. Continue transplanting of seedlings of cabbage, broccoli and transplanting of chilli. Continue sowing of finger millet, amaranth, black gram, soybean etc. after current spells of heavy rain. Postpone intercultural operations and application of fertilizers and pesticides till weather gets clear.
  - **Himachal Pradesh:**
    - Continue transplanting of 20-25 days old paddy seedling in prepared fields. Continue sowing of kharif pulses moong, mash and Kulthi. Continue sowing of peas, turnip, carrot, spinach etc in high hilly regions. Postpone intercultural operations and spraying of insecticides and pesticides in clear weather. Apply second half dose of nitrogen i.e. 1Kg. Cal. Nitrate + 500 gm. Urea to full grown apple trees after fruit set in lower valley areas or spray urea 1.0 kg. In 200 lit. of water, where there is dry conditions.
    - For the prevention of root rot disease in peas, spray Bavistin (Carbendazim) 1 g/liter of water after current spells of rain.
    - Protect tomato crops from white fly by using yellow sticky traps @ 1 trap/100 sq. m. Spray the plants with Melathione (22.5 ml) or Oxydematan Methyl (Metesystoks 15 ml) with 15 litre of water after current spells of rain.

- **Punjab, Haryana & Delhi:**
  - In Punjab, complete transplanting of rice. Continue sowing of rainy season vegetables like okra, cucurbits and cowpea. Continue transplanting of early cauliflower. Continue planting of fruit plants like citrus, litchi, mango, guava, loquat, ber, amla and papaya.
  - In Haryana, continue sowing of Lobia, moth and pigeon pea. Continue transplanting of rice. Drain out excess water from vegetable and cotton fields. Continue sowing of guar and bajra in clear weather. Continue transplanting of vegetables.
  - In Delhi, provide proper drainage in vegetables, pulse crops, maize and nurseries. Continue transplanting of rice. Continue transplanting of chilli, brinjal and cauliflower. Continue sowing of cucurbits. Continue sowing of red gram, soybean, maize, guar, bajra, cluster bean, spinach, amaranths and lady finger.
  - In Punjab, to control leaf spots or blight disease in cotton, spray Blitox 500 g + Agrimycin 20 g or Streptocycline 3 g/acre after current spells of rain and repeat at an interval of 15 to 20 days.
- **Uttar Pradesh:**
  - In East Uttar Pradesh, continue nursery preparation for onion, cauliflower, brinjal, chilli and tomato. Complete transplanting of rice. Continue sowing of cucurbits. Complete sowing of *kharif* maize, jowar, bajra, red gram, soybean, green gram, black gram and groundnut. Continue planting of banana.
  - In West Uttar Pradesh, continue transplanting of rice in Western Plain Zone. Continue sowing of bajra, jowar, green gram, black gram, maize and soybean in clear weather. Undertake transplanting of vegetables.
- **Rajasthan:**
  - In East Rajasthan, complete sowing of crops like red gram, green gram, cowpea, moth, pearl millet, sesame, sorghum, maize & cluster bean. Continue sowing of rainy season cucurbits like khira, bottle gourd, ridge gourd, bitter gourd & cucumber and nursery preparation of early cauliflower, chilli and brinjal. Continue sowing of groundnut. Complete transplanting of rice in Transition Plain Zone of Inland.
  - In West Rajasthan, continue sowing of sesame, guar, pearl millet, cluster bean, mung bean, moth crops. Undertake intercultural operations in cotton in clear weather.
- **Animal Husbandry**
  - In Jammu & Kashmir, mineral mixture should be supplemented in diet. Give vaccination against FMD. Provide adequate amount of fresh cool and clean drinking water. Increase protein content in animal ration by 2%.
  - In Himachal Pradesh consult veterinary doctor for FMD Vaccination. Give mixture of hay & green fodder. Weather is conducive for ticks and mites attack on animals. For control spray Butox @ 2.0 ml per litres of water.
- **Apiculture:**
  - In Jammu & Kashmir, protect bee colonies from rains. Give need based sugar feeding. Inspect colonies on a clear sunny day for infestation of wax moth or other disease. Protect bee hive from ants. Raise new frames by providing comb foundation sheets to healthy colonies. Raise new queen if needed.

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