



# *National Agromet Advisory Service Bulletin*

*Friday 22<sup>nd</sup> June 2018*  
*(For the period 22<sup>nd</sup> to 27<sup>th</sup> June 2018)*



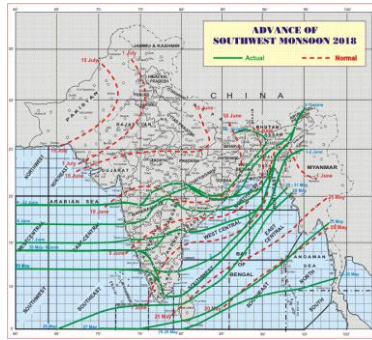
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*India Meteorological Department*

**Weblink For**

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

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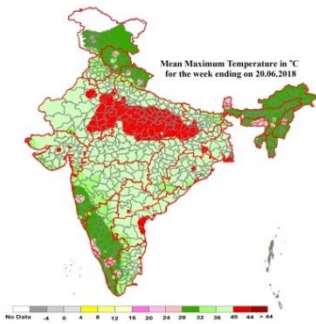
## Advance of South West Monsoon



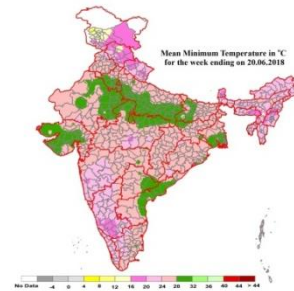
- Conditions are becoming favourable for further advance of Southwest Monsoon over remaining parts of Assam, some more parts of Maharashtra, Chhattisgarh, Odisha, West Bengal and some parts of south Gujarat region, Jharkhand, Bihar and Madhya Pradesh during next 2-3 days.
- The Northern Limit of Monsoon continues to pass through Lat. 19°N/ Long. 60°E, Lat. 19°N/ Long. 70°E, Thane (including Mumbai), Ahmednagar, Buldhana, Amravati, Gondia, Titlagarh, Cuttack, Midnapore, Lat. 24°N/Long. 89°E, Goalpara, Baghdogra and Lat. 27°N/ Long. 87°E.

### Spatial distribution of weather parameters for the week ending 20.06.2018

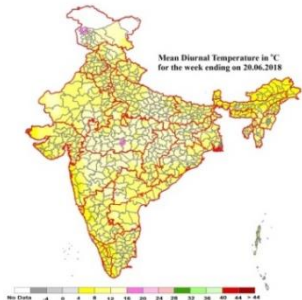
**Mean Maximum Temperature (°C) for the week ending 20.06.2018**



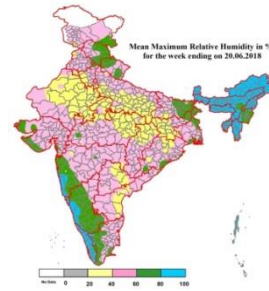
**Mean Minimum Temperature (°C) for the week ending 20.06.2018**



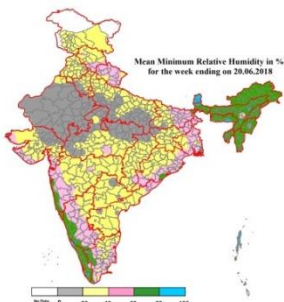
**Mean Diurnal Temperature Variation (°C) for the week ending 20.06.2018**



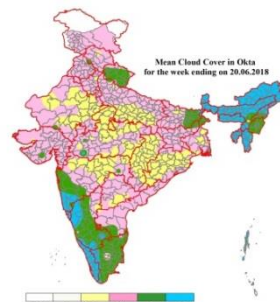
**Mean Maximum Relative Humidity (%) for the week ending 20.06.2018**



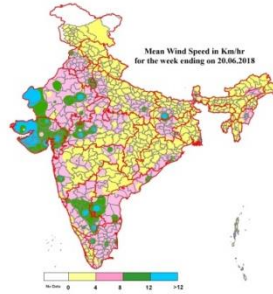
**Mean Minimum Relative Humidity (%) for the week ending 20.06.2018**



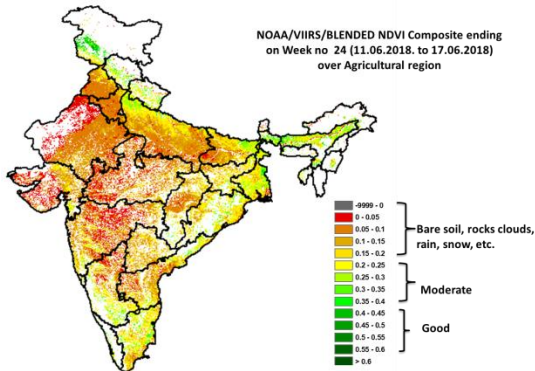
**Mean Cloud Cover (okta) for the week ending 20.06.2018**



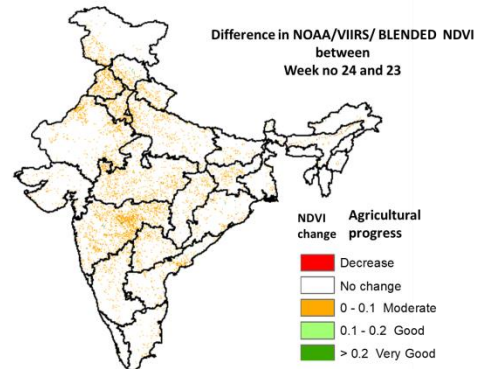
## Mean Wind Speed (km/hr) for the week ending 20.06.2018



### NOAA/VIIRS NDVI composite ending on 17<sup>th</sup> June 2018 over Agricultural regions of India



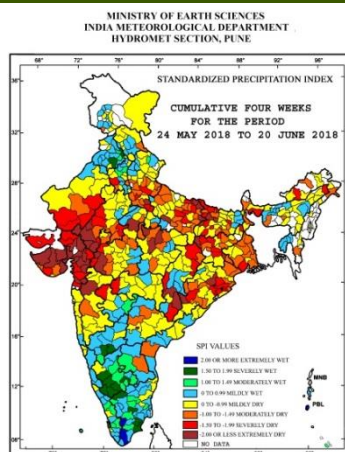
### Difference in NOAA/VIIRS NDVI between 10<sup>th</sup> June and 17<sup>th</sup> June 2018



- Agriculture vigour is moderate over few parts of Jammu & Kashmir, West Bengal and adjoining Assam, Bihar, Tamilnadu, Uttarakhand, Himachal Pradesh, Uttar Pradesh, Bihar, Odisha, North Coastal Andhra Pradesh and South Interior Karnataka.

- Good progress of vigour is observed over isolated pockets of Himachal Pradesh, moderate progress of agricultural vigour was observed over many parts of interior Karnataka & adjoining Rayalaseema, Assam, Madhya Pradesh, few parts of Maharashtra, Odisha, Bihar, Chattisgarh, Telangana, Punjab, Haryana Uttar Pradesh Jammu Kashmir, and Uttarakhand & and isolated pockets over remaining parts of the country.

## Standardised Precipitation Index Cumulative 4 weeks for the period 24<sup>th</sup> May to 20<sup>th</sup> June 2018

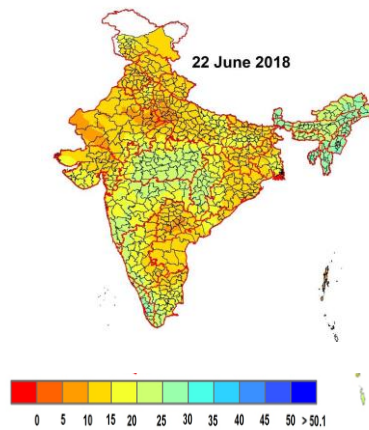


- Extremely/severely wet conditions experienced in few districts of Karnataka; South Andaman district of Andaman & Nicobar Islands; Sas Nagar Mohali, Barnala districts of Punjab; Karur, Ramanathapuram, Sivaganga, Theni, Tirunelveli districts of Tamil Nadu & Puducherry.
- Extremely/Severely dry conditions experienced in most districts of Gujarat Region; many districts of Saurashtra, Kutch & Diu; few districts of Jharkhand; Bihar; Rajasthan; Chhattisgarh; East Kameng district of Arunachal Pradesh; Tinsukia district of Assam; Cooch Behar, East Midnapore districts of West Bengal; Angul, Cuttack, Dhenkanal, Kalahandi, Khurda, Nawarangpur, Nayagarh districts of Odisha; Ballia,

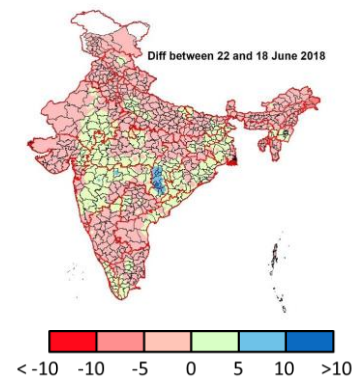
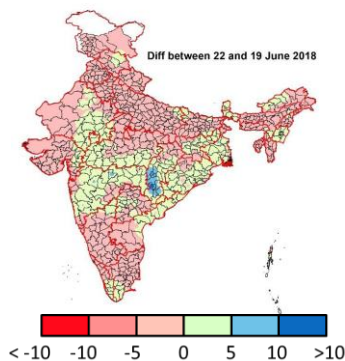
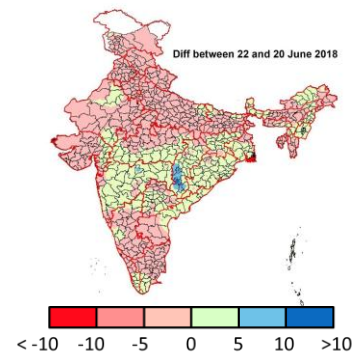
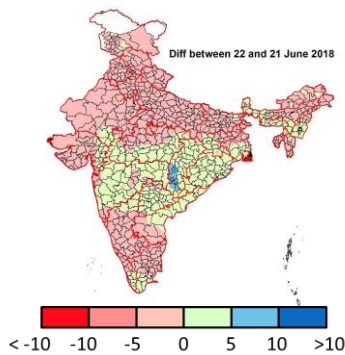
Fatehpur, Gorakhpur, Jaunpur, Kushi Nagar, Maharajganj, Siddharth Nagar, Sultanpur, Auraiya, Badaun, Etawah, Mahamaya Nagar, Mainpuri districts of Uttar Pradesh; Bhiwani district of Haryana; Dhar, Jhabua, Ratlam, Shivpuri, Alirajpur, Damoh, Panna, Tikamgarh districts of Madhya Pradesh; Nashik, Aurangabad, Buldhana districts of Maharashtra; Hyderabad district of Telangana.

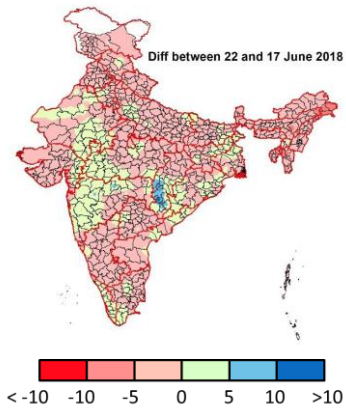
- Moderately dry conditions experienced in many districts of Meghalaya; West Bengal; Delhi; few districts of Arunachal Pradesh; Odisha; Jharkhand; Uttar Pradesh; Madhya Pradesh; Saurashtra, Kutch & Diu; Lunglei district of Mizoram; Gopalganj, Jamui, Monghyr, Muzaffarpur, Nawada, Sheikhpura, Sheohar districts of Bihar; Mahendragarh district of Haryana; Kinnaur district of Himachal Pradesh; Jammu district of Jammu & Kashmir; Jodhpur, Chittorgarh, Jhalawar, Kota districts of Rajasthan; Surat district of Gujarat Region; Pune district of Maharashtra; Jashpur district of Chhattisgarh; Prakasam, Cuddapah districts of Andhra Pradesh; Karimnagar, Medak districts of Telangana.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

### Daily Soil Moisture (mm) for 22<sup>nd</sup> June 2018 (ending at 0830 IST) for 60 cm depth

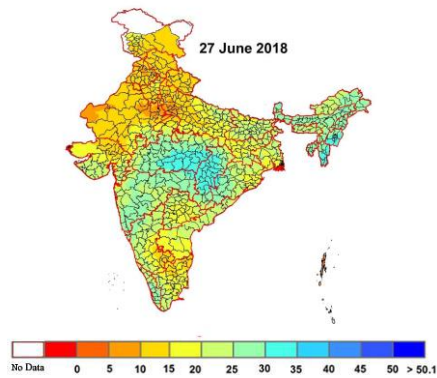
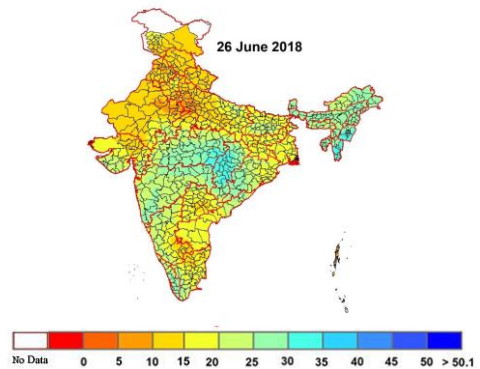
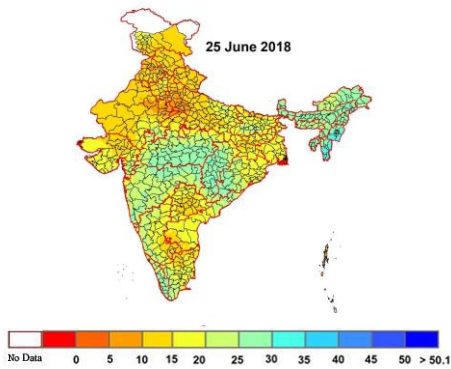
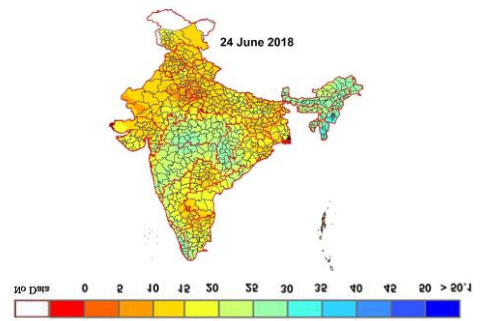
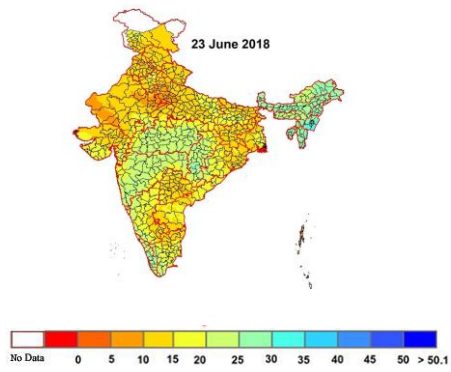


### Difference of Soil Moisture (mm) for 60 cm depth





**Forecasted Soil Moisture (mm) from 23<sup>rd</sup> June to 27<sup>th</sup> June 2018 (ending at 0830 IST) for 60 cm depth**



## Weather Forecast for next 5 days valid upto 0830 hours of 27<sup>th</sup> June 2018

- Meteorological subdivision wise detailed 5 days rainfall forecast is given in Table below.
- No significant change in maximum temperatures very likely over most parts of the country during next 2 days and fall by 2-4°C over east and adjoining central India during next 48 hours.

### 5 Day Rainfall Forecast (Mid day) 22<sup>nd</sup> June 2018

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

- **22 June (Day 1):** Heavy to very heavy rain at isolated places very likely over Vidarbha & Konkan & Goa; heavy rain very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Odisha, Madhya Maharashtra, Marathwada, Telangana, Coastal Karnataka and Kerala. Thunderstorm accompanied with gusty winds very likely at isolated places over Uttarakhand, Haryana, Chandigarh & Delhi, West Uttar Pradesh, Jharkhand, Bihar, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh, Telangana, Rayalaseema and Tamilnadu & Puducherry. Heat wave conditions very likely at a few places over East Uttar Pradesh and at one or two pockets over West Uttar Pradesh.
- **23 June (Day 2):** Heavy to very heavy rain at isolated places very likely over Vidarbha, Konkan & Goa, Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya; heavy rain very likely at isolated places over Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Marathwada,

Telangana, Coastal Karnataka, South Interior Karnataka and Kerala. Thunderstorm accompanied with gusty winds very likely at isolated places over Coastal Andhra Pradesh, Telangana, Rayalaseema and Tamilnadu & Puducherry.

- **24 June (Day 3):** Heavy to very heavy rain at isolated places very likely over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya; heavy rain very likely at isolated places over Vidarbha, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Coastal Karnataka, South Interior Karnataka and Kerala.
- **25 June (Day 4):** Heavy to very heavy rain at isolated places very likely over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Konkan & Goa, Coastal Karnataka and Kerala; heavy rain very likely at isolated places over East Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura and South Interior Karnataka.
- **26 June (Day 5):** Heavy to very heavy rain at isolated places very likely over Sub-Himalayan West Bengal & Sikkim, Konkan & Goa and Coastal Karnataka; **Heavy rain** likely at isolated places over East Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Gangetic West Bengal, Odisha, Assam & Meghalaya, Gujarat region, Coastal Andhra Pradesh, Telangana and South Interior Karnataka.

#### Weather Outlook for subsequent 2 days from 27<sup>th</sup> to 29<sup>th</sup> June 2018

- Widespread rainfall with isolated heavy falls very likely along the west coast, northeast and East India.
- Fairly widespread rainfall with isolated heavy falls likely over south and central India and Isolated to scattered rainfall likely over Northwest India.

#### Salient Advisories

- As conditions are becoming favourable for further advance of Southwest Monsoon over remaining parts of Assam, some more parts of **Maharashtra, Chhattisgarh, Odisha, West Bengal** and some parts of **south Gujarat region, Jharkhand, Bihar** and **Madhya Pradesh** during next 2-3 days, continue nursery preparation for rice in South Gujarat and carry out land preparation for sowing of cotton and groundnut in middle Gujarat. Continue nursery raising for rice. Undertake land preparation for sowing of maize, soybean and groundnut and undertake sowing after onset of monsoon in Madhya Pradesh and undertake nursery sowing of rice in Chhattisgarh. Undertake land preparation for sowing of direct seeded upland rice, maize, groundnut, pigeon pea, urad and moong in Jharkhand. Undertake land preparation for sowing of non-paddy crops like pulses, oilseeds and *kharif* vegetables in upland areas in Odisha.
- Utilising the realized and expected rainfall, continue transplanting of *Viruppu* rice in **Kerala**. Continue nursery sowing for *Sali* rice in **Assam** and undertake nursery sowing for low land *Sali/kharif* rice in **Meghalaya** after current spells of heavy rain. Undertake sowing of soybean, groundnut, black gram and rice bean in **Manipur**. Undertake transplanting of *kharif* rice in **Konkan**. In **Coastal Karnataka**, continue nursery raising of rice after current spells of heavy rain and undertake main field preparation for transplanting of rice. Continue sowing of cow pea, groundnut, green gram and black gram in **South Interior Karnataka**.
- In **North Interior Karnataka**, undertake 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 **Andhra Pradesh**, continue land preparation for rainfed crops *viz.*, pulses, ragi, groundnut and green manure crops and take up sowings of rainfed crops after receipt of sufficient rain. In **Telangana**, continue land preparation for sowing of *kharif* crops and undertake sowing of rainfed crops like soybean, jowar, maize, redgram, green gram, cotton etc., after receiving cumulative rainfall of 50-60 mm in light soils and 60-75 mm in heavy soils or the soil should be wet up to 15-20 cm depth. In **Tamil Nadu** continue nursery raising of *kuruvai* rice.

- As thunderstorm accompanied with gusty winds very likely at isolated places over **Bihar, Jharkhand, Gangetic West Bengal, Odish, Uttarakhand, Haryana, Chandigarh & Delhi** and **West Uttar Pradesh** on 22<sup>nd</sup> June and over **Coastal Andhra Pradesh, Telangana, Rayalaseema** and **Tamilnadu & Puducherry** on 22<sup>nd</sup> and 23<sup>rd</sup> June, it is advised to provide support to young fruit plants, banana and vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds.

### *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, Koppal district of North Interior Karnataka, Chikamangaluru, Kodagu and Shivamogga districts of South Interior Karnataka and Coimbatore and Nilgiris districts of Tamilnadu during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As rain/thundershowers would occur at most places over Kerala and Coastal Karnataka during the period, at many places over South Interior Karnataka from 24<sup>th</sup> to 26<sup>th</sup>, over North Interior Karnataka during the period, over Coastal Andhra Pradesh on 25<sup>th</sup> and 26<sup>th</sup>, over Telangana on 22<sup>nd</sup>, 23<sup>rd</sup> and 26<sup>th</sup>, along with heavy to very heavy/heavy rain very likely at isolated places over Coastal Karnataka during the period, over Kerala from 22<sup>nd</sup> to 25<sup>th</sup>, heavy rain at isolated places over Telangana on 22<sup>nd</sup>, 23<sup>rd</sup> and 26<sup>th</sup>, over South Interior Karnataka from 23<sup>rd</sup> to 26<sup>th</sup>, over Coastal Andhra Pradesh on 26<sup>th</sup> June, 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.
  - As thunderstorm accompanied with gusty winds very likely at isolated places over Coastal Andhra Pradesh, Telangana, Rayalaseema and Tamilnadu & Puducherry on 22<sup>nd</sup> and 23<sup>rd</sup> June, it is advised to provide support to young fruit plants, banana and vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds.
    - **Kerala:**
      - Continue transplanting of Viruppu rice and planting of vegetables like bhindi, chilli, brinjal, etc. Fix rain guard for rubber trees during the month. Continue main field planting of cardamom. Undertake planting of seedlings of cucurbits like bittergourd, snakegourd at 4-5 leaf stage. Continue planting of coconut saplings. Farmers may intercrop with Colaccasia, Banana, Ginger and Turmeric in coconut gardens.
      - Sigatoka leaf spot disease in banana may become severe due to increase in relative humidity. Spray 1% Bordeaux mixture or Tilt 25 EC (1ml/litre of water) after cutting the severely affected leaves and burning them after current spell of rain. Leaf rust disease in coffee plants may become severe due to increase in relative humidity. Apply 0.5% Bordeaux mixture or plant wax 20 EC @ 1-2 ml per litre of water to control the disease. Undertake plant protection measures after current spells of rain. To control downy mildew in cucurbits, spray combination fungicide Cymoxanil + Mancozeb @ 2g/ litre after current spell of rain. For leaf folder and stem borer in rice, use Trichocards @ 5cc/ha at weekly interval. If the infestation is severe apply Fame(Flubendiamide) @ 1ml/10 litres of water after current spells of rain. To control rust disease in cowpea, apply Dithane M 45 or Indofil M 45 @ 3 g per litre of water after current spells of rain.
    - **Andhra Pradesh:**
      - Take up land preparation for rainfed crops viz., pulses, ragi, groundnut and carry out sowings after receipt of sufficient rain. Seed treatment should be followed with Mancozeb @ 3 g/ kg seed. Choose high yielding varieties like K 6, K 9, Dharani, Kadiri, Chitravani and Amaravathi for groundnut and LRG 41, PRG 176 and LRG 52 varieties for redgram. Choose high yielding varieties of castor like Kranthi, Haritha, Jwala, PCH 111 and DCH 157. Take up timely sowings of early maturing cotton varieties so that the cotton bolls mature before the heavy population of pink bollworm builds up. Rainfed sugarcane can be planted by utilizing the realized rainfall. Treat the setts with 10 % lime solution. The present weather conditions are favourable for pinworm in tomato. To control, set up 8 pheromone traps/acre and spray Quinalphos @ 2 ml or Emamectin Benzoate 0.2 g or Novaluran 1 ml per litre of water after current spell of rain. For leaf folder and stem borer attack in paddy at nursery to tillering stage, spray Cartap Hydrochloride @ 2 g/litre of water after current spells of rain..
    - **Telangana:**
      - Undertake sowing of rainfed crops like Soybean, Jowar, Maize, Redgram, Greengram, Cotton, etc. only after receiving cumulative rainfall of 50-60 mm in light soils and 60-75 mm in heavy soils or if the soil is wet up to 15-20 cm depth. Protect the transplanted banana saplings from high temperatures by providing mulching. Do not start paddy nurseries of Telangana Sona (RNR 15048) rice in the month of June. Take-up sowing of



Sunhemp and Dhaincha as in-situ green manure crop preceding rice. Take-up nursery sowing of Tomato, Brinjal and Chilli. Take-up direct sowing of Gourds, Beans and Bhendi.

- For control of incidence of sucking pests in vegetables, spray Dimethoate @ 2 ml or Acephate @ 1.5 g per litre of water after current spell of rain.
- **Tamil Nadu:**
- For SRI cultivation in this kuruvai season, prepare 1 cent raised bed nursery for 1 ac planting. Broadcast uniformly 2 kg of pre-germinated seeds in the nursery bed and sprinkle water on the bed during morning and evening hours using rose can. Maintain standing water in the channel around the beds from 6th day of sowing. Sprinkle 0.5 % urea solution on 9th day after sowing. The seedlings will be ready at 14 days after sowing and stop irrigation two days before pulling out the seedlings. For getting higher yield in summer irrigated blackgram, do foliar spray with Pulse Wonder which contains nutrients and growth promoters @ 2 kg/ac at flowering stage. This will improve pod filling and grain weight. By utilizing received rainfall in command areas where rice is grown during August, green manure crops like daincha or sunnhemp may be grown and insitu ploughed @ 45 days after sowing. Start field preparation for rain-fed tomato crop. Fix polythene rain guard to the trunk of the rubber tree above the tapping panel so that tapping can be done during rainy season also.
- In summer irrigated black gram, occurrence of white fly is being noticed. To control this spray Azadirachtin 0.03% @ 3 ml/litre of water along with sticking agent in the morning or evening using hand sprayer. If damage is more, spray Imidacloprid 200 SL @ 40 ml/ acre using water @ 200 litre/acre after current spell of rain. Prevailing weather condition the incense of Rhizome weevil seen in Banana. It grubs bore into the rhizome and cause death of the plant. To avoid this, select healthy sucker seedling of less susceptible varieties like Poovan, Kadali, Kunnan and Poomkalli. Apply 250g castor cake or 50g Carbaryl dust or 5gms Phorate 10 G per pit before planting and dip suckers in 0.1 per cent Quinalphos emulsion. Use pheromone trap @ 25 Nos./hectare. To control thrips and other sucking pest in cotton spray Imidacloprid 200 SL @ 100 ml/ha (or) Dimethoate 30 EC @ 500 ml/ha or Azadirachtin 0.03% EC @ 500 ml/ha after current spells of rain. To control the incidence of sucking pest in the vegetable crops spray neem seed kernal extract 5% after current spell of rain. Spray Monocrotophos 36 SL 1000ml/ha (or) Quinalphos 25 EC1000 ml/ha (or) Phosphamidon 40 SL 600 ml/ha (or) Profenophos 50 EC 1000 ml/ha for incidence of stem borer in paddy after current spells of rain.
- **Karnataka:**
- In Coastal Karnataka, drain out excess water from crop fields. Undertake sowing of maize (DMH-2, Arjun and other hybrids) and cotton dibbling. For cotton use DHH-11, NCH-145, NHH-44, DHB-105 and Sahana varieties. Continue nursery raising of rice after spells of heavy rain; continue main field preparation for transplanting of rice. Undertake transplanting of areca nut seedlings; use healthy seedlings. Apply basal dose of fertilizers to plantation crops (arecanut, coconut, black pepper, banana and cardamom) after spells of heavy rain.
- In North Interior Karnataka, in areas where the soil moisture condition is favourable for sowing, continue sowing of soybean, green gram, black gram, red gram (TS-3R), sunflower, bajra, sesamum, navane, groundnut (bunch type), cotton and maize crops. 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. Repair of bunds, water retention structures.
- In South Interior Karnataka, in areas where the soil moisture condition is favorable for sowing, under double cropping, continue sowing of cowpea, green gram, black gram, horse gram, field bean, ragi, sesamum, groundnut, onion, maize and under mono cropping, sowing of long duration crops like red gram, castor, cotton, jowar crops and horticulture crops. Undertake sowing of green manure crops. Intercropping of groundnut + red gram in 8:2 proportion and groundnut + castor in 8:2 proportion is suggested for good income.
- **Animal Husbandry**
- In Telangana, prevailing weather conditions are congenial for the occurrence of blue tongue disease in sheep and goat and Foot and mouth disease in cattle and Buffaloes. To prevent the diseases, vaccinate the animals. Ensure proper cross ventilation in poultry sheds to avoid ammonia accumulation. Provide pedestal fans to increase air flow.
- In Kerala, avoid grazing of the animals in waterlogged areas to prevent leptospirosis. Contact nearest veterinary hospital for HS and FMD vaccination.
- In Karnataka, deworm animals and check/treat for ecto-parasites, if any.
- **Agro Forestry**
- Agro forestry on the bund involving Melia dubia (Hebbevu), Silver oak and agase, Halubevu, Glyceridia is recommended for sustainable income under abnormal extreme rainfall events.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Arunachal Pradesh except Dibang Valley and Tawang, all districts of Assam except Darrang, all districts of Meghalaya, Aizawl, Lunglei and Serchip districts of Mizoram, Chudachandrapur, Imphal East, Imphal West and Senapati districts of Manipur, Mon district of Nagaland and all districts of Tripura during the week. Weather remained mainly dry over rest of the region.
- **Advisories:**
  - As rain/thundershowers would occur at most/many places over, Assam & Meghalaya during the period, over Nagaland, Manipur, Mizoram & Tripura from 23<sup>rd</sup> to 26<sup>th</sup>, at many places over Arunachal Pradesh from 22<sup>nd</sup> to 25<sup>th</sup>, along with heavy to very heavy/heavy rain at isolated places very likely over Assam & Meghalaya during the period, heavy rain at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura from 23<sup>rd</sup> to 25<sup>th</sup> June, avoid irrigation, 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.
  - **Arunachal Pradesh:**
    - Provide proper drainage facility in the fields of Jhum rice, vegetables, ginger and turmeric crops. Avoid sowing of larger cardamom under current weather conditions till the rains subside. Undertake transplanting of kharif rice. Cut the tips of leaves before transplanting to reduce stem borer population. Continue harvesting mature cobs of maize.
    - Spray Imidacloprid 17.8 SL (0.003%) to chilli, tomato and brinjal crops inside net/green house or grown in shade for leaf curl at vegetative/flowering stage. For stem borer in early sown rice, spray Chlorpyrifos 20 EC @ 2ml/lit water at 15, 30 and 50 th day after transplanting after current spells of rain.
  - **Assam:**
    - Drain out excess water from jute and vegetable fields. Carry out field preparation for sowing sesamum. Undertake sowing of pigeon pea (variety: T-21). Continue field preparation for early cauliflower. Continue land preparation /nursery sowing of well germinated seeds of high yielding Sali rice varieties such as Ranjit, Bahadur, Kushal, Maniram, Mahsuri, Keteki, Joha, etc. in typical lowland areas and medium duration varieties like Satya and Basundhara in medium lowland areas. Continue land preparation/sowing of groundnut varieties like TG-1A, JL-24, etc. Continue sowing of maize with seeds (2.5-3.0 Kg/bigha) of normal hybrids like Ganga 11, Deccan 107, Deccan 109, Vivek 9; Quality Protein Hybrid like HQPM-1; normal Composite variety like NLD, Parbhat, Novjot, Pusa Comp 1 & 2 and Quality Protein composite like Shakti-1. Continue planting of pineapple and papaya.
    - Spray Carbendazim @1gm per litre of water to control blast disease in Sali paddy seedlings. Spray Phosphamidon @ 60-70 ml per 120 litres of water against borers, wooly aphids, mealy bugs and thrips in sugarcane. 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 methods after the 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. Undertake sowing of maize. Provide support of bamboo structure for climbers of bottle/ash gourd and carry out weeding & earthing up operations. Continue sowing of okra seeds on raised bed at spacing 45x30cm. Use bamboo sticks for staking in French bean, cow pea and cucurbit crops.
    - Spray Rogor@1ml/litre of water to control pest in cucurbits after current spells of rain.
  - **Manipur:**
    - Continue land preparation and sowing of soybean, groundnut, black gram and rice bean after current spells of heavy rain. Continue nursery raising of kharif rice varieties RC Maniphou-7, RC Maniphou- 10 and RC Maniphou- 13. Undertake land preparation for transplanting kharif rice seedlings to the main field. Undertake sowing of kharif maize. Prepare nursery bed for early cauliflower. Harvest mature fruits of tomato in clear weather. Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.
    - For grown up turmeric plants, spray Dithan M45 @ 2 to 2.5 ml/litre of water as prophylactic measures after the rain. For sheath blight/sheath rot in pre-kharif rice, apply Propiconazole @ 15ml/ 15 litres water 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 as it will help improve fruit retention, fruit development and the fruit quality.
    - 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:**

- Go for early Aman paddy in the areas where Aus paddy is completely or more than 50 percent damaged. may be chosen. Long duration high yielding variety of Aman paddy may minimize the losses. In lowland areas, submersible variety like Swarna Sub 1 or Ranjeet Sub 1 may be selected. Adequate drainage system must be maintained in nursery bed to avoid water logging. It will be better if farmers can go for community nursery. Flood has damaged entire cowpea crop in many places. In the fields which have not been affected by flood, carry out weeding and maintain good drainage. Continue sowing of groundnut (varieties are TAG 24, TG 37A, ICGS 76 etc.) and maize (varieties DMH- 849, 117, HQPM 1, BQPM 9, etc.) in upland or medium upland.

▪ **Nagaland:**

- Undertake nursery preparation for sowing of TRC/WRC paddy. Undertake weeding/earthing up in maize and green gram crops after current spells of rain. Maintain proper drainage in ginger/turmeric field.
- Monitor cucurbit plants against red pumpkin beetle especially in bottle gourd, pumpkin, cucumber, water melon etc. Mechanically collect and destroy the pest if incidence is low. Remove infested okra and brinjal fruits and shoots regularly and destroy them.

• **Animal Husbandry**

- Protect poultry houses against strong winds. Provide vitamin B complex @ 7ml/litre in drinking water daily in broiler for healthy growth. Vaccinate poultry birds against coccidiosis, Ranikhet and Gamboro diseases.
- De-worm pigs and cattle with anti helmentic drugs such as Fento Plus @ 1 tablet per 30 kg body weight. Vaccinate pigs against FMD & swine fever and cattle/sheep/goat against FMD, Hemorrhagic Septicaemia, Black Quarter. Vaccinate all newly born piglets against swine fever at the age of 3 months followed by annual booster dose. Vaccinate 6-9 months old calves with Brucella Abortus cotton strain-19 @ 5ml subcutaneous on the neck.

• **Fishery**

If there is sufficient water in pond due to rainfall in previous weeks, go for releasing fingerling @ Rahu 108 nos., Silver carp 136 nos., Catla 108 nos., Grass carp 70 nos, Mrigal 136 nos., and Common carp 136 nos. per bigha.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman and Nicobar Islands, Katihar, Kishanganj and Purnea districts of Bihar, Godda, Hazaribagh and Pakur districts of Jharkhand, Murshidabad district of Gangetic West Bengal and all districts of Sub-Himalayan West Bengal except Malda and South Dinajpur during the week. Weather remained mainly dry/dry over rest of the region.

• **Advisories:**

- As thunderstorm accompanied with gusty winds very likely at isolated places over Bihar, Jharkhand, Gangetic West Bengal and Odisha on 22<sup>nd</sup> June, it is advised to provide support to young fruit plants, banana and vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds.
- As rain/thundershowers would occur at most places over Sub-Himalayan West Bengal & Sikkim, at most/many places over Odisha and Andaman & Nicobar islands during the period, over Gangetic West Bengal from 23<sup>rd</sup> to 26<sup>th</sup> and over Bihar and Jharkhand from 24<sup>th</sup> to 26<sup>th</sup>, along with heavy/heavy to very heavy rain very likely at isolated places over Sub-Himalayan West Bengal & Sikkim during the period, heavy rain very likely at isolated places over Odisha from 23<sup>rd</sup> to 26<sup>th</sup> and over Gangetic West Bengal, Bihar, Jharkhand on 25<sup>th</sup> & 26<sup>th</sup> June, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields in to avoid water stagnation.

▪ **Odisha:**

- Undertake sowing of non-paddy crops like pulses, oilseeds and *kharif* vegetables in upland areas.
- Complete dry seeding of paddy in medium land. Before sowing treat the seeds with 3 g Thiram or 1.5 g Topsin-M/kg seeds. Use 20 kg seeds per acre for line sowing and 25 kg for broadcasting. Apply all the recommended dose of fertilizer as basal in upland, while 50% N and all P& K as basal in medium and low land. Wait for nursery sowing of paddy in dry bed to 4<sup>th</sup> week of this month as the monsoon will be expected to be active in last week of June.
- Continue sowing of green manuring crops like Dhaincha and sunhemp. Green manure crops are sown in medium and low land condition at 6-8 weeks before transplanting of rice. Use 10 kg seeds per acre. Sowing time should be adjusted in such a way that the crop will attain 5-week stage just at 7 days before transplanting. Undertake field preparation and keep inputs ready for kharif sowing.

▪ **Bihar:**

- Undertake nursery raising of long duration and medium paddy varieties. Long duration varieties like Rajshree,

Rajendra Mansuri, MTU 7029, Suwrna Sub-1, Aries 6444 and medium duration varieties like Kanak, Sita, Rajendra Sweta, BPT 5204, MTU- 1001 are recommended for this area. Method for preparation of nursery bed – Well treated and sprouted rice seed is used. For sprouting and treating, the seed is wetted for 12 hours in a jute bag treated with 2g/kg of Carbendazim 50 WP. Spread the treated rice seed over hard surface covered with wetted jute bag. Sprinkle water 2-3 times during daytime. Seed starts sprouting after 24 hours and can be broadcasted in puddled area for raising rice seedlings.

- Continue sowing of maize varieties Devki, Suwan, Shaktimaan-1, Shaktimaan-2, Rajendra shanker makka-3 and Ganga 11. Application of 100 quintal of FYM, 30 kg Nitrogen, 60 kg Phosphorus and 50 kg potash per hectare is advised before sowing. Continue preparation of nursery for Kharif onion, chilli and brinjal.
- Monitoring is advised for infestation of fruit borer in tomato crop. If infestation of fruit borer is found, installation of bird perches in tomato crop is advised. Hand picking of damaged fruit and burying are also advised. Spraying of Spinosad 48EC @ 1ml/4 litres of water, if pest population reaches ETL after current spells of rain.

- **Jharkhand:**

- Undertake land preparation for sowing of maize, groundnut, pigeon pea, urdbean and moong. After receiving sufficient rainfall, start land preparation for timely (15 to 30 June) sowing of direct seeded upland rice hence, incorporate well rotted FYM or compost @5-10 tonnes per acre by spreading it in equal proportion. To increase the fertility of Rice field, farmers may sow the green manure crops like Sunhemp and Dhaincha. The seed rate for both is 20-25 kg per acre.
- In Central and North Eastern Plateau Zone, undertake land preparation and sowing of sesame and soybean (vari. Birsa Soya bean-1, Birsa safed soya bean etc) before sowing treat the seed with Thiram, Captain or Carbendazim. Undertake land preparation for sowing of pigeon pea and maize in South Eastern Plateau Zone.
- For plantation of different fruit seedlings and prepare/dig the pit and maintain the distance between pit as per requirement of fruit tree.

- **West Bengal:**

- In the Sub-Himalayan West Bengal, provide proper drainage facility in soybean, round chilli, ginger and turmeric fields. Undertake land preparation for new plantation of large cardamom and shade trees and out weeding in large cardamom field after current spells of heavy rain. Start seedbed preparation for kharif paddy @5kg/bigha seeds. Treat seeds with Tricoderma Viride @ 4g/1.5 liter of water/kg seeds soaked for 24 hour.
- In Gangetic West Bengal, continue land preparation and nursery sowing of Aman paddy varieties like Lalswana (long duration) and MTU 1010, PD 12, Pratiksha, Bidhan 1 etc (short duration). Continue sowing of Sweta, Churni, Jagriti, Probhat varieties of arhar during next week after seed treatment with Mancozeb, Thairam or Captan. Prepare pit for plantation of saplings of mango, guava and coconut. Select varieties like Himsagar, Mallicka, Langra for Mango; Safeda, L-49 for guava and East Coastal, Hazari for coconut. Before planting, the pits should be filled by 20kg compost, 500g SSP and 25g MOP. Planting should be done after proper rain.
- In Sub-Himalayan West Bengal, for the management of cucurbitaceous fruit fly population, use pheromone traps along with bait spray of Molasses 200 ml + 20 ml Malathion 50% EC mixture as spot spray. To control Bhindi Yellow vein mosaic virus, spray Imidachloropid @ 0.2 ml/liter of water after current spells of rain.
- In Gangetic West Bengal, for jassids in bhindi crop, apply Thiomithoxam 0.3 SG 1g / 3litres of water after current spells of rain. In case of rotting of stem and spots on leaves in jute crop, apply Carbendazim 50 WP @ 1g/litre of water or Copper-Hydroxide 75 WP @ 2g/litre of water. for Phytophthora root rot in betel vine at green leaf stage, apply 1% Bordeaux mixture at the base at 1 month's interval. For Chitla disease in betel vine, apply 0.5% Bordeaux mixture at 15-20 days' interval.

- **Andaman & Nicobar Islands:**

- Prepare the nursery field of paddy and before final preparation of nursery field apply farm yard manure @ 2 t/ha and neem cake @ 500 kg/ha. Provide support to the vine vegetables grown in bamboo structure as 40 km/h wind speed is expected. Make pits of 60 cm away from base tree (arecanut) and transplant black pepper vines grown in nursery bed or polythene bags and fill the pits with compost or farm yard manure. Collect fallen coconut from the field and make pits at distance of 7.5 m for transplanting.

- **Animal Husbandry**

- In West Bengal, vaccinate/treat cattle against HS and black quarter. Avoid grazing animals during mid noon and after noon hours. Keep less number of bird per cage. Arrange electric fans in the cage. Provide more number of fresh water pots and avoid pond water for drinking purpose. Mix electrolyte and vitamin C with drinking water. Vaccinate goats against Peste des Petits Ruminants (PPR) before onset of monsoon.
- In Andaman & Nicobar Islands, provide clean and hygienic water treated with potassium permanganate (1 ppm) to the poultry and local chickens to avoid gastrointestinal infection.
- In Jharkhand, deworm the animals and give mineral mixture along with salt regularly and wheat grains, jaggery etc. may be provided @ 10%-20% in the daily ration to meet the energy requirement of the animals.

- **Fisheries**

- In West Bengal, apply cow dung @ 1000-1500 kg/bigha-m in the fish culture pond.
- In Odisha, maintain 6 ft water depth with pH 6.8-7.5, turbidity 20-30 cm and plankton growth of 2.5/50 liter water. Avoid over crowding. The fishes should be fed daily with oil cake bran mixture at the rate of 2-3 % of their total biomass.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa, Valsad district of Gujarat Region during the week. Weather remained mainly dry/dry over rest of the region.

- **Advisories:**

- As rain/thundershowers would occur at most places over Konkan & Goa during the period, at most/many places over Vidarbha during the period, at many places over Madhya Maharashtra and Marathwada during the period, along with heavy to very heavy rain at isolated places over Vidarbha on 22<sup>nd</sup> and 23<sup>rd</sup>, over Konkan & Goa on 22<sup>nd</sup>, 23<sup>rd</sup>, 25<sup>th</sup>, 26<sup>th</sup>, heavy rain at isolated places over Marathwada, Madhya Maharashtra on 22<sup>nd</sup>, 23<sup>rd</sup>, over Vidarbha on 24<sup>th</sup>, 25<sup>th</sup>, 26<sup>th</sup>, over Konkan & Goa on 24<sup>th</sup>, over Gujarat Region on 26<sup>th</sup>, avoid irrigation, 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 Konkan, undertake transplanting of 22-25 days old rice seedling. Drain out excess water from rice field wherever necessary. In South Konkan, continue land preparation for sowing of groundnut (varieties : Konkan Gaurav, Trombay Konkan (Tapora), TAG-26, TAG-24 and TPG-41). Plough the field deeply and after last leveling add FYM or Compost @ 10 tonnes of per ha in the soil. Use seed @ 100 to 125 kg per ha for sowing.
- In Madhya Maharashtra, undertake sowing of *kharif* crops like cotton, tur and soybean in areas which received sufficient rain. If there is sufficient rainfall then undertake the puddling operation in the rice fields for transplanting.
- In Marathwada, undertake sowing of *kharif* crops like rainfed Bt cotton, pigeonpea, black gram/green gram, groundnut, maize after receipt of sufficient rainfall. Undertake transplanting of vegetable crops where sufficient rainfall was received.
- In West Vidarbha, undertake sowing of *kharif* crops like sorghum, cotton, green gram, black gram and soybean except some pockets of Buldhana and Wardha district where sufficient rainfall is not received for sowing. In East Vidarbha, undertake nursery sowing for rice on raised beds . Undertake seed treatment with 3% brine solution before sowing. Undertake sowing of *kharif* crops like pigeon pea (varieties- AKT-8811, PKV-TARA, BSMR-853, BSMR-736 and ICPL-87119(Aasha)) with receipt of sufficient rainfall. Before sowing seeds should be treated with crop specific *Rhizobium* culture and Phosphate Solubilizing Bacteria.

- **Gujarat:**

- In North Gujarat, carry out gap filling in hybrid cotton under sufficient moisture condition. Continue land preparation for sowing of groundnut, pearl millet, sesame, maize and undertake sowing after receipt of sufficient rainfall. Continue nursery preparation of fennel. Continue picking of matured pods and fruits of vegetable and fruits.
- In South Gujarat, continue sowing of Bt. cotton and nursery sowing of rice under irrigation facility. Continue land preparation for sowing of pigeon pea, green gram and black gram crops and undertake sowing after receipt of sufficient rainfall. Prepare the pits for plantation of horticultural crops. Continue cultivation of amaranth, fenugreek, coriander, spinach and green garlic and nursery raising for capsicum.
- In Saurashtra & Kutch, continue land preparation for sowing of *kharif* groundnut, sesame, pearl millet, green gram, black gram, cowpea, pigeon pea and pre-sowing of irrigated hybrid and B.T. cotton. Undertake pre-sowing of irrigated groundnut under assured irrigation facilities. Adopt cotton-sesame, cotton-groundnut and cotton-maize inter cropping system as risk management.
- In Middle Gujarat, continue land preparation for sowing of Bt. cotton and ground nut. Continue nursery raising for rice. Provide irrigation to pomegranate, sapota, lemon and papaya orchards and staking in banana to counteract the effect of wind speed.

- **Agro Forestry**

- In Gujarat, continue preparing the pits of size (1 ft. x 1 ft. x 1 ft.) and fill the pits with 5 kg of FYM for Agro forestry.

- **Animal Husbandry**

- In Gujarat, protect animal shed from rain and wind. Take care of cattle and stored dry fodder during rainy days.

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

- **Realised Rainfall:** Rainfall occurred in Burhanpur and Dewas districts of West Madhya Pradesh, Durg district of Chhattisgarh during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As rain/thundershowers would occur at most/many places over East Madhya Pradesh from 24<sup>th</sup> to 26<sup>th</sup>, over Chhattisgarh from 23<sup>rd</sup> to 26<sup>th</sup>, at many places over West Madhya Pradesh on 26<sup>th</sup>, along with heavy rain at isolated places very likely over East Madhya Pradesh and Chhattisgarh on 25<sup>th</sup> and 26<sup>th</sup> June, avoid irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
  - **Madhya Pradesh:**
    - In West Madhya Pradesh, continue land preparation for sowing of red gram and soybean. Undertake sowing after onset of monsoon. Continue nursery preparation for brinjal, chilli and tomato. Continue nursery preparation for rice. Continue sowing of ginger and turmeric. Apply irrigation in vegetables, orchards, green gram, black gram, maize and groundnut. Continue harvesting of matured vegetables, moong and urad.
    - In East Madhya Pradesh, undertake sowing of *kharif* crops like maize, soybean and groundnut after onset of monsoon. Undertake nursery preparation for rainy season vegetables. Continue direct sowing of rice in areas where irrigation facilities are available in Kymore Plateau and Satpura Hill Zone. Continue nursery preparation for rice. Continue seed bed preparation for onion. Apply irrigation in sugarcane, summer moong, urad and cucurbits. Continue harvesting of matured vegetables, moong and urad.
    - In West Madhya Pradesh, for attack of red pumpkin, whitefly in cucurbit crops; spray Triazophos 40 E.C. @ 2.0 ml per litre of water on a non rainy day.
  - **Chhattisgarh:**
    - Continue land preparation for sowing of *kharif* crops. Continue nursery preparation for rice. Continue nursery preparation for vegetables. Continue line sowing of rice. Continue digging of pit for planting of fruit crops like papaya, guava, mango, litchi and pomegranate.
    - In Bastar Plateau Zone, continue planting of tuber crops and nursery preparation for papaya and custard apple.
- **Animal Husbandry**
  - In Madhya Pradesh, dairy farmers are advised to vaccinate the animals against mouth and jahari fever disease and to develop the immunity power.
  - 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 Kangra, Kullu, Mandi and Solan districts of Himachal Pradesh, Faridkot, Fatehgarh Saheb, Nawasahar, Patiala, Ropar and Mohali districts of Punjab, Ambala, Chandigarh, Katihal and Karnal districts of Haryana, Baramula, Rajouri and Reasi districts of Jammu & Kashmir, all districts of Uttarakhand except Almora, Bagewshwar, Haridwar, Udham Singh Nagar and Uttarkashi during the week. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with gusty winds very likely at isolated places over Uttarakhand, Haryana, Chandigarh & Delhi and West Uttar Pradesh on 22<sup>nd</sup> June, provide support to young fruit plants and vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds. Keep harvested produce at safe places.
  - As heat wave conditions very likely at a few places over East Uttar Pradesh and at one or two pockets over West Uttar Pradesh, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave conditions, undertake mulching with straw/polythene to conserve soil moisture.
  - **Jammu & Kashmir:**
    - Complete nursery sowing of Basmati 370 and Ranbir Basmati without any delay. Utilizing rainfall received during past few days, farmers are advised to go for transplanting of rice crop where seedlings are ready. Harvest the matured summer pulses (moong, mash) crops in clear weather. Undertake sowing of early sown maize crop under irrigated and rainfed conditions. Prepare land for sowing of rainy season bitter gourd, sponge gourd & bitter melon. Undertake transplanting of rainy seasonal annuals (gaillardia, balsam, cosmos, portulaca, kochia, sunflower, morning glory, gomphrena, celosia etc.) may be done as sufficient moisture is available. *Kharif* fodder crops like sorghum, bajra and fodder maize should be sown with pre sowing irrigation or sufficient moisture in the field. Direct sowing of radish, carrot, beet root should be done in Leh region.
  - **Uttarakhand:**
    - Complete preparation of nursery for mid duration varieties of paddy like - Narendra-359, Pant dhan-18, HKR-147, PR-113 etc in this week. Nursery of basmati & scented paddy varieties like Type-3, Tarawari basmati,

pusa basmati, pant sugandh dhan 17, 21, PRH 10 etc. should be prepared from 15 to 30 June. Complete direct sowing of paddy at hilly region of Pauri Garhwal district. Continue transplanting of 20-25 days old seedlings of paddy in the main field. Apply Butachlor 50%EC @ 60ml/Naali over the field within 1-3 days of transplanting to control the weeds. Undertake land preparation for sowing of maize and pea. In mid hilly regions, short duration variety of cabbage, cauliflower, broccoli and knol-khol should be selected and sown in the nursery. Continue transplanting of capsicum and brinjal in the polyhouse in mid and high hills and planting of turmeric, ginger and arbi. Optimum time for sowing of seeds of babul, subabul, khair, amla and prosopis in polythene bags. In mid hills, plucking the early varieties of apple should be started.

- In view of prevailing weather conditions, incidence of blight disease and fruit borer insect may affect the vegetable crops like tomato, capsicum, brinjal, chilli etc. To control the disease and fruit borer insect, make a solution of Mancozeb @ 2 g + Imidacloprid @ 1.5 ml/litre water and spray it in clear weather. Repeat after 15-20 days interval.

- **Himachal Pradesh:**

- In middle areas transplant the healthy and ready nursery of summer vegetables like tomato, capsicum, gourd, chilli etc. in the well prepared fields. Sowing of bhindi, arvi etc. may be done in prepared fields. Complete nursery sowing of rice. In lower regions, start sowing of cucurbit crops. Continue sowing of cucurbit crops. Continue sowing of spinach, coriander, fenugreek in present weather conditions. Continue transplanting of vegetables like tomato, capsicum, gourd, chilli etc. in the well prepared fields.

- **Punjab, Haryana & Delhi:**

- In Punjab, undertake transplanting of rice. Continue sowing of rainy season vegetables like okra, cucurbits and cowpea. Undertake sowing of maize.
- In Haryana, continue sowing of Lobia, moth and pigeon pea. Undertake transplanting of 30 days old seedlings of rice. Apply irrigation in cotton, sugarcane, vegetables and orchards. Undertake harvesting of matured moong.
- In Delhi, apply frequent irrigation in vegetables, fodder crops and orchards. Continue sowing of red gram. Continue nursery preparation for rice. Continue sowing of baby corn (HM-4) and sweet corn. Undertake transplanting of chilli, brinjal and cauliflower. Undertake sowing of cucurbits. Undertake field preparation for sowing of maize.
- In Punjab, to prevent the incidence of mealy bug in cotton, remove all the weeds growing around the crop fields.

- **Uttar Pradesh:**

- Continue harvesting of matured maize, green gram and black gram. Continue nursery preparation for onion, cauliflower, brinjal, chilli and tomato. Continue nursery preparation for rice. Continue sowing of pigeon pea under irrigated condition. Continue sowing of ginger and turmeric. Undertake sowing of cucurbits. Continue sowing of *kharif* maize, jowar, soybean and groundnut.

- **Rajasthan:**

- Undertake land preparation for sowing of crops like red gram, pearl millet, sorghum, maize & cluster bean. Undertake preparation of nursery of *kharif* fennel. Undertake sowing of rainy season cucurbits like khira, bottle gourd, ridge gourd, bitter gourd & cucumber. Apply irrigation in summer groundnut, sugarcane and moong. Continue nursery preparation of early cauliflower, chilli and brinjal. Continue sowing of groundnut and okra. Continue nursery sowing of rice. Apply first irrigation in cotton after 20-30 day of sowing and undertake weeding.

- **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%.

- **Apiculture:**

- In Jammu & Kashmir, protect colonies from high temperature by shifting to shady areas or migrate to cooler places or cover them with wet gunny bags. Provide water source in the apiary.
- In Himachal Pradesh in this time bee collects extra honey and stores it, so farmers are advised to give extra frames to the colony for more honey accumulation. Save the colony from insects. The colony may be divided to increase the numbers.

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