



National Agromet Advisory Service Bulletin

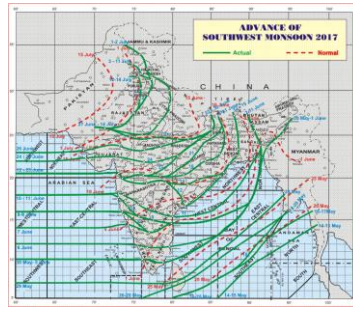
Friday 14th July 2017
(For the period 14th to 18th July 2017)



Issued by
National Agrometeorological Advisory Service Centre,
Agricultural Meteorology Division,
India Meteorological Department, Shivajinagar, Pune.

Weblink For
District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Monsoon watch dated 14.07.17



- Southwest Monsoon has further advanced into some more parts of West Rajasthan covering segments of Jaisalmer, Phalodi, Nagaur during last 24 hours.
- The Northern Limit of Monsoon (NLM) passes through Jaisalmer, Phalodi, Nagaur, Sikar, Hissar, Patiala, Kapurthala and Lat.31.5°N/Long. 74.5°E.

- The well marked low pressure area over West Madhya Pradesh & neighbourhood persists. The associated upper air cyclonic circulation now extends upto 5.8 Km above mean sea level. It is likely to concentrate into a depression over north Gujarat & neighbourhood during next 48 hours.

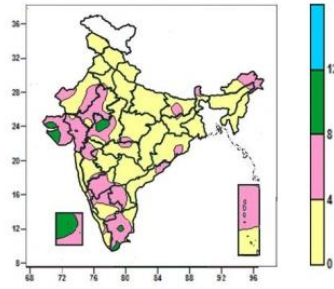
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 12.07.2017

Actual Mean Maximum Temperature (°C) in India for the week ending 12.07.2017	Mean Maximum Temperature (°C) Anomaly in India for the week ending 12.07.2017
Actual Mean Minimum Temperature (°C) in India for the week ending 12.07.2017	Mean Minimum Temperature (°C) Anomaly in India for the week ending 12.07.2017

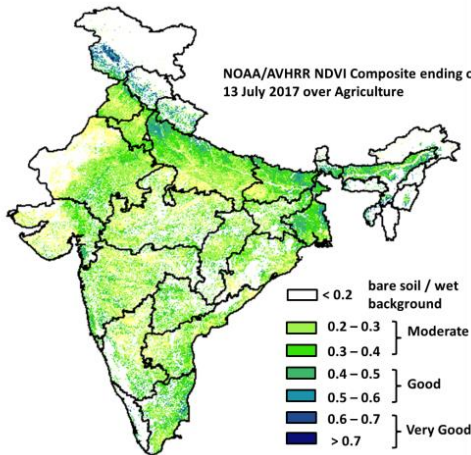
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending 12.07.2017

Relative Humidity (%) over India for the week ending 12.07.2017	Cloud amount (okta) over India for the week ending 12.07.2017

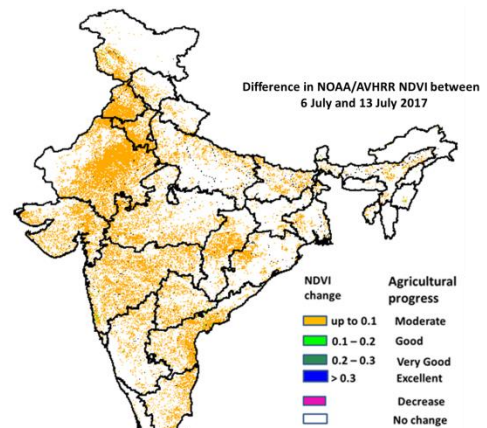
Wind speed (knots) over India for the week ending 12.07.2017



NOAA/AVHRR NDVI composite ending on 13th July 2017 over Agricultural regions of India

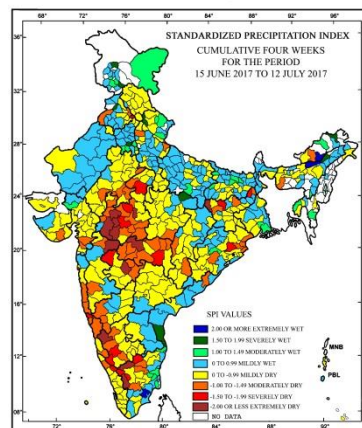


Difference in NOAA/AVHRR NDVI between 6th July and 13th July 2017



Standardised Precipitation Index Four Weekly for the period 15th June to 12th July 2017

MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE



Weather Forecast for next 5 days valid upto 0830 hours of 19th July 2017

- No significant change in maximum temperatures over most parts of the country during next 2-3 days.

Weather Warning during next 5 days

- 14 July (Day 1):** Heavy to very heavy rain at a few places with extremely heavy falls at isolated places very likely over Gujarat region and north Konkan & Goa; heavy rain at a few places with isolated heavy to very heavy at isolated places over Saurashtra & Kutch; heavy to very heavy at isolated places over East Rajasthan, West Madhya Pradesh, Madhya Maharashtra, Coastal Karnataka and south Konkan & Goa and heavy rain at isolated places over West Rajasthan, Gangetic West Bengal, Odisha, Coastal Andhra Pradesh, Telangana, South Interior Karnataka and Kerala.

- **15 July (Day 2):** Heavy to very heavy rain at a few places with extremely heavy falls at isolated places very likely over Gujarat state and Konkan & Goa; heavy to very heavy rain at isolated places over Coastal Karnataka and heavy rain at isolated places over Uttarakhand, Gangetic West Bengal, Odisha, Madhya Maharashtra, Coastal Andhra Pradesh, Telangana, South Interior Karnataka and Kerala.
- **16 July (Day 3):** Heavy to very heavy rain at a few places with extremely heavy falls at isolated places very likely over Saurashtra & Kutch; heavy at isolated places over Himachal Pradesh, Uttarakhand, Odisha, Gujarat region, Konkan & Goa, Coastal Karnataka, South Interior Karnataka and Kerala.
- **17 July (Day 4):** Heavy to very heavy rain very likely at isolated places over Uttarakhand: heavy at isolated places over Jammu & Kashmir, Himachal Pradesh, Odisha, Andaman & Nicobar islands, Saurashtra & Kutch, Konkan & Goa, Coastal Andhra Pradesh, Coastal Karnataka, South Interior Karnataka and Kerala.
- **18 July (Day 5):** Heavy to very heavy rain very likely at isolated places over Konkan & Goa and Coastal Karnataka; heavy rain at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, north Punjab, Haryana, Chandigarh & Delhi, Chhattisgarh, Odisha, Andaman & Nicobar islands, Madhya Maharashtra, Coastal Andhra Pradesh, Telangana, South Interior Karnataka and Kerala.

Weather Outlook for subsequent 2 days from 19th to 21st July 2017

- Rain very likely at most places over central & east India and along west coast.
- Rain very likely at isolated to few places over rest parts of the country.

**Meteorological sub-division wise detailed 5 day rainfall forecast (Mid day)
14th July 2017**

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

Salient Advisories

- As Southwest Monsoon has further advanced into some more parts of West Rajasthan covering segments of Jaisalmer, Phalodi, Nagaur during last 24 hours, in **West Rajasthan**, continue sowing of pearl millet, cluster bean, mung bean, moth bean etc.
- As heavy to very heavy rain at a few places with extremely heavy falls at isolated places very likely over **Gujarat Region** on 14th, over **Gujarat State** on 15th, over **Saurashtra and Kutch** on 16th and over **Konkan & Goa** on 14th and 15th July, continue sowing of soybean, pigeon pea, cotton in South Gujarat Heavy Rainfall Zone and in South Gujarat Zone and sowing of pulses like green gram, black gram, pigeon pea and vegetables crops in middle and North Gujarat after current spells of heavy rain. Drain out excess water from already sown crop fields and from rice nurseries to avoid water stagnation. In **Konkan**, complete transplanting of 20 to 25 days old rice seedlings. Also maintain 2-3 cms water level in transplanted rice fields. Drain out excess water from rice field wherever necessary.
- Utilising the realised and expected rainfall:
 - In **West Madhya Pradesh**, continue sowing of soybean, maize, moong, urad, sesame and groundnut after current spells of heavy rain. Continue sowing of soybean, jowar, bajra, urad, moong and sesame and nursery sowing of rice in **East Madhya Pradesh**.
 - In **Punjab, Haryana, Delhi and Himachal Pradesh** continue transplanting of rice. Complete transplanting of rice in Western Zone of Punjab.
 - In Western Zone of **Haryana**, continue sowing of guar, bajra and maize and transplanting of rice.
 - In **Jammu & Kashmir**, continue transplanting of rice and sowing of maize and mash.
 - In **East Uttar Pradesh**, continue transplanting of rice. Continue land preparation and direct sowing of rice in low land areas. Continue sowing of long duration varieties of maize and arhar. In **West Uttar Pradesh**, in Bundelkhand Zone, continue sowing of *kharif* crops like maize, jowar, groundnut, arhar, urad, mung and linseed. Continue sowing of maize, bajra and guar in Western Plain Zone.
 - Complete nursery sowing of medium duration varieties of rice and continue land preparation and sowing of maize and minor millets in **Bihar**.
 - In Sub Humid and Sub Tropic Zone of **Uttarakhand**, continue nursery sowing of rice and continue sowing of maize. In Udham Singh district of Bhabar and Tarai Zone, continue transplanting of rice, continue direct sowing of rice, sowing of maize, cowpea and pigeon pea after current spells of heavy rain.
 - In **New Delhi**, continue transplanting of rice seedling in prepared fields. Continue sowing of maize, guar, bajra.
 - In **East Rajasthan**, continue sowing of groundnut, pearl millet, sorghum, maize, mung bean, cluster bean, moth and cowpea after current spells of heavy rain.
 - In **Jharkhand**, continue nursery sowing of rice and sowing of maize, urad and arhar.
 - In **West Bengal**, continue main field preparation and transplant the seedlings of rice. Continue sowing of direct seeded long duration rice varieties. Provide adequate drainage in already sown jute fields and vegetable fields.
 - In **Odisha**, continue direct sowing of *kharif* rice in medium and low lands and sowing of red gram in East and South East Coastal Plain Zone. Continue sowing of *kharif* maize, red gram and groundnut crops in North eastern and Western Plateau Zone.
 - Continue sowing of soybean, maize, jowar and groundnut in **Chhattisgarh**. Continue transplanting of rice.
 - In **Coastal Andhra Pradesh**, in Krishna Godavari Zone, continue nursery sowing of rice, sowing of maize, black gram, green gram and red gram.
 - Continue sowing of *kharif* crops like cotton, jowar, groundnut, red gram, green gram, black gram in **Telangana**.
 - In **Madhya Maharashtra**, continue transplanting of rice seedlings in Western ghat region. Maintain 2-3 cm water level in transplanted rice fields. In Solapur district, keep *kharif* crops weedfree. In fallow lands, undertake sowing of *kharif* crops with receipt of sufficient rainfall.
 - In **Coastal Karnataka**, continue transplanting of rice.
 - In **South Interior Karnataka**, continue sowing of pulses like cowpea, green gram, black gram, horse gram and field bean. In the Eastern Dry Zone, continue sowing of *kharif* crops like red gram, ragi, groundnut and maize.
 - In **North Interior Karnataka**, in North East Dry Zone, continue sowing of red gram, cotton, bajra, castor and

maize and in North Dry Zone, complete sowing of sunflower, maize, Bt. cotton, pigeonpea, bajra, sesamum, navane, etc.

- In **Assam**, drain out excess water from rice nurseries, jute and vegetable fields. In flood affected areas, if there is total damage of seedlings of rice crops in the main fields, farmers are advised for replanting with medium to short duration varieties like-Monohar Sali, Salpona, Prasadbhog, Gobin bhog etc. within 1st week of August. Initiative should be taken for raising community nursery for late planting with old seedlings of the varieties like Profulla and Gitesh (If more than 50% damaged) or wet seeding of sprouted seeds @75-80 kg/ha of short to medium duration varieties like Disang, Luit, (100 days) Kapili, Kalong (120 days). If the field is heavily damaged, undertake late and staggered planting with the old seedlings (50-60 days old seedlings) of the varieties like Profulla and Gitesh. Undertake direct seeding with the photo insensitive short duration variety like Luit and for repeat flood prone areas, adopt of submergence tolerance varieties like Jalashree and Jalkuwari.
- In **Meghalaya**, continue nursery sowing rice. Provide adequate drainage in ginger/turmeric fields. Continue land preparation for transplanting of Sali rice/kharif rice.
- In **Arunachal Pradesh**, continue nursery sowing of rice, sowing of large cardamom and planting of banana. In **Nagaland**, continue transplanting of TRC/WRC rice.
- In **Manipur**, continue field preparations for transplanting of *kharif*rice. In **Mizoram**, continue transplanting of rice. In **Tripura**, continue sowing of *Aman* rice.
- In **Rayalaseema**, undertake sowing of rainfed groundnut, red gram, Korra in Anantpur district after receipt of sufficient rainfall.

Detailed Zonewise Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala except Thiruvananthapuram, in Nellore and Srikakulam districts of Coastal Andhra Pradesh, Chittoor district of Rayalaseema, Nizamabad and Warangal districts of Telangana, all districts of Coastal Karnataka, Chikkamagaluru, Kodagu and Shivamogga districts of South Interior Karnataka, Chennai, Kancheepuram, Tiruvallur and Sivaganga districts of Tamil Nadu during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - **Kerala:**
 - In the Northern Zone, undertake planting of cultivars of bananas like Poovan, Palayankodan and Robusta.
 - In the Southern Zone, continue phytosanitation of the banana field and provide propping for bunched nendran banana plants.
 - In the Problem Area Zone, continue planting of new coconut seedlings with moderate soil wetness and undertake all sprayings to the crops early in the morning or evening to get a gap of 2 hours before rain.
 - In the Central Zone, apply Tobacco decoction or 2% neem oil-garlic-soap emulsion for control of aphids in cowpea after current spells of rain.
 - In the Northern Zone, persistent high soil moisture and relative humidity may cause the spread of collar rot and web blight diseases in cowpea. To control, rouge the severely infected plants, drench and spray Mancozeb (R) @ 2g/litre of water on and around the infected plants after current spells of rain.
 - In the Problem Area Zone, for controlling fruit and shoot borer in bhindi and brinjal, remove all drooping shoots and damaged fruits. Spray Coragen @ 2 ml/litre of water after current spells of rain.
 - In the Southern Zone, spray Neem oil – soap emulsion to control serpentine leaf miner incidence in cow pea after current spells of rain.
 - **Karnataka:**
 - In Coastal Zone of Karnataka, continue transplanting of 25-30 days old saplings of rice. Maintain optimum water level in transplanted rice.
 - In Hill Zone, complete nursery sowing and continue transplanting of rice. Continue planting of arecanut seedlings and sowing of turmeric and ginger after current spells of heavy rain. Postpone intercultural operations and hand weeding in cotton and maize.
 - In Central Dry Zone, continue sowing of groundnut and red gram, across the slope, where sufficient rainfall is received; undertake sowing of crops in remaining areas after receipt of sufficient rainfall. Continue intercultural operations in green gram, sesamum and maize and hand weeding in onion.
 - In the Southern Dry Zone, undertake sowing of minor millets crops, viz., foxtail millet, kodo millet, proso millet, ragi, jowar, maize.
 - In Southern Transition Zone, continue of nursery sowing of rice and sowing of maize, red gram with realised

rainfall. Undertake direct sowing of ragi/prepare nursery for transplanting of ragi seedlings.

- In the Eastern Dry Zone, continue sowing of kharif crops after receipt of sufficient rainfall. Apply protective irrigation to crops sown in pre-monsoon showers. Undertake intercultural, thinning and earthing up operations.
- In North East Dry Zone, continue sowing of red gram, cotton, bajra, castor and maize. Make furrows in sugarcane and apply one bag urea/acre. Make basins and give chemical fertilizer to the fruit crops. Take up fresh plantation of fruit trees.
- In North Dry Zone, complete sowing of sunflower, maize, Bt. cotton, pigeonpea, bajra, sesamum, navane, etc. To make efficient use of available soil and water resources and to get higher returns, adopt intercropping systems in light and medium black soils; 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. Use short duration varieties of red gram for sowing; use wilt resistant variety TS-3R of red gram. Sow crops in rows across the slope and repair bunds for better soil and moisture conservation.
- In North Transition Zone, continue sowing of groundnut under sufficient soil moisture condition.
- In North East Transition Zone, continue sowing of jowar crop with proper spacing utilising available soil moisture.
- In the Hill Zone, spray 1% Bordeaux mixture solution for control of Koleroga in Arecanut. Spray 1% Bordeaux mixture solution and pour 5 liters of 0.2 % Copper Oxochloride solution to the root of the vine in the soil for control of Katte Roga in Black pepper after current spells of rain.
- In North Transition Zone, spray Thiodicarb 1gm 75WP per litre of water to control fruit borer in Tomato. Spray Carbaryl 50% WP 2g/litre + wettable Sulphur 50% WP 2g/litre of water to control Shoot & Fruit borer in brinjal after current spells of rain. Also, collect and destroy the damaged tender shoots and fallen fruits.
- In the Southern Dry Zone, spray 2 ml Chloropyrophos/litre of water to control mealy bug in papaya after current spells of rain.
- In the Southern Transition Zone, spray Dimethoate 30 EC @ 1.7 ml or 2 ml Melathion 50 EC/litre of water to control leaf eating caterpillar and stem borer in ginger and turmeric crops after current spells of rain.
- **Andhra Pradesh:**
- In the North Coastal Zone, continue nursery sowing of rice, seed treatment for dry rice nursery with Carbendazim @ 2.0g/kg seed and for wet nurseries Carbendazim @ 1.0g/litre of water, sowing of green manure crops like sunnhemp or dhaincha and planting of rainfed sugarcane after current spells of rain. As there is forecast for rain, remove excess water from maize and sesamum crop fields immediately, as the crops are sensitive to excess moisture.
- In the Krishna Godavari Zone, under present dry weather conditions, undertake dry sowing of irrigated dry paddy, MTU-1006 with gorru after seed treatment with Carbandism @ 2.5 grams/kg of seed before sowing. Continue land preparation for sowing of cotton, field preparation and nursery preparation of chillies, nursery sowing of paddy, sowing of maize, black gram, green gram and red gram.
- In the Scarce Rainfall Zone of Rayalaseema, undertake sowing of rainfed groundnut, red gram, Korra in Anantpur district after receipt of sufficient rainfall, also light stress was noticed in the June sown groundnut crop. Farmers are advised to give protective irrigation (20mm) if available through farm ponds/nearby available resources. Continue sowing of maize, castor, korra and rainfed red gram in Chittoor and Kurnool districts.
- In the East Godavari Zone, continue nursery preparation/sowing of *kharif* rice and nursery sowing/transplanting of finger millet.
- In the Southern Zone, in Chittoor and Kadapa districts, continue sowing of *kharif* groundnut only if there is enough sowing moisture in the soil. Continue sowing of red gram in Chittoor districts and go for either monocropping (@ 4-5 kilo seed/acre) or intercropping with red gram + groundnut in 7:1 ration or 11:1ratio. Continue sowing of rainfed millets like ragi, jowar, korra and pulses like redgram, blackgram, and greengram when there is enough sowing moisture in the soil and maintain optimum plant population by selecting good varieties.
- In the Scarce Rainfall Zone of Rayalaseema, ash weevil incidence was noticed in germinated red gram crop. To control, undertake dusting of Malathion @ 5kg/acre.
- In the Southern Zone, prevailing weather conditions (partially cloudy and light rains) are congenial for incidence of red hairy caterpillar in groundnut. To control, remove and destruct the egg, masses and larval stages from the field and take up bon fires on the field bunds immediately next day after receipt of rains.
- **Telangana:**
- In South Telangana Zone, continue sowing of rainfed crops like jowar, bajra, maize, soybean, green gram, cotton, red gram etc. in ridge and furrow method. Sow red gram as inter crop in cotton or maize fields. Take up rice nurseries using medium duration varieties after seed treatment with Mancozeb @ 2.5 g/ kg of seed. Continue frequent inter cultivation to control weeds and conserve soil moisture in rainfed crops like jowar, bajra, castor etc.
- In North Telangana Zone, continue land preparation for sowing of cotton and for sustainable cotton production, take up inter cropping in cotton with green gram / black gram / soybean / cluster bean in 1:2 or 1:3 ratio and red gram 4:1 / 6:1 / 8:1. Raise nursery bed for sowing of vegetables and provide adequate drainage. Continue sowing red gram as inter crop in cotton or maize fields, rainfed crops like jowar, bajra and black gram, red gram, maize, green gram and soybean and planting of turmeric.

- In South Telangana Zone, spray Monocrotophos @ 1.6 ml/ litre of water as prophylactic spray to 12-15 days old maize crop to prevent incidence of stem borer and apply Carbofuran 3G @ 800g in 200 sq.mt. area nursery to control stem borer incidence noticed in rice nurseries after current spells of rain.
- **Tamil Nadu:**
 - In the Cauvery Delta Zone, continue preparation for transplanting of Kuruvai and SRI cultivated rice.
 - In the Western Zone, protect bananas by giving support to avoid lodging as protection from anticipated heavy wind and light rain.
 - In the High Rainfall Zone, as heavy winds (20 - 21 km/hr) are expected, staking should be given to young rubber, banana and fruit trees. Irrigation should be given to banana, coconut, rubber, black pepper and other horticultural crops due to low rainfall. Avoid moisture loss by undertaking mulching in nutmeg, clove and cinnamon field through farm waste materials.
 - In the North Western Zone, undertake cultivation of groundnut.
 - In the Western Zone, anticipated high relative humidity is congenial for either powdery mildew or downy mildew incidence in grapes. To control powdery mildew spray 0.3% Wettable Sulphur. To control downy mildew, spray 1% Bordeaux mixture. Prevailing weather condition is favourable for thrips attack in onion. To control, monitor the crop carefully and spray Monocrotophos @ 1 ml/litre of water.
 - In the Southern Zone, prevailing weather condition is congenial for incidence of jassids in bhendi. To control, spray To control, spray Imidacloprid 200 SL @ 100 ml/ha.
 - In the High Altitude Zone, due to prevailing cloudy conditions and expected moderate rainfall, there may be chance of spread of cercospora leaf spot in beetroot crop. To control, undertake foliar spray of Mancozeb @ 2 grams.
- **Animal Husbandry**
 - In the Central Zone of Kerala, as part of mosquito control measures, direct falling of rain on the cowdung pit should be avoided.
 - In the Northern Zone of Kerala, ephemeral fever is noticed in cattle during the onset of rainy seasons. Consult the nearest veterinary surgeon and provide immediate treatment to maintain the blood circulation and avoid permanent muscle damage.
 - In the Cauvery Delta Zone of Tamil Nadu, sheep and goat should be dewormed by using suitable anthelmintic by consulting with local veterinary doctor. Farmers rearing backyard poultry are advised to vaccinate country chicken against Ranikhet disease.
 - In Rayalaseema, there is possibility of the Enterotoxaemia disease in 2-3 years Lambs. So farmers are advised to vaccinate the animals.
 - In the Southern Zone of Tamil Nadu, several species of mosquitoes attack livestock causing painful bites, unthriftiness, and occasionally death by suffocation or heavy blood loss. In addition, their attacks can cause loss of weight and decreased milk production. To control, remove or drain mosquito breeding sites and undertake daily fogging or aerosoling for adult mosquitoes.
 - In Southern Dry Zone and Eastern Dry Zone of Karnataka, maintain optimum room temperature in sericulture, poultry and dairy unit. Keep the animal habitation dry to avoid hoof infection & to prevent fly breeding. Vaccinate cattle against the Foot and Mouth Disease (FMD) & Black Quarter.
- **Fishery**
 - In Eastern Dry Zone of Karnataka, fish culture can be undertaken in the rainwater storage structure like farm pond, check dam and nala bund by releasing the fingerlings.

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

- **Realised Rainfall:** Rainfall occurred in Changlang, East Kameng, East Siang, Lohit, Lower Dibang Valley, Papumpara, Tirap, Upper Siang, Upper Subansari, West Kameng, and West Siang districts of Arunachal Pradesh, Baksa, Barpeta, Bongaigaon, Cachar, Chirang, Dhemaji, Dhubri, Dibrugarh, Goalpara, Golghat, Hailakandi, Jorhat, Kamrup(Rural), Kamrup(Metro), KarbiAnglong, Karimganj, Kokrajhar, Lakhimpur, Morigaon, N.C.Hills, Nowgaon, Nalbari, Sonitpur, Sibsagar, Tinsukia and Udalgiri districts of Assam, East Garo Hills, East Khasi Hills and West Garo Hills districts of Meghalaya, Lunglei district of Mizoram, Imphal East and Imphal West districts of Manipur, Dimapur, Kohima and Wokha districts of Nagaland and all districts of Tripura except Dhalai during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - **Assam, Arunachal Pradesh and Meghalaya:**
 - In the Barak Valley Zone of Assam, continue transplanting of banana and lemon trees. In flood affected areas if rice nurseries are damaged, undertake nursery sowing of short duration/submergence tolerant varieties of rice like Swarna Sub-1, Ranjit Sub-1, Bahadur Sub-1, Luit and Dishang.
 - In Karbi Anglong and NC Hills districts of Hill Zone of Assam, continue nursery sowing of Sali rice. Continue sowing of arhar and sesame. Continue harvesting of maize and vegetables in clear weather.
 - In the Lower Brahmaputra Valley Zone of Assam, continue transplanting of Sali rice seedlings. Undertake harvesting of matured bitter gourd in clear weather.

- In Upper Brahmaputra Valley Zone of Assam, continue transplanting of seedlings of Sali rice in the main field and sowing of sesame.
- In Nagaon and Marigaon districts of Central Brahmaputra Valley Zone of Assam, undertake main field preparation and transplanting of Sali rice and sowing of sesame. Continue land preparation and sowing of arhar, sesame. Continue harvesting and retting of Capsularis jute preferably at pre-flowering stage (120 days after sowing) to get better quality fibre. At present the water temperature in the retting tanks is ideal for retting of jute. Early and timely sown capsularis jute may be harvested during this week and kept in the field in standing position for 3-4 days before retting for proper defoliation.
- In Dhemaji, Darrang, Lakhimpur, Sonitpur and Udalgiri districts of North Bank Plain Zone of Assam, undertake transplanting of Sali rice in main field by the end of this month. Undertake harvesting of Capsularis jute in clear weather. In flood affected areas, if there is total damage of seedlings of rice or crops in the main field, farmers are advised for replanting with medium to short duration varieties like-Monohar Sali, Salpona, Prasadbhog, Gobin bhog etc. in nursery bed within 1st week of August. Initiative should be taken for raising community nursery for late planting with old seedlings of the varieties like Profulla and Gitesh (If more than 50% damaged) or wet seeding of sprouted seeds @ 75-80 kg/ha of short to medium duration varieties like Disang, Luit, (100 days) Kapili, Kalong (120 days). If the field is heavily damaged, undertake late and staggered planting with the old seedlings (50-60 days old seedlings) of the varieties like Profulla and Gitesh. Undertake direct seeding with the photo insensitive short duration variety like Luit and for repeat flood prone areas, adopt of submergence tolerance varieties like Jalashree and Jalkuwari.
- In East Garo Hills, East Khasi Hills, Jaintia Hills, Ri-Bhoi, South Garo Hills, West Garo Hills and West Khasi Hills districts of Meghalaya, undertake transplanting of *Sali/kharif* rice. Continue sowing of soybean and undertake harvesting of brinjal and cucurbits.
- In Arunachal Pradesh, continue nursery sowing and transplanting of rice. Continue sowing of large cardamom and planting of banana. Maintain proper drainage in already sown crop fields.
- In Lower Brahmaputra Valley Zone of Assam, spray jute plants with Carbendazim @ 1g/litre or Mencozeb @ 3g/litre of water and to control root rot anthracnose on a non rainy day.
- In Upper Brahmaputra Valley Zone of Assam, maintain proper drainage facilities to prevent rot disease in pineapple.
- In Barak Valley Zone of Assam, spray Carbendazim + Mancozeb @ 2.5 gm per liter of water to control brown spots and blasts in Sali rice nursery beds on a non rainy day.
- In Dhemaji, Darang, Lakhimpur, Sonitpur and Udalgiri districts of North Bank Plain Zone of Assam, remove excess water and maintain proper drainage facilities in ginger and turmeric fields.
- In Arunachal Pradesh, spray Dichlorvos 76 EC @ 3ml/litre water along with sticker @ 1ml/litre water against true armyworm attack in jhum rice at tillering stage on a non rainy day.
- In Meghalaya, high humidity with intermittent rain is favourable for development of shoot fly/cob borer/stem borer incidence in maize crop. Apply Carbofuran 3G granules @ 2-3 granule to each whorl of maize plant at cob formation stage on a non rainy day.
- **Nagaland, Manipur, Mizoram and Tripura:**
- In Dimapur, Kephire, Kohima, Longleng, Mokochung, Mon, Paren, Phek, Tuensang, Wokha and Zunheboto districts of Nagaland, continue transplanting of TRC/WRC rice.
- In Manipur, continue field preparations for transplanting of *kharif* rice. Apply Carbofuran 3G @ 2 kg/hectare a week before uprooting the seedling. Continue harvesting of matured pre-kharif rice in clear weather.
- In Mizoram, continue transplanting of pre-*kharif* rice. Maintain proper drainage in the ginger/turmeric, cowpea, okra and maize fields.
- In Tripura, continue sowing of *Aman* rice. Complete sowing of maize at the earliest.
- In Mizoram, spray Monocrotophos @ 1.5 ml/litre of water or Imidachloroprid 1.5 ml/litre of water for effective control of rice stem borer and leaf folder in *ghum* rice. Also apply insecticide like Imidacloprid 0.5 ml or Phosolone 1.5 ml or Acephate 1.0 g or Dimethoate 2 ml per litre of water to control leafroller in okra crop after current spells of rain.
- In Nagaland, there is chance of attack of blast disease in jhum rice at tillering stage. Spray Tricyclazole 0.1% after current spells of rain and repeat at 12-15 days interval. Remove the infested plants to control stem borer in maize. Maintain proper drainage to manage soil borne root diseases in green gram field at flowering stage. Destroy infected plants of okra, cucurbits, brinjal and Naga King chilli to prevent further spread of disease.
- In Manipur, to prevent leaf spot disease in ginger/turmeric at vegetative stage, apply Bordeaux mixture (5:5:50) after 4-5 weeks of sowing or Captan @ 1.5 g/litre of water after current spells of rain.
- In Tripura, temperature above 30^oC with humidity over 80 percent is highly favourable for the fungal disease like brown spot, rice blast in the nursery bed of *Aman* rice. To manage the attacks apply Carbendazim+ Mancozeb @ 2.5gm per litre of water into the seedbed after current spells of rain. Also there is infestation of sheath blight due to humid weather in jhum rice at panicle initiation. Spray Surf @ 1gm per litre of water after current spells of rain.

- **Animal Husbandry**

- In Northeastern states, farmers are advised to keep animals in sheds during heavy rain fall period. Undertake immunization against FMD, Hemorrhagic Sceptaemia and Black Quarter in cattle & buffaloes and swine-fever in pigs during monsoon season. Undertake immunization of mature sheep and goat against Enterotoxaemia. Vaccinate 6-9 months calves against Brucellosis. Keep the poultry shed clean. Provide balanced feed and sufficient water with 1% salt and mineral mixture.

- **Fishery**

- In Assam, check the PH of the pond water. Apply 50 kg of lime per hectare if the PH of water is found below 6.5. Undertake rearing of fingerlings of carp in the rearing tanks and nurseries at the rate of 25-30 fry per square meter.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa except Mumbai City, Mumbai Suburban, in Kolhapur and Nashik districts of Madhya Maharashtra, Gadchiroli and Gondia districts of Vidarbha, Bharuch, Dadra & Nagar Haveli, Dangs, Gandhinagar, Narmada and Valsad districts of Gujarat Region, Bhavnagar district of Saurashtra and Kutch during the week and weather remained mainly dry over rest of the region.

- **Advisories:**

- **Maharashtra:**

- In Konkan, complete transplanting of rice as early as possible. Maintain 2-3 cm water level in transplanted rice fields. Drain out excess water from rice field wherever necessary. Nagli crop is in transplanting stage. Transplanting should be done by dibbling method at a distance of 20 cm X 15 cm. Also apply urea @ 870 gm and SSP @ 2.5 kg Are area in Nagli fields after current spells of rain. Complete the sowing of kharif groundnut as early as possible. Apply first one third dose of urea @ 720 to 870 g per Are area to vegetable crops after current spells of rain.

- In Madhya Maharashtra, continue transplanting of rice seedlings in Western ghat region. Maintain 2-3 cm water level in transplanted rice fields. In Solapur district, keep *kharif* crops weedfree. In fallow lands, undertake sowing of kharif crops with receipt of sufficient rainfall.

- In Marathwada, in fallow lands, undertake sowing of pigeonpea + pearl millet (2 : 4) mix cropping with receipt of sufficient rainfall. In Jalna, Nanded, Beed, Osmanabad, Latur and Parbhani districts, keep *kharif* crops weedfree.

- In Vidarbha, in fallow lands, undertake sowing of kharif crops with receipt of sufficient rainfall. Undertake intercultural operations like hoeing and weeding in *kharif* crops and vegetables to conserve soil moisture. Prepare field for rice transplanting in East Vidarbha and undertake transplanting of 20 to 25 days old rice seedlings with available irrigation facility. Apply light irrigation to *kharif* and vegetable crops, wherever necessary.

- **Gujarat:**

- As heavy to very heavy rain at a few places with extremely heavy falls at isolated places very likely over Gujarat Region on 14th, over Gujarat State on 15th, over Saurashtra and Kutch on 16th July, drain out excess water from already sown crop fields and from rice nurseries to avoid water stagnation.

- In Middle Gujarat Zone, continue sowing of pulses like green gram, black gram, pigeon pea and vegetables crops after current spells of heavy rain.

- In Bhal and Coastal Zone of Gujarat, undertake sowing of *kharif* desi cotton. Continue sowing of green gram, sesame and cow pea after current spells of heavy rain and continue transplanting of vegetable crops.

- In North Gujarat, continue sowing of pulses like green gram, black gram, pigeon pea and vegetables crops after current spells of heavy rain.

- In South Saurashtra Zone, continue sowing of groundnut, BT/hybrid cotton, green gram, black gram, cowpea, pigeon pea and soybean after current spells of heavy rain. Undertake intercultural operations and hand weeding in sugarcane and irrigated groundnut after current spells of rain.

- In North Saurashtra Zone of Gujarat, undertake gap filling in cotton and thinning in sesame, pearl millet and pulses. Continue nursery preparation for tomato, chilli, brinjal and early cauliflower; continue transplanting of brinjal, chilli and early cauliflower where seedlings are ready after current spells of heavy rain.

- In the South Gujarat Zone, drain out excess water from the maize, sugarcane, green gram, black ram, ginger, turmeric and vegetable crop fields to avoid water stagnation. Avoid sowing of soybean, pigeon pea, cotton.

- In South Gujarat Heavy Rainfall Zone, avoid sowing of pulses like green gram, black gram, pigeon pea, sweet corn and vegetables crops like bottle gourd, ridge gourd, sponge gourd, bitter gourd, cucumber.

- In South Gujarat Heavy Rainfall Zone, apply Triazophos 40 EC @ 12.5ml or Acephate 75 SP @ 11.9g/10 litre of water to control whitefly in sugarcane after current spells of rain.

- In North Saurashtra Zone of Gujarat, spray neem seed extract @ 500 ml or neem seed oil @ 50 ml or neem oil @ 40 ml and acetamiprid 20 % SP @ 5.0 gm per 10 lit of water at 15 days interval to control thrips and white fly in vegetable crops and cucurbits after current spells of rain.

- **Animal Husbandry**

- In Konkan, keep cattle/goats indoor during heavy rainfall period & keep the animal shed dry and clean. Undertake vaccination against Foot and Mouth Disease in cows, buffaloes and goats under the supervision of veterinary doctor.

- In Gujarat, keep animal shed hygienic and clean to avoid flies and mosquitoes. Avoid water logging in and around

the sheds. For the control of tick and other parasites, spray Deltamethrin or Aemitz @ 2 ml in 1 litre of water. Keep animals in shed during rainfall.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands, all districts of West Bengal & Sikkim, all districts of Bihar except Gaya, Jahanabad and Muzaffarpur, all districts of Jharkhand except Bokaro, Kunthi, Saraikela and West Singbhum, all districts of Odisha except Bhadrak, Dhenkanal, Jajpur, Kandhamal, Keonjhar, Malkangari, Nawpara and Nawrangpurduring the week.
- **Advisories:**
 - **Odisha:**
 - In East and South Eastern Coastal Plain Zone, continue land preparation and sowing of direct seeded rice in medium and low lands and continue sowing of arhar and maize in medium/uplands. Continue sowing of groundnut, planting of fruit crops like mango, coconut, citrus, guava, sapota, papaya, banana, litchi and pineapple in uplands and in marginal lands. Continue sowing of cotton, sesamum, ragi and cowpea under rainfed condition in areas receiving good soaking rain. Continue nursery raising of rice for transplanting in medium and low lands instead of direct sowing, since nursery raising requires less water and it is expected to have sufficient moisture for transplanting at that time.
 - In Eastern Ghat High Land Zone, complete sowing of direct seeded paddy in low land and medium low land. Undertake sowing of medium duration (around 120 days duration or more) non-paddy crops like groundnut, arhar, cotton in rainfed uplands. Continue sowing of pigeon pea and vegetables.
 - In South Eastern Ghat Zone, undertake sowing of maize in North Central Plateau Zone, undertake planting of ginger and turmeric and in West Central Table Land Zone, undertake sowing of arhar.
 - In Western Undulating Zone, undertake land preparation and sowing of pulses and maize in uplands.
 - In North Central Plateau Zone, undertake sowing of maize.
 - In East and South Eastern Coastal Plain Zone, due to abrupt rise and fall in temperature, the problem of sucking pests like White fly will aggravate in vegetables. To control these pests spray Imidacloprid @ 4ml/10 litres of water after current spells of rain.
 - In North Eastern Coastal Plain Zone, due to erratic rain, weed infestation is seen in direct seeded rice. To control the all categories of weeds at two to three leaf stage, spray Bispyribac sodium or Penoxsulam @ 20g a.i. ha-1 in 500 litres of water after current spells of rain.
 - **West Bengal:**
 - In Laterite and Red Soil Zone, provide proper drainage to remove excess water in low-land nursery. Undertake main field land preparation. Undertake proper bunding to hold water in the field.
 - In the Hill Zone of West Bengal, undertake transplanting of 25 to 30 days saplings as soon as possible. Provide proper drainage in the fields of maize, ginger, turmeric and Mandarin orange.
 - In the Old Alluvial Zone, continue transplanting of kharif rice utilizing the realized rainfall. Undertake preparation of seed bed for early cabbage and cauliflower and undertake sowing after seed beds are ready.
 - In Terai Zone, undertake main field preparation and transplant the seedlings of rice. Continue harvesting of legume vegetables.
 - In the New Alluvial Zone, continue sowing/transplanting of kharif rice in those places where irrigation facilities are not available.
 - In Coastal Saline Zone, prepare main field by ploughing and incorporate the daincha with the soil for increasing fertility status of soil. Undertake sowing of brinjal and chilli for making saplings in upland through ridge furrow system.
 - In the Hill Zone, spray neem oil @ 2ml per litre of water to control jassid infestation in bhindi crop after current spells of rain.
 - In the Laterite and Red Soil Zone, to control fruit borer in bhindi, collect and destroy the affected fruits and spray neem oil @ 30 ml per lit at clear weather condition after current spells of rain.
 - In the Old Alluvial Zone, spray Neem oil @ 3ml/litre of water 7 days before transplanting of rice seedlings to prevent of early stage infestation of rice stem borer, gall midge & sucking pest and spray Metalaxyl + Mencozeb @ 2.5 gram/liter of water to control downy mildew of cucurbits after current spells of rain.
 - In the Terai Zone, uproot mosaic affected legume vegetable plants and follow it up by spraying Thiomethoxam 0.3 SG @ 1 gm per 3 litres of water or Acetamiprid 20 SP @ 1 gm per 1 litre of water. Apply Spiromesifen (Pyromite) 1 ml/litre of water to control red mite and (Matalaxyl + Mancozeb) @ 2 gm/litre or Azoxystrobin @1 ml/litre of water to control downy mildew in cucurbits after current spells of rain.
 - In New Alluvial Zone, apply Carbendazim (1 gm) and Thiram (2 gm) together per litre of water to control fungal collar rot in yam crop after current spells of rain.
 - In Coastal Zone of West Bengal, apply 0.5% Bordeaux mixture at the base at 15-20 days interval to control Chitla disease in Betel vine after current spells of rain.

▪ **Andaman and Nicobar Islands:**

- In North, Middle and South Andaman, make channels in the vegetable fields to drain out excess water. Harvest the mature banana after current spells of rain and provide support to the fruit bearing banana trees.
- In the Nicobar Islands, transplant black pepper vines grown in nursery bed or polythene bags and fill the pits with compost or farm yard manure.

▪ **Bihar:**

- In North East Alluvial Zone, complete nursery sowing of long duration paddy. Continue sowing of maize and minor millets. Continue sowing of *kharif* vegetable such as lady's finger, pumpkin, cucumber, sponge gourd, bottle gourd etc.
- In North West Alluvial Plain Zone, continue nursery sowing for medium duration of rice varieties and sowing of *kharif* vegetables such as lady's finger, pumpkin, cucumber, sponge gourd, bottle gourd. Continue sowing of direct seeded early and medium duration rice varieties. Complete the planting of turmeric, ginger and elephant foot yam at the earliest. Continue planting of turmeric and ginger. Continue land preparation and sowing of *kharif* maize.
- In South Bihar Alluvial Zone, farmers are advised to complete sowing of rainy season cucurbits crops.
- In South Bihar Alluvial Zone, continue nursery sowing of paddy seeds in nurseries.
- In North East Alluvial Zone of Bihar, to control brinjal fruit & shoot borer or tomato fruit borer, apply Indoxacarb 15.8 EC @ 1ml/litre of water after current spells of rain.

▪ **Jharkhand:**

- In Jharkhand, continue nursery sowing of rice and sowing of maize, urad and arhar.
- In Central and North Eastern Plateau Zone, complete the sowing of maize, pigeon pea, ground nut, marua, soyabean, urad and til.
- In Central and North Eastern Plateau Zone, continue planting of turmeric, ginger and yam.
- In South Eastern Plateau Zone, right time to sow the seeds because of sufficient moisture in the field.
- In Western Plateau Zone, continue sowing of ginger, yam and turmeric with improved variety.
- In South Eastern Plateau Zone, continue sowing of direct seeded upland rice.
- In South Eastern Plateau Zone, if cloudy weather appears, spray Sulfex WP @ 3 g per liter of water to check the occurrence of disease in mango. New shoots have emerged in mango trees and leaf galls are more prone to attack on the newly emerged leaves hence, spray Metasistox 1 ml or Imidacloprid 0.5 ml should be done. Spray Malathion 50 percent @ 2 ml along with half gram Carbendazim per litre of water to control the insects attack and anthracnose disease after current spells of rain.

• **Animal Husbandary**

- In the Terai Zone of West Bengal, undertake routine vaccination of cattle, buffalo and goat for Foot and Mouth disease (FMD). Vaccinate poultry birds against New Castle Disease.
- In Andaman & Nicobar Islands, keep the day old chicks under light, preferably 40 watt bulb, during cloudy days and provide them clean drinking water.

• **Fishery**

- In the Laterite and Red Soil Zone of West Bengal, undertake putting fingerling of carp in the pond. Stir pond water with wheel in case of oxygen deficiency. Apply lime for cleaning water.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Rainfall occurred in all districts of East Madhya Pradesh except Chhindwara, Jabalpur and Seoni, in Alirajpur, Bhind, Datia, Hoshangabad and Raisen districts of West Madhya Pradesh, all districts of Chhattisgarh except Bastar, Dantewada, Durg, Kanker and Narayanpur during the week and weather remained mainly dry over rest of the region.

• **Advisories:**

▪ **Madhya Pradesh:**

- In East Madhya Pradesh, continue sowing of red gram, soybean, maize, sesame, moong and urad and nursery sowing of rice.
- In Gird Zone, continue transplanting of rice, continue nursery sowing of *kharif* vegetables. Continue sowing of red gram, urad, moong, bajra and soybean after current spells of heavy rain .
- In Malwa Plateau Zone, complete sowing of *kharif* crops like soybean, pigeon pea, urad, moong, maize, sorghum and cotton after current spells of heavy rain. Continue transplanting rainy season vegetables like brinjal, tomato, *kharif* onion, early cauliflower, chilli etc. and fruit plants. If germination is poor in already sown soybean and maize, undertake gap filling.
- In Jhabua Hill Zone, undertake transplanting of rice and complete sowing of maize, soybean and black gram after current spells of heavy rain. Continue transplanting of rainy season vegetables.
- In Central Narmada Valley Zone, continue nursery raising of rice. Continue sowing of soybean, red gram and maize after current spells of heavy rain.
- In Bundelkhand Zone, continue sowing of *kharif* onion. Undertake transplanting of rice. Continue sowing of soybean, maize, moon, urad, sesame and groundnut and vegetables like okra, bottle gourd, cucurbits, sponge gourd,

- bitter gourd and beans after current spells of heavy rain.
- In Vindhya Plateau Zone, continue transplanting of rice. Continue sowing of red gram and soybean after current spells of heavy rain.
- In Grid Zone, due to cloudy weather there are chances of attack of fruit borer in okra and brinjal, spray Dimethoate @ 750 ml/hectare dissolved in 500-600 litres of water at an interval of 10 days after current spells of rain.
- **Chhattisgarh:**
- In North Hill Zone, continue transplanting of rice and rainy season vegetables. Continue line sowing of rice. Continue planting of horticultural crops like papaya, mango, guava etc.
- In Bastar Plateau Zone, undertake transplanting of rice, continue nursery preparation of vegetables like tomato, brinjal, and chilly. Continue line sowing of rice. Continue sowing of soybean, groundnut and sesame and nursery preparation for papaya and custard apple. Undertake sowing of tuber crops.
- In Chhattisgarh Plain Zone, continue direct sowing of rice and transplanting of rice. Continue sowing of *kharif* crops like soybean, arhar, sesame and maize. Continue planting of banana. Undertake intercultural operations in vegetables. Undertake sowing vegetables like pumpkin, bitter gourd and bottle gourd.
- **Animal Husbandry**
- In Madhya Pradesh, undertake vaccination to protect the animals from mouth and Jahari fever disease and to develop the immunity power.
- In Chhattisgarh, undertake vaccination of animals against the Black Quarter and Anthrax disease.

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

- **Realised Rainfall:** Rain occurred in all districts of East Uttar Pradesh and Uttarakhand, all districts of Himachal Pradesh except Chamba, Kinnaur, Kullu, Lahaul & Spiti and Shimla, over Badaun, Bareilly, Bijnore, Etawah, Firozabad, Hamirpur, JyotibaPhule Nagar, Kanshiram Nagar, Mainpuri, Meerut, Moradabad, Pilibhit, Rampur and Shahjahanpur districts of West Uttar Pradesh, Bandipore, Doda, Kathua, Reasi and Udhampur districts of Jammu and Kashmir, Amritsar, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Nawanshahar, Patiala and Ropar districts of Punjab, Ambala and Yamunanagar districts of Haryana, New Delhi, South Delhi and West Delhi districts of Delhi during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - **Jammu & Kashmir:**
 - In Sub Tropical Zone, Intermediate Zone and Valley Temperate Zone, continue transplanting of rice seedlings. Plant 2-3 seedlings per hill at 3 to 5 cm deep in the soil. Strengthen and raise the dike height of field bunds during the preparation of land to retain rain water as much as possible.
 - In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, continue sowing of maize, moong and mash during clear weather conditions. Undertake direct seed sowing of rice in areas where farmers could not prepare nursery of rice.
 - In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, continue intercultural operations in maize and vegetable crops. Continue sowing of mash crop.
 - In Valley Temperate Zone of Jammu and Kashmir, apply first dose of Nitrogen as top dressing to paddy crop after current spells of rain. Continue weeding, hoeing and earthing up wherever maize is at knee high stage.
 - In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, to control red pumpkin beetle apply Imidachloprid 1 ml/3 liter of water or Dichlorvos 30 EC @ 2 ml/ liter of water after current spells of rain.
 - In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, to control yellow vein mosaic in okra and mosaic in mungbean & chilli, remove virus infected plants followed by spraying with Imidachloprid @ 0.03% after current spells of rain.
 - **Uttarakhand:**
 - In Sub Humid and Sub Tropic Zone of Uttarakhand, continue nursery sowing of basmati rice, sowing of maize and groundnut. Complete sowing of late varieties of pigeon pea and nursery sowing of onion. Continue transplanting of rice if nursery seedling is about 20-25 days old. Undertake land preparation for sowing of urad, moong, groundnut and sesamum after current spells of heavy rain.
 - In Udham Singh district of Bhabar and Tarai Zone, continue transplanting of seedlings of paddy. Complete sowing of late varieties of pigeon pea after current spells of heavy rain.
 - In Nainital district of Bhabar and Tarai Zone, continue sowing of radish, rai, coriander, turnip and spinach (PusaHarit) after current spells of heavy rain.
 - In Hill Zone continue sowing of rainy season cucurbits like cabbage and cauliflower on raised beds. Continue direct sowing of radish, rai, coriander, carrot, spinach and French bean etc after current spells of heavy rain.
 - In Bhabar and Tarai Zone, apply Carbofuran 3CG @ 33kg /ha in the soil at the time of sowing to control stem borer in maize crop. Spray Fipronil 5 SC @ 1liter/ 500 liter of water per hectare to control insects in paddy nursery. Apply Chlorpyrifos @ 20-25Kg/ha before or after the irrigation to control shoot borer in sugarcane crop after current spells of rain.

▪ **Himachal Pradesh:**

- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, continue transplanting of paddy nursery in main field. Undertake intercultural operation in maize crop. Undertake sowing of baby corn (HM-4) and sweet corn. Continue sowing of *kharif* mung, mash and kulthi. In lower regions, continue intercultural operation in cucurbits crops and sowing of early okra, spinach, coriander, fenugreek, radish, turnip after current spells of heavy rain. Continue nursery transplanting of tomato, brinjal, chillies and capsicum crops in poly house. In High hills regions continue intercultural operation in peas, French bean, oola, palak, radish, turnip and carrot. Continue transplanting of cabbage, cauliflower, broccoli and exotic vegetables.
- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul & Spiti, spray micronutrient on apple trees at fruit setting stage after current spells of rain.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts, picking of stone fruits has already done, prepare the basins of the plant and apply FYM.
- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul & Spiti, present weather is conducive for attack of cabbage butterflies in Tomato/Cabbage/Cauliflower, for control spray Mailathion 50 EC @ 1ml per 1 litre of water after current spells of rain.
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, in Solan, Shimla, Bilaspur, Sirmour districts, present weather is conducive for attack of stem and fruit borer in brinjal and bhindi, for control spray neem oil @ 2 ml per litre of water or spray Lambda Saehelathin (Lambda) @ 1ml per litre of water, before flowering stage after current spells of rain.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of shoot and fruit borer in brinjal and tomato crops, for control, infested fruits and shoots should be collected and buried inside the soil. If pest population is high, spray Spinosad 48 EC @ 1 ml per 4 litres of water after current spells of rain.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts, present weather is conducive for attack of fruit biting larvae in apple, for control spray Melathion @ 200 ml per 200 litres of water after current spells of rain.

▪ **Punjab, Haryana and Delhi:**

- Undertake weeding operation in maize in Western Plain Zone of Punjab. Use atrazine 50 WP as pre-emergence application @ 500g per acre on light textured soils and @ 800 g per acre on heavy textured soils. Complete sowing of summer moong.
- In Western Zone of Punjab, complete transplanting of rice, continue sowing of bottle gourd, sponge gourd, bitter gourd, ash gourd and round melon by using 2 kg seed per acre. Continue transplanting of cauliflower at 45 x 30 cm spacing.
- In Central Plain Zone of Punjab, continue transplanting of rice. Undertake weeding in sugarcane crop. Continue sowing of okra, bottle gourd, sponge gourd, bitter gourd, ash gourd and cowpea-263.
- Continue sowing of guar, bajra, maize and cluster bean in Western Zone of Haryana. Continue transplanting of rice.
- Continue transplanting of 25-30 days old seedlings of rice in Eastern Zone of Haryana. Withdraw water from the field after 6-10 days of transplanting for better establishment of the seedlings.
- Continue transplanting of rice seedling in prepared field in New Delhi. Continue sowing of maize. Start sowing of rainy season cucurbits like bottle gourd, bitter gourd, pumpkin and ridge gourd etc. Continue sowing of guar, bajra, spinach, amaranths and ladies finger. Continue sowing of baby corn and sweet corn.
- Prevailing weather is favourable for development and spread of fruit rot in chilli in Central Plain Zone of Punjab. Farmers are advised to give 3-4 sprays of Indomil M-45 or Blitox 50 WP @ 750 g/acre after current spells of rain and repeat at 10 days interval.

▪ **Uttar Pradesh:**

- In Central Plain Zone of Uttar Pradesh, complete transplanting of medium and late maturing paddy varieties in first fortnight and early maturing in second fortnight of this month. Undertake sowing of bajara after 15 July and 4-5 kg seed per/ha in required. Continue sowing of mung and urad crop before sowing treat seeds with rhizobium culture. Continue sowing of soybean crop, *kharif* sunflower, sorghum, arhar, linseed. Complete sowing of groundnut in the first fortnight of this month. Undertake sowing of lobia, jowar, maize, bajara, guar and multicutting M.P. Chari for green fodder if it is not done earlier. Complete *kharif* onion nursery raising and apply 12-15 Kg seed/ha.
- In Eastern plain Zone of Uttar Pradesh, Continue transplanting of 20 to 25 days old rice nursery in main field. Undertake sowing of urad, mung, turmeric and late maturing variety of arhar. Continue transplanting of cauliflower, brinjal, tomato nursery in main field. Continue transplanting of *kharif* onion in main field.
- In Western Plain Zone of Uttar Pradesh, in maize, pulses, vegetables crops avoid water logging in the fields by proper drainage. Continue transplanting of paddy seedling in prepared fields with spacing of 20 x 10 (RxP)cm. Nitrogen 40 kg./ha, Phosphorus 60 kg./ha, Potash 40 kg/ha and zinc sulphate 25 kg/ha should be use before transplanting.
- In Bundelkhand Zone of Uttar Pradesh, undertake sowing of *kharif* crops like maize, jowar, groundnut, arhar, urad, mung, linseed and fodder crops. Continue nursery sowing of rice. Continue nursery sowing of rainy season cauliflower, cabbage, tomato, chilli, brinjal. Undertake sowing of dhaincha for green manuring.

- In North Eastern plain Zone of Uttar Pradesh, Undertake transplanting of paddy and sowing of maize, arhar, groundnut, pea, mustard crop.
- In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of khaira disease in paddy nurseries for control broadcast Zinc Sulphate @ 25 kg or spray Zinc Sulphate @ 5 kg plus lime @ 2.5 kg in 100 litres of water per hectare after current spells of rain.
- In Eastern plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of khaira disease in paddy nurseries for control spray Zinc Sulphate @ 5 kg or Urea @ 20 kg in 1000 litres of water per hectare after current spells of rain.
- **Rajasthan:**
 - In East Rajasthan, continue sowing of groundnut, pearl millet, sorghum, sesame, maize, mung bean, cluster bean, moth and cowpea after current spells of heavy rain.
 - In West Rajasthan, continue sowing of pearl millet, cluster bean, mung bean, moth bean etc. Use improves varieties for sowing of bajra, mung, moth and guar crops. In Sriganganagar, continue sowing of guar (RGC-936, RGC-986, RGC-1002, RGC-1017, HG-365, HG-563 and HG-2-20). In Irrigated North Western Plain Zone, Hanumangarh, continue transplanting of rice.
 - In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, continue nursery sowing of brinjal, tomato, rainy onion, cauliflower and chilli. Continue sowing of groundnut, maize. Continue transplanting of nursery plants of papaya in field after current spells of heavy rain.
 - In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, continue sowing of *kharif* crops like pearl millet, sorghum, maize & cluster bean, greengram, cowpea after current spells of heavy rain.
 - In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, continue sowing of bajra, sesame, sorghum and undertake sowing of rainy season cucurbits (bottle gourd, ridge gourd, bitter gourd & cucumber etc) after current spells of heavy rain.
 - In Southeastern Humid Plain Zone, in Jhalawar, Kota, Bundi, Baran districts, continue nursery sowing of rice. Continue transplanting of three weeks old rice nursery in main field. Continue sowing of soybean, mung, urad, maize after current spells of heavy rain.
 - In Jaisalmer and Bikaner districts of Arid Western Plain Zone, continuesowing of kharif crops like pearl millet, cluster bean, mung bean, moth crops, guar crops. In Barmer, Churu, Jalore, Jodhpur, Pali districts of Arid Western Plain Zone, continue sowing of lentil, mung, bajra, moth, guar, jowar crops.
 - In Irrigated North Western Plain Zone, Hanumangarh and Sriganganagar, continue sowing of guar, bajra, sesame, mung, moth in rainfed areas on receiving of monsoon rain. Continue transplanting 25 to 30 days old seedlings of rice & maintain the plant to plant distance of 15 cm.
 - In Jaisalmer and Bikaner districts of Arid Western Plain Zone, prevailing weather condition is congenial for attack of root rot/collar rot in groundnut, for control broadcast mixture of Carbendizem and Mencozeb @ 250 gm per bigha along with soil after current spells of rain.
- **Horticulture**
 - In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of aphid in Pomegranate, for control spray Imidacloprid @ 60ml per 200 litres of water.
 - In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, this is the right time for plantation of ber, aonla, phalsa, pomegranate and agroforestry tree saplings.
 - In Jaisalmer and Bikaner districts of Arid Western Plain Zone, prevailing weather condition is congenial for attack of Chaffer beetle in ber orchards, after first rain, for control spray Carboryl 50 WP @ 4 g/litre of water on a non rainy day.
- **Floriculture:**
 - In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of mite in carnation for control spray Omite, Pyromite @ 1 ml per litre of water and Dicofol @ 2 ml per litre of water. In marigold blight is expected for control spray Bavistin @ 2 g per litre of water after current spells of rain.
 - In East Rajasthan, in Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, undertake planting of fruit crops like mango, plum, pomegranate, aonla etc may be done. 50-100 gm Quinalphos 1.5% per pit may be added before planting.
- **Apiculture**
 - In Himachal Pradesh, dust sulphur for protection from ants, put the legs of apiary into water so that ants could not attack apiary. Examine colonies for mites. Give artificial food if required. Insert empty frame to apiaries as bees population is increasing.
 - In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, keep colonies in shade or cover with wet gunny bags. Provide adequate space to the colonies for brood rearing and storage of nectar. To control mite, dust sulphur on top bars @ 1g/frame /oxalic acid treatment @ 3.5%/litre water.

- **Animal Husbandry**

- In Himachal Pradesh, monitor the animals for FMD and advised Vaccination. Ecto-parasite attack is expected in this weather, for control, spray Butox @ 2ml per litre in cow shed and give mixture of hay & green fodder .

- **Fishery**

- In Himachal Pradesh, Due to high rainfall Fish pond should be surrounded /protected with net so that the fishes may not escape outside the pond. Maintain water depth of at least 5 feet in order to rear all the three types of fish viz., mirror carp, grass carp and silver carp. Add supplementary feed (rice/wheat bran & mustard oil cake and rice/wheat bran) @ 2-3% of total fish biomass on daily basis.

- **Poultry**

- In Himachal Pradesh, replace the poultry houses with fresh litter and keep the houses clean and ensure plenty of drinking water to the birds. Normal feeding schedule should be continued. For precautionary measures spray Formaline 40% @ 1litre in 9 litres of water in outside or surrounding of farm. Increase protein by 2% in poultry diet.

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