



National Agromet Advisory Service Bulletin

Friday 30th June 2017

(For the period 30th June to 4th July 2017)



Issued by

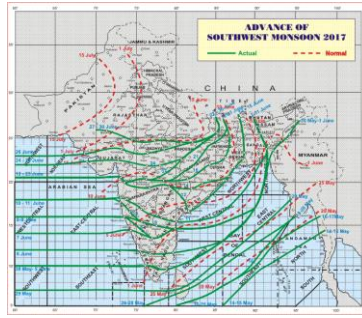
*National Agrometeorological Advisory Service Centre,
Agricultural Meteorology Division,
India Meteorological Department, Shivajinagar, Pune.*

Weblink For

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

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

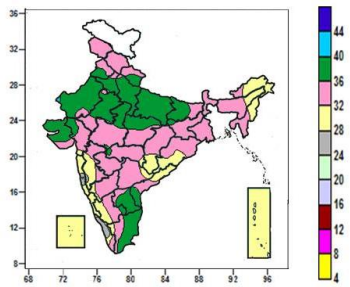
Monsoon watch dated 30.06.17



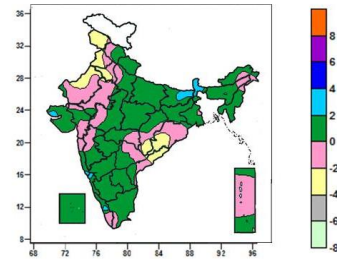
- The Northern Limit of Monsoon (NLM) continues to pass through Lat. 26.0 °N/Long. 70.0°E, Barmer, Chittorgarh, Guna, Satna, Siddhi, Patna and Lat.27.0°N/Long. 85.0°E.
- Favourable conditions are developing for the further advance of southwest monsoon into remaining parts of Bihar and some more parts of Madhya Pradesh, East Uttar Pradesh during next 48 hours and and subsequently towards West Uttar Pradesh, National Capital Region (NCR) and some parts of Uttarakhand and Haryana during next 72 hours.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 28.06.2017

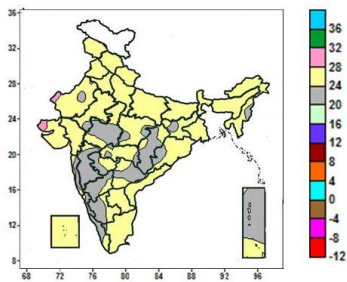
Actual Mean Maximum Temperature (°C) in India for the week ending 28.06.2017



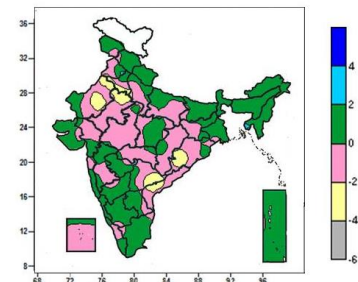
Mean Maximum Temperature (°C) Anomaly in India for the week ending 28.06.2017



Actual Mean Minimum Temperature (°C) in India for the week ending 28.06.2017

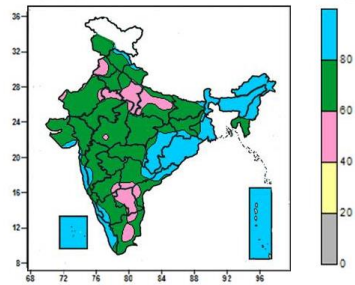


Mean Minimum Temperature (°C) Anomaly in India for the week ending 28.06.2017

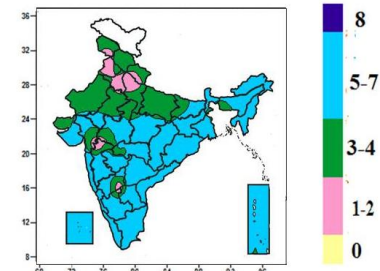


Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending 28.06.2017

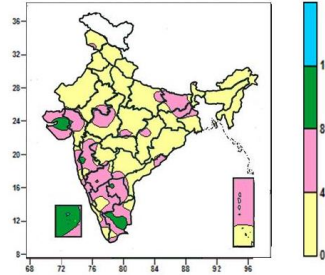
Relative Humidity (%) over India for the week ending 28.06.2017



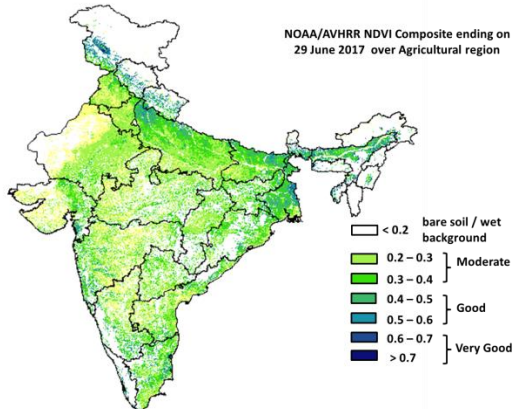
Cloud amount (okta) over India for the week ending 28.06.2017



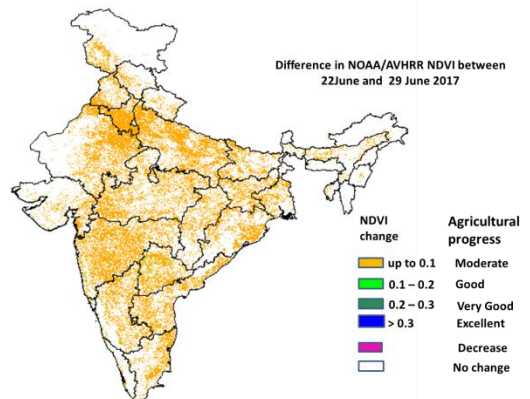
Wind speed (knots) over India for the week ending 28.06.2017



NOAA/AVHRR NDVI composite ending on 29th June 2017 over Agricultural regions of India

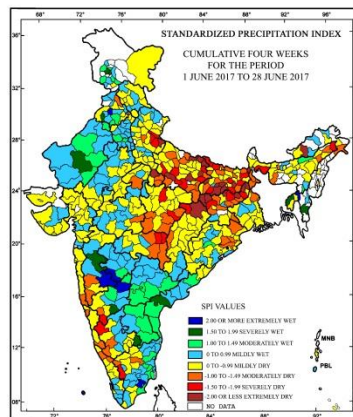


Difference in NOAA/AVHRR NDVI between 22nd June and 29th June 2017



**Standardised Precipitation Index
Four Weekly for the period 1st June to 28th June 2017**

MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE



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

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

Weather Warning during next 5 days

- **30 June (Day 1):** Heavy to very heavy rain with extremely heavy fall very likely at isolated places over Assam & Meghalaya; heavy to very heavy rain at isolated places over Gujarat, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Konkan & Goa. Heavy rain very likely at isolated places over Jammu division of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Rajasthan, Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, Jharkhand, Odisha, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, north Coastal Andhra Pradesh, Coastal Karnataka and north Kerala.
- **01 July (Day 2):** Heavy to very heavy rain with extremely heavy fall very likely at isolated places over Assam & Meghalaya; heavy to very heavy rain at isolated places over Uttarakhand, Gujarat, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura and Konkan & Goa. Heavy rain very likely at isolated places over Himachal Pradesh, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Rajasthan, East Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Odisha, Madhya Maharashtra, north Coastal Andhra Pradesh, Coastal Karnataka and north Kerala.
- **02 July (Day 3):** Heavy to very heavy rain with extremely heavy fall very likely at isolated places over Assam & Meghalaya; heavy to very heavy rain at isolated places over Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura and Konkan & Goa. Heavy rain very likely at isolated places over Uttarakhand, Uttar Pradesh, East Rajasthan, Bihar, Arunachal Pradesh, Gujarat and Coastal Karnataka.
- **03 July (Day 4):** Heavy to very heavy rain very likely at isolated places over East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Heavy rain very likely at isolated places over Uttarakhand, West Uttar Pradesh, Gujarat, Arunachal Pradesh and Konkan & Goa.
- **04 July (Day 5):** Heavy to very heavy rain very likely at isolated places over East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya. Heavy rain very likely at isolated places over Uttarakhand, West Uttar Pradesh, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Gujarat and Konkan & Goa.

Weather Outlook for subsequent 2 days from 5th to 7th July 2017

- Rain very likely at most places over along west coast, northeastern states and over Gangetic Plains; at many places over East India.
- 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)
30th June 2017**

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

% Station Reporting Rainfall

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

Salient Advisories

- As favourable conditions are developing for the further advance of southwest monsoon into remaining parts of Bihar and some more parts of Madhya Pradesh, East Uttar Pradesh during next 48 hours and subsequently towards West Uttar Pradesh, National Capital Region (NCR) and some parts of Uttarakhand and Haryana during next 72 hours; the following agromet advisories are suggested:
 - Undertake sowing of soybean, jowar, bajra, urad, moong and sesame in **East Madhya Pradesh** and continue nursery sowing of rice. In **West Madhya Pradesh**, undertake land preparation and sowing of soybean, jowar, bajra, urad, moong.
 - In **East Uttar Pradesh**, undertake land preparation and direct sowing of rice in low land areas. Undertake sowing of long duration varieties of maize and arhar. In **West Uttar Pradesh**, in Bundelkhand Zone, undertake land preparation for sowing of *kharif* crops like maize, jowar, groundnut, arhar, urad, mung and linseed and keep inputs ready for sowing and go for sowing after receipt of sufficient rainfall. Undertake land preparation for sowing of maize, bajra and guar in Western Plain Zone.
 - Continue nursery sowing of rice and undertake 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 undertake sowing of

maize. In Udham Singh district of Bhabar and Tarai Zone, continue direct sowing of rice, sowing of maize, cowpea and early maturing varieties of pigeon pea.

- Utilising realised and expected rain in **Punjab, Haryana, Delhi, Uttarakhand** and **Himachal Pradesh** continue nursery sowing of rice. Continue sowing of cotton in Western Zone of Punjab.
- In Western Zone of **Haryana**, continue sowing of guar, bajra, maize. Undertake transplanting of rice.
- In **New Delhi**, undertake transplanting of rice seedling in prepared fields. Continue sowing of maize, guar, bajra.
- In **Gujarat**, drain out excess water from rice nurseries and from already sown crop fields. Complete nursery sowing of *kharif* rice and continue sowing of pulses like green gram, black gram, pigeon pea and vegetables crops at optimum soil moisture conditions. Undertake nursery sowing of chilli and brinjal in South Gujarat Heavy Rainfall Zone and in South Gujarat Zone, drain out excess water from the maize, sugarcane, green gram, black gram, ginger, turmeric and vegetable crop fields. Continue sowing of soybean, pigeon pea, cotton at optimum soil moisture conditions.
- In **East Rajasthan**, utilising realised and expected rain, undertake sowing of groundnut, pearl millet, sorghum, maize, mung bean, cluster bean, moth and cowpea. Continue nursery sowing of rice in Southeastern Humid Plain Zone. In **West Rajasthan**, undertake sowing of pearl millet, cluster bean, mung bean, moth bean etc. Use improved varieties for sowing of bajra, mung, moth and guar crops. In Sriganganagar, undertake 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, undertake transplanting of rice .
- Utilising the realized and expected rainfall;

Jharkhand

- Continue nursery sowing of rice and undertake land preparation for sowing of maize, urad and arhar.

West Bengal

- Undertake main field preparation and transplant the seedlings of rice. Undertake sowing of direct seeded long duration rice varieties. In Laterite and Red Soil Zone, complete nursery sowing of rice crop under upland and lowland condition. Provide adequate drainage in already sown jute fields and vegetable fields.

Odisha

- Continue land preparation and direct sowing of *kharif* rice in medium and low lands and land preparation 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.
- Undertake sowing of soybean, maize, jowar and groundnut in **Chhattisgarh**. Continue nursery sowing of *kharif* rice in south Chhattisgarh.
- In **Coastal Andhra Pradesh**, in Krishna Godavari Zone, continue nursery sowing of rice, sowing of maize, black gram, green gram and red gram.
- In **Royalaseema**, continue sowing of *kharif* groundnut in Southern Zone and continue sowing of rainfed red gram, korra and land preparation and sowing of groundnut in Anantpur districts.
- Undertake land preparation and sowing of *kharif* crops like cotton, jowar, groundnut, red gram, green gram, black gram in **Telangana**.
- In **Konkan**, in view of realized rainfall and expected widespread rain with isolated heavy/very heavy spells during next 5 days, provide adequate drainage in already sown rice and nagli fields to avoid water stagnation continue sowing of rice, nagli and varai seeds in prepared nursery beds after current spells of heavy rain.
- In **Madhya Maharashtra**, continue sowing of *kharif* crops like soybean, tur, cotton, groundnut and sunflower etc. Undertake transplanting of 20 to 25 days old rice seedlings in Sangli, Satara and Kolhapur districts.
- In **Vidarbha**, continue sowing of *kharif* crops like soybean, cotton, tur and moong in Central and West Vidarbha utilizing the the realised and expected rainfall. Continue nursery sowing of *Kharif* rice on raised beds in East Vidarbha.
- In **Marathwada**, as there is possibility of only scattered rain during next 5 days, apply protective irrigation to *kharif* crops and undertake dust mulching and weeding in *kharif* sorghum and pearl millet in all districts except in Hingoli and Jalna districts.

Karnataka

- In **Coastal Karnataka**, continue transplanting of rice. In Hill Zone, undertake drill sowing of rice and continue sowing of pulse crops. Provide adequate drainage/clean drainage channels in already sown crop fields to avoid water stagnation.

- In **South Interior Karnataka**, continue sowing of pulses like cowpea, green gram, black gram, horse gram, and field bean. In the Eastern Dry Zone, undertake land preparation and sowing of *kharif* crops like red gram, ragi, groundnut and maize.
- In **North Interior Karnataka**, continue sowing of jowar, pearl millet, red gram, black gram, maize, groundnut, soybean, sunflower, sesame.
- In the Central and in the Northern Zones **Kerala**, continue transplanting of *Viruppu* rice, In the Problem Area Zone, continue wet sowing of rice with adequate drainage facilities.

Assam, Meghalaya and Arunachal Pradesh

- In **Assam**, continue nursery sowing of Sali rice after current spells of heavy rain. Provide adequate drainage in rice nurseries and vegetable fields,
- In **Meghalaya**, continue nursery sowing rice and planting of ginger/turmeric after current spells of heavy rain. Provide adequate drainage in ginger/turmeric fields. Undertake land preparation for transplanting of Sali rice/kharif rice
- In **Arunachal Pradesh**, continue transplanting of finger millet and nursery sowing of rice, sowing of cowpea, French bean and soybean.

Nagaland, Manipur & Mizoram

- In **Nagaland**, continue nursery preparation for sowing of TRC/WRC rice.
- In **Manipur**, continue nursery raising for main *kharif* rice and sowing of *kharif* maize, soybean, groundnut and black gram and planting of ginger/turmeric. Raise community nursery in upland area so that it may be least affected with the heavy rains. Continue main field preparation for transplanting of rice
- In **Mizoram**, continue transplanting of rice.

Detailed Zonewise Agromet Advisories

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

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala, all districts of Coastal Andhra Pradesh except Prakasam and Vizianagaram, in all districts of Telangana except Hyderabad, Mahbubnagar and Rangareddy, in all districts of Coastal Karnataka, Belagavi and Kalaburgi districts of North Interior Karnataka, Chikkamagaluru, Kodagu, Hassan and Shivamogga districts of South Interior Karnataka, Coimbatore, Kanyakumari, Nilgiris and Tirunelveli districts of Tamil Nadu during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - **Kerala:**
 - In the Northern Zone, continue transplanting of rice and planting of black pepper.
 - In the Southern Zone, complete transplanting of *Viruppu* rice. In Thiruvananthapuram district, continue tapping of rubber.
 - In the Problem Area Zone, continue planting of new coconut seedlings with moderate soil wetness, wet sowing of rice and undertake all sprayings to the crops early in the morning or evening only to get a gap of 2 hours before rain.
 - In the High Altitude Zone, continue planting of coconut, pepper and arecanut.
 - In the Central Zone, hang perforated Mancozeb, 3 sachet @ 5 gm around spindle leaves as a prophylactic measure to prevent bud rot incidence in coconut after current spells of rain.
 - In the Northern Zone, in the hilly tracts, there are chances of occurrence of 'yellowing of coconut leaves' and bud rot disease in weak palms. Apply Lime @ 2 kg/palm and 500g of Ayar (R) (micro nutrient mixture) along with the recommended dose of NPK fertilizers, two weeks after lime application after current spells of rain.
 - **Karnataka:**
 - In Coastal Zone of Karnataka, continue transplanting of rice in Coastal Zone and drill sowing of rice in Hill Zone with proper drainage facilities. Intan, Abhilash, Jaya and Mugada Sirsi-1253 for low land rice and Amrut or Prasanna varieties for upland rice are recommended. Continue planting of arecanut seedling.
 - In Central Dry Zone, undertake 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 on a non rainy day.
 - In Southern Transition Zone, continue nursery sowing of rice. Drain out excess water from crop fields in Shivamogga and Chikkamagaluru districts. Continue sowing of maize, ragi, red gram, groundnut utilising realised and expected rainfall.
 - In Southern Dry Zone, continue sowing of minor millets like foxtail millet, Kodo millet, prosomillet, jowar, ragi,

- maize and pulses like Avare, cowpea etc in Kodagu district with realised and expected rainfall and undertake sowing in remaining districts with receipt of sufficient rainfall. Continue planting of turmeric and zinger rhizomes.
- In the Eastern Dry Zone, continue sowing of ragi, sesame, black gram, green gram, cowpea, groundnut and field bean under double cropping and sowing of red gram, maize, castor under monocropping under sufficient moisture condition.
 - In North East Dry Zone, continue sowing of green gram, black gram, red gram, cotton, maize, bajra and castor with realised rainfall.
 - In North Dry Zone, continue sowing of green gram, sunflower, maize, Bt. cotton, red gram, bajra, sorghum, sesamum, navane and groundnut (bunch type) in Vijayapura and Bagalkote districts with realized rainfall and in Gadag district as and when wetting rain is received. 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 the crops in rows across the slope.
 - In North Transition Zone, continue sowing of green gram, black gram, red gram, groundnut and soybean where sufficient soil moisture condition is available.
 - In North East Transition Zone, continue nursery sowing of rice and continue sowing of green gram, black gram, jowar, soybean crops first and then sowing of red gram crop with realised and expected rainfall.
 - Infestation of wilt disease is noticed in brijal crop in Southern Dry Zone; manage this disease by uprooting of affected plants and drench the affected site with bleaching powder @20 g dissolved in 1 litre of water or spray Carbon-oxy-Chloride @ 3 g + Streptomycin Sulphate @500 g / litre of water after current spells of rain.
 - Incidence of panama wilt disease in elakki and nanjanagudu rasabale plantation was noticed in the taluks of Mysore district in Southern Dry Zone; to control this, uproot the diseased plants and pour 5 litre Bavistin solution and then spray with Bevistin @ 2 g per litre of water after current spells of rain.
 - As a precautionary measure, for the control of Katte Roga in black pepper in Hill Zone, spray 1% Bordeaux mixture solution and pour 5 liters of 0.2 % Copper Oxychloride solution to the root of the vine in the soil after current spells of rain
- **Andhra Pradesh:**
 - In the North Coastal Zone, undertake sowing of rainfed crops viz. groundnut and maize, continue sowing of pulses, and green manure crops preceding to paddy by utilizing the realized and expected rainfall and planting of rainfed sugarcane. Avoid excess water in sesamum fields as the crop is sensitive to excess moisture and also in mesta crop field.
 - In the Krishna Godavari Zone, continue 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, continue sowing of maize under irrigated conditions after seed treatment with Kaptan @ 3.0 gm/one kg of seed, sowing of castor, korra, rainfed red gram, planting of ber and pomegranate in Anantapur and Kurnool districts. Continue land preparation for sowing of irrigated groundnut in Anantpur district and sowing of sunhemp and dhaincha as in-situ green manure crops preceding rice in Kurnool district.
 - In the East Godavari Zone, continue nursery preparation for *kharif* rice, sowing of cotton and other green manure crops(sesamum and green gram).
 - In the Southern Zone, in Chitoor and Kadapa districts, continue sowing of millets like ragi, bajra, jowar and korra and *kharif* groundnut after seed treatment with Mancozeb @ 3g/litre of water after current spells of rain.
 - In the Krishna Godavari Zone, due to prevailing rainy weather conditions, incidence of white mite may occur in sugarcane (vegetative to ripening stage). To control, spray Malathion @ 3 ml/litre of water after current spells of rain and undertake foliar application of liquid fertilizers to overcome waterlogging/excess moisture.
 - **Telangana:**
 - In South Telangana Zone, continue sowing of rainfed crops like jowar, bajra, maize, soybean, green gram, cotton, red gram etc. 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 sowing of sunhemp and dhaincha as in-situ green manure crop preceding rice and sowing of green gram. drench nursery bed with Copper-Oxy-Chloride @ 3 g/ litre of water and provide adequate drainage to prevent incidence of damping off in vegetable nurseries.
 - In North Telangana Zone, sow redgram as inter crop in cotton or maize fields and drain out excess water from the fields of rainfed crops where heavy rainfall has been received. Continue sowing of rainfed crops like jowar, bajra and black gram, red gram, maize, green gram and soybean.
 - In the South Telangana Zone, spray Monocrotophos @ 1.6 ml/litre of water as prophylactic spray to 12-15 days old maize crop to prevent the incidence of stem borer.
 - **Tamil Nadu:**
 - In the Cauvery Delta Zone, continue SRI cultivation of rice after appropriate seed treatment and continue nursery sowing of Kuruvai rice.

- In the Western Zone, since heavy wind (>16 km/hr) is anticipated, early season sugarcane and five months old banana crops may be propped against lodging. Considering the prevailing weather, root feeding of TNAU coconut tonic 200ml/tree is advised for arresting button shedding in coconut.
- In the North Western Zone, undertake cultivation of small onions.
- In the High Rainfall Zone, due to scanty rainfall, provide irrigation to newly planted fruit trees, vegetable crops and other horticultural crops. Undertake mulching in pineapple fields for moisture conservation. In banana fields, the dried and diseased leaves have to be removed to control the spread of leaf spot disease.
- In the Cauvery Delta Zone, incidence of boll worms is noticed in cotton. To control this, spray Indoxacarb 15.8 SC @ 200 ml/acre on a non rainy day.
- In the Western Zone, continue de-trashing or remove dry cane leaves to avoid borer infestation in early season planted sugarcane of 150 days old.
- In the Southern Zone, prevailing weather condition is congenial for incidence of white downy growth in onion. To control, spray Mancozeb 0.2 % on a non rainy day and repeat at 10-12 days interval.
- In the South Zone, high cloud cover and moderate humidity expected in the coming days is congenial for lace wing bug incidence in brinjal. To control, spray Dimethoate 30% EC @ 1 ml/litre of water on a non rainy day.
- **Animal Husbandry**
- In the Cauvery Delta Zone of Tamil Nadu, feed Azolla 1-2 kg per cow and 0.5-1kg for other animals daily in the afternoon. Increase the quantity of green fodder during the day time and decrease the quantity of dry fodder on cooler part of the day.
- 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.

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

- **Realised Rainfall:** Rainfall occurred in Changlang, Dibang Valley, East Kameng, East Siang, Lohit, Lower Dibang Valley, Papumpara, Tawang, Upper Siang, Upper Subansari, West Kameng and West Siang districts of Arunachal Pradesh, Baksa, Bongaigaon, Cachar, Dhubri, Gopalpara, Golghat, Hailakandi, Kamrup(Rural), Kamrup(Metro), Karbi Anglong, Karimganj, Kokrajhar, Lakhimpur, Morigaon, N.C.Hills, Nagaon, Sonitpur, Sibsagar and Tinsukia districts of Assam, East Garo Hills, East Khasi Hills, Ri-Bhoi, South Garo Hills and West Garo Hills districts of Meghalaya, Aizwal, Lunglei, Saiha and Sechhip districts of Mizoram, Imphal East, Imphal West, Tamenglong, Ukhrul and Thoubal district of Manipur, Dimapur, Kohima, Phek, Zunheboto, Tuensang and Wokha districts of Nagaland ,West Tripura, North Tripura and South Tripura districts of Tripura during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - **Assam, Arunachal Pradesh and Meghalaya:**
 - In Karbi Anglong and NC Hills districts of Hill Zone of Assam, undertake sowing of arhar after current spells of heavy rain. Provide adequate drainage in already sown crop fields and vegetable fields. Avoid harvesting of maize immediately after a shower.
 - In the Barak Valley Zone of Assam, continue planting of healthy and disease free banana sucker in the main banana field and planting of lemon trees after current spells of heavy rain.
 - In the Hill Zone of Assam, undertake transplanting of Sali rice, wash the uprooted seedlings of Sali rice and dip the root portion in 0.02% solution of Chlorpyrifos @ 2.1 ml/litre of water along with urea @ 10 gm/litre of water as a protective measure against stem borer, gall midge and hopper.
 - In Upper Brahmaputra Valley Zone, continue land preparation/ sowing for Sali rice. Repair bunds for conservation of rain water.
 - In Nagaon and Marigaon districts of Central Brahmaputra Valley Zone of Assam, continue nursery bed preparation/main field preparation for Sali rice and transplanting of Bao paddy. Undertake land preparation and sowing of arhar after current spells of heavy rain.
 - In Dhemaji, Darrang, Lakhimpur, Sonitpur and Udalgiri districts of North Blank Plain Zone of Assam, continue sowing of Sali rice in nursery bed/main field preparation for transplanting. Provide proper drainage in ginger and turmeric fields.
 - In East Garo Hills, East Khasi Hills, Jaintia Hills, Ri-Bhoi, South Garo Hills, West Garo Hills and West Khasi Hills districts of Meghalaya, continue nursery bed preparation for *Sali/ kharif* rice. Undertake main field preparation for transplanting for *Sali/ kharif* rice. Provide bamboo structure to bottle gourd, ash gourd and pumpkin plants.
 - In Arunachal Pradesh, continue raising of low-land rice nursery. Undertake sowing of finger millet and soybean after current spells of heavy rain. Maintain proper drainage in already sown crop fields.
 - In Lower Brahmaputra Valley Zone of Assam, apply Carbofuran @ 3g/sq.m or Phorate/Diazinon 1g/sq.m or spray Chlorpyrifos 20 EC @ 0.02% in the seed bed 5 to 7 days before uprooting of seedlings as a protection measure against stem borer, gall midge and hoppers. Spray jute plants with Carbendazim @ 1g/litre or Mencozeb @ 3g/litre of water to control root rot anthracnose after current spells of rain.
 - In Barak Valley Zone of Assam, apply Malathion @ 2ml/litter of water against fruit and shoot borer and Jassids in

Okra crop after current spells of rain. Spray Carbendazim + Mancozeb @ 2.5 gm per liter of water to control brown spots and blights in Sali rice nursery beds after current spells of rain.

- In Central Brahmaputra Valley Zone of Assam, apply Bordeaux mixture in clear weather to control rotting in beetle vine and wilting of black pepper after current spells of rain.
- In Dhemaji, Darang, Lakhimpur, Sonitpur and Udalgiri districts of North Bank Plain Zone of Assam, provide proper drainage to control red rot disease of sugarcane. Drench the affected area with 0.3% Mencozeb 75 WP @ 2g/litre of water to prevent rhizome rot in ginger and turmeric after current spells of rain.
- In Arunachal Pradesh, use pheromone traps/light traps against shoot and fruit borer in brinjal crop. Undertake need-based application of carbendazim @ 2gm/litre with sticker @ 2ml/litre to protect rice seedlings from diseases. Spray Triazophos @ 2 ml/litre in young seedlings of groundnut. Undertake plant protection measures after current spells of rain.
- 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 tasselling/cob formation stage. Apply plant protection measures after current spells of rain.

▪ **Nagaland, Manipur, Mizoram and Tripura:**

- In Dimapur, Kephire, Kohima, Longleng, Mokokchung, Mon, Paren, Phek, Tuensang, Wokha and Zunheboto districts of Nagaland, continue nursery preparation for sowing of TRC/WRC rice. Undertake seed treatment before sowing.
- In Manipur, continue sowing of *kharif* rice, soybean, groundnut and black gram after current spells of heavy rain. Undertake field preparations for transplanting of *kharif* rice. Apply Carbofuran 3G @ 2 kg/hactare a week before uprooting the seedling.
- In Mizoram, continue transplanting of rice. Maintain proper drainage in the ginger/turmeric, cowpea, okra and maize fields.
- In Tripura, complete sowing maize before 15th July. Continue nursery sowing of *Aman* rice. Continue land preparation and planting of banana.
- In Nagaland, there is chance of attack of blast disease in jhum rice at tillering stage. Spray Tricyclazole 0.1% 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.
- In Mizoram, spray Monocrotophos @ 1.5 ml/litre of water or Imidachloroprid 1.5 ml/lit of water for effective control of rice stem borer and leaf folder in jhum rice. 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 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.

• **Animal Husbandry**

- In Northeastern states, farmers are advised to keep animals in sheds during heavy rain fall period. Carry out immunizations against FMD, Hemorrhagic Scepcaemia and Black Quarter in cattle & buffaloes and swine-fever in pigs during monsoon season. Undertake immunization of cattle and buffaloes against. Vaccinate 6-9 months calves against brucellosis. Bleaching powder may be spread near farm premises. Avoid fungal infested feed. Use dry litter material in the shed; if moist apply lime powder @ 1kg per 100 ft² area.
- Vaccinate one week old chicks against Ranikhet disease and two weeks old chicks against Gamboro disease. 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.
- In Meghalaya, provide sufficient feed like rice bran, mustard oil cake, fish meal, minerals & vitamins to major/minor carp brooders for proper egg development. Monitor PH level and dissolved oxygen regularly.
- In Tripura, check the PH of the pond water. Apply 50 kg of lime per hectare if the PH of the water found below 6.5. Avoid excess feeding as it leads to depletion of oxygen.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa, all districts of Madhya Maharashtra except Ahmednagar, Jalgaon, Sangli and Sholapur, in Hingoli and Nanded districts of Marathwada, all districts of Vidarbha except Akola, Amraoti and Gondia, in all districts of Gujarat Region except Ahmedabad and Banaskantha, in Jamnagar, Junagadh, Porbandar and Rajkot districts of Saurashtra & Kutch during the week and weather remained mainly dry over rest of the region.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, in view of realized and expected widespread rain with isolated heavy/heavy to very heavy

spells during next 5 days, drain out excess water from nursery and transplanted rice / nagli fields and orchards. Start plantation of horticultural crops like mango and sapota at 10x10 m, cashew at 7.0x7.0 m, kokum at 6x6 m, coconut at 7.5x7.5 m, arecanut at 2.7 x 2.7 m distance. Provide proper support to cucurbitaceous crops. Apply first one third dose of urea @ 720 g to 870 gm per R area to vegetable crops. Continue land preparation for planting of biennial forage crops like Paragrass, Napier and Gajraj.

- In Madhya Maharashtra, continue sowing of *kharif* crops like soybean, tur, cotton, groundnut and sunflower etc. Undertake transplanting of 20 to 25 days old rice seedlings in Sangli, Satara and Kolhapur districts. Continue transplanting of *kharif* vegetables like tomato, chilli and brinjal.
- In Marathwada, as there is possibility of scattered rain during next 5 days, apply protective irrigation to *kharif* crops and undertake dust mulching and weeding in *kharif* sorghum and pearl millet in all districts except in Hingoli and Jalna districts. Continue plantation of fodder crop like Napier grass. Apply protective irrigation to vegetable crops.
- In Vidarbha, continue nursery sowing of *Kharif* rice on raised beds in East Vidarbha. Continue sowing of *kharif* crops like soyabean, cotton, tur and moong etc. in Central and West Vidarbha. Continue transplanting of *kharif* vegetables like tomato, chilli and brinjal.
- In western Maharashtra scarcity zone, to protect the brinjal from fruit and shoot borer Spray 25% Syphermethrin @ 5 ml or Indoxacarb @ 10 ml or Deltamethrin 1% + Triazophos 35% @20 ml with 10 liters of water using knapsack spray pump.
 - **Gujarat:**
- In South Gujarat Heavy Rainfall Zone, drain out excess water from rice nurseries and from already sown crop fields. Complete nursery sowing of *kharif* rice and continue sowing of pulses like green gram, black gram, pigeon pea and vegetable crops like bottle gourd, ridge gourd, sponge gourd, bitter gourd, cucumber at optimum soil moisture conditions. Undertake nursery sowing of chilli and brinjal.
- In South Gujarat Zone, drain out excess water from the maize, sugarcane, green gram, black gram, ginger, turmeric and vegetable crop fields. Continue sowing of soybean, pigeon pea, cotton at optimum soil moisture conditions. Provide proper support to the fruit crops like papaya and banana to reduce the probable damage due to high wind speed. As rain is likely to occur, postpone intercultural operation, application of irrigation, fertilizers and plant protection measures to the crops.
- In Middle Gujarat Zone, as rain is likely to occur, avoid application of irrigation, fertilizer and pesticide in the standing crops. Continue nursery sowing of rice; drain out the excess water from rice nursery. Continue sowing of pearl millet, groundnut, cowpea, green gram, black gram, red gram, cotton etc. Arrange for rain water harvesting.
- In North Gujarat Zone, continue sowing of *kharif* crops like pearl millet, green gram, sesame, maize, sorghum, cotton, groundnut etc. with sufficient rainfall. Carry out transplanting of vegetable crops and complete nursery preparation for *kharif* fennel. Undertake budding in mango, aonla and ber.
- In North West Zone of Gujarat, undertake sowing of groundnut, cotton, pearl millet, green gram, moth bean, castor etc. after receipt of sufficient rainfall.
- In South Saurashtra Zone, undertake sowing of *kharif* groundnut, cotton, bajra, green gram with sufficient rainfall. Undertake intercultural operations and hand weeding in irrigated groundnut.
- In North Saurashtra Zone of Gujarat, undertake sowing of cotton, groundnut, sesame, pearl millet, black gram, green gram, cowpea and pigeon pea with sufficient rainfall. Continue nursery preparation for tomato, chilli, brinjal and early cauliflower; undertake transplanting of brinjal, chilli and early cauliflower where seedlings are ready.
- **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. Vaccinate animals against FMD and BQ. Keep animals in shed during heavy rainfall.

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

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands, Bankura, Burdwan, East Midnapore, West Midnapore, Hawrah, Kolkata, Nadia, North 24 Paraganas, South 24 Paraganas and Purulia districts of Gangetic West Bengal, Cooch Behar, Darjeeling, Jalpaiguri, East Sikkim, West Sikkim, North Sikkim and South Sikkim districts of Sub-Himalayan West Bengal & Sikkim, all districts of Bihar except Arwal, Aurangabad, Begusarai, Buxar, East and West Champaran, Gaya, Monghyr, Muzaffarpur, Nalanda, Nawada, Patna, Rohtas, Samastipur and Sitamarhi, all districts of Jharkhand except Bokaro, Chatra, Deogarh, Garwa, Giridh, Godda, Koderma, Latehar, Palamau and Ranchi, all districts of Odisha during the week and weather remained mainly dry over rest of the region.
- **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. Undertake sowing of groundnut,

planting of fruit crops like Mango, Coconut, Citrus, Guava, Sapota, Papaya, Banana, Litchi and Pineapple in uplands and in marginal lands.

- 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 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.

▪ **West Bengal:**

- In Laterite and Red Soil Zone, complete sowing of paddy in upland. Use seeds treated with Cabendazim @ 3gm per kg seeds. Provide proper drainage to remove excess water in low-land nursery. Undertake main field land preparation.
- In Terai Zone, undertake main field preparation and transplant the seedlings of rice after cutting the tips as far as possible.
- In the New Alluvial Zone, complete nursery sowing of Aman rice. Undertake land preparation for planting of banana suckers.
- In Coastal Saline Zone, undertake sowing of seeds in the seed beds for Aman paddy. Undertake seed bed preparation for *kharif* onion cultivation.
- In Old Alluvial Zone, to control the infestation of gall midge in rice seedling, treat them with Furadon 3G @250 - 300gram/ 100 sqm area of seedlings. Apply Neem oil 10,000 ppm @ 2ml/liter of water to control fruit and shoot borer in brinjal crop. Use pheromone trap @ 6-7 traps/bigha, to control the fruit fly in cucurbitaceous vegetables after current spells of rain.
- In the Terai Zone, to control extreme fruit and shoot borer infestation in brinjal crop, apply Cartap Hydrochloride 50 SP @ 1g/litre of water. Apply Spiromesifen (Pyromite) 1 ml/lit. 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 the New Alluvial Zone, the prevailing weather is congenial for attack of mite control in jute crop, apply Monocrotophos @ 1.5 ml per litre of water and after one week again apply Propergite/Simba @1.5 ml per litre of water. Undertake plant protection methods after current spells of rain.

▪ **Andaman and Nicobar Islands:**

- In North and Middle Andaman, clean and strengthen the bunds of paddy main fields and store rain water.
- In Nicobar Islands, transplant coconut seedlings @ 177/ha in square method and maintain 7.5 m plant to plant distance.

▪ **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. after current spells of heavy rain.
- 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. Undertake 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 after current spells of heavy rain.
- 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, continue planting of turmeric, ginger and yam.
- 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 and Nicobar Islands, deworm poultry and local chicken after consultation with veterinary doctors.
- **Fishery**
- In the Laterite and Red Soil Zone of West Bengal, undertake putting fingerling of carp in the pond. Supply food during night in tiger prawn cultivation. Stir pond water with wheel in case of oxygen deficiency. Apply lime for cleaning water.
- In A & N Islands, prepare nursery ponds by cleaning weeds and aquatic insects to stocks IMC spawns.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Rainfall occurred in all districts of East Madhya Pradesh except Damoh, Katni, Panna, Satna and Sidhi, all districts of West Madhya Pradesh except Ashoknagar, Barwani, Bhind, Datia, Dhar, Harda, Indore, Jhabua, Khargone, Morena, Rajgarh, Sheopur Kalani, Shivpuri and Ujjain, all districts of Chhattisgarh except Balrampur and Koriya.
- **Advisories:**
 - **Madhya Pradesh:**
 - In Kymore Plateau and Satpura Hill Zone, continue nursery sowing of rice and sowing of red gram.
 - In Satpura Plateau Zone, continue nursery sowing of rice, sowing of soybean, maize, red gram and moong. Continue nursery preparation for tomato, chilli, brinjal and early cauliflower. Undertake sowing of cotton.
 - In West Madhya Pradesh, undertake sowing of soybean, jowar, bajra, urad, moong utilizing the realized and expected rainfall.
 - In Gird Zone, continue nursery sowing of rice and *kharif* vegetables and sowing of red gram in irrigated areas. Undertake sowing of urad, moong, bajra and soybean.
 - In Malwa Plateau Zone, undertake sowing of *kharif* crops like soybean, pigeon pea, urad, moong, maize, sorghum and cotton. Continue land preparation for transplanting rainy season vegetables like brinjal, tomato, *kharif* onion, early cauliflower, chilli etc. and fruit plants.
 - In Jhabua Hill Zone, continue nursery sowing of rice and sowing of maize, soybean and black gram utilizing the realised rainfall. Continue nursery preparation for rainy season vegetables.
 - In Central Narmada Valley Zone, continue nursery preparation for tomato, chilli, brinjal and early cauliflower. Continue nursery bed preparation for rice. Undertake sowing of soybean, red gram and maize.
 - In Bundelkhand Zone, continue seed bed preparation for sowing of *kharif* onion. Continue nursery preparation for rice. Undertake sowing of soybean, maize, moon, urad, sesame and groundnut.
 - In Vindhya Plateau Zone, continue nursery sowing of rice. Continue sowing of red gram. Undertake sowing of soybean.
 - **Chhattisgarh:**
 - In North Hill Zone, continue nursery sowing of long duration varieties of rice. Continue sowing/transplanting of rainy season vegetables. Undertake line sowing of rice.
 - In Bastar Plateau Zone, continue nursery preparation of vegetables like tomato, brinjal, and chilly. Continue nursery sowing and line sowing of rice. Undertake sowing of soybean, groundnut and sesame.
 - In Chhattisgarh Plain Zone, continue direct sowing of rice and nursery sowing of rice. Undertake sowing of *kharif* crops like soybean, arhar, sesame and maize.
- **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:** Rainfall occurred in Baramula, Doda, Kulgam, Rajouri, Ramban, Reasi, Shopian districts of Jammu & Kashmir, Chamba, Hamirpur, Kangra, Mandi, Sirmour, Solan, Una districts of Himachal Pradesh, all districts of Uttarakhand except Garhwal Pauri, Udham Singh Nagar, in Gurdaspur, Kapurthala districts of Punjab, Ambala, Karnal, Kurukshetra, Mahendragarh, Yamunanagar districts of Haryana, North Delhi division of Delhi, Jhansi, Meerut, Saharanpur districts of West Uttar Pradesh, Ajmer, Banswara, Bhilwara, Bundi, Chittorgarh, Dungarpur, Jhalawar, Kota, Pratapgarh, Rajasmand, Sirohi, Tonk, Udaipur districts of East Rajasthan, all districts of West Rajasthan except Hanumangarh, Jaisalmer, Sriganganagar 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, undertake 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, undertake sowing of moong and mash and transplanting of tomato, brinjal and chilli.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, continue sowing maize.
- In Valley Temperate Zone of Jammu and Kashmir, undertake weeding, hoeing and earthing up wherever maize is at knee high stage on a non rainy day.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, there is chance of incidence of bacterial wilt in tomato, brinjal, chilli and cucurbits especially under higher areas of district. If observed, apply Streptocyclin Sulphate @ 1.0 gm/10 litres of water on a non rainy day.
- **Uttarakhand:**
- In Sub Humid and Sub Tropic Zone of Uttarakhand, continue nursery sowing of basmati rice, sowing of maize and groundnut. Undertake sowing of pigeon pea and nursery sowing of onion. Undertake transplanting of rice if nursery seedling is about 20-25 days old.
- In Udhm Singh district of Bhabar and Tarai Zone, continue nursery sowing of basmati & scented rice and sowing of groundnut. Undertake sowing of soybean (PS-1024, PS-1042 PS-1092, PS-1241, PS-1347, PS-1225, PS-19 etc.).
- In Nainital district of Bhabar and Tarai Zone, undertake transplanting of rice.
- In Hill Zone, continue nursery sowing of rice. Prepare land for *kharif* crops like maize, jethi rice, soybean and cowpea.
- In Bhabar and Tarai Zone, there are chances of fruit borer in tomato, spray Chlorantraniliprole 18.5 SC @ 150 ml/ha and Indoxacarb 14.5 SC @ 500ml/Ha respectively after current spells of rain.
- **Himachal Pradesh:**
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, undertake transplanting of paddy nursery in main field. In lower regions, continue sowing of cucurbits crops, early okra, spinach, coriander, fenugreek, radish, turnip. Continue nursery sowing of tomato, brinjal, chillies and capsicum crops in poly house. In High hills regions complete sowing of peas, French bean, opla, palak, radish, turnip and carrot in addition to transplanting of cabbage, cauliflower, brocloi and exotic vegetables. It is optimum time for nursery sowing of tomato, brinjal, chillies and capsicum crops in poly house.
- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul & Spiti, continue transplanting of tomato/cabbage/cauliflower in main field. Spray micronutrient on apple trees at fruit setting stage.
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, in Solan, Shimla, Bilaspur, Sirmaur districts, present weather is conducive for attack of fruit borer in tomato, chillies, brinjal at vegetative growth/ flowering/ fruit development stage, for control spray Endocascrab 14.5 EC @ 11ml or Karente @ 18.75 ml in 15 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 aphid in pomegranate, for control spray Imidacloprid @ 60ml per 200 litres of water 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 spray Spinosad 48 EC @ 1 ml per 4 litres of water after current spells of rain.
- **Punjab, Haryana and Delhi:**
- In Punjab, undertake transplanting of rice nursery with recommended varieties i.e. PR 126, PR 124, PR 123, PR 122, PR 121, PR 116, PR 114, PR 115, PR 113.
- In Western Plain Zone of Punjab, continue land preparation and sowing of cotton and remove excess water from already sown cotton fields.
- In Western Plain Zone of Punjab, complete sowing of summer moong and summer mash.
- Complete sowing of summer moong and cotton including Bt cotton or Desi cotton with recommended varieties/hybrids (RCH 650 BG II, NCS 855 BG III, Ankur 3028 BG II, MRC 7017 BG II, MRC 7031 BG II) in Western Zone of Punjab. Continue transplanting of Chilli in Central and Western Zone of Punjab and irrigate the crop. In Western Zone of Punjab, prepare the field for sowing of okra.
- In Central Plain Zone of Punjab, continue planting of sugarcane with recommended varieties. Undertake sowing of maize with varieties/hybrids PMH 1, PMH 2, Parbhat, Kesri and soybean with recommended varieties SL 958, SL 744 and SL 525. Undertake direct seeding of basmati with varieties Pusa Basmati 1121 and Pusa Basmati 1509 and undertake sowing of nursery basmati varieties CSR 30, Basmati 370, Basmati 386 and Pusa Basmati 1509.
- In Western Zone of Haryana, complete sowing of ladyfinger, bottle gourd, cucumber, ridge gourd and summer radish and apply irrigation to planted vegetable crops. Undertake hoeing in cotton crops for conserving the moisture and removing the weeds and drain out the excess rain water in the cotton crop.
- In Eastern Zone of Haryana, continue planting of spring season sugarcane.
- In New Delhi, continue sowing of okra. Seed rates should be 10-15 kilogram per acre. Continue sowing of French bean, cluster bean, summer radish as present temperature is suitable for germination of seeds. Continue transplanting of young seedlings of brinjal and chilli. Complete sowing of green gram and black gram. Undertake field preparation for sowing of pigeonpea with varieties- Pusa 2001, Pusa 991, Pusa 992, Parasmanak, UPAS 120

and sowing of cotton with recommended varieties: H-777, H-974, H-1098.

- In New Delhi, monitor paddy nurseries against attack of blast and brown spot, spray Carbendazim @ 2.0 gram per litre of water after current spells of rain.
- In Undulating Plain Zone of Punjab due to humid weather, downy mildew may occur in cucurbits, spray Indofil M 45 or Kavach 500g in 200L of water at weekly interval. Due to intermittent rainfall, whitefly may increase in okra and thus yellow vein mosaic virus attack may also increase. To control whitefly spray Malathion 50mL/acre after current spells of rain.
- Due to heavy rainfall in Western Plain, parawilt may attack the cotton crop check by spraying Cobalt Chloride @ 10 mg/litre of water only on the affected plants after current spells of rain.

▪ **Uttar Pradesh:**

- In Central Plain Zone of Uttar Pradesh, undertake land preparation/early sowing of *kharif* hybrid maize. Undertake land preparation/nursery sowing of paddy. Continue land preparation for sowing of arhar under irrigated condition or beginning of monsoon after current spells of heavy rain.
- In Eastern plain Zone of Uttar Pradesh, undertake transplanting of 20 to 25 days old rice nursery in main field. Continue sowing of early maturing variety of arhar in irrigated areas. Undertake sowing of long duration varieties of maize. Continue nursery sowing of *ofkharif* onion. Continue nursery sowing of brinjal, chilli, bhindi, tomato, cauliflower after current spells of heavy rain.
- In Bundelkhand Zone of Uttar Pradesh, keep inputs ready for sowing of *kharif* crops like maize, jowar, groundnut, arhar, urad, mung, linseed and fodder crops and go for sowing after receipt of sufficient rainfall. Continue nursery sowing of rice in irrigated areas. Undertake nursery sowing of rainy season cauliflower, cabbage, tomato, chilli, brinjal.
- In Western Plain Zone of Uttar Pradesh, undertake sowing of maize, seed rate 20 kg/ha. Farmers are advised to do proper drainage in the nurseries of brinjal, tomato, chilli and early cauliflower. Continue nursery sowing of paddy. Undertake sowing of guar, bajara, maize, cluster bean, spinach, amaranths and bhindi.
- In Western Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of blast and brown spot in paddy nurseries, for control spray Carbendazim @ 2.0 gram per litre of water after current spells of rain.
- In North Eastern plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of aphid, blight in Bottle guard, for control spray the mixture of 0.2 % Mancozeb @ 400 gm or 0.2 % Carbendazim @ 400 gm and 0.2 % Monocrotophos @ 200 ml in 200 litres of water on one acre field of Bottle guard after current spells of rain.

▪ **Rajasthan:**

- In East Rajasthan, utilising realised and expected rain, undertake sowing of groundnut, pearl millet, sorghum, maize, mung bean, cluster bean, moth and cowpea. Continue nursery sowing of rice in Southeastern Humid Plain Zone.
- In West Rajasthan, undertake sowing of pearl millet, cluster bean, mung bean, moth bean etc. Use improved varieties for sowing of bajra, mung, moth and guar crops. In Sriganganagar, undertake 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, undertake transplanting of rice.
- In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, continue deep ploughing by MB plough in vacant field to conserve the rain water in soil for *kharif* crops. Continue nursery sowing of brinjal, tomato, rainy onion, cauliflower and chilli. Continue land preparation/sowing of groundnut, maize. Continue transplanting of nursery plants of papaya in field.
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, continue sowing of rainy season cucurbits like Khira, bottle gourd, ridge gourd, bitter melon & cucumber. Treat seeds with Bavistin @ 2 gm per kg of seeds. Give 30 kg nitrogen, 40 kg P₂O₅ phosphorous & 40 kg potash per hectare. Keep inputs ready for *kharif* crops like pearl millet, sorghum, maize & cluster bean, greengram, cowpea sowing should be done after onset of monsoon.
- In Jaisalmer and Bikaner districts of Arid Western Plain Zone, continue land preparation for sowing of groundnut, bajra, mung, moth and guar crops and go for sowing after receipt of sufficient rainfall. Undertake sowing of rainfed pearl millet on receiving of monsoon rain, apply seed @ 4kg/ha after treating with Thiram @ 3g/kg seed and Chloropyrifos @ 4 ml/kg. In Barmer, Churu, Jalore, Jodhpur, Pali districts of Arid Western Plain Zone, keep inputs ready for sowing of *kharif* crops lentil, mung, bajra.
- In Southeastern Humid Plain Zone, in Jhalawar, Kota, Bundi, Baran districts, continue nursery sowing of rice. Undertake transplanting of three weeks old rice nursery in main field. Undertake sowing of soybean, mung, urad, maize.
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, undertake field preparation by deep ploughing for timely sowing of *kharif* season crop. Keep inputs ready for *kharif* crops bajra. Undertake sowing of sorghum. Undertake sowing of dhacha for green manuring.
- In Irrigated North Western Plain Zone, Hanumangarh and Sriganganagar, in desi cotton apply first irrigation at 30 to 40 days after sowing with apply N 45 (urea 100 kg) kg/ha at the time of first irrigation. Continue nursery sowing of

rice. Continue sowing of guar, seed rate of 16-20 kg/hectare.

- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, prevailing mainly dry weather condition is congenial for attack of fruit fly in cucurbits, for control spray Malathion 50 EC @ 15 ml per 10 litres of water on a non rainy day and repeat at 15 days interval 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 fruit borer in litchi, for control spray Cypermethrin 10 EC @ 1 ml per litre of water at 15 days interval after current spells of rain. Ensure moisture in litchi basin or apply mulch to ensure moisture to avoid the fruits cracks in Litchi. Ensure moisture in citrus, mango and Kinow orchards.
- **Floriculture:**
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, continue earthing up operation in gladiolus and disbudding in carnation, transplant the bulbs of gladiolus and rajnigandha. It is optimum time for raising nursery of summer annuals like gladiolus, portulaca, gomphrina and china aster etc. Complete pinching and staking in carnation.
- **Apiculture**
- In Himachal Pradesh, insert the brood chamber without frame for ensuring aeration. Dust sulphur on sealed brood in the colony and not on larvae to control mites attack on honeybees. Also insert empty frame /combs for egg laying to the queen as the population starts builds up.
- **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, maintain water level of five feet in fish ponds. 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.

Detailed NAAS Bulletin is available in www.imdagrimet.gov.in