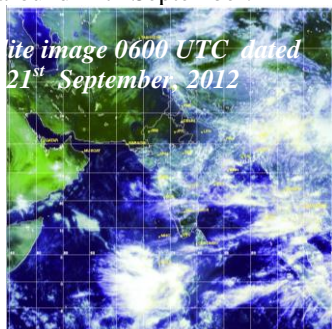


- The southwest monsoon has been vigorous over Assam & Meghalaya and Arunachal Pradesh and active over Andaman & Nicobar Islands and SubHimalayan West Bengal & Sikkim during past 24 Hrs ending at 0830 Hrs IST of today.
- Satellite imagery and surface observation indicate considerable decrease in moisture over extreme west Rajasthan, west Haryana and Punjab making conditions conducive for withdrawal of Southwest monsoon from West Rajasthan and adjoining areas around 24th September.



In the following sub-divisions moisture stress condition prevailed during earlier weeks due to deficient rainfall and as a result, contingent planning has been adopted in the agromet advisory. Rainfall situation is improved during last few weeks:

1. **Saurashtra & Kutch:** Farmers are advised to spray 2% urea solution for quick boost up of growth in all crops. Also apply split dose of nitrogen irrespective of crop. In cotton to speed up new growth, spray 10 ppm solution of gibberlic acid (1 g of gibberlic acid in 100 litres of water). Carry out weeding and intercultural operations in groundnut and cotton and in other recently sown crops in North Saurashtra Zone. Carry out intercultural operations and hand weeding in castor and vegetables in South Saurashtra Zone of Gujarat. Apply third dose of top dressing of Nitrogen in cotton @ 40 kg/ha i.e. 88 kg urea/ha after 90 DAS. Carry out intercultural operations, weeding and top dressing of fertilizer in crops sown in July in North West Zone of Saurashtra and Kutch region.
2. **Gujarat region:** In Middle Gujarat Zone, sowing of pigeon pea is recommended in case of failure of cotton crop. Carry out weeding, intercultural operations and application of fertilizer in crops as there is less possibility of rainfall. Carry out sowing operation of sesame selecting variety like Til Poorva-1 as a contingency planning in North Gujarat Zone. Carry out intercultural operation and hand weeding in castor, cotton and apply supplementary dose of nitrogen @ 40 kg / ha. Harvest the matured cowpea pods by hand picking. Carry out hand weeding in newly planted chillies, tomato and brinjal also.
3. **South Interior Karnataka:** Farmers in the Eastern dry zone are advised to undertake transplanting of finger millet and gap filling and intercultural operations in already sown crop. Undertake sowing of South African and Deccan-103 maize for fodder purpose, sowing of minor millets like foxtail millet and cowpea varieties TVX-944, KBC-1 and KBC-2. Also Field bean varieties HA-3 and HA-4 and Horse gram varieties KBH- and PHG-9 may be sown up to 30th September.
4. **North Interior Karnataka:** In North Dry Zone, farmers are advised to undertake sowing of sunflower, *rabi* jowar upto September end. Priority may be given to sowing of fodder crops such as fodder cowpea, maize and bajra. Farmers are advised to keep the land and inputs ready for sowing of chickpea, safflower etc. In North East Dry zone, farmers may undertake sowing of jowar, maize and bajra for fodder purpose. Sunflower can be sown upto end of October under irrigated conditions.
5. **Madhya Maharashtra:** As cotton is at floral bud initiation / flowering / boll formation stage, farmers of North Madhya Maharashtra are advised to spray 4 kg DAP + 2 kg Urea / acre for better development of cotton boll. As green gram and black gram are at pod maturity stage, farmers of Madhya Maharashtra are advised to complete harvesting of already matured pods. They are also advised to undertake sowing of *rabi* jowar and safflower after harvesting of matured pulses.
6. **Marathwada:** As green gram and black gram are at pod maturity stage, farmers of Marathwada are advised to complete plucking of already matured pods. They are also advised to complete preparatory tillage and field may be kept ready for sowing of *rabi* jowar, safflower after harvesting of matured pulses.
7. **Haryana:** Rice is at flowering / grain formation stage. Mild attack of sheath blight, hopper and severe attack of leaf folder on rice reported in Western Zone. Spray the crop (in clear weather) with 250 ml Monocrotophos or dusting of Methyl parathion @ 10 kg / acre may be done. Conserve moisture in field for sowing of raya and gram in September. Farmers are advised to monitor cotton crop field regularly and give irrigation as per demand during flowering. Agromet advisories for remaining met subdivisions are mentioned in page no 2.



Issued by

National Agrometeorological Advisory Service Centre, Agricultural Meteorology Division,
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The bulletin is also displayed in the website (<http://www.imdagrimet.gov.in>) of the Division

Executive Summary

Significant rainfall occurred over all the districts of East Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, West Bengal, Sikkim and Coastal Karnataka, most of the districts in Arunachal Pradesh, Assam, Himachal Pradesh, Punjab, West Uttar Pradesh, Orissa and Kerala, many districts in Haryana, Jammu & Kashmir, East Madhya Pradesh, Chhattisgarh and Konkan and over a few districts in Gujarat region, Saurashtra & Kutch and Coastal Andhra Pradesh. Rainfall for the above mentioned States during last week is given in Annexure – I.

Rainfall is likely to occur at most places over Assam, Meghalaya, Arunachal Pradesh, Sub Himalayan West Bengal and Sikkim and at many places over Orissa, Chhattisgarh, Vidarbha, Telangana, Coastal Andhra Pradesh, Nagaland, Manipur, Mizoram and Tripura. Farmers are advised to postpone irrigation, intercultural operation and application of fertilizers and plant protection measures in these regions. Heavy to very heavy rainfall would occur at a few places with extremely heavy falls at one or two places over Assam, Meghalaya and Arunachal Pradesh and at one or two places over Sub Himalayan West Bengal and Sikkim during next 48 hours. Farmers in these regions are advised to arrange for adequate drainage in standing crops. Weather forecast map is provided in Annexure – II.

In the following sub-divisions moisture stress condition prevailed during earlier weeks due to deficient rainfall and as a result, contingent planning has been adopted in the agromet advisory. Rainfall situation is improved during last few weeks:

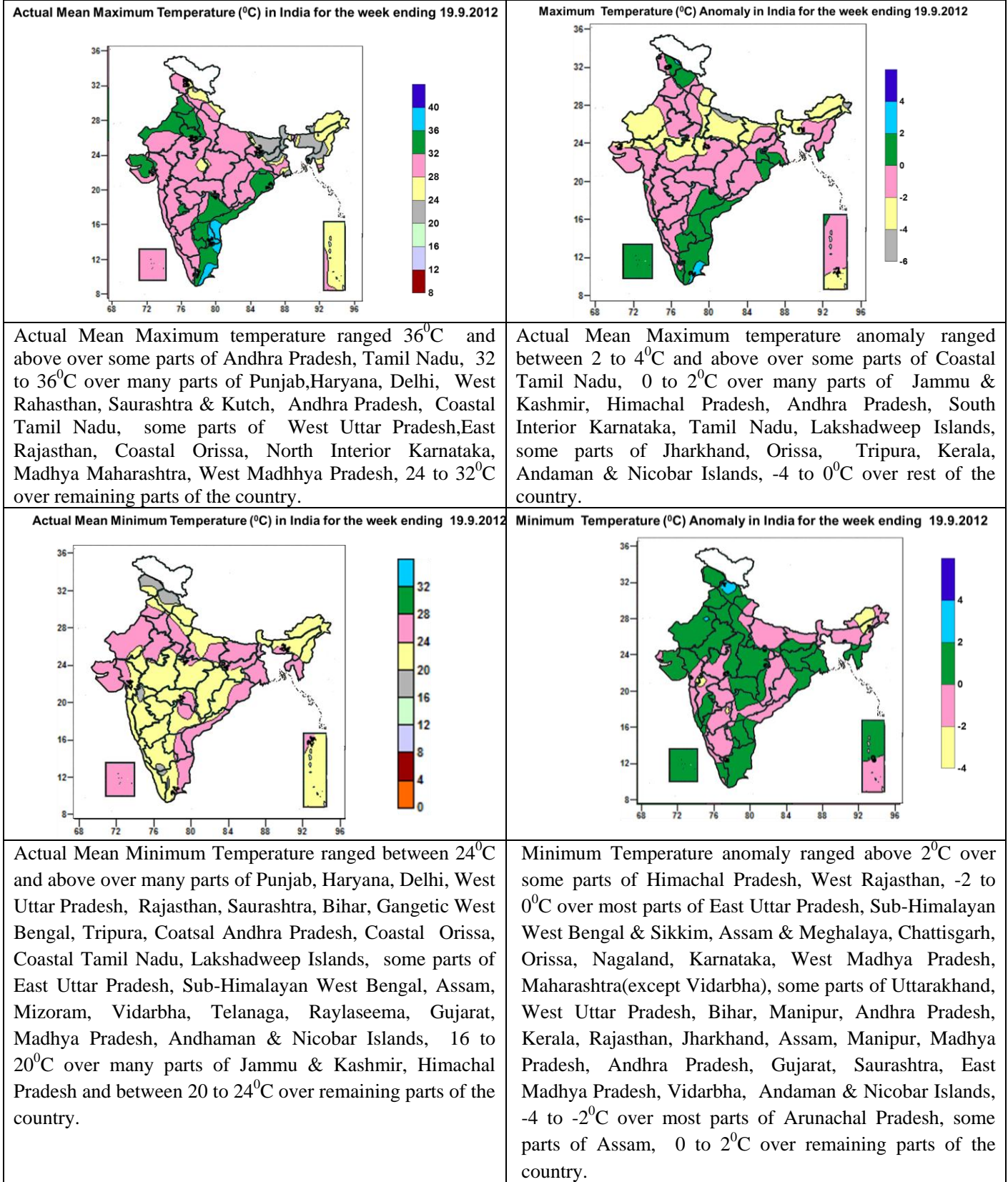
8. **Delhi:** Sowing of coriander, spinach and radish is in progress. Chrysanthemum and marigold may be transplanted in raised bed. Sowing of gladiolus may be done in prepared fields. Water logging should be avoided in nursery by doing proper drainage. Sowing of tomato, chilli, brinjal, cauliflower, rainy season cucurbits, coriander, spinach, radish and carrot is in progress. Present weather conditions are highly favourable for infestation of blast disease in rice. False smut may also appear in rice. Weather conditions are congenial for attack of yellow mosaic disease in soybean, urad and green gram. Farmers are advised to monitor the crops and apply plant protection measures if infestation exceeds ETL.
9. **West Rajasthan:** Good rainfall occurred during last week. As per contingent plan, sowing of carrot, planting of tomato, brinjal, onion, cabbage and chillies continued. Sowing of taramira may be done during 10th September - 15th October and undertake weeding in standing crops. Prepare field for sowing of the *rabi* crops.
10. **Bihar:** Farmers are advised to continue land preparation and sowing of September arhar and planting of cauliflower and shakarkand. Undertake application of Nitrogen @ 20 kg per hectare after hand weeding in the rice field. Undertake nursery sowing of tomato and cabbage. Apply nitrogenous fertilizers in *kharif* maize.

In remaining parts of the country, due to receipt of adequate rainfall in terms of quantity and distribution in relation to agricultural operations as well as water requirements of the crops, sowing of *kharif* crops and state of the crops are normal, which is stated below:

11. **Rayalaseema:** In late sown groundnut, red hairy caterpillar / *S. litura* incidence is observed. To control the pest, farmers are advised spread poison bait (rice brawn @ 10kg, jaggary 1 kg, thiodicarb @ 250gm) equally in field during evening times and dig trenches around the field to avoid spreading. Top dressing of 30- 40 days old castor with urea @ 25 Kg per acre is recommended.
12. **East Uttar Pradesh:** Excess water (if any) should be drained out especially from the fields of maize, pigeon pea and sesamum. Also advised for plantation of fruit saplings in orchards. Second top dressing of nitrogen fertilizer at Panicle initiation stage in early / medium duration transplanted rice and intercultural operation in pigeon pea, urd, mung, transplanting of cauliflower, brinjal, chilli, tomato, sugarcane and fertilizer application in sugarcane are in progress.
13. **West Uttar Pradesh:** Transplanting of brinjal, chillies may be done. Drain out excess water from the field. Carry out Weeding, top dressing and spraying insecticide in rice.
14. **Nagaland, Manipur, Mizoram & Tripura, Arunachal Pradesh and Assam & Meghalaya:** In already sown black gram / green gram crops, one weeding should be done at 20-25 days after sowing. The crop should be thinned out simultaneously to maintain the required spacing. Undertake land preparation and sowing of early cauliflower and radish.
15. **Sub Himalayan West Bengal:** Start land preparation for transplanting early cauliflower. Farmers are also advised to harvest maize.

16. **Sikkim:** Farmers are advised to maintain 3-5 cm standing water in flowering stage of rice.
17. **Gangetic West Bengal:** Start sowing of seeds of winter vegetables like radish, broccoli cauliflower etc. Farmers are also advised to maintain 5-7 cm depth of water in *aman* rice and irrigate as per requirement.
18. **Orissa:** Drain out excess water from fields of maize and pulses. Undertake sowing of green gram, black gram and horse gram in fallow up and up-medium land.
19. **Punjab:** Attack of white fly, jassids and tobacco caterpillar on cotton and leaf folder and stem borer at some places in rice in Western Zone of Punjab. Weather is congenial for spread of Sheath blight in rice in Central Plain Zone of Punjab. Drain out excess water from the fields in cotton field. Sow maize for fodder. Weather conditions are ideal for sowing early varieties of vegetables, garlic, palak and transplanting of cauliflower.
20. **Himachal Pradesh:** Excess rain water may be removed from the field immediately. Complete nursery sowing of cauliflower. In mid hill region, transplanting of cauliflower may also be completed.
21. **Jharkhand:** Farmers are advised to undertake sowing of til, kulthi, green pea and grow African marigold or French marigold. After harvesting of moong and urad, undertake sowing of toria immediately in that field.
22. **Uttarakhand:** Transplanting of cauliflower, cabbage, knoll-khol and broccoli may be done during the evening hours and also drainage out excess water. Start sowing of vegetable pea and potato. Continue transplanting of seasonal grasses for fodders to animals as their will be sufficient soil moisture. Avoid water logging; maintain proper drainage to prevent the root damage in maize, bajra, jowar and vegetable crops. Planting of fruits as well as timber crop should be done.
23. **Jammu & Kashmir:** Continue nursery sowing / transplanting of knol-khol, cabbage and cauliflower and sowing of bhindi, radish, pumpkin, bitter gourd, bottle gourd, sponge gourd, carrot and turnip. Undertake sowing of toria, berseem crop and harvesting of moong crop. Drain out stagnant water from maize field.
24. **East Rajasthan:** Carry out weeding, hoeing in timely sown crops like cluster bean, pearl millet, sesame, moong and groundnut. Raise nursery of early cauliflower and do the planting of early radish. Sowing of Desi carrot may be done. Undertake harvesting of bajra and jowar.
25. **East Madhya Pradesh:** Incidence of Bihar hairy caterpillar, tobacco caterpillar and semilooper is seen in the soybean. Apply plant protection measures if infestation exceeds ETL.
26. **West Madhya Pradesh:** Drain out excess water from rice and maize fields. Undertake intercultural operations and application of plant protection measures in sugarcane, maize, papaya, guava etc.
27. **Vidarbha:** Spray 2% Urea or DAP @ 200g in 10 litres water in cotton at flowering stage. As green gram and black gram are at pod maturity stage, farmers of west Vidarbha are advised to complete plucking of already matured pods. They are also advised to complete preparatory tillage and field may be kept ready for sowing of *rabi* jowar, safflower after harvesting of matured pulses.
28. **Chhattisgarh:** Farmers are advised to undertake sowing of horse gram and transplanting of vegetables crops.
29. **Konkan:** Maintain water level of 5 cm in rice field.
30. **Coastal Andhra Pradesh:** In North Coastal Andhra Pradesh, blast and sheath blight disease is observed in some parts on rice crop. Take appropriate plant protection measures. In South Coastal Andhra Pradesh, Where ever transplanting of rice could not be done due to non-availability of water farmers are advised to go for alternate crops like maize/ jowar / blackgram / green gram / *rabi* redgram. Undertake foliar application of 2% urea / 2% DAP / 2% KNO₃ at square formation and flowering stages of cotton crop.
31. **Telangana:** Incidence of white fly, tobacco streak virus in cotton and semilooper in castor is noticed in parts of the region. Take appropriate plant protection measures.
32. **Tamil Nadu:** Undertake nursery sowing of *samba* rice.
33. **Coastal Karnataka:** Drain out excess water in rice fields.
34. **Kerala:** Drain out water from rice field 10 days before harvesting.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 19.09.2012



Distribution of rainfall of the country during week ending on 19.09.2012

State/Districts	Actual mm	Dep %
Arunachal Pradesh		
Anjaw	**	**
Changlang	159.7	19
East Kameng	78.4	9
East Siang	425.5	134
Kurung Kumey	**	**
Lohit	211.7	137
Lower Dibang Valley	**	**
Lower Subansiri	111	171
Papumpara	220.1	154
Tawang	122	-18
Tirap	113.2	-1
Upper Dibang Valley	143	57
Upper Siang	280	65
Upper Subansiri	39.2	-12
West Kameng	249.6	68
West Siang	207	111
Assam		
Baksa	126.1	-22
Barpeta	108.4	-33
Bongaigaon	85.2	-22
Cachar	82.5	4
Chirang	171.5	56
Darrang	0	-100
Dhemaji	209	91
Dhubri	122.4	3
Dibrugarh	141	59
East Garo Hills	**	**
East Khasi Hills	295.4	54
Goalpara	133.1	62
Golghat	96.4	68
Hailakandi	113.8	64
Jaintia Hills	157	-22
Jorhat	76.7	30
Kamrup(Metro)	28.1	-41
Kamrup	36.7	-23
Karbi Anglong	56.4	45
Karimganj	78.7	-38
Kokrajhar	288.7	148
Lakhimpur	152.5	39
Morigaon	115.6	123
N.C.Hills	83.4	109
Nowgong	103.7	109
Nalbari	98.8	18
Ribhoi	96.7	16
Sonitpur	63	-13
Sibsagar	87.7	84
South Garo Hills	115	18
Tinsukia	225.6	181
Udalgiri	269.2	260
West Garo Hills	81.4	-16
West Khasi Hills	**	**
Himachal Pradesh		
Bilaspur	135.2	297
Chamba	126.6	432
Hamirpur	169.9	407
Kangra	180.3	224
Kinnaur	12.7	0
Kullu	106.2	356
Lahaul and Spiti	59.8	166

State/Districts	Actual mm	Dep %
Mandi	107.5	230
Shimla	63.2	180
Sirmaur	72.7	75
Solan	109.4	218
Una	187.9	500
Punjab		
Amritsar	96.3	629
Barnala	31.3	148
Bhatinda	7.7	-45
Faridkot	30	598
Fatehgarh Saheb	3	-81
Ferozpur	18.2	34
Gurdaspur	129.7	349
Hoshiarpur	85.9	228
Jalandhar	72	248
Kapurthala	234.7	1530
Ludhiana	42	89
Mansa	21.6	82
Moga	64.5	159
Muktesar	5	-51
Nawashahar	77.8	215
Patiala	45.7	161
Ropar	129.5	364
Sangrur	38.1	202
Mohali	163.8	836
TarnTaran	38.5	191
Haryana		
Ambala	66.7	139
Bhiwani	50.1	298
Chandigarh	31	3
Faridabad	79.1	210
Fatehabad	19	57
Gurgaon	30.2	31
Hissar	15.8	7
Jhajar	23.8	63
Jind	17.2	20
Katihah	16	-35
Karnal	49.6	172
Kurukshetra	23.6	7
Mahendragarh	33.4	148
Mewat	21.4	29
Palwal	31	22
Panchkkula	101.1	175
Panipat	30.7	56
Rewari	41.8	168
Rohtak	14.5	-20
Sirsa	6.7	-56
Sonepat	27.2	30
Yamunanagar	82.6	149
New Delhi	51.8	73
Jammu & Kashmir		
Anantnag	42.9	255
Badgam	17.2	187
Bandipore	**	**
Baramula	54.5	445
Doda	80.8	708
Ganderwal	53.4	854
Jammu	102.5	202
Kargil	0	-100
Kathua	57.8	19
Kistwar	**	**
Kulgam	40.2	232

State/Districts	Actual mm	Dep %
Kupwara	66.7	911
Ladakh(Leh)	0.7	-49
Poonch	132	256
Pulwama	12.6	157
Rajouri	10.6	-71
Ramban	104.2	942
Reasi	114.3	190
Samba	126.7	274
Shopian	21	329
Srinagar	16.9	201
Udhampur	100.8	156
East Madhya Pradesh		
Anuppur	32.6	-43
Balaghat	39.2	-20
Chhatarpur	70.5	41
Chindwara	35.4	-20
Damoh	12.3	-78
Dindori	111.8	226
Jabalpur	6.3	-87
Katni	18.5	-63
Mandla	23.6	-56
Narsingpur	4.4	-93
Panna	160.2	187
Rewa	96.2	100
Sagar	4.2	-93
Satna	78.2	79
Seoni	37.1	-31
Shahdol	82.3	79
Sidhi	165	226
Singrauli	244.5	430
Tikamgarh	17.5	-58
Umariya	34	-37
West Madhya Pradesh		
Alirajpur	6.2	-78
Asoknagar	3.8	-92
Badwani	7.9	-70
Betul	3	-95
Bhind	75.6	114
Bhopal	5.7	-86
Burhanpur	31.8	-16
Datia	36.9	-13
Dewas	11.8	-68
Dhar	5.2	-85
Guna	7.7	-80
Gwalior	65.7	47
Harda	0.3	-99
Hosangabad	17.3	-75
Indore	5	-87
Jhabua	6.1	-77
Khandwa	7.7	-81
Khargone	4.5	-85
Mandsaur	4.3	-81
Morena	36	4
Neemuch	14.1	-40
Raisen	12.8	-77
Rajgarh	1.4	-95
Ratlam	7.2	-75
Sehore	11.1	-72
Shajapur	4.8	-84
Sheopur Kalani	13.3	-42
Shivpuri	21.7	-42
Ujjain	3.1	-90

State/Districts	Actual mm	Dep %
Vidisha	0.9	-98
Chattisgarh		
Bastar	78.3	57
Bijapur	17.7	-61
Bilaspur	26.2	-47
Dantewara	77.6	80
Dhamtari	10.0	-81
Durg	12.4	-73
Janjgir	78.8	77
Jashpurnagar	57.8	17
Kanker	21.7	-63
Korba	74.6	49
Koriya	41.0	-17
Kawardha	15.0	-59
Mahasumund	16.7	-59
Narayanpur	10.9	-78
Raigarh	73.0	48
Raipur	60.7	43
Rajandgaon	5.0	-89
Surguja	97.3	114
East Uttar Pradesh		
Allahabad	291.1	474
Ambedkar Nagar	173.4	330
Azamgarh	104.1	39
Bahraich	154.6	254
Ballia	242.8	446
Balrampur	172	213
Banda	124.5	205
Barabanki	207	272
Basti	241.3	308
Chandauli	47.4	33
Deoria	200.3	224
Faizabad	158.2	178
Farrukhabad	108.3	165
Fatehpur	142.5	181
Gazipur	148.3	126
Gonda	170.7	189
Gorakhpur	361.7	318
Hardoi	198.2	308
Jaunpur	137.2	106
Kannauj	80.6	62
Kanpur City	80.9	84
Kanpur Dehat	55.3	49
Kaushambi	150.8	265
Kheri	214.2	430
Kushi nagar	211.5	157
Lucknow	165.5	229
Maharajganj	138.1	71
Mau	173.7	141
Mirzapur	435.1	509
Pratapgarh	169.3	207
RaiBareilly	94.7	99
Sahuji Maharajnagar	157	172
Sant Kabirnagar	444	628
Sant Ravidas Nagar	430	1108
Shrawasti	151.6	247
Sidharthnagar	186.8	221
Sitapur	147.1	224
Sonbhadra	358.9	684
Sultanpur	137.8	173
Unnao	191.3	326
Varanasi	112	66

State/Districts	Actual mm	Dep %
West Uttar Pradesh		
Agra	54.2	42
Aligarh	67.3	65
Auraiya	15.1	-62
Badaun	40.8	6
Baghpat	35.8	43
Bareilly	136.2	253
Bijnor	125.9	188
Bulandsahar	33	-19
Etah	57.3	41
Etawah	31.4	-27
Firozabad	27.3	-52
GBNagar	26	-34
Ghaziabad	65.5	80
Hamirpur	64.6	27
Jalaun	99.7	95
Jhansi	46.6	-11
Jotirba Phule Nagar	57.1	20
Kanshiramnagar	100	106
Lalitpur	12	-78
Mahamaya Nagar	30.5	-21
Mahoba	61	38
Mainpuri	24.6	-44
Mathura	85.8	178
Meerut	42.6	-2
Moradabad	48.9	16
Muzzaffarnagar	37.4	2
Pilibhit	162.6	216
Rampur	54	22
Saharanpur	145.7	266
Shahjahanpur	217	422
Uttarakhand		
Almora	106.4	155
Bageshwar	192	360
Chamoli	123.3	328
Champawat	316	556
Dehradun	203.5	214
Garhwal Pauri	102.6	103
Garhwal Tehri	35.6	-22
Haridwar	137.4	259
Nainital	282.2	309
Pithorgarh	216.1	257
Rudraprayag	66.1	20
Udham Sing Nagar	95.6	72
Uttarkashi	43	-36
Bihar		
Araria	183.8	158
Arwal	137	146
Aurangabad	154.6	162
Banka	70.3	49
Begusarai	135.5	233
Bhabua	213.4	250
Bhagalpur	91.7	76
Bhojpur	136	122
Buxar	121.6	84
Darbhanga	244.8	498
East Champaran	269.5	403
Gaya	97	91
Gopalganj	212.3	208
Jahanabad	134.7	100
Jamui	69	30
Kathihar	187.2	224
Khagadia	237.2	195

State/Districts	Actual mm	Dep %
Kishanganj	246.4	162
Lakhisarai	132	168
Madhepura	98.2	68
Madhubani	71.5	40
Monghyar	253.2	415
Muzaffarpur	297.8	390
Nalanda	247.2	364
Nawada	57.5	26
Patna	198.4	282
Purnea	139.2	94
Rohtas	153.3	129
Saharsha	75.1	54
Samstipur	147	177
Saran	251.6	303
Sheikpura	78.3	111
Sheohar	87	88
Sitamarhi	381.5	726
Siwan	449.7	575
Supaul	79.3	62
Vaishali	107.3	112
West Champaran	297.5	239
Jharkhand		
Bokaro	42	-24
Chatra	53.5	-14
Deoghar	87.1	74
Dhanbad	96.8	71
Dumka	194.1	341
East Singbhum	75.4	55
Garhwa	59	25
Giridih	67.7	49
Godda	79.1	58
Gumla	117.7	98
Hazaribagh	58.2	13
Jamtara	117.1	69
Khunti	34.6	-34
Koderna	48	14
Latehar	77.1	39
Lohardagga	46.7	1
Pakur	91.9	42
Palamau	111.4	149
Ramgarh	45.2	-12
Ranchi	101.5	93
Sahebganj	335.8	372
Saraikela	64.1	37
Simdega	47.4	-44
West Singbhum	90.4	118
East Rajasthan		
Ajmer	9.4	41
Alwar	33.8	135
Banswara	13.5	-41
Baran	9.7	-55
Bharatpur	76.9	275
Bhilwara	11.8	20
Bundi	4.1	-69
Chittorgarh	10.2	-29
Dausa	12.7	-22
Dholpur	43.7	47
Dungarpur	27.2	70
Jaipur	11.2	-3
Jhalawar	1.4	-94
Jhunjhunu	10.6	5
Karauli	25.9	22
Kota	11.4	-25

State/Districts	Actual mm	Dep %
Pratapgarh	24.4	0
Rajsamand	15	50
Sawai Madhopur	17.6	1
Sikar	4	-54
Sirohi	24.3	37
Tonk	19.9	67
Udaipur	17.8	12
West Rajasthan		
Barmer	10.1	102
Bikaner	0.7	-87
Churu	10.5	44
Hanumangarh	13.4	120
Jaisalmer	11.1	346
Jalore	20.5	259
Jodhpur	15	276
Nagaur	8	23
Pali	18.7	143
Sri Ganganagar	11.5	179
Gujarat Region		
Ahmedabad	26	45
Anand	9.1	-48
Banaskantha	31	70
Baroda	11.5	-60
Broach	13	-42
DNH	60.6	103
Dahod	2.3	-92
Daman	67	124
Dangs	15.2	-69
Gandhinagar	15.8	17
Kheda	10.4	-49
Mehsana	27.8	25
Narmada	18.9	-37
Navsari	49.8	21
Panchmahal	8.1	-71
Patan	22.4	34
Sabarkantha	26.3	22
Surat	46.4	65
Tapi	37.6	18
Valsad	42.2	9
Saurashtra, Kutch & Diu region		
Amreli	8.9	-53
Bhavnagar	7.8	-54
Diu	18	76
Jamnagar	47.8	286
Junagarh	17.1	-18
Kutch	30.1	114
Porbandar	17.6	-17
Rajkot	21.6	18
Surendranagar	27.3	117
Maharashtra		
Konkan & Goa		
Goa	26.8	-55
Mumbai	60.1	-18
Raigad	63.7	-1
Ratnagiri	60.7	5
Sindhudurg	29.1	-56
Thane	50.6	-4
Madhya Maharashtra		
Ahmednagar	1.9	-93
Dhule	4.3	-76
Jalgaon	6.2	-75
Kolhapur	23.5	-28
Nandurbar	12	-48







State/Districts	Actual mm	Dep %
Nasik	13.3	-57
Pune	6.9	-79
Sangli	3.6	-88
Satara	14.3	-50
Solapur	4.1	-89
Marathwada		
Aurangabad	3.3	-89
Beed	2.2	-94
Hingoli	2.5	-91
Jalna	1.8	-94
Latur	0.5	-99
Nanded	1.9	-94
Usmanabad	0.3	-99
Parbhani	5.2	-84
Vidarbha		
Akola	4	-87
Amraoti	3.7	-89
Bhandara	9.2	-78
Buldhana	4.4	-84
Chandrapur	13.6	-66
Gadchiroli	25	-29
Gondia	9.5	-80
Nagpur	5.1	-86
Wardha	2.2	-93
Washim	3.8	-90
Yeotmal	1.3	-95
Orissa		
Angul	47.6	14
Balasore	30.2	-48
Bargarh	76.1	65
Bhadrak	14.6	-70
Bolangir	53.8	31
Boudh	45.6	-4
Cuttack	45	5
Deogarh	139.3	208
Dhenkanal	46.4	14
Gajapati	28.9	-59
Ganjam	34.8	-22
Jagatsingpur	58.8	8
Jajpur	21	-64
Jharsuguda	67.1	30
Kalahandi	39	-16
Kandhamal	33.1	-30
Kendrapara	21	-56
Keonjhar	58.2	27
Khurda	17.3	-65
Koraput	32.3	-43
Malkangiri	98.5	136
Mayurbhanj	62.4	14
Nawapara	6.8	-82
Nawarangpur	87.7	75
Nayagarh	62.4	30
Puri	13.1	-74
Rayagada	30.4	-40
Sambalpur	107.8	139
Sonepur	36.8	-12
Sundargarh	98.4	121
West Bengal		
GWB		
Bankura	87.4	106
Birbhum	37	-34
Burdwan	48.5	-4
East Midnapore	92.1	91

State/Districts	Actual mm	Dep %
Hooghly	49.5	0
Howrah	47.7	-24
Kolkata	125.7	131
Murshidabad	93.3	60
Nadia	56.1	43
24 Pargana (N)	63.5	5
Purulia	81.1	54
24 Pargana (S)	41.4	-37
West Midnapore	42.1	-17
SHWB		
Cooch Behar	339.9	183
Darjeeling	293.2	150
East Sikkim	153.5	100
Jalpaiguri	288.5	111
Malda	94.9	61
North Dinajpur	107.2	27
North Sikkim	114.3	34
South Dinajpur	117.1	60
South Sikkim	208.9	173
West Sikkim	176.0	107
Karnataka		
Coastal Karnataka		
Dakshin Kannada	86.3	52
Udupi	90.7	25
Uttar Kannada	56.5	7
North Interior Karnataka		
Bagalkote	4.0	-89
Belgaum	6.0	-79
Bidar	1.6	-96
Bijapur	0.8	-98
Dharwad	4.6	-86
Gadag	2.4	-93
Gulbarga	7.4	-83
Haveri	11.9	-58
Koppal	5.6	-87
Raichur	7.4	-79
Yadgir	1.2	-97
South Interior Karnataka		
Bangalore Rural	0.2	-99
Bangalore Urban	12.6	-73
Bellary	7.3	-81
Chamarajnar	4.2	-88
Chichballapur	8.8	-79
Chickmagalur	20.4	-44
Chitradurga	2.5	-91
Davangere	11.5	-67
Hassan	6.9	-75
Kodagu	47.3	19
Kolar	4.1	-90
Mandya	7.2	-79
Mysore	13.7	-53
Ramnagara	13.6	-74
Shimoga	31.8	25
Tumkur	12.9	-68
Kerala		
Alappuzha	75.6	31
Kannur	79.3	123
Ernakulam	89.4	54
Idukki	51.5	-9
Kasaragod	88.2	82
Kollam	37.0	-16
Kottayam	78.0	46
Kozhikode	142.7	246

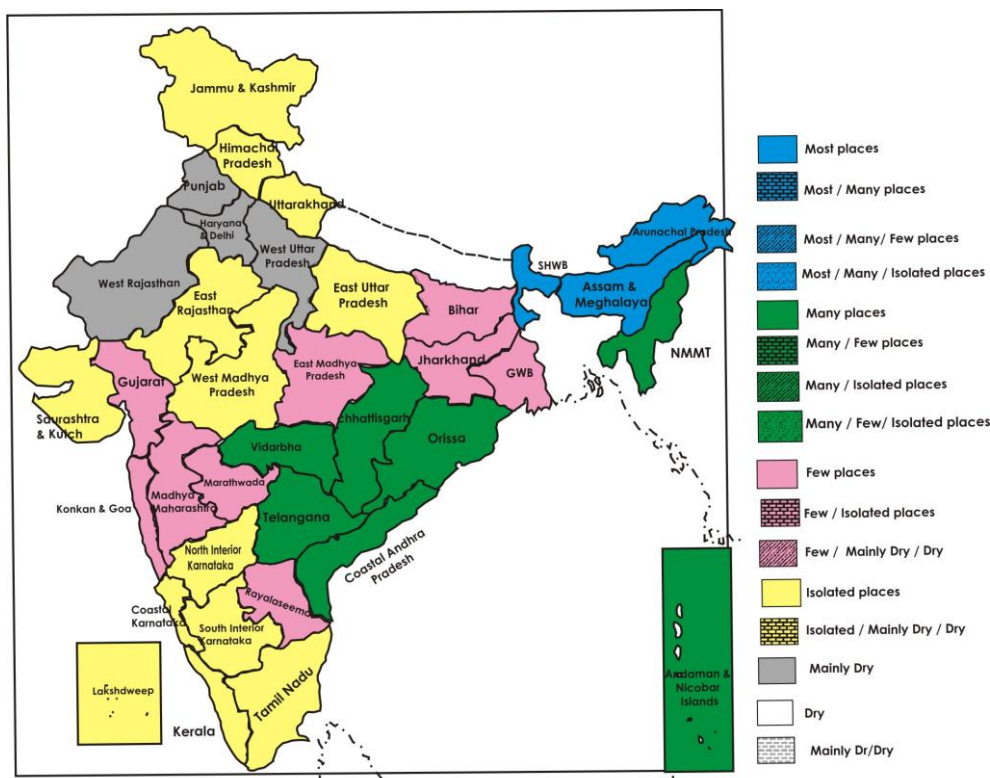
State/Districts	Actual mm	Dep %
Malappuram	55.4	33
Palakkad	32.2	5
Pathanamthitta	29.2	-42
Thiruvananthapuram	26.8	6
Thrissur	67.2	29
Wyanad	54.3	25
Tamil Nadu		
Ariyalur	17.4	-52
Chennai	50.1	91
Coimbatore	1.6	-92
Cuddalore	10.9	-66
Dharmapuri	0	-100
Dindigul	13.6	-62
Erode	7.6	-76
Kanchipuram	20.9	-34
Kanyakumari	4.8	-76
Karikal	94.6	254
Karur	0	-100
Krishnagiri	0.6	-99
Madurai	30.1	-10
Nagapattinam	26.8	35
Namakkal	11.8	-70
Nilgiris	78.1	112
Perambalur	14	-62

State/Districts	Actual mm	Dep %
Puducherry	0.4	-99
Pudukottai	24.9	-11
Ramanathapuram	3.6	-74
Salem	26.8	-44
Sivaganga	31.4	52
Thanjavur	27.4	-2
Theni	2.9	-83
Tirunelveli	0	-100
Tirupur	1.2	-95
Tiruvallur	56.5	77
Tiruvannamalai	20.5	-55
Tiruvarur	26.6	28
Toothukudi	0	-100
Trichy	8.6	-80
Vellore	8.6	-81
Villupuram	0.1	-99
Virudhunagar	4.3	-81
Andhra Pradesh		
Coastal Andhra Pradesh		
East Godavari	32.7	-10
Guntur	35.6	24
Krishna	20.5	-37
Nellore	3.3	-88
Prakasam	4.5	-82

State/Districts	Actual mm	Dep %
Sirkakulam	38.9	-19
Visakhapatnam	29.3	-33
Vizianagram	28.4	-46
West Godavari	15.7	-57
Telangana		
Adilabad	18.7	-43
Hyderabad	13.2	-60
Karimnagar	8.9	-72
Khammam	12.5	-62
Mehabubnagar	0.5	-99
Medak	9.5	-77
Nalgonda	8.9	-69
Nizamabad	11.1	-64
Rangareddy	15.4	-61
Warangal	16.4	-52
Rayalaseema		
Anantapur	1.7	-95
Chittoor	6.1	-83
Cuddapah	0	-100
Kurnool	2.2	-93

	(20% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-20 to -59%) deficient rainfall		** Data not available

Weather Forecast (Valid upto 0830 hours of 23rd September, 2012)



Major Feature of Weather Forecast up to 0830 hours IST of 23rd September, 2012

- Rain/thundershowers would occur at most places over Assam & Meghalaya, Arunachal Pradesh and Sub Himalayan West Bengal & Sikkim.
- Rain/thundershowers would occur at many places over Odisha, Chhattisgarh, Vidarbha, north Andhra Pradesh, Nagaland Manipur, Mizoram & Tripura and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at a few places over Bihar, Jharkhand, Gangetic West Bengal, east Madhya Pradesh, Gujarat region, Madhya Maharashtra, Konkan & Goa, Marathawada and Rayalaseema.
- Rain/thundershowers would occur at one or two places over rest parts of the country outside west Rajasthan, Punjab, Haryana and west Uttar Pradesh where weather would be mainly dry.
-

Weather Warning during next 3 days

- Heavy to very heavy rainfall would occur at a few places with extremely heavy falls at one or two places over Assam & Meghalaya and Arunachal Pradesh during next 48 hours.
- Heavy to very heavy rainfall would occur at one or two places over Sub-Himalayan West Bengal & Sikkim during next 48 hours.

Weather Outlook for subsequent 4 days up to 0830 hours IST of 27th September, 2012

- Rain/thundershowers would occur at many places over northeastern states and Andaman & Nicobar islands and at a few places over east India, north Andhra Pradesh and Chhattisgarh.
- Weather would be mainly dry over northwest India.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Most of the districts of Arunachal Pradesh and Assam received significant rainfall during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at most places over Assam & Meghalaya, Arunachal Pradesh and at many places over Nagaland, Manipur, Mizoram and Tripura during the period.
- **Warning:** Heavy to very heavy rainfall would occur at a few places with extremely heavy falls at one or two places over Assam & Meghalaya and Arunachal Pradesh during next 48 hours.
- **Advisories:**
 - As most of the districts of Arunachal Pradesh and Assam received significant rainfall during last week and rain / thundershowers would occur at most places over Assam & Meghalaya, Arunachal Pradesh and at many places over Nagaland, Manipur, Mizoram and Tripura during the period, farmers are advised to postpone sowing operation as well as irrigation, intercultural operations, application of fertilizers and plant protection measures to the crops in these States.
 - As heavy to very heavy rainfall would occur at a few places with extremely heavy falls at one or two places over Assam & Meghalaya and Arunachal Pradesh during next 48 hours, farmers are advised to arrange for drainage facilities to avoid stagnation of water in the crop fields.
 - Farmers in Hill Zone of Assam are advised to undertake land preparation and sowing of black gram and green gram, transplanting of early cauliflower and also nursery sowing of winter vegetables.
 - Farmers in lower Brahmaputra Valley Zone of Assam are advised for nursery sowing of early cauliflower, early cabbage, pumpkin, garlic and winter brinjal and also harvesting of matured jute. In already sown black gram / green gram crops, one weeding should be done at 20-25 days after sowing. The crop should be thinned out simultaneously to maintain the required spacing.
 - Farmers in Upper Brahmaputra Valley Zone of Assam are advised to undertake sowing of radish, early cauliflower, black gram and green gram.
 - Farmers in North Bank Plain Zone of Assam are advised to undertake land preparation and sowing of early cauliflower and radish. Select high lands having sandy-loam for sowing of green gram and black gram.
 - Farmers in Central Brahmaputra Valley Zone are advised to undertake intercultural operation of *kharif* sesame. Farmers are also advised to undertake nursery bed preparation for early cole crops, winter brinjal and raddish. Harvesting of *Olitorius* jute may be continued.
 - Farmers in Barak Valley Zone of Assam are advised to start preparing nursery for raising seedlings of brinjal and field preparation for sugarcane (Autumn planting). Select upland sandy loam soil for the cultivation of early cauliflower.
 - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to harvest matured maize, black gram, green gram and early sown rice and jhum rice. Farmers are also advised to undertake nursery preparation for early cruciferous crops in raised bed.
 - In Mild Tropical Hill Zone of Mizoram, farmers are advised to complete land preparation and sowing of black gram and nursery sowing of tomato and cole crops.
 - In Mild Tropical Hill Zone of Nagaland, farmers are advised to harvest *jhum* rice and also matured maize. Remove the weeds around papaya plants.
 - Farmers in Sub Tropical Plain Zone of Manipur are advised to maintain 5-8 cm of water level in the rice fields, top dressing may be done by applying 33 kg urea / ha. Farmers are also advised land preparation for nursery sowing of cabbage, cauliflower and broccoli. Provide proper drainage in and around soybean crop fields to check any loss due to excess water.
 - In Temperate Sub Alpine Zone of Meghalaya, farmers are advised to undertake nursery raising of cole crops and nursery sowing of French bean and dolichos bean. Farmers are also advised to undertake land preparation and sowing of pea, mustard and garlic in high altitude region. Sowing of *rabi* maize may be initiated in low and medium altitude region.
 - In Mild Tropical Plain Zone of Tripura, farmers are advised for land preparation for transplanting the seedling of early cauliflower, radish and brinjal.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.

- In Hill zone of Assam, infestation of rice *Hispa* in *sali* rice at tillering stage may occur; Spraying with Quinolphos @ 2 teaspoonful / 5 litres of water may be carried out, if the infestation is noticed above ETL. Shoot borer may be observed in turmeric and ginger. Spray Rogor 0.05%, if infestation of shoot borer is observed above ETL.
- In Lower Brahmaputra Valley Zone of Assam, attack of *Hispa* and Sheath blight are observed in rice. To control *Hispa* spray 0.02% Chloropyriphos 20 EC or 0.025% Quinalphos 25 EC. Spray Mancozeb (2.5 g / litre of water) or Hexaconazole 5 EC @ 2 ml / litre of water to control sheath blight.
- In Mild Tropical Plain Zone of Tripura, due to prevailing weather conditions, there is chance of attack of sheath blight in upland rice and *aman* rice. To control sheath blight, spray Bavistin 50 WP @ 200 g or Tilt 25 EC or Monceren 250 SC @ 200 ml in 200 liters of water.
- In Sub Tropical Hill Zone of Arunachal Pradesh, fruit drop has been reported from different corners. For management, application of Alphamethrin 0.02 % or Malathion 0.5% at 15 days interval may be carried out. Attack of Gummosis is observed in orchards. Drenching with Ridomil @ 2.5 g per litre of water is advised.
- In Mid Tropical Hill zone of Mizoram, there is chance of attack of hairy caterpillar and tikka disease in groundnut. If incidence of hairy caterpillar is observed, spray Quinolphos 25 EC or Chloropyriphos 20 EC @ 2 ml / litre of water. Carbendazim @ 0.5g / litre of water may be sprayed to control tikka disease.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - In North Bank Plain Zone and Brahmaputra Valley Zone of Assam and Sub Tropical Plain Zone of Manipur and Mid Tropical Zone of Tripura, farmers are advised to vaccinate cattle and buffaloes against FMD, HS and BQ, deworm pigs and vaccinate against swine fever. Farmers are advised to vaccinate poultry against Ranikhet and coccidiosis. Deworm goat and sheep against Fascioliasis and vaccinate against HS.
 - In Mild Tropical Hill Zone of Mizoram and Sub Tropical Plain Zone of Manipur, farmers are advised to deworm cattle against Fascioliosis and Endoparasite, vaccinate poultry against Ranikhet and Coccidiosis, deworm pigs and vaccinate against swine fever.
 - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to protect the birds from cold in the present weather conditions by using gunny bags / plastic sheets around the poultry shed during night, provide heat by lighting with 100 W bulb @ 1 bulb per 20 newly born chicks, also protect the birds against coccidiosis by adding coccineal coccistead @ 1 g per two litres of water.
- **Pisciculture**
 - Farmers in Upper Brahmaputra Valley of Assam are advised to feed mustard, rice polish etc. to fish. Well sieved lime, free of pebbles can also be applied to the fish ponds. Application of urea which will enhance the algal growth and eventually become feed for the fishes can also be practiced.
 - Farmers in Manipur, Mizoram are advised to maintain 1.0-1.5 m water depth in fish ponds.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]

- **Realised Rainfall:** Significant rainfall occurred in all districts of Bihar, Jharkhand, Gangetic West Bengal, Sub Himalayan West Bengal, Sikkim and Orissa (except Bhadrak, Gajapati, Jajpur, Kendrapara, Khurda, Nawapara and Puri) during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at most places over Sub Himalayan West Bengal and Sikkim, many places over Orissa and at a few places over rest of the region.
- **Warning:** Heavy to very heavy rainfall would occur at one or two places over Sub-Himalayan West Bengal & Sikkim during next 48 hours.

Advisories:

- As there was significant rainfall occurred in all districts of Bihar, Jharkhand, Gangetic West Bengal, Sub Himalayan West Bengal, Sikkim, Orissa(except Bhadrak, Gajapati, Jajpur, Kendrapara, Khurda, Nawapara and Puri) during last week, farmers are advised to postpone irrigation to the standing crops. As rain is also likely to occur at most places Sub Himalayan West Bengal and Sikkim and at many places over Orissa, farmers are advised to postpone intercultural operation and application of fertilizers and plant protection measures.

- In South Bihar Alluvial Zone, in the upland areas, where paddy crop could not be transplanted, farmers can start sowing of September pigeon pea, utilizing recent monsoon rainfall. Farmers are also advised to adopt contingent crop planning such as short duration crops (sunflower, maize, urad, bhindi) on upland fields. Sowing of tobacco and vegetables may also be undertaken. Weather is congenial for planting of onion, mango, litchi and guava. Farmers are advised to prepare pits and planting of seedlings may be done. Apply Nitrogenous fertilizers in *kharif* maize as it is at tasseling stage. Manures like vermi-compost, oilcakes, farmyard manures and straw mulch may be applied in between the rows of the maize field to conserve the soil moisture and to reduce weed populations.
- In North West Alluvial Plain Zone of Bihar, farmers are advised for field preparation and sowing of September arhar. Weather condition is congenial for planting of cauliflower and shakarkand. Farmers are advised to prepare field and sow these crops. Taking advantage of rainfall in the last few days, farmers are advised to apply top dressing of nitrogen in the rice crop which is in booting stage. Undertake nursery sowing of tomato and cabbage.
- Farmers of East and South Eastern Coastal Plain Zone of Orissa are advised to go for sowing of pre-*rabi* pulse crops like green gram, black gram, horse gram in the fallow up land and up-medium lands. Farmers are also advised top dressing of N in direct seeded rice. Apply 6-8 Kg/acre under saturated condition.
- Farmers of Western Undulating Zone of Orissa are advised that necessary arrangement should be made to drain out excess water from fields of maize and pulses.
- Farmers of North Central Plateau Zone of Orissa are advised to prepare field for sowing of rainy season vegetables like bhindi (lady's finger), bean, French bean, tomato, cauliflower, cabbage and planting of brinjal.
- Farmers of North Eastern Ghat Zone of Orissa are advised to go for sowing of non-paddy crops like green gram, black gram, sesame and vegetables such as cowpea, okra and cucurbitaceous crops.
- In Central and North Eastern Plateau Zone of Jharkhand, farmers are advised to undertake short duration varieties of arhar, groundnut, urad, turmeric, jowar, soybean and okra for inter cropping. Farmers are also advised to sow til, kulthi, potato, green pea and African marigold or French marigold.
- In Western Plateau Zone of Jharkhand, farmers are advised to complete sowing of different *kharif* crops at an early date with early duration varieties; undertake sowing of short duration varieties of different *kharif* crops like rice, urad, groundnut, arhar, maize and rainy season vegetables like bhindi, bean, French bean, tomato, cauliflower, cabbage, brinjal, chilli etc. Farmers, who have not sown *kharif* crops in upland till now, may sow kulthi or safflower. Farmers, having assured irrigation facility are advised to sow early potato and green peas. After harvesting of mung and urad, farmers may sow toria immediately. Farmers may raise the seedlings of winter vegetables like cauliflower, cabbage, chilli tomato and brinjal etc.
- In Coastal Saline Zone of West Bengal, farmers are advised to complete nursery sowing of brinjal for transplanting them in the next month.
- In New Alluvial Zone of West Bengal, farmers are advised to sow winter vegetables like onion, capsicum, raddish and broccoli etc. For those fields where *kharif* rice was sown, apply 4.5 kg Urea per Bigha as second top dressing when panicle initiation will start.
- Farmers in Laterite and Red Soil Zone of West Bengal are advised to start sowing of winter vegetables like radish, broccoli and cauliflower etc. Farmers are also advised to maintain 5-7 cm depth of water in *aman* rice and irrigate as per requirement.
- Farmers in Hill Zone of West Bengal are advised to start land preparation for the transplanting of early cauliflower. Seedbed may be prepared for the sowing of late varieties of cauliflower and cabbage. Farmers are also advised to harvest maize.
- As there is possibility of moderate rainfall in Old Alluvial Zone of West Bengal, keep 2-3cm stagnant water in the field of *aman* rice and increase the level of water with the age of the crop. Weeding followed by top dressing of urea should be done at 3 weeks after transplanting. Farmers are also advised to start seedbed preparation for winter vegetables.

- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- Present weather conditions are favourable for infection of diseases and insects in rice in South Bihar Alluvial Zone. Apply the Imidacloprid @ 1 ml dissolve in 4 liters of water or Nuvan @ 1 ml dissolve in 1 liter of water for control of insect pests of rice.
- In Western Plateau Zone of Jharkhand in timely sown rice there may be attack of gundhi bug. To control , dusting of Chlorpyrifos / Quinolphos / Methyl parathion dust @ 10 kg per acre is advised. In some pockets rice crops are infested by stem borer insects resulting drying of leaves. If the infestation is low, spray Monocrotophos @ 1 ml per litre of water during clear weather. If the infestation is high, apply granular insecticide like Carbofuran 3 G (@ 12 kg per acre) or Forate 3 G (@ 4 kg per acre. In some pockets arhar are attacked by leaf roller insects, spray insecticide Endosulfan @ 1 ml per litre of water.
- Infestation of Early shoot borer in sugarcane has been occurred in North Eastern Ghat Zone of Orissa. Farmers are advised to release 50,000 *Trychogramma chilonis* parasite to control the borer. Otherwise install 4 to 5 Pheromone traps per acre to attract the borer or spray 400 ml Monocrotophos or Quinalphos in 200 litre water. Spray 2 g Bentan or Crilton in each litre water to control red rot.
- *Helicoverpa* infestation has been found in maize in North Eastern Plateau Zone of Orissa. Farmers are advised to spray 100 L.E. NPV during morning and evening. Maize crop has been infested with stem borer, apply 1 g Furadan in the leaf whorl. Otherwise spray 2 ml Chloropyrifos or 1.5 ml Phosphamidon in 1 litre water. Again repeat the spraying once again after 15 days of first spraying.
- White ant attack has been found on groundnut crop in low rainfall areas of North Eastern Plateau Zone of Orissa. Farmers are advised to go for soil drenching with 2 ml Chloropyrifos in each litre of water thoroughly. Tikka disease also has been found, apply Carbendazim@ 2gm/litre of water. For Hairy caterpillar in groundnut, apply 10-12 kg Chloropyrifos or spray 400 ml Quinalphos in 200 liter water.
- Infestation of thrips has been occurred on groundnut in Mid Central Table Land Zone of Orissa. Farmers are advised to spray 2 ml Endosulphan in 1 litre water. Bud necrosis has been found. Spray Imidacloprid @ 4ml /10 litre water to control the vector. Infestation of tikka disease has been occurred . Spray 30 g Mancozeb in 10 litre water.
- Fruit and shoot borer in brinjal has been found in Mid Central Table Land Zone (Mahisapat) of Orissa. Farmers are advised to control it by installing Pheromone trap @ 12 nos /ac. Alternately spray 4 g Sevin WP or 2 ml Malathion in 1 litre water. Root rot of pointed gourd is observed. Spray 10 g Plantomycine along with 20 g Blitox 50 in 10 litre water. Thrips in chilli has been found. Spray 300 ml Ethion or 400 ml Carbosulphan in 200 litre water/acre. Drain out excess water from the vegetable field.
- There is incidence of *Alternaria* blight and bacterial leaf spot on cotton crop in some places of Western Undulating Zone of Orissa. Farmers are advised to spray Mancozeb@ 2.5 g per one lit. water for *Alternaria* blight and for bacterial leaf spot spray Steptocycline@0.1g with copper oxychloride 2.5g per one litre water. Spray 500 litres of these spray solution for one hectare area. There is infestation of whorl maggot and leaf folder in paddy. Farmers of Western Undulating Zone of Orissa are advised to spray Monocrotophos @2ml/lit of water. Ensure that 500 liters of pesticide solution should be sprayed for one hectare area.
- Stem borer infestation in rice crop observed in some area of Western Undulating Zone of Orissa. Farmers are advised to spray apply granular insecticides like Thimet or Phorate 4-5 granules per plant and spray Monocrotophos@ 2ml/ lt. of water.
- Under prevailing weather situation, in New Alluvial Zone of West Bengal, BPH may attack *aman* rice. If the number of insect is more than 15 per plant, apply 0.75 ml Nuvan or Vapona per litre of water or dust quinolphos 1.5% / carbaril 4% at lower portion of the stem. Fungal leaf spot disease may attack in vegetables. To prevent apply 2.5 gm Indofil-M-45 or 'Kavach' mixed with one lit of water.
- Due to favourable weather conditions in Laterite and Red Soil Zone and Terai Zone of West Bengal, sheath blight may be found in rice. Apply Carbendazem 50% 1 gm or Hexachonazol 5% (Contaf) 1.5 ml and sheathmar 2 ml respectively. Viral wilt or yellowing of leaf can be seen in brinjal and ladies finger (bhindi). White fly and green leaf hopper is the vector of this disease. Apply Imidachlorpid 0.2 ml or Rogor 2 gm.
- Due to humid and wet weather in Terai Zone of West Bengal, downy mildew may be found in cucumber, ridge gourd, pointed gourd, collar rot in chilli, bean, brown spot with yellow halo, blight in

betel vine, Ear cutting caterpillar in rice. Apply Mancozeb (64%) and Metalaxyl (8%) @ 1-1.5 gram per lit. of water for downy mildew, to protect from collar rot spray Carbendazim 12 % + Mancozeb 64%, 2 gram per lit of water, protect from ear cutting caterpillar, spray Lambda cyhalothrin 2.5 EC @ 1.5 ml per lit.

- Stages of major crops are mentioned in Annexure I.

Animal Husbandry

- Farmers of North Eastern Plateau Zone of Orissa are advised to provide clean and concentrate feed to the cattle, and mix with dry and green fodder. Insure for enrich diet having protein, carbohydrate, fat, vitamins. Arrange for vaccination to prevent from Foot and Mouth disease. Use potassium permanganate @ 5 ml per liter of water to clean the infected parts of the animals, as a precautionary measure. Vaccinate cattle against Anthrax disease, and arrange medicine against worm infection during rainy season.

Pisciculture

- Farmers of North Eastern Plateau Zone are advised that to decrease the turbidity of water, apply lime @ 250 kg/ha. Prevent the entry of predator fishes in to the pond by putting net at water entry points and go for false netting for better growth of fishes.
- Farmers of North Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa are advised to purchase fish seeds from a reliable fish seed producer and stock 3000 nos. of advance fingerlings of more than 8cm size per one acre of water area. In case of three species combination, the stocking numbers should be for Catla-900, Rohu-1200 and Mrigal-900. In case of six species combination, the stocking numbers should be for Catla-800, Rohu-1200, Mrigal-500, Common carp-300, Grass carp-100 and Silver carp-100. In any situation, the average water depth of the pond should not be less than 5ft level.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Thane, Raigad and Ratnagiri districts in Maharashtra, Navsari, Valsad, Surat and Tapi districts in Gujarat region and Jamnagar and Kutch districts in Saurashtra and Kutch region received significant rain during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over Vidarbha, and at a few places over Konkan & Goa, Madhya Maharashtra, Marathwada and Gujarat region and at one or two places in saurashtra and Kutch region.
- **Advisories:**
 - As rice is at flag leaf initiation / panicle initiation stage in Konkan, farmers are advised to maintain water level 5 cm by bunding in rice field. Farmers in Kolhapur, Pune and East Vidarbha region are also advised to maintain proper water level in transplanted rice field.
 - As most of *kharif* crops are at flowering / grain formation stage, farmers are advised to apply irrigation in Madhya Maharashtra and Marathwada.
 - As cotton is at floral bud initiation / flowering / boll formation stage, farmers in North Madhya Maharashtra are advised to spray 4 kg DAP + 2 kg Urea / acre on a non-rainy day for better development of cotton boll and take preventive measures against red leaf. Spray 2% Urea or DAP @ 200g in 10 litres of water in East Vidarbha.
 - Farmers in Nashik district are advised to remove new vegetative growth of grape to accumulate food material. Prepare onion seedlings for *rabi* season.
 - This is proper time for sowing of *rabi* jowar in Madhya Maharashtra and Marathwada. Farmers are advised to undertake sowing by selecting variety mentioned in Annexure II.
 - As green gram and black gram are at pod maturity stage, farmers in Madhya Maharashtra, Marathwada and West Vidarbha are advised to complete plucking of already matured pod and field may be prepared for *rabi* season.
 - Carry out intercultural operation and hand weeding in castor and vegetables in South Saurashtra Zone of Gujarat. Apply third dose of top dressing of Nitrogen in cotton @ 40 kg / ha i.e. 88 kg urea / ha after 90 DAS. Spray Ferrous Sulphate @ 100 g with 10 g of Citric Acid in 10 litres of water for yellowing in groundnut.
 - If sowing of sesame crop had been suspended due to heavy rainfall in previous week, carry out the sowing operation by selecting variety like Til poorva-1 as a contingency planning in North Gujarat Zone.

Carry out intercultural operation and hand weeding in castor, cotton and apply supplementary dose of nitrogen @ 40 kg / ha. Harvest the matured gram and cowpea pods by hand picking. Carry out hand weeding in newly planted chillies, tomato and brinjal.

- In South Gujarat Zone carry out weeding, inter-cultural operation and application of fertilizers in crops in view of lesser possibility of rainfall.
 - Carry out sowing of late *kharif* or semi *rabi* crops in South Gujarat Heavy Rainfall Zone of Gujarat. Taking advantage of recent rain in Navsari and Valsad districts, carry out sowing of castor. Carry out gap filling and hand weeding in germinated castor crops. Carry out the intercultural operations and earthing up in cotton.
 - Spray mixture of 40 g ferrous sulphate + 20 g zinc sulphate + 10 g boric acid in 10 litre lime water for yellowing of leaves in vegetables in South Gujarat Heavy Rainfall Zone and middle Gujarat Zone.
 - In middle Gujarat Zone, sowing of pigeon pea is recommended in case of cotton crop failure. Complete transplanting of tobacco @ 90 cm X 75 cm spacing to control nematode problem.
 - Apply irrigation and chemical spraying in the standing *kharif* crops in Bhal and Coastal Zone of Gujarat.
 - Taking the advantage of less possibility of rainfall, carry out weeding and intercultural operation in groundnut and cotton and in other recently sown crops in North Saurashtra Zone. Spray Ferrus Sulphate 100 gm + Citric Acid 10 gm per 10 lit of water for yellowing due to deficiency of Fe in groundnut. In cotton to speed up new growth, spray 10 ppm solution of gibberallic acid (1 gm of gibberallic acid in 100 litres of water).
 - Stages of the crops are mentioned in Annexure I.
 - Due to uneven rains, incidence of blue beetle and rice ear head bug may be observed in rice in South Konkan; spray Monocrotophos 36 WSC @ 14 ml or Carbaryl 50 WP @ 20 g or Cypermethrin 25 EC @ 2.4 ml per 10 litres of water or dust 2% Methyl Parathion @ 20 kg / ha.
 - Due to cloudy weather there may be attack of grain borer in *kharif* jowar in Marathwada; dust Methyl Parathion 2% @ 25 kg / ha.
 - Prevailing weather is congenial for increase in infestation of buck eye rot in tomato in Pune Division; infested fruits may be plucked and destroyed and for control spray Metalaxil 8% + Mancozeb 64% @ 20 g in 10 litres of water twice at 15 days interval.
 - Under prevailing weather there may be attack of leaf caterpillar and semi looper in soybean in Western Maharashtra Scarcity Zone; spray SLNPV @ 10 ml or Emamectin Benzoate 5% SG @ 4 ml in 10 litres of water against leaf caterpillar. For control of semi looper spray Chloropyriphos 20 EC @ 30 ml or Quinolphos 25 EC @ 30 ml in 10 litres of water. There may be incidence of shoot fly and leaf girdle beetle in soybean in East Vidarbha; spray Trizophos 40 % @ 25 ml or Profenofos 50% @ 15 ml in 10 litres of water.
 - Weather conditions in South Gujarat zone are favourable for incidence of aphids and jassids in cotton crop; spray Dimethoate 30 EC @ 10 ml or Methyl-o-Demeton 25 EC @ 10 ml or Emidachloprid 17.5 SL @ 4 ml or Thiomethocam 25 WG @ 3 g per 10 litres of water.
 - Varieties of *kharif* crops are mentioned in Annexure II.
- Animal Husbandry:**
- Spray Malathion dust & clean the shed frequently for control of fly and mosquito in cattle shed in North West Zone of Gujarat.

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

- **Realised Rainfall:** Significant rainfall occurred in all districts of East Uttar Pradesh and Uttarakhand, most of the districts in Himachal Pradesh, Punjab and West Uttar Pradesh and many districts in Haryana and Jammu & Kashmir.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over East Rajasthan, Uttarakhand, Himachal Pradesh, East Uttar Pradesh and Jammu & Kashmir and mainly dry weather is likely over West Rajasthan, Punjab, Haryana and West Uttar Pradesh.
- **Advisory:**
 - As significant rainfall occurred in all districts of East Uttar Pradesh and Uttarakhand, most of the districts in Himachal Pradesh, Punjab and West Uttar Pradesh and many districts in Haryana and Jammu & Kashmir, farmers are advised to postpone irrigation to the standing crops in the region.
 - As Rain/thundershowers would occur at one or two places over East Rajasthan, Uttarakhand, Himachal Pradesh, East Uttar Pradesh and Jammu & Kashmir and mainly dry weather is likely over West Rajasthan, Punjab,

Haryana and West Uttar Pradesh, farmers in are advised to continue weeding, intercultural operation and application of fertilisers to the standing crops.

- Farmers in Flood Prone Eastern plain zone of East Rajasthan are advised to prepare field for sowing of *rabi* crops like wheat, mustard, potato and lentil. Undertake harvesting of bajra and jowar and picking the fruits of tomato, brinjal and chilli.
- Farmers in Semi-arid zone of Jaipur and Southern humid plain zone of East Rajasthan are advised to start field preparation for the sowing of *rabi* crops like rainfed taramira, toria and mustard. Undertake sowing of early pea.
- In Transitional Plain Zone of Inland drainage of West Rajasthan, farmers are advised to undertake hoeing and weeding in late sowing *kharif* crops.
- In Arid Western Plain Zone (Jodhpur) of West Rajasthan, farmers are advised to undertake sowing of taramira and mustard. Prepare field for sowing of *rabi* crops.
- In Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan, farmers are advised to prepare seed for raising nursery of chilli, brinjal and tomato for *rabi* season and undertake hoeing and weeding in vegetables.
- In irrigated northwestern plain zone of Rajasthan, farmers are advised to give the third dose of nitrogen @ 10 gm/bigha in the form of top dressing of ammonium sulphate or urea in rice.
- In Sub tropical zone of Jammu and Kashmir, farmers are advised to continue sowing of pole type beans. Sowing of toria and preparation of nursery of cauliflower, cabbage and knol-knol may be continued.
- In (Leh) cold arid zone, farmers are advised to harvest wheat, barley and mustard before shattering of pods. Farmers are also advised to harvest Alfalfa before the leaves are shed. Farmers are also advised to harvest vegetables like tomatoes, capsicum, chilli and brinjal at regular interval. Proper irrigation should be applied at regular intervals of time. Seed crop of lettuce, cabbage, chinese cabbage, carrot and radish may be harvested. Harvesting of cabbage, cauliflower, bottle gourd, cucumber, summer squash, French beans, Faba beans, methi & coriander may be done. Okra in greenhouse may be harvested at 3 days interval. Cover the trenches and low tunnels with polythene in the night as the temperature may dip below <5oC.
- In Intermediate zone and lower intermediate zone of Jammu & Kashmir, farmers are advised to continue sowing of potato, radish, carrot, turnip, garlic, methi and nursery sowing of cauliflower and cabbage. Harvest the *kharif* fodder. Drain out excess water from the field. Do the second top dressing with 1/3rd N through urea before tassel formation and also do the sowing of toria. To control leaf webber and capsule borer, spray Carbaryl @ 0.1% or Endosulfan @ 0.07%.
- In Sub Tropical Zone of Jammu & Kashmir, farmers are advised to undertake sowing of toria, berseem crop and harvesting of moong crop. Farmers are advised to drain out stagnant water from maize field.
- In East Uttar Pradesh, farmers are advised to second top dressing of nitrogen fertilizer at panicle initiation stage in early/medium transplanted rice. Sowing of late pigeon pea, urd and mung etc., intercultural operation in pigeonpea, urd, mung, transplanting of cauliflower, brinjal, chilli, tomato, sugarcane and fertilizer application in sugarcane may be continued.
- In West Uttar Pradesh, farmers are advised to repair the bund around the field, top dressing and spraying insecticide in rice, top dressing and draining of fields in maize may be done.
- In (Varanasi) Central Plain Zone, farmers are advised to prepare the land for sowing of tur.
- In (Pant nagar) Bhabar and Tarai Zone of Uttarakhand, during last few days, there has been excess rainfall in the district, which was very useful for rice crop of all growth stages. Farmers are advised to do harvesting of matured rice crop from end of this week. Also advised to start sowing of vegetable pea from end of this week. Remove weeds from all vegetable crops and top dress Urea as per the need and stage of the vegetable crops.
- Farmers in Himachal Pradesh are advised to ensure 4-5 cm standing water and keep paddy crop weed free. In high hill dry temperate zone, improved grasses and legumes can be planted. Intercultural operations in ogra, phafra, French bean may be carried out in temperate regions. Skip irrigation to the crops. Ensure drainage in maize fields and impound water in rice field. It is optimum time for sowing of cole crops in poly houses. Nursery sowing of cauliflower and tomato crop is advised so that same can be transplanted. In mid hill region transplanting of cauliflower can also be taken. Harvest the apple, liliun bulbs and gladiolus spikes.
- In (Palampur) Sub-Montane & Low Hills Sub-Tropical Zone and (Seobagh) Mild Hills Sub Humid Zone of Himachal Pradesh, farmers are advised to complete sowing of toria. Maintain 4-5cm of water level in rice field for good yield. It is optimum time for transplanting of tomato seedlings in raised bed and planting of onion bulbs in 30X 10 cm spacing for harvesting green onion in October.
- In Bhabar and Tarai Zone of Uttarakhand, farmers are advised to do harvesting & threshing of matured rice crop from end of this week. Remove weeds from late planted crop. Farmers are advised to start sowing of vegetable pea from end of this week. Select only the recommended varieties of vegetable pea.
- In (Ranichuri) Hill zone of Uttarakhand, farmers are advised for sowing of high yield variety of toria utilizing realized rainfall during last week.
- In (Roorki) Sub humid sub tropic of Uttarakhand, due to expected mild rain in this coming week, farmers are advised that there is no need to spray any fungicide at this stage because chemical spray would also kill the

pollinating agents. Due to which the seed set may be reduced. In case of water logged field propping of sugarcane leave is advisable to prevent the logging of crop. Avoid water logging; maintain proper drainage practices to prevent the root damage in maize, bajra and jowar crop.

- Farmers in Delhi are advised to start field preparation for early mustard, early pea and planting of early potato. Sowing of carrot can be done in raised beds. Thereafter, sowing of other rabi crop such as late wheat can be taken up. This is suitable time for hoeing & weeding of all crops and vegetables. After that split dose of nitrogen should be broadcasted for optimum growth. Drenching of vegetable nursery with Bavistin or captan @ 2 grams per litre of water is advised to control damping off when the sky is clear. Transplant green onion seedling in the prepared fields. Nurseries should be prepared in raised bed. Water logging should be avoided in nursery by doing proper drainage. This is suitable time for sowing of sarson saag, spinach, coriander, turnip. Marigold plantation should be done in this weather conditions.
 - Farmers in Punjab and Haryana are advised to drain out excess water from cotton fields. Undertake planting of early maturing sugarcane. Maintain adequate water supply to the maize crop. First fortnight of September is the optimum period for sowing of toria. Use short duration variety for better yield. It is optimum time for the planting of fruit plants like mango, sweet orange, mandarin, lime, lemon, litchi, guava, loquat and papaya. This is the time of sowing of garlic, palak and transplanting varieties of cauliflower. Start sowing “desi” varieties of radish turnip and carrot, potato and palak. Transplant fully developed seedlings (4-6 week old) of main season varieties of cauliflower. Sowing of late season varieties of cauliflower can be started. Suitable varieties are given in Annexure III.
 - In Transitional Plain Zone of Inland drainage of West Rajasthan, bacterial blight attack on green gram, moth bean and cowpea are observed, spray Streptocyclin @ 1 gm and copper fungicide @ 20 gm per 10 litre of water. White grub attack is seen in groundnut and pearl millet. Apply Chloropyriphos @ 4 litre of water. To control fruit borer attack in bitter gourd, Tinda, cucumber, brinjal and tomato, picking affected fruits and buried them deep in soil may be done and spray Melathion 50 EC @ 1.0 ml per litre of water.
 - In Arid western plain zone (Bikaner) of West Rajasthan, to control root rot in groundnut, farmers are advised to spray Carbendazim @ 200g per bigha mixed with 10.0 kg sand, followed by irrigation. To control tikka disease in ground nut, spray Mancozeb @ 2 g per litre water. To control jassids in clusterbean, spray Imidachloprid @ 40 - 50 ml per bigha and to control bacterial leaf blight spray streptomycin @ 2.5 g + copper oxy chloride @ 30g/10 litre water.
 - In Himachal Pradesh, prevailing weather is favorable for appearance of rice hispa, leaf folder and leaf miner for control spray Metacid 50 EC 1ml/litre or Chloropyrophos @2ml/l of water. Weather is conducive for the attack of red pumpkin beetle and fruit fly in cucurbits. Weather is conducive for appearance of red spider mites in carnation, for control spray Cypermethrin or Nuvacron @0.05%. Weather is conducive for attack of blue beetle in roses and balsam, for control spray Metacid @ 0.05%.
 - Present weather conditions are highly favorable for infestation of blast disease in rice in Delhi. Monitoring at 2-3 days interval is advised. Early symptoms include development of eye shaped spot in the leaf sheath with light centre and dark boundaries. At later stage these spots coalesce to form big spots. Take proper plant protection measures the disease.
 - False smut may appear in paddy in present weather conditions in Delhi. Symptoms include increase in grains size with brown colored fungus inside. Spraying of Blitox 50 @ 500 grams per hectare at 10 days interval (2-3 times) is advised.
 - Weather conditions are congenial for attack of yellow mosaic disease in soybean, urd and green gram in Delhi. When infected plants are observed uprooting and burying of plant should be done. Spraying of Imidachloprid @ 1.0 ml / 3 litre of water is recommended against white flies (sucking pests) when sky is clear.
 - In Central Plain Zone of Punjab, weather is congenial for spread of sheath blight, discoloration and foot rot in Basmati, farmers are advised to spray the crop with Folicur 25 EC or Monceren @ 200ml or Bavistin @ 200 g or Tilt 25 EC @ 200 ml in 200 litres of water per acre.
 - Weather is congenial for incidence of white fly, jassid and tobacco caterpillar in cotton and leaf folder and stem borer in paddy in Western Plain Zone of Punjab. Farmers are advised to take proper plant protection measures.
 - Present weather is favorable for bacterial leaf blight in rice crop in Sub Tropical Zone of Jammu and Kashmir, farmers are advised to drain out whole old water and apply fresh water to the crop, spray Streptomycin @ 100gm + Copper Oxychloride @ 500gm in 500 litre of water during clear weather.
- **Animal Husbandry**
 - In Uttarakhand, farmers are advised to maintain proper cleanliness in animal sheds for avoiding incidence of diseases. Farmers are advised to use Iron case in poultry house for birds. It will give more eggs & will increase feed efficiency of birds. Proper care should be taken for cattles because the chance of Foot Mouth disease is

more during rainy season. Green forages is more available at this time but it should be mixed with wheat straw in 30: 70 ratio for feeding. Proper vaccination of all cattles and hens/bird should be during this period.

- In Transitional Plain Zone of Inland drainage and sub-humid southern plain and Aravali hilli zone of Rajasthan farmers are advised to that, mastitis disease may be seen in milch animals. In this disease, mammary glands & teats become swollen & blood spots in milk may be seen. Treat the affected animal under the guidance of veterinary Doctor.
- Farmers in Semi-arid Eastern Plain zone of East Rajasthan, farmers are advised to protect sheep and infants from pink cold.
- In Arid Western Plain Zone of West Rajasthan, give vaccination to animals against H.S/B.Q.
- In intermediate zone of Jammu & Kashmir, vaccination of animals against FMD is advised. Weather is conducive for ticks and mites attack on animals. For control spray Butox@ 2.0 ml per litres of water. Ensure proper drainage in the surroundings of cowshed.
- In Western plain Zone of Punjab, farmers are advised to provide dry bedding to young calves.
- **Horticulture :**
 - In Himachal Pradesh, give support to the branches of apple so that branches should not break due to fruit load. It is time for plantation of evergreen plants like mango, litchi, guava, citrus, loquat and amla. Plant the saplings in 3x3x3 cubic feet pit. Add 40-50kg FYM+SSP300g + Chlorpyrifos 10ml/10 litres of water per pit before planting.
 - In sub-tropical zone of Jammu, farmers are advised to apply light doses of urea if there is weak growth in plants.
 - In intermediate zone (Pahalgam), farmers are advised to do the planting of litchi.
 - In valley temperate zone of Jammu and Kashmir, undertake harvesting of apple and walnut. Maintain orchard sanitation.
 - In irrigated northwestern plain zone of Rajasthan, farmers are advised to prepare nursery for kinnow fruit.
 - In arid western plain and semi-arid eastern plain zone of Rajasthan, farmers are advised to spray dimethoate 30 EC / @ of lit water to control mosaic disease in papaya
 - In arid western plain zone of West Rajasthan, apply bordo mixture (4:4:50) @/lit of water at the interval of 20 days to control kanker in lemon.
- **Apiculture**
 - In Intermediate zone of Jammu & Kashmir, dust sulphur @ 1 g/frame on top bars to control ectoparasitic mite. Control wax both by fumigating frames with aluminium phosphide tablets before using them. Destroy wasp nests by dusting or spray insecticides and kill wasps colonies by wooden flappers.
- **Floriculture**
 - In Himachal Pradesh, it is advised in seed crop of marigold rouging is required to maintain the health of flowers. When the seasonal flowers attain height of 10-15cm then do pinching of terminal growing buds 1-2 cm so as to encourage the side branching for profuse flowering.
 - Farmers in Flood prone Eastern plain zone (Bharatpur) in East Rajasthan are advised to transplant marigold, balsom and xenia. Plant cuttings of bougainvillea, mogra and chameli.

In valley temperate zone of Jammu and Kashmir, all dead/damaged blooms, stalks and leaves may be removed from the beds as and when seen. Mowing of lawns may be continued. Nursery beds should be dug up and manure to sow the seeds of spring flowering annuals and herbaceous perennials. Procure the spring flowering seeds and bulbs if do not have their own. Start collecting seeds of summer annuals as and when matured. Cacti plants may be re-potted and manured.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- **Realised Rainfall:** Almost all the districts in Coastal Karnataka and Kerala, East Godavari, Guntur and Srikakulam in Coastal Andhra Pradesh, Kodagu and Shimoga in South Interior Karnataka, Nilgiris, Chennai, Karaikal, Madurai, Sivaganga and Thiruvallur in Tamil Nadu received good rainfall during last week. No significant rainfall occurred over remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over north Andhra Pradesh at one or two places over rest parts of the region.
- **Advisories:**
 - As almost all the districts in Coastal Karnataka and Kerala, East Godavari, Guntur and Srikakulam in Coastal Andhra Pradesh, Kodagu and Shimoga in South Interior Karnataka, Nilgiris, Chennai, Karaikal, Madurai, Sivaganga and Thiruvallur in Tamil Nadu received good rainfall during last week, postpone irrigation to the standing crops and drain out excess water from the fields. Apply irrigation to the crops in the remaining parts of the region, as no significant rainfall occurred.
 - Farmers in the Eastern Dry Zone are advised to take up top dressing with nitrogen (urea) for finger millet for boosting up the crop growth, earthing up for late sown groundnut crop and red gram, transplanting, gap filling and inter cultivation in early sown finger millet crop, sowing of minor millets like foxtail millet and little millet,

- sowing of cowpea and field bean upto 30th September and soak pits/trenches for perennial horticulture crops near the base of the crops to conserve moisture, avoid irrigation and spraying of chemicals for next five days and avoid water stagnation in new plantations.
- Farmers in the North East Transition Zone of Karnataka are advised to harvest black gram as early as possible and after harvesting green gram and black gram from inter cropping with red gram, take up intercultivation and keep the red gram land free from weeds.
 - Farmers in the Coastal Zone of Karnataka are advised to apply second dose of fertilizers to arecanut, coconut and cashew in the month of September and October, since low to medium showers are expected in the next few days.
 - Farmers in the North East Dry Zone of Karnataka are advised to undertake sowing of jowar, maize and bajra for fodder purpose, sowing of navane, and sunflower up to end of October, and keep the lands ready for *rabi* crops sowing like safflower, *rabi* sorghum and Bengal gram and wherever proper conditions are there safflower sowing can be done. Inter cultivation is to be done in all long duration *kharif* crops like redgram and cotton etc. repeatedly.
 - Farmers in the Central Dry Zone of Karnataka are advised to make provision for drainage in maize and cotton fields as these two crops are very susceptible to water logging.
 - Due to poor inflows into the reservoirs, farmers in the Southern Telangana Zone of Andhra Pradesh are advised to plan early *rabi* with irrigated dry crops like maize, jowar, groundnut, greengram and blackgram etc. with 4-5 irrigations by carefully monitoring the reservoir inflows.
 - Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to go in for alternate crops like maize/jowar/blackgram/greengram/*rabi* redgram, wherever transplanting could not be done due to non-availability of water and direct sowing of paddy can be done with short duration varieties NLR 34449/ MTU 1010.
 - Farmers in the Central Zone of Kerala are advised to drain the paddy field 10 days before harvest, as the first crop is ready for harvesting, continue intercultural operation and weeding in coconut gardens and go for the application of second dose of fertilizer to coconut and pepper, since light rain is expected .
 - Farmers in the Southern Zone of Kerala are advised to give propping to bunched banana plants, ensure drainage in already planted tissue culture banana, plant new TC banana only after rain and start preparation for planting of mundakan crop.
 - Farmers in the Eastern Dry zone of Karnataka are advised to spray fungicide & pesticide, if the incidence of pest and diseases exceeds threshold level of crops.
 - Phytophthora blight and sterility mosaic in pigeon pea and *Heliothis* in sorghum was noticed in the North East Transition Zone of Karnataka. Farmers are advised to rouge out the affected plants and spray M-45 @ 2g/litre of water to control Phytophthora blight, Dicofol @ 2.5 ml/litre of water to control sterility mosaic and dusting of Malathion @ 8 kg per acre to control *Heliothis*.
 - At the time of flower initiation stage/panicle emergence stage and due to cloudy weather, there is problem of gundhi bug in paddy in the Coastal Zone of Karnataka. Farmers are advised to go for dusting of Melathion @ 8-10 kg/ acre or spray the same @ 2 ml/lit of water
 - Present cloudy and high humid conditions are congenial for the incidence of late leaf spot and its spread on the groundnut crop which is at pegging stage in the North East Dry Zone of Karnataka. Farmers are advised to spray Mancozeb @ 3g or Hexaconazole @ 2ml/litre of water for efficient control of late leaf spot. Incidences of *Cercospora* leaf spot on redgram, sucking pests in cotton and leaf folder and sheath blight disease in paddy is also observed. Farmers are advised to spray Carbendizam or Bavistin @ 1gm/litre of water to control *Cercospora* leaf spot, Propiconazole @ 1 ml or Hexaconazole @ 2ml/liter of water to control sheath blight and Dimethoate @ 1.75ml/lit or Confidor @ 0.3ml/lit of water to control sucking pests.

- Thrips incidence is noticed in the *samba* paddy nursery in Cauvery Delta Zone of Tamil Nadu. Farmers are advised to spray profenophas @ 2ml/lit of water to control thrips and harvest the *kuruvai* paddy at ground level to avoid stem borer infestation in the thaladi season.
- Farmers in the Western Zone of Tamil Nadu. are advised to monitor thrips and leaf hopper infection in cotton, early shoot borer in sugarcane and red hairy caterpillar in groundnut and take the appropriate management measures.
- Blast and Sheath blight disease is observed in some parts of North Coastal Zone of Andhra Pradesh on rice crop. Farmers are advised to take appropriate plant protection measures.
- Intermittent rains and cloudy weather are favourable for the incidence for pest and disease in rice in the Problem Area Zone of Kerala. Farmers are advised to keep close watch on the paddy fields for the occurrence of insect pest like brown plant hopper, since the prevailing weather condition is favourable for the incidence. Draining the field will control the spread of the insect to a certain extent. In the prevailing climatic condition, there is chance of leaf roller, brown plant hopper and sheath blight occurrence in the fields where the plant population is high. Farmers are advised to remove the severely affected plants in order to provide air circulation into the crop canopy to reduce the spread of the disease to the nearby plants. In areas where Lakshmi disease was observed during the previous season, prophylactic methods for checking severe infection is needed. Farmers are advised to drain off the field completely. Spraying chemicals in the fields during the flowering stage should be restricted to after 3 pm
- Farmers in the Central Zone of Kerala are advised to undertake plant protection measures against rice bug in late planted paddy fields, gall midge, leaf roller and stem borer attack in rice, sigattoka leaf spot diseases in banana.
- **Livestock**
 - Farmers in the Coastal Zone of Karnataka are advised to undertake de-worming of animals and vaccinate the cattle's against black quarter, foot and mouth disease, mastitis and other diseases.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Significant rainfall occurred in all districts of East Madhya Pradesh except Damoh, Jabalpur, Katni, Mandla, Narsingpur, Rewa and Tikamgarh districts. Also significant rainfall occurred in Bhind, Burhanpur, Datia and Gwalior districts of West Madhya Pradesh and Chhattisgarh (except Bijapur, Bilaspur, Dhamtari, Durg, Kanker, Kawardha, Mahasumund, Narayanpur and Rajandgaon).
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over East Madhya Pradesh and at one or two places over Chhattisgarh and West Madhya Pradesh.
- **Advisories:**
 - Farmers in Madhya Pradesh and Chhattisgarh are advised to postpone irrigation to the standing crops as there was significant rainfall during last week.
 - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised that top dressing of remaining nitrogenous fertilizer may be applied in rice. Drain the water from the paddy field then top dressing of urea to be done. Again fill the water in the paddy field after three days after top dressing. Undertake sowing of tomato, brinjal, onion, chilli, and cauliflower in nursery for developing seedlings. If field is in good tillage conditions, then transplanting of seedlings should be done. Weeding in ginger and turmeric field should be done and give irrigation as per requirement in chilly, brinjal and tomato field.
 - Farmers in Nimar Valley Zone of Madhya Pradesh are advised to avoid water lodging in crop field also collect the water in pond and use this water at time of water stress condition for the crop. Apply urea and fertilizers in all *kharif* crops. Do weeding and hoeing in groundnut crop.
 - Farmers in Jhabua Hills of Madhya Pradesh are advised to prepare drainage channels in soybean, maize, cotton, vegetables and pulses. Attack of semi-looper and gram pod borer is increasing in this area, farmers are advised to monitor the crops and if 3 caterpillars in one meter row are observed spray Trizophos @ 800 ml/ha or Profenophos @ 1.5 l/ha (3.0 ml/l) soon. Farmers are also advised to give remaining 1/3 dose of recommended nitrogen through urea in late sown crops.

- Farmers in Gird Zone of Madhya Pradesh are advised to prepare fields for *rabi* crops like mustard, gram, pigeonpea and potato. Conserve moisture in the field. Arrange seeds of toria for sowing and sow after the end of monsoon season.
- Farmers in Central Narmada Valley Zone of Madhya Pradesh are advised to apply fertilizer in tomato, brinjal, onion, chilli and cauliflower. Maintain proper drainage of water in soybean, arhar and maize fields. Weather is favourable for the attack of caterpillar and girdle beetle in soybean if it is there apply Chloropyriphos @ 2 ml /lit. Farmers are advised for destroy of the soybean plant which is affected by the yellow mosaic virus and its vector white fly can be controlled by the use of chemical insecticide.
- Farmers in Bundelkhand region of Madhya Pradesh are advised that looking to the possibility of dry weather condition during in this week; prepare the fields for sowing of *rabi* crops and harvest the mature *kharif* crops. There is report of attack of semi lopper in the soybean; farmers are advised to spray Quinalphos 25 E.C. @ 2.0 ml per litre of water. Farmers are advised to regularly monitor the crops for the pest. There is possibility of attack of leaf feeder in urad and moong crops; If found, spray trizophas 40 E.C. @ 2.0 ml. per litre of water. Farmers are advised to prepare field for sowing of mustard and pea at end of week.
- Farmers in Malwa Plateau Zone of Madhya Pradesh are advised that weather is favourable for attack of caterpillar and girdle beetle attack in soybean, apply Chloropyrephos @ 2 ml /lit for its control. Also weather is favourable for the fruit fly attack in ber so apply Nuone @ 1.5 ml/lit. Spray should be done at morning or evening time as the attack is sporadic, apply where attack is there. Apply fertilizer to chilli, tomato, brinjal, cabbage, cauliflower, onion etc. There may be the attack of leaf minor on vegetable crops, apply rogor or confidore @ 1ml/ lit to control the attack. Nursery for *rabi* vegetables may be done, for this purpose make elevated beds so that water logging can be avoided and also protect the bed from rains.
- Kymore Plateau and Satpura Hills region of Madhya Pradesh, incidence of Bihar hairy caterpillar, tobacco caterpillar and semilooper is seen in the soybean, moong, and urd crops when temperature and humidity increasing in surrounding atmosphere. Use light traps in the field, and if possible destroy egg and larval masses by hand picking. Chemical control include spray of Chlorpyriphos (20 EC) at 1.5 lit/ha; or Triazaphos at 800 ml/ha, or Quinalphos at 1.5 lit/ha on these crops.
- Farmers in Vindhyan Plateau Zone of Madhya Pradesh are advised to keep watch on pyrilla and shoot borer in sugarcane. Farmers are also advised to do weeding and intercultural operations in *kharif* fields.
- Present weather conditions are suitable for sowing of nursery of early varieties of cabbage, tomato, brinjal, chilli etc. in a raised nursery of about 6 inch with proper drainage system in Chhattisgarh Plain Zone. Farmers are advised to undertake sowing / transplanting of vegetables utilizing the realized rainfall during last week.
- Farmers are advised for land preparation in the upland sloping fields in Chhattisgarh Plain Zone for sowing of horsegram during second fortnight of this month and transplanting of vegetables crops with proper drainage system.
- Farmers in North Hill zone of Chhattisgarh are advised to complete sowing of maize.
- Farmers in Bastar plateau zone in Chhattisgarh are advised to prepare field and undertake sowing of cowpea and *kharif* vegetables like bottle gourd, bitter gourd, okra and short duration beans, cabbage, cauliflower utilizing the realised rainfall during last week. Farmers are also advised for planting of cassava, colocasia, ginger, elephant foot yam and diascoria and support may be given by bamboo sticks.
- Farmers in Bastar plateau zone in Chhattisgarh are advised to undertake transplanting of rice and sowing of niger, horsegram (kulthi), urad, vegetables etc. and due to availability of sufficient moisture, castor crop sowing may also be done in the marhan and tikra farming situations.
- Infestation of different insect pests like stem borer, gall midge, brown hopper etc. are common. Farmers are advised to keep watch on the crop and if the infestation is above ETL, use recommended insecticides. Farmers are advised to keep watch over the crops and use light traps in that fields between 7 pm to 9 pm for initial control of pests. In case of heavy incidence of stem borer, farmers are advised for application of Carbofuran 33 kg/ha. or Fartera 10 kg/ha and after the treatment, water in the field should not be drained out at least 2-3 days in Chhattisgarh Plain Zone.

- Leaf folder is likely to attack rice field in Chhattisgarh Plain Zone, farmers are advised to keep watch over the crop and if more than one leaf damaged per plant by leaf folder, spray Chloropyriphos 1 lit / hectare in 500 lit water.
 - Tobacco caterpillar is likely to damage soybean, black gram, pigeon pea etc. in Chhattisgarh plain zone. Hence farmers are advised to keep watch over the crop and it is better to collect the insect and destroy it at early stage. For effective control spraying of Quinolphos @ 1.25 l or Fenvelrate 20EC @ 375 ml per hectare is advised.
 - There may be occurrence of tikka disease in groundnut in Chhattisgarh Plain Zone, farmers are advised to spray Metalyxil 0.15%.
- **Animal Husbandry & Poultry**
 - Farmers in Central Narmada Valley Zone and Satpura Plateau Zone are advised to vaccinate cattle against Foot and Mouth Disease.
 - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to vaccinate cattle against Anthrax disease and provide deworming tablets against worm's infection.
 - Farmers in Bundelkand region of Madhya Pradesh are advised that present weather condition is suitable for breeding period of buffalo. Therefore farmers are advised to incorporate minerals salts and vitamins in their feed.
 - Farmers in Jhabua hills of Madhya Pradesh are advised to vaccinate their cattle for FM disease. Animal and birds should be kept in clean, dry and well ventilated place.

Annexure I

Major Crops

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

- Sugarcane (vegetative), *sali* rice (tillering / panicle initiation), *Capsularis* and *Olitorius* jute for seed (sowing / seedling), ginger / turmeric (vegetative), arhar (vegetative), *kharif* sesame (vegetative / flowering / pod formation), groundnut (flowering / pegging / pod formation), black gram, green gram (sowing / early vegetative / vegetative), maize (vegetative), cauliflower (nursery raising / transplanting), winter vegetables (nursery sowing) in Assam.
- WRC rice (flowering / grain formation), okra, cucurbitaceous vegetables (fruiting / harvesting), soybean (vegetative / flowering / pod formation), sesame (vegetative / flowering / pod formation), cauliflower, cabbage (nursery raising) in Arunachal Pradesh.
- *Kharif* rice (tillering / panicle initiation / flowering), soybean, groundnut (vegetative / flowering / pod formation), *kharif* maize (cob maturity / harvesting), cucurbits, chilli and okra (fruiting / harvesting), tomato (seedling / transplanting), cauliflower (nursery sowing), rice bean, pea, black gram (sowing) in Manipur.
- *Ahu* rice (flowering / grain formation), *Kharif* rice (tillering / panicle initiation) maize (cob maturity / harvesting), groundnut (flowering / pegging), tomato (flowering / fruiting / harvesting), cole crops (nursery sowing), soybean (vegetative / flowering), turmeric, ginger (vegetative / rhizome formation), *rabi* maize (sowing) and French bean and dolichos bean (branching) in Meghalaya.
- Rice (vegetative / tillering), soybean (vegetative / flowering / pod formation), groundnut (vegetative / flowering / pegging), *kharif* maize (maturity / harvesting), cauliflower, tomato (nursery preparation) and ginger / turmeric (vegetative / rhizome formation), okra, bean and cow pea (harvesting) in Mizoram.
- *Jhum* rice (ripening), Wet land rice (milk / dough), maize (maturity / harvesting), okra (flowering / fruiting / harvesting), soybean (vegetative / flowering) in Nagaland.
- Upland rice (flowering / grain formation), *aman* rice (tillering / panicle initiation / flowering), groundnut (flowering / pegging), *Kharif* maize (grain filling), sesame (vegetative / flowering / pod formation), bitter melon and pointed melon (vegetative / flowering) in Tripura.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]

- Sugarcane (vegetative), fodder crops like sorghum, bajra, maize, meth, kalai, boda and dinanath grass (sowing / early vegetative / vegetative), *kharif* rice (transplanting / tillering / panicle initiation), urad, arhar, bajra etc. (sowing / early vegetative), onion, mango, litchi, guava (planting), maize (tasseling) in Bihar.
- Turmeric and ginger (vegetative), upland rice (tillering / panicle initiation), maize (vegetative / harvesting), pigeon pea, arhar, groundnut (vegetative), rice (panicle initiation / flowering / grain formation), urad, jowar and soybean, til (vegetative), *kharif* vegetables like okra, beans, French bean, tomato, cauliflower, cabbage etc. (vegetative / harvesting), kulthi, African marigold, French marigold (sowing), urd, potato, green pea, toria, tomato, cauliflower and cabbage (land preparation / sowing) in Jharkhand.
- Sugarcane (grand growth), banana (vegetative), jute (harvesting), maize, groundnut, arhar, ragi, cotton, direct seeded rice, sunflower (early vegetative / vegetative), rice (flowering / panicle initiation), green gram, black gram, cow pea (sowing), *kharif* vegetables like okra, French bean, tomato, cauliflower, cabbage etc. (sowing / vegetative) and fruit crops (planting / seedling) in Orissa.
- *Aus* rice (maturity to harvesting), *aman* rice (panicle initiation / flowering / milking stage), jute (harvesting / retting), banana (vegetative), maize, sweet corn (vegetative / flowering / cob information), cauliflower (seedling), marigold (planting), bitter melon and pointed melon, cucurbits (fruiting), yam and betel vine (vegetative) in West Bengal.
- Ginger (germination / early vegetative), orange (transplanting), large cardamom (vegetative / primary flowering / secondary flowering), vegetables (vegetative), rice (tillering) in Sikkim.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane *adsali* (elongation), sugarcane new pre-seasonal (active tillering / elongation), sugarcane new *suru* (active tillering in Madhya Maharashtra and Marathwada), new *adsali* (early tillering), *kharif* rice

(flag leaf initiation / panicle initiation in Konkan, Kolhapur Division and active tillering in Nashik, Pune and East Vidarbha Division), cotton (floral bud initiation / flowering / boll formation), soybean (pod development), groundnut (pod formation), bajra (grain formation / grain maturity in Madhya Maharashtra and Marathwada), red gram (vegetative / primary branching) in Maharashtra.

- Cotton (flowering / boll formation), groundnut (flowering / pegging), *kharif* rice (panicle initiation / flowering / grain filling), pulses (early vegetative / flowering), sugarcane (vegetative / elongation), sesamum, castor (early) (flowering / capsule formation), castor (sowing / seedling), vegetables (flowering / fruiting / harvesting), winter vegetables (sowing / transplanting), green gram, black gram (pod maturity / harvesting), red gram (vegetative), pearl millet (flowering / ear head emergence), cow pea (maturity / harvesting), sorghum (vegetative) in Gujarat.

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

- Vegetables [bhindi, cucurbits], peas (vegetative/maturity/harvesting), mirch, brinjal (vegetative/maturity/harvesting), cucurbits viz. cucumber, summer squash, khira, bitter gourd, bottle gourd (vegetative/maturity/harvesting), tur, Shimla mirch, and tomato (vegetative/maturity/harvesting), apple (fruit development), radish, arbi, amaranthus, turmeric, dhaincha, chari, bajra, barley, red and white clover, bell pepper, garlic, ginger, coriander, knol khol, cabbage, cauliflower, lettuce (early vegetative/vegetative), maize (maturity), soybean (vegetative/flowering), rice (grain formation) in Himachal Pradesh.
- Rice (vegetative/flowering), chilli, tomato, brinjal, cauliflower (vegetative/flowering/fruiting), spinach, coriander, radish (vegetative/ flowering/fruiting), maize (vegetative/tasselling), urd, moong, lobia, bajra, til, sorghum (vegetative/floral initiation), sugarcane (vegetative), cotton (vegetative/flowering), sugarcane (vegetative) in Delhi.
- Chilli, capsicum, cauliflower, broccolli (vegetative), sugarcane (planting), papaya (planting), sunflower (germination), maize (Normal sown -reproductive stage, early sown- tassel emergence / silking stage, very late sown- vegetative stage), lobia, sunnhemp, cowpea, jowar for green fodder (vegetative), garlic, cucurbits, okra (seedling), French bean, maize (tasseling/silking), rice (Early-panicle initiation, Normal (irrigated)-vegetative stage) tillering/vegetative), summer fodder (maize + cowpea + jowar) (vegetative), maize (silking/ tasselling/cob formation), *kharif* pulses (flowering /pod formation), potato (sowing), radish (sowing), cabbage, cauliflower (nursery sowing), carrot, turnip (sowing), knol-khol, cole crops (transplanting), toria (sowing/emergence), vegetable crops (fruiting stage), in Jammu & Kashmir.
- Rice (flowering / grain formation), finger millets (flowering / grain formation), groundnut, sorghum, pigeon pea, urad, moong, rajma, arhar and ginger (vegetative), soybean (flowering / pod formation/ pod maturity), maize (grain formation/cob maturity) in Uttarakhand.
- Rice (panicle initiation/grain formation), sugarcane (vegetative growth/ripening), sunflower (vegetative/flowering), fodder maize, lobia, (vegetative/1st cutting), Sanai, Dhaincha (early vegetative / vegetative), summer sugarcane (tillering/grand growth), cotton, soybean (vegetative/flowering), urd (flowering/maturity), sunflower, jowar, bajra, arhar, (seedling/vegetative), maize (tasseling to silking/cob formation), vegetables [cucumber, pumpkin, tomato, brinjal, cabbage, lady's finger, chilly, cucurbits] (vegetative/maturity), groundnut (early vegetative/vegetative) in Uttar Pradesh.
- Rice (tillering / panicle initiation), spring sugarcane (sprouting/tillering), radish, carrot, turnip, (sowing / germination/vegetative), cauliflower (transplanting/vegetative), tomato, sunflower (sowing/seedling), cotton (flowering/fruiting), okra, chilli, brinjal (transplanting/early vegetative), maize, mung, mash, tur (sowing/seedling), toria (sowing), maize (tasseling/silking) in Punjab.
- Rice (flowering / grain formation), sugarcane (grand growth) (early vegetative/vegetative), barseem (vegetative / last cut), fodder ((maize + cowpeas) (vegetative/ 1st cutting)), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), radish, cotton (vegetative), turnip (sowing/seedling) in Haryana.
- Cauliflower, cabbage, onion (transplanting / germination), sugarcane (new planting), cotton (Desi kapas, B.T. kapas, Narma kapas, American Cotton) (boll formation), pearl millet, jowar and bajra mixed with guar, Sudan grass, oats, sorghum etc. for green fodder (vegetative), maize (knee high/tasseling), mirch, simla mirch, guar, vegetable (tinda, water melon, pumpkin, cucumber, coriander, bhendi, ridge gourd) (sowing), *kharif* onion (transplanting), *kharif* rice (tillering), other *kharif* crops viz. pearl millet, sorghum, (flowering / grain formation), maize (flowering/cob formation), green gram, cowpea (flowering / pod formation) and groundnut (pegging/pod formation), short duration moth and guar (vegetative), moong (vegetative), kinnow (new planting) in Rajasthan.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- Sugarcane (vegetative), rice (panicle initiation/flowering), late planted paddy (flowering), fodder maize (silking/tasseling), sunflower (vegetative), groundnut (pegging), cowpea (vegetative), vegetables (fruit maturity), green gram/black gram (maturity/harvesting), soybean (flowering), pigeon pea (vegetative), sorghum (ear head emergence), maize (cob formation), desi cotton (vegetative), cotton (vegetative/flowering) and chilli (flowering/fruitleting) in Karnataka.
- Sugarcane (June planted) (formative/grand growth), banana (vegetative), vegetables (all stages), direct seeded rice (panicle initiation), jowar (vegetative), rice (nursery sowing), bajra (vegetative/grain development), ragi (flowering), finger millets (harvesting), castor (vegetative/spike initiation), early sown groundnut (vegetative/flowering), late sown groundnut (flowering/pod development/maturity), maize (vegetative/tasselling), green gram/black gram (pod formation), red gram (early vegetative), sesamum (pod filling/harvesting), pulses (vegetative/ pod formation), rainfed cotton (flowering/boll development), mesta (vegetative/flowering), Bt. cotton (flower initiation /boll formation) in Andhra Pradesh.
- Pepper (flowering/new planting), coconut (flowering), irrigated banana (harvesting/planting), nendran banana (harvesting), cardamom (planting/harvesting), rubber (tapping), vegetables (harvesting/planting), *virippu* paddy (harvesting), mundakan paddy (transplanting), sugar-cane (grand growth) in Kerala.
- *Kuruvai* rice (maturity/harvesting), *Samba* rice (sowing/nursery), rainfed maize and cotton (sowing), rainfed groundnut (vegetative), groundnut (pod formation/pod maturity), cotton (flowering/boll formation), maize (vegetative/flowering), banana (planting), irrigated maize (grain formation/maturity), sugarcane (grand growth), pulses (vegetative/flowering), vegetables (vegetative/fruitleting) in Tamil Nadu.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Rice (grain formation), maize (tasseling / silking /cob formation), jowar, arhar and soybean (vegetative), *kharif* vegetables i.e. tomato, brinjal, chilli etc. (early vegetative/vegetative), fodder crops (vegetative), ladies finger, cucurbits (sowing/early vegetative/vegetative) in Madhya Pradesh.
- Rice (panicle initiation / flowering / grain formation), sugarcane (planting/vegetative), groundnut (pod filling), sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), onion (planting), vegetables (transplanting / vegetative), millet (vegetative), tapioca, ginger, colocasia, diascorea, elephant foot yam and cassava (planting) in Chhattisgarh.

Annexure II List of Varieties

Himachal Pradesh :

Cauliflower: Pride of India, Shweta, Madhuri, Himrani.

Cucumber : Kiyam seedless/243, Matgaura, Maliniseeded

Pea: Ageta – 6 or Arkal pea

Jammu & Kashmir

Vegetables : Pumpkin: Arka Suryamukhi and Arka Chandan, Bittergourd: Pusa Domousami & Pusa Vishesh
Bottlegourd: Pusa Summer Prolific Long, Pusa Summer Prolific Round, Spongegourd: Pusa Chikni and Pusa Supriya, Pusa Nasadar Radish: japanese white, Pusa Chetki Carrot: Nantes, Pusa Kesar, Pusa, Turnip: Purple Top White Globe, Spinach: All green, Beans: Contender, Pusa Parvati and Arka komal, Methi: Pusa Early Bunching and Kasuri methi., Knol-khol: White Vienna and Purple Vienna, King of Market, Cabbage: Golden Acre and Pride of India, Pusa Mukta Brinjal: Pusa Purple Long, Pusa Purple Cluster, Cauliflower: Pusa Snowball, Pusa Snowball K-I, Giant snow ball & Pusa synthetic, Til: Punjab Til-1

Okra: (Varsha Uphar, Parbhani Kranti and A-4), Pumpkin (Arka Suryamukhi & Arka Chandan)

Toria: local toria, RSPT-1 RSPT-2, Radish: Pusa Reshmi Minowase Japanese White, Garlic: Local Large segmented, Agri-Found Parvati, Yamuna Safed-3, Palak : All Green, Peas: AP-1, AP-3, Bonneville, kale: Local

Punjab & Haryana

Punjab :

Okra: Punjab-8, Punjab-7 and Punjab Padmani

Radish: Punjab Ageti & Pusa Chetki, Punjab Pasand & Punjab Safed

Turnip: L-1 & 4-white

Carrot: PC-34

Palak: Punjab Green

Cauliflower: Punjab Giant 26, late season varieties: Snow-Ball-16, Pusa Snow ball 1 & Pusa Snow ball K-1.

Toria: PBT 37/ TL

Sugarcane: CoJ 85, CoJ 83, and CoJ 64

Delhi

Mustard: Pusa Sarson-25, Pusa Sarson-26, Pusa Agrni, Pusa Taraka, Pusa Mahak

Carrots: Pusa Rudhira and Pusa Kesar.

Sarson Saag: Pusa Saag-1;

Radish: Pusa Chatki, Versa Kee Rani, Long Chetaki;

Spinach: All Green;

Coriander: Pant Haritama, Hybrids;

Turnip: Pusa Swati, Local Red variety.

Potato: Kufri Badshah.

Rajasthan

Taramira: T-27, I.T.S.A, RTM-314, Karan Tara, Narendra Tara, R.T.M.

Ajwain: Pratap ajwain-1

Early Pea: Arkil, Hara bona, VL-3, Jawahar Matar-4, Matar Ageti-6

Mustard: Early sown (Irrigated) - NPJ 112, EJ17, Pusa Mahak and kanti. Normal sown (irrigated)-Maya, Rohini, Pusa Jai kisan, Varuna, RGN13, RGN73, like Bharat Sarson-1 (NRCDR-2), Bharat Sarson-2 (NRCHB 101), Bharat Sarson-3 (NRCHB506), Normal sown (rainfed) -Arawali, RGN48, Geeta and PBR 97, Saline sodic soils - CS52, CS54, CS56, Narendra Rai 1

Uttarakhand

Pea: VL Ageti Mater-7, Vivek Mater-10, Pant Subjee Mater-3, Azad Mater-3 and Arkel

Tomato: Pant Bahar, Pusa Rubi, Navin

Toria: PT-303, PT-507.

Potato : Kufri Jyoti, Kufri Ashok or Kufri Anand.

Chattisgarh

Maize: Proagro-4640, 4212, Pusa Hybrid -42, MH-10, MH-11, Navjyot, HM-9.

Niger: JNC-1, JNC-6, JNC-9, GA-10, Ootakmund, KGN-2

Kulthi: AK-21, Ak-42, Bastar Kulthi, Birsa Kulthi and VLG-9

Orissa

Okra: Utkal Gourav, Arka Anamika, Varsha Uphar, Parvani Kranti and all available hybrid varieties.

Cowpea: SEB-2, Pusa Barsati.

Brinjal: Utkala Tarini, Utkala Madhuri, Blue Star, Green Star, Pusa Purple Cluster.

Green chilli: Pant C-1, Kala Suryamukhi, Utkala Ava, Utkala ragini etc.

Tomato: BT-2, BT-10, BT-12, Niladri, Sadabahar, Madhuri, Maharathi, Rasmi, Naveen, etc.

Pre-rabi non-paddy crops

Sesame: Kanak, kalika, Uma, Usha, Tilottama, Neelima and Prachi

Green gram : K -851, PDM -54, PDM -11, OUM 11-5

Balck gram : T-9, Pant-U-19. Pant -U-30, Pant -U-11

Niger : Deomali

Horsegram : Urmi, DS 1-2-2, DS 1-2

West Bengal:

Cauliflower: Kanwari, Jowhar, Moti, Early Patna.

Tomato: Pusa Rubi, Pusa Early, S-2, Roma Super.

Jharkhand:

Okra: Pusa A-4, Prabhani Kranti, Arka Anamika, Versha Uphar & Hybrid varieties like Sonal and Sarika.

Urad: Pant Urad -19, Birsa Urad -1.
Til: Kanke Safed and Krishna.
Horse gram: Birsa kulthi-1, G.H.G.-20.
African Marigold: Pusa Narangi, Pusa Basanti.
French Marigold: Petite Orange, Petite Yellow, Rusty Red, Lemmon Drop.
Niger: Birsa niger – 1 or Birsa niger- 2
Green Pea: Arkel, Kashi Nandini, PE-6, Azad pea, Birsa Matar
Potato: Kufri Ashoka, Kufri Puhkraj, Kufri Pushkar and Kufri Surya
Toria: T-9, Panchali, Bhawani, PT-303
Tomato: Pusa ruby, Swarna Sampda, Swarn Lalima
Cabbage: Golden Acre, Pride of India, Early Drum Head
Cauliflower: Pusa Depali , Patna Early, Hazipur Extra Early, Pusa Ketki

Bihar

Urd: T-9.
Arhar: Bahar, Narendra Arhar 1, Malviya 13, Pusa-9, Sharad
Pigeon pea: Navin
Cauliflower: Aghani, Pusi, Early Snowball, Patna main and Pusa Shuvra
Shakarkand: Rajendra Shakarkand 5, Rajendra Shakarkand35, Rajendra Shakarkand 43, Rajendra Shakarkand 47, Kalmegh and Rajendra Shakarkand 92

Assam

Sesame: Punjab Til No. 1, Gouri, Vinayak, Madhabi, ST-1683.
Early cauliflower: Early Kunwari, Pusa Katki, Pusa Deepali.
Dolichos bean: Asina.
Green gram: T-44, Kopergaon, K-851, ML-56, ML-131.
Black gram: T-9, T-27, Pant U-19, T-122, Saonia Mah (SB123), KU 301, USJD113.
Cabbage: Golden Acre, Pride of India, Pusa Mukta (Sel – 8), Japanese, Pusa Synthetic, Pusa Snowball and for late maturing varieties- Snowball-16, Pusa Snowball, K-1 and Hissar 1 etc.
Winter Brinjal: Pusa Kranti, Pusa Purple Long, Pusa Purple Round, Pusa Vairab, Pant Amrat etc.

Manipur

Cauliflower: White Shot.

Gujarat:

Castor: GCH-7, GCH-5, GCH-4
Sesamum: Purva-1.

Maharashtra

Rabi Safflower: Bhima, Phule Kusuma, Sharda, Girna or DSH-129.
Rabi Jowar: Phule Mauli, Phule Anuradha in light soil, Phule Chitra, Phule Mauli, Maldandi-35-1 in medium soil and Phule Vasuda, Phule Yashoda, CSV-22 in black soil.

Karnataka

Cow pea: TVX-944, KBC-1 and KBC-2,
Field bean-HA-3 and HA-4

Annexure III

Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 19.09.2012

