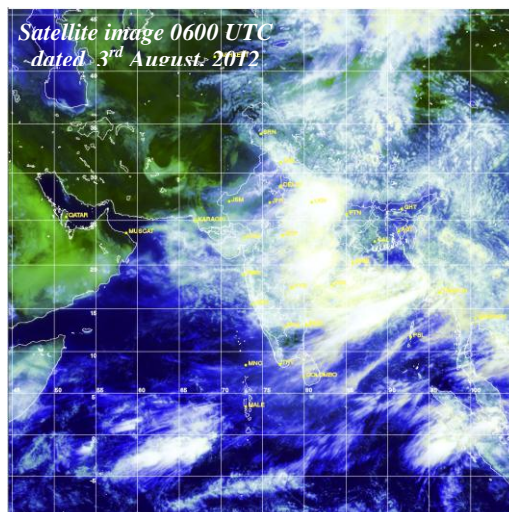


The southwest monsoon has been active over Arunachal Pradesh during past 24 hours ending at 0830 hours IST of today..



Due to subdued rainfall activities in some parts of the country during the season, contingency plan has been prepared for the farming community of Haryana, Delhi, Gujarat, Saurashtra & Kutch, West Rajasthan, Madhya Maharashtra, Marathwada, Bihar, North Interior Karnataka and South Interior Karnataka which is mentioned below:

- South Interior Karnataka:** Due to insufficient rainfall, moisture stress symptoms are observed in the early sown crops. Farmers are advised to monitor the crop situation and if the rainfall condition revives, undertake resowing and if the dry weather condition persists, the standing crops may be cut and used as fodder. For resowing, select ragi (direct sowing) instead of groundnut. Also undertake sowing of red gram for vegetable purpose and fodder crops.
- North Interior Karnataka:** Sowing of contingent crops is continued with realised rainfall. Undertake sowing of short duration varieties of tobacco, groundnut, maize, cowpea, sunflower, niger, castor, bajra, pigeon pea, horse gram and intercropping like bajra + redgram (2:1), pigeonpea + horsegram (2:1) or chilli + desi cotton.
- Haryana:** For standing crops if rainfall does not occur, cut alternate rows of bajra crop to reduce intra crop competition for moisture and use it as fodder, so that remaining crops can survive on available soil moisture. Undertake sowing of bajra (short duration variety HHB667), urd (T9, Uttara), moth (Jwala, RMO 40, RMO 257), guar (HG 563, HG 365) and fodder crops after receiving sufficient rain.
- Delhi:** Continue sowing of bajra wherever rainfall occurred and farmers in areas, where rainfall did not occur, are advised to wait for sowing. Cut off dates for sowing of bajra is upto 3rd August. After that contingent plan for vegetable crops may be worked out.
- West Rajasthan:** Undertake sowing of fodder bajra and short duration varieties of moth and guar.
- Gujarat:** All districts of North Gujarat zone experienced 18-20 days dry spell (from 11th July to 31st July). Farmers are advised to undertake mulching and thinning practices to conserve soil moisture in the early sown crops. From 31st July, weather became very humid and sky is overcast and light scattered rainfall also continued. If the original crop has failed due to moisture stress in some districts like Banaskantha, Mehsana and Patan, carry out land preparation and sowing operations for castor, cluster bean, maize, fennel and fodder sorghum with the recent rainfall.
- Saurashtra & Kutch:** Farmers of the Bhal area are advised to follow the contingency plan due to insufficient rain during the season.
Paddy: **Follow the SRI technique where tubewell or canal irrigation is possible**
Castor: **Sowing of castor crop in remaining field.**
Fodder: **Sowing of fodder crops like sorghum with high seed rate. Undertake sowing of fodder bajra, cluster beans and pulses in place of cereals.**
- Madhya Maharashtra:** In Ahmednagar, Dhule and Nandurbar districts, farmers are advised to undertake sowing of contingent crops like sunflower, bajra, sunflower + red gram, fodder sorghum, fodder bajra and fodder maize.
- Marathwada:** Undertake sowing of *kharif* sunflower, soybean, bajra, sesamum instead of regular *kharif* crops like cotton and jowar. Undertake soil moisture conservation practices in the early sown crops.
- Bihar:** Sowing of contingent crops is continued with realised rainfall. Undertake sowing of til (var. Krishna), intercropping of maize (Suwan) + urd (T-9, Pant U-31, Pant U-19) instead of upland rice, short duration varieties of rice like Rajendra Bhagwati, Prabhat, Narandra 97, MTU-1010 and Rajendra Sweta in medium land and medium duration varieties like Swarna Sab-1, BPT-5204, MTU-7029, MTU-1001 and Rajshree in low land situation, vegetables like early tomato, brinjal, early cauliflower, chilli etc.



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

The bulletin is also displayed in the website (<http://www.imdagrmet.gov.in>) of the Division

Executive Summary

Significant rainfall occurred over many districts in Assam, Arunachal Pradesh, Himachal Pradesh, Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Uttarakhand, Jharkhand, Konkan, Madhya Maharashtra, Vidarbha, Orissa, Gangetic West Bengal, Sikkim, Coastal Karnataka and Telangana and over a few districts in Jammu & Kashmir, Bihar, East Rajasthan, Gujarat region, Marathwada, Kerala and Coastal Andhra Pradesh.

Rainfall is likely to occur at many places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, West Bengal, Bihar, Jharkhand, Orissa, Kerala, Coastal Karnataka, Konkan, Madhya Maharashtra, Vidarbha and North Eastern States. Farmers are advised to postpone irrigation, intercultural operation and application of fertilizers and plant protection measures in these States. Heavy rainfall would occur at one or two places over Uttarakhand, Uttar Pradesh, East Madhya Pradesh, Chhattisgarh and Orissa during next 48 hours. In view of occurrence of heavy rainfall in these regions, arrange for adequate drainage in standing crops.

Due to subdued rainfall activities in some parts of the country during the season, contingent plan has been prepared for the farming community of Haryana, Delhi, Gujarat, Saurashtra & Kutch, West Rajasthan, Madhya Maharashtra, Marathwada, Bihar, North Interior Karnataka and South Interior Karnataka which is mentioned below:

- 1. South Interior Karnataka:** Due to insufficient rainfall, moisture stress symptoms are observed in the early sown crops. Farmers are advised to monitor the crop situation and if the rainfall condition revives, undertake resowing and if the dry weather condition persists, the standing crops may be cut and used as fodder. For resowing, select ragi (direct sowing) instead of groundnut. Also undertake sowing of red gram for vegetable purpose and fodder crops.
- 2. North Interior Karnataka:** Sowing of contingent crops is continued with realised rainfall. Undertake sowing of short duration varieties of tobacco, groundnut, maize, cowpea, sunflower, niger, castor, bajra, pigeon pea, horse gram and intercropping like bajra + redgram (2:1), pigeonpea + horsegram (2:1) or chilli + desi cotton.
- 3. Haryana:** For standing crops if rainfall does not occur, cut alternate rows of bajra crop to reduce intra crop competition for moisture and use it as fodder, so that remaining crops can survive on available soil moisture. Undertake sowing of bajra (short duration variety HHB667), urd (T9, Uttara), moth (Jwala, RMO 40, RMO 257), guar (HG 563, HG 365) and fodder crops after receiving sufficient rain.
- 4. Delhi:** Continue sowing of bajra wherever rainfall occurred and farmers in areas, where rainfall did not occur, are advised to wait for sowing. Cut off dates for sowing of bajra is upto 3rd August. After that contingent plan for vegetable crops may be worked out.
- 5. West Rajasthan:** Undertake sowing of fodder bajra and short duration varieties of moth and guar.
- 6. Gujarat:** All districts of North Gujarat zone experienced 18-20 days dry spell (from 11th July to 31st July). Farmers are advised to undertake mulching and thinning practices to conserve soil moisture in the early sown crops. From 31st July, weather became very humid and sky is overcast and light scattered rainfall also continued. If the original crop has failed due to moisture stress in some districts like Banaskantha, Mehsana and Patan, carry out land preparation and sowing operations for castor, cluster bean, maize, fennel and fodder sorghum with the recent rainfall.
- 7. Saurashtra & Kutch:** Farmers of the Bhal area are advised to follow the contingency plan due to insufficient rain during the season.
Paddy: **Follow the SRI technique where tubewell or canal irrigation is possible**
Castor: **Sowing of castor crop in remaining field.**
Fodder: **Sowing of fodder crops like sorghum with high seed rate. Undertake sowing of fodder bajra, cluster beans and pulses in place of cereals.**
- 8. Madhya Maharashtra:** In Ahmednagar, Dhule and Nandurbar districts, farmers are advised to undertake sowing of contingent crops like sunflower, bajra, sunflower + red gram, fodder sorghum, fodder bajra and fodder maize.
- 9. Marathwada:** Undertake sowing of *kharif* sunflower, soybean, bajra, sesamum instead of regular *kharif* crops like cotton and jowar. Undertake soil moisture conservation practices in the early sown crops.
- 10. Bihar:** Sowing of contingent crops is continued with realised rainfall. Undertake sowing of til (var. Krishna), intercropping of maize (Suwan) + urd (T-9, Pant U-31, Pant U-19) instead of upland rice, short duration varieties of rice like Rajendra Bhagwati, Prabhat, Narandra 97, MTU-1010 and Rajendra Sweta in medium land and medium duration varieties like Swarna Sab-1, BPT-5204, MTU-7029, MTU-1001 and Rajshree in low land situation, vegetables like early tomato, brinjal, early cauliflower, chilli etc.

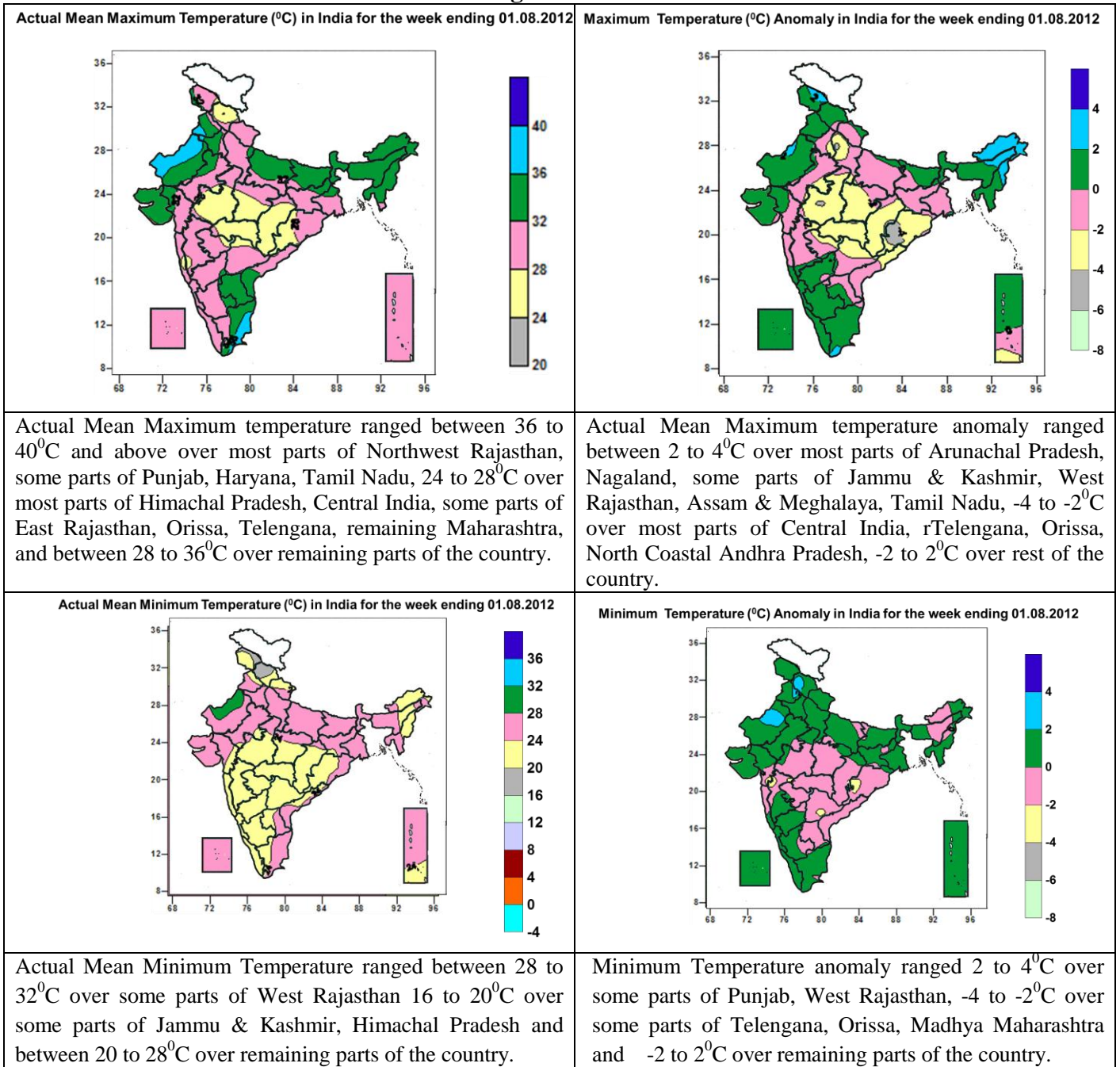
Even though dry condition prevailed during initial period of the monsoon, presently good rainfall condition prevails in the following sub-divisions. In Kerala, normal monsoon conditions prevailed during initial period and deficiency of rainfall is increasing gradually during later part of the season. Hence, no contingent plan was issued as normal sowing of crops is continued.

1. **Rayalaseema:** Continue sowing of groundnut, castor, cotton, bajra and red gram.
2. **West Uttar Pradesh:** Continue sowing of black gram and sesame. Continue transplanting of rice and sowing of sorghum upto 10th August.
3. **Himachal Pradesh :** Transplanting of rice and sowing of maize continued.
4. **Kerala:** Transplanting of *viruppu* rice completed. Crops are in good condition.

In remaining parts of the country (Konkan, Vidarbha, Coastal Karnataka, Coastal Andhra Pradesh, Telengana, Tamil Nadu, Northeastern States, West Bengal, Sikkim, Orissa, Jharkhand, Madhya Pradesh, Chhattisgarh, East Uttar Pradesh, Uttarakhand, Jammu & Kashmir and Punjab), due to receipt of adequate rainfall, sowing of *kharif* crops continued normally.

1. **Konkan:** Farmers are advised to continue transplanting of rice.
2. **Vidarbha:** Continue sowing of *kharif* soybean, red gram and cotton and also undertake transplanting of rice in East Vidarbha.
3. **Coastal Karnataka:** Good rainfall is received during last week. Transplanting operation of rice is continued.
4. **South Coastal Andhra Pradesh:** In view of receipt of rainfall, farmers are advised to undertake medium duration varieties of rice, like Swarna, Chatanya, Krishnaveni, Sambamasuri, Bapatlasannalu and Amara as well as medium duration varieties of pulses like LBG-20, 623, 752, T-9 and PU-31 for black gram, LGG-460, 450, TM96-2 for green gram and LRG-41, 38 and Laksmi (ICPL-85063) for red gram.
5. **Telangana and remaining parts of Coastal Andhra Pradesh:** Farmers are advised to continue direct sowing of rice, groundnut and red gram with receipt of sufficient rainfall and also continue transplanting of rice, sowing of *kharif* crops like cotton, jowar, maize, ragi, castor, groundnut and pulses in coastal Andhra Pradesh.
6. **Tamil Nadu:** Transplanting of *Kuruvai* rice is continued.
7. **Northeastern States:** The States in this region received good rainfall. Sowing of *kharif* crops continued.
8. **West Bengal:** Good rainfall occurred. Sowing of *kharif* crops continued.
9. **Sikkim:** Good rainfall occurred. Sowing of *kharif* crops carried out.
10. **Orissa:** Sowing of *kharif* crops and direct seeding / transplanting of rice is continued.
11. **Jharkhand:** Sowing of *kharif* crops have been carried out satisfactorily.
12. **Madhya Pradesh:** East and West Madhya Pradesh received good rainfall during last week; farmers are advised to continue sowing of soybean, maize, red gram and black gram and transplanting of rice in East Madhya Pradesh and soybean, cotton and maize in West Madhya Pradesh utilizing the rainfall.
13. **Chhattisgarh:** Good rainfall occurred. Sowing of *kharif* crops carried out.
14. **East Uttar Pradesh:** East Uttar Pradesh received good rainfall, sowing of *kharif* crops continued.
15. **Uttarakhand:** Continue transplanting of rice and sowing of maize, bajra, jowar and soybean.
16. **Jammu & Kashmir:** Rain occurred at a few districts during last week. With the receipt of rainfall during third week of July, sowing of major *kharif* crops is completed except vegetables. Crop condition is satisfactory.
17. **Punjab:** As 97-98% area of the State is irrigated, transplanting of rice and Basmati rice is mostly over with irrigation facilities along with sowing of cotton.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 01.08.2012



Distribution of rainfall of the country during week ending on 01.08.2012

State/Districts	Actual (mm)	Departure (% Dep.)	State/Districts	Actual (mm)	Departure (% Dep.)	State/Districts	Actual (mm)	Departure (% Dep.)
Arunachal Pradesh			Fatehgarh Saheb	0.3	-99	Jabalpur	41.5	-57
Changlang	94.0	26	Ferozpur	0.0	-100	Katni	17.2	-81
East Kameng	34.0	-38	Gurdaspur	147.7	88	Mandla	120.0	15
East Siang	20.2	-73	Hoshiarpur	20.0	-71	Narsingpur	89.8	1
Kurung Kumey	148.4	-31	Jalandhar	23.8	-49	Panna	116.4	33
Lower Dibang Valley	64.0	-47	Kapurthala	16.3	-44	Rewa	184.6	124
Papumpara	51.0	-26	Ludhiana	14.0	-68	Sagar	100.7	13
Tawang	175.3	105	Mansa	0.0	-100	Satna	80.7	-6
Tirap	56.0	-60	Moga	0.0	-100	Seoni	158.1	90
Upper Dibang Valley	228.0	38	Muktesar	0.0	-100	Shahdol	35.0	-46
Upper Siang	35.1	-76	Nawashahar	1.9	-97	Sidhi	35.6	-56
Upper Subansiri	38.0	62	Patiala	12.9	-77	Singrauli	105.0	38
West Kameng	96.7	-30	Ropar	20.8	-67	Tikamgarh	172.0	149
West Siang	29.0	-74	Sangrur	0.0	-100	Umaria	27.9	-68
Assam			Mohali	0.5	-99	West Madhya Pradesh		
Baksa	197.9	59	Tarn Taran	1.3	-98	Alirajpur	37.8	-45
Barpeta	55.2	-56	Haryana			Asoknagar	208.5	227
Bongaigaon	71.0	-44	Ambala	6.2	-90	Badwani	59.6	37
Cachar	111.6	6	Bhiwani	2.3	-93	Betul	161.4	129
Chirang	44.8	-64	Chandigarh	19.0	-64	Bhind	173.2	245
Darrang	31.0	-52	Faridabad	2.1	-97	Bhopal	148.0	69
Dhemaji	45.0	-62	Fatehabad	20.0	-62	Burhanpur	125.7	103
Dhubri	28.5	-76	Gurgaon	19.3	-51	Datia	242.4	342
Dibrugarh	101.3	-1	Hissar	0.0	-100	Dewas	384.3	389
East Garo Hills	20.0	-83	Jhajar	20.8	-54	Dhar	103.4	54
East Khasi Hills	118.6	-55	Jind	0.0	-100	Guna	164.9	132
Goalpara	50.4	-45	Katihah	3.7	-90	Gwalior	146.6	148
Golghat	98.2	88	Karnal	2.4	-92	Harda	318.1	310
Hailakandi	67.2	-35	Kurukshetra	0.5	-99	Hosangabad	391.5	284
Jaintia Hills	34.0	-89	Mahendragarh	6.9	-84	Indore	223.2	239
Jorhat	62.4	-26	Mewat	5.9	-86	Jhabua	107.7	91
Kamrup(Metro)	140.0	140	Palwal	9.6	-76	Khandwa	203.2	187
Kamrup	88.3	51	Panchkkula	14.4	-83	Khargone	134.4	119
Karbi Analog	34.1	-28	Panipat	9.8	-75	Mandsaur	93.8	13
Karimganj	88.2	-27	Rewari	6.0	-85	Morena	134.0	117
Kokrajhar	37.0	-77	Rohtak	7.6	-80	Neemuch	40.9	-48
Lakhimpur	149.4	26	Sirsa	0.0	-100	Raisen	193.1	109
Morigaon	33.4	-59	Sonepat	11.0	-77	Rajgarh	203.4	172
N.C.Hills	65.0	25	Yamunanagar	45.0	-39	Ratlam	165.8	90
Nowgong	46.9	-23	New Delhi	52.7	1	Sehore	329.0	260
Nalbari	52.9	-30	Jammu & Kashmir			Shajapur	242.0	193
Ribhoi	1.2	-99	Anantnag	4.6	-78	Sheopur Kalani	74.8	25
Sonitpur	83.4	5	Badgam	0.0	-100	Shivpuri	240.2	276
Sibsagar	92.3	21	Baramula	1.3	-93	Ujjain	260.2	261
South Garo Hills	93.0	-9	Doda	16.2	-52	Vidisha	255.3	192
Tinsukia	123.6	15	Ganderwal	6.5	-56	Chattisgarh		
Udalgiri	37.6	-41	Jammu	205.0	119	Bastar	122.1	43
West Garo Hills	19.8	-81	Kargil	0.0	-100	Bijapur	227.5	89
West Khasi Hills	52.0	-72	Kathua	89.0	-18	Bilaspur	142.5	77
Himachal Pradesh			Kulgam	10.0	-52	Dantewara	164.2	95
Bilaspur	37.9	-60	Kupwara	0.0	-100	Dhamtari	117.2	27
Chamba	61.0	-25	Ladakh(Leh)	0.0	-100	Durg	201.7	166
Hamirpur	169.6	67	Poonch	55.0	-37	Janjgir	117.2	27
Kangra	259.0	62	Pulwama	2.5	-87	Jashpurnagar	99.6	1
Kinnaur	11.1	8	Rajouri	35.7	-42	Kanker	111.9	-3
Kullu	30.0	-47	Ramban	19.3	-43	Korba	77.8	-17
Lahaul and Spiti	0.0	-100	Reasi	278.2	74	Koriya	96.3	20
Mandi	174.7	50	Samba	151.9	62	Kawardha	32.0	-49
Shimla	51.5	-21	Shopian	0.0	-100	Mahasumund	125.3	48
Sirmaur	107.4	-17	Srinagar	1.6	-89	Narayanpur	82.4	-14
Solan	41.1	-52	Udhampur	197.7	23	Raigarh	70.3	-18
Una	67.6	-17	East Madhya Pradesh			Raipur	115.5	47
Punjab			Anuppur	62.1	-29	Rajandgaon	127.9	61
Amritsar	12.5	-77	Balaghat	171.2	53	Surguja	87.5	-1
Barnala	0.0	-100	Chhatarpur	78.8	-1	East Uttar Pradesh		
Bhatinda	0.3	-99	Chindwara	102.7	84	Allahabad	60.5	-11
Faridkot	0.0	-100	Damoh	27.9	-73	Ambedkar Nagar	0.0	-100
			Dindori	36.6	-57	Azamgarh	17.2	-75

Bhraich	13.9	-83
Ballia	30.7	-50
Balrampur	31.0	-65
Banda	167.0	140
Barabanki	37.3	-51
Basti	78.8	12
Chandauli	54.4	-12
Deoria	25.0	-64
Faizabad	5.3	-94
Farrukhabad	53.6	-9
Fatehpur	42.9	-37
Gazipur	11.7	-81
Gonda	36.3	-54
Gorakhpur	20.9	-77
Hardoi	47.8	-21
Jaunpur	27.2	-58
Kannauj	62.8	10
Kanpur City	31.5	-47
Kanpur Dehat	46.7	-24
Kaushambi	69.5	7
Kheri	23.9	-65
Kushi nagar	1.5	-98
Lucknow	12.2	-81
Maharajganj	3.5	-97
Mau	27.3	-64
Mirzapur	91.7	34
Pratapgarh	63.0	-14
RaiBareilly	44.5	-34
Sahuji		
Maharajnagar	86.0	39
Sant Kabirnagar	50.0	-35
Sant Ravidas Nagar	67.0	9
Shrawasti	14.5	-83
Sidharthnagar	33.3	-63
Sitapur	47.5	-22
Sonbhadra	89.3	44
Sultanpur	16.1	-77
Unnao	27.7	-50
Varanasi	72.8	20
West Uttar Pradesh		
Agra	73.6	32
Aligarh	65.0	23
Auraiya	73.1	31
Badaun	68.4	-5
Baghpat	55.4	34
Bareilly	51.4	-34
Bijnor	110.9	25
Bulandsahar	73.9	25
Etah	62.3	27
Etawah	78.3	29
Firozabad	63.4	42
GBNagar	96.0	159
Ghaziabad	65.8	23
Hamirpur	145.6	153
Jalaun	96.5	72
Jhansi	116.9	99
Jotirba Phule Nagar	275.0	291
Kanshiramnagar	142.0	154
Lalitpur	349.0	350
Mahamaya Nagar	57.0	6
Mahoba	38.6	-39
Mainpuri	70.8	40
Mathura	45.9	-3
Meerut	37.1	-47
Moradabad	133.9	67
Muzzaffarnagar	158.0	155
Pilibhit	65.8	-24
Rampur	84.3	-7
Saharanpur	60.3	-10
Shahjahanpur	92.9	35

Uttarakhand		
Almora	80.1	12
Bageshwar	122.9	72
Chamoli	99.7	40
Champawat	116.0	8
Dehradun	111.4	-34
Garhwal Pauri	93.5	-18
Garhwal Tehri	40.9	-59
Haridwar	55.1	-39
Nainital	135.4	9
Pithoragarh	111.6	-23
Rudraprayag	59.0	-64
Udham Sing Nagar	163.8	64
Uttarkashi	137.3	48
Bihar		
Araria	7.0	-93
Arwal	38.5	-15
Aurangabad	40.8	-38
Banka	49.5	-33
Begusarai	35.0	-48
Bhabua	65.5	-8
Bhagalpur	28.8	-60
Bhojpur	12.5	-82
Buxar	5.0	-92
Darbhanga	19.2	-77
East Champaran	11.8	-87
Gaya	59.2	-10
Gopalganj	18.9	-72
Jahanabad	68.8	24
Jamui	3.9	-94
Kathihar	14.9	-81
Khagadia	22.3	-66
Kishanganj	17.6	-85
Lakhisarai	26.5	-66
Madhepura	27.0	-66
Madhubani	9.4	-87
Monghyar	28.7	-63
Muzaffarpur	20.3	-75
Nalanda	51.4	-23
Nawada	17.5	-70
Patna	45.5	-32
Purnea	15.9	-80
Rohtas	70.0	-7
Saharsha	0.0	-100
Samstipur	11.0	-86
Saran	29.4	-62
Sheikpura	94.4	63
Sheohar	4.0	-96
Sitamarhi	1.3	-99
Siwan	28.3	-63
Supaul	28.1	-63
Vaishali	26.6	-64
West Champaran	19.4	-84
Jharkhand		
Bokaro	140.5	80
Chatra	96.1	32
Deoghar	33.9	-53
Dhanbad	69.3	-15
Dumka	76.7	-10
East Singbhum	163.0	101
Garhwa	137.8	95
Giridih	78.6	4
Godda	33.3	-51
Gumla	98.5	14
Hazaribagh	38.5	-50
Jamtara	85.1	14
Khunti	73.8	-11
Koderna	10.0	-85
Latehar	184.4	131
Lohardagga	68.8	-11
Pakur	105.2	23

Palamau	91.5	20
Ramgarh	140.4	82
Ranchi	80.0	-4
Sahebganj	49.2	-40
Saraikela	125.2	89
Simdega	128.3	43
West Singbhum	67.0	-9
East Rajasthan		
Ajmer	13.7	-63
Alwar	21.6	-52
Banswara	68.8	-9
Baran	88.2	31
Bharatpur	38.6	-11
Bhilwara	5.2	-89
Bundi	17.7	-69
Chittorgarh	20.7	-69
Dausa	44.8	-2
Dholpur	101.8	106
Dungarpur	30.7	-47
Jaipur	13.9	-65
Jhalawar	102.2	47
Jhunjhunu	0.9	-97
Karauli	53.5	14
Kota	41.9	-35
Pratapgarh	94.4	16
Rajsamand	8.8	-79
Sawai Madhopur	18.4	-66
Sikar	10.2	-68
Sirohi	22.8	-76
Tonk	14.6	-67
daipur	12.7	-76
West Rajasthan		
Barmer	0.0	-100
Bikaner	3.2	-80
Churu	11.7	-52
Hanumangarh	0.0	-100
Jaisalmer	0.0	-100
Jalore	1.2	-97
Jodhpur	1.4	-94
Nagaur	10.4	-55
Pali	3.4	-92
Sri Ganganagar	4.3	-71
Gujarat Region		
Ahmedabad	3.1	-94
Anand	1.7	-97
Banaskantha	4.2	-93
Baroda	13.8	-82
Broach	14.9	-77
DNH	158.7	-24
Dahod	39.2	-51
Daman	43.0	-79
Dangs	149.0	-31
Gandhinagar	3.8	-94
Kheda	3.8	-95
Mehsana	6.7	-88
Narmada	34.8	-65
Navsari	65.0	-59
Panchmahal	22.4	-73
Patan	0.5	-99
Sabarkantha	10.0	-88
Surat	33.5	-69
Tapi	60.7	-60
Valsad	146.7	-14
Saurashtra, Kutch & Diu region		
Amreli	1.7	-95
Bhavnagar	1.8	-96
Diu	7.0	-88
Jamnagar	0.6	-98
Junagarh	4.5	-93
Kutch	0.1	-99
Porbandar	0.2	-99

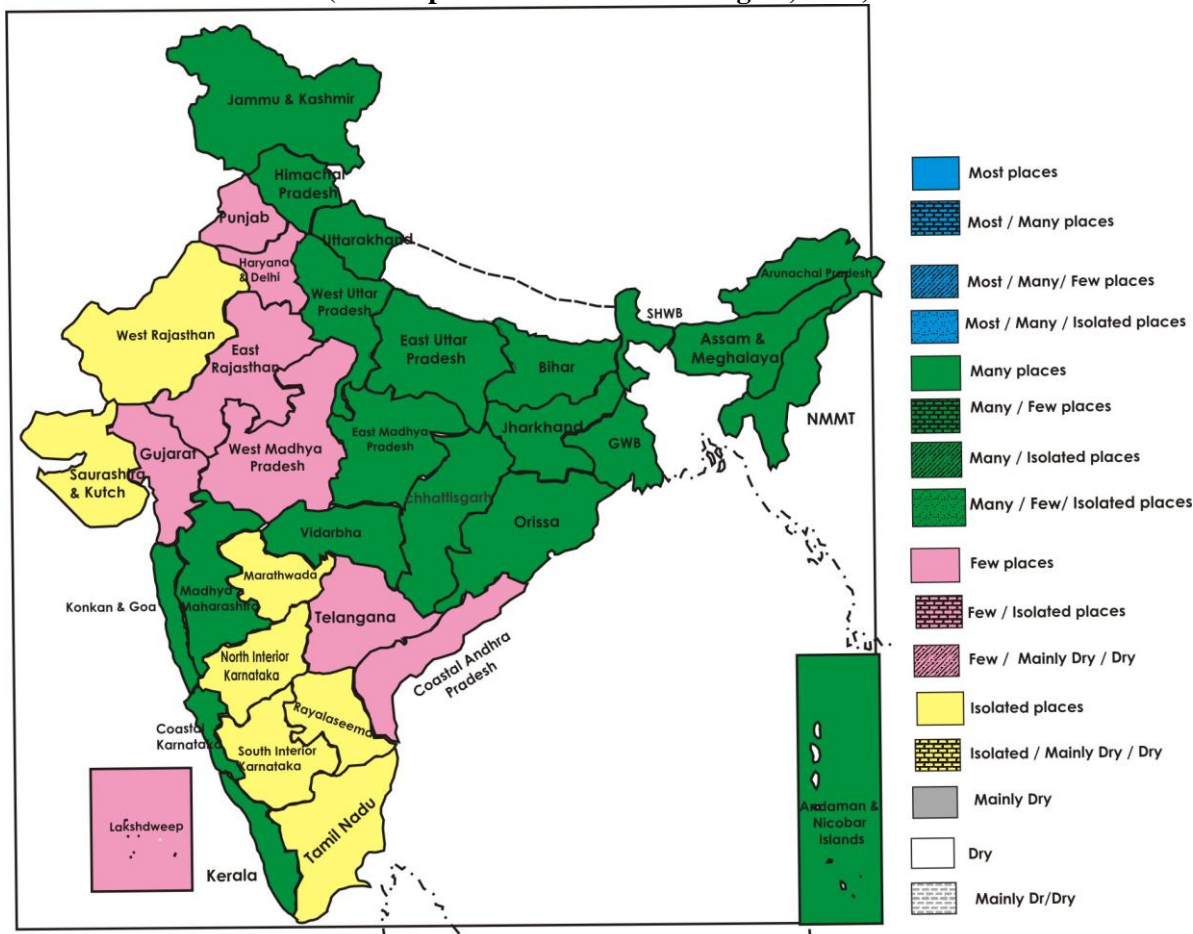
Rajkot	1.1	-98
Surendranagar	2.5	-93
Maharashtra		
Konkan & Goa		
Goa	85.9	-65
Mumbai	48.0	-71
Raigad	218.2	-23
Ratnagiri	312.9	13
Sindhudurg	166.5	-33
Thane	143.7	-30
Madhya Maharashtra		
Ahmednagar	22.9	5
Dhule	21.5	-42
Jalgaon	35.9	-25
Kolhapur	216.0	46
Nandurbar	44.7	-38
Nasik	127.2	61
Pune	111.4	53
Sangli	47.8	49
Satara	178.9	201
Solapur	16.2	-43
Marathwada		
Aurangabad	21.7	-46
Beed	14.4	-57
Hingoli	53.4	-15
Jalna	12.2	-70
Latur	33.6	-44
Nanded	60.6	-7
Usmanabad	27.9	-34
Parbhani	35.9	-41
Vidarbha		
Akola	83.7	89
Amraoti	122.7	121
Bhandara	156.9	74
Buldhana	48.1	5
Chandrapur	78.4	-9
Gadchiroli	157.0	41
Gondia	210.0	124
Nagpur	147.1	132
Wardha	89.9	50
Washim	70.6	37
Yeotmal	60.3	6
Orissa		
Angul	105.5	55
Balasore	28.6	-57
Bargarh	92.7	1
Bhadrak	43.8	-25
Bolangir	51.0	-44
Boudh	108.5	44
Cuttack	122.5	45
Deogarh	75.2	-23
Dhenkanal	109.4	51
Gajapati	53.4	-21
Ganjam	48.7	-21
Jagatsingpur	99.8	12
Jajpur	85.2	21
Jharsuguda	108.6	29
Kalahandi	155.1	65
Kandhamal	80.9	7
Kendrapara	141.7	159
Keonjhar	77.0	32
Khurda	56.5	-30
Koraput	93.8	-3
Malkangiri	134.5	28
Mayurbhanj	81.7	31
Nawapara	50.4	-33
Nawarangpur	134.1	37
Nayagarh	80.9	3
Puri	123.9	52
Rayagada	92.8	18
Sambalpur	108.0	10

Sonepur	118.3	18
Sundargarh	119.2	36
West Bengal		
GWB		
Bankura	98.3	50
Birbhum	55.2	-16
Burdwan	82.2	34
East Midnapore	53.1	-23
Hooghly	96.8	40
Howrah	60.7	-23
Kolkata	40.0	-53
Murshidabad	25.4	-58
Nadia	45.4	-5
24 Pargana (N)	64.2	-6
Purulia	78.0	32
24 Pargana (S)	104.9	-6
West Midnapore	83.5	0
SHWB		
Cooch Behar	31.7	-78
Darjeeling	49.3	-72
East Sikkim	61.1	-56
Jalpaiguri	41.7	-74
Malda	22.9	-68
North Dinajpur	19.4	-68
North Sikkim	47.6	-60
South Dinajpur	23.5	-65
South Sikkim	26.1	-81
West Sikkim	45.0	-62
Karnataka		
Coastal Karnataka		
Dakshin Kannada	136.7	-48
Udupi	185.6	-33
Uttar Kannada	161.1	-23
North Interior Karnataka		
Bagalkote	14.6	-30
Belgaum	43.8	10
Bidar	39.9	-4
Bijapur	4.0	-87
Dharwad	23.6	-25
Gadag	8.5	-56
Gulbarga	25.4	-42
Haveri	27.0	-17
Koppal	19.8	-7
Raichur	11.1	-66
Yadgir	34.8	-14
South Interior Karnataka		
Bangalore Rural	7.6	-70
Bangalore Urban	7.1	-69
Bellary	13.6	-38
Chamarajnagar	1.2	-90
Chichballapur	14.8	-38
Chickmagalur	100.2	-24
Chitradurga	7.7	-46
Davangere	14.9	-39
Hassan	31.7	-23
Kodagu	90.0	-48
Kolar	5.8	-68
Mandya	2.1	-80
Mysore	2.6	-84
Ramnagara	0.0	-100
Shimoga	147.7	18
Tumkur	5.0	-72
Kerala		
Alappuzha	12.7	-87
Kannur	81.0	-58
Ernakulam	34.9	-71
Idukki	45.4	-73
Kasaragod	51.5	-73
Kollam	4.9	-94
Kottayam	27.7	-75
Kozhikode	103.1	-46

Malappuram	86.8	-43
Palakkad	54.9	-52
Pathanamthitta	12.4	-88
Thiruvananthapuram	1.6	-97
Thrissur	25.5	-82
Wyanad	73.7	-67
Andhra Pradesh		
Coastal Andhra Pradesh		
East Godavari	56.7	32
Guntur	15.9	-53
Krishna	42.9	-13
Nellore	18.1	-5
Prakasam	14.9	-33
Sirkakulam	48.6	5
Visakhapatnam	17.5	-57
Vizianagram	21.2	-50
West Godavari	85.6	73
Telangana		
Adilabad	110.6	45
Hyderabad	35.7	-14
Karimnagar	112.9	87
Khammam	106.0	51
Mehabubnagar	51.8	21
Medak	51.4	-7
Nalgonda	35.6	0
Nizamabad	76.8	13
Rangareddy	41.1	-11
Warangal	112.4	89
Rayalaseema		
Anantapur	5.8	-64
Chittoor	11.9	-37
Cuddapah	23.3	-2
Kurnool	40.2	31

	(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 5th August, 2012)



Major Feature of Weather Forecast up to 0830 hours IST of 5th August, 2012

- Rain/thundershowers would occur at many places over east & central India.
- Rain/thundershowers would occur at many places over western Himalayan region, Uttar Pradesh, central & east India.
- Rain/thundershowers would also occur at many places over west coast, Madhya Maharashtra, northeastern states and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at a few places over Punjab, Haryana, Delhi, east Rajasthan, Gujarat region, north Andhra Pradesh and Lakshadweep.
- Rain/thundershowers would occur at one or two places over remaining parts of the country.

Weather Warning during next 3 days

- Heavy rainfall would occur at one or two places over Konkan & Goa, Orissa, Chhattisgarh, Madhya Pradesh and Uttar Pradesh during next 48 hours.

Weather Outlook for subsequent 4 days up to 0830 hours IST of 9th August, 2012

- Rain/thundershowers would occur at many places over western Himalayan region, Uttar Pradesh, west coast and northeastern states.
- Decrease in intensity of rainfall activity over central and east India.
- Subdued rainfall may occur over south interior peninsular India.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in most of the districts of the States of the region during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over the States of the region.
- **Advisories:**
 - As significant rainfall occurred over most of the districts of the States of the region during last week and rain is also likely to occur during the period, farmers are advised to postpone irrigation, intercultural operation and application of pesticides and fertilizers to the standing crops.
 - Farmers in the areas where flood water has been receded, are advised to raise community nursery for late transplanting with old seedlings of the varieties like Profulla and Gitesh (if more than 50% area damaged) or nursery raising of the photo insensitive short duration variety like Luit for re-transplanting (in case of total damage). Farmers may also sow traditional varieties of *sali* rice, which can be transplanted late up to the end of August. Adopt submergence tolerance varieties like Jalashree and Jalkuwari for repeatedly flood prone areas. In partially affected fields, drain out excess water and apply $1/3^{\text{rd}}$ N + 50% K_2O as top dressing during the tillering stage of *sali* rice. Provide aeration in root zone by hoeing in between lines after flood for sugarcane and pulses.
 - In flood affected areas of Hill Zone of Assam, after receding of flood water, the short duration varieties of rice like Luit, Kapilee, Dichang etc. can be sown directly in puddled field with sprouted seeds up to middle of September. Farmers can also sow sesamum in the months of July and August or green gram and black gram up to mid -September in medium and upland situation. Farmers can also raise community nursery, if individual farmer does not have suitable land for nursery due to inundation by flood water.
 - Farmers in Hill Zone of Assam are advised to complete transplanting of *sali* rice. Continue land preparation and sowing of arhar and sesame. Intercropping of arhar with green gram / black gram / sesame in 20-25% hill slope either in single or double row can be suitably done. Undertake nursery raising of early cauliflower. Adequate drainage should be provided in sugarcane plot.
 - Farmers in Upper Brahmaputra Valley Zone of Assam are advised to continue sowing of *sali* rice. Farmers can select suitable long duration high yielding varieties for typical lowland areas. But in medium lowland areas, farmers can select medium duration varieties which may facilitate them to grow toria / mustard after harvest of *sali* rice. Transplant the seedling of papaya and coconut. Farmers may go for cultivation of summer vegetables like snake gourd and ridge gourd. Proper drainage may be arranged to drain out excess water from summer sesame crop field.
 - Farmers in North Bank Plain Zone of Assam are advised to undertake planting of coconut seedling and black pepper and transplanting of areca nut seedling. It is also advised to transplant *kharif* rice seedlings in the main field of flood free area. Farmers may sow the recommended *kharif* sesame varieties within 15th August for better yield.
 - Farmers in Central Brahmaputra Valley Zone are advised to continue sowing of *kharif* sesame, arhar and transplanting of the seedlings of *sali* rice. Harvesting of early and timely sown olitorius jute may be started.
 - Farmers in Lower Brahmaputra Valley Zone of Assam are advised to continue transplanting of *sali* rice. For normal planting (July-Aug) farmers should maintain 2-3 seedlings per hill and 4-6 cm depth for all varieties. Farmers are also advised to continue sowing of *kharif* sesame, cowpea, bottle gourd and jute for seed.
 - Farmers in Barak Zone of Assam are advised to continue transplanting of semi dwarf *sali* rice. Select upland sandy loam soil for the cultivation of *Dolichos* bean (locally known as sheem). Start land preparation for the cultivation of *Kharif* sesame under upland situation.
 - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to complete transplanting of rice (upland WRC) at the earliest.
 - Farmers in Mild Tropical Hill Zone of Mizoram are advised to continue nursery preparation of rice. Maintain a water level of 2-5 cm, depending on the height of seedlings. Continue land preparation and sowing of groundnut and soybean.
 - In Mild Tropical Hill Zone of Nagaland continue harvesting of matured maize cob. Good drainage is important in papaya plant as water logging kills the plant.
 - In Sub Tropical Plain Zone of Manipur sowing of late variety of rice RC Maniphou 7 may be undertaken with the rains. Maintain 10-15 cm of water level. Land preparation for sowing black gram may be done.
 - In Mild Tropical Plain Zone of Tripura sowing of *kharif* vegetables must be completed by the end of this month. Prepare land for sowing of sesame and banana.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - Root dip treatment of seedlings of *sali* rice in Central Brahmaputra Valley Zone and Lower Brahmaputra Valley Zone of Assam is necessary before transplanting as protective measure against stem borer, gall midge and

hoppers. Farmers in these region are advised to wash the uprooted seedlings and then dip the root portion in 0.02% solution of chlorpyrifos (1 ml / litre of water) along with 1% urea (10 g / litre of water) for 3 hours.

- As pesticide application is not feasible in rainy weather, farmers in the Central Brahmaputra Valley Zone and North Bank Plain Zone of Assam are advised arrangement of bamboo perch as an effective measure to control the hairy caterpillar and semi-looper in jute through predatory birds on jute.
- Present weather condition may favour the occurrence of Phytophthora leaf & root rot in betelvine in Upper Brahmaputra Valley Zone. Farmers are being advised to apply four drenches and eight sprays of Bordeaux mixture @ 1% and 0.5%, respectively.
- In Mild Tropical Plain Zone of Tripura, due to prevailing weather conditions, there is chance of attack of stem borer in upland rice and sheath blight and leaf blight in maize. To control rice stem borer, spray Rogor or Monocrotophos @ 2 ml per litre of water and to control sheath blight in maize, spray Chlorothalonil @ 2 to 3 ml per liter of water, spray Zineb @ 3 g per liter of water for leaf blight.
- In Mild Tropical Plain Zone of Tripura, due to cloudy and humid weather, there may be attack of yellow vein mosaic virus particularly in ladies finger. White fly is the vector of the disease. To manage the attack, Prosper or Cypermethrin @ 1.5 ml per liter of water may be sprayed at an interval of 7 days for 3 times.
- Stages of major crops are mentioned in Annexure I.

• **Animal Husbandry**

- Farmers in the areas where flood water has been receded are advised to feed concentrate and green grasses along with vitamins and mineral supplements to cattle. If grass is not available then supply the leaves of edible tree like banana, bamboo, mango, jack fruit etc. and supply adequate pure and clean drinking water to prevent bacterial disease in livestock and poultry.
- In Central Brahmaputra Valley Zone and North Bank Plain Zone of Assam and Sub Tropical Plain Zone of Manipur, farmers are advised to vaccinate cattle and buffaloes against FMD, HS and BQ, pigs against swine fever. Farmers are advised to vaccinate poultry against Ranikhet and Gamboro diseases. Deworm goat and sheep.
- In Lower Brahmaputra Valley Zone, farmers are advised to vaccinate poultry against Ranikhet and Gamboro diseases.
- In Mild Tropical Hill Zone of Mizoram, farmers are advised to deworm cattle against Fascioliosis, vaccinate poultry against Ranikhet and Coccidiosis, deworm pig and vaccinate against swine fever.
- In Mid Tropical Plain Zone of Tripura due to congenial weather, there is chance of infection of coccidial and gastrointestinal parasite in poultry and pig. Farmers are advised to maintain clean sanitary conditions of poultry sheds.
- Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to deworm poultry, goat, sheep and pig.
- In Mild Tropical Hill Zone of Nagaland, farmers are advised to vaccinate pigs/piglets against swine fever.

• **Pisciculture**

- Farmers in Upper Brahmaputra Valley Zone of Assam are advised to release spawn in their fisheries. Clean up the pond well before releasing spawn. Cow dung @ 500 g per sq m may be added at least 15 days ahead of releasing fingerlings into the ponds.
- Farmers of Barak Valley Zone of Assam are advised to supply feed in adequate amount to help the fingerling to grow well. Necessary precautionary measures should be adopted so that embankments of the ponds are not submerged during flood.
- Farmers in Manipur and Arunachal Pradesh are advised to keep pond free from unwanted vegetation and insects. During heavy shower, water should not drain directly into the pond. It should be passed through a bed of sand before draining. Well balanced feed fortified with vitamins and minerals should be provided as supplementary feed.

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

- **Realised Rainfall:** Significant rainfall occurred in most of the districts of Jharkhand (except Koderma), West Bengal (except Murshidabad district in Gangetic West Bengal and Malda, North, South Dinajpur districts in Sub Himalayan West Bengal), Sikkim (except South Sikkim), Orissa (except Balasore district) and many districts of Bihar during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over West Bengal & Sikkim, Orissa and Jharkhand during the period. Rain / thundershowers would occur at many places over Bihar during next 24 hours and decrease thereafter.
- **Warning:** Heavy rainfall would occur at one or two places over Orissa during next 48 hours.
- **Advisories:**
 - As there was significant rainfall in most of the districts of Jharkhand, West Bengal, Sikkim, Orissa and many districts of Bihar during last week and rain is also likely to occur at many places over the States of the region during the period, farmers are advised to postpone irrigation, intercultural operation and application of fertilisers

and plant protection measures to the standing crops. In view of heavy rainfall at one or two places over Orissa during next 48 hours, farmers are advised to arrange for adequate drainage to avoid water stagnation in the crop fields.

- There were subdued rainfall activities in many districts of Bihar during earlier part of the season. However, there was good rainfall during last week in Bihar and thus, with realized rainfall, as contingent measures, farmers are advised to undertake sowing of til, intercropping of maize (Suwan) + urd (T-9, Pant U-31, Pant U-19) instead of upland rice, short duration varieties of rice in medium land and medium duration varieties in low land situation, vegetables like early tomato, brinjal, early cauliflower, chilli etc. Farmers are also advised to sow onion, yam, bean and planting of mango, litchi, guava etc.
- As heavy rainfall is expected at one or two places during next 48 hours, farmers of Western Undulating Zone and North Central Plateau Zone of Orissa are advised to make necessary arrangement to drain out excess water from maize, arhar, cotton and SRI transplanted field. The farmers of North Central Plateau Zone of Orissa are also advised to complete land preparation for sowing of ginger, turmeric and colocasia and avoid spraying in vegetable crops as the wind velocity is high.
- Farmers of North Eastern Ghat Zone of Orissa are advised to undertake sowing of groundnut, cotton, maize, arhar and ragi.
- The farmers of East and South Eastern Coastal Plain Zone of Orissa are advised for puddling for transplanting of rice and sowing of non-rice crops like green gram, black gram, sesame and vegetables such as cowpea, okra and cucurbitaceous crops.
- The farmers of North Eastern Plateau Zone of Orissa are advised for sowing of rainy season vegetables like bhindi, bean, French bean, tomato, cauliflower, cabbage etc.
- In Central and North Eastern Plateau Zone of Jharkhand, farmers are advised to complete sowing of upland rice and undertake short duration varieties of arhar, groundnut, rice, urad, turmeric, jowar, soybean and okra for intercropping.
- 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 in Coastal saline zone of West Bengal are advised to undertake land preparation and sowing of wet seeded rice. Farmers are also advised to start transplanting of water chestnut as waste land crop.
- Farmers in New Alluvial Zone of West Bengal are advised to undertake transplanting of rice utilizing the realised rainfall and maintain one inch stagnant water in the field from 5-7 days after transplanting. Farmers are also advised to undertake sowing of vegetables like tomato, early cauliflower.
- Farmers in Laterite and Red Soil Zone of West Bengal are advised to undertake transplanting of *aman* rice and planting of banana using recent rain water. Farmers are also advised to take short to medium duration varieties of rice, if there is delay in the sowing.
- Farmers in Terai Zone and Old Alluvial Zone of West Bengal are advised to transplant the seedlings of *aman* rice and also harvest already matured jute crop and start retting.
- Farmers in Hill Zone of West Bengal are advised to transplant the seedlings of rice and sowing of ginger and chirota.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- In Puri district in East and South Eastern Coastal Plain Zone of Orissa, fruit and shoot borer in brinjal has been found; install pheromone trap and spray 4 g Sevin WP or 2 ml Malathion in 1 litre water. Root rot in pointed gourd, thrips in chilli has also been found; spray 10 g Plantomycine along with 20 g Blitox 50 in 10 litres of water for pointed gourd and spray 300 ml Ethion or 400 ml Carbosulphan or Chloropyriphos in 200 litre water / acre for chilli.
- Infestation of shoot borer in sugarcane is reported in Western Undulating Zone of Orissa; farmers are advised to spray the crop with Monocrotophos @ 1000 ml / ha and repeat it after 15 days. Release eggs of *Trichogramma chilonis* @ 50000 nos. / ha during evening hours and repeat for 3 to 4 times at ten days interval.
- There is incidence of *Alternaria* blight and bacterial leaf spot on cotton crop in some places of Western Undulating Zone of Orissa. The farmers are advised to spray Mancozeb @ 2.5 g per litre of water for *Alternaria* blight and Steptocycline @ 0.1 g with copper oxychloride @ 2.5 g per one litre water for bacterial leaf spot.
- In Hill Zone of West Bengal, cucurbits may be infested by fruit fly. For protection against fruit fly, the crop may be baited with any contact insecticide like Carbaryl with a mixture 1 g Carbaryl and 10 g sugar in 100 litres of water. Tea may be infested by mites; spray Dicofol @ 1 ml / litre of water.
- Due to high humidity and pre monsoon shower, chitla has been found in Betel vine in Coastal Saline Zone of West Bengal; spray Blitox @ 4 g / liter of water & 0.5% Bordeaux mixture. Due to rain and high humidity, rhizome rot in turmeric and ginger may occur; raise the level of bed and drench the soil around rhizome.

- Due to heavy rainfall in Laterite and Red Soil Zone of West Bengal, caterpillar may attack the *aus* rice; use Acephate 75% or Methyl parathion 50%. Semilooper may attack jute; spray Carbaril 50% (2.5 gm per litre of water). Cut worm may cause damage the stem and root of *khari* maize, sweet corn etc.; apply methyl parathion 2% or Chlorpyrifos 1.5%.
- Due to cloudy weather and high humidity in New Alluvial Zone of West Bengal, fungal collar-rot may be seen. Keep the field weed free and clean and apply mixture of Carbendazim @ 1 g and Thiram @ 2 g per litre of water.
- Under prevailing weather situation, collar rot, fruit and branch rot may be seen in pointed gourd, ridge gourd, tomato, brinjal, yam and chilli in New Alluvial Zone, Old Alluvial Zone, Laterite and Red Soil Zone and Terai Zone of West Bengal. To control collar rot apply Carbendazim @ 1 g and Thiram @ 2 g together per liter of water.
- Stages of major crops are mentioned in Annexure I.
- 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. Ensure 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 of Orissa are advised to apply Mahua Oil cake @ 1 ton / acre to kill the predator fishes where the pisciculture activities are to be taken in new water bodies. Collect 4000 no. of spawns / acre in the ratio of 4:3:3 (Catla : Rohu : Mrigal). For pH correction of water, add 250 kg of Lime / 1 hamt of water.
- Farmers of North Eastern Coastal Plane 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 8 cm size per one acre of water area. In case of three species combination, the stocking numbers should be 900 for Catla, 1200 for Rohu and 900 for Mrigal. In case of six species combination, the stocking numbers should be 800 for Catla, 1200 for Rohu, 500 for Mrigal, 300 for Common carp, 100 for Grass carp and 100 for Silver carp. In any situation, the average water depth of the pond should not be less than 5 ft level.

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

- **Realised Rainfall:** Significant rainfall occurred in many districts of Himachal Pradesh, Uttar Pradesh, Uttarakhand, Banswara, Baran, Bharatpur, Dausa, Dholpur, Dungarpur, Jhalawa, Karauli, Kota and Pratapgarh districts of East Rajasthan, Gurdspur district in Punjab, Yamuna Nagar district in Haryana and New Delhi received significant rainfall during last week. No significant rainfall occurred in West Rajasthan during last week.
- **Rainfall Forecast:** Rainfall is likely to occur at many places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Uttar Pradesh, at a few places over Punjab, Haryana, Delhi, East Rajasthan and at one or two places over remaining parts of the country.
- **Warning:** Heavy rainfall would occur at one or two places over Uttarakhand and Uttar Pradesh during next 48 hours.
- **Advisory:**
 - As significant rainfall occurred over many districts in Himachal Pradesh, Uttar Pradesh, Uttarakhand, Banswara, Baran, Bharatpur, Dausa, Dholpu, Dungarpur, Jhalawa, Karauli, Kota, Pratapgarh districts of East Rajasthan, Gurdspur district in Punjab, Yamuna Nagar district in Haryana and New Delhi received significant rainfall during last week, farmers are advised to postpone irrigation to the standing crops. Farmers in the remaining districts of the above mentioned States and West Rajasthan are advised to provide irrigation to the standing crops. In view of occurrence of heavy rainfall in East Uttar Pradesh during next 48 hours, arrange for adequate drainage in standing crops in these regions to avoid stagnation of water.
 - Farmers in Flood prone Eastern plain zone in East Rajasthan are advised to undertake late sowing preferably early maturing varieties of green gram, moth been, cluster bean and sesame. Nursery sowing of marigold and planting of ber, mulberry, aonla, pomegranate, lime, orange and phalsa utilizing realized rainfall during last week. Undertake sowing of tomato, brinjal and cucumber, cucurbits like bitter gourd, water melon, pumpkin, cucumber, round gourd, ridged gourd and bottle gourd etc.
 - Farmers in Sub Humid Southern Plain and Aravali Hill Zone in East Rajasthan, are advised to sow pulses (urd, red gram and green gram), sesamum utilizing the realized rainfall.
 - In Southern Humid Plain Zone in East Rajasthan, farmers are advised to raise rice nursery with SRI method.
 - Farmers in Semi Arid Eastern Plain Zone (Jaipur) in East Rajasthan are advised to sow short duration varieties of urd, red gram and moong and planting early radish, okra and spinach.

- In Transitional Plain Zone of Inland drainage (Fatehpur) of West Rajasthan, farmers are advised for continue sowing of rainy season crops like bajra, guar, cowpea, moth etc. and cucurbits like khira, bottle gourd, ridge gourd, bitter gourd and cucumber utilizing the realized rainfall during previous weeks.
- In Arid Western Plain Zone (Jodhpur) in West Rajasthan, farmers are advised to undertake sowing of short duration varieties of mothbean, guar and intercropping of fodder bajra with moth or guar instead of bajra for food purpose. Provide irrigation to the early sown crops where irrigation facility is available.
- Farmers in West Rajasthan are advised to undertake sowing of fodder bajra and short duration varieties of moth and guar.
- In (Chatha(Jammu))Sub Tropical Zone of Jammu and Kashmir, farmers are advised to go for transplanting of Basmati and Sambal basmati and complete sowing of *kharif* pulses like urd and green gram without any further delay. Farmers are advised to go for applications of 2nd dose of nitrogenous fertilizer as top dressing in maize if crop is at knee high and drain out the excess water from field of maize and pulse crop under water stagnation condition.
- In Cold Arid Zone of Jammu & Kashmir, farmers are advised to harvest turnips, knolkhol, lettuce, Chinese cabbage, broccoli, summer squash and radish. Irrigate the crops at regular intervals of time as per moisture condition of the soil. In case of sowing of 2nd crops, preferably undertake sowing of legumes as fodder or pea mixed with maize and millets to enrich the soil and the fodder will be more nutritive & palatable.
- In Intermediate zone of Jammu & Kashmir, farmers are advised to continue transplanting of seedlings of rice at 4-6 leaf stage and complete sowing of mash and moong. Continue nursery sowing / transplanting of knol-khol, cabbage and cauliflower and sowing of bhindi, radish, pumpkin, bittergourd, bottlegourd, sponge gourd, carrot, turnip.
- In Valley Temperate zone of Jammu & Kashmir, farmers are advised to give light irrigation to maize, pulse and vegetable crops to avoid moisture stress. Maintain standing water in rice fields during panicle exertion stage. Farmers are advised to undertake transplanting of seedlings of cole crops (knol khol, cauliflower cabbage and kale).
- Farmers in East Uttar Pradesh are advised for direct sowing / transplanting of medium duration rice and sowing of *kharif* crops like jowar, bajra, urad, moong, soybean, groundnut and til. Continue sowing of vegetables like okra, cucumber, pumpkin, tomato, cabbage and chilly. Undertake planting of early cauliflower, brinjal, tomato, onion as early as possible. Also start land preparation and nursery sowing of onion. Top dressing of fertilizers and weeding, hoeing in sugarcane and vegetables in East Uttar Pradesh after current spells of rain.
- Farmers in West Uttar Pradesh are advised to continue sowing of black gram and sesame. Continue transplanting of rice and sowing of sorghum upto 10th August. Fill the gaps where the early transplanted rice seedlings are dried. Before transplanting apply 25kg/ha zinc sulphate in the field. It is also advised to start nursery sowing of brinjal, chilli, tomato, cauliflower, lady's finger and cucurbits (lobia, gourd, taroi, bitter gourd, cucumber).
- In Himachal Pradesh, transplanting of rice and sowing of maize may be completed with realized rainfall during last week.
- In High Hill Temperate Dry Zone of Himachal Pradesh, farmers are advised to completed sowing of cauliflower, capsicum, squash, cabbage and lettuce and planting of capsicum / tomato in poly house. In Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, farmers are advised to continue planting of evergreen fruit plants like mango, litchi, guava, citrus, loquat and amla. Also continue sowing of ginger, arbi, amaranthus and turmeric and continue direct sowing of medicinal plants like Ashvagandha and kalmegh may be done.
- In (Seobagh) Mild Hills Sub Humid Zone of Himachal Pradesh, farmers are advised to complete sowing ginger, arbi, amaranthus, turmeric and also sowing of peas, turnip, radish, carrot and French bean in high hills. Transplanting of paddy should be completed as delayed transplanting reduce the yield. Skip irrigation to the crops. Ensure drainage in maize fields and impound water in rice field.
- In Bhabar and Tarai Zone of Uttarakhand, farmers are advised to stop further transplanting of rice from this week and keep fields fallow for sowing of crops like toria, potato, vegetable pea in September month well in time. Also advised not to go for further sowing of soybean and leave the fields fallow. In areas where rice has not been transplanted due to low rainfall, go for sowing of urd from this week in fallow fields as weather will remain congenial for sowing.
- In Bhabar and Tarai Zone of Uttarakhand, farmers are advised to remove weeds from the rice, soyabean, groundnut, maize, pigeon pea, gahat, kutoo, mandua. vegetable and madira crops and undertake thinning to maintain proper distance for better growth. Top dress Urea @ 2 kg per Nali in these crops as per the crop needs. Maintain proper drainage in all standing field crops. Farmers are advised to monitor the rice crop for the deficiency of Zinc and to correct the deficiency spray a mixture of 5 g zinc sulphate and 20 g Urea dissolved in per liter of water.
- In (Roorki) Sub humid sub tropic Zone of Uttarakhand, rice transplanting should be completed before this week also irrigations and weeding should be done as per the requirement. Complete sowing of maize, bajra, jowar

and vegetables like brinjal, chilli, lady's finger utilizing realized rainfall. Harvest the fruits and take it to market. To improve water conservation in sugarcane, apply mulching or harrowing in between the rows.

- Keeping in view of rainfall, farmers in Delhi are advised to conserve rain water in rice fields by making broad and elevated bunds. In other crops (maize, pulses, vegetables) water logging should be avoided by doing proper drainage in the fields. Farmers are advised for weeding and hoeing in the standing crops for effective weed control and to conserve the soil moisture. Undertake sowing of short duration varieties of maize, urd, moong, lobia, if rice transplantation cannot be done due to limited irrigation facilities. Continue sowing of baby corn (HM-4), sweet corn, bajra, guar, cluster bean, amaranthus, ladyfinger, radish, spinach, coriander. Continue transplanting of tomato, chilli, brinjal and early cauliflower in raised beds. Use FYM because this enhances the water retention of the soil. Optimum use of potash fertilizer is recommended to minimize the water requirement and to develop resistant against attack of insect pests and diseases in the crops.
- Farmers in Central and Western Plain Zone in Punjab are advised to complete transplanting of Basmati rice varieties during this week. Apply urea on the basis of leaf colour chart to the paddy transplanted in June. Farmers in Western Plain Zone in Punjab are advised to complete sowing of cowpea & radish. Farmers in the state are advised to continue sowing of *kharif* fodders at regular intervals for continuous supply of sufficient green fodder. Drain out excess standing water from cotton fields if any as the crop is sensitive to standing water. Irrigate sugarcane crop at 7-10 days interval and apply second dose of urea @ 65 kg per acre along the rows.
- Farmers in Haryana are advised to take up sowing of bajra, sorghum, guar, green gram urd, arhar and moth.
- Farmers in Western Zone of Haryana are advised to weeding in rice and apply recommended dose of fertilizers to the crop. Continue sowing of rainy season vegetables and irrigate existing crops. Farmers in Eastern Zone are advised to undertake sowing of bajra, urd, moth, guar and fodder crops.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - In Sub humid sub tropic of Uttarakhand, it is advised to vaccinate the animals for various diseases as they are more prone to diseases in this weather. For the control of cough use piperazine citrate @50-30 ml/animal. Vaccination for Ranikhet disease in poultry should be done.
 - In Himachal Pradesh, weather is conducive for spread of FMD and galgotu so, farmers are advised for vaccination of animals against FMD. Also for ticks and mites attack on animals for control spray Butox @ 2.0 ml per litres of water. Ensure proper drinking water. Feed pregnant and lactating cows and buffaloes with balance feed including mineral mixture. Put uromin bricks for licking to animals for 5 minutes in morning and evening.
 - In Sub-Tropical Zone of Jammu & Kashmir, farmers are advised to go for vaccinate the animal against foot and mouth diseases. In Valley Temperate Zone of Jammu & Kashmir, it is advised to provide cool and fresh drinking water to the livestock. Low energy diets should be provided to animals. Adult animals should be dewormed. Animal sheds should be properly cleaned and disinfected. Cow dung should damp away from animal sheds to avoid spread of infection. Any injury on animal should be properly attended to avoid collection of maggots. As weather is conducive for ticks and mites attack on animals in Intermediate Zone (Rajouri) of Jammu & Kashmir, it is advised to spray Butox @ 2.0 ml per litres of water.
 - Farmers in Delhi are advised for constant monitoring of cotton crops against sucking pests and mealy bug, if the insect population is above ETL then spray of Imidacloprid 0.5 ml/litre of water is recommended when sky is clear. Use of pheromone traps and Light traps are recommended for monitoring and control of other insect of cotton crop.
 - In Semi-Arid Eastern Plain Zone (Jaipur) of Rajasthan, domestic animals may be attacked by external & internal parasites. To control internal parasites give Albendazol or Fenbendazol under the guidance of Veterinary Doctor to subside attack of external parasites like ticks, flies, mosquitoes etc. spray Butox on animal surrounding & body.
- **Horticulture :**
 - In Himachal Pradesh, give support to the branches of apple so that branches should not break due to fruit load in Sub mountain and low hills sub tropical zone. In high hills temperate wet zone, temperate fruits (Apple, pear plum etc.) are in the fruit development stage. So, maintain the moisture in the soil, apply irrigation if possible. Remove all the bushes from the orchards and also keep the tree basins neat and clean. Picking may be done of the early maturing varieties of the apple and pear.
- **Apiculture :**
 - In Sub Tropical (Chatha) Zone and Intermediate (Pahalgam) Zone of Jammu & Kashmir, farmers are advised to check ants by placing leg of bee hives stand in water pots & feed the colonies with sugar water solution in the ratio of 2:1. Check ectoparasitic mite infestation by dusting sulphur, Keep bee colonies in shade or cover with wet gunny bags. Provide ventilation by placing a small stock in between brood chamber. Kill wasps with a wooden flapper and also by dusting or spraying with insecticides.

- In Sub humid sub tropic of Uttarakhand, to control mango gall formation cut and destroy the affected parts away from the orchard. Spray NAA 200 ppm 90ml/200 litres of water for better flower and fruiting.
- **Floriculture :**
 - In Subtropical and Intermediate lower zone of Jammu & Kashmir, Chrysanthemum can be propagated through rooting of stem cuttings which are taken from healthy mother stocks.
 - In Flood Prone Eastern Plain Zone (Bharatpur) of Rajasthan, farmers are advised to raise nursery for monsoon season marigold using 700 g seed at 6 cm spacing and 2cm depth. Undertake pruning operation in ber. Pruning is necessary because as flower develop in axils of new shoots only.

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

- **Realised Rainfall:** Most of the districts in Coastal Karnataka, Bidar, Belgaum and Yadgir in North Interior Karnataka, Chickmagalur, Hassan, Kodagu and Shimoga districts in South Interior Karnataka, East and West Godavari, Krishna and Srikakulam in Coastal Andhra Pradesh, Kurnool in Rayalaseema, most of the districts in Telangana, Nilgiris in Tamil Nadu and most of the districts in Kerala except Alapuzha, Kollam, Kottayam, Pathanamthitta, Thrissur and Thiruvananthapuram received good rainfall. No significant rainfall occurred over remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would also occur at many places over Coastal Karnataka and Kerala, at few places over north Andhra Pradesh and at one or two places over rest of the region.
- **Advisories:**
 - As most of the districts in Coastal Karnataka, Bidar, Belgaum and Yadgir in North Interior Karnataka, Chickmagalur, Hassan, Kodagu and Shimoga districts in South Interior Karnataka, East and West Godavari, Krishna and Srikakulam in Coastal Andhra Pradesh, Kurnool in Rayalaseema, most of the districts in Telangana, Nilgiris in Tamil Nadu and most of the districts in Kerala received good rainfall, complete sowing of *kharif* crops, drain out excess water and postpone irrigation to the standing crops.
 - In view of the high wind speed forecast during coming five days, farmers in the Eastern Dry Zone of Karnataka are advised to provide staking to the newly planted horticultural crops.
 - Shortage of water and weed infestation in late paddy transplanting is noticed in Coastal Zone of Karnataka due to light rainfall. Farmers are advised to continue paddy transplanting and planting of cashew, mango, papaya and coconut.
 - Farmers in North transition Zone (Dharwad district) are advised to take up sowing of paddy (drill sown), maize, sunflower, groundnut and cowpea and start/continue land preparation for transplanting rice.
 - Since there is possibility of light to moderate amount of rainfall at many places, farmers in North Dry Zone are advised to take up sowing of sunflower, bajra, niger, navane, castor and horse gram. During first fortnight of August, sowing of maize and sunflower and mixed cropping of onion + chilli + cotton (desi) may be taken up. If the crops already sown have recovered due to rainfall received in the last week, then farmers are advised to take up spraying of 2 per cent urea to improve and fasten the growth of the crops.
 - Farmers in the Southern Transition Zone of Karnataka are advised to go for intercultural operation in maize and vegetable crops and undertake preparation of the main field and puddling for transplanting of paddy.
 - As there is a heavy rainfall forecast, farmers in the North East Dry Zone of Karnataka are advised to avoid sowings and care should be taken for field bunds and channels by preparing drainages. Most of the areas have received good rainfall last week. The farmers are advised to follow the contingent crop plan for efficient use of available soil moisture and rainfall. (Contingency plan in Annexure-III). Inter cultivation is to be done in all *kharif* crops like green gram, black gram, cowpea, red gram, soybean etc. wherever it is possible hand weeding can also be done in between the plants.
 - Farmers in the Central Dry Zone of Karnataka are advised to provide drainage in maize and cotton fields, as these two crops are very susceptible to water logging.
 - Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to raise samba paddy with green manure crops by using the expected light rainfall in next few days.
 - Farmers in the North Eastern Zone of Tamil Nadu are advised to undertake sowing of rain fed groundnut and plough the field to eradicate the weeds in the field.
 - Farmers in the Western Zone of Tamil Nadu are advised to take up the main field preparation as paddy crop is ready for transplantation from nursery.
 - Farmers in the South Zone of Tamil Nadu are advised to select alternate crops like maize, pearl millet, finger millet, sesamum, pulses and green manure crops for managing water scarcity situation, adopt alternate furrow

irrigation & drip irrigation and spread the crop residues on the soil for minimizing moisture loss. Farmers are also advised to undertake propping in sugarcane and support for banana for preventing the damage due to winds with high speed.

- Farmers in the High Rainfall Zone of Tamil Nadu are advised to undertake basin preparation for pepper, clove, nutmeg and cinnamon for better rain water harvest and grafting and cutting of horticultural crops.
- Water levels in the reservoirs are very low due to lack of inflows. Hence farmers in the Southern Telangana Rainfall Zone of Andhra Pradesh are advised to avoid cultivation of rice crop under bore wells, not to raise the rice nurseries, either raise the nurseries or adopt the direct seeding in puddled soil, after receipt of sufficient rainfall and start of inflows into the reservoirs. Wherever tanks are filled with sufficient water due to recent rains, farmers can go for direct seeding of rice under puddled conditions using drum seeder or can take up nursery sowings sparsely, so as to get quick growth with short duration varieties for transplanting.
- Farmers in the North Coastal Zone of Andhra Pradesh are advised to drain out excess water from green gram and black gram field, as there is forecast for rain during the ensuing five days.
- Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to continue sowing of medium duration varieties of rice, pulses, cotton, maize and vegetables utilising the recent rainfall.
- Farmers in the Northern Telangana Zone of Andhra Pradesh are advised to sow cotton, soyabean, green gram, black gram, sunflower and castor, as sufficient rainfall has occurred during last week.
- Farmers in the High Altitude Zone of Kerala are advised to sow short duration varieties of paddy, make a decision on area to be sown based on water availability and cultivate drought tolerant varieties to cope up the shortage of rainfall.
- The low rainfall condition in the Problem Area Zone of Kerala results in building up of soil acidity and excess iron, making the soil acidic. Farmers are advised to undertake proper water management by flushing in and draining out of fresh water once in a week, which in turn enhances tillering. Wherever bronzing is noticed, farmers are advised to verify the root health and undertake proper weed management to control weed infestation.
- Farmers in the Southern Zone of Kerala are advised to apply second dose of fertilizer for paddy crop planted in May, ensure proper drainage in coconut garden, complete propping in banana by month end and take care of tapping panels in rain guarded rubber plants.
- Due to continuous rain and decrease in temperature, rust disease in soyabean and stem fly in green gram /black gram was noticed in the North East Transition Zone of Karnataka. Farmers are advised spray Propiconazole or Hexaconazole 1 ml per liter of water to control rust disease and Imidachlorprid @ 0.3 ml per litre of water to control sucking pests and undertake plant protection measures.
- Stem borer incidence in kuruvai paddy and early shoot borer incidence in sugarcane is noticed in the Cauvery Delta Zone of Tamil Nadu. Farmers are advised to place pheromone traps and spray Profenophos at 400 ml/acre (or) apply Cartap hydrochloride 4 G @ 6 kg/ac for effective control of stem borer and Chlorpyrifos at 400 ml/acre to control early shoot borer.
- Fruit borer incidence in tomato and brinjal and borer in bhendi is noticed in the Southern Zone of Tamil Nadu. Farmers are advised to use pheromone trap or light trap 12 nos. / ha and spray chlorphyriphos 800 ml / ha to control them.
- Farmers in the High Rainfall Zone of Tamil Nadu are advised to undertake combined application of systemic and contact fungicides on banana to restrict the spreading of diseases.
- Incidence of stem borer is noticed in maize and the borers caused dead hearts in early stages of the crop, early shoot borer is noticed in sugarcane, mites and shoot and fruit borer is noticed in brinjal in the Northern Telangana Zone of Andhra Pradesh. Farmers are advised to undertake plant protection measures.
- Prevailing dry conditions are favourable for incidence of leaf miner/ leaf webber in groundnut, thrips in cotton and semilooper in castor in the Scarce Rainfall Zone of Andhra Pradesh. Farmers are advised to undertake plant protection measures.
- In Southern Telangana Zone of Andhra Pradesh, delayed sowing of paddy nurseries and transplantings will result in gall midge incidence. Hence farmers should select gall midge resistant varieties or go for application of Carbofuran granules @ 10 kg per acre or phorate @ 5 kg per acre at 10-15 days after transplanting to control gall midge incidence. Incidence of fruit fly is noticed in gourds. Farmers are advised to keep poison bait (100 ml Malathion + 100 g Jaggery per litre of water) to control it and monitor the incidence of brown spot in rice nurseries and sucking pests in cotton and vegetables.
- Incidence of sucking pest is noticed in black gram, green gram and vegetables in the Krishna Godavari Zone of Andhra Pradesh. Farmers are advised to undertake plant protection measures on a non-rainy day.
- Incidences of case worm, stem borer and gall midge is noticed in rice fields in the Problem Area Zone of Kerala. Farmers are advised to keep regular watch over the fields and if the attack is found, they are advised to drain off

the field completely. The prevailing weather condition is most favourable for the incidence and spread of leaf thrips, leaf folder and stem borer in paddy, bud rot diseases in coconut and leaf spot and fruit fall diseases in nutmeg. Farmers are advised to undertake plant protection measures.

- Farmers in the Central Zone of Kerala are advised to allow maximum sunlight to fall on pepper field to control pollu beetle and fungal diseases and undertake efficient management of palms suspected to be affected by coconut root wilt disease.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** All districts in Konkan and Vidarbha, Nashik, Jalgaon, Nandurbar, Kolhapur, Satara, Pune and Sangli in Madhya Maharashtra and Nanded, Hingoli, Latur and Parbhani districts in Marathwada received significant rain during last week. Navsari, Valsad, Dangs, Narmada, Surat, Dahod and Tapi districts in Gujarat region received significant rain during last week.
- **Rainfall Forecast:** Rain/ thundershowers would occur at many places over Konkan, Madhya Maharashtra and Vidarbha, at few places over Gujarat region and at isolate places over Marathwada and Saurashtra and Kutch.
- **Advisories:**
 - As rain / thundershowers would occur at many places over Konkan, Madhya Maharashtra and Vidarbha during the period, farmers are advised to postpone irrigation, intercultural operation and application of fertilizers and plant protection measures.
 - Rainfall situation has improved in Madhya Maharashtra during last 3-4 days; recent rain is beneficial for the growth of already sown crop, transplanting of *kharif* rice and sowing of contingent crop. Farmers of Pune district are advised to undertake sowing of water stress tolerant crops like sunflower, red gram, horse gram on *vapsa* condition with early maturing varieties mentioned in annexure 1 as contingent planning. Farmers of Eastern Pune district are also advised to adopt intercropping of sunflower+ tur (2:1).
 - In Kolhapur region, farmers are advised to complete transplanting of rice seedlings. As Sangli district has received adequate rain during last 4-5 days, farmers in this region are advised to continue sowing of contingent crops like sunflower (SS-56, Bhanu); sunflower (SS-56, Bhanu) + pigeonpea (Vipula, BDN-708) in 2:1 ratio.
 - Significant rain is expected during next 2-3 days in Nasik district, farmers are advised to continue transplanting of rice and finger millet seedlings.
 - *Kharif* crops in Marathwada region are at early vegetative growth stage. Farmers are advised to undertake weeding in cotton, green gram, sunflower, soybean and red gram. Aurangabad, Beed and Jalna districts received insignificant rain during last week; rainfall situation is partly improving since last two days; farmers are advised to undertake hoeing to preserve moisture in the field and apply supplementary irrigation, if possible.
 - All districts in East Vidarbha received significant rain during last week; farmers are advised to continue transplanting of 21 to 25 days old rice (*dhan*) seedlings. Transplant 2 to 3 seedlings per hill.
 - Ahmednagar and Dhule districts received insignificant rain during last week. As fairly widespread rain is expected during next 2-3 days, farmers are advised to undertake sowing of contingent crops like sunflower, red gram and fodder crops in unsown area by selecting short duration varieties.
 - Rainfall situation has improved since last 3-4 days in Madhya Maharashtra and parts of Marathwada; farmers are advised to undertake planting of *adsali* sugarcane.
 - All the districts of North Gujarat zone experienced 18-20 days dry spell (from 11th July to 30st July). Farmers are advised to carryout inter-culturing and hand weeding operations under optimum soil moisture in already sown *kharif* crops (pulses). Carry out mulching and thinning to reduce the loss of evaporation. If the original crop has failed due to moisture stress in some districts like Banaskantha, Mehsana and Patan, carry out land preparation and sowing operations for castor, cluster bean, maize, fennel and fodder sorghum. Carry out hand Weeding & apply supplement irrigation in cotton.
 - Undertake transplanting of rice in South Gujarat region. Due to presence of sufficient moisture in soil and further chances of rainfall, farmers in South Gujarat Zone are advised for sowing of vegetable crops.
 - Due to occurrence of sufficient rain, farmers in South Gujarat Heavy Rainfall Zone of Gujarat, are advised for proper drainage in green gram, black gram, cowpea, red gram and vegetable nursery. In view of prevailing weather conditions, carry out weeding and intercultural operation in early sown crops. Undertake land preparation for sowing of pearl millet and castor.
 - Farmers in Middle Gujarat Zone are advised to undertake transplanting of rice and continue sowing of groundnut, green gram castor and cluster bean. Undertake sowing of castor.
 - In view of insufficient rain, farmers in Bhal area of Gujarat are advised to follow the SRI technique for rice where tube well or canal irrigation is possible and sow castor crop in remaining fields during this week. Also undertake sowing of fodder crops like sorghum with high seed rate. Carry out hand weeding and continue inter-culturing operation in pre sown *kharif* crops. Select short duration varieties for sowing.
 - As very large area of agricultural land still remain unsown due to lack of rain and the area where *kharif* crops sown received very low amount of rain due to which crops are suffering from acute moisture stress in North Saurashtra Zone, farmers are advised to grow short duration crops like castor and sesame (Purva-1) and fodder

crops like forage maize, Gundri jowar, solapuri jowar. Grow bunch groundnut for seed purpose. If moisture stress condition is extended carry out mulching with wheat straw, groundnut shell, dry leaves of crops like groundnut and cotton. Carry out intercultural operations like weeding, hoeing and mulching. If drought spell prolongs for two weeks or more, carry out thinning of rows depending on the severity of the moisture stress. If dry spell is long, ratooning of jowar may be done and if rains occur, top dressing of fertilizer should be suggested. In case crops sown have been damaged, resowing of alternative crops should be recommended as above.

- Undertake inter cultural operation and hand weeding in earlier sown groundnut and pulses in South Saurashtra Zone of Gujarat and apply irrigation. Apply irrigation to vegetables.
- Carry out sowing of castor up to 15th August to avoid incidence of castor semi looper and undertake planting of horticulture crops in North West Zone of Gujarat, after receipt of sufficient rain.
- Varieties of *kharif* crops are mentioned in Annexure II.
- Prevailing cloudy weather condition in North Gujarat Zone is favorable for outbreak of sucking pest in vegetables. Farmers are advised to spray Dimethoate (40%) or Methidathion (25%) @ 10 ml in 10 litres of water.
- Due to cloudy weather condition in Middle Gujarat Zone, there are chances of downey mildew in pearl millet and maize. Farmers are advised to spray Carbendazim @ 3 g / litres of water.
- Due to cloudy weather in South Gujarat Zone, there are chances of incidences of sucking pests in cotton. Farmers are advised to spray Emidacloprid @ 4 ml (200 SL) per 10 liters of water.
- Stages of major crops are mentioned in Annexure-I.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Significant rainfall occurred in many districts of Madhya Pradesh except Damoh, Katni and Umaria in East Madhya Pradesh and Chhattisgarh.
- **Rainfall Forecast:** Rain/thundershowers would occur at many places over East Madhya Pradesh and Chhattisgarh and at a few places over West Madhya Pradesh.
- **Warning:** Heavy rainfall would occur at one or two places over East Madhya Pradesh and Chhattisgarh.
- **Advisories:**
 - Farmers in Madhya Pradesh and Chhattisgarh are advised to postpone irrigation to already sown crops as there was sufficient rainfall during last week.
 - Farmers in Madhya Pradesh are advised to complete sowing of *kharif* crops and transplanting of rice utilizing the rainfall during last week.
 - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to complete sowing of *kharif* crops. Farmers are also advised to go for gap filling in the field where germination is poor, undertake weeding in rice and soybean field, apply top dressing of urea in rice where the leaves are in dried condition. Undertake nursery sowing / transplanting of tomato, brinjal, onion, chilli and cauliflower. Farmers are also advised to provide drainage facilities in pulses and vegetables, particularly turmeric and ginger.
 - Farmers in Gird Zone of Madhya Pradesh are advised to do weeding and intercultural operations in bajra, urad, moong, til and guar and provide proper drainage facilities in the already sown crops. Prepare bunds to conserve soil moisture in rainfed crops.
 - Farmers in Jhabua Hills of Madhya Pradesh are advised to undertake weeding and intercultural operation in soybean and other pulses for soil moisture conservation. Earthing up may be done in maize and followed by application of 1/3 dose of recommended nitrogen through urea after 30 days. Due to prevailing weather conditions these operations may be carried out on a non rainy day. They are also advised to provide proper drainage channels in *kharif* chilli, capsicum, tomato, papaya, garlic, and turmeric and arbi fields.
 - Farmers in Central Narmada Valley Zone of Madhya Pradesh are advised to complete sowing of *kharif* crops like sesame, maize, soybean and sorghum. They are also advised for the weeding and broadcasting of urea in early transplanted rice. Undertake nursery sowing of tomato, brinjal, onion, chilli and cauliflower. Weeding and intercultural operations followed by application of fertilizers may be undertaken in different fruit crops i.e. papaya and guava etc.
 - Farmers in Satpura Plateau of Madhya Pradesh are advised for top dressing of urea in cotton, sugarcane, maize and jowar etc. Farmers are also advised for sowing of niger and seasmum.
 - Farmers in Malwa Plateau region of Madhya Pradesh are advised to prepare drainage channel to avoid water logging in the crop fields. They are also advised for transplanting of fruit crops and vegetable crops such as chilli, tomato, brinjal and onion etc. Sowing of ladies finger and cucurbits etc. may be done.
 - Farmers in Bundelkhand region of Madhya Pradesh are advised to complete the transplanting of rice. Undertake thinning and weeding operations in the standing crops like maize and soybean etc. Provide proper drainage facilities for removal of excess water from oilseeds and pulses crop. Also farmers are advised to prepare grafts of mango, guava and citrus to change the desi varieties to new improved varieties.
 - As wide spread rainfall occurred in all the districts of Chhattisgarh Plain Zone, rice crop have sufficient standing water. Farmers are advised to provide drainage channels in pulses and oilseeds to avoid waterlogging.

- Due to receipt of sufficient rainfall during last week in Chhattisgarh Plain Zone, farmers are advised to continue transplanting of rice. In the transplanted rice field, standing water may be maintained up to 5 cm. Conditions are now favourable for *biasi* operation in direct seeded rice. Hence, wherever direct seeded dry sown rice is of about 25 days old *biasi* operation may be done. After *biasi* operation, *Saghan Chalai* may be done at the earliest.
 - Present weather conditions are favourable for the planting of horticultural crops viz, papaya, mango, guava etc. in Chhattisgarh Plain Zone. Farmers are advised for the planting at the earliest.
 - Farmers in North Hill zone of Chhattisgarh are advised to prepare field and complete sowing of maize utilizing the realized rainfall during last week. Farmers are advised to undertake nursery for sowing of rice, sowing of arhar, urad, til, maize, groundnut, jowar, ginger, turmeric and arbi.
 - Farmers in Bastar plateau zone in Chhattisgarh are advised to prepare field and undertake sowing of cowpea and *kharif* vegetables like bottle gourd, bitter melon, okra and short duration beans, cabbage, cauliflower utilizing the realised rainfall during last week. Farmers are also advised to 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.
 - Due to prevailing weather in Bastar Plateau Zone in Chhattisgarh, attack of swarming caterpillar is likely, spray neem oil 10 ml or DDVP or Quinolphos @ 1 ml/ litre of water.
- **Animal Husbandry & Poultry**
 - Farmers in Central Narmada Valley Zone and Satpura Plateau regions are advised to vaccinate cattle against Foot and Mouth Disease.
 - Farmers in Kymore Plateau and Satpura Hills region, Satpura Plateau region of Madhya Pradesh are advised to vaccinate cattle against Anthrax disease and provide deworming tablets against worm's infection during rainy season.
 - Farmers in Jhabua hills of Madhya Pradesh are advised to vaccinate their goats by CCPC vaccine and keep them in clean, dry and well ventilated place.
 - Farmers in Bundelkhand region of Madhya Pradesh are advised that in high humid condition there is high activity of house flies and mosquitoes in poultry houses, for control measures, spray flit or dust power of Malathion in the poultry houses.
 - In Chattisgarh Plain Zone during early monsoon period, FMD (Foot and mouth disease) is commonly noticed in cattle. Hence, proper vaccination of the cattle should be done. Due to cloudy weather condition, farmers are advised to increase light duration in poultry farms.

Annexure I

Major Crops

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

- Sugarcane (vegetative), *sali* rice (nursery preparation / sowing / seedling / transplanting / tillering), *olitorius* jute (vegetative), *capsularis* jute (harvesting), Capsularis and Olitorius jute for seed (sowing), cucurbits (flowering / fruiting), ginger / turmeric (early vegetative / vegetative), arhar (sowing / early vegetative), *kharif* sesame (sowing / early vegetative), groundnut (sowing / early vegetative), cauliflower (nursery raising) in Assam.
- *Jhum* and WRC rice (transplanting / tillering), okra, cucurbitaceous vegetables (fruiting / harvesting), soybean (early vegetative / vegetative), sesamum (vegetative), black / green gram (harvesting) in Arunachal Pradesh.
- *Kharif* rice (transplanting / early vegetative), soybean, groundnut (vegetative), *kharif* maize (vegetative / silking), cucurbits, chilli and okra (fruiting / harvesting), tomato (seedling / transplanting), cauliflower (nursery raising), turmeric, ginger (rhizome formation), rice bean, pea (sowing) in Manipur.
- *Sali* rice (vegetative / panicle initiation), maize (cob formation), groundnut (vegetative), tomato (flowering / fruiting / maturity), potato (tuber formation), soybean (vegetative / flowering), turmeric, ginger (vegetative / rhizome formation), banana (planting / vegetative) and vegetables like bottle gourd, ash gourd (vegetative / flowering) in Meghalaya.
- Rice (nursery preparation), soybean, groundnut (sowing / early vegetative), *khasi* mandarin (flowering / fruiting), *kharif* maize (vegetative / tasseling / silking), okra (fruiting / harvesting), *kharif* cucurbits (vegetative) and ginger / turmeric (vegetative) in Mizoram.
- *Jhum* rice (milk / early dough), Wetland rice (transplanting / tillering), maize (maturity), okra (flowering / fruiting), cowpea / bean (flowering / pod formation), papaya (vegetative) in Nagaland.
- *Aus* rice (panicle initiation / flowering), upland *kharif* rice (tillering), *aman* rice (seedling / transplanting), groundnut (sowing / early vegetative), arhar (vegetative), maize (tasseling / silking / grain filling), sesame (vegetative / flowering / pod formation), *kharif* vegetables like okra, cucurbits (sowing), cucurbits (flowering / fruiting), okra (flowering / fruiting) 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), *kharif* rice (sowing / transplanting), *kharif* maize, *kharif* arhar, urad, til, sunflower, groundnut, castor (sowing), onion, yam bean, bhindi, brinjal (sowing), mango, litchi, guava (planting) in Bihar.
- Turmeric and ginger (planting), upland rice (sowing), maize, arhar, groundnut, rice, urad, jowar and soybean, til (sowing), *kharif* vegetables like okra, beans, French bean, tomato, cauliflower, cabbage etc. (sowing) in Jharkhand.
- Sugarcane (grand growth), banana (vegetative), jute (vegetative), maize, groundnut, arhar, ragi, cotton, direct seeded rice, pulses, sunflower (sowing), rice (sowing / transplanting), ginger and turmeric (planting), onion (nursery sowing), *kharif* vegetables like okra, French bean, tomato, cauliflower, cabbage etc. (sowing) and fruit crops (planting) in Orissa.
- *Aus* rice (panicle initiation / booting stage), *Aman* rice (transplanting), jute (vegetative / harvesting), banana (planting), *kharif* maize, sweet corn (vegetative), summer vegetables (fruiting stage), cauliflower (seedling), marigold (seedling), cucurbits (fruiting), yam and beetle vine (vegetative) in West Bengal.
- Ginger (germination / early vegetative), orange (transplanting), large cardamom (vegetative / primary flowering / secondary flowering), vegetables (vegetative), rice (transplanting) in Sikkim.

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

- Vegetables (bhindi, cucurbits), peas (sowing / germination), mirch, brinjal (transplanting/seedling), cucurbits viz. cucumber, summer squash, khira, bitter gourd, bottle gourd (nursery sowing/transplanting/ early vegetative), tur, Shimla mirch, and tomato (transplanting / seedling/early vegetative), apple and other temperate fruits (vegetative), radish, arbi, amaranthus, turmeric, maize, dhaincha, chari, bajra, barley, red and white clover, bell pepper, garlic, ginger, coriander, knolkhol, cabbage, cauliflower, lettuce (sowing / planting / germination), soybean (sowing), rice (nursery sowing / transplanting) in Himachal Pradesh.
- Rice (Direct sowing / transplanting/vegetative), late onion (vegetative), chilli, tomato, brinjal, spinach, tomato and cucurbits (vegetative and fruiting), French bean, cluster bean, summer radish, (vegetative and fruiting), ladies finger (fruiting / maturity / harvesting), guar, moong, soybean maize, bajra, til, cluster bean as fodder crops (early vegetative), pigeon pea, cotton (vegetative), sugarcane (vegetative) in Delhi.
- Chilli, capsicum, cauliflower, broccoli (vegetative), sugarcane (planting), papaya (planting), sunflower (germination), Chaitee dhan, maize, lobia, sunhemp, cowpea, jowar for green fodder (vegetative), garlic, cucurbits, okra (seedling), French bean, maize (seedling), rice (Nursery sowing / direct sowing / early transplanting / seedling establishment), summer fodder (maize + cowpea + jowar) (vegetative), maize (sowing / emergence / early vegetative / vegetative / knee high stage), turnip, cruciferous crop (viz. cabbage, cauliflower, knolkhol, kale, broccoli), radish, carrot, beet root, coriander and fenugreek (sowing), leafy vegetables like celery, Parsley and Leek, solanaceous crops viz. tomato, onion, brinjal and chilli, capsicum (nursery sowing/transplanting), matured turnips, knolkhol, lettuce, kale, chinese cabbage, broccoli, summer squash and radish (harvesting in Leh), Horticultural crops (various stages) viz. [peach, mango (flowering/fruiting), plum (picking), ber, orange & guava (fruiting)], *kharif* pulses, til radish, carrot, turnip, spinach, beans, methi and cabbage (sowing), brinjal, Knolkhol, chillies, cabbage, cauliflower (transplanting) in Jammu & Kashmir.
- Rice (early tillering), finger millets (early vegetative), groundnut, sorghum, millets, pigeon pea, urad, moong, soybean, rajma, arhar, maize and ginger (sowing / early vegetative) in Uttarakhand.
- Rice (Direct sowing / transplanting), sugarcane (vegetative growth), sunflower, fodder maize, lobia, (sowing / germination), Sanai, Dhaincha (sowing / early vegetative / vegetative), summer sugarcane (tillering), cotton, soybean and urd (sowing), sunflower, jowar, bajra, maize, arhar, (sowing), vegetables [cucumber, pumpkin, tomato, brinjal, cabbage, lady's finger, chilly, cucurbits] (sowing) in Uttar Pradesh.
- Rice (Transplanting / tillering), spring sugarcane (sprouting / tillering), radish (sowing), carrot, turnip, cauliflower (transplanting / vegetative), tomato, sunflower (sowing), cotton (early vegetative), okra, chilli, brinjal (sowing / transplanting), maize, mung, mash, tur (sowing) in Punjab.
- Rice (transplanting/tillering), Sugarcane (spring season) (early vegetative), barseem (vegetative / last cut), fodder ((maize + cowpeas) (vegetative)), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), radish, cotton (sowing), turnip (sowing) in Haryana.
- Cauliflower, cabbage, onion (transplanting / germination), sugarcane (new planting), cotton (Desi kapas, B.T. kapas, Narma kapas, American Cotton) (land preparation / sowing), pearl millet, jowar and bajra mixed with guar, Sudan grass, oats, maize, sorghum etc. for green fodder (vegetative), mirch, simla mirch, guar, vegetable (tinda, water melon, pumpkin, cucumber, coriander, bhendi, ridge gourd) (sowing), *kharif* onion (nursery planting), *kharif* groundnut, rice (land preparation/sowing) other *kharif* crops viz. pearl millet, sorghum, maize, green gram, cowpea (field preparation / sowing) in Rajasthan.

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

- Sugarcane (vegetative), rice (/transplanting / tillering), maize (vegetative), sunflower (sowing), groundnut (sowing), cowpea (sowing), arecanut (maturity), vegetables (vegetative), coconut (flowering/nut maturity), turmeric, ginger (vegetative), arhar (sowing), green gram/black gram (vegetative), vegetables (vegetative/flowering), soybean (vegetative/flowering), pigeon pea (vegetative), chilli (flowering/fruitle), horticultural crops (fruiting) in Karnataka.
- Sugarcane (April planting) (formative/tillering), rainfed sugarcane (formative/tillering), sesame and banana (vegetative), vegetables (planting), rice (nursery/transplanting), maize (vegetative/grain hardening), ragi (vegetative/tillering), castor (seedling), kharif groundnut (vegetative/flowering), early sown groundnut (vegetative/flowering/pegging), green gram/black gram (seedling/vegetative), red gram (sowing/seedling), rainfed cotton (sowing), irrigated Bt.cotton (vegetative / boll formation) in Andhra Pradesh.
- Pepper (flowering/new planting), ginger (vegetative), rubber (tapping), irrigated banana (harvesting/ planting), cardamom (planting/harvesting), sugarcane (grand growth), vegetables (sowing/ seedling), virippu paddy (tillering/panicle initiation), coconut (flowering) in Kerala.
- *Kuruvai* rice (transplanting/tillering), rice (vegetative/harvesting), rainfed groundnut (sowing), cotton (vegetative/flowering), irrigated maize (vegetative/maturity/harvest), sugar-cane (grand growth stage), sorghum (vegetative), vegetables (vegetative/fruitle) in Tamil Nadu.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane new *adsali* (active tillering / elongation), sugarcane new pre-seasonal (active tillering), sugarcane new *suru* (active tillering in Madhya Maharashtra and Marathwada), *kharif* rice (early tillering in Konkan, Kolhapur Division and transplanting in Nashik, Pune and East Vidarbha Division), cotton (early vegetative in Marathwada and Vidarbha), soybean (early vegetative), groundnut (germination / early vegetative), bajra (germination / early vegetative in Madhya Maharashtra and Marathwada), red gram (sowing / germination / early vegetative) in Maharashtra.
- Cotton (seedling / early vegetative / vegetative / flowering), groundnut (sowing / germination / early vegetative / vegetative / flowering / pegging), *kharif* rice (seedling / transplanting / tillering), pulses (germination / tillering), sugarcane (vegetative / elongation), castor (sowing), vegetables (nursery sowing / seedling / transplanting), green gram, black gram (sowing / germination / branching), red gram (germination / vegetative), sorghum (sowing) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Rice (transplanting), maize, jowar, arhar and soybean (sowing/germination/early vegetative), *kharif* vegetables i.e. tomato, brinjal, chilli etc. (transplanting), fodder crops (sowing/early vegetative), onion (transplanting) in Madhya Pradesh.
- Rice (Direct sowing/transplanting), sugarcane (planting/vegetative), groundnut (pod filling), sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), onion (planting), vegetables (land preparation / sowing / vegetative), millet (sowing), tapioca, ginger, colocasia, dioscorea, elephant foot yam, cassava (planting) in Chhattisgarh.

Annexure II

List of Varieties

Assam

Sali rice: Ranjit, Bahadur, Peoli, Moniram, Pankaj, Kushal, Masuri, Monohar (for typical lowland rice area), Satya and Basundhara (for medium lowland area).

Rice for flood affected areas: Profulla and Gitesh.

Short duration rice for flood affected areas: Luit, Kapilee, Dichang etc.

Traditional sali rice for flood affected areas: Sonamukhi, Manohar Sali, Bordha, Andru Sali, Solpona.

Submergence tolerance Sali rice varieties: Jalashree and Jalkuwari.

Arhar: T-21.

kharif sesame: Gauri, Madhabi, ST 1683, Punjab Til No.1.

Papaya: Ranchi, Washington, Halflong, Coorg Honeydew.

Areca nut: Kahikuchi, Kachar, Sribardhan, Mohin Nagar, Sumongala Vital-11.

Early cauliflower: Early Kunwari, Pusa Deepali

Summer Bottle gourd: Pusa Summer Prolific Long, Pusa Summer Prolific, Pusa Meghdoot and Pusa Manjiri.

Snake gourd: Long Green, Long White and Extra Long.

Ridge gourd: Pusa Nasdar, AAUJ-2, AAUC-3.

Mizoram

Rice: Buhsakei, Bhusanghar, Biahzin, Khairawal, Wonder Rice, IR 64, Ranjeet, PHB-71, IR 50, RCM-9.

Manipur

Soybean: JS 335.

Groundnut: ICGS-76.

Cauliflower: White Shot.

Tripura

Aman rice: Swarna Masuri, Naveen, Puja, Krishnahamsa.

Kharif rice:

Early maturing varieties: Parijat, Khandagiri, Vandana, Jogesh, Siddant.

Medium maturing varieties: Pratikshya, Manaswini, Tapaswini MAS, Konark, Surendra, Lalata, Kharavela, Naveen, Surendra, MTU-1001, MTU1010, Abhisek.

Late maturing varieties: CR-1009, CR-1018, Ranidhan, Mrinalini, Swarna, RGL-2837, Ketakijoha, Moti, Padmini, Kanchana, Mahanadi, Jagabandhu.

For flash flood areas: Swarna Sub-1, Barsadhan.

Hybrid varieties: CRHR-32, Ajay, Rajalaxmi, BS6444G, JKRH-401, ARIZE 6444G, JKRH-3333.

Fruit Crops:

Mango: Banganpalli, Totapuri, Subarnarekha, Nilam, Langrah, Dasher, Amrapalli.

Banana: Kabuli, Robusta, Patakapura, Champa, Gaja Bantala, Batisha Bantala.

Guava: Allahabad Safed, Lucknow -49, Banarasi Seedless.

Papaya: Kurg Honeydew, Coimbatore-1 & 2, Pusa Delicious, Pusa Majesty.

Coconut: Eastcoast Tall, Westcoast Tall, Andaman, Lakhsadeep, Java, Fiji.

Pine apple: Que, Queen, Simachalan and Maricius.

Cashew nut: Vengrulla 1.4, BPP-4.

Jackfruit: Kadua, Khajra and Singapor.

Orissa

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

➤ Ginger: Suprava, Suruchi and Suravi.

➤ *Kharif rice:*

➤ Early maturing varieties: Parijat, Khandagiri, Vandana, Jogesh, Siddant.

➤ Medium maturing varieties: Pratikshya, Manaswini, Tapaswini MAS, Konark, Surendra, Lalata, Kharavela, Naveen, Surendra, MTU-1001, MTU1010, Abhisek.

➤ Late maturing varieties: CR-1009, CR-1018, Ranidhan, Mrinalini, Swarna, RGL-2837, Ketakijoha, Moti, Padmini, Kanchana, Mahanadi, Jagabandhu.

➤ For flash flood areas: Swarna Sub-1, Barsadhan.

➤ Hybrid varieties: CRHR-32, Ajay, Rajalaxmi, BS6444G, JKRH-401, ARIZE 6444G, JKRH-3333.

➤ Maize: Navjot, Shakti, Decan-107.

➤ Arhar:

➤ Early duration: Prabhat, Upas-120, ICPL-86012.

- Medium duration: Asha, Visakha.
- Cotton: MCU-5 and Sabita.
- Ragi: Divyasingh, AKP-2, AKP-3, AKP-7, Godavari, Neelachal, Bhairavi, Shubhra, and Chilika.
- Green gram: PDM-11 & 54, K-851.
- Black gram: T-9, Pant U-11, Pant U-19, Pant U-30.
- Cowpea: SEB-2, Pusa Barsati.
- Niger: Deomali, Niger-1.
- Groundnut: TMV-2, TAG 24, Smruti, Devi.
- Brinjal: Utkala Tarini, Utkala Madhuri, Blus Star, Green Star, Pusa Purple Cluster.
- Green chilli: Pant C-1, Kala Suryamukhi, Utkala Ava, Utkala ragini etc.
- Dry chilli: Pusa Jwala, Utkala Rashmi Sindur, Pusa Sada Bahar etc.
- Soyabean: Ankur, Gourav, P. K. 73-163 and T-49.
- Castor: Jyoti, Kranti, Aruna, Bhagya, and hybrids like GCH-4, GCH- 5, GCH- 177 and GCH-32.

West Bengal:

- Aman rice: IET-4094, 2233, Ratna, Bikash, Kitish, Sasya-shree, IR-42, Swarna, Mashuri, IET-8002.
- Coconut: Eastcoastal, Hazari.
- Mango: Himsagar, Bombai, Langra, Mallica etc.
- Guava: Safeda, L-49.
- Banana: Mortoman, Chapa, Kathali, Singapuri.
- Cauliflower: Kanwari, Jowhar, Moti, Early Patna.
- Tomato: Pusa Rubi, Pusa Early, S-2, Roma Super.

Jharkhand:

- Ginger: Vardhaman, Nadia.
- Turmeric: Rajendra Sona.
- Okra: Pusa A-4, Prabhani Kranti, Arka Anamika, Versha Uphar & Hybrid varieties like Sonal and Sarika.
- Maize: Birsa Makka-1, Birsa Makka-1, Sawan-1 (Hybrid), HQPM (Hybrid).
- Arhar: Birsa Arhar-1, Narendra Arhar-1, Bahar, ICPH-2671.
- Upland rice: Vandana, Birsa Vikas Dhan -109 & Birsa Vikas Dhan -110.
- Medium land rice: Anjali, Sahbhagi, Naveen, Lalat, Birsamati, Sugandha, BR-10, Pro-Agro 6444, IR-36, IR-64 etc.
- Low land rice: Swarna (MTU-7029), Rajshree, Sambha Mahsuri (BPT-5204), Birsa Dhan- 202, Birsamati, Pro-Agro 6444.
- Urad: Pant Urad -19, Birsa Urad -1.
- Til: Kanke Safed and Krishna.

Bihar

Short duration rice varieties in medium land: Rajendra Bhagwati, Prabhat, Narandra 97, MTU-1010 and Rajendra Sweta.

Medium duration rice varieties in low land: Swarna Sab-1, BPT-5204, MTU-7029, MTU-1001 and Rajshree.

Til: Krishna.

Maize for intercropping: Suwan.

Urd for intercropping: T-9, Pant U-31, Pant U-19.

Onion: N-53, Agrifound Dark Red and Basant- 780.

Yam bean: Rajendra Mishrikand 11.

Himachal Pradesh :

Brinjal: Arka Nidhi, PPC

Shimla mirch: California wonder

Agetibhindi: P-8, Prabhnikranti, Arkaanamika,

Frenchbean: Contender

Pepper : Surjmukhi,

Rajmash: Triloki, Jwala, baspa Kailash

Raddish: japani white and early mino white,

Turnip: PTWG-1.

Cabbage: Himsona Cabbage, Varun, Bahar, Bajrang, Green challenge.

Knolkhol : White Bina,

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

Peas: Angoori, PS1100/Azad1.

Cucumber : Kiyam seedless/243, Matgaura, Maliniseeded

Tomato : Naveen2000plus, Avtar, Solan hybrid 1 and 2,

Red capsicum : Natasha, Tanvi

Yellow capsicum : California wonder, bharat, solan sankar 1, Indira, Orivelle

Jammu & Kashmir

Bhindi: Varsha Uphar, Pusa A-4 and Prabhani Kranti),
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
Radish: Japanese white,
Carrot: Nantes
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
Cabbage: Golden Acre and Pride of India
Brinjal: Pusa Purple Long, Pusa Purple Cluster,
Cauliflower: Pusa Snowball, Pusa Snowball K-I
Rice: IET – 1410, K-39, Ratna, China-1039, PC-19, Basmati, Jaya and RR-8585
Intermediate higher zone (K-39, K-448, Giza-14, K-78 and K-332), K-84, K-39.
Mash : Pant U-19
Urd : Pant U-19, Uttra
Moong: PDM-54, ML-131 and ML -818, PS-16, PS-7
Til: Punjab Til-1

Punjab & Haryana

Punjab :
Paddy : Basmati- 370, 386
Okra: Punjab-8, Punjab-7 and Punjab Padmani
Radish: Punjab Ageti & Pusa Chetki.

Haryana :

Paddy : PAU 201, PR 120, PR 118, PR 116, PR 114, PR 113, PR 111, PR 115.
Bajra: HHB 50, HHB 60, HHB 67 Improved, HHB 68, HHB 226
Sorghum: Muskan Satya, Basmati, Pusa Bold
Guar: HG 563, HG 365
Green gram: SML 668
Urd: T9, Uttara
Arhar: Manak, Paras, Pusa 992
Moth: Jwala, RMO 40, RMO 257.

Delhi

Paddy: Pusa sugandha-5, Saket-4, Govind, P S -5, PRH-10.
Maize: Hybrid: AH-421, AH-58 Composites: Pusa composite-3, Pusa composite-4
Baby corn: HN-4
Cucurbits:
Hybrid varieties: Bottle Gourd- Pusa Santushti, Pusa Naveen, Pusa Sandesh;
Bitter Gourd- Pusa Visesh, Pusa-2 mosumi; Pumpkin- Pusa Visvash;
Ridge Gourd- Pusa Chikni, Pusa Sneh.
Radish: Versa ki rani, summer long, long chetaki Pusa chetaki
Spinach: All green
Coriander: Pant Haritama or hybrids

Uttarakhand

Rice : Pant Dhan-1, 3, 4, 12, Ashwani, Narendra -92, Suraj – 52, VI-Dhan -154, 81, VK Dhan – 62, 65, 82, 85

Uttar Pradesh

Sugarcane : KS-8436, KS-88230, KS-95255
Sunflower : K.P.S.H. 1, Divyamukhi, Jwalamukhi
Moong : Type-44, Pant Moong-1,2, Narendra Moong-1, PDM-11, MUM-2, Malviya Jagruti, Samrat, Pusa Vaishakhi K. , K-851, JM-721 etc.
Urad : Azad Urd-1,2, Bhokhar-1,2, Type-9, Uttara etc. JT-9, Pant U-19, Narendra ; Pant U-35
Arhar : U.P.A.S.-120 and T 21.
Bajra : I.C.M.B.-155, W.C.C.-165, Raj-171, Pusa-322, 332(hybrid)
Jowar : C.S.V.-3, 15, C.S.H.-9,13,23,26

Groundnut: Chandra, Chitra, T.G.-37A

Rajasthan

Kharif paddy : P.R.106, B.K.190, Mahi Sugandha (Basmati), Ratna, B.K.79, Jaya Basmati 370, Tarauri, Basmati, P.H.B.-71, Improved Pusa Basmati, Pusa Sugandha-4, 5.

Kharif onion : N-53 & Agrifound dark red

Kharif groundnut : RG-382, R.S.-1, M-13, RG-141, TG 37-A & Girnar-2, J – 38, TG – 37 – A, Pratap mungphali – 1, Pratap mungphali – 2, etc. are improved varieties

Guar : **R.G.S- 936, R.G.S- 986, R.G.S- 1002**, R.G.S- 1017, H.G- 365, H.G 563, H.G 2 & 20. R.G.C. 1066 (Lathi), R.G.S. 112(Surya Gwar)A, R.G.C.-936A, R.G.C.-1002A, R.G.C.-1003A, R.G.C.-1017A, R.G.C.-1031_(Gwar Kanti)A, R.G.C.-1038(Gwar Karan)A, R.G.C.-1055(Gwar Uday)A, R.G.C.-1066(Gwar Lathi)

Pearl millet: Composite: Raj-171, **Hybrid:** RHB-121, HHB-67 (Improved), High yielding varieties : RHB-173, RHB-177 H.H.B. 67-2, I.C.T.P.-8203, R.H.B.-121, R.H.B.-154, G.H.B.-538, H.H.B.-67 (improved).

Pusa 334, Pusa 383, HHB 67, HHB 94, Raj 171, ICMH 356, ICTP 8201 and RHB 121

For fodder purpose : Bajra Raj 171, C.Z.P. 9802 with Chawala V 16 A.R.S. 9, F.S.-68 A, Moth R.M.O.-40A, R.M.O.-257A, R.M.O.-435, Gwar R.G.C.-936A, R.G.C.-1002A, R.G.C.-1017

Sorghum: CSV-15 (105-110 days), CSV-23 (110-115 days), Pratap Chari-1080 (105-120 days), CSH-14, 16

Maize: Mahi Kanchan (75-80 days) & Pratap Makka-5 (85-95 days), RMG-62, RMG-268. RMG-492 & RMG-344, SML-668 are improved varieties of green gram. FS-68, RC-19 and RC-101 are improved varieties of cowpea. Him – 129, Aravali Makka, PEHM-1, PEHM- 2, Pratap Makka-1, Pratap Makka-3, etc.

Improved varieties of bottle guard are Pusa Naveen, Arka Bahar for pumpkin - Pusa Vishwas, Arka Chandan, Pusa Alankar, Arka Suryamukhi for bitter guard - Arka Harit Pusa Vishesh, Priya and for round gourd- Arka tinda, Bikaneri green, Punjab-48.

Til (Sesamum) : R.T. 46, R.T.125 and T.C. 25.

Moong (Green gram): Ganga-1 (Jamnotri), Ganga-8(Gangotri), S.M.L. 668, M.U.M.-2 **Improved varieties :** RMG-62(65-70 days), RMG-268 (65-70 days),RMG-492 (65-70 days) & RMG-344, SML-668

Short duration varieties - K 851, Pant M 2, PS16, Samrat, Pusa Baisakhi and Pusa Vishal,

Cowpea: FS-68 (60-70 days), RC-19 (60 days), RC-101 (60-65 days)

Mothbean: RMO-40 (62-65 days), R.M.O.-225, R.M.O.-257, R.M.O.-435, Kajari Moth 3, FMS-96 (58-60 days)

Urdbean: Pant: U-19 (70-75 days), RBU (70-80 days), T-9, Krishna, Barkha,

Vegetables : Tomato : Pusa Ruby, Pusa early dwarf, Roma, **Brinjal:** Pusa long, Meghdoot, ArkaBahar, Pusa summer and prolific round, **Cucumber:** Balam, Pusa Sahyog

Guava: Allahabad safeda and Lucknow 49, **Pomegranate :** Ganesh, Jhalore and Seedless, **Orange:** Nagpur and Kinnoo, **Lime :** Kagzi and Baramasi, **Aonla:** Banarshi, Krishana, NA9 and NA10, **Ber:** Sonor,Thornless,Katha Alwar, Gola,and Seb

Andhra Pradesh

Cotton: Srisilam, Mahanandi, Srinandi, Jayadhar and Yaganti

Rice : Sriranga, NLR-T-145 (swarnamukhi), LNLN-9674, Pardhiva

for salt affected areas: Deepthi, Vikas, Vedagiri and Somaseela, gall midge resistant varieties such as JGL11470, JGL 1798, JGL 3844

Pulses:

Black gram: LBG-20, 623, 752, T-9 and PU-31

Green gram: LGG-460, 450, TM96-2

Red gram: LRG-41, 38 and Laksmi (ICPL-85063)

Gujarat:

Rice: GR-101, 102, 103, 104, Masuri, Narmada, IR – 28.

GR-3, 4, 6, 7 and 12 (early maturing varieties).

Maize: Gujarat Maize-4, Ganga Safed-2, Farm Sameri, Ganga-11.

Groundnut: GG-2, GG-5, GG-9, TG-26, TPG-41, TAG 37 for bunch and GG-20 for semi spreading type. Other varieties - GAUG-10 , GG-2 ,GG-11, GJG-9 GJG-17, TAG-24

Sesamum: GT-1, 2, 3, 4, Purva-1.

Bajra: GHB-558, 577, 538, 719, 732, 744, 528, 316, 183.

Green gram: GM-3, GM-4, K-851.

Black gram: T-9, GU-1.

Cowpea: Gujarat Cowpea-1, 2, 3,4, Pusa Falguni.

Pigeon pea: GT-1, GT-100, GT-101, T-15-15, BDN-2, IPCL_87-Pusa Ageti, GTH-1.

Tobacco: Anand 119, Anand 2, GT 5, GT 9, GTH 1 and ABT 10.

Castor: GCH -6, GC -3, GAUCH -1, GCH-5, 7

Cluster bean: HG-75 or G.C.-1, G.Guar-2, SG-74

Maharashtra:

Jowar:

Hybrid variety: CSH-5, CSH-9, 13, 14, 16, 17, 18, 21, 23 and SPH 1567.

Improved variety: SPV-462, CSV-13, 15, 17, 20, 23 and PVK-801.

Bajra:

Hybrid variety: Shraddha, Saburi, Phule Shanti.

Improved variety: ICTP 8203, ICMV – 155.

Groundnut: SD 11, Phule Pragati, Phule Vyas, Phule Unap, TPG 41, TG 26.

Sunflower: EC-68414, Morden, SS-56 and Bhanu for Madhya Maharashtra and LSF-8 and LS-11 for Marathwada.

Soybean: JS-335, Phule Kalyani (DS-228), PK 1029, MACS 450 for Madhya Maharashtra and MASU-47, JS-335 and MAUS-71 for Marathwada.

Rice: PKVHMT, PKV Khamang, Sindewahi 2001, Sindewahi-5, Sindewahi-75 for nursery swing in East Vidarbha and Ambika, Prabhavati (Parbhani-1), Sugandha, Parbhani Avishkar for drill sowing in Marathwada.

Black gram: BDU-1, TAU-1 for Marathwada.

Red Gram: ICPL 87, Vipula, BSMR-853, BSMR-736 for Madhya Maharashtra and for Central Vidarbha – ICPL-87119 (Asha), C-11.

Kharif Cotton: AKA-5, AKA-7, AKA-8, American improved variety – AKH-081, PKV-Rajat, AKH- 8828 for Central Vidarbha Zone.

Adsali sugarcane : CO-86032 (Neera), Phule-0265.

Caster: VR-9, Girija, Aruna.

Horse gram: Seena, Man.

Gaur: Pusa Sadabahar, Pusa Mosami, Pusa Navbahar.

Bean: Phule Suyash, Varun.

Intercropping varieties :

For Western Maharashtra Scarcity zone

Bajra (Shanti) +tur (Vipula).

Soybean (JS-9305, JS-335, JS-228) + tur (Vipula).

Crop varieties for Sangli District.

Kharif bajra: Hybrid variety ICTP-8203, Shradha, Saburi.

Sunflower : SS-56, Morden, Bhanu.

Fodder sorghum: Phule Amruta, MP Chari, CSV-21F.

Contingency crops for Ahmednagar, Dhule, Nandurbar district

Sunflower: SS-56, Bhanu.

Intercrops: Sunflower: EC-68414, SS-56, Bhanu+ Red gram : ICPL-87, Vipula.

Fodder sorghum: Phule Amruta, MP Chari, CSV-21F, fodder bajra: Giant bajra, fodder maize: African tall.

Madhya Pradesh

Paddy: a. Medium: IR-36, IR-64, Pusa Sugandha-5, MTU-1001

b. Late: Mahsuri, Safari-17, Syamla, Swarna

Maize: Navjot, Arun, H-216, Jm-13, Sartaj, Daccan 107(Medium), Ganga-11, Prabhat, Trisulta, Daccan 103, Daccan 105(Late), JVM 421, JM 12, JM 216, **Hybrid** – HPQM– 1, Vivek Hy. -4, PEHM– 2

Arhar: Laxmi, Pragti, Asha, Jagrati, JKM-7 and JKM-189

Jowar: JJ-741, JJ-938, JJ-1022, JJ-1041 and CSV-15

Soybean: JS-95-60, JS-93-95, JS-97-52, JS-80-21, JS-335, NRC-37

Urad: JU - 86, JU 3, T-9

Pigeonpea: TJT-501, JKM-189, ICPL-88039

Moong: HUM- 1, JM-721, K-851, Pusa Baishakhi

Chattisgarh

Millet: High Yielding : PR 202, HR 374, VR 708, RAU 08, GPU 45, VC 149 and for kodo millet GPUK-3, RVK-155 and for Kutki JK08.

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

Rice: IR-64, IR-36, Poornima, Annada, MTU 1010, MTU 1001, Mahamaya, Karma Mahsuri, Bamleshwari, Swarna.

Soybean: JS 335, Indira Soya-09, JS 93-05.

Annexure III

Contingency plan for Karnataka (North Transition Zone)

Soil type	Normal Cropping	Contingent crops
Medium Deep Block Soil	Soybean	Avoid Soybean. Alternatively go for sole Tobacco
	Groundnut	(JL-24, GPBD-4)
		Cotton,
	Blackgram	Avoid Black gram and go for Maize, cow pea & sunflower
	kharif sorghum	Avoid kharif sorghum and go for Maize, cow pea & sunflower
	Sunflower	Sunflower (SB 275)
	Green gram in Kharif –Rabi Sorghum	Avoid Green gram, Blackgram, Soybean, kharif sorghum and plan for Sunflower Morden, SB 275)/ Cowpea (C-152)/ Maize (Arjun, 900M)
Red Loamy Soil	Hy.Bajra, Horse gram, Hybrid cotton(Bt.), Groundnut, Chilli, Foxtail millet	Horse gram
		Cowpea (C-152)
		Castor GCH -4,
		Sunflower Morden, SB 275
Medium to deep black soil	Maize(maize hybrids) - Chickpea (A-1) Soybean (JS 335)- Rabi Jowar(M 35-1) Groundnut(GPBD 4, TMV2, JL 24) - R. Jowar / Wheat (DWR 162) Green gram(CM/SM) -Rabi Jowar/ Wheat Chilli (B. Dabbi & B. Kaddi) + desi Cotton (Jayadhar) + Onion Hy. Cotton (Bt).	Avoid green gram – rabi Jowar (M 35-1) Cropping sequence. Continued up to July 15th Maize + Red gram (4:2) Groundnut + Red gram (4:2)
Rainfed drilled paddy situation	Paddy - Green gram / Black green gram(TAU 1, DU1) / Avare	Paddy - Green gram / Black green gram(TAU 1, DU1) / Avare

Status of monsoon and contingency plans for deficit rainfall areas of Northern Karnataka

The rainfall has been very limited and insufficient to start any sowing operations in northern Karnataka except in coastal districts, Bidar and parts of Gulbarga, Subhumid talukas of Belgaum district (Belgaum and Khanapur) and Bijapur districts. Since there is not much scope of rainfall in the next week, the following contingency measures are suggested for districts of northern Karnataka where rainfall has been little.

- As and when the monsoon becomes active and sufficient wetting rainfall is received in the month of July, the following contingent crop plans and measures are suggested to be taken up based on soil type and district concerned.
 - Sowing of onion, cucumber, ridgeguard, sesamum, maize, sunflower, niger, castor, Bajra, groundnut (spreading), redgram, cotton, navane, horsegram, tobacco or cowpea, may be taken up.
- To reduce effects of extreme weather situations/ to reduce crop loss risk, the following intercrops are advised.
 - Bajra + Groundnut -bunch (2:4); Bajra + Redgram (2:1); Maize/Groundnut (bunch) + Redgram (4:2), Kharif sorghum + redgram (5:1), Redgram + sesamum (1:2 or 2:4); redgram + horsegram (2:1) or chilli + desi cotton.
- Soil and moisture conservation aspects like compartment bunds in the lands earmarked for Rabi crops so that conservation of Soil and soil moisture can be improved.

- Repeated intercultivation, removing weak and excess seedlings within the crop row is recommended to conserve soil moisture in areas where sowing has been taken up under limited soil moisture.

Contingency plans for Madhya Maharashtra

- In Pune and Solapur districts, farmers are advised to take up the following contingency crops after receiving sufficient rain.
 - Tur – ICPL-87, AKT-881, BSMR-853, BSMR-736, Vipula.
 - Bajra – Shraddha, Saburi, Shanti
 - Maize – African tall, Manjri, Kiran, Panchganga, Karvir
Hybrid – Deccan 103, 105, Ganga – 11, JK – 2492.
 - Gawar – Pusa Sadabahar, Pusa Mausami, Pusa Navabahar.
 - Intercropping - Bajra + Tur (2:1), Sunflower + Tur (2:1), Gawar + Tur (2:1)
- In Sangli and Satara districts –
 - Soybean – JS – 9305, JL – 335,
 - Groundnut – SB-11, JL-24 (Phule PRagati),
 - Sugarcane (Adsali) – Advised for late planting.

Annexure IV

Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 01.08.2012

