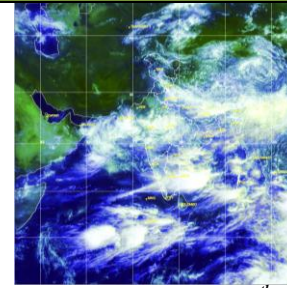




## Monsoon Watch

Southwest monsoon was vigorous over west Madhya Pradesh, south interior Karnataka and Andaman & Nicobar Islands and active over east Rajasthan, Gujarat region. Madhya Maharashtra, Marathwada, Vidarbha, coastal Karnataka and Kerala.



Satellite image 0600 UTC dated 5<sup>th</sup> July, 2013

## Salient Advisories for the kharif Crops

Based on the realized and expected rainfall, following salient advisories for the crops have been prepared.

- **Northeast Region:** As rain / thundershowers would occur at most places with heavy to very heavy rainfall at a few places over the states of the region with possibility of extremely heavy falls at one or two places during next 48 hours, farmers are advised to postpone nursery sowing of rice and sowing of other *kharif* crops. Provide adequate drainage in crop fields.
- In Mild Tropical Plain Zone of **Tripura**, undertake transplanting of early sown *aman* rice and planting of banana.
- **Kerala:** Postpone planting of banana, sowing / transplanting of vegetables as rainfall is expected at most places along with heavy to very heavy rainfall at one or two places during next 48 hours. Also provide drainage in already planted banana and vegetable crop fields and do propping in bunched banana. Continue transplanting of *Virippu* rice.
- **Coastal Andhra Pradesh:** Complete nursery sowing of rice and sowing of bajra and groundnut.
- **Raylaseema:** Continue sowing of groundnut in all the districts of Rayalaseema with the help of assured irrigation.
- **Telangana:** Continue sowing of maize, sorghum, groundnut, cotton and castor.
- **Coastal Karnataka:** Continue transplanting of *kharif* rice. Postpone sowing of maize in Uttar Kannada districts as rainfall is expected at most places along with heavy to very heavy rainfall at one or two places during next 48 hours.
- **North Interior Karnataka:** Due to subdued rainfall activity for the past 3 weeks early sown *kharif* crops are facing moisture stress. Farmers are advised to wait up to first fortnight of July for revival of rainfall to take up further sowing of *kharif* crops viz. bajra, groundnut, red gram, sesamum, castor etc.
- **South Interior Karnataka:** Complete sowing of cow pea, maize and groundnut.
- **Tamil Nadu:** Continue transplanting of *Kuruvai* rice mainly in Thanjavur, Trichy, Nagapattinam and Thiruvarur districts with irrigation facilities in Cauvery Delta Region. In South Zone, continue sowing of green gram and black gram with irrigation facilities.
- **Maharashtra:** Farmers in Konkan are advised to undertake transplanting of *kharif* rice. Also advised to arrange adequate drainage to avoid stagnation of water in nursery beds of rice and finger millets as well as in mango, cashew and sapota orchards as rain/thundershowers would occur at most places with heavy to very heavy rainfall at one or two places during next 48 hours.
- In **Madhya Maharashtra**, farmers are advised to continue sowing of *kharif* jowar, bajra, groundnut, soybean and cotton and planting of banana. Continue transplanting of rice in Western Ghat Zone and Kolhapur region.
- In **Vidarbha**, continue sowing of jowar, soybean, cotton, red gram and sunflower.
- In **Marathwada** continue sowing of *kharif* jowar, soybean, cotton, red gram, green gram and black gram and planting of turmeric and ginger.
- **Gujarat:** As rain / thundershowers would occur at many places with heavy to very heavy rainfall at one or two places over Gujarat State during next 48 hours, farmers are advised to undertake sowing of cluster bean, sesame, bajra, pulses etc. after current spells of rain. Farmers are also advised to postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops of groundnut, cotton, pulses, sesame, pearl millet, maize and vegetable nurseries. In view of occurrence of heavy to very heavy rainfall, also arrange for adequate drainage in already sown crops to avoid water stagnation in the fields. Undertake transplanting of rice in Middle Gujarat and South Gujarat Heavy Rainfall Zone.
- **Madhya Pradesh:** farmers are advised to continue sowing of soybean, jowar, bajra, urad, moong, cotton, maize, groundnut and sesame. In Vindhya Plateau Zone, undertake transplanting of rice.
- **Chattisgarh:** Undertake field preparation and transplanting of rice in plain Zone and continue sowing of soybean, maize, jowar, arhar and groundnut.
- **West Bengal:** As rain / thundershowers would occur at most places along with heavy to very heavy rainfall at a few places over Sub-Himalayan West Bengal & Sikkim during next 48 hours, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Also provide adequate drainage in crop fields.
- In New Alluvial Zone, Laterite and Red Soil Zone and Coastal Saline Zone of Gangetic West Bengal, complete nursery sowing and undertake land preparation for transplanting of *aman* rice, continue sowing of maize and pigeon pea.
- **Odisha:** Continue nursery sowing of rice and direct sowing of rice and sowing of maize, arhar, groundnut, sesame in medium, uplands.
- **Bihar:** Postpone sowing of maize, urad and small millets, vegetable crops like bottle gourd, sponge gourd, bitter gourd, ridge gourd, cucumber, cowpea and okra in upland as rainfall is expected at many places along with heavy to very heavy rainfall at one or two places during next 48 hours and continue transplanting of rice in lowland.
- **Jharkhand:** Continue nursery sowing of rice, direct sowing of rice and sowing of soybean, maize, urad, arhar, *kharif* vegetables viz. bhindi, bean, French bean and nursery sowing of tomato, cauliflower, cabbage.
- **Himachal Pradesh:** As rainfall is expected at many places along with heavy to very heavy rainfall at one or two places during next 24 hours and heavy to very heavy falls at a few places on 6<sup>th</sup> and 7<sup>th</sup>, farmers in Mild Hills Sub Humid Zone of Himachal Pradesh are advised to postpone direct sowing of cucurbits viz. khira, bitter gourd, tori in main field. It is also advised to postpone nursery sowing of cauliflower, cucurbits, turnip, radish in lower areas and sowing of potato in Hill zone. Continue transplanting of rice.
- **Uttarakhand:** As rain / thundershowers would occur at many / most places along with heavy to very heavy rainfall at one or two places during next 24 hours and at a few places thereafter over Uttarakhand, farmers in the Hill Zone of Uttarakhand are advised to postpone nursery sowing / transplanting of rice, sowing of soybean, groundnut, millets, pigeon pea, horse gram and French bean. Provide adequate drainage in already sown crop fields.
- **Uttar Pradesh:** As heavy rainfall at one or two places is expected over **west Uttar Pradesh** on 6<sup>th</sup> & 7<sup>th</sup> July, farmers are advised to postpone sowing of maize, jowar, groundnut arhar, moong, urad and nursery sowing of rice. Provide adequate drainage in already sown crop fields.
- In **East Uttar Pradesh**, continue sowing of maize, jowar, groundnut arhar, moong, urad and nursery sowing of rice.
- **Punjab:** Complete transplanting of Basmati rice and sowing of cowpea.
- **Haryana:** Continue transplanting of rice, sowing of cotton, guar and bajra in Western Zone.
- **Delhi:** Undertake transplanting of rice and continue nursery sowing of rice, sowing of guar, bajra, maize, cluster bean, pigeon pea, spinach, *Amaranthus* and lady's finger.
- **Jammu & Kashmir:** In Sub Tropical Zone, continue sowing of maize, sowing of direct seeded rice and transplanting of brinjal, chilli and cauliflower. In Intermediate Zone, continue sowing of maize, bajra and nursery raising of rice. In Valley Temperate Zone continue transplanting of rice.
- **Rajasthan:** In East Rajasthan, farmers are advised to continue sowing of groundnut, pearl millet, sorghum, maize, green gram, cow pea, cluster bean, new planting of fruit trees and sowing of soybean, castor and rainy season cucurbits. In West Rajasthan, it is advised to continue sowing of bajra with available soil moisture.



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

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

### Significant realized rainfall during last week

Significant rainfall received in all the districts of Uttarakhand, East Uttar Pradesh, West Bengal, East Madhya Pradesh, Konkan & Goa, Coastal Karnataka; Most of the districts of Himachal Pradesh, West Uttar Pradesh, Arunachal Pradesh, Assam, Mizoram, Bihar, West Madhya Pradesh, Kerala; Many districts of Meghalaya, Tripura, Chhattisgarh, Marathwada, Vidarbha, Odisha; in few districts in Jammu & Kashmir, Punjab, Haryana, East Rajasthan, Manipur, Nagaland, Jharkhand, Gujarat, Madhya Maharashtra, Interior Karnataka; one or two places in Manipur, Punjab, Jammu & Kashmir, East Rajasthan, Saurashtra & Kutch, Diu region, Tamil Nadu.

### Distribution of rainfall of the country during week ending on 03.07.2013

State/Districts	Actual (mm)	% dep.			
<b>Arunachal Pradesh</b>			Sonitpur	167.6	71
Anjaw	**	**	Sibsagar	55.9	-38
Changlang	105.9	-8	Tinsukia	68.5	-38
Dibang Valley	121.0	25	Udalgiri	106.2	30
East Kameng	113.4	40	<b>Meghalaya</b>		
East Siang	309.5	46	East Garo Hills	3.0	-97
Kurung Kumey	**	**	East Khasi Hills	396.3	10
Lohit	216.0	48	Jaintia Hills	152.0	-50
Lower Dibang Valley	**	**	Ribhoi	77.7	-25
Lower Subansari	6.6	-86	South Garo Hills	1.0	-99
Papumpara	147.1	-21	West Garo Hills	129.0	9
Tawang	88.0	-49	West Khasi Hills	0.0	-100
Tirap	57.2	-69	<b>Mizoram</b>		
Upper Siang	256.0	52	Aizwal	61.7	-43
Upper Subansari	160.8	77	Champhai	94.0	10
West Kameng	121.3	-30	Chhimtuipui	**	**
West Siang	192.1	45	Kolasib	7.0	-92
<b>Assam</b>			Lawngtlai	93.0	-12
Baksa	112.1	-42	Lunglei	30.0	-72
Barpeta	111.4	-42	Mamit	150.0	39
Bongaigaon	83.8	-58	Saiha	67.0	-39
Cachar	120.7	-2	Serchhip	38.0	-63
Chirang	160.9	-20	<b>Manipur</b>		
Darrang	1.0	-99	Bishnupur	**	**
Dhemaji	132.0	-12	Chandel	**	**
Dhubri	121.7	2	Churachandpur	48.0	-49
Dibrugarh	86.0	-23	Imphal east	54.2	-35
Goalpara	121.9	-19	Imphal west	**	**
Golghat	46.2	-29	Senapati	**	**
Hailakandi	66.7	-32	Tamenglong	**	**
Jorhat	62.9	-26	Thoubal	129.0	161
Kamrup(Rural)	47.6	-39	Ukhrul	96.0	58
Kamrup(Metro)	40.7	-48	<b>Nagaland</b>		
Karbi Anglong	68.5	60	Dimapur	46.5	50
Karimganj	82.9	-44	Kephire	51.0	-33
Kokrajhar	160.4	-32	Kohima	42.5	-47
Lakhimpur	143.6	-4	Longleng	**	**
Morigaon	116.4	32	Mokokchung	29.0	-77
N.C.Hills	49.3	-36	Mon	**	**
Nowgong	50.0	-22	Paren	**	**
Nalbari	88.0	-17	Phek	30.8	-62
			Tuensang	**	**
			Wokha	0.0	-100
			Zunheboto	28.0	-63
			<b>Tripura</b>		
			Dhalai	14.0	-83
			North tripura	22.7	-73
			South tripura	100.9	-8
			West tripura	53.0	-37
			<b>Himachal Pradesh</b>		
			Bilaspur	68.0	30
			Chamba	38.7	-38
			Hamirpur	61.6	-16
			Kangra	50.3	-37
			Kinnaur	1.2	-89
			Kullu	27.3	12
			Lahaul and Spiti	4.9	-77
			Mandi	45.2	-32
			Shimla	40.1	8
			Sirmaur	40.9	-46
			Solan	86.9	44
			Una	43.1	-23
			<b>Punjab</b>		
			Amritsar	10.2	-60
			Barnala	25.5	34
			Bhatinda	0.0	-100
			Faridkot	6.5	-60
			Fatehgarh Saheb	40.8	48
			Ferozpur	13.3	-6
			Gurdaspur	30.3	-25
			Hoshiarpur	20.8	-54
			Jalandhar	43.2	54
			Kapurthala	84.6	252
			Ludhiana	41.3	43
			Mansa	0.6	-95
			Moga	47.3	245
			Muktesar	26.0	71
			Nawashahar	42.0	-23
			Patiala	17.0	-44
			Ropar	46.5	11
			Sangrur	0.2	-99
			Mohali	20.0	-42
			TarnTaran	10.5	-17
			<b>Haryana</b>		
			Ambala	56.4	24
			Bhiwani	0.8	-94

Chandigarh	37.0	-32
Faridabad	4.8	-77
Fatehabad	2.8	-85
Gurgaon	3.3	-85
Hissar	0.0	-100
Jhajar	1.7	-93
Jind	2.0	-93
Katihah	5.0	-59
Karnal	40.5	33
Kurukshetra	22.5	-16
Mahendragarh	2.2	-89
Mewat	0.3	-99
Palwal	8.3	-60
Panchkkula	28.9	-48
Panipat	9.0	-64
Rewari	0.5	-97
Rohtak	15.4	-54
Sirsa	0.3	-98
Sonepat	1.8	-93
Yamunanagar	34.7	-39
Delhi	6.2	-79
<b>Jammu &amp; Kashmir</b>		
Anantnag	30.6	110
Badgam	24.4	201
Bandipore	**	**
Baramula	29.5	125
Doda	2.6	-84
Ganderwal	23.8	213
Jammu	32.8	2
Kargil	0.0	-100
Kathua	7.5	-80
Kistwar	**	**
Kulgam	35.2	141
Kupwara	22.1	163
Ladakh(Leh)	0.6	-60
Poonch	**	**
Pulwama	41.0	477
Rajouri	43.7	107
Ramban	12.5	-25
Reasi	71.2	30
Samba	23.3	-28
Shopian	40.0	463
Srinagar	27.9	267
Udhampur	25.2	-54
<b>East Madhya Pradesh</b>		
Anuppur	66.1	-2
Balaghat	76.3	-6
Chhatarpur	260.5	340
Chindwara	103.2	81
Damoh	334.4	359

Dindori	66.8	-19
Jabalpur	150.3	150
Katni	262.0	316
Mandla	109.1	41
Narsingpur	247.5	346
Panna	313.6	365
Rewa	134.2	109
Sagar	446.1	559
Satna	168.3	143
Seoni	86.1	39
Shahdol	55.7	-1
Sidhi	190.0	223
Singrauli	51.0	-3
Tikamgarh	204.0	256
Umaria	114.6	99
<b>West Madhya Pradesh</b>		
Alirajpur	27.2	-35
Asoknagar	135.8	148
Badwani	40.7	15
Betul	73.3	41
Bhind	134.5	279
Bhopal	195.6	214
Burhanpur	27.8	-51
Datia	135.8	256
Dewas	58.8	9
Dhar	54.3	26
Guna	140.0	126
Gwalior	60.9	60
Harda	54.6	3
Hosangabad	206.8	185
Indore	60.6	25
Jhabua	28.5	-31
Khandwa	71.8	41
Khargone	36.9	-24
Mandsaur	51.6	31
Morena	29.0	-12
Neemuch	27.5	-37
Raisen	276.1	334
Rajgarh	175.3	311
Ratlam	73.3	50
Sehore	104.3	99
Shajapur	88.7	133
Sheopur Kalani	107.0	135
Shivpuri	101.4	117
Ujjain	65.1	56
Vidisha	225.8	302
<b>Chattisgarh</b>		
Bastar	17.6	-76
Bijapur	19.2	-72
Bilaspur	44.1	-44

Dantewara	26.6	-57
Dhamtari	41.4	-45
Durg	60.6	-24
Janjgir	12.9	-85
Jashpurnagar	35.5	-61
Kanker	61.8	-27
Korba	89.8	-1
Koriya	118.1	44
Kawardha	22.0	-59
Mahasumund	86.0	43
Narayanpur	20.5	-71
Raigarh	20.9	-71
Raipur	54.8	-30
Rajandgaon	60.9	-14
Surguja	29.3	-62
<b>East Uttar Pradesh</b>		
Allahabad	266.2	455
Ambedkar Nagar	180.2	311
Azamgarh	147.7	183
Bahraich	132.5	111
Ballia	75.3	52
Balrampur	309.3	516
Banda	342.1	459
Barabanki	171.6	214
Basti	390.9	638
Chandauli	58.2	46
Deoria	82.5	30
Faizabad	290.6	405
Farrukhabad	88.4	116
Fatehpur	259.4	416
Gazipur	62.4	55
Gonda	346.4	525
Gorakhpur	451.9	594
Hardoi	74.2	45
Jaunpur	167.2	202
Kannauj	151.2	279
Kanpur City	218.8	451
Kanpur Dehat	125.7	227
Kaushambi	236.6	450
Kheri	104.0	134
Kushi nagar	75.5	4
Lucknow	136.8	208
Maharajganj	115.4	61
Mau	126.5	136
Mirzapur	166.8	239
Pratapgarh	281.9	456
RaiBareilly	254.2	537
Sahuji Maharajnagar	294.3	359
Sant Kabirnnagar	369.0	694

Sant Ravidas Nagar	163.0	308
Shrawasti	96.5	54
Sidharthnagar	355.5	638
Sitapur	139.0	201
Sonbhadra	114.0	95
Sultanpur	206.5	410
Unnao	200.7	342
Varanasi	116.2	114
<b>West Uttar Pradesh</b>		
Agra	37.1	-6
Aligarh	39.5	36
Auraiya	96.3	189
Badaun	20.3	-46
Baghpat	32.4	40
Bareilly	38.5	-17
Bijnor	18.3	-59
Bulandsahar	57.4	91
Etah	44.8	36
Etawah	73.9	117
Firozabad	86.5	86
GBNagar	4.5	-85
Ghaziabad	48.4	95
Hamirpur	198.6	332
Jalaun	115.0	167
Jhansi	174.7	224
Jotirba Phule Nagar	26.3	-10
Kanshiramnagar	102.0	217
Lalitpur	221.5	246
Mahamaya Nagar	7.0	-78
Mahoba	103.4	122
Mainpuri	113.5	180
Mathura	34.3	14
Meerut	37.8	13
Moradabad	17.2	-61
Muzaffarnagar	67.9	75
Pilibhit	43.1	-18
Rampur	31.5	-27
Saharanpur	31.3	-39
Shahjahanpur	68.5	45
<b>Uttarakhand</b>		
Almora	64.8	60
Bageshwar	131.8	225
Chamoli	62.1	37
Champawat	37.0	-58
Dehradun	64.5	-35
Garhwal Pauri	39.3	-42
Garhwal Tehri	30.1	-49
Haridwar	41.6	-14
Nainital	78.9	-6

Pithorgarh	55.6	-50
Rudraprayag	56.5	-35
Udham Sing Nagar	36.4	-41
Uttarkashi	46.7	-12
<b>Bihar</b>		
Araria	162.9	82
Arwal	106.2	73
Aurangabad	55.3	13
Banka	42.2	-25
Begusarai	96.0	55
Bhabua	56.2	-9
Bhagalpur	108.3	49
Bhojpur	129.2	110
Buxar	50.7	-1
Darbhanga	78.2	2
East Champaran	66.4	-6
Gaya	23.2	-64
Gopalganj	128.5	88
Jahanabad	25.9	-47
Jamui	88.4	13
Kathihar	107.0	25
Khagadia	81.0	12
Kishanganj	140.2	4
Lakhisarai	15.0	-78
Madhepura	194.2	163
Madhubani	107.0	28
Monghyar	82.6	19
Muzaffarpur	96.7	27
Nalanda	69.7	14
Nawada	22.7	-70
Patna	90.3	29
Purnea	142.2	63
Rohtas	55.1	9
Saharsha	79.3	-42
Samstipur	124.9	67
Saran	101.0	39
Sheikpura	67.8	-13
Sheohar	81.0	-19
Sitamarhi	49.7	-50
Siwan	147.9	94
Supaul	114.3	67
Vaishali	84.5	18
West Champaran	70.2	-29
<b>Jharkhand</b>		
Bokaro	25.0	-58
Chatra	20.3	-71
Deoghar	29.9	-52
Dhanbad	39.4	-48
Dumka	31.3	-54
East Singbhum	35.8	-51

Garhwa	43.0	-34
Giridih	37.5	-52
Godda	90.9	51
Gumla	28.6	-67
Hazaribagh	24.9	-66
Jamtara	59.8	-21
Khunti	18.3	-78
Koderrna	16.2	-76
Latehar	23.3	-62
Lohardagga	20.0	-70
Pakur	68.3	0
Palamau	45.4	-21
Ramgarh	22.0	-68
Ranchi	10.4	-87
Sahebganj	353.2	233
Saraikela	22.0	-70
Simdega	40.5	-55
West Singbhum	19.8	-72
<b>East Rajasthan</b>		
Ajmer	29.3	13
Alwar	16.6	-35
Banswara	1.8	-96
Baran	143.5	245
Bharatpur	17.6	-27
Bhilwara	14.5	-60
Bundi	53.9	53
Chittorgarh	27.3	-32
Dausa	65.8	101
Dholpur	15.6	-57
Dungarpur	0.8	-98
Jaipur	16.8	-40
Jhalawar	124.9	160
Jhunjhunu	16.1	-16
Karauli	61.7	104
Kota	111.9	168
Pratapgarh	13.4	-76
Rajsamand	3.2	-91
Sawai Madhopur	75.7	116
Sikar	18.2	-17
Sirohi	7.6	-79
Tonk	29.6	-9
Udaipur	2.4	-94
<b>West Rajasthan</b>		
Barmer	0.0	-100
Bikaner	0.4	-97
Churu	11.9	-23
Hanumangarh	14.9	-10
Jaisalmer	0.9	-90
Jalore	2.6	-86
Jodhpur	2.4	-82



Nagaur	4.7	-78
Pali	0.0	-100
Sri Ganganagar	10.4	-17
<b>Gujarat Region</b>		
Ahmedabad	4.4	-89
Anand	8.5	-84
Banaskantha	0.0	-100
Baroda	7.1	-89
Broach	6.0	-89
DNH	93.1	-46
Dahod	3.1	-94
Daman	103.6	-40
Dangs	36.7	-67
Gandhinagar	0.0	-100
Kheda	0.0	-100
Mehsana	0.8	-98
Narmada	17.7	-75
Navsari	69.3	-54
Panchmahal	5.9	-89
Patan	0.0	-100
Sabarkantha	1.4	-97
Surat	41.7	-60
Tapi	36.2	-66
Valsad	117.8	-28
<b>S K &amp; Diu region</b>		
Amreli	5.9	-86
Bhavnagar	15.3	-58
Diu	47.0	-42
Jamnagar	1.8	-96
Junagarh	22.1	-77
Kutch	0.2	-99
Porbandar	14.0	-79
Rajkot	5.4	-87
Surendranagar	4.3	-88
<b>Maharashtra</b>		
<b>Konkan &amp; Goa</b>		
Goa	363.6	28
Mumbai	58.7	-70
Raigad	277.8	-4
Ratnagiri	300.5	-4
Sindhudurg	393.9	43
Thane	153.8	-25
<b>Madhya Maharashtra</b>		
Ahmednagar	3.1	-87
Dhule	9.4	-76
Jalgaon	11.1	-75
Kolhapur	116.3	-29
Nandurbar	23.7	-59
Nasik	56.7	3
Pune	34.1	-45

Sangli	10.4	-68
Satara	23.2	-57
Solapur	8.7	-57
<b>Marathwada</b>		
Aurangabad	5.4	-83
Beed	24.6	-10
Hingoli	31.8	-49
Jalna	24.4	-29
Latur	41.7	7
Nanded	42.3	-16
Usmanabad	16.1	-40
Parbhani	48.4	1
<b>Vidarbha</b>		
Akola	15.1	-68
Amraoti	23.8	-50
Bhandara	60.6	-23
Buldhana	6.8	-85
Chandrapur	58.1	-31
Gadchiroli	63.3	-29
Gondia	84.5	-2
Nagpur	49.3	-21
Wardha	21.4	-60
Washim	13.6	-79
Yeotmal	30.7	-47
<b>Orissa</b>		
Angul	27.8	-48
Balasore	7.2	-90
Bargarh	50.1	-33
Bhadrak	48.3	-16
Bolangir	11.9	-84
Boudh	14.9	-77
Cuttack	42.1	-39
Deogarh	31.2	-64
Dhenkanal	48.8	-26
Gajapati	3.1	-92
Ganjam	0.6	-99
Jagatsingpur	17.3	-70
Jajpur	34.4	-47
Jharsuguda	50.7	-25
Kalahandi	8.3	-90
Kandhamal	14.3	-78
Kendrapara	38.0	-39
Keonjhar	20.9	-66
Khurda	6.6	-88
Koraput	38.4	-45
Malkangiri	48.6	-33
Mayurbhanj	17.2	-78
Nawapara	31.8	-56
Nawarangpur	35.2	-55
Nayagarh	8.4	-82

Puri	10.3	-79
Rayagada	6.6	-86
Sambalpur	37.5	-56
Sonepur	34.3	-57
Sundargarh	32.7	-56
<b>West Bengal</b>		
<b>GWB</b>		
Bankura	164.0	131
Birbhum	61.7	-12
Burdwan	55.0	-14
East Midnapore	40.8	-40
Hooghly	131.4	75
Howrah	85.0	-1
Kolkata	95.3	21
Murshidabad	97.0	12
Nadia	71.6	6
24 Pargana (N)	124.2	73
Purulia	57.7	-19
24 Pargana (S)	93.4	-7
West Midnapore	51.6	-29
<b>SHWB</b>		
Cooch Behar	130.0	-36
Darjeeling	190.2	17
East Sikkim	103.2	-7
Jalpaiguri	139.3	-39
Malda	148.6	102
North Dinajpur	119.9	44
North Sikkim	90.9	-29
South Dinajpur	116.7	42
South Sikkim	70.4	-37
West Sikkim	77.0	-40
<b>Karnataka</b>		
<b>Coastal Karnataka</b>		
Dakshin Kannada	300.8	-1
Udupi	382.1	21
Uttar Kannada	338.6	34
<b>N I Karnataka</b>		
Bagalkote	3.8	-72
Belgaum	26.7	-49
Bidar	39.7	10
Bijapur	1.6	-91
Dharwad	26.3	-29
Gadag	6.0	-62
Gulbarga	2.9	-90
Haveri	51.3	17
Koppal	3.9	-64
Raichur	3.3	-80
Yadgir	3.0	-87
<b>S I Karnataka</b>		
Bangalore Rural	16.9	94

Bangalore Urban	12.9	34
Bellary	7.5	-45
Chamarajnagar	3.1	-76
Chichballapur	22.8	117
Chickmagalur	130.1	-24
Chitradurga	12.2	36
Davangere	33.4	57
Hassan	28.7	-38
Kodagu	145.1	-39
Kolar	8.4	0
Mandya	4.6	-11
Mysore	10.0	-51
Ramnagara	6.3	-18
Shimoga	247.4	62
Tumkur	8.4	-8
<b>Kerala</b>		
Alappuzha	132.1	-9
Kannur	253.6	-11
Ernakulam	208.3	10
Idukki	159.1	-25
Kasaragod	272.3	-1
Kollam	105.5	2
Kottayam	200.6	21
Kozhikode	193.7	-26
Malappuram	186.8	-13
Palakkad	121.0	-25
Pathanamthitta	103.4	-28
Thiruvananthapuram	26.2	-64
Thrissur	118.7	-43
Wyanad	174.1	-43
<b>Tamil Nadu</b>		

Ariyalur	0.0	-100
Chennai	22.8	37
Coimbatore	42.6	353
Cuddalore	25.3	167
Dharmapuri	1.9	-72
Dindigul	7.6	18
Erode	9.3	150
Kanchipuram	30.2	108
Kanyakumari	9.3	-75
Karikal	4.6	24
Karur	0.0	-100
Krishnagiri	3.8	-37
Madurai	6.4	-31
Nagapattinam	24.8	235
Namakkal	13.6	156
Nilgiris	40.5	-36
Perambalur	2.5	-31
Puducherry	44.7	645
Pudukottai	4.8	-41
Ramanathapuram	3.8	37
Salem	19.4	40
Sivaganga	20.3	183
Thanjavur	2.5	-41
Theni	14.3	155
Tirunelveli	6.1	-43
Tirupur	0.0	-100
Tiruvallur	27.3	53
Tiruvannamalai	10.6	9
Tiruvarur	0.0	-100
Toothukudi	0.0	-100
Trichy	1.4	-55

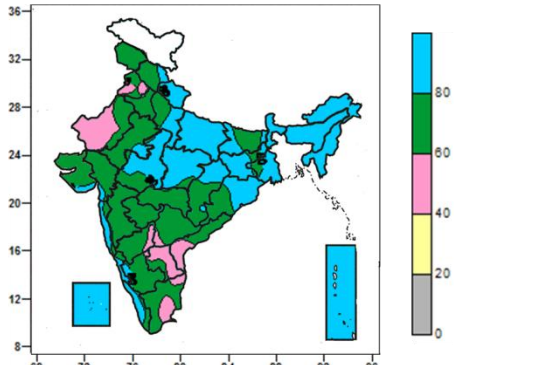
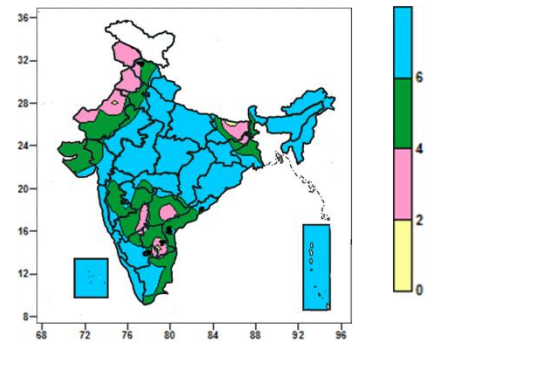
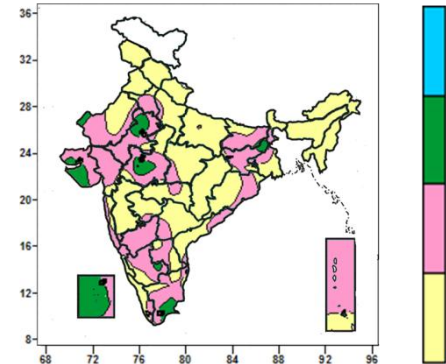
Vellore	13.2	13
Villupuram	12.8	15
Virudhunagar	5.8	164
<b>Andhra Pradesh</b>		
<b>Coastal Andhra Pradesh</b>		
East Godavari	13.1	-70
Guntur	4.8	-82
Krishna	7.3	-84
Nellore	1.1	-93
Prakasam	7.0	-61
Sirkakulam	7.6	-83
Visakhapatnam	11.4	-69
Vizianagram	2.2	-95
West Godavari	13.3	-72
<b>Telangana</b>		
Adilabad	18.4	-68
Hyderabad	5.0	-86
Karimnagar	16.5	-69
Khammam	21.0	-57
Mehabubnagar	7.8	-72
Medak	31.5	-27
Nalgonda	2.7	-91
Nizamabad	51.7	-11
Rangareddy	9.8	-71
Warangal	23.5	-53
<b>Rayalaseema</b>		
Anantapur	2.3	-72
Chittoor	8.1	-32
Cuddapah	1.1	-92
Kurnool	4.0	-77

**Legends**

	(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

## Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 03.07.2013

Actual Mean Maximum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 03.07.2013	Mean Maximum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 03.07.2013
<ul style="list-style-type: none"> <li>• 36 to 40<math>^{\circ}\text{C}</math> over many parts of Punjab, Haryana, Delhi, West Rajasthan, Rayalaseema, Coastal Tamil Nadu, some parts of East Rajasthan, Kutch, Coastal Andhra Pradesh, North Interior Karnataka.</li> <li>• 28 to 36<math>^{\circ}\text{C}</math> over many parts of the country (except Punjab, Haryana, Delhi, West Rajasthan, Raylaseema, Coastal Tamil Nadu, some parts of East Rajasthan, Kutch, Coastal Andhra Pradesh, North Interior Karnataka).</li> <li>• 24 to 28<math>^{\circ}\text{C}</math> over some parts of Jammu &amp; Kashmir, Himachal Pradesh, Madhya Pradesh, Chhattisgarh.</li> </ul>	<ul style="list-style-type: none"> <li>• 0 to 2<math>^{\circ}\text{C}</math> over many parts of Northeast India (except Mizoram, Tripura), Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, Lakshadweep and Andaman &amp; Nicobar Islands, some parts of Jammu &amp; Kashmir, Himachal Pradesh, Rajasthan, Punjab, Haryana, Saurashtra &amp; Kutch, Odisha, Chattisgarh.</li> <li>• -4 to 0<math>^{\circ}\text{C}</math> and above over many parts of Northwest India (except Uttarakhand, East Uttar Pradesh), East India, Chattisgarh, West India, Sout Interior Karnataka, some parts of North Interior Karnataka, Kerala, Tamil Nadu, Lakshadweep Islands,</li> <li>• -8 to -4<math>^{\circ}\text{C}</math> over many parts of Uttar Pradesh, Madhya Pradesh, some parts of Bihar, Jharkhand, Chattisgarh.</li> </ul>
Actual Mean Minimum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 03.07.2013	Mean Minimum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 03.07.2013
<ul style="list-style-type: none"> <li>• 28 to 32<math>^{\circ}\text{C}</math> over some parts of West Rajasthan, Kutch, Tamil Nadu.</li> <li>• 20 to 28<math>^{\circ}\text{C}</math> over many parts of country (except Himachal Pradesh, Bihar, some parts of Jammu &amp; Kashmir, Rajasthan, Jharkhand, Interior Karnataka).</li> <li>• 16 to 20<math>^{\circ}\text{C}</math> over many parts of Himachal Pradesh, Bihar, some parts of Jammu &amp; Kashmir, Rajasthan, Jharkhand, Interior Karnataka.</li> </ul>	<ul style="list-style-type: none"> <li>• 2 to 4<math>^{\circ}\text{C}</math> over some parts of Madhya Maharashtra.</li> <li>• 0 to 2<math>^{\circ}\text{C}</math> over many parts of Northeast India (except Arunachal Pradesh), Jammu &amp; Kashmir, Himachal Pradesh, West Rajasthan, Jharkhand, West Bengal &amp; Sikkim, Gujarat, Saurashtra &amp; Kutch, Konkan &amp; Goa, Madhya Maharashtra, Tamil Nadu, Andaman &amp; Nicobar Islands, some parts of West Uttra Pradesh, East Rajasthan, Bihar, Arunachal Pradesh, Marathwada, Vidarbha, Odisha, Andhra Pradesh, Karanataka, Kerala, Lakshadweep Islands.</li> <li>• -2 to 0<math>^{\circ}\text{C}</math> over many parts of Uttarakhand, Uttar Pradesh, East Rajasthan, Bihar, Jharkhand, Odisha, Arunachal Pradesh, Central India, Marathwada, Telengana, Karnataka, North Kerala, Lakshdweep Islands, some parts of Jammu &amp; Kashmir, Punjab, Assam, Saurashtra, Coastal Andhra Pradesh, Andaman &amp; Nicobar Islands.</li> <li>• -4 to -2<math>^{\circ}\text{C}</math> over some parts of Uttar Pradesh, East Madhya Pradesh, Marathwada, North Interior Karnataka.</li> </ul>

Relative Humidity (%) over India for the week ending 03.07.2013	Cloud amount (okta) over India for the week ending 03.07.2013
	
<ul style="list-style-type: none"> <li>80% and above over many parts of North East India, West Bengal &amp; Sikkim, Uttarakhand, East Uttar Pradesh, Madhya Pradesh, Jharkhand, Odisha, West Coast from Konkan to Kerala, Lakshadweep &amp; Andaman &amp; Nicobar Islands, some parts of Himachal Pradesh, West Uttar Pradesh, East Rajasthan, Bihar, Chattisgarh, Gujarat, Saurashtra.</li> <li>60 to 80 % over many parts of Jammu &amp; Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, East Rajasthan, Bihar, Chattisgarh, Gujarat, Saurashtra &amp; Kutch, West India (except Konkan &amp; Goa), North &amp; South Interior Karnataka, Telangana, North Coastal Andhra Pradesh, Tamil Nadu, some parts of West Rajasthan, West Uttar Pradesh, Jharkhand, Gangetic West Bengal, Madhya Pradesh, Odisha, Rayalaseema.</li> <li>40 to 60% over many parts of West Rajasthan, Coastal Andhra Pradesh, Rayalaseema, some parts of Punjab, Interior Karnataka, Telangana and Tamil Nadu.</li> </ul>	<ul style="list-style-type: none"> <li>6 okta and above many parts of the country (except Jammu &amp; Kashmir, Punjab, West Rajasthan, Bihar, West Bengal, Saurashtra &amp; Kutch, Andhra Pradesh, Madhya Maharashtra, Marathwada, North Interior Karnataka and some parts of East Rajasthan, Jharkhand, Vidarbha, South Interior Karnataka, Tamil Nadu).</li> <li>4 to 6 okta over many parts of Himachal Pradesh, Haryana, Delhi, West Rajasthan, West Bengal, Saurashtra &amp; Kutch, Madhya Maharashtra, Marathwada, Andhra Pradesh, North Interior Karnataka, Coastal Tamil Nadu, some parts of East Rajasthan, Bihar, Jharkhand, Gujarat, Vidarbha, South Interior Karnataka.</li> <li>2 to 4 okta over many parts of Jammu &amp; Kashmir, Punjab, West Rajasthan, Bihar, some parts of Himachal Pradesh, Jharkhand, North Interior Karnataka, Telangana, Rayalaseema.</li> <li>0 to 2 okta over some parts of West Rajasthan, Bihar, Rayalaseema.</li> </ul>
<b>Wind speed (knots) over India for the week ending 03.07.2013</b>	
	
<ul style="list-style-type: none"> <li>8 to 12 knots over many parts of Lakshadweep Islands and some parts of Rajasthan, Saurashtra &amp; Kutch, West Madhya Pradesh, Bihar, Jharkhand, Rayalaseema, South Interior Karnataka and South Tamil Nadu.</li> <li>4 to 8 knots over many parts of Haryana, Delhi, Rajasthan, Bihar, Jharkhand, West Madhya Pradesh, Gujarat, Saurashtra &amp; Kutch, Konkan &amp; Goa, South &amp; North Interior Karnataka, Rayalaseema, Tamil Nadu, Andaman &amp; Nicobar Islands, some parts of West Uttar Pradesh, West Bengal, Coastal Odisha, South Marathwada, Vidarbha, Coastal Andhra Pradesh, Telangana, Coastal Karnataka, Kerala, Lakshadweep Islands.</li> <li>0 to 4 knots over many parts of Northwest India (except Haryana, Delhi), Northeast India, West Bengal, Sikkim, Odisha, East Madhya Pradesh, Chattisgarh, Maharashtra, Coastal Andhra Pradesh, Telangana, Kerala, some parts of Rajasthan, West Madhya Pradesh, Bihar, Jharkhand, Coastal &amp; South Interior Karnataka, Kerala and Andaman &amp; Nicobar Islands.</li> </ul>	



## Weather Forecast

### Weather Forecast for next 3 days (upto 0830 hours IST of 8<sup>th</sup> July, 2013)

- Rain/thundershowers would occur at many places over west Madhya Pradesh, Gujarat and east Rajasthan during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at most places along west coast and over Sub-Himalayan West Bengal & Sikkim, northeastern states, Lakshadweep and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at many places over Madhya Maharashtra, Bihar, Odisha and Gangetic West Bengal.
- Rain/thundershowers would occur at many places over Himachal Pradesh and Uttarakhand during next 24 hours and at most places thereafter.
- Rain/thundershowers would occur at one or two places over Jammu & Kashmir, Punjab, Haryana and Uttar Pradesh during next 24 hours and at many places thereafter.
- Rain/thundershowers would occur at a few places over east Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand and Andhra Pradesh during next 48 hours and increase thereafter.
- Rain/thundershowers would occur at one or two places over remaining parts of the country.

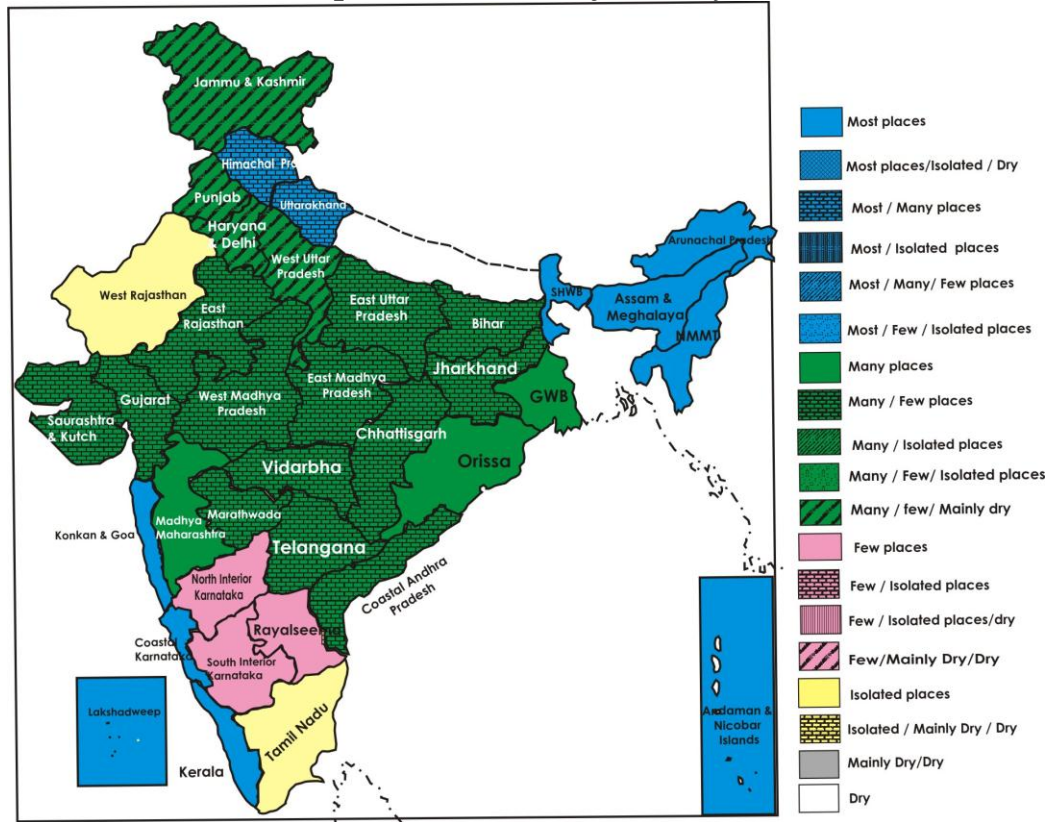
### Weather Warning during next 3 days

- Heavy to very heavy rainfall would occur at a few places over northeastern states and Sub Himalayan West Bengal & Sikkim with possibility of extremely heavy falls at one or two places during next 48 hours.
- Heavy to very heavy rainfall would occur at one or two places over Gujarat state, Bihar, coastal Karnataka, Konkan & Goa and Kerala during next 48 hours.
- Heavy rainfall would occur at one or two places over Uttarakhand during next 24 hours and heavy to very heavy falls at a few places thereafter with extremely heavy falls at one or two places and heavy rainfall at one or two places over Himachal Pradesh during next 24 hours and heavy to very heavy falls at a few places on 6<sup>th</sup> & 7<sup>th</sup>.
- Heavy to very heavy rainfall would occur at one or two places over west Uttar Pradesh on 6<sup>th</sup> & 7<sup>th</sup>.

### Weather Outlook for subsequent 4 days from 8<sup>th</sup> to 12<sup>th</sup> July, 2013

- Intense rainfall activity with heavy to very rainfall at a few places over Uttarakhand and heavy to very heavy at one or two places over Himachal Pradesh and west Uttar Pradesh with extremely heavy falls at one or two places over Uttarakhand and west Uttar Pradesh on 8<sup>th</sup>.
- Rainfall would occur at most places over northeastern states and along west coast with isolated heavy to very heavy rainfall.
- Rainfall would occur at many places over central & east India, Haryana, Delhi, Punjab, Uttar Pradesh and Bihar.
- Rainfall would occur at one or two places to at a few places over interior peninsular India.

### Weather Forecast Map (Valid upto 0830 hours of 8<sup>th</sup> July, 2013)



## Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in all the districts of Uttarakhand; East Uttar Pradesh; most of the districts of Himachal Pradesh; West Uttar Pradesh; Fatehgarh Sahib, Gurudaspur, Jalandhar, Kapurthala, Ludhiana, Moga, Nawanshahar, Ropar districts of Punjab; Ambala, Chandigarh, Karnal, Yamunanagar districts of Haryana; Anantnag, Jammu, Kulgam, Pulwama, Rajouri, Reasi, Shopian districts of Jammu & Kashmir and in Baran, Bundi, Dausa, Jhalawar, Karuali, Kota, Sawai Madhopur districts of East Rajasthan. Mainly dry weather prevailed over Delhi and West Rajasthan.
- **Weather Forecast:** Rain/thundershowers would occur at many places over east Rajasthan during next 24 hours and decrease thereafter; at many places over Himachal Pradesh, Uttarakhand during next 24 hours and at most places thereafter; at one or two places over Jammu & Kashmir, Punjab, Haryana, Uttar Pradesh during next 24 hours and at many places thereafter and at one or two places over West Rajasthan, Delhi.
- **Weather Warning:** Heavy rainfall would occur at one or two places over Uttarakhand during next 24 hours and heavy to very heavy falls at a few places thereafter with extremely heavy falls at one or two places and heavy rainfall at one or two places over Himachal Pradesh during next 24 hours and heavy to very heavy falls at a few places on 6<sup>th</sup> & 7<sup>th</sup>. Heavy to very heavy rainfall would occur at one or two places over west Uttar Pradesh on 6<sup>th</sup> & 7<sup>th</sup>.
- **Weather Outlook:** Intense rainfall activity with heavy to very rainfall at a few places over Uttarakhand and heavy to very heavy at one or two places over Himachal Pradesh and west Uttar Pradesh with extremely heavy falls at one or two places over Uttarakhand and west Uttar Pradesh on 8<sup>th</sup>.
- **Advisory :**
  - As rain / thundershowers would occur at many / most places along with heavy to very heavy rainfall at one or two places during next 24 hours and at a few places thereafter over Uttarakhand, farmers in the Hill Zone of Uttarakhand are advised to postpone nursery sowing / transplanting of rice, sowing of soybean, groundnut, millets, pigeon pea, horse gram and French bean. Provide adequate drainage in already sown crop fields.
  - As rainfall is expected at many places along with heavy to very heavy rainfall at one or two places during next 24 hours and heavy to very heavy falls at a few places on 6<sup>th</sup> and 7<sup>th</sup>, farmers in Mild Hills Sub Humid Zone of Himachal Pradesh are advised to postpone direct sowing of cucurbits viz. khira, bitter gourd, tori in main field. It is also advised to postpone nursery sowing of cauliflower, cucurbits, turnip, radish in lower areas and sowing of potato in Hill zone. Continue transplanting of rice.
  - As heavy rainfall at one or two places is expected over west Uttar Pradesh on 6<sup>th</sup> & 7<sup>th</sup> July, farmers are advised to postpone sowing of maize, jowar, groundnut arhar, moong, urad and nursery sowing of rice. Provide adequate drainage in already sown crop fields.
  - In East Uttar Pradesh, farmers are advised to continue sowing of maize, jowar, groundnut arhar, moong, urad and nursery sowing of rice. Provide adequate drainage in already sown crop fields. Start transplanting of Brinjal and chilly.
  - In Central Plain Zone of Uttar Pradesh, farmers are advised to complete transplanting of medium and late maturing paddy varieties in first fortnight and early maturing in second fortnight of this month. Also sowing of groundnut and sowing of soybean may be completed in the first fortnight of this month.
  - Farmers in Sub Tropical Zone of Jammu & Kashmir are advised to continue sowing of maize, sowing of direct seeded rice and transplanting of brinjal, chilli and cauliflower. Also, farmers in Intermediate Zone of Jammu & Kashmir are advised to continue nursery sowing of rice, sowing of moong, mash, maize, bajra and transplanting of rice seedlings at 4-6 leaf stage.
  - Farmers in Delhi are advised to undertake transplanting of rice seedlings in main fields and continue sowing of maize, guar, bajra, cluster bean, spinach, amaranthus, lady's finger, baby corn (HM-4) and cucurbits crops. Also farmers are advised to prepare nursery for chilli, brinjal and early cauliflower (maturing in the month of September).
  - Farmers in Western Zone of Punjab are advised to complete transplanting. Also, are advised to drain out the excess water from the cotton fields as it is highly sensitive to standing water during early growth stages and complete sowing of moong and start sowing of okra and radish.
  - Farmers in Central Plain Zone of Punjab are advised to complete the sowing of *Kharif* onion and start sowing of cucurbits viz. bottlegourd, bittergourd, ashgourd and sponge gourd.
  - In East Rajasthan, farmers are advised to continue sowing of groundnut, pearl millet, sorghum, maize, green gram, cow pea, cluster bean, new planting of fruit trees and sowing of soybean, castor and rainy season cucurbits. In West Rajasthan, it is advised to continue sowing of bajra with available soil moisture
  - Farmers in Haryana are advised to continue transplanting of rice where irrigation facility is available.

- As weather is congenial for rice blast in nursery in Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, farmers are advised to spray Blitox 12 g per four litres of water in 100 sq m areas after spells of rain.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure II
- **Animal Husbandry**
  - Farmers in Central Plain Zone in Punjab are advised that all the animals are vaccinated against FMD, if still not, then get them vaccinated immediately, keep their record and repeat after six months. During this season crossbreed animals need special care due to higher humidity. Provide them sufficient drinking water, bathe them (twice daily) and arrange proper ventilation.

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

- **Realised Rainfall:** Significant rainfall occurred in all districts of Madhya Pradesh except Alirajpur, Burhanpur and Jabua and in most of the districts of Chhattisgarh except Bastar, Bijapur, Dantewara, Janjgir, Kawardha, Narayanpur, Raigarh, Sarguja.
- **Weather forecast:** Rain/thundershowers would occur at many places over west Madhya Pradesh during next 24 hours and decrease thereafter, at a few places over east Madhya Pradesh and Chattisgarh during next 48 hours and increase thereafter.
- **Advisories:**
  - In Madhya Pradesh, farmers are advised to continue sowing of soybean, jowar, bajra, urad, moong, cotton, maize, groundnut and sesame. In Vindhya Plateau Zone, undertake transplanting of rice.
  - Farmers in Chhattisgarh Plain Zone are advised to continue transplanting of rice, sowing of *kharif* vegetables and nursery raising of tomato, brinjal, chilli.
  - In North Hill Plain Zone of Chhattisgarh, farmers are advised to continue nursery sowing of rice and vegetables, sowing of arhar, soybean, maize, jowar and groundnut.
  - Farmers in Bastar Plateau Zone of Chhattisgarh are advised to continue upland sowing of rice, ragi and kodomillet crops.
  - Stages of major crops are mentioned in Annexure I.
  - Varieties are mentioned in Annexure II
- **ANIMAL HUSBANDRY & POULTRY**
  - Farmers in Madhya Pradesh are advised to keep animals in sheds, protect them from mosquitoes and provide clean drinking water during monsoon season.
  - Farmers in Chhattisgarh Plain Zone are advised to undertake vaccination of the cattle for FMD during monsoon period.

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

- **Realised Rainfall:** Significant rainfall occurred in all districts of Sikkim; Gangetic West Bengal; Sub Himalayan West Bengal; in most of the districts of Bihar except Gaya, Jahanabad, Lakhisarai, Nawada; in most of the districts of Odisha except Angul, Balasore, Bolangir, Boudh, Gajapati, Ganjam, Jagatsinghpur, Kalahandi, Kandhamal, Keonjhar, Khurda, Mayurbhanj, Nayagarh, Puri and Rayagada; in Dhanbad, Dumka, East Singbhum, Garhwa, Giridih, Godda, Jamtara, Pakur, Palamau, Sahebganj and Simdega districts of Jharkhand.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Sub Himalayan West Bengal & Sikkim, many places over Odisha, Bihar, Gangetic West Bengal and at a few places over Jharkhand.
- **Weather Warning:** Heavy to very heavy rainfall would occur at a few places over Sub-Himalayan West Bengal & Sikkim with possibility of extremely heavy falls at one or two places during next 48 hours, at one or two places over Bihar during next 48 hours.
- **Advisories:**
  - As rain / thundershowers would occur at most places along with heavy to very heavy rainfall at a few places over Sub-Himalayan West Bengal & Sikkim with possibility of extremely heavy falls at one or two places during next 48 hours, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Also provide adequate drainage in crop fields.
  - In Odisha, farmers are advised to continue nursery sowing of rice and direct sowing of rice, sowing of maize, arhar, groundnut, cotton and pulses.
  - In Bihar, farmers are advised to postpone sowing of maize, urad and small millets, vegetable crops like bottle gourd, sponge gourd, bitter gourd, ridge gourd, cucumber, cowpea and okra in upland as rainfall is expected at many places along with heavy to very heavy rainfall at one or two places during next 48 hours.
  - As significant rainfall received in North Bihar, farmers in North West Alluvial Plain Zone of Bihar are advised to continue transplanting rice seedlings in low and medium land areas.

- In Jharkhand, farmers are advised to continue nursery sowing of rice and direct sowing of rice and sowing of soybean, maize, urad, arhar and sowing/transplanting of *kharif* vegetables viz. bhindi, bean, French bean, tomato, cauliflower, cabbage etc. and planting of ginger and turmeric.
- Farmers in New Alluvial Zone and Old Alluvial Zone of West Bengal are advised to undertake land preparation for transplanting of *Aman* rice and postpone planting of banana suckers in New Alluvial Zone of West Bengal.
- Farmers in Laterite and Red Soil Zone, Coastal Saline Zone of West Bengal are advised to postpone sowing of wet seeded *Aman* rice and prepare main field for transplanting of wet seeded *Aman* rice.
- Farmers in Laterite and Red Soil Zone of West Bengal are advised to postpone sowing of maize and sowing of pigeon pea.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure II
- **Animal Husbandry**
  - Farmers in South Bihar Alluvial Zone are advised to give vaccination to the animals against foot and mouth, black quarter and anthrax disease.

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

- **Realised Rainfall:** Significant rainfall occurred in almost all the districts of the states of the region except Lower Subansari district of Arunachal Pradesh, Darrang district of Assam, East Garo Hills, West Khasi Hills and South Garo Hills districts of Meghalaya, Kolasib district of Mizoram, Mokokchung, Zunheboto and Wokha districts of Nagaland, Dhalai and North Tripura districts of Tripura.
- **Weather Forecast:** Rain / thundershowers would occur at most places over the States of the region during the period.
- **Weather Warning:** Heavy to very heavy rainfall would occur at a few places over the states of the region with possibility of extremely heavy falls at one or two places during next 48 hours.
- **Weather outlook:** Rainfall would occur at most places over the states of the region with isolated heavy to very heavy rainfall.
- **Advisories:**
  - As rain / thundershowers would occur at most places with heavy to very heavy rainfall at a few places over the states of the region with possibility of extremely heavy falls at one or two places during next 48 hours, farmers are advised to undertake transplanting *sali* rice in Assam and Meghalaya, transplanting of WRC rice in Arunachal Pradesh, transplanting of *kharif* rice in Manipur, transplanting of *jhum* rice in Mizoram, transplanting of *aman* rice in Tripura and transplanting of low land rice in Nagaland after current spells of rain.
  - Farmers are also advised to postpone nursery sowing of *sali* rice, sowing of pigeon pea, sesame and *Olitorius* jute in Assam, planting of banana in Arunachal Pradesh, sowing of black gram and harvesting of pre-*kharif* rice in Manipur, sowing of groundnut in Mizoram, sowing of pigeon pea in Meghalaya and planting of banana and sowing of groundnut in Tripura.
  - Farmers in these States are also advised to postpone irrigation, intercultural operation and application of fertilizers and plant protection measures and also to arrange adequate drainage to avoid stagnation of water in the crop fields.
  - In view of likely occurrence of rainfall at most places with heavy to very heavy rainfall during the period, farmers in Central Brahmaputra Valley Zone and Barak Valley Zone of Assam are advised to postpone harvesting of *ahu* rice.
  - Farmers in North Bank Plain Zone, Barak Valley Zone and Upper Brahmaputra Valley Zone of Assam are advised to undertake transplanting of *sali* rice seedling from nursery bed to the main field after current spells of rain.
  - In Mild Tropical Hill Zone of Mizoram, due to fluctuation in temperature and high humidity, there is chance of incidence pseudo stem weevils in banana; farmers are advised to remove unwanted suckers, dried and infected leaf and sheath.
  - Due to cloudy weather with occasional rain in Mild Tropical Plain Zone of Tripura, there is chance of attack of stem borer on *jhum* rice; farmers are advised to spray Validamycin 3 I @ 2.5 ml or Hexaconazole 5 EC @ 2.0 ml or Thifluzamide 24 SC @ 0.75 ml per litre of water after current spells of rain to prevent the spread of the disease.
  - Stages of major crops are mentioned in Annexure I.
  - Varieties are mentioned in Annexure II.



- **Animal Husbandry**

- In view of likely occurrence of rainfall at most places with heavy to very heavy rainfall during the period, it is advised to keep the cattle safely under shed.
- Farmers in all the states of the region are advised to deworm and carry out immunizations against FMD, HS and BQ in cattle & buffaloes and swine fever in pigs during this period. Also, vaccinate against Ranikhet disease in one week old chicks and against Gamboro disease in two weeks old chicks.
- In Mild Tropical Plain Zone of Tripura, due to humid weather conditions, there is chance of gastrointestinal parasites in pigs; farmers are advised to keep good sanitary conditions in pig sheds.

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

- **Realised Rainfall:** Significant rainfall occurred in all the districts of Konkan & Goa, Kolhapur, Nashik, Pune districts of Madhya Maharashtra; Hingoli, Latur, Nanded, Parbhani districts of Marathwada; Bhandara, Chandrapur, Gadchiroli, Gondia, Nagpur, Yeotmal districts of Vidarbha; Navsari, Valsad, Dangs, Surat, Tapi and Diu districts of Gujarat during last week.
- **Weather Forecast:** Rain / thundershowers would occur at many places over Gujarat during next 24 hours and decrease thereafter. Rain / thundershowers would occur at most places in Konkan and Goa, at many places over Madhya Maharashtra and at isolated places over Marathwada during the period. Rain/thundershowers would occur at a few places over Vidarbha during next 48 hours and increase thereafter.
- **Warning:** Heavy to very heavy rainfall would occur at one or two places over Gujarat State and Konkan and Goa during next 48 hours.
- **Weather outlook:** Rainfall would occur at most places over Konkan and Goa with isolated heavy to very heavy rainfall. Rainfall would occur at many places over Vidarbha and at one or two places to at a few places over remaining parts of the region.
- **Advisories:**
  - As rain / thundershowers would occur at most places over Konkan and Goa along with heavy to very heavy rainfall at one or two places during next 48 hours, farmers are advised to postpone irrigation, intercultural operations and application of fertilizers in rice and finger millet nurseries as well as application of plant protection measures. Farmers are also advised to arrange adequate drainage to avoid stagnation of water in nursery beds of rice and finger millets as well as in mango, cashew and sapota orchards.
  - Farmers in Konkan are also advised to prepare main rice field and continue transplanting of *kharif* rice seedlings of 22-25 days old.
  - In Madhya Maharashtra, as rain is likely to occur at many places, farmers are advised to postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in early sown crops. They are also advised to undertake sowing of *kharif* jowar, bajra, groundnut, soybean and cotton and planting of banana.
  - Farmers in Western Ghat region are advised to undertake transplanting of *kharif* rice seedlings in main rice field.
  - Farmers in Kolhapur region are advised to prepare main rice field and continue transplanting of 21-25 days old seedlings of early maturing rice, 23-27 days old seedlings of medium maturing varieties and 25-30 days old seedlings of late maturing rice.
  - In Marathwada, farmers are advised to continue sowing of *kharif* jowar, soybean, cotton, red gram, green gram and black gram and planting of banana (*mrugbag*) and turmeric and ginger. Farmers are advised to undertake preparatory tillage for the planting of *adsali* sugarcane.
  - In Vidarbha, farmers are advised to continue sowing of jowar, soybean, cotton, red gram and sunflower in Vidarbha on *vapsa* condition.
  - As rain / thundershowers would occur at many places over Gujarat with heavy to very heavy rainfall at one or two places over Gujarat State during next 48 hours, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops of groundnut, cotton, pulses, sesame, pearl millet, maize and vegetable nurseries. Provide adequate drainage in crop fields.
  - Farmers in Middle Gujarat Zone and South Gujarat Heavy Rainfall Zone are advised to undertake transplanting of rice. Also postpone sowing of cluster bean, sesame, bajra, pulses etc. and undertake sowing after current spells of rain.
  - Cloudy and high humid weather is congenial for attack of semilooper and tobacco eating caterpillar in early sown soybean in Central Vidarbha Zone in Maharashtra; spray Neemark 5% or Fenveralate 20% @ 5 ml in 10 litres of water after current spells of rain.

- Cloudy weather in Middle Gujarat Zone is favourable for outbreak of sucking pests in *kharif* vegetables; spray Dimethoate (40%) or Methyl-o-Demonate (25%) @ 10 ml in 10 liters of water after current spells of rain.
- 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, if noticed.
- Stages of the crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure II.
- **Animal Husbandry**
  - Farmers in Gujarat are advised to keep animals indoor during rain. Spray phenyl in the animal shed to avoid flies and mosquitoes.

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

- **Realised Rainfall:** Significant rainfall occurred in most of the districts of Coastal Karnataka; Bidar and Haveri in North Interior Karnataka; Chickmagalur, Davangere, Kodagu and Shimoga in South Interior Karnataka; most of the districts in Kerala except Thiruvananthapuram; in Coimbatore, Kancheepuram, Nilgiris and Puducherry districts in Tamil Nadu; Medak and Nizamabad districts in Telangana. No significant rainfall occurred in the remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at most places over Kerala, Coastal Karnataka, Lakshadweep and Andaman & Nicobar Islands. Rain/thundershowers would occur at a few places over Andhra Pradesh during next 48 hours and increase thereafter. Rain/thundershower would occur at one or two places over remaining parts of the region.
- **Weather Warning:** Heavy to very heavy rainfall would occur at a one or two places over coastal Karnataka and Kerala during next 48 hours.
- **Advisories:**
  - In Kerala, farmers are advised to postpone planting of banana, sowing/ transplanting of vegetables as rainfall is expected at most places along with heavy to very heavy rainfall at one or two places during next 48 hours. Also provide drainage in already planted banana and vegetable crop fields and do propping in bunched banana. Continue transplanting of *Virippu* rice.
  - In Coastal Karnataka, farmers are advised to continue transplanting of *kharif* rice. Postpone sowing of maize in Uttar Kannada district as rainfall is expected at most places along with heavy to very heavy rainfall at one or two places during next 48 hours.
  - Farmers in Eastern Dry Zone of Karnataka are advised to undertake nursery sowing of ragi and rice where assured irrigation facility is available.
  - Farmers in the North East Transition Zone of Karnataka are advised to continue sowing of pigeon pea.
  - In North Dry Zone of Karnataka, due to subdued rainfall activity during last 3 weeks, farmers are advised to wait up to first fortnight of July for revival of rainfall to take up further sowing of *kharif* crops viz. bajra, groundnut, red gram, sesamum, castor etc.
  - Farmers in the North Transition Zone of Karnataka are advised to continue sowing of maize, sorghum, green gram, soybean, groundnut, chilli and cotton.
  - Farmers in Southern Transition Zone of Karnataka are advised to complete sowing of maize, and groundnut utilizing realized rainfall during last week.
  - Farmers in the North East Dry Zone of Karnataka are advised to complete sowing of short duration varieties of green gram and cowpea.
  - Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to continue transplanting of *Kuruvai* rice mainly in Thanjaur, Trichy, Nagapattinam and Thiruvarur districts with irrigation facilities.
  - Farmers in the Western Zone of Tamil Nadu are advised to undertake propping against lodging of nearly maturing sugarcane and five months old banana crops due to high wind speed.
  - In South Zone of Tamil Nadu, farmers are advised to continue sowing of green and black gram and give support to banana and propping for sugarcane to prevent the crops from damage, due to high wind speed.
  - Farmers in the North Coastal Zone of Andhra Pradesh are advised to complete sowing of bajra, planting of sugarcane and sowing of rice nurseries and direct seeding of rice utilizing the realised rainfall.
  - Farmers in the High Altitude Zone of Andhra Pradesh are advised to continue nursery sowing of rice, ragi and maize.
  - Farmers in the Scarce Rainfall Zone of Andhra Pradesh are advised to continue sowing of groundnut with intercropping with redgram in the ratio 7:1, bajra and jowar as border crop for groundnut as it will prevent sucking pest into main field of groundnut. Prepare field for sowing of cotton, castor, maize and nursery sowing of rice.

- Farmers in the Southern Telangana Zone of Andhra Pradesh are advised to continue nursery sowings of medium and long duration rice varieties, red gram, green gram and groundnut.
- Farmers in the Northern Telangana Zone of Andhra Pradesh are advised to undertake sowing of maize, jowar, red gram, black gram, green gram, cotton, groundnut and nursery sowings of rice utilizing the realized rainfall during the week.
- Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to undertake nursery sowing of rice with assured irrigation facilities.
- The present weather is most conducive for the incidence of bud rot, rhinoceros beetle, red palm weevil and leaf rot diseases in coconut and leaf fall diseases in nutmeg in the Problem Area Zone of Kerala. Farmers are advised to undertake proper field surveillance, plant protection measures, provide adequate drainage to newly planted seedlings and postpone spraying of Bordeaux mixture with sticker to prevent leaf fall diseases.
- There are chances for sheath blight rice and mahali disease in coconut due to prevailing weather in the Central Zone of Kerala. Farmers are advised to postpone application of Propiconazole 25 EC @ 500 ml per 1 hectare to control sheath blight and 1% Bordeaux mixture to control mahali disease.
- High humidity favours incidence of sigatoka leaf spot in banana in the Southern Zone of Kerala. Farmers are advised to undertake phytosanitation, postpone application of 1% Bordeaux mixture or tilt 1ml/l or contaf 2ml/l to control sigatoka leaf spot incidence, also take preventive measures against bud rot in coconut and adopt proper control measures against the pseudo stem borer in varieties other than Nendran banana.
- Prevailing weather conditions are favorable for the incidence of red hairy caterpillar in already sown rainfed crops in the Southern Telangan Zone of Andhra Pradesh. Undertake the following measures to control the pest. Keep bonafires in the night between 7 pm to 11.pm to attract and kill the moths, remove and destroy leaves containing egg masses and larvae, for the early instar larvae, dust Methyl parathion or Quinolphos @ 10 kg/acre, to avoid migration from field to field, plough deep furrows around the field and dust with Methyl parathion 2 % @ 10 kg/acre and for the final instar larvae, spray Dimethoate @ 400 ml or Monocrotophos @ 320 ml using 200 litres of water per acre.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure II
- **Animal Husbandry:**
  - Farmers in the Scarce Rainfall Zone of Andhra Pradesh are advised to undertake vaccination of animals against FMD, Brucellosis, Haemorrhagic Septicaemia, Anthrax and small ruminants against PPR and Sheep and Goat Pox.
  - Continuous wet spell in the Western Zone of Tamil Nadu is conducive for bacterial and fungal infection to cattle and milch animals. Farmers are advised to undertake pro-active measures to protect the animals from infectious diseases and provide drainage to cattle and poultry shed to avoid mosquito breeding.

## Annexure I

### Stages of Major Crops

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

- *Capsicum*, tomato, brinjal, chilli (nursery raising / transplanting), cucurbits, French bean, okra (sowing), rice (nursery sowing), maize, soybean, mash (sowing), peas (flowering/ pod formation), cauliflower (nursery sowing), cucurbits viz. khira, bitter gourd, tori (direct sowing/germination), potato (planting / sprouting) in Himachal Pradesh.
- Rice (nursery sowing / transplanting), ginger (vegetative), autumn sugarcane (vegetative), moong, urad (pod maturity/harvesting), okra (vegetative / flowering), sugarcane (planting / seedling), vegetables viz. tomato, *Capsicum*, chilli, brinjal, cabbage, cauliflower in mid and high hilly area (transplanting), vegetables viz. palak, fenugreek, coriander, bhindi, French bean and lobia (sowing/germination), maize, finger millet, urad, moong, soybean, groundnut, pigeon pea, cowpea, horse gram, rice bean (sowing/seedling) in Uttarakhand.
- Bajra, moong, til, sorghum (sowing), chilli, brinjal and early cauliflower (transplanting), maize (sowing), rice (transplanting) in Delhi.
- Vegetables (flowering / fruiting / picking), rice (nursery raising / transplanting), maize (sowing / germination), cowpea, bajra, pole type beans (sowing/germination), sunflower (vegetative/flowering), garlic, cucurbits, okra (vegetative/ flowering), radish, spinach (transplanting), carrot, turnip (sowing/ transplanting), onion, cole crops (nursery sowing / transplanting), oat, berseem (vegetative), fruit crops (planting), brinjal, chilli, tomato, potato (transplanting/germination), *kharif* pulses (moong, mash) (sowing / germination) in Jammu & Kashmir.
- *Kharif* maize, jowar (sowing), rice (transplanting), groundnut, arhar, moong and urad (sowing), tomato, brinjal and cucurbits (nursery sowing), vegetables (nursery sowing), spring sugarcane (vegetative) in Uttar Pradesh.
- New sugarcane (tillering), cotton (germination), cucurbits, cowpea (sowing), rice (transplanting), soybean / arhar (sowing) in Punjab.
- New sugarcane (vegetative), cotton (sowing/germination), rice (nursery raising/ transplanting) in Haryana.
- Rice (nursery preparation / transplanting), groundnut (field preparation / sowing), cotton (field preparation / sowing), chilli, shimla mirch (sowing/ germination), moong, early sown groundnut (early vegetative /vegetative), new sugarcane (planting / early vegetative), groundnut, bajra, sorghum, soybean, moong, guar, sesame, moth, maize, cowpea, cluster bean, castor (sowing), cucurbits (sowing) and ber, aonla, pomegranate, phalsa (new planting), kinnu (new planting) in Rajasthan.

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

- *Kharif* rice (seedling / transplanting), onion (germination/seedling), maize, jowar, arhar, soybean, sesame, groundnut (sowing/germination/early vegetative), sugarcane (elongation / grand growth), vegetables (transplanting / early vegetative) in Madhya Pradesh.
- Sugarcane (planting/early vegetative), *kharif* rice (nursery sowing/transplanting), maize, groundnut, green gram (sowing) jowar, arhar, soybean (sowing/germination), ragi and kodo millet (sowing), ginger, turmeric, papaya (vegetative), onion (vegetative), vegetable crops (sowing/ transplanting) in Chhattisgarh.

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

- *Kharif* rice, maize (nursery sowing / sowing), sugarcane (early vegetative / tillering), summer vegetables (fruiting / harvesting), moong, urad (harvesting), yam (vegetative) in Bihar.
- *Kharif* rice (nursery sowing), soybean, maize, urad, arhar, marua (sowing), onion (vegetative), ginger and turmeric (planting), *kharif* vegetables viz. bhindi, bean, French bean, tomato, cauliflower, cabbage etc. (sowing) in Jharkhand.
- Rice (direct sowing / nursery sowing), pigeon pea, groundnut, ragi, arhar, maize, cotton and *kharif* vegetables (sowing), turmeric, ginger, fruit crops (planting), Jute (active vegetative), turmeric, ginger, yam (planting / early vegetative), sugarcane (tillering), banana (vegetative), cowpea (pod maturity / harvesting), tomato (fruiting / harvesting), summer vegetables (fruiting / harvesting), sunflower (maturity/harvesting) in Odisha.
- *Aus* rice (flowering), *aman* rice (seedling/transplanting), maize (sowing), ginger, turmeric (planting), pigeon pea (sowing), summer vegetables (fruiting / harvesting), jute (vegetative), tomato (fruiting / harvesting), brinjal, bitter gourd, pointed gourd, ladies finger (fruiting / harvesting), chilli (fruiting / harvesting), mango (fruiting / harvesting), litchi (fruiting / harvesting), banana (flowering/fruting) in West Bengal.
- Ginger (vegetative), large cardamom (secondary flowering), *kharif* vegetables (sowing/transplanting) in Sikkim.



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

- Sugarcane (active vegetative / elongation), transplanted early *ahu* rice (maturity / harvesting), normal *ahu* rice (grain formation), *sali* rice (nursery sowing / seedling / transplanting), *Capsularis* jute (harvesting), *Olitorius* jute (sowing), pigeon pea (sowing), sesame (sowing), *kharif* vegetables (sowing / transplanting), maize (active vegetative), ginger, turmeric (early vegetative), cucurbits (vegetative / fruiting) and banana (fruiting / maturity / harvesting) in Assam.
- *Jhum* rice (tillering), main WRC rice (nursery sowing / transplanting), early WRC rice (tillering), maize (cob maturity / harvesting), soybean (vegetative), green gram, black gram (vegetative), okra (fruiting / harvesting), cucurbits (fruiting / harvesting), potato (tuber formation / harvesting), banana (fruiting / maturity / harvesting), tomato, brinjal (fruiting) in Arunachal Pradesh.
- *Pre-kharif* rice (grain maturity / harvesting), *kharif* rice (nursery sowing), maize (cob maturity / harvesting), groundnut and soybean (vegetative), turmeric, ginger (vegetative), black gram, rice bean (sowing), cowpea, okra (sowing), chilli, cucurbits (fruiting / harvesting) in Manipur.
- *Kharif* maize (tasselling / cob formation), *ahu* rice (grain formation / maturity), *sali* rice (transplanting / tillering), turmeric, ginger (vegetative), pigeon pea (sowing), cucurbits (vegetative / fruiting) in Meghalaya.
- Maize (active vegetative), *jhum* rice (nursery sowing / transplanting), groundnut (sowing / early vegetative), banana (vegetative), summer okra (flowering / fruiting / harvesting), okra (sowing / early vegetative), French bean (sowing / early vegetative), cucurbits (vegetative), ginger and turmeric (vegetative) in Mizoram.
- *Kharif* maize (cob formation / cob maturity), upland rice (active tillering / panicle initiation), lowland rice (transplanting), chilli, okra, brinjal (fruiting / harvesting) and ginger (vegetative), cucurbits (vegetative) in Nagaland.
- *Jhum* rice (active tillering / panicle initiation), *aman* rice (transplanting), groundnut, maize (sowing / vegetative), banana (planting) in Tripura.

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

- *kharif* rice (seedling / transplanting in Konkan, Kolhapur region, Nasik (ghat), seedling in Pune (west) and germination in East Vidarbha), jowar, soybean, groundnut & cotton (sowing / germination / early vegetative in Madhya Maharashtra, Marathwada, Vidarbha), bajra (sowing / germination / early vegetative in Madhya Maharashtra and Marathwada), green gram and black gram (sowing / germination / early vegetative in Marathwada).
- *Kharif* rice (seedling / transplanting), pearl millet (sowing / germination), sesame (sowing), groundnut, cotton (germination / vegetative), pulses (sowing / germination / vegetative), summer vegetables (fruiting / harvesting), *kharif* vegetables (sowing / transplanting), sugarcane (grand growth) in Gujarat.

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

- Summer groundnut (vegetative to pod formation), summer cotton (vegetative/boll formation), *kharif* crops: maize (sowing/ early vegetative), pigeon pea, Bt.cotton, bajra, castor, jowar, groundnut (sowing/seedling), sugarcane (tillering/ grand growth), rice (nursery sowing) and vegetables (sowing) in Andhra Pradesh.
- Summer crops: Black gram (harvest), pulses (maturity) cotton (harvest), sesame (maturity/harvest), maize (vegetative/flowering), sorghum (flowering/ grain formation), groundnut (pegging), *kharif* crops: *kuruvai* rice (nursery sowing/transplanting), groundnut (sowing/germination), sugarcane (grand growth) and pulses (vegetative), irrigated cotton (boll development), irrigated rice (booting), irrigated sorghum (grain filling), irrigated groundnut (pod formation) in Tamil Nadu.
- *Viruppu* rice (transplanting/tillering), arecanut (flowering/nut formation), sugarcane (tillering), rainfed banana (planting), rubber (tapping/planting), summer vegetables (fruiting/harvest), *Kharif* vegetables (sowing/planting), pepper and cardamom (planting), ginger (vegetative) in Kerala.
- Sugarcane (grand growth), arecanut (nut formation/maturity), *kharif* crops: sorghum, bajra, sesame, sunflower, navane, Bt. Cotton, ragi and cowpea (sowing), green gram, maize, red gram, groundnut, black gram and soybean (sowing/early vegetative) rice (nursery sowing/transplanting), vegetable crops (nursery/transplanting) in Karnataka.

## Annexure II List of Varieties

### Delhi

**Rice: Hybrid varieties:** Pant hybrid Dhan1, Narendra hybrid dhan 1, P R H 10.

**High yielding varieties:** Pusa 44, Pant Dhan 4, Pant Dhan 10, Pusa 834, Pusa basmati 1,

**Pusa improved basmati:** Pusa sugandha 5, Pusa sugandha 4 (Pusa 1121), Ranvir basmati and Taravadi basmati.

**Maize:** AH-421, AH-58 or Composites: Pusa composite-3, Pusa composite-4.

**Bottle Gourd-** Pusa Naveen, Pusa Samridhi.

**Bitter Gourd-** Pusa Visesh, Pusa-2 mosumi, Pumpkin- Pusa Visvash, Pusa Vikash.

**Ridge Gourd-** Pusa Chikni.

### Jammu & Kashmir

**Maize :** GS-2, Mansar, Trikuta, C-5 and C-8, Super Composite (Mansar), C-6, Vijay, Him-123 and Local Tall

**Rice :** direct seeded rice - IET 1410, China-1039, K-39, Ratna, PC-19, Jaya, RR-8585(Ajay) (Subtropical Zone), China-1039, Samwal, K-39, K-84, K-343 & Giza-14 (in Intermediate lower zone)

**Brinjal :** PPL, PPC & PPR

**Chillies :** NP-46A, Pusa jawala.

### Punjab

**Rice:** PR-121, PR-122, PR-118, PR-116, PR-114, PR-111, PR-113, PR-115 in Western Plain Zone, Basmati 3, Pusa Basmati 1121, Punjab Basmati 2 & Punjab Mehak 1.

### Rajasthan

**Rice:** P.R.106, B.K.190, Mahi Sugandha Basmati

**Groundnut:** G.G.-2, J.-38, Pratap Munghali-1, Pratap Munghali-2, R.S.-1, R.G.-141, M.13, T.G.37-A, T.B.G.-39, H.N.G.10, H.N.G.69, Mallika, Chandra,

**Bikaneri Nerma:** RST-9 and Hybrid-4

**Chilli:** Pusa Jwala, N.P.46-A, PantC-2, Pusa Sadabahar, G-3, G-5 and RCH-1

**Shimla Mirch:** yellow wonder, California wonder, Bulnose and Arka Mohini

**Guar:** RGC-936, 197, 986, 1002, 1003, HG-365, 563, HG-2-20, RGC 1066 (Lathi)

**Bajra :** Raj 171, HHB-67, HHB-67A, HHB-60, RHB-90, RHB-121, RHB-121A, RHB-90, RHB-177A, RHB-154A, GHB-538, ICMH-356, ICTP-8203A,

**Sorghum:** CSH-6 (90-100 days), CSV-10 (100-110 days), CSV-15 (104-140 days), CSV – 17, Pratap Jowar – 1430, CSH – 13, CSH – 14, Rajasthan chari-1, Rajasthan chari-2 MP chari, SSG 59-3 and JS 20, CSH 16.

**Soybean :** JS-335, MACS-13, PK – 472, MACS-58, PS – 16, JS – 71 – 05, Pratap Soya-1.

**Maize:** Bassi selected (80-85 days), Mahi Kanchan (75-80 days) & Ageti-76 (85-95 days), Him – 129, Aravali Makka, PEHM-1, PEHM- 2, Pratap Makka-1, Pratap Makka-3, Pratap Makka-5,

**Sesame:** RT-46

**Moong:** Ganga-1(Jamnotri), Ganga-8 (Gangotri), SML-668, MUM-2, SML-668, MUM-2, RMG-62, RMG-268, RMG-492 & RMG-344 and K-851

**Moth-** RMO-257, 225, 435, 423 and RMO-40

**Cowpea:** FS-68, RC-19 and RC-101

**Cucurbits:** bottle guard : Pusa Naveen, Arka Bahar, pumpkin - Pusa Vishwas, Arka Chandan, Pusa Alankar, Arka Suryamukhi, bitter guard - Arka Harit Pusa Vishesh, Priya and round gourd- Arka tinda, Bikaneri green, Punjab-48.

### Himachal Pradesh

**Rice:** Pant Dhan-10, Govind, Pant Dhan-12, Ratna, UPR-71-12, Pant Sankar Dhan-1, Narendra Sankar Dhan-2.

**Finger millet** as VL- Mandua-124 and VL-149 and short duration (95 to 100 days) varieties like VL- Mandua-204, Pant Mandua-3, PES-176, PES-110, VLMandua-146.

**Cauliflower :** Patna snowball and joint snowball.

### Uttarakhand

**Chote Dhan:** VL-163, VL-221, Pant dhan-6, Pant Dhan-11, VL-62, VL-81

**Rice -** Saket-4, Govind, Narendra-80, Pusa 2-21 (short duration)

**Jethi Dhan (unirrigated) :** VL-154, V.L.221

**Scented rice :** Pant Sugandh-15, Tarawadi, Basmati, Pusa Basmati-1, Type-3, Basmati-370

**Maize:** Hima-129, Navin, Sartaj, VL16, Surya, Him, Ganga Makka-9, 11.

**Urad:** Pant Urad-19, Pant urad-30, Pant Urd-35, 40.

**Soybean:** Brag, PK-262, VL Soya-2, VL Soya 21, VL Soya-47, PRS-1, PS-1092.

**French bean :** VL Rajma-63, **Gahat:** VLG-1, 8

**Pigeon pea :** Jagrati, UPAS-120, Sagar, Manak, Type-21, Bahar, Pusa-855, Pusa-74 and hybrid varieties like ICPH-8 etc

**Mandua- PRM-1,2, VL Mandua-324, 146, 149.**

**Rice bean –** PRR-1, 2

**Cow pea-** PRA-1, 2, 3 and VL-44.

**Grain sorghum :** CSH-13 or CSH-15

**Pearl millets:** MH-179, HHB-60, HHB-67 or composite varieties like HC-4, ICMB-8440, WCC-75.

### Uttar Pradesh

**Jowar:** Mauta-1, Mauta-2, Varsha, C.S.B.-15 and C.S.H.-5, C.S.H.-9, C.S.H.-14, C.S.H.-16.

**Late sown varieties of rice:** Sambha Masoori, Swarna sub-1, Jal-Lahari, Jal-Priya

**Medium Late sown varieties of rice:** Narendra- 359, Malviya-36, Pant Dhan-4, 10 Narendra Dhan-3112 , Narendra Dhan-2064, Swarna, Suraj-52, Pusa Basmati-1, Haryana Basmati

**Early sown varieties of rice:** Manhar Pant Dhan- 12, I.R- 50, Narendra- 118, Narendra Dhan- 2026.

**Arhar:** Paras, U.P.A.S-120, Pusa- 992

**Groundnut-** Moongfali-1, 13, Girnar-2, Ta-64, Kaushal guchedar, Chandra, Ta- 28

**Til-** Haryana Til-1, Punjab Til-2

**Moong-** Pusa Baishakhi

**Urad-** T-9

**Cabbage-** Patgobhi-3, Early Kuwari, Pusa early synthetic, pusa deepali

**Bhindi-** Varsha Uphar, Arka Anamika, V.R.O-5, R.O-6

**Tomato-** pusa early, pusa ruby, H.S. 101

**Kharif onion-** N.- 53, agrifound darkred

### Madhya Pradesh

Rice:

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

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

Maize:

a. Medium: navjot, Arun, H-216, Jm-13, Sartaj, Daccan 107

b. Late: Ganga-11, Prabhat, Trisulta, Daccan 103, Daccan 105

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

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

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

**Onion:** Nashik 53, Agrifound dark red, Pusa kalyani

### Chhattisgarh

**Ragi:** PR-202, HR-374, VR-708, RU-08, GPU-45, VC-149 etc.

**Kodomillet:** GPUK-03, RBK-155 etc.

### Odisha

**Ginger:** Suprava, Suruchi, Surabhi.

**Turmeric:** Roma, Surama, Rang, Rashm.

**Maize:** Navjot, Shakti, Decan-107, Decan-109.

**Yam: Local Yam:** Shreekirti, Shreerupa, Hatikhoj, Shreeshilpi.

**Small yam:** Shreelata, Shreekala.

**White Yam:** Shreesubhra, Shreepriya, Shreedhanya.

**Rice:** Early- Khandagiri, Bandana, Pathara, Parijat, Annada.

Medium-MTU- 1001, MTU-1010, Konark, Gajapati, Surendra, Lalat.

Late- CR-1009, CR-1018, Swarna (MTU-7029), Indravati, Mahanadi, Puja, Ramachandi, Kanchana, Sarala, Lunishree and Fine-CR-1014, BPT-5204.

**Arhar:** Early-duration- Prabhat, Upas-120, ICPL-86012., Medium duration- Asha, Visakha.

**Cotton:** Tulasi, Sigma, Chiruta, Diana, Bunny

**Ragi:** Divyasinha, AKP-2, AKP-3, AKP-7, Godavari, Neelachal, Bhairavi, Shubhra, and Chilika.

**Groundnut:** Smruti, AK12-24, TAG-38, Devi

**Fruit Crops: Mango-** Banganpalli, Totapuri, Subarnnarekha, 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, Lakhadeep, Java, Fiji.

**Pine apple-** Que, Queen, Simachalan and Maricius.

**Cashew nut-** Vengrulla 1.4, BPP-4, Bhubaneswar-1 and Hybrid-2-17.

**Jackfruit-** Kadua, Khajra and Singapore.

### West Bengal

**Arum:** BCC-17, BCC-33, BCC-02, BCC-01, BCC09.

**Pigeon pea:** Sweta, Chumi.

**Aman rice :** IET-4094, 2233, Ratna, Bikash, Kitish, Sasya-shree, IR-42, Swarna, Mashuri, IET-8002.

**Banana :** Mortoman, Chapa, Kathali, Singapuri,

### Jharkhand

**Rice(Upland):** Birsa Dhan- 108, Birsa Vikas Dhan- 109, 110, Vandana etc.

**Rice(Medium land):** Anjali, Sahbhagi, Naveen, Lalat, Birsamati, Sugandha, BR-10, Pro-Agro 6444, IR-36, IR-64etc.

**Rice(Low land):** Swarna (MTU-7029), Rajshree, Sambha Mahsuri (BPT- 5204), Birsa Dhan- 202, Birsamati, Pro-Agro 6444, etc.

**Arhar:** Birsa Arhar-1, Narendra Arhar-1, Bahar, ICPH-2671.

**Maize:** Birsa Makka -1, Birsa Makka-2, Suwan-1 etc.

**Ginger:** Vardhaman, Nadia etc.

**Turmeric:** Rajendra Sona.

**Okra:** Pusa A-4, Prabhani Kranti, Arka Anamika, Varsa Uphar, Sonal and Sarika.

**Marua:** A-404, HR-374, Birsa Marua-1 and Birsa Marua-2.

### **Bihar**

**Rice:** Rajshree, Rajendra Sweta, Rajendra Mansuri, Swarna, Satyam, Kishori, MTU 7029. Rajendra mehsoori-1, Rajendra bhagwati, MTU-1010, MTU-1001, Hybrid seed-PHB 71, A 6444, PRH 10.

**Maize:** Deok, Shaktiman 1, Shaktiman 2, Sunkar Makka 3 and Ganga 11.

### **Assam**

**Sali rice:**

**Long duration high yielding varieties:** Ranjit, Bahadur, Peoli, Moniram, Pankaj, Kushal.

**Medium to short duration varieties:** Satya, Basundhara, Mahsuri, Luit, Pioli, Moniram.

**Flood tolerant varieties:** Jalashri, Jalkuwari (for chronically low lying flood affected areas).

**Arhar:** T-21.

**Sesame:** AST-1, Gauri, Vinayak.

### **Tripura**

**Aman rice:** Gomati, Ranjeet, Swarna, Samba Masuri.

**Groundnut:** TAG 24, TG 37A, ICGS 76.

**Maize:** DMH- 849, 117, HQPM 1, BQPM 9.

### **Maharashtra**

**Kharif jowar:** Hybrid - CSH5, CSH 9, CSH13, CSH14, CSH16, CSH17, CSH18, CSH2; improved - SPV 462, CSV 13, CSV15, CSV17, PKV 801 for Pune region and CSH14, CSH16, CSH25 for Marathwada.

**Kharif bajra:** Hybrid variety Shraddha (RHRBH 8609), Saburi (RHRBH 8924), Phule Shanti (RHRBH 9808) and improved variety – ICTP 8203, ICMV – 155 for Pune region and GHB 558, Shraddha, Saburi and Pratibha for Marathwada.

**Kharif groundnut:** SD 11, Phule Pragati, Phule Vyas, Phule Unap, TPG 41, TG 26.

**Red Gram:** ICPL 87, Vipula, BSMR-853, BSMR-736, AKT 8811, Amol for Madhya Maharashtra, ICPL-87119 (Asha), C-11 for Central Vidarbha and BSMR 736, BSMR 853, BDN 711 (for rain shadow area) for Marathwada.

**Sunflower:** EC-68414, SS-56 and Bhanu.

**Soybean:** JS-335, Phule Kalyani (DS-228) for North Madhya Maharashtra, MAUS 71, MAUS 158, JS-335 for Marathwada.

**Kharif Rice:** PKV HMT, PKV Khamang, PKV Makarand, PKV Ganesh, Sindewahi 2001 for East Vidarbha.

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

**Green Gram:** BM-2002-1, BM 2003-2, AKM-4 and Green Gold for Marathwada.

### **Gujarat**

**Rice:** GR-11, Jaya, IR – 22, Gurjari and Dandi.

**Pearl millet:** GHB-528, GHB-577, GHB-316 and GHB-183.

GHB-744 (moderate duration) and GHB- 538, GHB-719 (early maturing).

**Pigeon pea:** GT-1, GT-100, GT-101, T-15-15, BDN-2, IPCL-87, Pusa Ageti, GTH-1.

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

**Black gram:** T-9 and GU-1.

**Cowpea:** Gujarat cowpea-1, 2, 4, Pusa Falguni.

**Sesame:** G.til-1, G.til-2.

**Cluster bean:** G.Guar-2.

### **Kerala**

**Bananas:** Robusta, Poovan, Njalipoovan, Palayankodan

### **Tamil Nadu**

**Rice :** ADT 36, ADT 43, ADT 45 and ADT 47

**Green gram :** CO 6, CO 7, VBN 2 and VBN 3

**Black gram :** VBN 3, VBN 4, VBN 5 and CO 5

**Karnataka:**

**Red gram:** TTB-7, BRG-1, BRG-2 (For Eastern Dry Zone )  
TS-3R (For North Dry Zone)

**Maize:** DMH-2 and Arjun

**Groundnut:** Bunch type of varieties – GPBD-4, JL-24 and TMV-2 (Use 125 kg seeds/ha (i.e 50 kg seeds per acre)

Spreading type of varieties – DSG-1 and JSP-39 (Use 75 kg seeds per hectare (i.e 30 kg seeds per acre)

**Soybean:** JS-335 (Use 75 kg seeds/ha

**Cotton:** DHH-11, NCH-145, NHH-44, DHB-105 and Sahana.

**Red gram:** TTB-7, BRG-1, BRG-2

### **Andhra Pradesh**

**Mung bean-** LGG 407, Lgg 460, LGG 450, PDM 54, MGG 295, WGG 37, Pusa 105, MGG 348.

**Urad bean -** LBG 752, Lbg 20, PU 31, T9, LBG 623

**Redgram –** LRG 30, LRG 41, LRG 38, ICPL 332, ICPL 8719, ICP 8863, ICPL 85063, MRG 66, PRG 158, PRG 100

**Soybean –** S 335, PK 1029, JS 93-05, Bheema, Basara.

**Rice-** Swarna, Sonamashuri, Sambamashuri and ragi with varieties Bharati, Srichaitanaya, Hima.