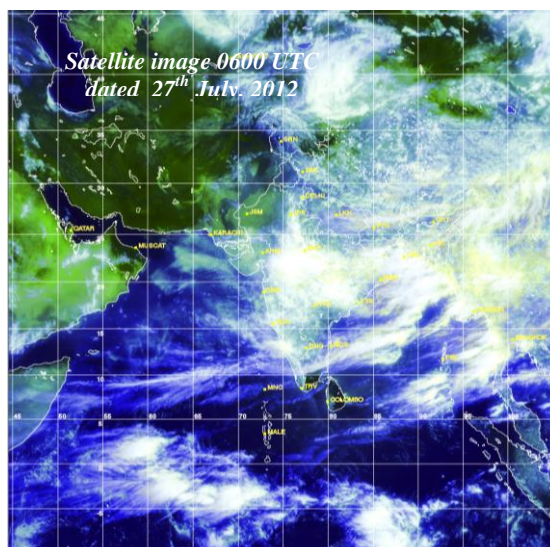


The southwest monsoon has been active over west Telangana, Orissa, Jharkhand, Chandigarh and west Uttar Pradesh during past 24 hours ending at 0830 hours IST of today.



Due to subdued rainfall activities in some parts of the country during the season, contingency plan has been prepared for the farming community for Madhya Maharashtra, Marathwada, Interior Karnataka, Rajasthan, Haryana, Bihar and Gujarat are given in page no. 2 and 3.

- Gujarat:** Undertake sowing of cluster bean (G. Guar-2), cowpea (G. Cow pea- 3 or 4, PusaFalguni) and green gram (G. Mung-4 and K-851) in North Gujarat region. Sowing of castor can be started with effect from 1<sup>st</sup> August and continued for whole month.
- Saurashtra & Kutch:** Undertake sowing of cotton, castor and fodder and rice cultivation with SRI techniques with irrigation facilities in Bhal and Coastal Zone. Select short duration varieties of castor and sesame (Purva-1) and fodder crops like forage maize, GundriJowar, SolapuriJowar in North Saurashtra Zone. Undertake soil moisture conservation practices in early sown crops. Select short duration varieties of groundnut, sesamum, castor, hybrid bajra, cotton, maize and fodder sorghum. Undertake intercultural operations in the early sown crops for conserving soil moisture.
- West Rajasthan:** Undertake sowing of fodder bajra, cluster beans and pulses in place of cereals.
- Madhya Maharashtra:** Undertake sowing of tur (ICPL-87, BDN-708, Vipula), bajra (Shradha, Saburi, Shanti), maize (fodder) (African tall, Manjri, Kiran, Panchganga, Karvir), guar (Pusa Sadabahar, Pusa Mausami, Pusa Navabahar), soybean (JS - 9305, JS - 335), groundnut (JL-501, JL-286, JL-24) and intercropping like bajra + tur (2:1), sunflower + tur (2:1), guar + tur (2:1) and soybean + tur (6:2).



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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

## Executive Summary

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

Rainfall is likely to occur at many places over West Bengal, Bihar, Jharkhand, Orissa, Madhya Pradesh, Vidarbha, Kerala, Coastal Karnataka, Konkan, Jammu & Kashmir, Himachal Pradesh, Uttarakhand, East Rajasthan and Uttar Pradesh. 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 Konkan & Goa, Orissa, Chhattisgarh, Madhya Pradesh and Uttar Pradesh during next 48 hours. In view of occurrence of heavy rainfall, arrange for adequate drainage in standing crops in the above States. Rainfall for the States of Assam, Arunachal Pradesh, Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, Gujarat, Maharashtra, Orissa, West Bengal, Sikkim, Karnataka, Kerala and Andhra Pradesh during last week is given in Annexure – I. Weather forecast map is provided in Annexure – II.

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

5. **Haryana:** Undertake sowing of 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) and moth (Jwala, RMO 40, RMO 257).
6. **Delhi:** Continue sowing of bajra wherever rainfall occurred and farmers in areas where rainfall not occurred are advised to wait for sowing.
7. **Gujarat:** Undertake sowing of cluster bean (G. Guar-2), cowpea (G. Cow pea- 3 or 4, PusaFalguni) and green gram (G. Mung-4 and K-851) in North Gujarat region. Sowing of castor can be started with effect from 1<sup>st</sup> August and continued for whole month.
8. **Saurashtra & Kutch:** Undertake sowing of cotton, castor and fodder and rice cultivation with SRI techniques with irrigation facilities in Bhal and Coastal Zone. Select short duration varieties of castor and sesame (Purva-1) and fodder crops like forage maize, GundriJowar, SolapuriJowar in North Saurashtra Zone. Undertake soil moisture conservation practices in early sown crops. Select short duration varieties of groundnut, sesamum, castor, hybrid bajra, cotton, maize and fodder sorghum. Undertake intercultural operations in the early sown crops for conserving soil moisture.
9. **West Rajasthan:** Undertake sowing of fodder bajra, cluster beans and pulses in place of cereals.
10. **Madhya Maharashtra:** Undertake sowing of tur (ICPL-87, BDN-708, Vipula), bajra (Shraddha, Saburi, Shanti), maize (fodder) (African tall, Manjri, Kiran, Panchganga, Karvir), guar (Pusa Sadabahar, Pusa Mausami, Pusa Navabahar), soybean (JS – 9305, JS – 335), groundnut (JL-501, JL-286, JL-24) and intercropping like bajra + tur (2:1), sunflower + tur (2:1), guar + tur (2:1) and soybean + tur (6:2).
11. **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.
12. **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 RajendraBhagwati, Prabhat, Narandra 97, MTU-1010 and RajendraSweta 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.
13. **South Interior Karnataka:** Undertake sowing of finger millet, maize, sunflower and redgram (medium duration varieties like BRG-1, 2)
14. **North Interior Karnataka:** Undertake sowing of tobacco, groundnut (short duration), maize (short duration), cowpea, sunflower (SB-275), niger, castor, bajra, pigeon pea, horse gram, intercropping like bajra + redgram (2:1), pigeonpea + horsegram (2:1) or chilli + desi cotton).

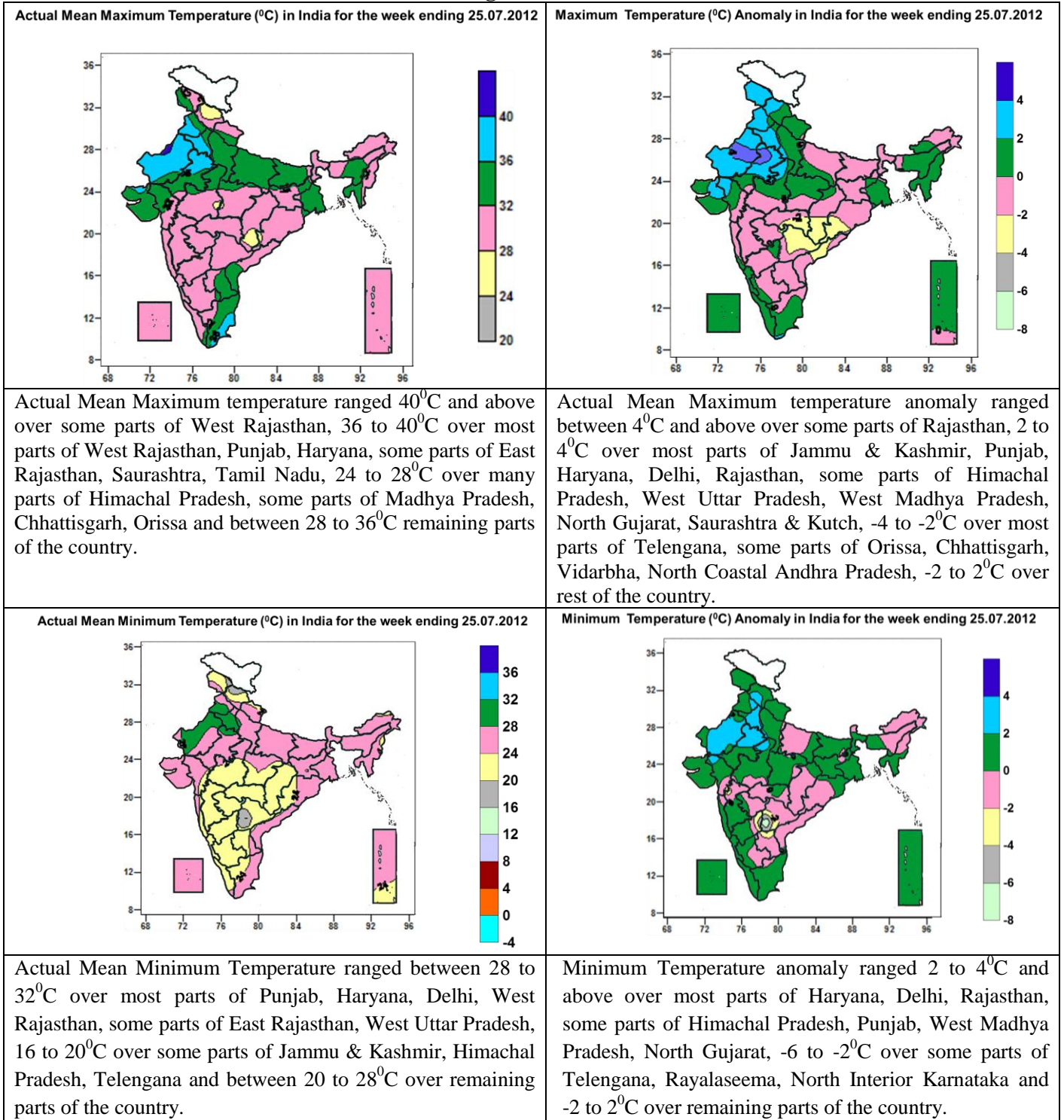
In the following sub-divisions dry condition prevailed during initial period of the monsoon but now good rainfall conditions prevailed now. Hence no contingency plan was issued as normal sowing of crops is continued.

1. **Rayalaseema:** Normal sowing of groundnut, castor, cotton, bajra and red gram.
2. **West Uttar Pradesh:** Continue sowing of black gram and sesame upto 30<sup>th</sup> July. Continue transplanting of rice and sowing of sorghum upto 10<sup>th</sup> August.
3. **Himachal Pradesh :** Transplanting of rice and sowing of maize continued.

In remaining parts of the country, due to receipt of adequate rainfall, sowing is continued normally. Sowing status in these States are given below:

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. **Kerala:** Transplanting of *viruppu* rice completed. Crops are in good condition.
4. **Coastal Karnataka:** Good rainfall is received during last week. Transplanting operation of rice is continued.
5. **Andhra Pradesh:**
  - Farmers in **Telengana** are advised to continue direct sowing of rice, groundnut and red gram with receipt of sufficient rainfall and also continue nursery sowing / transplanting of rice, sowing of *kharif* crops like cotton, jowar, maize, ragi, castor, groundnut and pulses in coastal Andhra Pradesh.
  - In **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.
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 25.07.2012



**Distribution of rainfall of the country during week ending on 25.07.2012**

State/Districts	Actual	25.07.12
<b>Arunachal Pradesh</b>		
Anjaw	**	**
Changlang	144.6	35
East Kameng	23.0	-57
East Siang	38.7	-54
Kurung Kumey	387.1	83
Lohit	**	**
Lower Dibang Valley	172.7	-6
Lower Subansiri	**	**
Papumpara	9.0	-83
Tawang	63.0	-56
Tirap	61.0	-59
Upper Dibang Valley	139.2	-32
Upper Siang	148.5	21
Upper Subansiri	120.0	165
West Kameng	101.0	-31
West Siang	48.0	-66
<b>Assam</b>		
Baksa	142.2	-16
Barpeta	163.7	-3
Bongaigaon	177.8	8
Cachar	85.5	-33
Chirang	265.2	62
Darrang	2.0	-97
Dhemaji	88.0	-22
Dhubri	53.5	-56
Dibrugarh	96.2	-22
East Garo Hills	21.0	-78
East Khasi Hills	268.5	-11
Goalpara	87.0	-19
Golghat	20.6	-72
Hailakandi	55.0	-45
Jaintia Hills	43.0	-87
Jorhat	39.4	-48
Kamrup(Metro)	72.0	11
Kamrup	59.7	-8
Karbi Analog	17.3	-73
Karimganj	111.8	-16
Kokrajhar	218.9	12
Lakhimpur	88.6	-22
Morigaon	48.2	-31
N.C.Hills	8.5	-86
Nowgong	62.5	-19
Nalbari	42.2	-51
Ribhoi	24.1	-72
Sonitpur	37.6	-48
Sibsagar	52.1	-30
South Garo Hills	32.0	-68
Tinsukia	113.2	-4
Udalgiri	52.0	-21
West Garo Hills	32.0	-68
West Khasi Hills	88.0	-60
<b>Himachal Pradesh</b>		
Bilaspur	73.8	6
Chamba	28.6	-68
Hamirpur	65.8	-32
Kangra	150.2	-1
Kinnaur	2.0	-81
Kullu	15.1	-74
Lahaul and Spiti	4.2	-90
Mandi	96.9	-12
Shimla	21.5	-67
Sirmaur	59.1	-54
Solan	45.7	-55
Una	58.0	-25
<b>Punjab</b>		
Amritsar	0.0	-100
Barnala	54.4	36

Bhatinda	21.6	-17
Faridkot	0.0	-100
Fatehgarh Saheb	9.5	-79
Ferozpur	3.8	-88
Gurdaspur	36.6	-57
Hoshiarpur	30.9	-54
Jalandhar	22.2	-59
Kapurthala	15.9	-62
Ludhiana	21.1	-51
Mansa	0.3	-99
Moga	0.0	-100
Muktesar	31.5	22
Nawashahar	38.8	-41
Patiala	25.0	-34
Ropar	67.3	18
Sangrur	3.5	-91
Mohali	53.5	42
TarnTaran	0.0	-100
<b>Haryana</b>		
Ambala	28.6	-56
Bhiwani	8.6	-74
Chandigarh	70.9	26
Faridabad	0.3	-99
Fatehabad	8.3	-73
Gurgaon	52.7	-4
Hissar	19.3	-41
Jhajar	0.9	-97
Jind	14.3	-52
Katihah	18.8	-48
Karnal	10.8	-74
Kurukshetra	6.3	-88
Mahendragarh	1.9	-96
Mewat	3.4	-94
Palwal	1.0	-98
Panchkkula	70.2	-7
Panipat	5.2	-88
Rewari	2.1	-95
Rohtak	18.2	-66
Sirsa	13.3	-46
Sonepat	9.0	-84
Yamunanagar	3.9	-95
New Delhi	2.5	-96
<b>Jammu &amp; Kashmir</b>		
Anantnag	11.0	-51
Badgam	1.5	-91
Bandipore	**	**
Baramulla	9.7	-57
Doda	13.6	-60
Ganderwal	15.4	-5
Jammu	44.6	-48
Kargil	0.0	-100
Kathua	30.5	-74
Kistwar	**	**
Kulgam	6.5	-71
Kupwara	2.8	-86
Ladakh(Leh)	0.0	-100
Poonch	0.0	-100
Pulwama	8.8	-50
Rajouri	8.5	-89
Ramban	30.7	-10
Reasi	64.2	-54
Samba	39.1	-55
Shopian	0.0	-100
Srinagar	6.2	-62
Udhampur	34.5	-75
<b>East Madhya Pradesh</b>		
Anuppur	173.1	125
Balaghat	60.0	-40
Chhatarpur	83.7	4

Chindwara	28.3	-56
Damoh	205.9	153
Dindori	91.6	6
Jabalpur	149.1	94
Katni	150.0	98
Mandla	115.5	29
Narsingpur	102.8	32
Panna	76.0	-10
Rewa	94.5	38
Sagar	76.4	-6
Satna	70.7	-3
Seoni	54.6	-27
Shahdol	77.0	13
Sidhi	256.8	304
Singrauli	168.9	196
Tikamgarh	84.0	20
Umaria	100.1	36
<b>West Madhya Pradesh</b>		
Alirajpur	20.3	-72
Asoknagar	33.7	-67
Badwani	32.9	-38
Betul	166.5	137
Bhind	12.3	-79
Bhopal	56.5	-28
Burhanpur	112.3	118
Datia	70.1	1
Dewas	105.5	40
Dhar	39.2	-42
Guna	42.1	-61
Gwalior	22.1	-69
Harda	261.8	211
Hosangabad	57.9	-38
Indore	39.1	-42
Jhabua	19.9	-67
Khandwa	202.3	228
Khargone	81.0	48
Mandsaur	55.7	-18
Morena	8.3	-89
Neemuch	49.4	-14
Raisen	88.5	-4
Rajgarh	50.1	-38
Ratlam	41.5	-46
Sehore	147.2	72
Shajapur	62.0	-20
Sheopur Kalani	18.6	-74
Shivpuri	47.2	-42
Ujjain	53.5	-19
Vidisha	80.6	-15
<b>Chattisgarh</b>		
Bastar	155.9	83
Bijapur	159.2	33
Bilaspur	160.1	101
Dantewara	186.1	71
Dhamtari	109.6	46
Durg	101.6	55
Janjgir	132.9	64
Jashpurnagar	39.5	-57
Kanker	154.8	73
Korba	72.3	-11
Koriya	180.0	105
Kawardha	95.0	55
Mahasumund	122.7	67
Narayanpur	77.3	-30
Raigarh	38.5	-48
Raipur	148.5	118
Rajandgaon	79.9	-30
Surguja	116.2	28
<b>East Uttar Pradesh</b>		
Allahabad	207.8	278

Ambedkar Nagar	209.2	211
Azamgarh	70.2	2
Bahraich	72.5	-14
Ballia	38.2	-37
Balrampur	206.3	109
Banda	115.4	116
Barabanki	139.6	91
Basti	88.2	4
Chandauli	23.4	-69
Deoria	22.0	-71
Faizabad	116.7	43
Farrukhabad	18.8	-62
Fatehpur	174.7	275
Gazipur	59.3	-5
Gonda	162.0	85
Gorakhpur	65.3	-22
Hardoi	63.6	16
Jaunpur	54.0	-11
Kannauj	165.0	226
Kanpur City	42.5	-22
Kanpur Dehat	142.6	113
Kaushambi	78.5	66
Kheri	68.0	-8
Kushi nagar	42.5	-46
Lucknow	93.1	82
Maharajganj	37.2	-59
Mau	45.2	-43
Mirzapur	82.9	41
Pratapgarh	151.0	155
RaiBareilly	150.1	196
Sahuji Maharajnagar	209.0	245
Sant Kabirnagar	75.0	-16
Sant Ravidas Nagar	202.0	171
Shrawasti	70.0	-17
Sidharthnagar	164.4	102
Sitapur	140.1	109
Sonbhadra	50.7	-18
Sultanpur	183.9	188
Unnao	85.4	51
Varanasi	79.0	14
<b>West Uttar Pradesh</b>		
Agra	21.5	-63
Aligarh	25.1	-55
Auraiya	87.7	62
Badaun	32.6	-39
Baghpat	1.0	-98
Bareilly	31.1	-52
Bijnor	53.1	-38
Bulandsahar	4.4	-92
Etah	13.7	-70
Etawah	31.7	-41
Firozabad	31.9	-44
GBNagar	32.0	-37
Ghaziabad	0.0	-100
Hamirpur	39.3	-44
Jalaun	44.3	-27
Jhansi	63.8	-8
Jotirba Phule Nagar	4.6	-93
Kanshiramnagar	27.0	-49
Lalitpur	61.0	-33
Mahamaya Nagar	13.1	-74
Mahoba	78.4	21
Mainpuri	25.5	-45
Mathura	10.3	-80
Meerut	3.9	-94
Moradabad	37.4	-43
Muzaffarnagar	0.0	-100
Pilibhit	53.9	-28
Rampur	10.5	-86
Saharanpur	18.0	-69
Shahjahanpur	42.7	-35







<b>Uttarakhand</b>		
Almora	43.8	-40
Bageshwar	106.0	45
Chamoli	100.9	23
Champawat	85.5	-18
Dehradun	173.8	-1
Garhwal Pauri	90.3	-13
Garhwal Tehri	75.3	-14
Haridwar	46.3	-32
Nainital	130.9	16
Pithoragarh	142.6	9
Rudraprayag	71.5	-52
Udham Sing Nagar	57.3	-31
Uttarkashi	25.9	-73
<b>Bihar</b>		
Araria	82.0	-23
Arwal	11.9	-73
Aurangabad	31.7	-50
Banka	47.4	-2
Begusarai	63.1	35
Bhabua	21.8	-69
Bhagalpur	84.3	42
Bhojpur	5.0	-91
Buxar	10.8	-82
Darbhanga	147.9	165
East Champaran	123.1	41
Gaya	46.0	-33
Gopalganj	77.9	24
Jahanabad	44.0	-6
Jamui	37.2	-33
Kathihar	52.1	-31
Khagadia	43.6	-7
Kishanganj	130.4	-3
Lakhisarai	80.7	46
Madhepura	50.0	-40
Madhubani	49.5	-30
Monghyar	49.2	-11
Muzaffarpur	89.3	19
Nalanda	72.9	14
Nawada	42.0	-21
Patna	67.2	13
Purnea	138.2	74
Rohtas	76.2	17
Saharsha	48.2	-32
Samstipur	58.3	4
Saran	50.5	-18
Sheikpura	40.3	-17
Sheohar	85.0	1
Sitamarhi	76.0	-10
Siwan	41.3	-33
Supaul	78.8	11
Vaishali	72.8	12
West Champaran	301.4	255
<b>Jharkhand</b>		
Bokaro	22.7	-62
Chatra	42.5	-38
Deoghar	62.5	-3
Dhanbad	71.5	5
Dumka	30.0	-54
East Singbhum	66.7	10
Garhwa	62.2	-25
Giridih	47.0	-37
Godda	53.9	-2
Gumla	40.5	-44
Hazaribagh	36.4	-46
Jamtara	62.4	1
Khunti	34.0	-49
Koderna	73.6	26
Latehar	35.9	-54
Lohardagga	26.4	-58
Pakur	71.4	-4

Palamau	46.4	-39
Ramgarh	54.0	-20
Ranchi	66.6	1
Sahebganj	49.8	-25
Saraikela	96.3	57
Simdega	49.5	-50
West Singbhum	28.8	-53
<b>East Rajasthan</b>		
Ajmer	24.0	-46
Alwar	8.6	-85
Banswara	28.4	-58
Baran	10.9	-89
Bharatpur	27.6	-46
Bhilwara	22.7	-59
Bundi	10.0	-88
Chittorgarh	28.4	-54
Dausa	1.6	-98
Dholpur	36.2	-36
Dungarpur	4.9	-90
Jaipur	2.4	-96
Jhalawar	23.4	-72
Jhunjhunu	12.5	-75
Karauli	7.5	-90
Kota	24.2	-73
Pratapgarh	34.3	-42
Rajsamand	0.0	-100
Sawai Madhopur	9.9	-88
Sikar	7.6	-86
Sirohi	0.8	-99
Tonk	16.3	-76
daipur	2.3	-95
<b>West Rajasthan</b>		
Barmer	4.0	-78
Bikaner	3.8	-85
Churu	7.9	-80
Hanumangarh	6.4	-78
Jaisalmer	1.1	-93
Jalore	5.0	-81
Jodhpur	0.0	-100
Nagaur	1.4	-97
Pali	0.0	-100
Sri Ganganagar	3.1	-86
<b>Gujarat Region</b>		
Ahmedabad	3.0	-93
Anand	4.6	-93
Banaskantha	1.3	-97
Baroda	8.1	-89
Broach	9.2	-85
DNH	112.8	-40
Dahod	5.2	-91
Daman	30.3	-84
Dangs	164.2	-1
Gandhinagar	0.0	-100
Kheda	0.6	-99
Mehsana	2.2	-95
Narmada	24.5	-72
Navsari	64.1	-59
Panchmahal	2.0	-97
Patan	0.0	-100
Sabarkantha	0.5	-99
Surat	49.5	-50
Tapi	49.3	-58
Valsad	89.4	-46
<b>Saurashtra, Kutch &amp; Diu region</b>		
Amreli	1.6	-96
Bhavnagar	7.4	-81
Diu	5.1	-89
Jamnagar	0.3	-99
Junagarh	3.0	-96
Kutch	0.0	-99
Porbandar	0.6	-99

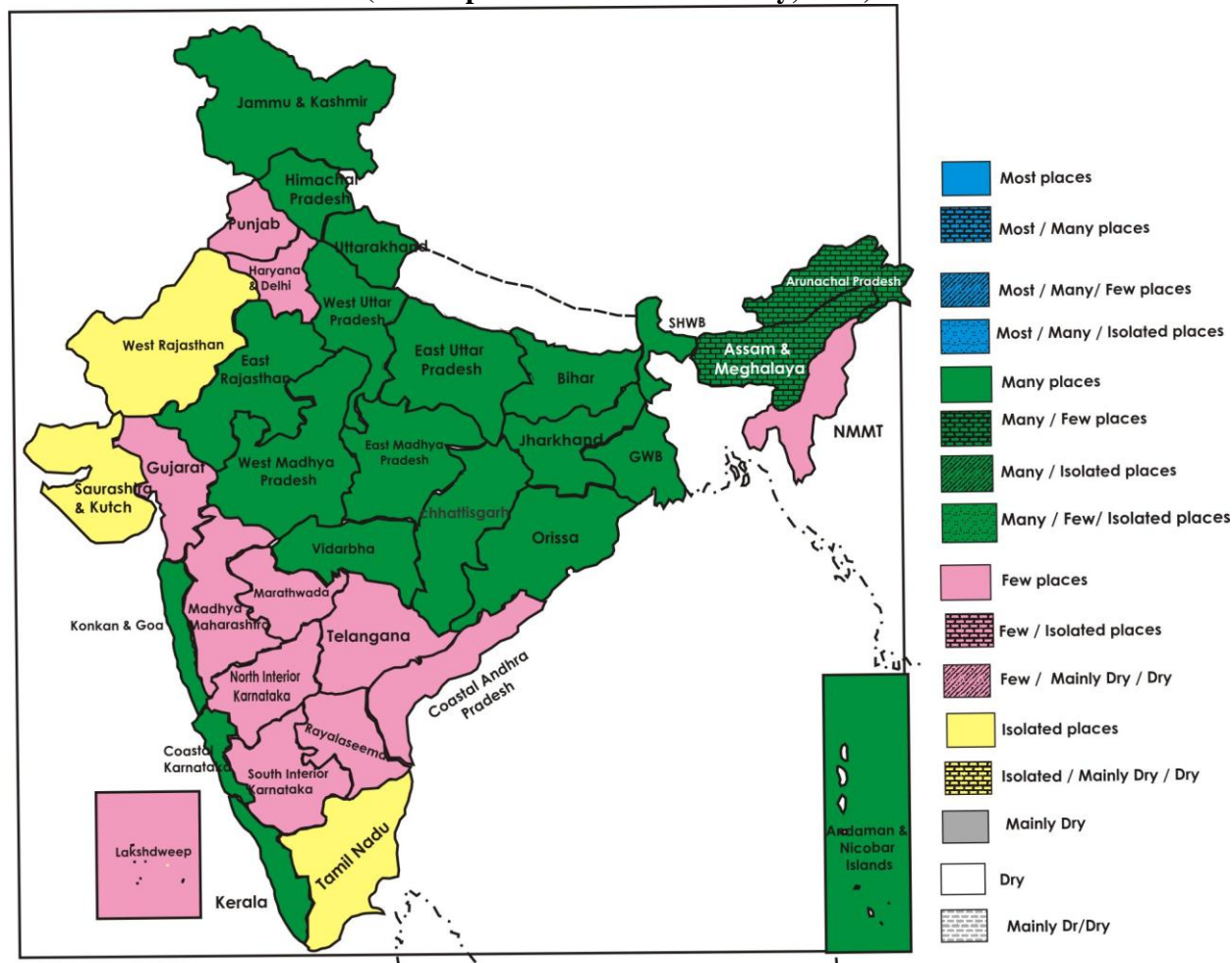
Rajkot	2.3	-95
Surendranagar	0.0	-100
<b>Maharashtra</b>		
<b>Konkan &amp; Goa</b>		
Goa	105.6	-60
Mumbai	41.8	-75
Raigad	199.6	-22
Ratnagiri	205.1	-25
Sindhudurg	124.2	-52
Thane	171.9	-14
<b>Madhya Maharashtra</b>		
Ahmednagar	8.3	-65
Dhule	18.7	-54
Jalgaon	36.1	-16
Kolhapur	135.6	-21
Nandurbar	31.5	-54
Nasik	67.9	-5
Pune	52.0	-22
Sangli	16.2	-52
Satara	83.7	47
Solapur	6.6	-74
<b>Marathwada</b>		
Aurangabad	16.5	-56
Beed	13.0	-64
Hingoli	78.1	31
Jalna	17.5	-56
Latur	31.1	-47
Nanded	49.8	-22
Usmanabad	7.6	-81
Parbhani	29.3	-43
<b>Vidarbha</b>		
Akola	108.7	73
Amraoti	88.2	42
Bhandara	104.3	41
Buldhana	56.3	20
Chandrapur	188.6	131
Gadchiroli	149.6	43
Gondia	82.2	-7
Nagpur	76.0	19
Wardha	51.2	-18
Washim	123.4	97
Yeotmal	176.2	161
<b>Orissa</b>		
Angul	64.6	-20
Balasore	37.4	-52
Bargarh	76.2	-3
Bhadrak	34.5	-43
Bolangir	42.4	-48
Boudh	48.5	-29
Cuttack	146.5	82
Deogarh	69.0	-24
Dhenkanal	68.3	-21
Gajapati	63.2	-2
Ganjam	116.6	139
Jagatsingpur	79.2	4
Jajpur	75.4	17
Jharsuguda	78.4	-11
Kalahandi	30.6	-62
Kandhamal	85.1	24
Kendrapara	29.8	-54

Keonjhar	45.1	-39
Khurda	103.9	33
Koraput	188.9	108
Malkangiri	212.8	89
Mayurbhanj	47.0	-49
Nawapara	44.5	-43
Nawarangpur	123.5	29
Nayagarh	81.6	9
Puri	44.5	-15
Rayagada	28.2	-65
Sambalpur	97.7	8
Sonepur	45.0	-44
Sundargarh	51.4	-37
<b>West Bengal</b>		
<b>GWB</b>		
Bankura	49.5	-25
Birbhum	44.7	-35
Burdwan	103.0	44
East Midnapore	65.7	4
Hooghly	78.1	0
Howrah	66.3	-21
Kolkata	95.0	16
Murshidabad	20.0	-74
Nadia	55.6	-23
24 Pargana (N)	88.3	18
Purulia	88.3	61
24 Pargana (S)	88.9	-14
West Midnapore	90.6	18
<b>SHWB</b>		
Cooch Behar	84.4	-51
Darjeeling	264.3	48
East Sikkim	139.0	23
Jalpaiguri	274.0	30
Malda	71.1	0
North Dinajpur	105.1	28
North Sikkim	133.3	10
South Dinajpur	59.4	-29
South Sikkim	134.2	19
West Sikkim	13.0	-89
<b>Karnataka</b>		
<b>Coastal Karnataka</b>		
Dakshin Kannada	128.7	-56
Udupi	187.1	-44
Uttar Kannada	184.9	-27
<b>North Interior Karnataka</b>		
Bagalkote	15.9	-16
Belgaum	30.5	-34
Bidar	51.5	-3
Bijapur	9.3	-56
Dharwad	11.1	-65
Gadag	4.4	-74
Gulbarga	31.1	-23
Haveri	34.6	-7
Koppal	8.5	-62
Raichur	28.5	2
Yadgir	27.5	-37
<b>South Interior Karnataka</b>		
Bangalore Rural	2.6	-90
Bangalore Urban	2.4	-90
Bellary	11.9	-38

Chamarajnaragar	1.2	-94
Chichballapur	2.4	-89
Chickmagalur	86.7	-40
Chitradurga	22.9	57
Davangere	33.1	27
Hassan	19.1	-58
Kodagu	70.1	-62
Kolar	1.1	-95
Mandya	3.6	-75
Mysore	5.2	-77
Ramnagara	2.5	-91
Shimoga	148.0	8
Tumkur	5.4	-72
<b>Kerala</b>		
Alappuzha	38.3	-67
Kannur	102.1	-56
Ernakulam	53.3	-65
Idukki	117.7	-30
Kasaragod	44.4	-84
Kollam	46.1	-49
Kottayam	57.9	-54
Kozhikode	72.7	-65
Malappuram	109.0	-37
Palakkad	65.3	-50
Pathanamthitta	41.8	-62
Thiruvananthapuram	28.4	-42
Thrissur	49.2	-71
Wyanad	66.5	-71
<b>Andhra Pradesh</b>		
<b>Coastal Andhra Pradesh</b>		
East Godavari	47.8	-7
Guntur	21.8	-46
Krishna	51.7	-14
Nellore	17.2	-32
Prakasam	17.8	-34
Sirkakulam	93.2	104
Visakhapatnam	50.6	6
Vizianagram	74.8	62
West Godavari	59.5	-7
<b>Telangana</b>		
Adilabad	97.8	19
Hyderabad	136.4	144
Karimnagar	111.4	67
Khammam	121.2	63
Mehabubnagar	35.3	-14
Medak	82.4	27
Nalgonda	37.2	-14
Nizamabad	65.9	-14
Rangareddy	100.0	98
Warangal	91.8	22
<b>Rayalaseema</b>		
Anantapur	16.3	-2
Chittoor	1.9	-94
Cuddapah	15.9	-43
Kurnool	30.4	4

	(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 29<sup>th</sup> July, 2012)



### Major Feature of Weather Forecast up to 0830 hours IST of 29<sup>th</sup> July, 2012

- Rain/thundershowers would occur at many places over east & central India.
- Rain/thundershowers would occur at many places over west coast, Andaman & Nicobar Islands and Lakshadweep.
- Rain/thundershowers would occur at a few places over interior peninsular India and northeastern states.
- Rain/thundershowers would occur at many places over western Himalayan region, east Rajasthan and Uttar Pradesh and at a few places over Punjab, Haryana, Delhi and Gujarat region.
- Rain/thundershowers would occur at one or two places over rest 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 2<sup>nd</sup> 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 a few places over the States of the region and rainfall would increase after 48 hours over Nagaland, Manipur, Mizoram and Tripura.
- **Advisories:**
  - As significant rainfall occurred over the States of the region during last week, 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 excess water and apply 1/3<sup>rd</sup> N + 50% K<sub>2</sub>O 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 preparation of main field and transplanting of rice at the end of July and replant dead hills or gap filling with seedlings of similar age within 7-10 days of transplanting. Farmers are also advised to continue land preparation and sowing of arhar and sesame. Undertake nursery raising of early cauliflower.
  - Farmers in Upper Brahmaputra Valley Zone of Assam are advised to continue sowing of *Sali* rice and undertake main field preparation for transplanting. Transplant the seedling of papaya and coconut.
  - 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.
  - Farmers in Central Brahmaputra Valley Zone, Barak Valley Zone and North Bank Plain Zone of Assam are advised to continue sowing of *kharif* sesame, arhar and transplanting of the seedlings of *Sali* rice.
  - Farmers in Lower Brahmaputra Valley Zone of Assam are advised to continue transplanting of *Sali* rice. Farmers are also advised to continue sowing of *kharif* sesame.
  - 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 and continue land preparation and sowing of groundnut and soybean.
  - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to complete transplanting of *sali* rice. Farmers, who could not be able to sow the seeds of early varieties of *sali* rice, can make arrangement to raise the seedlings by adopting 'Mat nursery' technique. Seedlings of such nursery become suitable for transplanting earlier and transplanting becomes easier using paddy transplanter etc. Otherwise, farmers can use late varieties for cultivation.
  - Farmers in Mild Tropical Hill Zone of Nagaland are advised to complete transplanting of lowland rice. Undertake harvesting of matured maize cob.
  - Farmers of Sub Tropical Plain Zone of Manipur are advised to complete sowing and continue transplanting of *kharif* rice. Complete sowing of soybean and groundnut. Continue nursery raising of tomato and cauliflower. Undertake sowing of rice bean in upland area or slope and pea at the foothills both terrace and non-terrace.
  - Farmers of Mid Tropical Plain Zone of Tripura are advised to complete transplanting of *aman* rice and *kharif* vegetables without further delay.
  - 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/lit 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.

- 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 the maize spray Chlorothalonil 2 to 3ml per liter of water, spray Zineb, 3gm per liter of water for leaf blight.
- In Mild Tropical Hill Zone of Nagaland, farmers are advised to place a rotten frog/ dry fish in the field of *Jhum* rice during milky stage as preventive measure on the attack of Gundhi bug.
- Apply plant protection measures after current spells of rain in Nagaland, Manipur, Mizoram and Tripura.
- 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, 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, 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 West Bengal except Murshidabad district in Gangetic West Bengal, Sikkim (except West Sikkim), many districts in Jharkhand, Bihar and Orissa.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over the States of the region.
- **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 the States of the region and rain is likely to occur at many places 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, yambean and planting of mango, litchi, guava.

- As heavy rainfall is expected during next five days period in of Orissa farmers in Western Undulating Zone are advised to make necessary arrangement to drain out excess water from maize, arhar, cotton, SRI transplanted field, recently sown paddy nursery and do not spray in these rainy days and wait for rain to stop.
- Farmers of North Eastern Ghat Zone of Orissa are advised to go for sowing of green manuring crop, groundnut, cotton, maize, arhar and ragi.
- Farmers of East and South Eastern Coastal Plain Zone of Orissa are advised to go for sowing of non-paddy crops like, green gram, black gram, sesame, and vegetables such as cowpea, okra, cucurbitaceous crops. Go top dressing of maize and groundnut. Go for transplanting at 15 days and bushening of direct sown paddy in medium and low land after 21 days of sowing. As weather is optimum for sowing of soyabean in Nayagarh district, prepare field and take up sowing of these crops.
- Farmers of North Central Plateau Zone and North Eastern Plateau Zone of Orissa are advised to transplant the 21-25 days old seedling of 4-5 leaves in the main field and those who already have sown the crop earlier, should maintain the plant population per unit area by filling the gap and rouging the extra plants. Intercultural operation may be done to control the weeds after 15 days of sowing.
- In view of widespread rain is likely in Orissa, farmers of North Eastern Plateau Zone are advised to store the water in the rice fields and complete the transplanting and Biasi operation in the crop at 25-30 days seedling stage as early as possible and are also advised to postpone the application of herbicides and nitrogen fertilizers.
- 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 inter cropping.
- 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 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 go for 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 winter vegetables like tomato, early cauliflower.
- Farmers in Laterite and Red Soil Zone of West Bengal are advised to go for transplanting of Aman rice and planting of banana using rain water.
- Farmers in Terai Zone and Old Alluvial Zone of West Bengal are advised to transplant the seedlings of aman rice and also harvesting of already matured jute crop and start retting.
- Farmers in Hill Zone of West Bengal are advised to transplant the seedling of rice and sowing of ginger and chirota.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- Fruit and shoot borer in brinjal has been found in North Eastern Ghat Zone of Orissa in Raygarh district. To control it install pheromone trap and to control fruit and shoot borer in brinjal spray 4 g Sevin WP or 2 ml Malathion in 1 litre water alternatively. Thrips in chilli has been found. Spray 300 ml Ethion or 400 ml Carbosulphan or Chloropyriphos in 200 litre water/acre.
- Under the present weather situation leaf curl disease (whitefly) in chilli and mites in tea may occur in Hill Zone of West Bengal. To control whitefly, spray Monocrotophos @ 1.5 ml / litre of water and to control mites, spray Dicofol @ 1 ml / 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. To control fruit and branch rot, spray Metalaxyl 8% and Mancozeb 64% @ 1.5 g or Ridomyl MZ @ 2.5 g / litre of water.
- In North West Alluvial Plain Zone of Bihar, there are chances of outbreak of Pyrilla in the October planted sugarcane crop. Farmers are advised to remove the dry leaves and burn them. In case of high infestation, apply Malathion @2.0 ml per litre of water to protect the sugarcane crop.
- Stages of major crops are mentioned in Annexure I.

#### **Pisciculture**

- Farmers of North Central Plateau Zone and North Eastern Plateau Zone of Orissa are advised to apply Mahua Oil cake @ 1 tonne / acre to kill the predator fishes where the pisciculture activities are to taken in new water bodies. Collect 4000 no of fish / 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 Central Plateau Zone and North Eastern Plateau Zone of Orissa are advised that during early monsoon period, FMD (Foot and mouth disease) is commonly noticed in cattle. Hence, proper vaccination of the cattle should be done. Increase light duration in poultry farms to maintain egg production. Create smoke in the cattle shed to prevent mosquitoes.
- Farmers of North Eastern Coastal Plane Zone of Orissa are advised that after complete eradication of aquatic weeds, weed fishes and cat fishes from the pond, apply 100 kg of lime in the pond water.

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

- **Realised Rainfall:** Significant rainfall occurred over many districts in Himachal Pradesh, Barnala, Gurdaspur, Hosiarpur, Muktesar, Nawasahar, Ropar and Mohali districts in Punjab, Chandigarh, Gurgaon, Panchkula in Haryana, Jammu, Kathua, Ramban, Reasi, Samba and Udhampur districts in Jammu & Kashmir, most of the districts in East Uttar Pradesh, Auraiya, Badaun, Bareilly, Bijnor, Etawah, Firozabad, GBNagar, Hamirpur, Jalaun, Jhansi, Lalitpur, Mahoba, Moradabad, Pilibhit and Shahjahanpur districts in West Uttar Pradesh, most of the districts in Uttarakhand, Dholpur and Pratapgarh districts in East Rajasthan. No significant rainfall occurred in West Rajasthan and Delhi during last week.
- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Uttar Pradesh and at a few places over Punjab, Haryana and Delhi and isolated places over rest of the region.
- **Warning:** Heavy to very heavy rainfall would occur at one or two places over Uttar Pradesh during next 48 hours.
- **Advisory:**
  - As significant rainfall occurred over many districts in Himachal Pradesh, Barnala, Gurdaspur, Hosiarpur, Muktesar, Nawasahar, Ropar and Mohali districts in Punjab, Chandigarh, Gurgaon, Panchkula in Haryana, Jammu, Kathua, Ramban, Reasi, Samba and Udhampur districts in Jammu & Kashmir, most of the districts in East Uttar Pradesh, Auraiya, Badaun, Bareilly, Bijnor, Etawah, Firozabad, GBNagar, Hamirpur, Jalaun, Jhansi, Lalitpur, Mahoba, Moradabad, Pilibhit and Shahjahanpur districts in West Uttar Pradesh, most of the districts in Uttarakhand, Dholpur and Pratapgarh districts in East Rajasthan, 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 prepare field and continue sowing of jowar, bajra, sesame, groundnut, green gram, cluster bean, nursery sowing of marigold and planting of ber, mulberry, aonla, pomegranate and phalsa utilizing realized rainfall during preceding weeks. Continue sowing of cucurbits like bitter gourd, water melon, pumpkin, cucumber, round gourd, ridged gourd and bottle gourd etc.
  - In Sub Humid Southern Plain and Aravali Hill Zone in East Rajasthan, farmers are advised to sow pulses (urd, red gram and green gram) utilizing the realized rainfall.
  - Farmers in Semi Arid Eastern Plain Zone in East Rajasthan are advised to sow short duration varieties of urd, red gram and mung.
  - In Jhunjhunu and Sikar districts of transitional plain zone of Inland drainage, 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 West Rajasthan, Pali and Jhalawar districts, crop condition is good and in the remaining districts crops are under stress condition. So farmers are advised to undertake sowing of fodder bajra, pulses, cluster bean upto 1<sup>st</sup> week of August.
  - In (Chatha(Jammu))Sub Tropical Zone of Jammu and Kashmir, farmers are advised to go for transplanting of Basmati and Sambal basmati as rainfall is expected. Sowing of *kharif* pulses like urd and green gram may be taken up without any further delay. Also go for the cultivation of fodder sorghum (chari) and pearl millet (bajra) till the last week of July.
  - In Cold Arid Zone of Jammu & Kashmir, farmers are advised to harvest turnips, knolkhol, lettuce, Chinese cabbage, broccoli, summer squash and radish.
  - 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 of bhindi, radish, pumpkin, bittergourd, bottlegourd, sponge gourd, cabbage, cauliflower, carrot, turnip and transplanting of knol-khol and cabbage.

- In Valley Temperate zone of Jammu & Kashmir, rainfall is expected at many places with heavy rainfall at one or two places, farmers are advised for second top dressing in maize crop may be completed after current spells of rain. Also, seed sowing of kale, knol khol, cauliflower, cabbage may be done. Pollination in cucurbits. Light irrigation and weeding in crops as and when required. Avoid water logging in chillies. Farmers are advised to undertake sowing of knol khol, cauliflower cabbage and kale. Undertake weeding followed by top dressing in rice and *kharif* pulses after current spells of rain.
- 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. Apply top dressing of fertilizers and weeding, hoeing may be done in sugarcane and vegetables in East Uttar Pradesh after current spells of rain.
- Farmers in West Uttar Pradesh are advised to continue direct sowing / transplanting of medium varieties rice utilizing recent rainfall. Continue sowing of black gram and sesame upto 30<sup>th</sup> July and sowing of sorghum upto 10<sup>th</sup> August. Continue sowing of maize, bajra, groundnut, arhar, moong, urd and fodder crops. 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 High Hill Temperate Dry Zone of Himachal Pradesh, farmers are advised to continue 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 continue 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 (Roorki) Sub humid sub tropic Zone of Uttarakhand, **rice** transplanting may be continued with realized rainfall. Continue 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.
- Farmers in Delhi are advised to continue sowing of bajra wherever rainfall occurred and farmers in areas where rainfall not occurred are advised to wait for sowing. Undertake weeding and hoeing in the standing crops for weed control and to conserve the soil moisture. Conserve rain water in the paddy fields by making broad and elevated bunds. In other crops (Maize, Pulses, Vegetables) water logging should be avoided by providing proper drainage in the fields. Undertake sowing of maize, bajra, baby corn, sweet corn, rainy season cucurbits, coriander, spinach, guar, cluster bean, amaranthus, ladyfinger and radish after sufficient rain and continue transplanting of chilli, brinjal and early cauliflower with irrigation facilities. Store rain water at one portion in the field; this water can be used for irrigation in the crops at suitable time during dry spell. 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 start the sowing of pearl millet, guar and rainfed bajra after getting sufficient rain. Conserve moisture in the cotton crop by intercultural operations and hoeing. Transplant short duration varieties of rice or basmati rice where ever sufficient irrigation water / good water of tubewell is available. Do the intercultural operations in sugarcane field for removing weeds and conserve the moisture and also apply the remaining dose of nitrogen if not applied yet.
- 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.
- **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, Gulbarga and Haveri in North Interior Karnataka, Chickmagalur, Davangere, Kodagu and Shimoga districts in South Interior Karnataka, most of the districts in Coastal Andhra Pradesh except Nellore and Prakasam, Kurnool in Rayalaseema, most of the districts in Telangana and most of the districts in Kerala except Thiruvananthapuram received good rainfall. No significant rainfall occurred over Tamil Nadu and remaining parts of the region.

- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Kerala and Coastal Karnataka, at few places over Interior Peninsular India and one or two places over the rest of the region.
- **Advisories:**
  - As most of the districts in Coastal Karnataka, Bidar, Belgaum, Gulbarga and Haveri in North Interior Karnataka, Chickmagalur, Davangere, Kodagu and Shimoga districts in South Interior Karnataka, most of the districts in Coastal Andhra Pradesh, Kurnool in Rayalaseema, most of the districts in Telangana and most of the districts in Kerala received good rainfall, complete sowing of *kharif* crops, drain out excess water and postpone irrigation to the crops.
  - Farmers in the North East Transition Zone of Karnataka are advised to prepare the nursery bed and undertake sowing of brinjal, tomato, cabbage and cauliflower in the nursery.
  - Continue paddy transplanting in Coastal Zone of Karnataka due to sufficient rainfall during last week. Farmers are advised to undertake planting of cashew, mango, papaya and coconut.
  - Farmers in North transition Zone (Dharwad district) are advised to undertake sowing of alternate crops like tobacco, groundnut (short duration), maize (short duration), cowpea and sunflower (SB-275) instead of normal crops due to poor rainfall situation.
  - Farmers in North Dry Zone (particularly Bijapur, Bagalkote, Gadag districts) are advised to undertake sowing of alternate crops like onion, cucumber, ridge gourd, sesamum, maize, sunflower, niger, castor, bajra, groundnut (spreading), pigeon pea, horse gram or cowpea due to receipt of moderate rainfall. It is also advised to undertake following intercropping like bajra + redgram (2:1), pigeonpea + horsegram (2:1) or chilli + desi cotton) to reduce effects of extreme weather situations / to reduce crop loss risk. If the crops already sown have recovered due to rainfall received in the last week, then spray 2 per cent urea to improve and fasten the growth of the crops and if the crops already sown have dried up due to moisture shortage, then re-sowing with sunflower, bajra, groundnut (spreading type), pigeon pea, niger, navane, castor and horse gram may be taken up. Take up plant protection measures in horticultural crops on a non rainy day.
  - 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 mainfield and puddling for transplanting of paddy.
  - In North East Dry Zone of Karnataka, farmers are advised to strengthen field bunds and channels by preparing drainages for rain water conservation. Continue cotton dibbling and undertake inter cultivation in all *kharif* crops like green gram, black gram, cowpea, red gram, soybean etc.
  - 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 green manure crops for samba paddy.
  - Farmers in the North Eastern Zone of Tamil Nadu are advised to harvest paddy crops due to relatively dry weather likely during next five days 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 postpone irrigation and do propping for sugarcane and support to banana by using casuarina poles to prevent the damage to the crops due to high wind speed.
  - Farmers in the North Western Zone of Tamil Nadu are advised to undertake nursery sowing of grafted high bred tomato, chilly and brinjal.
  - Farmers in the North Coastal Zone of Andhra Pradesh are advised to go for nursery sowing of medium and short duration varieties of rice and sowing of direct seeding of rice under aerobic conditions. They are advised to complete planting of sugarcane.
  - Farmers in the Scarce Rainfall zone of Andhra Pradesh are advised to start sowing of cotton, castor, nursery sowing of rice and groundnut as sufficient rainfall has been received during the week.
  - 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 select drought tolerant varieties to cope up the shortage of rainfall.
- Farmers in the Problem Area Zone of Kerala are advised to provide adequate drainage for the newly planted coconut seedlings and apply fertilizers after current spells of rainfall.
- 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.
- 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.
- 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, phytophthora blight and alternaria leaf spot in castor and yellow stem borer in rice in the Scarce Rainfall Zone of Andhra Pradesh. Farmers are advised to undertake plant protection measures.
- Incidence of sucking pest is noticed in the early sown groundnut in the Southern Zone of Andhra Pradesh.
- 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.
- Farmers in the Problem Area Zone of Kerala, attack of caseworm, stem borer and gall midge is noticed in rice fields. 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 and undertake plant protection measures.

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

- **Realised Rainfall:** All districts in Konkan and Vidarbha, Nashik, Jalgaon, Nandurbar, Kolhapur, Satara, Pune districts in Madhya Maharashtra and Nanded, Hingoli, Latur and Parbhani districts in Marathwada received significant rain during last week. Ahmednagar, Sangli, Dhule, Solapur in Madhya Maharashtra and Aurangabad, Beed, Jalna and Osmanabad in Marathwada districts received deficient/scanty rainfall during last week. Navsari, Valsad, Dangs, Surat, and Tapi districts in Gujarat region received significant rain during last week.
- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Konkan and Vidarbha and few places over Madhya Maharashtra, Marathwada, Gujarat region and at one or two places over Gujarat State.
- **Warning:** Heavy rainfall would occur at one or two places over Konkan.
- **Advisories:**
  - As there was subdued rain in Eastern Pune and some parts of Solapur districts in Madhya Maharashtra since two weeks, farmers are advised for sowing of water stress tolerant crops like bajra, sunflower, redgram, guar etc. with early maturing varieties during last week of July mentioned in annexure 1 as contingency planning. Also adopt intercropping of bajra+tur (2:1), sunflower+ tur (2:1) or guar + tur (2:1).
  - As there was significant rain in Konkan, farmers are advised to complete transplanting of 20 to 22 days old rice seedlings by adopting 4 way planting (Chatursutri) method. Maintain 2 to 3 cm water level in already transplanted rice field. Transplant finger millet seedlings by dibbling method.



- Farmers in Nasik district (Western ghat region) are advised to continue transplanting of rice and finger millet seedlings. Apply Urea+DAP briquette to rice after 3-4 days of transplanting.
- *Kharif* crops in Marathwada region are in germination / seedling / early vegetative growth stage. Farmers are advised to undertake weeding in cotton, green gram, sunflower, soybean and red gram. Due to insignificant rain in Beed and Jalna districts, farmers are advised to undertake hoeing to preserve moisture in the already sown field. Undertake sowing of *kharif* sunflower, soybean, bajra, sesamum instead of regular *kharif* crops like cotton and jowar.
- Farmers in Ahmednagar and Dhule districts are advised to undertake hoeing in early sown crops to preserve soil moisture in the field. Undertake sowing of contingency crops i.e intercrops like bajra+ tur (2:1) and soybean+tur(6:2).
- Farmers in Madhya Maharashtra and Marathwada are advised to complete preparatory tillage and undertake planting of *adsali* sugarcane.
- As 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. Undertake hoeing in early sown soybean, cotton and red gram.
- As scattered rain is expected during next 2-3 days, farmers in Kolhapur region are advised to complete transplanting of rice seedling and undertake hoeing and weeding in early sown *kharif* crops. Sangli district has received inadequate rain since last four weeks ( 26, 10, 17, 16 mm /week respectively), farmers are advised to undertake sowing of crops like bajra, sunflower and fodder sorghum as contingency planning with short duration varieties after receiving sufficient rain.
- Undertake sowing of cluster bean, cowpea, and green gram in North Gujarat region. Sowing of castor can be started with effect from 1st August and continued for whole month. Under optimum soil moisture conditions, carry out hand weeding and interculturing in *kharif* crops in North Gujarat Zone. In late sown crops after 8 to 10 days carry out thinning and gap filling in pulses, maize. Carry out sowing of castor, guar and sorghum at optimum moisture condition.
- Due to occurrence of sufficient rain in few districts in Gujarat, farmers in South Gujarat Heavy Rainfall Zone of Gujarat, are advised for sowing of vegetable crops like okra, beans, and cucurbits. Arrange for proper drainage in green gram, black gram, cowpea and red gram. Carry out weeding and intercultural operation in early sown crops. Undertake planting of horticulture crops.
- Farmers in Middle Gujarat Zone are advised to undertake transplanting of rice and continue sowing of groundnut, green gram castor and cluster bean. Carry out weeding in early sown crops and gap filling in cotton, castor, pigeon pea and groundnut crops. Prepare pits for papaya for sowing papaya in first week of August.
- 65% of rice, more than 50 % of cotton, 15% of sorghum (fodder) has been sown in Bhal and Coastal Zone of Gujarat State. Undertake sowing of cotton, castor and fodder and rice cultivation with SRI techniques with irrigation facilities in Bhal and Coastal Zone. As Bhal and Coastal Zone of Gujarat State received less rain, as contingent crop planning, farmers are advised to sow castor crop in remaining fellow land/ field during this week, sowing of cotton with higher seed rate and wider spacing and follow the SRI technique (for rice) where tube well or canal irrigation is possible. Carry out sowing of fodder crops like sorghum for fodder purpose with high seed rate. Carryout hand weeding and inter-culturing operation in pre-sown *kharif* crops in Bhal and Coastal Zone of Gujarat State. Carry out gap filling. 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 jower, solapuri jower. Grow bunch groundnut for seed purpose. In early sown crops, carry out intercultural operation to conserve soil moisture, weeding to minimize evaporation losses and thinning and apply life saving irrigation under acute moisture stress. If moisture stress condition is extended carry out mulching with wheat straw, groundnut shell, dry leaves of trees in crops like groundnut and cotton.
- In South Saurashtra Region, select late varieties of groundnut, sesamum, castor, hybrid bajra, cotton, maize and fodder sorghum. Undertake intercultural operations in the early sown crops for conserving soil moisture.
- Carry out inter culturing and hand weeding in groundnut and pulses in South Saurashtra Zone of Gujarat in pre-sown crops. Apply irrigation to vegetables.

- Varieties of *kharif* crops are mentioned in Annexure II.
- Due to subdued rainfall activity in Kolhapur region during last 2-3 days, there may be attack of white woolly aphids in old adsali sugarcane, farmers are advised to remove lower dried leaves and apply Themate@4 kg/acre.
- 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 Methile-O-Demonate (25%) @10 ml in 10 litre 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 3g/litre.
- Due to cloudy weather in South Gujarat Zone, there are chances of incidences of sucking pest in cotton. Farmers are advised to spray Emidacloprid 4ml (200 SL) per 10 liter of water.
- Stages of major crops are mentioned in Annexure-I.

#### **Animal Husbandry:**

- Due to likely occurrence of rainfall at most places in South Gujarat Heavy Rainfall Zone of Gujarat, keep animals indoor during rainfall. Keep fodder in safe place to avoid spoilage due to rainfall.
- Arrange for artificial light during evening in poultry house in Middle Gujarat Zone to maintain egg numbers.

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

- **Realised Rainfall:** Significant rainfall occurred in all districts of Chattisgarh, East Madhya Pradesh except Chhindawara and except Alirajpur, Bhind, Gwalior, Jhabua, Morena and Sheopur Kalani in West Madhya Pradesh.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over the region.
- **Warning:** Heavy to very heavy rainfall would occur at one or two places over the region during next 48 hours.
- **Advisories:**
  - 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.
  - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to complete sowing of *kharif* crops as soon as possible. Treat seeds with 1.5 g bavistin / kg + thiram (1.5 g/kg) before sowing. Farmers are advised to go for gap filling in the field where germination is poor. 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 complete sowing of high yielding varieties of bajra, urad, moong, til and gawar. Prepare bunds for conservation of water in rainfed crops.
  - Farmers in Jhabua Hills of Madhya Pradesh are advised to complete sowing of *kharif* crops viz. maize, soybean, cotton and pulses as soon as possible with early maturing varieties with realized rainfall during last week. Soybean may be sown by ridges and furrow method. They are also advised to prepare proper drainage channels in *kharif* chilli, capsicum, tomato, papaya, garlic, 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 to complete transplanting of rice. Undertake nursery sowing of tomato, brinjal, onion, chilli and cauliflower. Weeding and intercultural operations should be undertaken in different fruit crops i.e. papaya and guava etc. and apply fertilizers.
  - As there is possibility of rain during next five days, farmers in Vindhyan Plateau region of Madhya Pradesh are advised to make pond in their field to conserve the water along with repair of bunds for moisture conservation also make appropriate drainage for removal of excess water from vegetables, pulses and oilseed crops. Farmers are also advised to do hoeing and weeding in the vegetable crops.
  - Farmers in Satpura Plateau of Madhya Pradesh are advised to undertake transplanting of brinjal, tomato, cauliflower, *kharif* onion and papaya etc. and top dressing of urea in cotton, sugarcane and jowar etc. Farmers are also advised for sowing of niger and seasmum. Field operation like weeding, interculture, earthing and plant protection are to be followed in sugarcane crop.

- As wide spread rainfall occurred in all the districts of Chhattisgarh Plain Zone , rice crop have sufficient standing water however, in pulses and oilseed crops there may be water logging condition. It is advised to make drainage channels in pulses and oilseeds.
  - Due to the rainfall received during past week in Chhattisgarh Plain Zone, it is advised for transplanting of rice crop. In the transplanted rice field, standing water may be maintained up to 5 cm, more than that will affect the number of tillers. Weather conditions are favourable for proper germination of maize, soybean, groundnut, sesame, pigeon pea, urd, kodo in uplands of Chhattisgarh Plain Zone. Hence, farmers are advised to prepare the fields well pulverized and sowing of the above crops by the end of this month.
  - 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 sowing of arhar, urad, til, maize, groundnut, jowar, ginger, turmeric and arbi. Farmers are advised to prepare the nursery for sowing of rice with irrigation facilities.
  - Farmers in Bastar plateau zone in Chhattisgarh are advised to prepare field and undertake sowing of cowpea and *kharif* vegetables like bottlegourd, bittergourd, okra and short duration beans, cabbage, cauliflower utilising the realised rainfall during last week. Farmers are also advised to plantating of cassava, colocasia, ginger, elephant foot yam and discorea and support should be given by bamboo sticks.
  - Farmers in Bastar plateau zone in Chhattisgarh are advised to complete direct sowing of early duration varieties of rice and transplanting of rice.
- **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 arrange medicine 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.
  - 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, normally low light duration hence 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), groundnut (sowing), 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 (early vegetative/ 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 (tillering / panicle initiation), *Ahu* rice (tillering), maize (tasseling / silking /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 (grain formation / 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 (flowering/ seed filling), *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 (nursery 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 (nursery 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 (nursery sowing/ transplanting), cucurbits viz. cucumber, summer squash, khira, bitter gourd, bottle gourd (nursery sowing/transplanting), tur, Shimla mirch, and tomato (transplanting / seedling), 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), summer fodder (maize + cowpea + jowar) (vegetative), maize (sowing / emergence / vegetative), 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), turnips, knolkhol, lettuce, kale, chinese cabbage, broccoli, summer squash and radish (harvesting in Leh), Horticultural crops (various stages) viz. [peach, plum & mango (flowering/fruiting), 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, soyabean, 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, soyabean 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 (tillering/transplanting), 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 (nursery), soybean (vegetative), chilli (flowering/fruitlet), horticultural crops (fruiting) in Karnataka.
- Sugarcane (April planting) (formative), rainfed sugarcane (planting), sesame and banana (vegetative), vegetables (planting), rice (transplanting), maize (vegetative/grain hardening), ragi (vegetative/tillering), castor (sowing), *kharif* groundnut (sowing), early sown groundnut (flowering/pegging), red gram (sowing/seedling), rainfed cotton (sowing), irrigated Bt.cotton (fruiting) in Andhra Pradesh.
- Pepper (flowering/new planting), ginger (vegetative), rubber (tapping), irrigated banana (harvesting/ planting), cardamom (planting), sugarcane (grand growth), vegetables (planting/ seedling), virippu paddy (sowing/transplanting/ tillering), cashew, coconut (vegetative) in Kerala.
- Kuruvai rice (transplanting/tillering), rice (vegetative/harvesting), rainfed groundnut (sowing), cotton (vegetative/flowering), irrigated maize (vegetative/maturity/harvest), sorghum (vegetative), vegetables (planting) in Tamil Nadu.

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

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

#### Meghalaya

**Soyabean:** Clark-63, Bragg, Hill, Punjab-1, Hardee, Lee.

**Sali rice:** RCPL-1-412, Bhalum, Shah Sarang.

#### 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.

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**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,

**Blackgram:** 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, utkalamadhuri, blus star, green star, pusa purple cluster for brinjal

**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, Sonia.

**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** : Kiyani 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  
**Moong**: PDM-54, ML-131 and ML -818  
**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

**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** : R.T. 46

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

**Green gram:** RMG-62 (65-70 days), RMG-268 (65-70 days),RMG-492 (65-70 days)

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

**Mothbean:** RMO-40 (62-65 days), FMS-96 (58-60 days)

**Urdbean:** Pant: U-19 (70-75 days), RBU (70-80 days)

### Karnataka

**Bajra:** WCC-75, MH-179, ICTP-8203(@5Kg/Ha)

**Groundnut:** R-8808, R-9251, S-220(Spreading type)

**Cotton:** DCH-32, DHH-11, NHH-44 and Bt Cotton etc.

**Arhar : Medium to Short Duration:** ICP-8863 (Maruti), ICPL-87119(Asha) WRP-1 , ICPL-87(Pragati)

**Niger:** No-71, RCR-18

**Sesame:** E-8, DS-1 (White )

### Andhra Pradesh

**Cotton:** Srisilam, Mahanandi, Srinandi, Jayadhar and Yaganti

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

for salt affected areas: Deepthi, Vikas, Vedagiri and Somaseela

#### **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:

**Hybrid cotton:** G. Cot. 4, 6, 8, 10.

**Cotton:** Digvijay, Sanjay (CJ-73), Gujarat Cotton-10, Gujarat Cotton-11.

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

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

GR-11, Jaya, IR – 22, Gurjari, Dandi (mid and late maturing varieties).

**Sorghum:** GJ-39, GJ-40 GJ-41

**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.

**Soyabean:** 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.

## **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,	Horse gram
	Hybrid cotton(Bt.),	Cowpea (C-152)
	Groundnut, Chilli,	Castor GCH -4,
	Foxtail millet	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 25.07.2012

