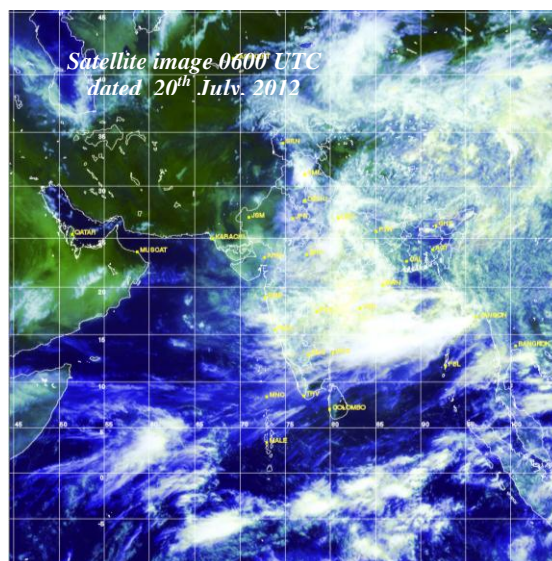


National Agromet Advisory Bulletin

Thursday, 19th July, 2012
(For the period 19th to 23rd July, 2012)



The southwest monsoon was vigorous over Sub-Himalayan West Bengal & Sikkim, and active over Gangetic West Bengal, Bihar, Konkan & Goa during 0830 hours IST of 18th to 0830 hours IST of 19th.



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.



Issued by

National Agrometeorological Advisory Service Centre

Agricultural Meteorology Division

India Meteorological Department, Shivajinagar, Pune.

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

Executive Summary

Significant rainfall occurred over many districts in Assam, Arunachal Pradesh, East Madhya Pradesh, Chhattisgarh, East Uttar Pradesh, Bihar, Jharkhand, Gujarat region, Konkan, Marathwada, Orissa and Sikkim, Sub Himalayan West Bengal, Gangetic West Bengal, Coastal Karnataka, Kerala, Tamil Nadu and Andhra Pradesh and over a few districts in Himachal Pradesh, Jammu & Kashmir, West Madhya Pradesh, West Uttar Pradesh, Uttarakhand, East Rajasthan, West Rajasthan, Madhya Maharashtra, Vidarbha, North Interior Karnataka and South Interior Karnataka. Rainfall is likely to occur at many places over West Bengal, Bihar, Jharkhand, Orissa, East Uttar Pradesh and North Andhra Pradesh, Kerala, Konkan and Coastal Karnataka. Rain/thundershowers would occur at many places over North Eastern States during next 24 hours and decrease thereafter, at a few places over East Madhya Pradesh, Chhattisgarh and Vidarbha during next 24 hours and increase thereafter, at a few places over West Madhya Pradesh, Marathwada, Madhya Maharashtra and Gujarat region during next 48 hours and increase thereafter. 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 Sub Himalayan West Bengal & Sikkim, East Uttar Pradesh, Bihar, Konkan and Orissa during next 48 hours and over Vidarbha and Chhattisgarh on 20th and 21st July and Madhya Pradesh on 21st July. In view of occurrence of heavy rainfall, arrange for adequate drainage in standing crops in the above States.

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 which is mentioned below:

1. Maharashtra

• **Madhya Maharashtra:**

- In Nashik, Kolhapur districts, farmers are advised to continue transplanting of rice and finger millet, sowing of *kharif* groundnut, soybean and red gram.
- Due to subdued rainfall activity since last fortnight, sowing could not be done in many parts of the districts like Pune, Solapur, Sangli and Satara, for which contingency plans are as follows:
 - In Pune and Solapur districts, farmers are advised to take up the contingency crops like tur (ICPL-87, BDN-708, Vipula), bajra (Shraddha, Saburi, Shanti), maize (fodder) (African tall, Manjri, Kiran, Panchganga, Karvir), maize (hybrid) (Deccan 103, 105, Ganga – 11, JK – 2492), guar (Pusa Sadabahar, Pusa Mausami, Pusa Navabahar) and intercropping like bajra + tur (2:1), sunflower + tur (2:1), guar + tur (2:1) after receiving sufficient rain.
 - In Sangli and Satara districts the contingent crops are soybean (JS – 9305, JS – 335) and groundnut (JL-501, JL-286, JL-24).
- In remaining districts of Madhya Maharashtra, farmers are advised to continue sowing of *kharif* bajra, soybean, cotton and red gram.

• **Marathwada:**

- In Aurangabad, Parbhani, Hingoli and Nanded districts, farmers are advised to continue sowing of *kharif* soybean, red gram and cotton.
- In view of deficient rain during earlier part of the season in Jalna and Osmanabad districts of Marathwada, farmers of these districts are advised to undertake sowing of *kharif* bajra, tur, sunflower, castor, soybean, sesamum instead of regular *kharif* crops, with the help of available moisture in the field and recent rainfall.

2. Karnataka

• **North Interior Karnataka**

- In Central Dry Zone and North transition Zone (Dharwad district), sowing / transplanting is not yet started and in some areas, early sown crops are under moisture stress due to insufficient rainfall. Farmers 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.
- In North Dry Zone (particularly Bijapur, Bagalkote, Gadag districts), crops already sown have dried up or their growth is not satisfactory due to limited soil moisture. Moderate amount of rainfall has been received at many places in these districts during last few days, which may help for taking up sowing during next two three days and also help the already sown crops. Farmers 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. 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.
- In North East Transition Zone (Bidar district), sowing of green gram, black gram, jowar, soybean, pigeonpea, sesamum and vegetables such tomato, bitter gourd, chilli and brinjal has been completed with the help of realized rainfall. Soybean, green gram, black gram crops are in 6-8 leaf stage and pigeon pea is in 4-6 leaf stage, which are in good state.

- **South Interior Karnataka**

Crops which are sown earlier (20% area) during first fortnight of May, especially in northern districts of SIK, are withering due to subdued rainfall. In remaining 80% of the normal sown area, sowing is withheld. New sowing as well as resowing will be done with revival of monsoon. Farmers are advised to undertake sowing of alternate crops like finger millet, maize, sunflower, redgram (medium duration varieties like BRG-1, 2) instead of groundnut after revival of monsoon.

3. Gujarat:

- **South Gujarat region**

- Due to receipt of sufficient rainfall, farmers are advised to continue sowing of maize in South Gujarat region (Dahod, Panchmahal and Vadodara districts) and other *kharif* crops in Anand district.
- In Navsari, Valsad and Dang districts, farmers are advised to continue normal sowing of rice, bajra, groundnut, maize, tur, moong and urad.
- In south Saurashtra region, 35% sowing of cotton, groundnut and 5% sowing of maize have been completed. Farmers are advised to withhold sowing due to subdued rainfall.

- In **North Gujarat Zone**, sowing of long duration *kharif* crops like cotton and groundnut has been completed within 15-20 June under irrigated condition. With the start of regular rain, pulse crops like cluster bean, cowpea, green gram and some other crops like sesamum and fennel have also been sown till 15 July by adopting late varieties or early maturing varieties. With receipt of rainfall in some of the districts like Sabarkantha, Kheda and Mehsana, farmers are advised to adopt short duration varieties or early maturing varieties like G. Guar-2 for cluster bean, G. Cow pea- 3 or 4, Pusa Falguni for cowpea and G.Mung-4 and K-851 for green gram. These short duration pulse crops may be sown upto 20-25 July by selecting late cultivars. In case of castor, sowing can be started with effect from 1st August and continued for whole month.

4. Bihar:

- There were subdued rainfall activities in many districts of Bihar during earlier part of the season. However, there was good rainfall during last few days in Bihar and thus, with realized rainfall, as contingent measures, farmers are advised-
 - to transplant short duration varieties like Rajendra Bhagwati, Prabhat, Narandra 97, MTU-1010 and Rajendra Sweta in medium land and medium duration varieties like Swarna Sab-1, BPT-5204, MTU-7029, MTU-1001 and Rajshree in low land situation.
 - to avoid transplanting in upland areas. Instead of that, sowing of til (var. Krishna), intercropping of maize (Suwan) + urd (T-9, Pant U-31, Pant U-19) is advised.
 - to take vegetable cultivation like early tomato, brinjal, early cauliflower, chilli etc. as profitable venture in the upland areas under condition of weak monsoon and deficit rainfall.

5. Haryana:

- Sowing of rice in eastern part is continued. In 70-80% area in eastern Haryana, sowing of rice is completed.
- Sowing of *kharif* crops (guar, bajra, green gram and red gram) in western part is withheld, early sown crops are under stress. No sufficient rainfall occurred till date. In Western part of Haryana sowing of bajra, pulses, guar is not yet done due to insufficient rainfall. As cut off dates normal sowing was 15th July, farmers are advised for late sowing with short duration varieties crops like 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).

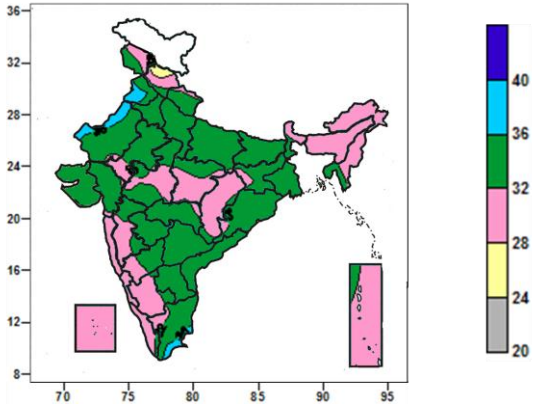
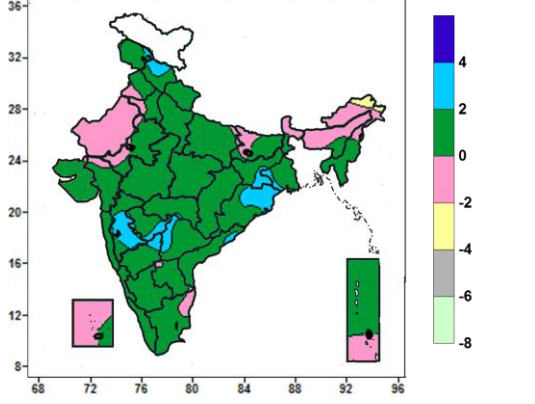
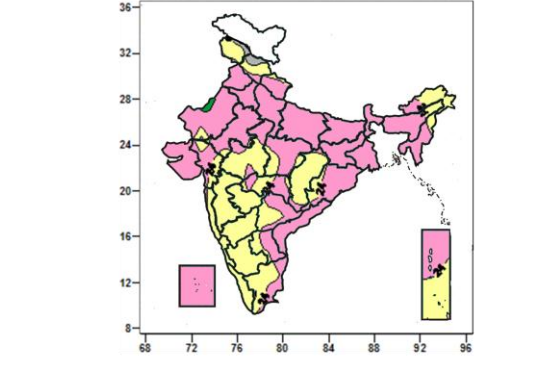
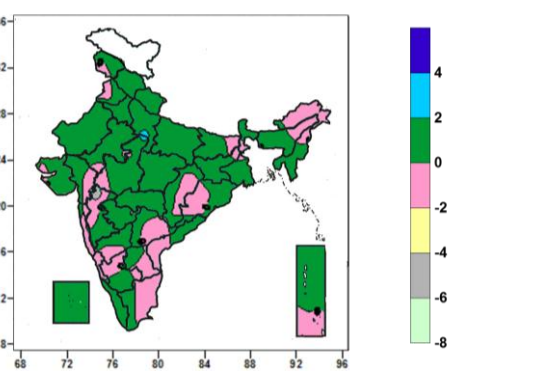
6. Rajasthan:

- In East Rajasthan, in Sub Humid Southern Plain and Aravali Hill Zone, sowing of maize, sorghum, groundnut and soybean has been completed and crop is in satisfactory condition. Farmers are advised to continue sowing of pulses (urd, red gram and green gram).
- In Semi Arid Eastern Plain Zone, as rainfall is received only in some areas, 20% sowing of bajra, moong, guar and moth is completed. As contingent measures, farmers are advised to continue sowing of short duration varieties of oilseed and pulses in place of cereals.
- In West Rajasthan, as there was good rainfall in Pali and Jhalawar districts, farmers are advised to continue sowing of bajra. Due to insufficient rainfall, in Jodhpur, Barmer, Bikaner, Nagaur and Jaisalmer districts, sowing is not yet started. Farmers in these districts are advised to undertake sowing of short duration varieties of bajra after receipt of rainfall.

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

- **Konkan:** Farmers are advised to continue transplanting of rice.
- **Vidarbha:** Continue sowing of *kharif* soybean, red gram and cotton and also undertake transplanting of rice in East Vidarbha.
- **Kerala :** Transplanting of *viruppu* rice completed. Crops are in good condition.
- **Coastal Karnataka :** Good rainfall is received during last week. Farmers are advised to continue sowing / transplanting operation of rice.
- **Andhra Pradesh :**
 - In Rayalaseema, sowing of groundnut, castor and cotton will be picking up due to receipt of wide spread rainfall during last week. Farmers are advised to continue sowing of bajra and red gram.
 - Farmers in Telengana are advised to continue direct sowing of rice, groundnut and red gram after receipt of sufficient rainfall and also to 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 insufficient rainfall, farmers are advised to undertake medium duration varieties of rice, like Swarna, Chatanya, Krishnaveni, Sambamasuri, Bapatlasannalu and Amara and rice varieties for salt affected areas like Deepthi, Vikal, Vedagiri and Somaseela 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 Lakshmi (ICPL-85063) for red gram.
- **Tamil Nadu :** Transplanting of *Kuruvai* rice is continued.
- **Northeastern States :** The States in this region received good rainfall. Sowing of *kharif* crops continued.
- **West Bengal :** Good rainfall occurred. Sowing of *kharif* crops continued.
- **Sikkim :** Good rainfall occurred. Sowing of *kharif* crops carried out.
- **Orissa :** Sowing of *kharif* crops and direct seeding / transplanting of rice is continued.
- **Jharkhand :** Sowing of *kharif* crops have been carried out satisfactorily.
- **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 soyabean, cotton and maize in West Madhya Pradesh utilizing the rainfall.
- **Chhattisgarh :** Good rainfall occurred. Sowing of *kharif* crops is carried out.
- **Uttar Pradesh :** Both West and East Uttar Pradesh received good rainfall. In west U.P., transplanting of rice and also sowing of fodder crops and pulses continued. In East U.P. also sowing of *kharif* crops continued.
- **Uttarakhand :** Continue transplanting of rice and sowing of maize, bajra, jowar and soybean.
- **Himachal Pradesh :** Transplanting of rice and sowing of maize, soybean and cowpea as an intercropping with maize, sowing / transplanting of vegetables are continued.
- **Jammu & Kashmir :** As different districts received sufficient rainfall, sowing of major *kharif* crops is completed except vegetables. Crop condition is satisfactory.
- **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 18.07.2012

<p>Actual Mean Maximum Temperature (°C) in India for the week ending 18.07.2012</p> 	<p>Maximum Temperature (°C) Anomaly in India for the week ending 18.07.2012</p> 
<p>Actual Mean Maximum temperature ranged 36 to 40⁰C and above over some parts of Punjab, West Rajasthan, Tamil Nadu, 32 to 36⁰C over most parts of NorthWest India (except Himachal Pradesh), East India (except Sikkim), Tripura, Gujarat, Saurashtra & Kutch, Andhra Pradesh, Tamil Nadu, Marathwada, Vidarbha, some parts of Interior Karnataka, Kerala, Madhya Pradesh, Chattisgarh, Mizoram, Andaman & Nicobar Islands and 24 to 32⁰C over remaining parts of the country.</p>	<p>Actual Mean Maximum temperature anomaly ranged between 2⁰C and above over some parts of Jammu & Kashmir, Himachal Pradesh, Jharkhand, Gangetic West Bengal, Orissa, Telanagan, Coastal Andhra Pradesh, Marathwada, Madhya Maharashtra, North Interior Karnataka, -2 to 0⁰C over most parts of West Rajasthan, Sikkim, Arunachal Pradesh, Assam & Meghalaya, Lakshadweep Islands, some parts of Punjab, Haryana, Bihar, Sub-Himalayan West Bengal, Nagaland, East Rajasthan, Gujarat, Rayalaseema, Tamil Nadu, Andaman & Nicobar Islands, -4 to -2⁰C over some parts of Arunachal Pradesh, 0 to 2⁰C over rest of the country.</p>
<p>Actual Mean Minimum Temperature (°C) in India for the week ending 18.07.2012</p> 	<p>Minimum Temperature (°C) Anomaly in India for the week ending 18.07.2012</p> 
<p>Actual Mean Minimum Temperature ranged between 28 to 32⁰C over some parts of West Rajasthan, 16 to 20⁰C over some parts of Jammu & Kashmir, Himachal Pradesh and between 20 to 28⁰C over remaining parts of the country.</p>	<p>Minimum Temperature anomaly ranged 2⁰C and above over some parts of West Uttar Pradesh, -2 to 0⁰C over most parts of Arunachal Pradesh, Nagaland, Orissa, Chhattisgarh, Konkan & Goa, Coastal Karnataka, Andhra Pradesh, Tamil Nadu, some parts of Jammu & Kashmir, Punjab, East Rajasthan, Bihar, Jharkhand, West Bengal, Assam & Meghalaya, Gujarat, Saurashtra & Kutch, Madhya Maharashtra, Interior Karnataka, Andaman & Nicobar Islands and 0 to 2⁰C over remaining parts of the country.</p>

Distribution of rainfall of the country during week ending on 18.07.2012

State/Districts	Actual (mm)	% Dep.
Arunachal Pradesh		
Changlang	162.2	48
East Kameng	155.0	189
East Siang	158.7	67
Kurung Kumey	635.7	154
Lohit	**	**
Lower Dibang Valley	252.3	70
Lower Subansiri	**	**
Papumpara	18.0	-76
Tawang	145.9	16
Tirap	96.0	-52
Upper Dibang Valley	149.1	-29
Upper Siang	374.9	165
Upper Subansiri	88.4	63
West Kameng	83.4	-59
West Siang	63.0	-59
Assam		
Baksa	115.4	-20
Barpeta	197.9	36
Bongaigaon	291.6	91
Cachar	66.0	-46
Chirang	350.1	129
Darrang	59.0	-28
Dhemaji	106.0	-26
Dhubri	194.2	51
Dibrugarh	88.4	-25
East Garo Hills	492.0	305
East Khasi Hills	899.7	146
Goalpara	113.4	5
Golghat	35.3	-56
Hailakandi	24.6	-73
Jaintia Hills	690.0	150
Jorhat	55.9	-40
Kamrup(Metro)	42.4	-50
Kamrup	36.0	-58
Karbi Analog	20.7	-57
Karimganj	155.9	9
Kokrajhar	214.6	51
Lakhimpur	91.0	-36
Morigaon	133.6	75
N.C.Hills	119.1	116
Nowgong	44.7	-48
Nalbari	76.8	-37
Ribhoi	157.3	79
Sonitpur	87.2	-4
Sibsagar	46.2	-41
South Garo Hills	256.0	129
Tinsukia	120.8	0
Udalgiri	58.0	-30
West Garo Hills	146.6	31
West Khasi Hills	471.0	343
Himachal Pradesh		
Bilaspur	58.9	-26
Chamba	12.6	-86
Hamirpur	32.8	-67
Kangra	61.7	-57
Kinnaur	4.7	-62
Kullu	16.2	-71
Lahaul and Spiti	0.8	-98
Mandi	47.8	-54
Shimla	35.2	-52
Sirmaur	59.9	-49
Solan	108.4	15
Una	10.3	-86
Punjab		
Amritsar	29.8	-32
Barnala	3.1	-93
Bhatinda	6.3	-79
Faridkot	0.0	-100
Fatehgarh Saheb	2.5	-95
Ferozpur	4.0	-88

Gurdaspur	27.9	-63
Hoshiarpur	18.7	-72
Jalandhar	19.7	-56
Kapurthala	54.7	82
Ludhiana	21.2	-57
Mansa	12.0	-63
Moga	1.0	-97
Muktesar	1.0	-96
Nawashahar	23.4	-59
Patiala	20.0	-60
Ropar	50.8	-12
Sangrur	19.1	-59
Mohali	8.1	-84
TarnTaran	9.4	-78
Haryana		
Ambala	18.2	-74
Bhiwani	20.1	-36
Chandigarh	22.8	-65
Faridabad	22.0	-46
Fatehabad	1.7	-93
Gurgaon	12.8	-76
Hissar	13.2	-57
Jhajar	10.3	-73
Jind	20.1	-58
Katihah	9.3	-81
Karnal	3.9	-94
Kurukshetra	20.7	-63
Mahendragarh	29.2	-29
Mewat	3.4	-92
Palwal	6.0	-85
Panchkkula	19.5	-74
Panipat	16.2	-70
Rewari	7.3	-85
Rohtak	15.5	-69
Sirsa	27.5	16
Sonepat	8.2	-82
Yamunanagar	14.1	-79
New Delhi	26.9	-58
Jammu & Kashmir		
Anantnag	13.9	-24
Badgam	8.2	-48
Bandipore	**	**
Baramulla	10.7	-50
Doda	3.0	-91
Ganderwal	15.4	12
Jammu	13.9	-83
Kargil	0.0	-100
Kathua	50.0	-35
Kistwar	**	**
Kulgam	16.2	-11
Kupwara	37.0	191
Ladakh(Leh)	1.1	-61
Poonch	25.0	-69
Pulwama	10.9	-38
Rajouri	48.2	-20
Ramban	12.3	-62
Reasi	16.1	-86
Samba	51.4	-37
Shopian	0.0	-100
Srinagar	15.2	11
Udhampur	95.1	-17
East Madhya Pradesh		
Anuppur	125.1	31
Balaghat	76.7	-39
Chhatarpur	23.3	-64
Chindwara	37.0	-43
Damoh	87.5	5
Dindori	85.1	-19
Jabalpur	57.9	-27
Katni	45.0	-46
Mandla	121.8	19
Narsingpur	27.2	-67
Panna	67.5	-20

Rewa	7.6	-90
Sagar	23.3	-72
Satna	46.5	-27
Seoni	44.6	-48
Shahdol	56.0	-29
Sidhi	57.6	-27
Singrauli	35.7	-45
Tikamgarh	17.5	-73
Umaria	34.8	-59
West Madhya Pradesh		
Alirajpur	19.4	-65
Asoknagar	39.8	-41
Badwani	1.5	-97
Betul	6.4	-90
Bhind	44.2	-10
Bhopal	15.3	-76
Burhanpur	12.0	-74
Datia	54.8	1
Dewas	4.5	-94
Dhar	5.9	-91
Guna	8.3	-87
Gwalior	8.3	-86
Harda	0.0	-100
Hosangabad	18.3	-81
Indore	0.9	-99
Jhabua	28.5	-45
Khandwa	0.0	-100
Khargone	5.9	-89
Mandsaur	4.9	-92
Morena	33.5	-31
Neemuch	15.6	-74
Raisen	43.0	-47
Rajgarh	6.2	-90
Ratlam	13.3	-79
Sehore	15.1	-81
Shajapur	2.5	-96
Sheopur Kalani	40.5	-36
Shivpuri	8.0	-85
Ujjain	19.0	-68
Vidisha	25.3	-65
Chattisgarh		
Bastar	57.7	-24
Bijapur	58.6	-34
Bilaspur	72.7	-13
Dantewara	103.3	11
Dhamtari	32.4	-61
Durg	27.3	-63
Janjgir	71.4	-23
Jashpurnagar	46.6	-52
Kanker	43.2	-48
Korba	73.1	-25
Koriya	135.1	42
Kawardha	39.0	-43
Mahasamund	80.0	13
Narayanpur	34.0	-61
Raigarh	23.9	-73
Raipur	47.9	-46
Rajandgaon	53.1	-36
Surguja	67.3	-35
East Uttar Pradesh		
Allahabad	47.5	-33
Ambedkar Nagar	130.2	51
Azamgarh	42.4	-57
Bahraich	74.9	-18
Ballia	54.9	-32
Balrampur	102.4	-7
Banda	20.7	-69
Barabanki	75.6	-12
Basti	51.3	-40
Chandauli	21.8	-73
Deoria	102.0	25
Faizabad	99.4	-2
Farrukhabad	8.3	-88

Fatehpur	34.2	-50
Gazipur	37.7	-47
Gonda	62.3	-33
Gorakhpur	85.2	-18
Hardoi	29.9	-59
Jaunpur	45.3	-47
Kannauj	0.0	-100
Kanpur City	30.0	-44
Kanpur Dehat	28.5	-48
Kaushambi	18.5	-74
Kheri	129.0	87
Kushi nagar	49.8	-49
Lucknow	49.9	-29
Maharajganj	20.8	-81
Mau	86.5	-11
Mirzapur	45.0	-44
Pratapgarh	34.3	-53
RaiBareilly	6.3	-90
Sahuji Maharajnagar	28.0	-54
Sant Kabirnagar	73.0	-26
Sant Ravidas Nagar	10.0	-88
Shrawasti	74.4	-18
Sidharthnagar	111.1	15
Sitapur	62.4	-8
Sonbhadra	47.2	-35
Sultanpur	31.9	-57
Unnao	51.0	-25
Varanasi	45.0	-50
West Uttar Pradesh		
Agra	14.6	-71
Aligarh	22.3	-54
Auraiya	0.0	-100
Badaun	33.2	-39
Baghpat	1.3	-98
Bareilly	40.8	-39
Bijnor	25.7	-68
Bulandsahar	27.3	-46
Etah	14.7	-70
Etawah	12.0	-77
Firozabad	29.0	-46
GBNagar	2.0	-96
Ghaziabad	2.9	-95
Hamirpur	13.7	-75
Jalaun	31.7	-43
Jhansi	32.8	-41
Jotirba Phule Nagar	29.5	-50
Kanshiramnagar	18.0	-64
Lalitpur	84.0	31
Mahamaya Nagar	17.0	-67
Mahoba	0.0	-100
Mainpuri	10.3	-80
Mathura	17.3	-61
Meerut	26.9	-59
Moradabad	14.9	-76
Muzzaffarnagar	23.5	-65
Pilibhit	43.6	-37
Rampur	9.7	-87
Saharanpur	16.0	-78
Shahjahanpur	56.4	-20
Uttarakhand		
Almora	44.8	-40
Bageshwar	71.7	-4
Chamoli	46.6	-32
Champawat	56.2	-49
Dehradun	114.3	-31
Garhwal Pauri	75.1	-33
Garhwal Tehri	17.4	-82
Haridwar	23.1	-68
Nainital	81.8	-37
Pithoragarh	26.7	-78
Rudraprayag	29.5	-78
Udham Sing Nagar	20.1	-80
Uttarkashi	45.7	-51
Bihar		
Araria	250.6	134
Arwal	109.0	90







Aurangabad	91.6	12
Banka	78.0	6
Begusarai	46.0	-29
Bhabua	114.7	33
Bhagalpur	147.0	108
Bhojpur	120.9	59
Buxar	36.8	-49
Darbhanga	224.8	251
East Champaran	227.8	174
Gaya	87.2	7
Gopalganj	183.2	168
Jahanabad	90.4	20
Jamui	73.5	-7
Kathihar	119.4	42
Khagadia	97.0	27
Kishanganj	216.9	65
Lakhisarai	85.3	16
Madhepura	99.7	3
Madhubani	105.5	55
Monghyar	78.4	7
Muzaffarpur	130.6	60
Nalanda	97.8	31
Nawada	3.7	-95
Patna	166.6	124
Purnea	79.0	-16
Rohtas	111.7	27
Saharsha	26.6	-68
Samstipur	95.2	39
Saran	143.1	71
Sheikpura	78.7	16
Sheohar	244.6	202
Sitamarhi	128.4	59
Siwan	147.4	81
Supaul	158.9	94
Vaishali	87.8	14
West Champaran	177.4	81
Jharkhand		
Bokaro	93.2	17
Chatra	145.7	78
Deoghar	69.7	-7
Dhanbad	70.6	-8
Dumka	100.0	17
East Singbhum	93.7	27
Garhwa	49.0	-34
Giridih	87.6	-3
Godda	261.9	267
Gumla	74.3	-11
Hazaribagh	117.4	45
Jamtara	131.8	40
Khunti	11.3	-84
Koderna	59.0	-25
Latehar	57.2	-29
Lohardagga	140.4	101
Pakur	236.6	197
Palamau	105.0	36
Ramgarh	80.8	0
Ranchi	62.4	-10
Sahebganj	250.4	210
Saraikela	68.6	11
Simdega	31.7	-62
West Singbhum	15.5	-77
East Rajasthan		
Ajmer	22.3	-56
Alwar	31.1	-39
Banswara	26.1	-58
Baran	55.1	-15
Bharatpur	20.9	-55
Bhilwara	20.8	-60
Bundi	19.0	-67
Chittorgarh	8.0	-86
Dausa	28.0	-60
Dholpur	53.2	11
Dungarpur	30.9	-38
Jaipur	27.2	-57
Jhalawar	12.8	-78
Jhunjhunu	51.2	18

Karauli	26.3	-55
Kota	9.1	-84
Pratapgarh	15.0	-76
Rajsamand	8.4	-82
Sawai Madhopur	7.8	-88
Sikar	40.5	-16
Sirohi	27.0	-64
Tonk	14.1	-77
daipur	5.6	-88
West Rajasthan		
Barmer	12.2	-53
Bikaner	14.8	-39
Churu	64.6	113
Hanumangarh	79.3	267
Jaisalmer	10.9	-34
Jalore	17.1	-62
Jodhpur	6.4	-81
Nagaur	10.8	-77
Pali	11.5	-76
Sri Ganganagar	44.4	99
Gujarat Region		
Ahmedabad	26.9	-47
Anand	43.2	-27
Banaskantha	23.1	-53
Baroda	33.3	-57
Broach	19.2	-66
DNH	144.2	-27
Dahod	32.4	-46
Daman	59.8	-70
Dangs	103.0	-35
Gandhinagar	10.0	-85
Kheda	37.5	-43
Mehsana	31.7	-48
Narmada	30.4	-66
Navsari	78.3	-52
Panchmahal	45.9	-35
Patan	22.2	-59
Sabarkantha	55.3	-19
Surat	39.9	-62
Tapi	48.5	-58
Valsad	137.8	-26
Saurashtra, Kutch & Diu region		
Amreli	15.4	-68
Bhavnagar	29.5	-26
Diu	90.5	44
Jamnagar	21.6	-58
Junagarh	21.3	-71
Kutch	4.4	-90
Porbandar	5.8	-92
Rajkot	14.7	-74
Surendranagar	7.4	-83
Maharashtra		
Konkan & Goa		
Goa	225.1	-12
Mumbai	107.3	-42
Raigad	219.8	-18
Ratnagiri	308.4	17
Sindhudurg	210.0	-16
Thane	153.3	-37
Madhya Maharashtra		
Ahmednagar	4.3	-80
Dhule	14.5	-60
Jalgaon	10.9	-74
Kolhapur	48.3	-69
Nandurbar	25.2	-62
Nasik	36.1	-48
Pune	14.0	-78
Sangli	17.2	-50
Satara	30.6	-45
Solapur	30.7	53
Marathwada		
Aurangabad	14.6	-57
Beed	34.0	32
Hingoli	55.5	12
Jalna	18.2	-46

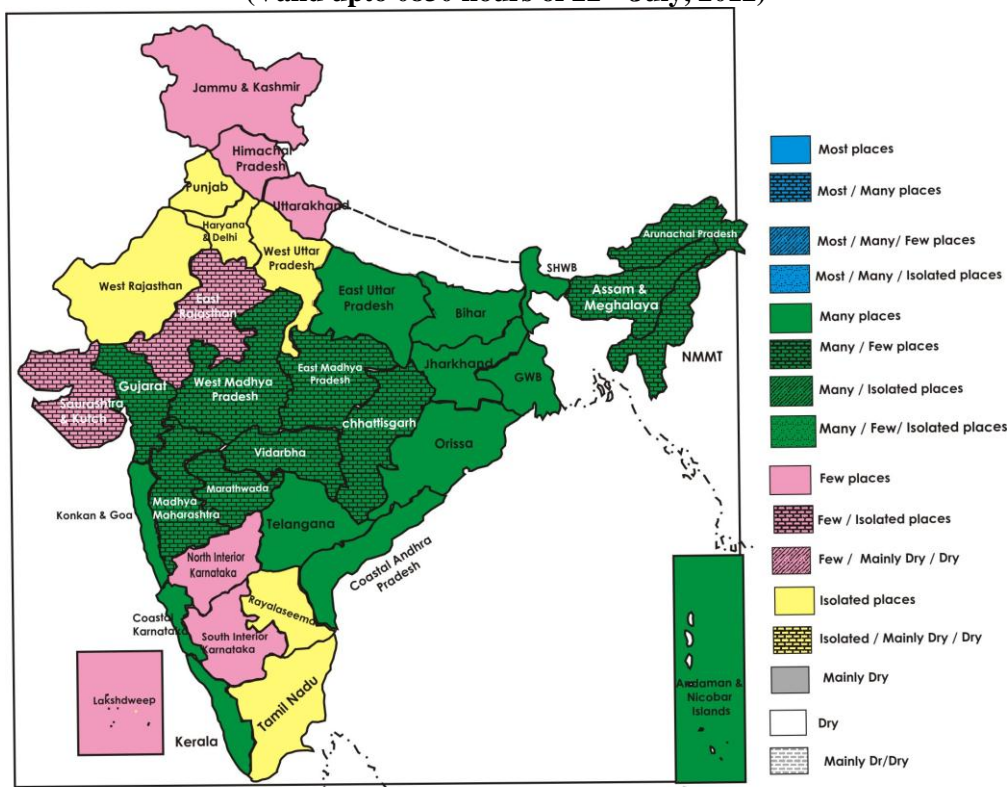
Latur	50.1	34
Nanded	36.1	-27
Usmanabad	51.5	86
Parbhani	82.0	102
Vidarbha		
Akola	5.7	-89
Amraoti	9.9	-84
Bhandara	94.3	3
Buldhana	13.2	-69
Chandrapur	83.6	-3
Gadchiroli	117.6	9
Gondia	78.6	-22
Nagpur	87.7	10
Wardha	25.5	-64
Washim	12.6	-78
Yeotmal	24.7	-59
Orissa		
Angul	39.3	-48
Balasore	25.4	-64
Bargarh	17.6	-79
Bhadrak	50.3	-33
Bolangir	51.3	-48
Boudh	26.1	-64
Cuttack	46.0	-34
Deogarh	25.6	-71
Dhenkanal	84.1	20
Gajapati	38.3	-31
Ganjam	23.5	-57
Jagatsingpur	14.1	-77
Jajpur	35.3	-54
Jharsuguda	77.6	-22
Kalahandi	29.4	-66
Kandhamal	23.7	-67
Kendrapara	20.5	-65
Keonjhar	17.7	-74
Khurda	62.0	-20
Koraput	18.1	-79
Malkangiri	29.0	-70
Mayurbhanj	56.4	-27
Nawapara	63.1	-15
Nawarangpur	99.6	-4
Nayagarh	138.5	80
Puri	13.8	-77
Rayagada	40.7	-46
Sambalpur	47.1	-48
Sonepur	19.3	-76
Sundargarh	39.1	-55
West Bengal		
GWB		
Bankura	73.5	5
Birbhum	122.5	57
Burdwan	99.6	45
East Midnapore	43.3	-15
Hooghly	28.4	-55
Howrah	41.5	-44
Kolkata	24.3	-68
Murshidabad	174.3	154
Nadia	55.5	3
24 Pargana (N)	53.0	-24
Purulia	54.9	-27
24 Pargana (S)	39.9	-54
West Midnapore	67.5	3
SHWB		
Cooch Behar	169.0	-13

Darjeeling	360.2	97
East Sikkim	164.3	50
Jalpaiguri	427.8	119
Malda	96.5	28
North Dinajpur	161.6	94
North Sikkim	286.2	198
South Dinajpur	136.4	46
South Sikkim	135.9	24
West Sikkim	260.0	171
Karnataka		
Coastal Karnataka		
Dakshin Kannada	92.2	-66
Udupi	118.1	-63
Uttar Kannada	133.0	-46
North Interior Karnataka		
Bagalkote	20.5	27
Belgaum	12.9	-72
Bidar	57.8	34
Bijapur	53.6	186
Dharwad	17.7	-50
Gadag	29.3	72
Gulbarga	46.9	38
Haveri	8.7	-79
Koppal	25.5	38
Raichur	28.8	11
Yadgir	47.9	38
South Interior Karnataka		
Bangalore Rural	60.3	168
Bangalore Urban	55.3	145
Bellary	17.4	-6
Chamarajnanagar	28.9	105
Chichballapur	44.7	101
Chickmagalur	27.6	-81
Chitradurga	8.7	-36
Davangere	6.5	-74
Hassan	11.2	-75
Kodagu	44.7	-76
Kolar	101.3	503
Mandya	12.6	6
Mysore	13.7	-31
Ramnagara	61.5	234
Shimoga	44.4	-69
Tumkur	25.2	54
Kerala		
Alappuzha	29.5	-74
Kannur	73.4	-67
Ernakulam	37.8	-75
Idukki	56.0	-65
Kasaragod	83.1	-67
Kollam	11.8	-85
Kottayam	36.1	-72
Kozhikode	41.1	-80
Malappuram	31.4	-81
Palakkad	14.3	-89
Pathanamthitta	9.6	-92
Thiruvananthapuram	7.8	-84
Thrissur	35.3	-79
Wyanad	26.6	-88
Tamil Nadu		
Ariyalur	30.3	109
Chennai	55.1	79
Coimbatore	11.5	24
Cuddalore	31.8	112
Dharmapuri	75.2	304

Dindigul	33.2	211
Erode	33.4	289
Kanchipuram	57.6	102
Kanyakumari	0.8	-96
Karikal	26.2	145
Karur	5.2	-41
Krishnagiri	76.4	339
Madurai	15.6	0
Nagapattinam	28.7	105
Namakkal	50.6	275
Nilgiris	33.4	-38
Perambalur	58.6	443
Puducherry	39.8	380
Pudukottai	11.7	-44
Ramanathapuram	15.6	126
Salem	86.1	306
Sivaganga	30.3	93
Thanjavur	15.7	29
Theni	2.9	-51
Tirunelveli	0.2	-97
Tirupur	17.2	265
Tiruvallur	76.5	168
Tiruvannamalai	112.2	392
Tiruvarur	16.7	37
Toothukudi	0.0	-100
Trichy	23.5	86
Vellore	86.9	268
Villupuram	65.5	262
Virudhunagar	12.8	49
Andhra Pradesh		
Coastal Andhra Pradesh		
East Godavari	52.2	18
Guntur	62.0	100
Krishna	85.2	109
Nellore	40.8	84
Prakasam	69.8	217
Sirkakulam	45.8	0
Visakhapatnam	31.9	-19
Vizianagram	68.2	83
West Godavari	56.9	11
Telangana		
Adilabad	60.4	-11
Hyderabad	53.9	47
Karimnagar	98.0	88
Khammam	50.1	-12
Mehabubnagar	45.6	37
Medak	45.3	-8
Nalgonda	24.7	-30
Nizamabad	39.8	-35
Rangareddy	50.0	23
Warangal	74.6	32
Rayalaseema		
Anantapur	56.4	248
Chittoor	101.7	290
Cuddapah	48.8	92
Kurnool	54.6	111

	(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 22nd July, 2012)



Major Feature of Weather Forecast up to 0830 hours IST of 22nd July, 2012

- Rain/thundershowers at many places over east India, east Uttar Pradesh and north Andhra Pradesh.
- Rain/thundershowers would occur at many places over northeastern states during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at many places over west coast and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at a few places over east Madhya Pradesh, Chhattisgarh and Vidarbha during next 24 hours and increase thereafter.
- Rain/thundershowers would occur at a few places over west Madhya Pradesh, Marathawada, Madhya Maharashtra and Gujarat region during next 48 hours and increase thereafter.
- Rain/thundershowers would occur at one or two places over east Rajasthan and Saurashtra & Kutch during next 48 hours and increase thereafter.
- Rain/thundershowers would occur at a few places over interior Karnataka and Lakshadweep and at one or two places over west Rajasthan, south Andhra Pradesh and Tamilnadu.
- Rain/thundershowers would occur at a few places over western Himalayan region and at one or two places over rest northwest India.

Weather Warning

- Heavy rainfall would occur at one or two places over SubHimalayan West Bengal & Sikkim, east Uttar Pradesh, Bihar, Konkan & Goa and Orissa during next 48 hours.
- Heavy rainfall would occur at one or two places over Vidarbha and Chhattisgarh on 20th and 21st July and Madhya Pradesh on 21st July.

Weather Outlook for subsequent 4 days up to 0830 hours IST of 26th July, 2012

- Increase in rainfall activity over Maharashtra, Gujarat and Rajasthan.
- Rain/thundershowers would occur at many places along west coast, east and northeast India.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in most of the districts of the States of the region during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over the states of the region during next 24 hours and decrease thereafter.
- **Advisories:**
 - As rainfall occurred in most of the districts of the States of the region during last week and rain / thundershowers would occur at many places over the states of the region during next 24 hours, farmers are advised to postpone irrigation, intercultural operation and application of fertilisers and plant protection measures 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 for repeatedly flood prone areas. In partially affected fields, drain excess water and apply $1/3^{\text{rd}}$ N + 50% K_2O as top dressing during the tillering stage of *sali* rice. Provide aeration in root zone by hoeing in between lines after flood for sugarcane and pulses.
 - In flood affected areas of Hill Zone of Assam, after receding of flood water, the short duration varieties of rice like Luit, Kapilee, Dichang etc. can be sown directly in puddled field with sprouted seeds up to middle of September. Farmers can also sow sesamum in the months of July and August or green gram and black gram up to mid September in medium and upland situation. Farmers can also raise community nursery, if individual farmer does not have suitable land for nursery due to inundation by flood water.
 - Farmers in Hill Zone of Assam are advised to continue preparation of main field and continue transplanting of rice 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.
 - Farmers in Upper Brahmaputra Valley Zone of Assam are advised to continue nursery bed preparation of *Sali* rice and 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 land preparation and sowing of *kharif* sesame and transplanting of the seedlings of *Sali* rice.
 - Farmers in Lower Brahmaputra Valley Zone of Assam are advised to continue transplanting of *Sali* rice and complete the harvesting of *ahu* rice. Farmers are also advised to undertake 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 and planting of ginger and turmeric.
 - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to continue transplanting of *sali* rice in low and medium altitude areas. Continue sowing of *sali* rice and soybean in high altitude region utilizing realized monsoon rainfall. The 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 Drum Seeder etc. Otherwise, farmers can use late varieties for cultivation.
 - Farmers in Mild Tropical Hill Zone of Nagaland are advised to continue transplanting of lowland rice. As maize is very susceptible to water logging, provide proper drainage in the field.
 - Farmers of Sub Tropical Plain Zone of Manipur are advised to continue sowing of *kharif* rice, soybean and groundnut. Undertake nursery raising of tomato and cauliflower.

- Farmers of Mid Tropical Plain Zone of Tripura are advised to complete seedbed preparation of *aman* rice for low land without further delay and undertake transplanting seedlings in the main field.
- 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.
- Due to prevailing weather conditions, there is chance of attack of stem borer in maize in Mild Tropical Plain Zone of Tripura. To control maize stem borer, spray Novacron @ 2 ml per litre of water. Also there is chance of fungal attack in vegetables like pumpkin, ridge gourd, cucumber, ladies finger etc.; spray Calixin 1 ml per litre of water to manage the attack and avoid use of sulphur fungicide.
- Apply plant protection measures after current spells of rain.
- 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 and supply adequate pure and clean drinking water to prevent bacterial disease in livestock and poultry.
 - In Central Brahmaputra Valley Zone, Lower Brahmaputra Valley Zone and North Bank Plain Zone of Assam, Mild Tropical Hill Zone of Mizoram and Sub Tropical Plain Zone of Manipur, farmers are advised to vaccinate cattle and buffaloes against FMD, HS and BQ, pigs against swine fever. Vaccinate poultry against Ranikhet and Gamboro diseases. Deworm goat and sheep.
 - 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 take a precaution against Japanese encephalitis, a mosquito borne disease. Avoid stagnant water in and around the sty, maintain proper hygienic condition.
- **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 and Mizoram 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 all the districts of Sikkim, Sub Himalayan West Bengal and most of the districts of Gangetic West Bengal (except in Hooghly, Kolkata), Jharkhand (except in Khunti and West Singhum), Bihar (except in Nawada and Saharsha) and Orissa (except in Balasore, Bargarh, Boudh, Deogarh, Ganjam, Jagatsingpur, Kalahandi, Kandhamal, Kendrapara, Keonjhar, Koraput, Malkangiri, Puri, Sonapur).
- **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 Sub-Himalayan West Bengal & Sikkim 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 Sub-Himalayan West Bengal & Sikkim 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 few days in Bihar and thus, with realized rainfall, as contingent measures, farmers are advised-
 - to transplant short duration varieties like Rajendra Bhagwati, Prabhat, Narandra 97, MTU-1010 and Rajendra Sweta in medium land and medium duration varieties like Swarna Sab-1, BPT-5204, MTU-7029, MTU-1001 and Rajshree in low land situation.
 - to avoid transplanting in upland areas. Instead of that, sowing of til (var. Krishna), intercropping of maize (Suwan) + urd (T-9, Pant U-31, Pant U-19) is advised.
 - to take vegetable cultivation like early tomato, brinjal, early cauliflower, chilli etc. as profitable venture in the upland areas under condition of weak monsoon and deficit rainfall.
- Farmers of Western Undulating Zone of Orissa are advised to complete the nursery sowing of rice, as the weather is suitable for wet nursery sowing of rice, for transplanting by second week of August.
- Farmers of North Eastern Ghat Zone of Orissa are advised to undertake nursery sowing of rice, planting of turmeric, sowing of cotton, maize, ragi and arhar.
- The farmers of East and South Eastern Coastal Plain Zone of Orissa are advised go for transplanting of rice seedlings of 3 to 4 week stage and go for sowing of green gram, black gram, sesame and vegetables like cowpea, okra and cucurbits. Farmers are also advised to complete sowing of castor (Ganjam district) and sowing of soybean (Kendrapara district).
- Farmers of North Central Plateau Zone of Orissa are advised for sowing of groundnut, maize, and vegetables like brinjal, chilli and cucumber.
- Farmers of North Eastern Plateau Zone of Orissa are advised that those farmers who already have sown the upland rice earlier, should maintain the plant population per unit area by filling the gap and rouging the extra plants. Inter culture operation may be done to control the weeds after 15 days of sowing. Farmers are also advised transplanting of rice through SRI method, sowing of *kharif* groundnut and prepare the field for sowing of rainy season vegetables like bhindi, bean, French bean, tomato, cauliflower, cabbage etc.
- In Central and North Eastern Plateau Zone of Jharkhand, farmers are advised to complete sowing of upland rice and undertake short duration varieties of arhar, groundnut, rice, urad, turmeric, jowar, soybean and okra for 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 for sowing of wet seeded rice.
- Farmers in New Alluvial Zone of West Bengal are advised to transplant *aman* rice and also harvesting of already matured jute crop.
- Farmers in Laterite and Red Soil Zone of West Bengal are advised to undertake sowing of rainy season vegetables like bhindi (Lady's finger), bean, French bean, tomato, leafy vegetables and planting of banana.
- 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.

- In Puri, Cuttack, Khurda and Ganjam districts of East and South Eastern Coastal Plain Zone and Phulbani district in North Eastern Ghat Zone of Orissa, fruit and shoot borer in brinjal has been found. To control it, install Pheromone traps or 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 Chloropyrifos in 200 litres of 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, brinjal 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 12% + Mancozeb 64%, 2 g per litre of water at the collar region. To control fruit and branch rot, spray Metalaxyl 8% and Mancozeb 64% @ 1.5 g or Ridomyl MZ @ 2.5 g / litre of water.
- Stages of major crops are mentioned in Annexure I.

Pisciculture

- The 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 be 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 ha of water.
- The 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 Bilaspur, Hamirpur, Kangra, Mandi, Shimla, Sirmour and Solan districts in Himachal Pradesh, Kapurthala and Ropar districts in Punjab, Kathua, Kupwara, Rajouri, Samba and Udhampur districts in Jammu & Kashmir, many districts in East Uttar Pradesh, Badaun, Bareilly, Jalaun, Jhansi, Lalitpur, Philipit and Shajahanpur districts in West Uttar Pradesh, Almora, Bagheswar, Chamoli, Champawat, Dehradun, Garhwal Pauri, Nainital and Uttarkasi districts in Uttarakhand, Alwar, Bharan, Dholpur, Dungarpur, Jhunjhunu and Sikar districts in East Rajasthan, Churu, Hanumangarh and Sri Ganganagar in West Rajasthan. No significant rainfall occurred in Haryana and Delhi during last week.
- **Rainfall Forecast:** Rainfall is likely to occur at many places over East Uttar Pradesh, at a few places over Jammu & Kashmir, Uttarakhand and Himachal Pradesh, at one or two places over East Rajasthan during next 48 hours and increase thereafter and at isolated places in rest of the region.
- **Warning:** Heavy rainfall is likely at one or two places would occur over East Uttar Pradesh during next 48 hours.
- **Advisory:**
 - As significant rainfall occurred over Bilaspur, Hamirpur, Kangra, Mandi, Shimla, Sirmour and Solan districts in Himachal Pradesh, Kapurthala and Ropar districts in Punjab, Kathua, Kupwara, Rajouri, Samba and Udhampur districts in Jammu & Kashmir, many districts in East Uttar Pradesh, Badaun, Bareilly, Jalaun, Jhansi, Lalitpur, Philipit and Shajahanpur in West Uttar Pradesh, Almora, Bagheswar, Chamoli, Champawat, Dehradun, Garhwal Pauri, Nainital and Uttarkasi districts in Uttarakhand, Alwar, Bharan, Dholpur, Dungarpur, Jhunjhunu and Sikar districts in East Rajasthan, Churu, Hanumangarh and West Ganganagar in West Rajasthan, farmers are advised to postpone irrigation to the standing crops. Farmers in the remaining districts of the above mentioned States and Haryana 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 East Rajasthan are advised to continue sowing of *kharif* crops like soybean, sorghum and maize due to receipt of sufficient rainfall during the week. Farmers are also advised to complete sowing of groundnut.
 - Farmers in Flood prone Eastern plain zone 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. Continue sowing of cucurbits like bitter melon, 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 oilseed and pulses like moong, guar and moth in place of cereals as contingent measures due to rainfall in some areas only.
- In Jhunjhunu and Sikar districts of transitional plain zone of Inland drainage, farmers are advised for 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, as there was good rainfall in Pali and Jhalawar districts, sowing of bajra is advised. Due to insufficient rainfall, in Jodhpur, Barmer, Bikaner, Nagaur and Jaisalmer districts, farmers in these districts are advised to undertake sowing of short duration varieties of bajra after receipt of rainfall.
- In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to continue direct sowing / transplanting of rice including basmati varieties. Maintain water for transplanting the seedling at 3-5 cm deep and transplant 2-3 seedling / hill at proper spacing. Continue sowing of *kharif* pulses viz. *kharif* moong, groundnut, bajra, til and maize.
- 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 continue 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, farmers are advised to undertake sowing of knol khol, cauliflower cabbage and kale. Undertake weeding followed by top dressing in rice, maize and *kharif* pulses on a non rainy day.
- 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. 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 go for direct sowing / transplanting of medium and long duration varieties rice, sowing of maize, arhar, moong, urd and fodder crops utilising rainfall during last two weeks. 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 in Himachal Pradesh, farmers are advised to undertake 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 undertake planting of evergreen fruit plants like mango, litchi, guava, citrus, loquat and amla. Also sowing of ginger, arbi, amaranthus and turmeric and direct sowing of medicinal plants like Ashvagandha and kalmegh may be done.
- In Mid Hills Sub-Humid Zone in Himachal Pradesh, farmers are advised to sow ginger, arbi, amaranthus, turmeric and also sowing of peas, turnip, radish, carrot and French bean in high hills.
- In Bhabar and Tarai Zone of Uttarakhand, farmers are advised to undertake weeding in transplanted rice, ragi, Gahat, Kutoo, early sown soybean and earthing up in maize on a non rainy day. Farmers are advised to broadcast Urea under optimum soil moisture if crop is turning to be yellow. Farmers are advised to look the deficiency of Zinc in crop. If deficiency is appearing, then spray a solution of 5 g of zinc sulphate and 20 g of Urea per kg of water two times at 10 days interval.
- In Sub humid sub tropic Zone of Uttarakhand, transplanting of rice may be undertaken. To improve water conservation in sugarcane crop, apply mulches or harrowing in between the rows may be done. Farmers in Dehradun and Garhwal Pauri districts are advised to prepare field and sowing of maize, bajra and jowar utilizing realized rainfall.
- Farmers in Delhi are advised for direct sowing of short duration varieties of paddy with sufficient irrigation facilities, if paddy nursery has been damaged due to high temperature. Farmers are advised to conserve rain water in the paddy fields by making broad and elevated bunds. Undertake sowing of maize, bajra, baby corn, sweet corn, rainy season cucurbits, coriander, spanich and raddish and transplanting of chilli, brinjal and early cauliflower.
- Farmers in Punjab are advised to complete transplanting of Basmati rice varieties. Start sowing of maize, mung, tur, mash and bhindi in Gurdaspur, Kapurthala, Hosiarpur, Patiala, and Ropar districts utilising realised rainfall during last two weeks. Cotton crop is highly sensitive to standing water during early growth stages hence avoid waterlogging in cotton fields. Irrigate sugarcane crop at 7-10 days interval and apply second dose of urea @ 65 kg per acre along the rows.

- Farmers in Western zone of Haryana are advised to prepare field utilizing the realized rainfall during last week and go for late sowing with short duration varieties crops like bajra, sorghum, guar, green gram, urd, arhar and moth. Undertake transplanting of rice with irrigation facilities from tubewell. Conserve soil moisture in already sown cotton by undertaking hoeing and intercultural operation. Complete transplanting of Basmati varieties with 40-45 days old seedlings at closer spacing in Eastern Zone.
- 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, it is high time for vaccination of animals against FMD as animals are shifting from plain to higher reaches. Weather is conducive for ticks and mites attack on animals for control spray Butox @ 2.0 ml per litres of water. Sprinkle water on animals to reduce the heat stress and 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.
- **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, Bijapur, Gulbarga and Yadgir in North Interior Karnataka, Bangalore Rural & Urban, Chickballapur, Kodagu and Shimoga districts in South Interior Karnataka, almost all districts in Andhra Pradesh except Nalgonda, most of the districts in Kerala except Kollam, Palakkad, Pathanamthitta, Thiruvananthapuram and Wayanad districts and number of districts in Tamil Nadu received good rainfall. No significant rainfall occurred over the remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Kerala and Coastal Karnataka, at few places over Andhra Pradesh, interior Karnataka and Tamil Nadu and at one or two places over rest of the region.
- **Advisories:**
 - As most of the districts in Coastal Karnataka, Bidar, Bijapur, Gulbarga and Yadgir in North Interior Karnataka, Bangalore Rural & Urban, Chickballapur, Kodagu and Shimoga districts in South Interior Karnataka, almost all districts in Andhra Pradesh, most of the districts in Kerala and number of districts in Tamil Nadu received sufficient rainfall, complete sowing of kharif crops, drain out excess water and postpone irrigation to the crops.

- Farmers in the Coastal Zone of Karnataka are advised to continue transplanting of late sown paddy seedlings after draining out excess water from main paddy field due to heavy rain received in the last couple of days, undertake planting of cashew, mango, papaya and coconut and drain out excess of water in papaya and drumstick plantation.
- Farmers in Central Dry Zone and 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.
- Farmers in the Eastern Dry Zone of Karnataka are advised to undertake sowing of alternate crops like finger millet, rice, aerobic rice, maize, pulses and other oilseed crops in rainfed and tank-bund areas.
- Farmers in the Southern Transition Zone of Karnataka are advised to go in for intercultivation of maize and vegetable crops and undertake preparation of the main land with puddling operation for paddy crop.
- Farmers in the North East Dry Zone of Karnataka are advised to continue sowing of Redgram +greengram (2:4 or 1:2), Bajra+redgram (2:1), Sorghum+redgram (3:1), Castor+Redgram, wherever intercropping is to be done.
- Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to raise samba paddy fields with green manure crops by using the rainfall received in the last few days.
- 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 take up sowing of vegetables like ribbed gourd, snake gourd and ash gourd.
- Farmers in the North Western Zone of Tamil Nadu are advised to sow castor (YRCH-1 and GCH) varieties, cereal sorghum variety (CO-30) and fodder sorghum (K8) in the present Adi conditions, since widespread rains have occurred in the zone.
- 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 sowing of medium duration varieties of rice and pulses because the kharif season is slightly delayed and also take up sowing of cotton, vegetables and other kharif crops including preparation of rice nurseries in the zone utilising the recent rainfall.
- Farmers in the Southern Telangana Zone of Andhra Pradesh are advised to raise the rice nurseries. They are also advised to complete sowing of cotton hybrids, groundnut, okra, cluster bean and dolichos bean (bush type) and transplanting of brinjal and tomato utilising the recent rainfall. Farmers are also advised to take up short duration varieties of maize if sowing is not done so far.
- Farmers in the Problem Area Zone of Kerala are advised to provide adequate drainage for the newly planted coconut seedlings and apply fertilizers.
- Leaf eating caterpillars in soyabean and stem fly in green gram/black gram has been noticed in some parts of North East Transition Zone of Karnataka. Farmers are advised to spray the crop with Monocrotophos 1 ml or Dimethoate 1.7 ml dissolved in 1 lit of water to control leaf eating caterpillars and Imidachlorpid @ 0.3 ml per litre of water to control stem fly.
- Stem borer incidence is noticed in *kuruvai* paddy in the Cauvery Delta Zone of Tamil Nadu. Farmers are advised to place pheromone traps and spray profenophos at 400 ml/acre (or) apply Cartarp hydrochloride 4 G @ 6 kg/ac for effective control of stem borer.
- Stem borer incidence in irrigated sorghum and fruit borer incidence in tomato and brinjal is observed in the South Zone of Tamil Nadu and prevailing climatic condition may induce sucking pests in irrigated vegetables. Farmers are advised to undertake plant protection measures.
- Incidence of early shoot borer is noticed in sugarcane in the North Telangana Zone of Andhra Pradesh. To control, adopt the IPM measures like give irrigations at close intervals and spray Chlorpyrphos @2.5 ml per litre of water at 4, 6 and 9th week after transplantation & release parasitic complex Trichogramma chelonis
- Incidence of sucking pest is noticed in the early sown groundnut in the Southern Zone of Andhra Pradesh. Take up appropriate plant protection measures.

- Farmers in the Problem Area Zone of Kerala are advised to undertake proper plant protection measures, since the present intermittent rains will be favorable for the incidence of thrips (20-25 days old) and black bug (35-40 days after sowing) in paddy bud rot in coconut and leaf spot and fruit fall diseases in nutmeg.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** All districts in Konkan and East Vidarbha, most of the districts in Marathwada (except Aurangabad and Jalna) and Kolhapur, Nashik, Satara, Solapur districts in Madhya Maharashtra received significant rain during last week. Ahmednagar, Pune, Sangli, Jalgaon, Nandurbar, Dhule and all districts in West Vidarbha received deficient / scanty rainfall during last week. All districts except Ahmedabad, Banaskantha, Bharuch, Gandhinagar and Patan in Gujarat region received significant rain during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at many places over Konkan and Goa and at isolated places in Saurashtra and Kutchh during the period. Rain / thundershowers would occur at a few places over Vidarbha during next 24 hours and increase thereafter. Rain / thundershowers would occur at a few places over Marathwada, Madhya Maharashtra and Gujarat region during next 48 hours and increase thereafter.
- **Warning:** Heavy rainfall would occur at one or two places over Konkan & Goa during next 48 hours at one or two places over Vidarbha on 20th and 21st.
- **Advisories:**
 - In view of occurrence of rainfall at many places shortly in Konkan and Goa, Madhya Maharashtra, Marathwada, Vidarbha and Gujarat region, farmers are advised to postpone irrigation to the crops. As there is possibility of heavy rainfall at one or two places over Konkan & Goa during next 48 hours and at one or two places over Vidarbha on 20th and 21st July, farmers are advised to arrange for adequate drainage to avoid water stagnation.
 - As there was subdued rain in Sangli, Pune and some parts of Satara and Solapur districts in Madhya Maharashtra since last two weeks and scattered rain is expected during next 2-3 days, undertake contingency planning for sowing of water stress tolerant crops like bajra, castor, sunflower, red gram, bean, gaur in Pune and Solapur districts and groundnut, soybean in Sangli and Satara districts by selecting early maturing varieties. Farmers in Pune and Solapur districts are also advised to adopt intercropping like bajra + tur (2:1), sunflower + tur (2:1) or gaur + tur (2:1). Under prevailing weather, to preserve moisture in the field, farmers are also advised to undertake hoeing in early sown crops, spray 8% kaolin and reduce the plant population. Apply drip irrigation by alternate furrow method to sugarcane.
 - In Konkan, farmers are advised to complete transplanting of 20 to 22 days old rice seedlings and transplant finger millet seedlings by dibbling method. As there was heavy rain in some places and isolated heavy rain is also expected during next 48 hours, farmers are advised to drain out excess water from rice nursery, main rice field, mango orchards and already sown groundnut and vegetable fields.
 - Farmers in Nashik, Jalgaon, Dhule and Nandurbar districts are advised to continue sowing of *kharif* bajra, red gram using available moisture in the field. Farmers in Nashik district are advised to continue transplanting of rice and finger millet.
 - Farmers in Kolhapur district are advised to continue transplanting of rice seedlings and sowing of *kharif* groundnut, soybean and red gram. Undertake weeding in early sown *kharif* crops.
 - Beed, Latur, Parbhani, Hingoli, Nanded and Osmanabad districts in Marathwada received significant rain during last week; farmers are advised to complete sowing of *kharif* soybean and red gram. Aurangabad and Jalna districts received deficient rain and scattered rain is expected during next 2-3 days; farmers in these region are advised to continue sowing of *kharif* bajra, tur, sunflower, castor, soybean, sesame instead of regular *kharif* crops after receipt of significant rain.
 - Farmers in remaining districts of Madhya Maharashtra and Marathwada are advised to complete preparatory tillage for planting of *adsali* sugarcane. Due to subdued rainfall activity farmers are advised to undertake planting of sugarcane in flat bed after receipt of rainfall.
 - 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 seedlings. As there was no significant rain in all districts of west Vidarbha during last week, farmers are advised to complete sowing of *kharif* soybean, red gram with the help of available moisture in the field immediately, before start of rain. Hoeing and weeding may be done in early sown crop.

- In south Saurashtra region, 35% sowing of cotton, groundnut and 5% sowing of maize have been completed. Sowing is presently withheld due to subdued rainfall. Farmers are advised to resume sowing after receipt of sufficient rain.
- Due to receipt of sufficient rainfall, farmers are advised for sowing of maize in South Gujarat region (Dahod, Panchmahal and Vadodara districts).
- In Navsari, Valsad and Dang districts, normal sowing of rice, bajra, maize, tur, moong and urad is continued and 50% sowing of groundnut is completed.
- In North Gujarat Zone, sowing of long duration *kharif* crops like cotton and groundnut has been completed within 15-20 June under irrigated condition. With the start of regular rain, pulse crops like cluster bean, cowpea, green gram and some other crops like sesamum and fennel have been also sown till 15 July by adopting late varieties or early maturing varieties. For the areas under somewhat delayed monsoon, contingency measures like adoption of short duration varieties or early maturing varieties like G. Guar-2 for cluster bean, G. Cow pea- 3 or 4, Pusa Falguni for cowpea and G.Mung-4 and K-851 for green gram are suggested. These short duration pulse crops may be sown upto 20-25 July by selecting late cultivars. In case of castor, the sowing can be started with effect from 1st August and continued for whole month.
- In view of occurrence of significant rain during last week, farmers in Middle Gujarat Zone are advised to undertake transplanting of rice and sowing of groundnut, green gram castor and cluster bean.
- In area of North Saurashtra Zone of Gujarat where monsoon sowing is over and crops are suffering from moisture stress, farmers are advised to carry out intercultural operation, weeding and thinning in green gram, black gram, sesame and bajra and apply lifesaving irrigation under acute moisture stress.
- Due to occurrence of sufficient rain and likely occurrence of rain in South Gujarat Heavy Rainfall Zone of Gujarat, farmers are advised to continue sowing of green gram, black gram, cow pea and transplanting of *kharif* rice. Carry out weeding and intercultural operation in early sown crops.
- 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.
- 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.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Significant rainfall occurred in Anuppur, Balaghat, Chindwara, Damoh, Dindori, Jabalpur, Katni, Narsingpur, Panna, Satna, Seoni, Shahdol, Sidhi, Singrauli, Umaria districts in East Madhya Pradesh, Asoknagar, Bhind, Datia, Morena, Raisen, Sheopur Kalani districts in West Uttar Pradesh and most of the districts in Chhattisgarh.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over East Madhya Pradesh, Chhattisgarh during next 24 hours and increase thereafter. Rain/thundershowers would occur at a few places over west Madhya Pradesh during next 48 hours and increase thereafter.
- **Warning:** Heavy rainfall would occur at one or two places over Chhattisgarh on 20th and 21st and Madhya Pradesh on 21st.
- **Advisories:**
 - Farmers in East and West Madhya Pradesh are advised to continue sowing / transplanting of rice, sowing of soybean, maize, bajra, tur, and urad in Madhya Pradesh utilizing the realised rainfall.
 - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to complete nursery sowing of rice, maize, tur and soybean as soon as possible. Treat seeds with 1.5 g bavistin / kg + thiram (1.5 g/kg) before sowing. Undertake nursery sowing / transplanting of tomato, brinjal, onion, chilli and cauliflower. Farmers are advised to provide drainage facilities in pulses and vegetables, particularly turmeric and ginger.
 - Farmers in Gird Zone of Madhya Pradesh are advised to undertake sowing of high yielding varieties of bajra and transplanting of onion. Avoid water logging in onion field and prepare bunds for conservation of water in rainfed crops.

- Farmers in Jhabua Hills of Madhya Pradesh are advised to prepare main field and undertake transplanting of rice. Sowing of *kharif* crops viz. maize, soybean, cotton and pulses may done as soon as possible with early maturing varieties due to late monsoon. 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 for sowing of *kharif* crops like sesame, maize, soybean and sorghum. They are also advised to undertake direct sowing of rice and nursery sowing / transplanting of rice. Undertake nursery sowing of tomato, brinjal, onion, chilli and cauliflower.
 - Farmers in Nimar Valley of Madhya Pradesh are advised to continue sowing of *kharif* cotton, soybean, maize, jowar, tur, intercropping with moong / urad in two lines or soybean in four lines. Apply top dressing of Nitrogen in early sown maize and jowar. Farmers are also advised to undertake transplanting of tomato, brinjal, chilli and cauliflower.
 - Farmers in Bundelkhand Zone of Madhya Pradesh, are advised to continue sowing of *kharif* crops like soybean, sesame, groundnut, urd, moong, jowar and maize and treat the seeds with 2 gram thiram +1 gram carbendazim per kg of seed prior to sowing. Farmers are also advised to do hoeing and weeding in the vegetable crops.
 - Farmers in Malwa Plateau zone of Madhya Pradesh are advised to sow *kharif* crops like soybean with early varieties, maize, cotton and sorghum and transplanting of *kharif* vegetables such as tomato, brinjal and onion. Farmers are also advised for intercropping due to deficient rainfall during this week. Soil mulching or other type of mulching should be done if; the crop is of more than 20 days. Undertake weeding using hand hoe or tractor or bullock drawn doras in early sown crops. Farmers in Vindhyan Plateau of Madhya Pradesh are advised to do intercultural operations for moisture conservation in the field and avoid water logging in the field.
 - 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.
 - As wide spread rainfall occurred in all the districts of Chhattisgarh Plain Zone , rice crop have sufficient moisture however, in pulses and oilseed crops there may be water lodging 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. 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, 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 in Bastar plateau zone in Chhattisgarh are advised to complete direct sowing of early duration varieties of rice and transplanting of rice. In already sown direct seeded crops, attack of leaf folder is being observed. For its control, neem oil 5 per cent (50 ml of neem oil mixed in 1 litre of water) may be sprayed. In rice nursery, stem borer attack is there and for its prevention, upper part of leaves may be cut before transplanting as Yellow stem borer lays its eggs in the upper portion.
- **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 animals and keep them in clean, dry and well ventilated place.

Annexure I

Major Crops

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

- Sugarcane (vegetative), *ahu* rice (maturity / harvesting), *Sali* rice (nursery preparation / sowing / seedling / transplanting / tillering), *olitorius* jute (vegetative), *capsularis* jute (vegetative / harvesting), cucurbits (vegetative / flowering / fruiting), ginger / turmeric (early vegetative / vegetative), arhar (sowing / early vegetative), *kharif* sesame (sowing), groundnut (sowing) in Assam.
- *Jhum* and WRC rice (transplanting / early tillering), okra, cucurbitaceous vegetables (fruiting / harvesting), soybean (early vegetative / vegetative), sesamum (vegetative) in Arunachal Pradesh.
- *Kharif* rice (sowing / transplanting / early vegetative), soybean, groundnut (sowing / early vegetative), *kharif* maize (vegetative), cucurbits, chilli and okra (fruiting / harvesting), brinjal (sowing / transplanting), tomato (seedling / transplanting), cauliflower (nursery raising), turmeric (rhizome formation) in Manipur.
- *Sali* rice (transplanting / tillering / panicle initiation), maize (tasseling / silking), 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 (flowering / fruiting / maturity), 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 (planting / vegetative) in Mizoram.
- *Jhum* rice (milk / early dough), lowland rice (nursery preparation / transplanting), Terrace cultivation (TRC) rice (transplanting / tillering), maize (flowering / grain formation / maturity), banana (fruiting / harvesting), okra (flowering / fruiting), cowpea / bean (flowering) in Nagaland.
- *Aus* rice (panicle initiation / flowering), upland *kharif* rice (tillering), *aman* rice (sowing / seedling / transplanting), groundnut (sowing / early vegetative), arhar (vegetative), maize (tasseling / silking), cucurbits (flowering / fruiting), okra (flowering / fruiting), summer vegetables like ridge gourd, bitter gourd, sweet gourd etc. (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), bhindi, brinjal (sowing) 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 (tillering / panicle initiation / flowering), *aman* rice (transplanting), jute (vegetative / harvesting), banana (planting), *kharif* Maize (vegetative), 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) in Himachal Pradesh.

- Rice (Direct sowing / transplanting), 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 (sowing), 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, soybean, rajma, arhar, maize and ginger (sowing / early vegetative) in Uttarakhand.
- Rice (land preparation / nursery sowing / transplanting), sugarcane (vegetative growth), sunflower, fodder maize, lobia, (sowing / germination), Sanai, Dhaincha (sowing / early vegetative / vegetative), summer sugarcane (tillering), cotton, soybean and urd (sowing), sunflower, jowar, bajra, maize, arhar, (sowing), vegetables [cucumber, pumpkin, tomato, brinjal, cabbage, lady's finger, chilly, cucurbits] (sowing) in Uttar Pradesh.
- Rice (transplanting / tillering), spring sugarcane (sprouting / tillering), radish (sowing), carrot, turnip, cauliflower (transplanting / vegetative), tomato, sunflower (sowing), cotton (early vegetative), okra, chilli, brinjal (sowing / transplanting), maize, mung, mash, tur (sowing) in Punjab.
- Rice (transplanting/tillering), Sugarcane (spring season) (early vegetative), barseem (vegetative / last cut), fodder ((maize + cowpeas) (vegetative)), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), radish, cotton (sowing), turnip (sowing) in Haryana.
- Cauliflower, cabbage, onion (transplanting / germination), sugarcane (new planting), cotton (Desi kapas, B.T. kapas, Narma kapas, American Cotton) (land preparation / sowing), pearl millet, jowar and bajra mixed with guar, Sudan grass, oats, maize, sorghum etc. for green fodder (vegetative), mirch, simla mirch, guar, vegetable (tinda, water melon, pumpkin, cucumber, coriander, bhendi, ridge gourd) (sowing), *kharif* onion (nursery planting), *kharif* groundnut, rice (land preparation/sowing) other *kharif* crops viz. pearl millet, sorghum, maize, green gram, cowpea (field preparation / sowing) in Rajasthan.

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

- Sugarcane (early vegetative), rice (nursery sowing / tillering), maize (sowing/vegetative), sunflower (sowing), groundnut (sowing), cowpea (sowing), arecanut (planting), vegetables (nursery/ transplanting), coconut (flowering/nut maturity), turmeric, ginger (early vegetative), arhar (sowing), soybean (vegetative), horticultural crops (fruiting) in Karnataka.
- Sugarcane (April planting) (formative), rainfed sugarcane (planting), sesame and banana (vegetative), vegetables (planting), rice (nursery sowing/transplanting), maize (vegetative), ragi (vegetative), castor (sowing), *kharif* groundnut (sowing), early sown groundnut (vegetative/flowering), cotton (sowing), 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 (transplanting/ tillering), cashew, coconut (early vegetative) in Kerala.
- Kuruvai rice (transplanting/tillering), rainfed groundnut (sowing), cotton (vegetative/flowering), irrigated maize (vegetative), 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 in Kolhapur Division and sowing / germination in other Divisions), 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), *khariif* rice (nursery sowing / seedling / transplanting), pulses (sowing), sugarcane (vegetative / elongation), castor (sowing), vegetables (nursery sowing / seedling / transplanting), green gram, black gram (sowing / germination / emergence), red gram (sowing / germination) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Rice (nursery sowing/transplanting), maize, jowar, Arhar and soybean (sowing/germination/early vegetative), *khariif* 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 (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.

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, Dasherri, Amrapalli.

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

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

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

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

Pine apple: Que, Queen, Simachalan and Maricius.

Cashew nut: Vengrulla 1.4, BPP-4.

Jackfruit: Kadua, Khajra and Singapor.

Orissa

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

Ginger: Suprava, Suruchi and Suravi.

Kharif rice:

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

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

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

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

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

Maize: Navjot, Shakti, Decan-107.

Arhar:

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

Medium duration: Asha, Visakha.

Cotton: MCU-5 and Sabita.

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

Green gram: PDM-11 & 54, K-851,
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.

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.

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 : Kiyana 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 & Harvana

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.

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, Puas 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
Cowpea : FS-68, RC-19 and RC-101, **Moth bean:** R.M.O.-40

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 a 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).

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

Groundnut: GG 2, GG-5, 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.

Sesamum: GT-2 or GT-3.

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.

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

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.

Madhya Pradesh

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

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

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

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

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

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

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

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

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

Chattisgarh

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

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

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

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

Annexure III

Contingency plan for Karnataka (North Transition Zone)

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

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

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

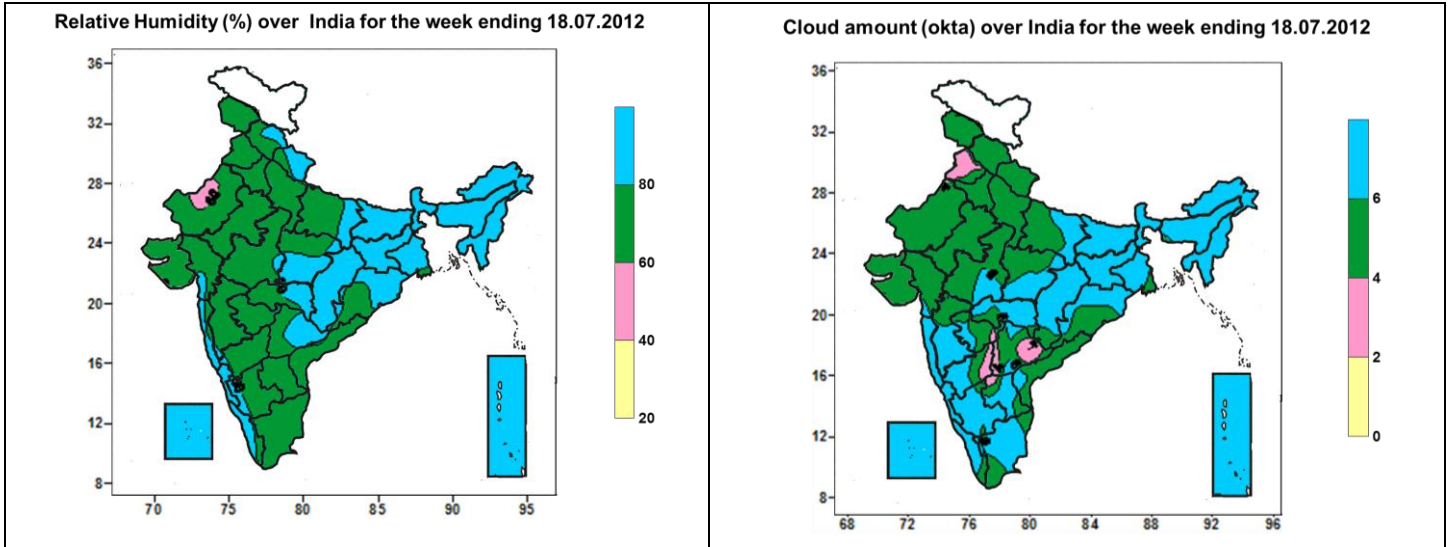
- As and when the monsoon becomes active and sufficient wetting rainfall is received in the month of July, the following contingent crop plans and measures are suggested to be taken up based on soil type and district concerned.
 - Sowing of onion, cucumber, ridgeguard, sesamum, maize, sunflower, niger,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

Contingency plans for Madhya Maharashtra

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

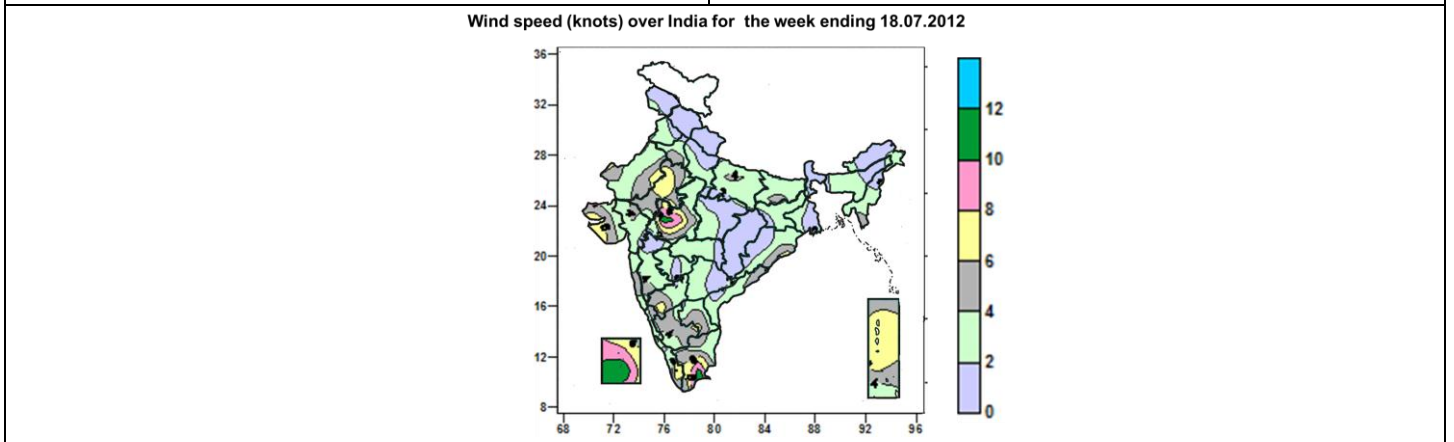
Annexure IV

Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 18.07.2012



Relative humidity ranged between 80% and above over most parts of Uttarakhand, East India, Northeast India, Chattisgarh, East Madhya Pradesh, Konkan & Goa, Coastal Karnataka, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Himachal Pradesh, East Uttar Pradesh, south Madhya Maharashtra, South Gujarat, Telangana, Interior Karnataka and 40 to 60 % over some parts of West Rajasthan, 60 to 80 % remaining parts of the country.

Cloud amount 4 to 6 okta and above over most parts of Northwest India (except Punjab), north Madhya Pradesh, Orissa, Andhra Pradesh, some parts of Gangetic West Bengal, Chhattisgarh North Madhya Maharashtra, Marathwada, Vidarbha, Interior Karnataka, Tamil Nadu, Kerala, 2 to 4 okta over many parts of Punjab, some parts of Marathwada, Telangana, Interior Karnataka and above 6 okta over remaining parts of the country.



Wind speed ranged between 10 to 12 knots and above over some parts of West Madhya Pradesh, Tamil Nadu, Lakshadweep Islands, 8 to 10 knots over some parts of West Madhya Pradesh, Tamil Nadu, Lakshadweep Islands and below 8 knots over remaining parts of country.