



Regionwise Salient Advisories

Northern India

- **Major crops :** Wheat (end harvesting), moong, urad (early vegetative / active vegetative), summer vegetables (vegetative / flowering).



- As significant rainfall occurred in Ganderwal district of Jammu & Kashmir, Lahaul and Spiti district of Himachal Pradesh, farmers are advised to postpone irrigation to the standing crops in the above mentioned districts. Apply irrigation to vegetables in the remaining districts of Jammu & Kashmir, summer moong and urad in Uttarakhand and Uttar Pradesh and summer vegetables in Himachal Pradesh, Delhi and Rajasthan.
- In view of prevailing dry weather condition, farmers are advised to apply irrigation in maize, fodder crops and also in early sown vegetables in Central Plain Zone and Eastern Zone of Uttar Pradesh.

Central India

- **Major crops :** Autumn sugarcane (vegetative / elongation), summer vegetables (early vegetative / vegetative / flowering), sesame (late vegetative).



- As no significant rainfall occurred during last week and no rainfall is likely, farmers are advised to apply irrigation to in sugarcane, summer maize and summer vegetables in the states of the region. As heat wave conditions would continue to prevail, farmers are advised to apply light and frequent irrigation to the standing crops in east Madhya Pradesh, Chhattisgarh.
- Heat wave conditions would continue to prevail over some parts of east Madhya Pradesh, Chhattisgarh during next 48 hours, farmers are advised to apply light and frequent irrigation in the morning or evening hours in vegetables like tomato, brinjal, chilli & okra, water melon and musk melon.

Eastern India

- **Major crops :** summer vegetables (vegetative / flowering / fruiting), moong, urad (vegetative), jute (sowing / early vegetative)
- As significant rainfall occurred in Bankura and Purulia districts of Gangetic West Bengal; Sikkim, Cooch Behar, Jalpaiguri, Darjeeling and South Dinajpur districts of Sub Himalayan West Bengal; Balasore, Bhadrak, Cuttack, Jajpur, Kendrapara, Keonjhar and Mayurbhanj districts of Odisha during last week, farmers are advised to postpone irrigation to the standing crops in these districts. As no significant rainfall is likely in remaining parts of the states of the region, farmers are advised to apply irrigation to the standing summer maize, summer vegetable crops, moong, sunflower, onion, autumn and spring season sugarcane and summer rice.
- As thundersquall would occur at one or two places over West Bengal, Sikkim and Odisha during next 48 hours, farmers are advised staking for vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds.
- Farmers in West Bengal, Sikkim and Odisha are advised not to stand in open field during afternoon hours to avoid thunder related accidents during thunderstorm.

Western India

- **Major crops :** New *suru* sugarcane (tillering / elongation), summer groundnut (flowering / pegging / pod formation), summer bajra (grain formation), pulses (vegetative / flowering).



- As high temperature is prevailing in some parts of Eastern Vidarbha and Marathwada, farmers are advised to apply frequent irrigation to the vegetable crops, sugarcane and orchard crops and also apply mulch in orchards and newly planted sugarcane to reduce the high rate of evaporation. Farmers in Bhandara and Gondia district in East Vidarbha are also advised to maintain 10 cm water level in rice field at grain formation stage and cover the heads of cauliflower with its leaves to protect it from the scorching sun. Apply irrigation in groundnut at pegging stage in Saurashtra Zone of Gujarat.

Northeast India

- **Major crops :** *Boro* rice (harvesting), early *ahu* rice (tillering / panicle initiation / flowering), summer vegetables (vegetative / flowering / fruiting).



- As significant rainfall occurred almost all districts of the States of the region and also rainfall is expected in many places, farmers are advised to postpone irrigation to the standing crops and also advised to arrange for adequate drainage to avoid water stagnation in the crop fields in these states of the region.
- As thundersquall and heavy rainfall would occur at one or two places over Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 48 hours, farmers are advised to arrange mechanical support to banana and staking for vegetables and also carry out propping up in sugarcane to prevent the crops from lodging due to strong winds.
- Farmers are advised not to stand in open field during afternoon hours to avoid thunder related accidents during thunderstorm.

South India

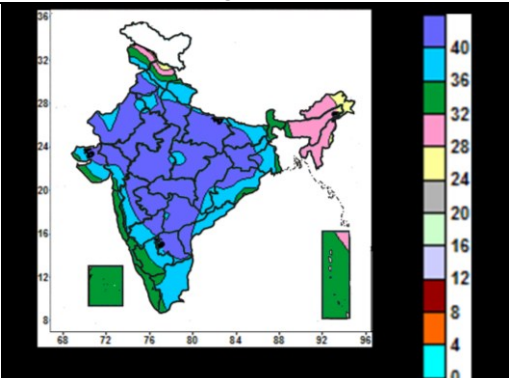
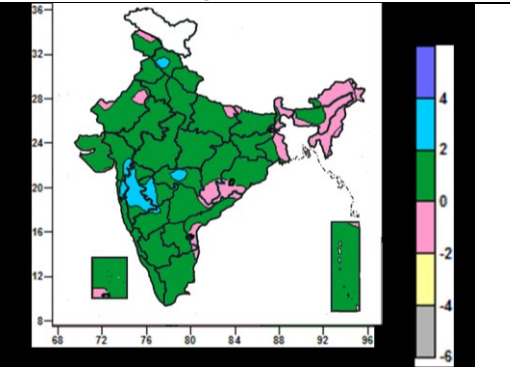
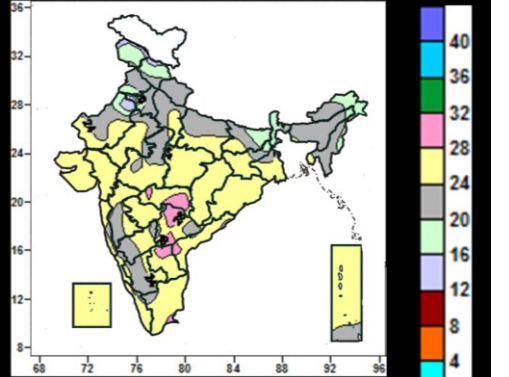
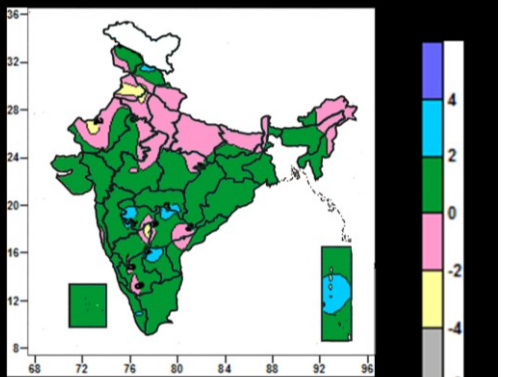
- **Major crops :** Sunflower (seed formation / maturity), summer pulses (vegetative / flowering), sugarcane (tillering / grand growth), summer groundnut (vegetative / flowering / pegging), maize (vegetative) and summer cotton (vegetative).
- As significant rainfall occurred in Alapuzha, Ernakulam, Idukki, Kollam, Kottayam, Pathanamthitta and Thiruvananthapuram in Kerala, Kanyakumari, Nilgiris, Sivaganga, Theni and Tirunelveli in Tamil Nadu, Chamrajnagar and Mysore in South Interior Karnataka, farmers are advised to postpone irrigation to the crops in the above mentioned districts and as mainly dry weather prevailed over remaining parts of the region, apply irrigation to groundnut, sugarcane, summer cotton, summer pulses and vegetable crops in the rest of the region. Farmers in Kerala and Karnataka are advised to apply plant protection measures on a non rainy day.
- As Thundersquall would occur at one or two places over North coastal Andhra Pradesh and South Interior Karnataka during next 48 hours, farmers are advised to arrange mechanical support to banana and staking for vegetables and also carry out propping up in sugarcane to prevent the crops from lodging due to strong winds.
- Farmers are advised not to stand in open field during afternoon hours to avoid thunder related accidents during thunderstorm.

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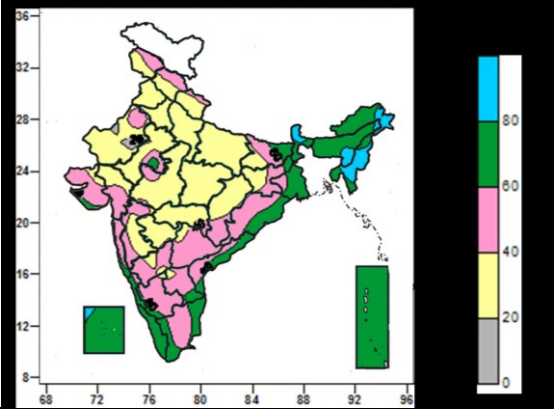
National Agrometeorological Advisory Service Centre, Agricultural Meteorology Division,
India Meteorological Department, Shivajinagar, Pune.

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

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 08.05.2013

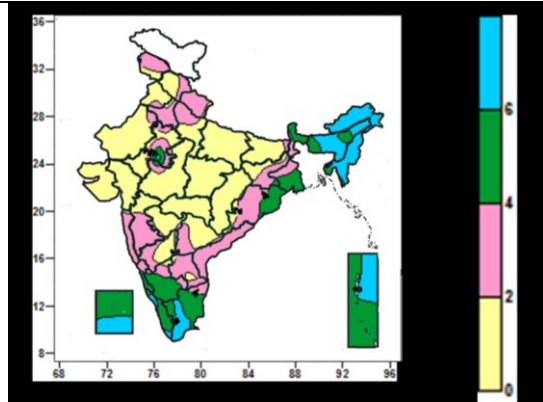
Actual Mean Maximum Temperature (°C) in India for the week ending 08.05.2013	Mean Maximum Temperature (°C) Anomaly in India for the week ending 08.05.2013
	
<ul style="list-style-type: none"> • 36 to 40°C and above over many parts of the Country (except Jammu & Kashmir, Himachal Pradesh, West Coast from Saurashtra & Kutch to Kerala, Northeast India, Sub-Himalayan West Bengal & Sikkim). • 32 to 36°C over most parts of Sub-Himalayan West Bengal & Sikkim, West Coast of India, Coastal, Lakshadweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh. • 28 to 32°C over most parts of Northeast India some parts of Jammu & Kashmir, Himachal Pradesh. • 24 to 28°C over some parts of Himachal Pradesh and Arunachal Pradesh. 	<ul style="list-style-type: none"> • 0 to 2°C and above over many parts of the country (except Northeast India, West Bengal & Sikkim and some parts of Jammu & Kashmir, East Uttar Pradesh, West Rajasthan, Orissa, Chattisgarh, Coastal Andhra Pradesh, Tami Nadu, Lakshadweep, Andaman & Nicobar Islands), • -2 to 0°C over many parts of Northeast India, West Bengal & Sikkim, some parts of Jammu & Kashmir, East Uttar Pradesh, West Rajasthan, Orissa, Chattisgarh, Andhra Pradesh, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands.
Actual Mean Minimum Temperature (°C) in India for the week ending 08.05.2013	Mean Minimum Temperature (°C) Anomaly in India for the week ending 08.05.2013
	
<ul style="list-style-type: none"> • 24 to 28°C over many parts of Rajasthan, Southern Uttar Pradesh, East India (except Bihar, Sub-Himalayan West Bengal, Sikkim), Central India, West India (except South Konkan & Goa, South Madhya Maharashtra), South India (except Interior Karnataka). • 20 to 24°C over many parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, Northeast India, south Konkan & Goa, South Madhya Maharashtra, Karnataka, , some parts of Himachal Pradesh, Rajasthan, Gangetic West Bengal, West Madhya Pradesh, Telengana, Tamil Nadu, Andaman & Nicobar Islands. • 16 to 20°C over many parts of Jammu & Kashmir, Himachal Pradesh, Sub-Himalayan West Bengal & Sikkim, some parts of Punjab, Haryana, West Rajasthan, Bihar, Arunachal Pradesh, Nagaland, Manipur. • 12 to 16°C over some parts of Jammu & Kashmir, Himachal Pradesh, West Rajasthan. 	<ul style="list-style-type: none"> • 0 to 2°C and above many parts of the country (except Punjab, Haryana, Delhi, Uttarakhand, Uttar Pradesh, West Rajasthan, Northern Bihar, Sikkim, Arunachal Pradesh, Nagaland), • -2 to 0°C over many parts of Punjab, Haryana, Delhi, Uttarakhand, Uttar Pradesh, Bihar, Sikkim, Arunachal Pradesh, Nagaland some parts of Jammu & Kashmir, Himachal Pradesh, Manipur, Madhya Pradesh, Marathwada, Coastal Andhra Pradesh, Telangana, Interior Karnataka . • -4 to -2°C over some parts of Haryana, West Rajasthan.

Relative Humidity (%) over India for the week ending 08.05.2013



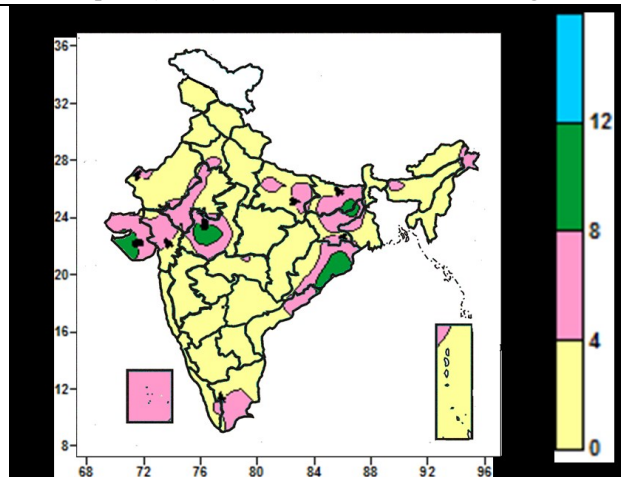
- 60 to 80% and above over many parts of Northeast India, West Bengal & Sikkim, east coast from Orissa to Tamil Nadu, Kerala, Coastal Karnataka, Goa, Lakshadweep, Andaman & Nicobar Islands.
- 40 to 60% over most parts of Orissa, Telangana, Raylaseema, Tamil Nadu, South & North Interior Karnataka, Konkan, Gujarat, Saurashtra & Kutch, some parts of Jammu & Kashmir, Himachal Pradesh, Rajasthan, Bihar, Jharkhand, West Madhya Pradesh, Chhattisgarh, Vidarbha, Madhya Maharashtra.
- 20 to 40 % over many parts of North India, Central India, Maharashtra (except Konkan & Goa), some parts of Bihar, Jharkhand, Gujarat, Kutch, Interior Karnataka, Telangana, Raylaseema.

Cloud amount (okta) over India for the week ending 08.05.2013



- 6 okta and above over some parts of Northeast India, some parts of Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Islands.
- 4 to 6 okta over many parts of West Bengal & Sikkim, Tamil Nadu, Kerala, Coastal & South Interior Karnataka, Lakshadweep, Andaman & Nicobar Islands, some parts of East Rajasthan, West Madhya Pradesh, Coastal Orissa, Assam & Meghalaya, Tripura.
- 2 to 4 okta over many parts of Jammu & Kashmir, Uttarakhand, Haryana, Delhi, Orissa, Andhra Pradesh, Madhya Maharashtra, Konkan & Goa, some parts of Himachal Pradesh, Punjab, West Uttar Pradesh, Rajasthan, West Bengal, Jharkhand, Tamil Nadu, Karnataka.
- 0 to 2 okta over many parts of Himachal Pradesh, Punjab, Uttar Pradesh, Bihar, West India (except Madhya Maharashtra, Konkan & Goa), Central India, Telangana, North Interior Karnataka, some parts of Jammu & Kashmir, Jharkhand, Orissa, Rayalaseema.

Wind speed (knots) over India for the week ending 08.05.2013



- 8 to 12 knots over some parts of Saurashtra, West Madhya Pradesh, Bihar, Jharkhand, Coastal Orissa.
- 4 to 8 knots over many parts of Gujarat, Saurashtra & Kutch, East Rajasthan, West Madhya Pradesh, Bihar, Jharkhand, South Tamil Nadu, Lakshadweep Islands, some parts of Haryana, Uttar Pradesh, Gangetic West Bengal, Assam, Arunachal Pradesh, Orissa, Coastal Andhra Pradesh and Andaman & Nicobar Islands.
- 0 to 4 knots over many parts of the country except Gujarat, Saurashtra & Kutch, East Rajasthan, West Madhya Pradesh, Bihar, Jharkhand, South Tamil Nadu, Lakshadweep Islands.

Significant realized rainfall during last week

Significant rainfall received in most of the districts of Northeast India; Sub-Himalayan West Bengal; Sikkim; many districts of Kerala; Lahaul and Spiti district of Himachal Pradesh; Ganderwal district of Jammu & Kashmir; Balasore, Bhadrak, Cuttack, Jajpur, Kendrapara, Keonjhar, Mayurbhanj districts of Orissa; Bankura, Purulia districts of Gangetic West Bengal, Chamarajnar, Mysore districts of South Interior Karnataka; Kanyakumari, Nilgiris, Sivaganga, Theni, Tirunelveli districts of Tamil Nadu. Mainly dry weather prevailed over rest parts of the country.

Distribution of rainfall of the country during week ending on 08.05.2013

State/Districts	Actual (mm)	% dep.
Arunachal Pradesh		
Anjaw	**	**
Changlang	67.5	6
Dibang Valley	239.0	593
East Kameng	41.7	1
East Siang	111.8	82
Kurung Kumey	**	**
Lohit	209.6	189
Lower Dibang Valley	42.0	22
Lower Subansari	29.0	-35
Papumpara	153.9	55
Tawang	75.0	19
Tirap	74.2	14
Upper Siang	234.1	306
Upper Subansari	**	**
West Kameng	51.1	-19
West Siang	106.8	123
Assam		
Baksa	57.7	-28
Barpeta	90.1	12
Bongaigaon	148.0	32
Cachar	318.7	272
Chirang	99.3	-11
Darrang	8.0	-90
Dhemaji	71.0	10
Dhubri	56.6	-22
Dibrugarh	105.4	55
Goalpara	132.4	50
Golghat	39.9	-41
Hailakandi	250.2	148
Jorhat	57.7	-8
Kamrup(Rural)	71.6	10
Kamrup(Metro)	80.6	23
Karbi Anglong	**	**
Karimganj	125.1	-1
Kokrajhar	72.5	-32
Lakhimpur	82.9	29
Morigaon	22.4	-49

State/Districts	Actual (mm)	% dep.
N.C.Hills	174.5	162
Nowgong	24.1	-44
Nalbari	83.8	-13
Sonitpur	104.4	60
Sibsagar	45.0	-27
Tinsukia	92.4	53
Udalgiri	51.6	-35
Meghalaya		
East Garo Hills	2.0	-98
East Khasi Hills	301.2	105
Jaintia Hills	54.0	-61
Ribhoi	91.6	53
South Garo Hills	68.0	-5
West Garo Hills	83.2	16
West Khasi Hills	124.0	59
Mizoram		
Aizwal	200.4	167
Champhai	140.0	139
Chhaintuipui	**	**
Kolasib	91.0	26
Lawngtlai	163.0	264
Lunglei	177.0	244
Mamit	115.0	53
Saiha	193.0	183
Serchhip	166.0	225
Manipur		
Churachandpur	16.0	-73
Imphal east	188.9	320
Thoubal	140.0	476
Ukhrul	45.0	45
Nagaland		
Dimapur	37.0	8
Kephire	1.0	-98
Kohima	47.7	46
Longleng	**	**
Mokokchung	41.0	34
Phek	24.1	-26
Tuensang	**	**
Wokha	0.0	-100

State/Districts	Actual (mm)	% dep.
Zunheboto	151.0	157
Tripura		
Dhalai	230.7	127
North tripura	340.3	204
South tripura	227.3	203
West tripura	220.0	170
Himachal Pradesh		
Bilaspur	0.0	-100
Chamba	0.5	-93
Hamirpur	0.0	-100
Kangra	0.0	-99
Kinnaur	13.0	-18
Kullu	7.5	-54
Lahaul and Spiti	26.5	45
Mandi	1.1	-88
Shimla	0.2	-99
Sirmaur	0.0	-100
Solan	0.2	-97
Una	0.0	-100
Jammu & Kashmir		
Anantnag	19.2	7
Badgam	7.7	-32
Bandipore	**	**
Baramula	13.3	-54
Doda	3.8	-78
Ganderwal	24.9	83
Jammu	0.0	-100
Kargil	0.0	-100
Kathua	0.0	-100
Kistwar	**	**
Kulgam	15.7	-13
Kupwara	6.6	-65
Ladakh(Leh)	1.5	28
Poonch	0.0	-100
Pulwama	8.0	-40
Rajouri	0.0	-100
Ramban	4.1	-77
Reasi	0.0	-100
Samba	0.0	-100

State/Districts	Actual (mm)	% dep.
Shopian	11.0	-17
Srinagar	7.0	-49
Udhampur	0.0	-100
Orissa		
Angul	17.9	135
Balasore	49.6	117
Bargarh	2.1	-50
Bhadrak	69.0	281
Bolangir	1.9	-66
Boudh	1.3	-89
Cuttack	33.9	189
Deogarh	1.5	-71
Dhenkanal	14.6	-11
Gajapati	0.0	-100
Ganjam	0.8	-94
Jagatsingpur	7.8	-28
Jajpur	56.0	367
Jharsuguda	0.1	-99
Kalahandi	0.0	-100
Kandhamal	0.0	-100
Kendrapara	22.3	34
Keonjhar	44.4	144
Khurda	9.2	5
Koraput	0.0	-100
Malkangiri	0.0	-100
Mayurbhanj	62.4	274
Nawapara	0.0	-100
Nawarangpur	11.6	-41
Nayagarh	6.5	-14
Puri	13.5	38
Rayagada	0.0	-100
Sambalpur	3.9	-23
Sonepur	0.0	-100
Sundargarh	0.9	-86
West Bengal		
GWB		
Bankura	30.2	103
Birbhum	2.5	-83
Burdwan	8.0	-47
East Midnapore	6.3	-75
Hooghly	0.0	-100
Howrah	8.0	-49
Kolkata	0.0	-100
Murshidabad	0.0	-100

State/Districts	Actual (mm)	% dep.
Nadia	0.0	-100
24 Pargana (N)	2.5	-91
Purulia	24.8	107
24 Pargana (S)	16.6	-21
West Midnapore	8.6	-53
SHWB		
Cooch Behar	48.5	-13
Darjeeling	24.3	-52
East Sikkim	139.6	138
Jalpaiguri	38.4	-36
Malda	0.0	-100
North Dinajpur	0.0	-100
North Sikkim	160.1	110
South Dinajpur	27.2	-18
South Sikkim	40.2	-32
West Sikkim	37.0	-51
Karnataka		
S I Karnataka		
Bangalore Rural	7.8	-61
Bangalore Urban	6.0	-69
Bellary	17.8	107
Chamarajnar	24.3	-9
Chichballapur	3.8	-67
Chickmagalur	11.7	-38
Chitradurga	1.6	-82
Davangere	1.8	-86
Hassan	14.8	-31
Kodagu	6.3	-78
Kolar	9.4	-16
Mandya	13.1	-30
Mysore	21.5	-6
Ramnagara	10.8	-57
Shimoga	1.1	-93
Tumkur	9.4	-38
Kerala		
Alappuzha	30.2	-35
Kannur	0.0	-100
Ernakulam	29.7	-12
Idukki	35.6	7
Kasaragod	0.0	-100
Kollam	47.2	7
Kottayam	72.5	69

State/Districts	Actual (mm)	% dep.
Kozhikode	1.6	-94
Malappuram	2.3	-94
Palakkad	3.2	-89
Pathanamthitta	55.0	-6
Thiruvananthapuram	48.7	41
Thrissur	6.3	-83
Wyanad	12.5	-49
Tamil Nadu		
Ariyalur	0.0	-100
Chennai	0.0	-100
Coimbatore	2.2	-89
Cuddalore	0.2	-98
Dharmapuri	4.0	-78
Dindigul	18.7	-1
Erode	2.4	-86
Kanchipuram	0.0	-100
Kanyakumari	40.0	49
Karikal	0.0	-100
Karur	3.1	-78
Krishnagiri	8.4	-57
Madurai	7.4	-46
Nagapattinam	0.0	-100
Namakkal	6.9	-60
Nilgiris	37.0	67
Perambalur	0.0	-100
Puducherry	0.0	-100
Pudukottai	0.4	-96
Ramanathapuram	5.1	-40
Salem	2.8	-85
Sivaganga	21.4	64
Thanjavur	2.6	-79
Theni	45.8	163
Tirunelveli	21.4	43
Tirupur	0.0	-100
Tiruvallur	0.1	-99
Tiruvannamalai	0.0	-100
Tiruvarur	0.0	-100
Toothukudi	1.3	-86
Trichy	0.0	-100
Vellore	0.0	-100
Villupuram	0.0	-100
Virudhunagar	4.5	-76

Legends

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

Weather Forecast

Major Feature of Weather Forecast up to 0830 hours IST of 13th May, 2013

- Rain/thundershowers would occur at a few places over Jammu & Kashmir and at one or two places over Himachal Pradesh and Uttarakhand during next 24 hours and increase thereafter over Jammu & Kashmir.
- Duststorm/thunderstorm may occur at one or two places over Punjab, Haryana, Delhi and Rajasthan on 11th & 12th May.
- Rain/thundershowers would occur at many places over northeastern states and Sub-Himalayan West Bengal & Sikkim.
- Rain/thundershowers would occur at one or two places over Bihar, Jharkhand, Chhattisgarh, Odisha and Gengetic West Bengal during next 48 hours.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 24 hours and increase thereafter.
- Rain/thundershowers would occur at a few places over Lakshadweep, Kerala and Karnataka and at one or two places over Andhra Pradesh and Tamilnadu.
- Maximum temperatures would fall by 1-2°C over northwest and adjoining central India from tomorrow onwards.

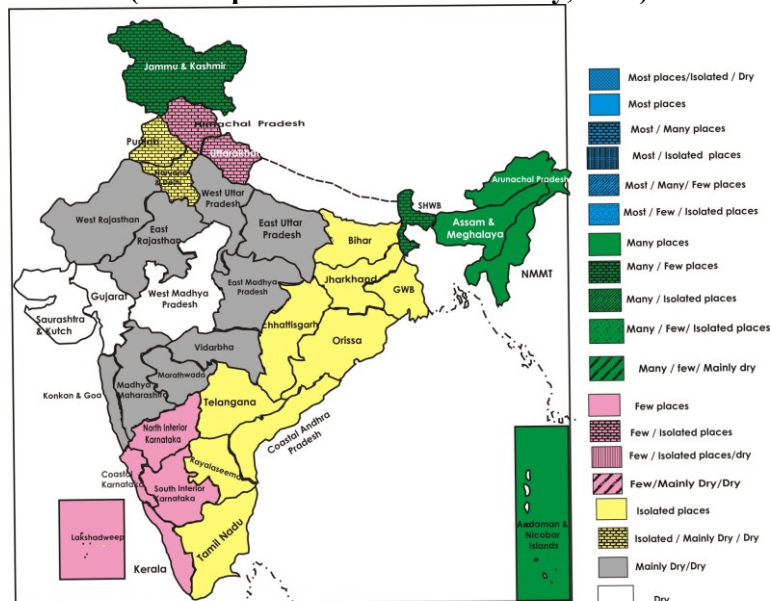
Weather Warning during next 3 days

- Heat wave conditions would continue to prevail over some parts of Vidarbha, east Madhya Pradesh, Chhattisgarh and interior Odisha during next 48 hours.
- Thundersquall would occur at one or two places over Odisha, West Bengal & Sikkim, north coastal Andhra Pradesh, south interior Karnataka, Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 48 hours.
- Heavy rainfall would occur at one or two places over Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura during next 48 hours.

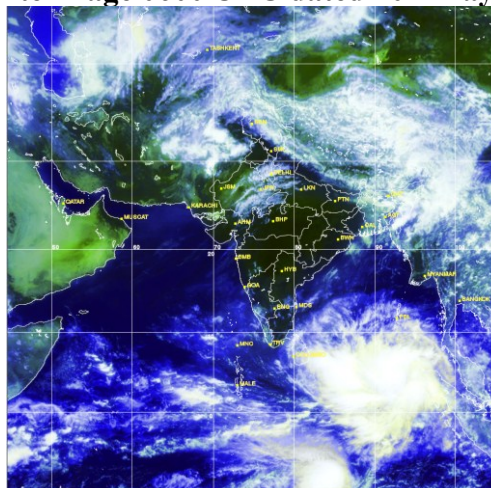
Weather Outlook for subsequent 4 days from 13th to 17th May, 2013

- Rain/thundershowers would occur at many places over northeastern states and at one or two places over West Bengal & Sikkim.
- Rainfall activity may increase along east coast from 12th May onwards.
- Rainfall activity would increase over Andaman & Nicobar Islands and adjoining sea areas.
- Maximum temperature would increase by 2-3°C over northwest and adjoining central India.

Weather Forecast Map (Valid upto 0830 hours of 13th May, 2013)



Satellite image 0600 UTC dated 10th May, 2013



Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in Ganderwal district of Jammu & Kashmir, Lahaul and Spiti district of Himachal Pradesh and weather remained mainly dry over rest parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Jammu & Kashmir and at one or two places over Himachal Pradesh and Uttarakhand during next 24 hours and increase thereafter over Jammu & Kashmir. Duststorm / thunderstorm may occur at one or two places over Punjab, Haryana, Delhi and Rajasthan on 11th & 12th May. Maximum temperatures would fall by 1-2°C from 11th May onwards.
- **Advisory:**
 - As significant rainfall occurred in Ganderwal district of Jammu & Kashmir, Lahaul and Spiti district of Himachal Pradesh, farmers are advised to postpone irrigation to the standing crops in the above mentioned districts. Apply irrigation to vegetables in the remaining districts of Jammu & Kashmir, summer moong and urad in Uttarakhand and Uttar Pradesh and summer vegetables in Himachal Pradesh, Delhi and Rajasthan.
 - In view of prevailing dry weather condition, farmers are advised to apply irrigation in maize, fodder crops and also in early sown vegetables in Central Plain Zone and Eastern Zone of Uttar Pradesh.
 - As mainly dry weather would prevail in Uttarakhand, farmers are advised to complete harvesting and threshing of matured wheat, barley etc. crops in clear weather and give light irrigation to sugarcane, vegetables, late sown moong, urd, lobia etc.
 - Duststorm / thunderstorm may occur at one or two places over Punjab, Haryana, Delhi and Rajasthan, farmers are advised to give light irrigation to vegetable crops at vegetative / flowering stage in Punjab, Haryana, Delhi and to summer vegetables, *zaid* fodder crops, *Cucurbitaceous* crops and small fruit plants in Rajasthan.
 - Due to prevailing weather conditions in Eastern Plain Zone of Uttar Pradesh, there may be chance of yellow mosaic disease in pulses like urad and moong, farmers are advised to spray Endosulphan 35 EC @ 1.25 liter in 800-1000 liter of water per/ha.
 - Due to prevailing high temperature in Barbar and Tarai zone of Uttarakhand, armyworm insects may damage leaves of sugarcane crop; if the damage is more than 10% then farmers are advised to submerge the crop field with 4 inch water, if still insects are seen then spray 36 EC Monochrotophos @ 1 ml per liter of water in the evening after 4 PM for effective control.
 - Due to fluctuation in day and night temperature in Semi Arid Eastern Plain Zone of Rajasthan, there are chances of mosaic in okra, cucumber mosaic virus (CMV) and watermelon virus (WMC) in summer cucurbits; farmers are advised to check spread of mosaic disease, uproot & burn the affected plants and spray Dithane M 45 @ 2 ml per litre of water in summer cucurbits.
 - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
- In Rajasthan, as dry weather conditions prevail in Arid Western Plain Zone, farmers are advised to make arrangements for proper shade, water and green fodder during this period. Ecto and endo parasites may attack livestock due to changed weather conditions. To prevent/ control ecto parasites like lice, mite, jock etc., farmers are advised to apply Butox/Tickle @ 1 ml/l on the body of animal.
- Due to increase in day temperature, farmers of Barbar and Tarai zone of Uttarakhand are advised to keep animals under shade of trees or in shed during noon time.
- **Horticulture crops**
 - In Subtropical and Intermediate Lower zone of Jammu & Kashmir, farmers are advised to white wash the lower portion of the trunk/stem of mango, litchi, citrus, ber, loquat and guava fruit trees with a thick solution to which little quantity of copper sulphate is added to ward off fungal diseases for protection of fruit plants against hot sun. Farmers are also advised to protect young plants by providing thatching/cover of any farm waste material but circulation of air in the thatches/cover should be ensured.
 - Farmers in Punjab & Haryana are advised to plant evergreen fruit plants like citrus, mango, litchi, guava, loquat and ber in the field. To avoid the adverse effect of hot weather on fruit trees apply whitewash on the trunk of trees, if not done earlier.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather was mainly dry in the region.
- **Weather forecast:** Rain/thundershowers would occur at one or two places over Chhattisgarh during next 48 hours.
- **Weather Warning:** Heat wave conditions would continue to prevail over some parts of east Madhya Pradesh, Chhattisgarh during next 48 hours.
- **Advisories:**

- As no significant rainfall occurred during last week and no rainfall is likely, farmers are advised to apply irrigation to sugarcane, summer maize and summer vegetables in the states of the region. As heat wave conditions would continue to prevail, farmers are advised to apply light and frequent irrigation to the standing crops in east Madhya Pradesh, Chhattisgarh.
- Dry weather and no rainfall expected in Kymore Plateau and Satpura Hills Zone, Gird Zone and Satpura Plateau Zone of Madhya Pradesh hence farmers are advised to irrigate summer moong, vegetables and fodder (sorghum and maize) crops during evening hours regularly.
- In view of dry weather and high maximum temperature in Bundelkhand Zone of Madhya Pradesh, farmers are advised to give irrigation in all vegetable crops, including orchards.
- Heat wave conditions would continue to prevail over some parts of east Madhya Pradesh, Chhattisgarh during next 48 hours, farmers are advised to apply light and frequent irrigation in the morning or evening hours in vegetables like tomato, brinjal, chilli & okra, water melon and musk melon.
- Due to prevailing heat wave conditions, farmers in Malwa Plateau Zone are advised to protect the fruits of cucurbitaceous plants like watermelon, bottle gourd, cucumber, sponge gourd by covering and also irrigate the plants in the morning or evening hours.
- Due to prevailing heat wave condition in Chhattisgarh Plain Zone, farmers are advised to apply light and frequent irrigation in summer vegetables and light irrigation in groundnut at pod filling stage and in sunflower in the morning or evening hours.
- Prevailing hot weather conditions in Chhattisgarh Plain Zone may enhance early maturity of vegetables, so farmers are advised to harvest matured crops.
- Due to high temperature there is chance of white fly and fruit borer attack in vegetables in Malwa Plateau Zone of Madhya Pradesh. Farmers are advised to apply Dimethoate (Rogor) 1 ml/liter of water for their control.
- Other advisories are mentioned in Annexure – I.
- Stages of major crops are mentioned in Annexure II.
- **Animal Husbandry & Poultry**
 - Farmers in Madhya Pradesh are advised to keep animals in shady and cool places and provide frequent drinking water (two-three times) in view of the prevailing high temperature. They are also advised to cover the window and doors of poultry farms with gunny bags between 11 am to 4 pm and keep wet with water, remove the gunny bags after 4 pm.

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

- **Realised Rainfall:** Significant rainfall occurred in Bankura and Purulia districts of Gangetic West Bengal; Sikkim, Cooch Behar, Jalpaiguri, Darjeeling and South Dinajpur districts of Sub Himalayan West Bengal; Balasore, Bhadrak, Cuttack, Jajpur, Kendrapara, Keonjhar and Mayurbhanj districts of Odisha and mainly dry weather prevailed over Bihar and Jharkhand during last week.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Sub-Himalayan West Bengal & Sikkim and at one or two places over Bihar, Jharkhand, Odisha and Gangetic West Bengal during next 48 hours.
- **Weather Warning:** Thundersquall would occur at one or two places over West Bengal, Sikkim and Odisha during next 48 hours.
- Heat wave conditions would continue to prevail over interior Odisha during next 48 hours.
- **Advisories:**
 - As significant rainfall occurred in Bankura and Purulia districts of Gangetic West Bengal; Sikkim, Cooch Behar, Jalpaiguri, Darjeeling and South Dinajpur districts of Sub Himalayan West Bengal; Balasore, Bhadrak, Cuttack, Jajpur, Kendrapara, Keonjhar and Mayurbhanj districts of Odisha during last week, farmers are advised to postpone irrigation to the standing crops in these districts. As no significant rainfall is likely to occur in remaining parts of the States of the region except in Sub-Himalayan West Bengal & Sikkim, farmers are advised to apply irrigation to the standing summer maize, summer vegetable crops, moong, sunflower, onion, autumn and spring season sugarcane and summer rice.
 - As thundersquall would occur at one or two places over West Bengal, Sikkim and Odisha during next 48 hours, farmers are advised staking for vegetables and propping up in sugarcane to prevent the crops from lodging due to strong winds.
 - Farmers in West Bengal, Sikkim and Odisha are advised not to stand in open field during afternoon hours to avoid thunder related accidents during thunderstorm.
 - In view of prevailing dry weather condition in South Bihar Alluvial Zone, farmers are advised to apply irrigation to summer vegetables, moong.
 - As dry weather prevailed during last week, farmers in North West Alluvial Plain Zone of Bihar are advised to apply irrigation in summer vegetables, maize crops and lichi orchards in the evening.
 - As dry weather is likely to continue for next three days, the farmers of North Eastern Coastal Plain Zone of Odisha are advised to irrigate the summer paddy crop and maintain 2 inches depth of water and also irrigate hybrid maize.

- As no rain is expected and temperature is expected to rise, the farmers of West Central Table Land Zone of Odisha are advised to irrigate the summer groundnut crop.
- Due to prevailing high temperature in Jharkhand, farmers are advised to irrigate summer moong and vegetables at regular interval and maintain optimum water level in summer rice field as the crop is in milking to grain maturity stage.
- Due to high temperature there is possibility of thrips infestation and purple blotch in onion and garlic. Farmers of West Central Table Land Zone of Odisha are advised to spray Prophenophos @ 4ml/litre with sticker and Mancozeb @ 4g/litre with sticker alternatively at 10 days interval.
- Due to humid weather in Terai Zone and Laterite and Red Soil Zone of West Bengal, there is possibility of occurrence of branch and fruit rot in pointed gourd. To control spray Mancozeb 64%+ Metalaxyl 8%, 1 g per litre of water.
- Attack of Thrips in timely sown summer moong crops which are at flowering stage is noticed in Western Plateau Zone of Jharkhand. Farmers are advised to spray Trizophos or Profanaphos during evening @ 1 ml per litre of water for its control.
- **Animal Husbandry**
- In view of the prevailing high temperature, farmers in South West Alluvial Plain Zone of Bihar are advised to keep livestock in shade and provide more amount of drinking water.
- Due to prevailing heat wave conditions in interior Odisha, farmers are advised that grazing /feeding of cattle/goats may be done during morning/ evening hours. Keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking.
- In Jharkhand, there is possibility of attack of heat stroke in animals due to prevailing high day temperature. Hence, animals should be kept in shade during noon hours and give plenty of fresh water for drinking. To keep the shed cool, jute bag may be hanged as curtain in the windows and it should be wetted time to time.
- **Poultry**
- In Jharkhand, due to high temperature, preventive measure should be taken by giving mixture of Vitamin C and spraying of cool water during noon time to poultry birds. Roof of asbestos sheet should be painted with white paint, supply sufficient amount of wet poultry feed.
- Due to high temperature, hens may be affected from heat stroke. Farmers in South Bihar Alluvial Zone are advised to take special care to protect the hens.
- **Pisciculture**
- Farmers of Western Undulating Zone and Eastern Ghat High Land Zone of Odisha are advised that as high temperature reduces the oxygen in the fish pond, stir the pond water early in the morning from a corner for better oxygen supply. Feed the fish with rice bran and groundnut cake @ 5kg per day per acre of pond area.

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

- **Realised Rainfall:** Significant rainfall occurred in all districts of the States of the region except in Darrang district of Assam and East Garo Hills of Meghalaya.
- **Weather Forecast:** Rain/thundershowers would occur at many places over the states of the region.
- **Weather warning:** Thundersquall would occur at one or two places over Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 48 hours. Heavy rainfall would occur at one or two places over Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura during next 48 hours.
- **Outlook:** Rain/thundershowers would occur at many places over the States of the region.
- **Advisories:**
 - As significant rainfall occurred almost all districts of the States of the region and also rainfall is expected in many places, farmers are advised to postpone irrigation to the standing crops and also advised to arrange for adequate drainage to avoid water stagnation in the crop fields in these states of the region.
 - As thundersquall and heavy rainfall would occur at one or two places over Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 48 hours, farmers are advised to arrange mechanical support to banana and staking for vegetables and also carry out propping up in sugarcane to prevent the crops from lodging due to strong winds.
 - In Sub-Tropical Hill Zone of Arunachal Pradesh, farmers are advised to arrange for adequate drainage to avoid water stagnation in the fields of maize, black gram, green gram, soybean and vegetables.
 - Farmers in Sub Tropical Plain Zone of Manipur are advised to drain out excess water from crops field of maize, soybean, groundnut, ginger, turmeric, cucurbits and summer vegetable. Also, drain out excess water from the rice field and maintain water depth of 5-8 cm.
 - In view of likely occurrence of rain at many places during the period, farmers in Mild Tropical Hill Zone of Nagaland are advised to provide proper drainage and earthing up in maize as the crop is highly susceptible to water logging.
 - Due to increase in RH and probable increase in temperature in the coming days in Central Brahmaputra Valley Zone of Assam, there is chance of attack of blast disease in *ahu* rice; farmers are advised to spray Bavistin @ 1 g per litre of water after current spells of rain.

- Due to prevailing weather conditions in Barak Valley Zone of Assam, there is chance of attack of beetles and fruit and shoot borer in summer gourd, vegetables and okra; farmers are advised to spray Malathion 50 EC @ 1.5 litres / ha mixed in 500 – 700 liters of water after the current spells of rain.
- High soil moisture coupled with poor drainage and relatively high temperatures favour rapid development of damping off on brinjal. Farmers in Mild Tropical Hill Zone of Nagaland are advised to monitor the crop.
- In Mild Tropical Plain Zone of Tripura, due to prevailing weather conditions, there is chance of fruit and shoot borer on summer brinjal and tomato; farmers are advised to apply Cypermethrin @ 1.5 ml or Flubendamid @ 0.5 ml per liter of water before start of rain.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
- The prevalent weather is congenial for respiratory diseases in poultry, farmers in Mild Tropical Hill Zone of Nagaland are advised to monitor poultry.
- Farmers in Sub Tropical Plain Zone of Manipur are advised to provide proper drainage around the poultry and animal sheds to avoid water logging as mosquitoes breeding may take place in it. Also, take care that there is no water leakage in the sheds.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Mainly dry weather prevailed over the States of the region.
- **WeatherForecast:** Dry/Mainly dry weather would prevail over remaining parts in the region.
- **Outlook:** Mainly dry weather would prevail over the States of the region.
- **Advisories:**
- As very high temperature is prevailing in some parts of Eastern Vidarbha and Marathwada, farmers are advised to apply frequent irrigation to the vegetable crops, sugarcane and orchard crops and also apply mulch in orchards and newly planted sugarcane to reduce the high rate of evaporation.
- Farmers in Bhandara and Gondia district in East Vidarbha are also advised to maintain 10 cm water level in rice field at grain formation stage and cover the heads of cauliflower with its leaves to protect it from the scorching sun. Apply irrigation in groundnut at pegging stage in Saurashtra Zone of Gujarat.
- As there was no significant rainfall in the State and mainly dry weather expected over the State during next 3 days, farmers are advised to apply irrigation to summer *bajra* at grain formation stage (Pune and Nasik region), groundnut at pod development stage, sugarcane and vegetables in morning hours or in the evening to avoid excessive evaporation.
- Due to prevailing high temperature and acute water shortage in the State, farmers in Madhya Maharashtra are advised to apply either drip / sprinkler irrigation or flood irrigation in alternate furrow to sugarcane and apply mulch @ 5 tons trash / ha in furrows to conserve soil moisture.
- Considering dry weather conditions in Konkan, farmers are advised to apply 15 to 20 litres of water per newly planted mango grafts at an interval of 10-15 days and mulching to reduce high evaporation. Provide shade net to saplings like coconut, arecanut, cinnamon, nutmeg and clove to protect from scorching sun.
- Due to high day temperature (around 40°C), there may be wilting in already sown irrigated cotton due to water stress, farmers in Ahmednagar district of Maharashtra are advised to apply irrigation.
- Due to prevailing high temperature (around 39°C), farmers in Pune region of Maharashtra are advised to apply irrigation to banana @ 20 litres of water / plant / day by flood irrigation and apply 13-14 litres of water / dripper. Cover the banana bunch with porous gunny bags to protect them from scorching sun.
- As mango is at maturity stage at most places in Konkan, farmers are advised to harvest mango (at 80-85 % maturity stage) with stalk intact early in the morning or late in the evening.
- Due to prevailing high temperature in North Saurashtra Zone of Gujarat, farmers are advised to apply irrigation in groundnut at pegging stage.
- In South Gujarat Zone farmers are advised to protect banana bunches from high maximum temperature by covering with plastic sheet.
- Undertake mulching in mango in Bhal and Coastal Zone of Gujarat using crop residues to minimize the rate of evaporation due to high temperature.
- In South Gujarat Zone, due to high temperature farmers are advised to provide shadow with shade net or coconut leaves for young mango plant. Also give drip irrigation for 2 to 3 hrs.
- Due to prevailing cloudy weather there may be increase in the incidence of aphids, jassids, white fly, spider mite in brinjal in Western Maharashtra Scarcity Zone. Spray Imidachloprid @ 4 ml or Carbosulphan @ 10 ml in 10 litres of water.
- Rise in maximum and minimum temperature (2-4°C above normal) is congenial for attack of early shoot borer in newly planted sugarcane in Pune and Kolhapur region of Maharashtra; use 2 Phule Trichocard per acre at 10 days interval for 2-3 times.
- Due to cloudy weather conditions, there is possibility of incidence of anthracnose on mango fruits in North Konkan of Maharashtra; spray Bordeaux mixture 1 % or Carbendazim @ 10 g in 10 litres of water. Due to high

day temperature, there is possibility of incidence of thrips on new flush and grafts of various fruit crops; spray Acephate @ 1.5 g per litre of water.

- In South Gujarat Heavy Rainfall Zone, due to high temperature and humidity there is a possibility of shoot and stem borer attack on sorghum; farmers are advised to control them by spraying chlorpyrifos 20 EC @ 20 ml or quinalphos 25 EC @ 20 ml or monocrotophos 12 ml per 10 litre of water.
- In Bhal and Coastal Zone of Gujarat, farmers are advised to spray Monocrotophos 0.04% @ 12 ml per 10 litre of water to manage shoot and fruit borer attack in brinjal and okra.
- In Middle Gujarat Zone, due to high temperature, there is chance of occurrence of blast disease in summer rice and infestation of sucking pests in summer vegetables; apply carbendazim @ 10 g per 10 litres of water 2-3 times at an interval of 10 days for blast and phosphamidon 10 ml per 10 liter of water to control sucking pests.
- Stages of the crops are mentioned in Annexure I.

Animal Husbandry

- As high maximum temperature is persisting and also predicted in Gujarat, keep animals under shade during noon hours and provide clean drinking water. Increase the green fodder quantity for feeding. Make arrangement of curtains for poultry house. In North Saurashtra Zone, vaccinate animals against FMD and BQ to avoid disease outbreak.

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

- **Realised Rainfall:** Significant rainfall occurred in Alapuzha, Ernakulam, Idukki, Kollam, Kottayam, Pathanamthitta and Thiruvananthapuram in Kerala, Kanyakumari, Nilgiris, Sivaganga, Theni and Tirunelveli in Tamil Nadu and Chamarajnar and Mysore in South Interior Karnataka. Mainly dry weather prevailed over remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at a few places over Kerala and Karnataka and at one or two places over Tamil Nadu and Andhra Pradesh.
- **Warning:** Thundersquall would occur at one or two places over North Coastal Andhra Pradesh and South Interior Karnataka during next 48 hours.
- **Outlook:** Rainfall activity may increase in the region from 12th onwards.
- **Advisories:**
 - As significant rainfall occurred in Alapuzha, Ernakulam, Idukki, Kollam, Kottayam, Pathanamthitta and Thiruvananthapuram in Kerala, Kanyakumari, Nilgiris, Sivaganga, Theni and Tirunelveli in Tamil Nadu, Chamrajnar and Mysore in South Interior Karnataka, farmers are advised to postpone irrigation to the crops in the above mentioned districts and as mainly dry weather prevailed over remaining parts of the region, apply irrigation to groundnut, sugarcane, summer cotton, summer pulses and vegetable crops in the rest of the region. Farmers in Kerala and Karnataka are advised to apply plant protection measures on a non rainy day.
 - Thundersquall would occur at one or two places over North coastal Andhra Pradesh and South Interior Karnataka during next 48 hours, farmers are advised to arrange mechanical support to banana and staking for vegetables and also carry out propping up in sugarcane to prevent the crops from lodging due to strong winds.
 - Farmers in North Coastal Andhra Pradesh and South Interior Karnataka are advised not to stand in open field during afternoon hours to avoid thunder related accidents during thunderstorm.
 - Due to prevailing dry weather conditions in Cauvery Delta Zone of Tamil Nadu, farmers are advised to provide irrigation to sesame, black gram, sugarcane and rice fallow cotton.
 - Farmers in South Zone of Tamil Nadu to give support to banana and propping to sugarcane to prevent crop damage, as winds with high speed (30-40 kmph) in Thoothukudi district is expected in the coming days.
 - Due to prevailing weather, black stem disease incidence may be noticed in sesame in the Western Zone of Tamil Nadu. Farmers are advised to monitor the incidence and drench the soil with Carbendazim @ 2g/litre.
 - As rainfall is expected in the State, farmers in the High Altitude Hilly Zone of Tamil Nadu, farmers are advised to avoid spraying of chemicals.
 - Due to dry weather prevailed and no significant rainfall is likely for the next few days, farmers in the North Transition Zone of Karnataka are advised to conserve soil moisture by mulching of dry leaves and grass in the sugarcane crop.
 - Prevailing weather conditions (high day temperature) are favorable for incidence of fruit borer and Anthracnose in mango, bacterial leaf spot in pomegranate and sucking pests in Bt. cotton in Scarce Rainfall Zone of Rayalaseema. Farmers are advised to spray Chlorpyrifos @2.5 ml or Dichlorovos @1.5 ml or neem oil @ 3.0 ml + chlorpyrifos @ 2.5 ml /litre of water to control fruit borer, Blitox @3gm per litre of water to control anthracnose, Blitox @3gm or Agrimycin 200 mg per litre of water to control bacterial leaf spot and stem painting with Monocrotophos+water @1:20 after 20, 40, 60 and 80 DAS to control sucking pests in Bt. cotton.
 - Prevailing high humidity may accelerate the incidence of Anthracnose in cowpea in Southern Zone of Kerala. Farmers are advised to spray Copper oxy chloride 4g / litre of water as a prophylactic measure against anthracnose in cow pea.
 - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry:**

- Farmers in the Scarce Rainfall Zone of Rayalaseema in Andhra Pradesh are advised to provide animals with mineral mixture along with salt regularly and grains like sorghum, bajra and jaggery etc. @ 10-20% in the daily ration due to prevailing high temperature to meet the energy requirement of animals and ensure periodic vaccination of animals against FMD, Brucellosis, Haemorrhagic, Septicaemia, Anthrax and small ruminants against Peste- des-Pepits Ruminants (PPR) and Sheep and Goat Pox.
- Farmers in the Cauvery Delta of Tamil Nadu are advised to vaccinate sheep and goats against sheep pox and provide highly reflective aluminum roofs to cattle shed to reduce the heat stress to the cattle.
- Due to prevailing high temperature (Max. temperature 39 to 43⁰C), farmers in the North East Dry Zone of Karnataka are advised to cover the poultry sheds with paddy straw, arrange fans and foggers, feed poultry with wet mash to increase the feed intake and arrange cold water for drinking.

Annexure I

Stages of Major Crops

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

- Wheat (harvesting), pome and stone fruits (flowering), apple (green tip to pink bud), onion (vegetative), cabbage, cauliflower (maturity), capsicum, tomato, brinjal (sowing / transplanting), cucurbits, okra, French bean, fodder crops (chari, bajra) (sowing/early vegetative) in Himachal Pradesh.
- Wheat (harvesting), onion (bulb formation /maturity), French bean, cluster bean, amaranthus, summer radish, summer green gram, lady's finger (vegetative / flowering / fruiting), vegetable lobia, bottle gourd, cucumber, ridge gourd (sowing / early vegetative), chilli, tomato, brinjal and cucurbits (vegetative / fruiting), Gwar, maize, Bajra, cluster bean as fodder crops (sowing) in Delhi.
- Wheat (flowering), pulses (pea and lentil) (early maturity), vegetables (sowing / planting / transplanting), rice (nursery raising), maize (sowing), fruit crops (nursery bed preparation) in Valley Temperate Zone (Srinagar)), sunflower (early vegetative / vegetative), garlic, cucurbits, okra (seedling / early vegetative), radish, spinach (sowing), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), oat, berseem (vegetative), summer moong & mash (sowing), dhaincha (sowing), fodder jower, summer fodder (Maize + Cowpea+Jowar) (sowing), fruit crops (nursery bed preparation), *kharif* pulses (field preparation) in Jammu & Kashmir.
- Wheat (harvesting), arhar (harvesting), ginger (vegetative), garlic (harvesting), autumn sugarcane (vegetative), barley (harvesting), oat (tillering / ear head emergence), moong, urd (vegetative / flowering), okra (seedling / vegetative), sugarcane, cucurbits (sowing / planting / seedling), fodder jowar (sowing), rice (nursery sowing) in Uttarakhand.
- Wheat (harvesting), linseed, jai (pod maturity), onion, garlic (maturity/harvesting), moong, urad (vegetative), summer vegetables, spring sugarcane (planting/vegetative), summer green fodder like maize, lobia, sunhemp, dhaincha (sowing/seedling) in Uttar Pradesh.
- Wheat (maturity / harvesting), sugarcane (harvesting), new sugarcane (tillering), cotton (sowing/germination) pulses (field preparation for sowing), cucurbits (sowing), berseem (vegetative / cutting) in Punjab.
- Wheat (maturity/ harvesting), sugarcane (harvesting), new sugarcane (early vegetative), barseem (vegetative / cutting), other fodder crops (bajra, lobia, Sudan grass and Napiar grass) (germination/tillering, cotton (sowing/germination) in Haryana.
- Rice (nursery preparation), Irrigated groundnut (field preparation), Cotton (field preparation / sowing), *Zaid* crops (moong, groundnut, fodder crops) (sowing / germination / early vegetative), sugarcane (maturity / harvesting), new sugarcane (field preparation/sowing), maize (maturity), capsicum, guar, water melon, muskmelon (maturity / harvesting), vegetables (tinda, pumpkin, cucumber, coriander, bhindi, ridge gourd) (seedling / vegetative), opium poppy (pre-flowering / flowering) in Rajasthan.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Ladies finger (flowering / fruiting / harvesting), sugarcane (elongation), lobia, cowpea, jawar, maize (sowing), summer vegetables (vegetative/flowering) in Madhya Pradesh.
- Sugarcane (planting/early vegetative), pigeon pea, groundnut (pod filling/maturity), sesame (late vegetative), ginger, turmeric, papaya (vegetative), onion (transplanting/ early vegetative), vegetable crops (early vegetative / vegetative), millet (flowering), rice (transplanting), niger, kulthi (vegetative) in Chhattisgarh.

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

- Sunflower (head formation), sugarcane (early vegetative/tillering), summer vegetables (vegetative), moong, urad (vegetative), yam (sowing/early vegetative) in Bihar.
- Pigeon pea (pod formation), onion (transplanting), vegetables (vegetative / flowering / fruiting), ginger and turmeric (planting), rice (milking /grain maturity) and maize (vegetative to pod formation) in Jharkhand.
- Jute (sowing), summer rice (panicle initiation/flowering), sugarcane (tillering), banana (vegetative), *rabi* groundnut (maturity/harvesting), cowpea (pod formation / maturity), tomato (flowering / fruiting), summer vegetables (sowing/early vegetative), sunflower (seed formation/maturity) in Odisha.
- *Boro* rice (harvesting), sesame (flowering/capsule formation), summer vegetables (transplanting/ early vegetative), jute (sowing/early vegetative), ginger, turmeric (planting), mango (flowering /fruiting), tomato (flowering / fruiting), Bitter gourd, pointed gourd, ladies finger (flowering to fruiting), sunflower (flowering), groundnut (pegging to pod formation), chilli (flowering / fruiting) in West Bengal.
- Ginger (sprouting / early vegetative), large cardamom (secondary flowering), summer vegetables (vegetative), rice (grain formation / maturity) in Sikkim.

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

- Sugarcane (planting/ vegetative), *boro* rice (harvesting), transplanted early *ahu* rice (panicle initiation/flowering), transplanted normal *ahu* rice (tillering), early *ahu* (direct seeded) (panicle initiation/heading), *bao* rice (sowing), maize (sowing), jute (sowing/seedling), summer pulses (vegetative/ flowering), okra (sowing), cucurbits

(vegetative / flowering / fruiting), coconut, ginger, turmeric, banana, papaya (planting) and summer vegetables (flowering / fruiting), cowpea (sowing) in Assam.

- *Jhum* rice (vegetative), WRC rice (nursery raising), maize (vegetative/ cob formation), soybean (vegetative), green gram, black gram (seedling / vegetative), French bean (vegetative/ flowering/pod formation), okra (vegetative/ flowering) and cucurbits (vegetative/flowering), banana (planting) in Arunachal Pradesh.
- Pre-*kharif* rice (early vegetative / vegetative), maize (vegetative / silking / cob formation), groundnut and soybean (sowing/ early vegetative), tomato, brinjal, chilli (flowering / fruiting), cucurbits (flowering / fruiting), turmeric, ginger (planting/ early vegetative) in Manipur.
- *Kharif* maize (vegetative), *boro* rice (grain filling/grain maturity), jute (vegetative), black gram, green gram (vegetative), okra (flowering / fruiting/ harvesting), bottle gourd, ash gourd (vegetative), brinjal (vegetative), tomato, potato, turmeric, ginger (sowing) in Meghalaya.
- Maize (sowing), banana (vegetative / fruiting / harvesting), okra, cucurbits, French bean (sowing), chilli, brinjal, ginger and turmeric (nursery raising / planting) in Mizoram.
- Maize (vegetative/tasseling), upland rice (germination / vegetative), lowland rice (nursery raising), cucurbits (vegetative), chilli (vegetative), okra (germination / early vegetative), ginger (sowing) and brinjal (transplanting) in Nagaland.
- *Jhum* rice (seedling), *boro* rice (flowering/ grain filling), summer brinjal, tomato (flowering / fruiting), summer green gram and black gram (pod formation/grain filling), okra (flowering / fruiting), cucurbits (sowing / seedling), summer maize (vegetative / tasseling) and summer sesamum (capsule formation) in Tripura.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane New *adsali* (tillering / elongation), new pre seasonal (tillering), new *suru* sugarcane (early tillering), summer rice (grain formation in mid late and late varieties in South Konkan and grain formation in Western Ghat region and East Vidarbha), summer groundnut (pod formation in Madhya Maharashtra, Marathwada and Vidarbha), summer bajra (grain formation in Pune and Nasik region) in Maharashtra.
- Pearl millet (vegetative / tillering), pulses (vegetative / flowering), summer groundnut (flowering / pegging / pod formation), sorghum (vegetative), mango (maturity), summer rice (grain formation), summer vegetables (vegetative / flowering / fruiting), sugarcane (elongation / grand growth) in Gujarat.

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

- Summer groundnut and cotton (vegetative), sunflower (seed formation/maturity), summer rice (panicle initiation), Bt. cotton (vegetative to flowering stage), green gram (pod maturity/harvest), cowpea (pod maturity/harvest), sesame (flowering /capsule formation), sugarcane (tillering), mango (harvesting) and vegetables (all stages) in Andhra Pradesh.
- Black gram (early vegetative), summer cotton (vegetative/flowering/boll formation), sesame (flowering/pod formation/maturity), sugarcane (tillering /grand growth), pearl millet (vegetative), maize (vegetative/flowering), groundnut (vegetative/flowering/pegging), sorghum (vegetative) and vegetables (all stages) in Tamil Nadu.
- Summer rice (grain filling), *Viruppu* rice (nursery preparation), arecanut (flowering), mango (fruit maturity/harvesting), sugarcane (tillering), banana (planting), rubber (tapping), vegetables (sowing / planting / vegetative), pepper, ginger and cardamom (planting /early vegetative) in Kerala.
- Mango (fruit maturity /harvesting), paddy (grain filling), summer green gram/ black gram (vegetative), sugarcane (tillering), arecanut (flowering/nut formation), banana (fruit development) and vegetables (all stages) in Karnataka.