

Significant weather and realized rainfall during last week:

- Significant rainfall received in most districts in Himachal Pradesh; many districts in Jammu & Kashmir; Arunachal Pradesh; Assam; few districts of Nagaland; Kerala and Tamil Nadu; one or two districts of SHWB; Manipur; Madhya Pradesh Kerala and Tamil Nadu. Mainly dry weather prevailed over rest parts of the country.

Major Features of Weather Forecast up to 0830 hours IST of 31st March, 2013

- Rain/thundershowers would occur at one or two places over Jammu & Kashmir during next 48 hours.
- Rain/thundershowers would occur at a few places over Himachal Pradesh and Uttarakhand during next 48 hours.
- Rain/thundershowers would occur at a few places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at one or two places over Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand and Odisha during 24 hours.
- Rain/thundershowers would occur at one or two places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Sub-Himalayan West Bengal & Sikkim during next 24 hours and increase thereafter.
- Rain/thundershowers would occur at one or two places over south Tamilnadu and Kerala.
- Mainly dry weather would prevail over rest parts of the country.

Weather Warning during next 3 days

- Thundersquall may occur at one or two places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 48 hours.
- Thundersquall accompanied with hailstorm would occur at one or two places over Himachal Pradesh, Uttarakhand, Punjab, north Rajasthan, Haryana, Delhi and Uttar Pradesh during next 24 hours.

Regionwise Salient Advisories

North India

Major crops

- Wheat (milky / dough / grain maturity/harvesting), mustard (capsule formation / maturity / harvesting)



- As significant rainfall occurred in many districts of Jammu & Kashmir and Himachal Pradesh, farmers are advised to postpone irrigation to the standing crops in these States.
- As significant rainfall occurred in many districts of Jammu & Kashmir and most of the districts of Himachal Pradesh, farmers are advised to postpone irrigation to the standing crops in these States.

Central India

Major crops

- Wheat (grain filling / maturity / harvesting), autumn sugarcane (vegetative / elongation), yellow sarson, mustard (maturity / harvesting)



- As mainly dry weather prevailed over the region during last week and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops.

East India

Major crops

- Gram, lentil (maturity / harvesting), Wheat (milky / dough stage / grain maturity) and potato (tuber maturity/harvesting).
- As significant rainfall occurred in Darjeeling in Sub-Himalayan West Bengal and East Sikkim districts in Sikkim during last week, farmers are advised to postpone irrigation to the standing crops in Sub-Himalayan West Bengal. As mainly dry weather prevailed over the remaining districts of the States during last week and no significant rainfall is likely during the period, farmers are advised to apply irrigation to the standing crops in these regions.

Northeast India

Major crops

- *Boro* rice (active tillering / panicle initiation), early ahu rice (sowing / seedling), wheat (dough stage / grain maturity), rapeseed, mustard (capsule maturity / harvesting), summer vegetables (sowing / transplanting).
- As significant rainfall occurred in most of districts in Arunachal Pradesh, Baksa, Cachar, Darrang, Dhemaji, Dibrugarh, Golaghat, Jorhat, Kamrup, Lakhimpur, N. C. Hill, Nalbari, Sonitpur, Sibsagar, Udalguri and Tinsukia districts in Assam, Dimapur, Kohima, Mokokchung and Zunheboto districts in Nagaland and East Imphal and Ukhrul districts in Manipur, postpone irrigation to the standing crops in these districts. As there was no significant rain in remaining districts of the region and no significant rain is likely to occur, farmers are advised to apply irrigation to the standing crops.

West India

Major crops

- New *suru* sugarcane (early tillering), summer groundnut (vegetative / flowering / pegging), summer bajra (vegetative), wheat (dough / grain maturity/harvesting).
- As no significant rain occurred over the States of the region during last couple of weeks and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to summer groundnut, sugarcane, summer bajra, late sown wheat, gram, vegetables, fruit crops etc. in Gujarat and summer bajra, sugarcane and vegetables in Madhya Maharashtra, Marathwada and Vidarbha.

South India

Major crops

- Sunflower (flowering / seed formation), rice fallow pulses (vegetative), puncha rice (maturity/harvesting), sugarcane (ratooning / planting), summer sorghum, maize and cotton (vegetative).
- As there was no significant rainfall over the region except in Idukki, Kollam, Kottayam and Pathanamthitta districts of Kerala and Theni, Tirunelveli and Madurai districts of Tamil Nadu during last week, farmers are advised to apply irrigation to the standing crops. Postpone irrigation to the crops in the above mentioned districts as there was significant rainfall during last week.

(Detailed regionwise summary is given in page no.2)

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.indagrmet.gov.in>) of the Division

Executive Summary

North India

- As significant rainfall occurred in many districts of Jammu & Kashmir and most of the districts of Himachal Pradesh, farmers are advised to postpone irrigation to the standing crops in these States.
- As thundersquall accompanied with hailstorm would occur at one or two places over Punjab, Himachal Pradesh, Uttarakhand, north Rajasthan, Haryana, Delhi and Uttar Pradesh during next 24 hours, farmers are advised to use hailnet for orchard crops to protect from mechanical damage. Also arrange mechanical support to banana, propping in sugarcane and staking to vegetables, to prevent the crops from lodging due to strong winds.
- In the Low Hills, Sub-humid Subtropical Zone of Himachal Pradesh, weather is congenial for late blight in potato and downy mildew in onion. Farmers are advised to apply Dithane M-45 @ 25 g in 10 litres of water and repeat the spray at 10-15 days interval for late blight in potato and Redomil M-Z @ 25 g per 10 litres of water for downy mildew in onion on a non rainy day.
- In view of likely occurrence of thundersquall accompanied with hailstorm at one or two places over Punjab, Himachal Pradesh, Uttarakhand, north Rajasthan, Haryana, Delhi and Uttar Pradesh during next 24 hours, farmers are advised to keep cattle/goats indoors during thunderstorm period.

Central India

- As mainly dry weather prevailed over the region during last week and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops.
- In Chhattisgarh Plain Zone, as there is possibility of cloudy weather condition farmers are advised to monitor cucurbitaceous vegetables for the incidences of red pumpkin beetle; farmers are advised to spray Savin @ 2 gram/liter of water at root zone in morning time, if the damage occurs.

East India

- As significant rainfall occurred in Darjeeling in Sub-Himalayan West Bengal and East Sikkim districts in Sikkim during last week, farmers are advised to postpone irrigation to the standing crops in Sub-Himalayan West Bengal. As mainly dry weather prevailed over the remaining districts of the States during last week and no significant rainfall is likely during the period, farmers are advised to apply irrigation to the standing crops in these regions.
- Farmers in Western Undulating Zone of Odisha are advised to apply irrigation to vegetable crops to avoid moisture stress due to dry weather.
- As mainly dry weather is prevailing, farmers in North West Alluvial Plain Zone of Bihar are advised to give irrigation to wheat, maize, sugarcane and vegetable crops. Due to prevailing dry weather condition, farmers in South Bihar Alluvial Zone are advised to apply irrigation to late sown wheat at milk stage and in summer vegetables.
- As present weather is favourable for wilt disease in tomato and brinjal in Jharkhand, farmers are advised to spray 100 mg of Streptocycline and Bavistin @ 0.5 g / litre of water to control it.
- Under the prevailing weather situation in Laterite and Red Soil Zone and New Alluvial Zone of West Bengal, there is a possibility of spread of blast disease in *boro* rice, to prevent it, apply Hinosan or Kitazin at recommended dose.

Northeast India

- As significant rainfall occurred in most of districts in Arunachal Pradesh, Baksa, Cachar, Darrang, Dhemaji, Dibrugarh, Golaghat, Jorhat, Kamrup, Lakhimpur, N. C. Hill, Nalbari, Sonitpur, Sibsagar, Udalguri and Tinsukia districts in Assam, Dimapur, Kohima, Mokokchung and Zunheboto districts in Nagaland and East Imphal and Ukhrul districts in Manipur, postpone irrigation to the standing crops in these districts. As there was no significant rain in remaining districts of the region and no significant rain is likely to occur, farmers are advised to apply irrigation to the standing crops.
- As reduced moisture is favourable for cracking in banana, farmers in Mild Tropical Hill Zone of Mizoram are advised for proper mulching and nutrient management especially application of boron to minimize cracking. Staking / propping up should be done in fruit bearing banana plant to avoid lodging due to high wind speed. In tomato, reduced soil moisture hinders availability of calcium; farmers are advised to apply irrigation for optimum fruit setting.
- Farmers in Sub Tropical Plain Zone of Manipur are advised to mulch in onion and garlic in between rows using dried twigs, paddy straw and dry leaves to preserve the soil moisture in the districts where rain is received during last week.

- Due to prevailing weather conditions in Mild Tropical Plain Zone of Tripura, there is chance of fruit and shoot borer on summer brinjal and tomato; farmers are advised to apply Cypermethrin @ 1.5 ml or Flubendamid @ 0.5ml per liter of water to manage the attack.

West India

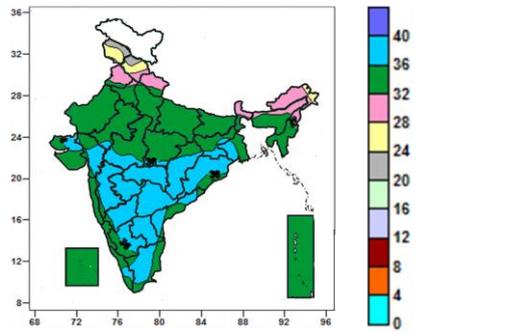
- As no significant rain occurred over the States of the region during last couple of weeks and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to summer groundnut, sugarcane, summer bajra, late sown wheat, gram, vegetables, fruit crops etc. in Gujarat and summer bajra, sugarcane and vegetables in Madhya Maharashtra, Marathwada and Vidarbha.
- Considering the increasing day temperature and acute water shortage in the State, farmers in Madhya Maharashtra are advised to apply sprinkle irrigation instead of flood irrigation to groundnut at an interval of 8-10 days and at 10-12 days interval in Konkan.
- As high day temperature (38-40°C) is prevailing over Marathwada region, farmers are advised to cover banana bunch with leaves or papers or curtains to avoid damage from bright sunshine. They are also advised to apply 25 -30 micron thickness polythene mulch or biomass mulch.
- Weather conditions in South Gujarat Zone are favourable for dropping of unripe fruits in Mango orchard; spray NAA @ 2g or Gibberellic acid @ 1g + 2 kgs urea / 100 liter of water solution.
- Due to cloudy weather there is possibility for incidence of hoppers in mango in North Konkan; spray 17.8% Imidachlopid @ 3 ml per 10 litres of water.
- Due to cloudy condition in Middle Gujarat Zone, there is a chance of occurrence of powdery mildew in mango; spray Sulphur @ 3 g / 10 litre of water.

South India

- As there was no significant rainfall over the region except in Idukki, Kollam, Kottayam and Pathanamthitta districts of Kerala and Theni, Tirunelveli and Madurai districts of Tamil Nadu during last week, farmers are advised to apply irrigation to the standing crops. Postpone irrigation to the crops in the above mentioned districts as there was significant rainfall during last week.
- In Kerala, farmers are advised to apply mulching with crop residues to conserve soil moisture in coconut gardens.
- Farmers in the North East Transition Zone of Karnataka are advised to provide irrigation to sugarcane and mango as no rainfall is likely for next five days.

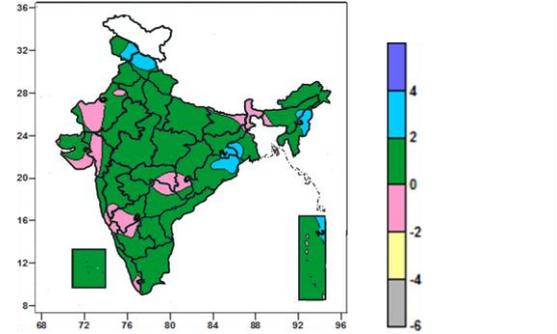
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 27.03.2013

Actual Mean Maximum Temperature (°C) in India for the week ending 27.03.2013



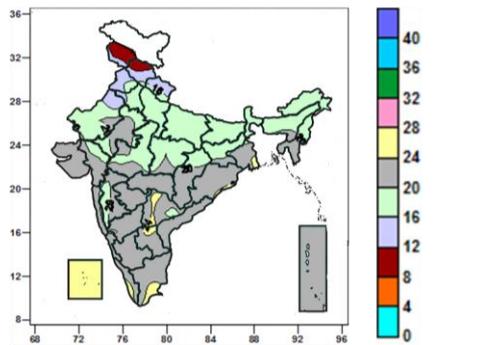
Actual Mean Maximum temperature ranged between 36 to 40°C over many parts of Orissa, Chattisgarh, Gujarat, Vidarbha, Madhya Maharashtra, Marathwada, Andhra Pradesh, North & South Interior Karnataka, Tamil Nadu, some parts of Jharkhand, Gangetic West Bengal, Saurashtra & Kutch, Madhya Pradesh, Kerala, 28 to 32°C over many parts of Uttarakhand, Punjab, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, some parts of Himachal Pradesh, Assam, Nagaland, 24 to 28°C over some parts of Jammu & Kashmir, Himachal Pradesh, 20 to 24°C over some parts of Jammu & Kashmir, Himachal Pradesh, 32 to 36°C over remaining parts of the country.

Mean Maximum Temperature (°C) Anomaly in India for the week ending 27.03.2013



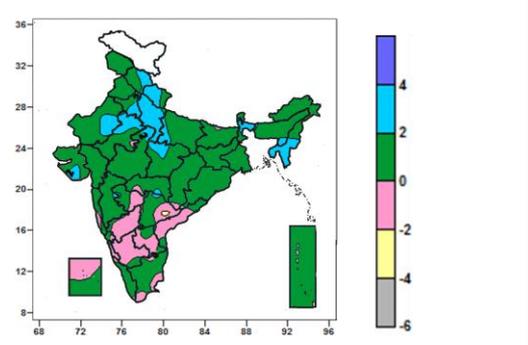
Mean Maximum temperature anomaly ranged between 2 to 4°C over many parts of Himachal Pradesh, some parts of Jammu & Kashmir, Jharkhand, Gangetic West Bengal, Assam & Meghalaya, Nagaland, Manipur, Orissa, Andaman & Nicobar Islands, -2 to 0°C over many parts of Sub-Himalayan West Bengal & Sikkim, North Interior Karnataka, some parts of Rajasthan, Bihar, Gujarat, Saurashtra & Kutch, Vidarbha, Madhya Maharashtra, South & Coastal Interior Karnataka, Kerala, 0 to 2°C over rest of the country.

Actual Mean Minimum Temperature (°C) in India for the week ending 27.03.2013



Actual Mean Minimum Temperature ranged between 24 to 28°C over many parts of Lakshadweep, some parts of Gangetic West Bengal, Coastal Orissa, Telanagana, Raylaseems, Kerala, Tamil Nadu, 16 to 20°C over many parts of West Rajasthan, Haryana, Delhi, Uttar Pradesh, Bihar, Jharkhand, Sub-Himalyan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Madhya Pradesh, some parts of East Rajasthan, Haryana, Gujarat, Chattisgarh, Madhya Maharashtra, Telangana, 12 to 16 over many parts of Uttarakhand, Himachal Pradesh, Punjab, some parts of Jammu & Kashmir, West Rajasthan, Haryana, Delhi, 8 to 12°C over many parts of Jammu & Kashmir, some parts of Himachal Pradesh, 20 to 24°C over remaining parts of the country.

Mean Minimum Temperature (°C) Anomaly in India for the week ending 27.03.2013



Minimum Temperature anomaly ranged between 2 to 4°C over many parts of Uttarakhand, West Uttar Pradesh, Tripura, some parts of Rajasthan, Haryana, Delhi, Himachal Pradesh, East Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Mizoram, Saurashtra & Kutch, Madhya Pradesh, Vidarbha, Madhya Maharashtra, -2 to 0°C over many parts of Coastal Andhra Pradesh, Raylaseema, Karnataka, some parts of East Rajasthan, Bihar, Konkan & Goa, Marathwada, Vidarbha, Chattisgarh, Kerala, Tamil Nadu, Lakshadweep Islands, 0 to 2°C over rest of the country.

Significant weather and realized rainfall during last week

Significant rainfall received in Dibang Valley, East Siang, Lohit, Lower Dibang Valley, Papumpara, Tawang, Tirap, Upper Siang, Upper Subansari, West Kameng and West Siang in Arunachal Pradesh; Baksa, Cachar, Darrang, Dhemaji, Dibrugarh, Golaghat, Jorhat, Kamrup, Lakhimpur, N. C. Hill, Nalbari, Sonitpur, Sibsagar, Udalgiri and Tinsukia districts in Assam; Dimapur, Kohima, Mokokchung, Zunheboto districts in Nagaland and East Imphal, Ukhrul districts in Manipur; Anantnag, Badgam, Baramula, Doda, Udampur, Jammu, Kathua, Kulgam, Kupwara, Pulwama, Rajouri, Ramban, Reasi, Shopian, Srinagar, Ganderwal districts of Jammu & Kashmir; in Nawashahar and Ropar district of Punjab; all the districts in Himachal Pradesh except Sirmour; Darjeeling and East Sikkim districts in SHWB; Seoni district of East Madhya Pradesh; Idukki, Kollam, Kottayam and Pathanamthitta districts of Kerala and Theni, Tirunelveli and Madurai districts of Tamil Nadu. Mainly dry weather prevailed over rest parts of the country.

Distribution of rainfall of the country during week ending on 27.03.2013

State/Districts	Actual (mm)	Dep. %
Arunachal Pradesh		
Changlang	6.3	-94
Dibang Valley	33.0	-42
East Kameng	12.4	-48
East Siang	40.5	44
Lohit	29.1	-44
Lower Dibang Valley	30.0	-47
Lower Subansari	18.8	-14
Papumpara	88.4	116
Tawang	65.0	265
Tirap	53.9	57
Upper Siang	32.0	-53
Upper Subansari	24.4	0
West Kameng	28.7	61
West Siang	28.0	76
Assam		
Baksa	35.5	67
Barpeta	13.1	-38
Bongaigaon	18.2	-8
Cachar	72.1	32
Chirang	7.2	-63
Darrang	20.0	32
Dhemaji	42.0	84
Dhubri	6.4	-39
Dibrugarh	41.0	22
Goalpara	15.8	-10
Golghat	72.2	239
Hailakandi	5.9	-89
Jorhat	2.0	-94
Kamrup(Rural)	40.2	65
Kamrup(Metro)	41.4	103
Karbi Anglong	10.6	-48
Karimganj	15.4	3
Kokrajhar	17.4	-66
Lakhimpur	7.7	-41
Morigaon	9.0	-47
N.C.Hills	80.6	1
Nowgong	13.1	-15
Nalbari	24.7	51
Sonitpur	29.9	98
Sibsagar	51.7	114
Tinsukia	47.4	15
Udalgiri	30.0	99
Manipur		
Bishnupur	3.0	-88
Chandel	4.0	-44
Churachandpur	9.0	-64
Imphal east	22.5	18
Thoubal	18.0	128
Senapati	**	**
Ukhrul	27.0	275
Nagaland		
Dimapur	31.0	161
Kephire	8.0	-62
Kohima	32.9	83
Mokokchung	60.0	114
Phek	18.1	1
Wokha	0.0	-100
Zunheboto	33.0	55
Himachal Pradesh		
Bilaspur	49.5	258
Chamba	49	54
Hamirpur	59.6	290
Kangra	52.6	138
Kinnaur	34.4	5
Kullu	52	52
Lahaul and Spiti	52.5	13
Mandi	35.7	72

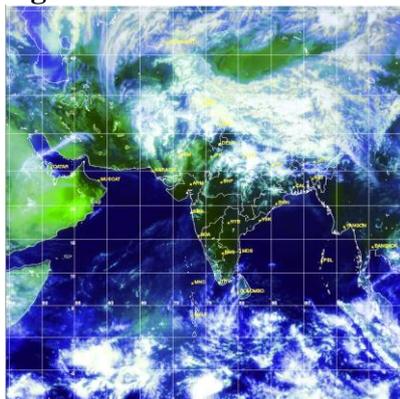
Shimla	18.5	-15
Sirmour	5.6	-52
Solan	22.8	37
Una	26.6	158
Punjab		
Amritsar	1.0	19
Barnala	3.2	32
Bhatinda	5.0	631
Faridkot	7.0	-90
Fatehgarh Saheb	38	-28
Ferozpur	0.8	-58
Gurdaspur	10.8	-48
Hoshiarpur	4.3	-55
Jalandhar	4.5	51
Kapurthala	2.7	20
Ludhiana	12.2	-100
Mansa	3.0	-85
Moga	0.0	116
Muktesar	1.0	-21
Nawashahar	24.6	66
Patiala	4.7	47
Ropar	21.3	3
Sangrur	6.0	-100
Mohali	7.3	19
Tarn Taran	0.0	32
Jammu & Kashmir		
Anantnag	36.8	4
Badgam	46.2	69
Bandipore	**	**
Baramula	39.7	-61
Doda	39.2	-30
Ganderwal	42.8	50
Jammu	20.8	-4
Kargil	0.0	-100
Kathua	20.4	21
Kistwar	**	**
Kulgam	43.7	23
Kupwara	46.6	-5
Ladakh(Leh)	0.7	-68
Poonch	0.0	-100
Pulwama	34.8	20
Rajouri	35.4	57
Ramban	52.7	-5
Reasi	43.5	2
Samba	16.7	-23
Shopian	22.0	-24
Srinagar	45.5	60
Udampur	37.6	-12
East Madhya Pradesh		
Anuppur	0.0	-100
Balaghat	0.1	-96
Chhatarpur	0.0	-100
Chindwara	0.0	-100
Damoh	0.0	-100
Dindori	0.0	-100
Jabalpur	0.3	-91
Katni	0.0	-100
Mandla	15.5	131
Narsingpur	0.3	-67
Panna	0.0	-100
Rewa	2.6	-23
Sagar	0.1	-97
Satna	2.3	-6
Seoni	23.8	480
Shahdol	0.0	-100
Sidhi	0.0	-100
Singrauli	0.0	-100
Tikamgarh	0.0	-100
Umariya	0.0	-100

SHWB		
Cooch Behar	1.9	-83
Darjeeling	23.2	54
East Sikkim	29.3	118
Jalpaiguri	8.8	-25
Malda	0.5	-91
North Dinajpur	0.0	-100
North Sikkim	14.3	-72
South Dinajpur	0.0	-100
South Sikkim	10.1	-25
West Sikkim	13.0	-75
Kerala		
Alappuzha	17.8	51
Kannur	0.0	-100
Ernakulam	13.9	60
Idukki	41.9	235
Kasaragod	0.0	-100
Kollam	26.0	78
Kottayam	46.0	338
Kozhikode	3.8	-7
Malappuram	1.8	-38
Palakkad	9.3	7
Pathanamthitta	75.0	262
Thiruvananthapuram	10.5	5
Thrissur	0.8	-86
Wyanad	17.8	295
Tamil Nadu		
Ariyalur	0.0	-100
Chennai	0.0	-100
Coimbatore	4.5	39
Cuddalore	0.0	-100
Dharmapuri	0.0	-100
Dindigul	1.4	-75
Erode	0.0	-100
Kanchipuram	0.0	-100
Kanyakumari	11.9	8
Karikal	0.0	-100
Karur	0.0	-100
Krishnagiri	0.0	-100
Madurai	30.6	581
Nagapattinam	0.0	-100
Namakkal	0.0	-100
Nilgiris	9.4	57
Perambalur	0.0	-100
Puducherry	0.0	-100
Pudukottai	0.0	-100
Ramanathapuram	0.1	-98
Salem	0.0	-100
Sivaganga	0.3	-92
Thanjavur	0.0	-100
Theni	36.2	341
Tirunelveli	28.3	258
Tirupur	0.0	-100
Tiruvallur	0.0	-100
Tiruvannamalai	0.0	-100
Tiruvarur	0.0	-100
Toothukudi	0.4	-91
Trichy	0.0	-100
Vellore	0.0	-100
Villupuram	0.0	-100
Virudhunagar	13.8	87

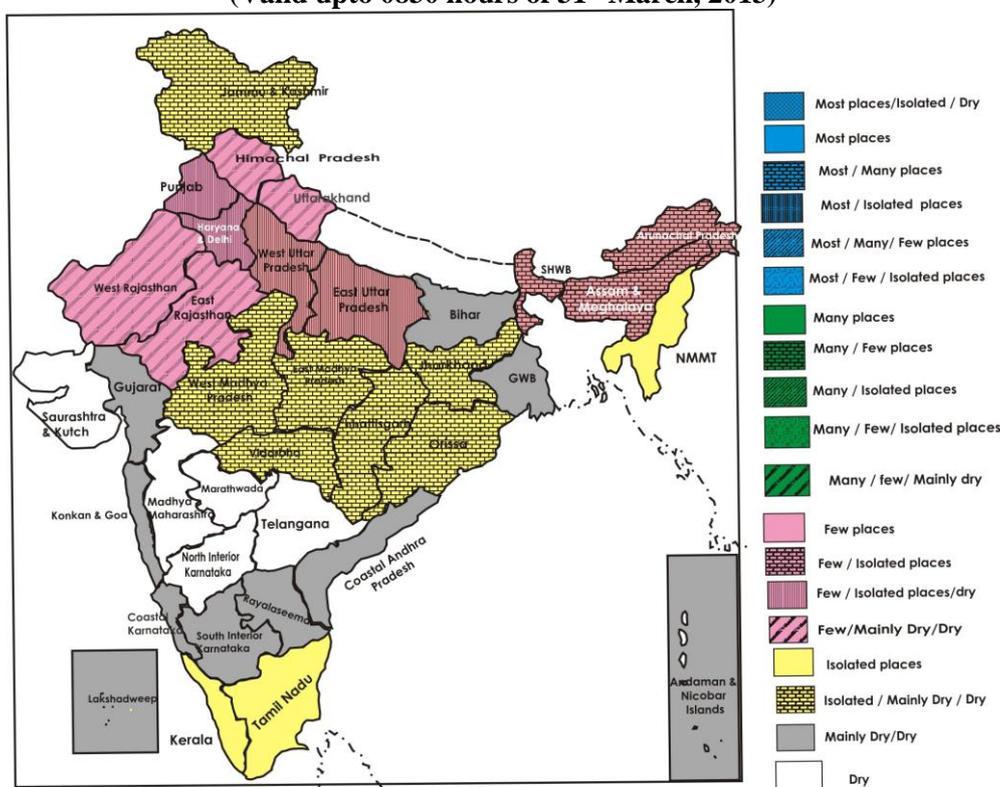
Legends

	(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

Satellite image 0600 UTC dated 28th March, 2013



Weather Forecast (Valid upto 0830 hours of 31st March, 2013)



Major Feature of Weather Forecast up to 0830 hours IST of 31st March, 2013

- Rain/thundershowers would occur at one or two places over Jammu & Kashmir during next 48 hours.
- Rain/thundershowers would occur at a few places over Himachal Pradesh and Uttarakhand during next 48 hours.
- Rain/thundershowers would occur at a few places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at one or two places over Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand and Odisha during 24 hours.
- Rain/thundershowers would occur at one or two places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Sub-Himalayan West Bengal & Sikkim during next 24hours and increase thereafter.
- Rain/thundershowers would occur at one or two places over south Tamilnadu and Kerala.
- Mainly dry weather would prevail over rest parts of the country.

Weather Warning during next 3 days

- Thundersquall may occur at one or two places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 48 hours.
- Thundersquall accompanied with hailstorm would occur at one or two places over Himachal Pradesh, Uttarakhand, Punjab, north Rajasthan, Haryana, Delhi and Uttar Pradesh during next 24 hours.

Weather Outlook for subsequent 4 days from 31st March to 3rd April, 2013

- Rain/thundershowers would occur at a few places over northeastern states.
- A fresh feeble western disturbance would affect western Himalayan region from 1st April.
- Weather would be mainly dry over rest of the country.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in many districts of Jammu & Kashmir, almost all the districts in Himachal Pradesh and Nawanshahar and Ropar districts of Punjab. Weather remained mainly dry over rest parts of the region.
- **Weather Forecast:** Rain / thundershowers would occur at one or two places over Jammu & Kashmir during next 48 hours. Rain / thundershowers would occur at a few places over Himachal Pradesh and Uttarakhand during next 48 hours. Rain / thundershowers would occur at a few places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh during next 24 hours and decrease thereafter. Mainly dry weather is likely to prevail over South Rajasthan.
- **Weather warning:** Thundersquall accompanied with hailstorm would occur at one or two places over Punjab, Himachal Pradesh, Uttarakhand, north Rajasthan, Haryana, Delhi and Uttar Pradesh during next 24 hours.
- **Advisory:**
 - As significant rainfall occurred in many districts of Jammu & Kashmir and most of the districts of Himachal Pradesh, farmers are advised to postpone irrigation to the standing crops in these States.
 - As thundersquall accompanied with hailstorm would occur at one or two places over Punjab, Himachal Pradesh, Uttarakhand, north Rajasthan, Haryana, Delhi and Uttar Pradesh during next 24 hours, farmers are advised to use hailnet for orchard crops to protect from mechanical damage. Also provide mechanical support to banana, propping in sugarcane and staking to vegetables to prevent the crops from lodging due to strong winds.
 - In the Low Hills, Sub-humid Subtropical Zone of Himachal Pradesh, weather is congenial for late blight in potato and downy mildew in onion. Farmers are advised to apply Dithane M-45 @ 25 g in 10 litres of water and repeat the spray at 10-15 days interval for late blight in potato and Redomil M-Z @ 25 g per 10 litres of water for downy mildew in onion on a non rainy day.
 - In Semi Arid Eastern Plain Zone of Rajasthan, weather is congenial for the attack of stem & fruit borer in tomato and brinjal crops. To control, farmers are advised to destroy the affected fruits and branches and spray Acephate 75 SP @ 0.5 g per litre water on a non rainy day. Pluck fruits after 7-10 days of spraying. Weather is also congenial for mango hopper on mango tree at flowering stage. To control, farmers are advised to spray Melathion 50 EC @ 1 ml per litre water on a non rainy day.
 - Other advisories are mentioned in Annexure I.
 - Stages of major crops are mentioned in Annexure II.
 - Suitable varieties of crops are mentioned in Annexure III.
- **Animal Husbandry**
 - As thundersquall accompanied with hailstorm would occur at one or two places over Punjab, Himachal Pradesh, Uttarakhand, north Rajasthan, Haryana, Delhi and Uttar Pradesh during next 24 hours, keep cattle/goats indoors during thunderstorm period.
 - Due to variation in temperature in Himachal Pradesh, farmers are advised to protect the animals (especially new born calves) during night hours.
 - Due to expected increase in day temperature in Uttarakhand, keep all animal inside the shed during noon time. Give the animals fresh water for drinking.
 - In Valley Temperate Zone of Jammu & Kashmir, it is advised to make arrangements for proper insulation of sheds particularly during night hours. Livestock should not be allowed to graze in the fields during early morning hours.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Significant rainfall occurred in Seoni district of East Madhya Pradesh during last week. Weather was mainly dry in rest of the region.
- **Weather forecast:** Rain / thundershowers would occur at one or two places over Madhya Pradesh and Chhattisgarh during 24 hours. Mainly dry weather would prevail during the remaining period.
- **Advisories:**
 - As mainly dry weather prevailed over the region during last week and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops.

- In Chhattisgarh Plain Zone, as there is possibility of cloudy weather condition farmers are advised to monitor cucurbitaceous vegetables for the incidences of red pumpkin beetle; farmers are advised to spray Savin @ 2 g / litre of water at root zone in morning time.
- Weather is congenial for attack of stem borer in wheat crop, farmers in Bundelkhand Zone of Madhya Pradesh are advised to spray trizophas 40 E.C. @ 2 ml per litre of water for its control.
- Other advisories are mentioned in Annexure – I.
- Stages of major crops are mentioned in Annexure II.
- **ANIMAL HUSBANDRY & POULTRY**
- Farmers in Jhabua Hill Zone of Madhya Pradesh are advised that, in view of high temperatures, white wash the wall and roof of the poultry houses to minimize the temperature.

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

- **Realised Rainfall:** Significant rainfall occurred in Darjeeling and East Sikkim districts in Sub-Himalayan West Bengal and mainly dry / dry weather prevailed over rest of the States of the region during last week.
- **Weather Forecast:** Rain / thundershowers would occur at one or two places over Sub-Himalayan West Bengal & Sikkim during next 24 hours and increase thereafter. Mainly dry weather would prevail over rest parts of the region.
- **Advisories:**
- As significant rainfall occurred in Darjeeling in Sub-Himalayan West Bengal and East Sikkim districts in Sikkim during last week, farmers are advised to postpone irrigation to the standing crops in Sub-Himalayan West Bengal. As mainly dry weather prevailed over the remaining districts of the States during last week and no significant rainfall is likely during the period, farmers are advised to apply irrigation to the standing crops in these regions.
- As mainly dry weather is prevailing, farmers in North West Alluvial Plain Zone of Bihar are advised to give irrigation to wheat, maize, sugarcane and vegetable crops. Due to prevailing dry weather condition, farmers in South Bihar Alluvial Zone are advised to apply irrigation to late sown wheat at milk stage and in summer vegetables.
- Farmers in Western Undulating Zone of Odisha are advised to apply irrigation to vegetable crops and other *rabi* crops to avoid moisture stress due to dry weather.
- As present weather is favourable for wilt disease in tomato and brinjal in Jharkhand, farmers are advised to spray 100 mg of Streptocycline and Bavistin @ 0.5 g / litre of water to control it.
- As temperature and dryness is increasing, farmers in North Eastern Plateau Zone of Odisha are advised to monitor infestation of stem borer, leaf blight and leaf folder in summer rice and to spray Triazophos @ 2 ml / litre of water for stem borer, a mixture of 20gm streptocycline+ 500gm 50%WP in 200 litres of water for leaf blight and chlorpyrifos @ 2ml or cartap Hydrochloride 2 gm or acephate @ 1.5 g per one litre of water for leaf folder.
- Under the prevailing weather situation in Laterite and Red Soil Zone and New Alluvial Zone of West Bengal, there is a possibility of spread of blast disease in *boro* rice; to prevent it, apply Hinosan or Kitazin at recommended dose.
- Under the prevailing weather condition in New Alluvial Zone of West Bengal, there is possibility of increased attack of Anthracnose leading to black spot in mango; to control it, spray 1 ml Carbendazim per litre of water.
- Other crop advisories are mentioned in Annexure I.
- Stages of major crops are mentioned in Annexure II.
- List of Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- As temperature is increasing, farmers in North West Alluvial Plain Zone of Bihar are advised to keep livestock in shade.
- Due to rise in temperature in North Eastern Plateau Zone of Odisha, farmers are advised to provide clean drinking water to the animals and broom and brush them for managing tick menace.
- **Poultry:**
- In Orissa, due to rise in temperature, give poultry birds drinking water 2-3 times in a day. The farmers are advised to vaccinate poultry against Ranikhet disease.

- In Jharkhand, due to rise in 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.

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

- **Realised Rainfall:** Significant rainfall occurred in most of districts in Arunachal Pradesh, many districts in Assam, Dimapur, Kohima, Mokokchung and Zunheboto districts in Nagaland and East Imphal and Ukhrul districts in Manipur. No significant rainfall occurred over the remaining districts of the States of the region during last week.
- **Weather Forecast:** Rain/thundershowers would occur at one or two places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 24 hours and increase thereafter.
- **Weather Warning:** Thundersquall may occur at one or two places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 48 hours.
- **Advisories:**
 - As significant rainfall occurred in most of districts in Arunachal Pradesh, Baksa, Cachar, Darrang, Dhemaji, Dibrugarh, Golaghat, Jorhat, Kamrup, Lakhimpur, N. C. Hill, Nalbari, Sonitpur, Sibsagar, Udalguri and Tinsukia districts in Assam, Dimapur, Kohima, Mokokchung and Zunheboto districts in Nagaland and East Imphal and Ukhrul districts in Manipur, postpone irrigation to the standing crops in these districts. As there was no significant rain in remaining districts of the region and no significant rain is likely to occur, farmers are advised to apply irrigation to the standing crops.
 - As reduced moisture is favourable for cracking in banana, farmers in Mild Tropical Hill Zone of Mizoram are advised for proper mulching and nutrient management especially application of boron to minimize cracking. Staking / propping up should be done in fruit bearing banana plant to avoid lodging due to high wind speed. In tomato, reduced soil moisture hinders availability of calcium; farmers are advised to apply irrigation for optimum fruit setting.
 - Farmers in Sub Tropical Plain Zone of Manipur are advised to mulch in onion and garlic in between rows using dried twigs, paddy straw and dry leaves to preserve the soil moisture in the districts where rain is received during last week.
 - Due to prevailing weather conditions in Mild Tropical Plain Zone of Tripura, there is chance of fruit and shoot borer on summer brinjal and tomato; farmers are advised to apply Cypermethrin @ 1.5 ml or Flubendamid @ 0.5ml per liter of water to manage the attack.
 - Weather is favourable for incidence of late blight and fruit borer in tomato in Mild Tropical Hill Zone of Mizoram; farmers are advised to spray Mencozeb @ 1 g per litre of water for blight and 5% neem seed kernel extract or NPV @ 250-500 LE with 100 ml teepol / ha for fruit borer.
 - Other advisories are mentioned in Annexure - I
 - Stages of major crops are mentioned in Annexure II.
 - Suitable varieties of crops are mentioned in Annexure III.
- **Pisciculture**
 - Due to prevailing weather conditions in Mild Tropical Plain Zone of Tripura, farmers are advised to feed the fishes with available fish feed or to feed the fishes with a mixture of Rice bran and MOC in 1:1 ratio @ 3% of body weight of the total biomass in their ponds.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Mainly dry weather prevailed over the States.
- **Weather Forecast:** Rain / thundershowers would occur at one or two places over Vidarbha during 24 hours. Mainly dry weather would prevail over rest parts of the country.
- **Advisories:**
 - As no significant rain occurred over the States of the region during last couple of weeks and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to summer groundnut, sugarcane, summer bajra, late sown wheat, gram, vegetables, fruit crops etc. in Gujarat and summer bajra, sugarcane and vegetables in Madhya Maharashtra, Marathwada and Vidarbha.
 - As mainly dry weather prevailed over Madhya Maharashtra and Marathwada and dry weather is expected during the period, farmers are advised to apply irrigation to summer bajra (Pune and Nasik region), sugarcane and vegetables. As no significant rain is expected over Vidarbha during next 24

hours, farmers are advised to apply irrigation to summer groundnut, green gram, sesamum and vegetables.

- Considering the increasing day temperature and acute water shortage in the State, farmers in Madhya Maharashtra are advised to apply sprinkle irrigation instead of flood irrigation to groundnut at an interval of 8-10 days and at 10-12 days interval in Konkan. Farmers in East Vidarbha are advised to irrigate water melon and musk melon at 6-8 days interval. Provide 15 – 20 litres of water for newly planted mango grafts at 10-12 days interval.
 - As high day temperature (38-40°C) is prevailing over Marathwada region, farmers are advised to cover banana bunch with leaves or papers / curtains to avoid damage from bright sunshine. They are also advised to apply 25 -30 micron thickness polythene mulch or biomass mulch.
 - Considering the rise in day temperature (evaporation upto 12mm), farmers are advised mulching of crop residues and other plant waste products in the orchards and sugarcane trash in sugarcane field to minimize the rate of evaporation. Farmers in Konkan region are advised to use 25 µ thickness black polythene mulch between 2 trenches or beds of the fruit crop nursery to control weeds and improve soil water conservation. To reduce the rate of transpiration of the plants in Pune, farmers are advised to spray 8% Kaolin or chalk powder.
 - Weather conditions in South Gujarat Zone are favourable for dropping of unripe fruits in Mango orchard; spray NAA @ 2g or Gibberellic acid @ 1g + 2 kgs urea / 100 liter of water solution.
 - Maximum temperature will rise up to 37°C during day time in North Saurashtra Zone of Gujarat; under such conditions apply irrigation to the standing crops at regular intervals to meet the evaporative demand of the crops.
 - Taking advantage of dry weather in Bhal and Coastal Zone of Gujarat, farmers are advised to complete harvesting of matured rabi crops.
 - As dry weather prevailed in last few weeks and is likely to continue in South Saurashtra Zone, North West Zone of Gujarat and Bhal and Coastal Zone of Gujarat, apply irrigation in summer groundnut. Apply irrigation to summer bajra, sugarcane and mango also in South Saurashtra Zone.
 - In view of prevailing dry weather and increasing temperatures in Middle Gujarat Zone, apply irrigation in vegetables, late sown wheat and summer groundnut.
 - Under prevailing weather, there may be incidence of thrips and jassids in summer groundnut in Vidarbha region. If incidence is above ETL (15-20 jassids / plant), spray 5% Neemark or 30% Dimethoate @ 10 ml or Methyl Dimeton @ 8 ml in 10 litres of water.
 - Due to cloudy weather there is possibility for incidence of hoppers in mango in North Konkan; spray 17.8% Imidachloprid @ 3 ml per 10 litres of water. There is also possibility of incidence of tikka in summer groundnut; spray Mancozeb @ 25 g or Carbendazim @ 10 g / 10 litres of water.
 - Prevailing weather is congenial for more incidence of thrips and mites which may cause leaf curl in summer chilli in Western Maharashtra Scarcity Zone; spray Dimethoate or Methyl Dimeton @ 20 ml plus wettable Sulphur @ 20 g in 10 litres of water at 10 days interval.
 - Due to cloudy condition in Middle Gujarat Zone, there is a chance of occurrence of powdery mildew in mango; spray Sulphur @ 3 g /10 litre of water. Due to high temperature and cloudy weather, there is chance of infestation of sucking pests in vegetables; spray Dimethoate 30 EC @ 10 ml in 10 litres of water.
 - Other advisories are mentioned in Annexure I.
 - Stages of the crops are mentioned in Annexure II.
 - Varieties of the crops are mentioned in Annexure III.
- **Animal Husbandry**
 - Considering the high temperatures in Konkan and Madhya Maharashtra, it is advised to make arrangement of curtains for poultry house and maintain cool temperature in the poultry shed by sprinkling water on the curtains.
 - Make shade arrangement with proper ventilation to protect animals from direct sunlight and temperature in South Gujarat Heavy Rainfall Zone.
 - To protect cattle from summer heat in North Saurashtra Zone, shower the animals with cold water two to three times in a day and increase the green fodder quantity for feeding.

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

- **Realised Rainfall:** Significant rainfall occurred over Idukki, Kollam, Kottayam and Pathanamthitta districts of Kerala and Theni, Tirunelveli and Madurai districts of Tamil Nadu during last week. Mainly dry / dry weather prevailed over rest parts of the region.
- **Rainfall Forecast:** Rain / thundershowers would occur at one or two places over south Tamil Nadu and Kerala. Mainly dry weather would prevail over rest parts of the region.
- **Advisories:**
 - As there was no significant rainfall over the region except in Idukki, Kollam, Kottayam and Pathanamthitta districts of Kerala and Theni, Tirunelveli and Madurai districts of Tamil Nadu during last week, farmers are advised to apply irrigation to the standing crops. Postpone irrigation to the crops in the above mentioned districts as there was significant rainfall during last week.
 - In Kerala, farmers are advised to apply mulching with crop residues to conserve soil moisture in coconut gardens.
 - Farmers in the North East Transition Zone of Karnataka are advised to provide irrigation to sugarcane and mango as no rainfall is likely for next five days.
 - Weather is congenial for incidence of early shoot borer in sugarcane in Southern Zone and North Coastal Zone and North Telangana Zone of Andhra Pradesh. Farmers are advised to spray Chloripyriphos @ 2.5 ml per litre of water.
 - Other advisories are mentioned in Annexure – I.
 - Stages of major crops are mentioned in Annexure II.
 - Varieties of the crops are mentioned in Annexure III.
- **Animal Husbandry:**
 - As the day temperatures is likely to be high (around 38⁰C) in North Western Zone of Tamil Nadu, poultry birds are likely feel the severity of the summer.
 - Due to increase in day temperature in the Cauvery Delta Zone and North Eastern Zone of Tamil Nadu, farmers are advised to avoid grazing cattle in the hot hours of the day and vaccinate calves above 3 months and sheep and goat above 2 months against Foot and Mouth disease.
 - In order to mitigate the effect of high temperature on animals in the South Zone of Tamil Nadu, farmers are advised to provide adequate cool drinking water and green fodder to the animals and spray water on gunny bags surrounding the cattle shed.

Annexure I

Other Advisories

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

- In Central Plain Zone of Uttar Pradesh, farmers are advised to complete sowing / transplanting of cucurbitaceous and lady's finger, sowing of autumn maize and planting of autumn sugarcane. Complete harvesting of brinjal, chillies, leafy vegetables, potato, sugarcane and mustard. Continue transplanting of papaya plants in new orchard.
- In Arid Western Plain Zone of Rajasthan, farmers are advised to undertake deep summer ploughing immediately after harvesting of *rabi* crops. Prepare field for sowing of *zaid* crops i.e. jowar, bajra for summer green fodder.
- Farmers in Punjab are advised to complete planting of sugarcane. Undertake transplanting of chilli and planting of evergreen fruit plants like citrus, guava and ber.
- Farmers in Haryana are advised to transplant the nursery of tomato and chilli and complete sowing of cucurbits and bhindi.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Mango is in the flowering stage, farmers in Jhabua Hill Zone and Bundelkhand Zone of Madhya Pradesh are advised to stop insecticide-pesticide spray on the crop during this stage.
- Those farmers who have irrigation facilities in Gird Zone of Madhya Pradesh are advised to undertake sowing of soybean. They are also advised to sow summer moong and urad.
- Farmers in Madhya Pradesh are advised to undertake sowing of moong and urad crops.
- Farmers in Chhattisgarh Plain Zone are advised to complete sowing of summer green gram and planting of sugarcane.
- In Bastar Plateau Zone of Chhattisgarh before appearance of curling in the crops of tomato, brinjal, chillies, okra and cucurbitaceous vegetable crops, systemic insecticide should be sprayed. In case of cucurbitaceous crops if white lining is observed, Carbofuran 3 G should be applied @ 3-4 grams per plant.

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

- In North West Alluvial Plain Zone of Bihar, in gram and pigeon pea crops, infestation of pod borer is observed; farmers are advised to spray Endosulphan 35 E.C @ 1.5 ml per litre of water.
- The farmers of Puri district in East and South Eastern Coastal Plain Zone of Odisha are advised to undertake sowing of summer cow pea and sesame and jute.
- Farmers in Jharkhand are advised to undertake sowing of summer vegetables like sponge gourd, bottle gourd, pumpkin, water melon, musk melon, okra etc. and transplanting of onion.
- Farmers in Jharkhand are advised sowing of moong and summer vegetable like cauliflower, cabbage, chilli along with cucurbitaceous crops.
- Farmers in Jharkhand are advised not to apply irrigation and insecticides in Mango and Litchi as they are at flowering stage.
- Farmers in Old Alluvial Zone and Terai Zone of West Bengal of West Bengal are advised to undertake land preparation for sowing of jute and sesame and harvesting of wheat.

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

- Farmers in Central Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of summer pulses, *Capsularis* jute and summer vegetables and harvesting of matured wheat crop. Undertake sowing of regular direct seeded *ah* and, *bao* rice.
- Farmers in Sub-Tropical Hill Zone of Arunachal Pradesh are advised to continue land preparation for *jhum* rice and sowing of okra, maize, soya bean, black gram, green gram and French bean, cucurbits.
- Farmers in Mild Tropical Hill Zone of Mizoram are advised to continue land preparation and sowing of okra, chilli, brinjal, ginger, turmeric and cucurbits.
- Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to undertake land preparation and sowing of *khariif* maize, jute, summer vegetables like French bean, brinjal, bottle gourd. Undertake seed bed preparation for summer pulses like black gram and green gram.

- Farmers in Sub Tropical Plain Zone of Manipur are advised to undertake transplanting of *pre-kharif* rice, land preparation and planting of turmeric and ginger, tuber crops.
- Farmers in Mild Tropical Hill Zone of Nagaland are advised to continue sowing of summer vegetables like okra, summer maize, land preparation of ginger and turmeric and transplanting of chilli.
- Farmers in Tripura are advised to continue sowing of summer vegetables, summer maize and summer sesame and undertake land preparation and sowing of *jhum* rice.
- In Central Brahmaputra Valley Zone of Assam, stem borer infestation is observed at tillering stage of *boro* rice. Farmers are advised to spray Chloropyriphos (20%) @ 2 ml / litre of water.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Carry out sowing of summer cluster bean and summer green gram in Bhal and Coastal Zone of Gujarat and North West Zone of Gujarat. Complete sowing of summer pearl millet and carry out sowing of pulses in Bhal and Coastal Zone of Gujarat.
- Carry out hand weeding and intercultural operations in groundnut and timely sown crops in Bhal and Coastal Zone of Gujarat, North West Zone and North Saurashtra Zone.
- Complete sowing of summer crops under assured irrigation in North Saurashtra Zone and North West Zone of Gujarat. Farmers are advised to monitor the mango orchard for mango mealy bug and leaf hopper.

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

- Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to complete sowing of summer cotton by selecting short duration sucking pest tolerant varieties for summer cotton cultivation.
- Farmers in the Cauvery Delta of Tamil Nadu are advised to harvest the matured *Samba & Thaladi* rice and rice fallow black gram and undertake sowing of ADT 5 summer Black gram.
- Farmers in the North Transition Zone of Karnataka are advised to undertake harvesting of sugarcane, sorghum (October and November sown), wheat, and chick-pea.
- In the Southern Transition Zone of Karnataka, farmers are advised to go for spraying of Chloropyrophos@1.5 ml/lit and Bavastine@2 g/lit to control stem borer and blast disease respectively in paddy.

Annexure II

Major Crops

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

- Wheat (flowering/grain formation), pea (maturity/harvesting), pome and stone fruits (planting), apple (green tip to pink bud), potato, onion (vegetative), cabbage, cauliflower (head formation/ maturity), capsicum, tomato, brinjal (sowing), cucurbits, French bean, okra, fodder crops (chari, bajra) (sowing) in Himachal Pradesh.
- Wheat (grain filling/maturity), pea, gram (pod development), radish (flowering/ fruiting), mustard (maturity), onion (vegetative), lady's finger, French bean, cluster bean, summer radish, hybrid cluster bean (sowing), chilli, tomato, brinjal and cucurbits (nursery raising/ transplanting), green gram, black gram (sowing) in Delhi.
- *Rabi* cereal (wheat - tillering), pulses (pea and lentil) (vegetative), brown sarson (vegetative), fodder oat (tillering), vegetables (sowing / planting / transplanting) in Valley Temperate zone (Srinagar), sunflower (early vegetative / vegetative), garlic, cucurbits, okra (seedling / early vegetative), potato (planting), radish, spinach (sowing), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), mustard (maturity / harvesting), wheat (late sown – ear head emergence, normal / early sown – milky / dough), barley (jointing / flag leaf initiation), pulses (pea, lentil, gram) (pod development), oat, berseem (vegetative), summer moong & mash (sowing), fruit crops (nursery bed preparation) in Jammu & Kashmir.
- Wheat (grain maturity/harvesting), arhar (pod maturity/harvesting), ginger (vegetative), autumn sugarcane (vegetative), yellow sarson, mustard (capsule formation), barley (grain filling), oat (tillering / ear head emergence), moong, urd, okra (sowing), sugarcane, cucurbits (sowing) in Uttarakhand.
- Wheat (grain filling/maturity), new sugarcane (planting), linseed, jai (flowering/pod formation), onion, garlic (vegetative), rapeseed, mustard, pea, lentil, gram (pod maturity/harvesting) maize (grain maturity/harvesting), moong, urad (sowing), summer vegetables (sowing) in Uttar Pradesh.
- Wheat (ear head emergence/milky/dough), sugarcane (harvesting/planting), potato (harvesting), new sugarcane (planting), mustard (capsule maturity), maize (sowing / germination), summer pulses (field preparation for sowing), cucurbits (sowing), berseem (vegetative / cutting), fruit (planting) in Punjab.
- Wheat (ear head emergence/dough), sugarcane (harvesting), new sugarcane (planting), mustard (capsule maturity/harvesting), barseem (vegetative / cutting) in Haryana.
- Zaid crops (moong, groundnut, fodder crops) (field preparation / sowing), sugarcane (maturity / harvesting), new sugarcane (field preparation), maize (maturity), capsicum, guar, vegetables (tinda, water melon, pumpkin, cucumber, coriander, bhindi, ridge gourd) (sowing / germination / seedling), potato (tuber maturity / harvesting), mustard (capsule formation / maturity / harvesting), gram (pod maturity / harvesting), wheat (dough/grain maturity/ harvesting), barley (grain maturity / harvesting), opium poppy (pre-flowering / flowering) in Rajasthan.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Ladies finger (flowering / fruiting / harvesting), sugarcane (elongation), summer vegetables (sowing/ transplanting), wheat (grain filling/maturity/harvesting), in Madhya Pradesh.
- Sugarcane (planting/vegetative), pigeon pea, groundnut (pod filling/maturity), sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), onion (transplanting/ early vegetative), vegetables (transplanting / vegetative), millet (flowering), wheat (grain development/maturity), rice (transplanting), niger, kulthi (vegetative) in Chhattisgarh.

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

- Gram, lentil (harvesting), sunflower (head formation), maize (cob formation), sugarcane (planting), potato (tuber maturity / harvesting), mustard (maturity / harvesting), wheat (milk / dough), pigeon pea (flowering / pod formation), summer vegetables (sowing / early vegetative), moong, urad (sowing) in Bihar.
- Wheat (milk/dough), potato (tuber maturity / harvesting), pigeon pea (pod formation), onion (transplanting), vegetables (vegetative / flowering / fruiting / harvesting), gram, linseed, lentil, pea (pod formation / pod filling / maturity), rapeseed, mustard (harvesting) in Jharkhand.
- Jute (sowing), Summer rice (late tillering/panicle initiation), sugarcane (tillering), banana (vegetative), mustard, *rabi* groundnut (maturity/harvesting), cowpea (pod formation / maturity), fruit crops (planting / seedling), wheat (maturity/harvest), tomato (flowering / fruiting), black gram, green gram (maturity/harvesting), summer vegetables (sowing), sunflower (seed formation/maturity) in Odisha.
- *Boro* rice (active tillering / panicle initiation), wheat (milk / dough / maturity), sesame (sowing / vegetative), maize (vegetative), summer vegetables (transplanting), potato (tuber maturity / harvesting), mango (flowering), tomato (flowering / fruiting), mustard (capsule maturity / harvesting), pointed gourd, cucumber (flowering), sunflower (flowering), groundnut (vegetative / flowering), chilli (flowering / fruiting) in West Bengal.
- Ginger (sprouting / early vegetative), large cardamom (primary flowering / secondary flowering), vegetables (vegetative), rice (grain formation / maturity) in Sikkim.

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

- Sugarcane (planting), *boro* rice (panicle initiation / flowering / grain formation), early *ahu* rice (nursery raising / sowing / seedling / transplanting), *bao* rice (sowing), maize (sowing), jute (sowing), wheat (grain formation / dough / maturity / harvesting), *rabi* maize (maturity), tomato (flowering / fruiting), summer pulses (sowing), okra (sowing / seedling), cucurbits (sowing / seedling), ginger, turmeric, banana (planting) and summer vegetables (sowing) in Assam.
- Okra, green gram, black gram, maize, soyabean (sowing), French bean (sowing, germination, vegetative) and cucurbits (sowing) in Arunachal Pradesh.
- Pre-*kharif* rice (sowing / transplanting), *rabi* maize (vegetative), pea (pod maturity / harvesting), cauliflower, cabbage (sowing), rapeseed (pod maturity / harvesting), onion, garlic (vegetative / bulb formation), tomato, brinjal, chilli (vegetative / flowering), beans (early vegetative / vegetative), cucurbits (transplanting / early vegetative), okra (sowing), turmeric, ginger (sowing), potato (tuber formation) in Manipur.
- *Rabi* maize (silking / tasselling / cob formation), *boro* rice (grain filling), chilli, brinjal (vegetative / flowering / fruiting), okra (fruiting), *kharif* maize, jute, summer vegetables like French bean, brinjal, bottle gourd (sowing) in Meghalaya.
- Maize (cob formation / maturity), tomato (fruiting / harvesting), banana (vegetative / harvesting), okra, cucurbits (sowing) and chilli, brinjal, ginger and turmeric (nursery raising) in Mizoram.
- Maize (sowing), pea (pod maturity / harvesting), banana (fruiting / harvesting), potato (tuber formation / maturity / harvesting), cucurbits (germination), chilli, brinjal (transplanting), and okra and other summer vegetables (sowing) in Nagaland.
- *Boro* rice (active tillering / panicle initiation), *jhum* rice (sowing), summer brinjal, tomato (flowering / fruiting), summer green gram and black gram (vegetative), summer vegetable, summer maize (sowing) in Tripura.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- *Adsali*, pre seasonal & *suru* sugarcane (cane maturity / harvesting in Madhya Maharashtra and Marathwada), new *adsali* (tillering / elongation), new pre seasonal (early tillering / tillering), new *suru* sugarcane (early tillering), wheat (grain maturity / harvesting), summer rice (tillering / panicle initiation in South Konkan and tillering in Western Ghat region and East Vidarbha), summer groundnut (pegging in South Konkan and vegetative / flowering in Madhya Maharashtra, Marathwada and Vidarbha), summer bajra (vegetative / ear head emergence in Pune and Nasik region) in Maharashtra.
 - Pearl millet (sowing / early vegetative), pulses (sowing / vegetative), summer groundnut (flowering / pegging), summer rice (tillering), summer vegetables (vegetative), wheat (maturity / harvesting), sugarcane (vegetative / elongation), jowar (grain formation / grain maturity), *rabi* fennel (flowering / pod formation / grain development), fenugreek (flowering / pod formation), maize (cob maturity / harvesting) in Gujarat.

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

- *Rabi* groundnut (maturity/harvest), *rabi* maize (cob development), sunflower (flowering / seed formation), *rabi* rice (panicle initiation), summer cotton (sowing), Bengal gram (harvesting), red gram (harvesting), cowpea (pod formation/ pod maturity), rice fallow pulses (pod development), sesame (flowering /capsule formation), sugarcane (tillering), mango (flowering/fruit initiation) and vegetables (all stages) in Andhra Pradesh.
- *Samba* rice (maturity/harvesting), *thaladi* rice (maturity/ harvesting), sorghum (harvesting), rice fallow pulses (maturity/harvesting), rainfed groundnut (maturity), maize (flowering / maturity/ harvesting), red gram (maturity/harvest), summer sorghum, maize (vegetative), cotton (vegetative), black gram (vegetative), rice (dough stage),vegetables (fruiting) in Tamil Nadu.
- Coconut (harvesting), *puncha* rice (maturity/harvesting), third crop rice (tillering), vegetables (planting/seedling), summer rice (seedling), sugarcane (planting), pepper and cardamom (new planting) in Kerala.
- Cowpea, black gram and green gram (pod maturity/harvesting), pigeon pea (harvesting), chilli (fruiting), chick pea (pod development /harvesting), grapes (fruit development), jowar (grain formation/harvest), ragi (ear head emergence), maize (cob development/harvesting), groundnut (pod formation/harvesting), mango (flowering to fruit setting /fruit development), summer green gram/ black gram (branching), rice (transplanting/tillering), sugarcane (harvesting/planting) in Karnataka.

Annexure III

List of Varieties

Odisha

Sugarcane: CO 740, CO 6304, CO7219, COT 8201, Neelamadhaha and Sabita.
Sesame: Vinayak, Kanak, Kalika, Uma, Usha, Amrit, Prachi, Nirmala
Maize: Dhabal, Navjot, Decca, Ganga, Deccan 105, Kargil 900-M, PRO 345, Kargil 633.
Sunflower: Morden, PAC-36, KBSH, MSFH-8, SFH-7, KBSH-1, MSHF-1, MSFH-17.
Papaya: Honey dew, Kurg honey dew, Coimbatore-1, Coimbatore-2, Pusa delicious, Pusa majestic, Pusa dwarf and Pusa giant.
Summer Green Gram: PDM 11, PDM-54, Pusa Baisakhi.

West Bengal:

Sesame: Rama, Tilottama, B64, B14.
Moong: Chaiti mung, Sonali, T44, PDM-84, Samrat, Basanti.
Jute: Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali.
Water melon: Sugar Baby, Ashi Yeamoto.

Jharkhand:

Onion: Pusa Red, Pusa Ratnar, N-53, Arka Nikatan, Arka Kalyan, Agrifound Dark Red.
Moong: Pusa Vishal, Pant moong-2, Samrat, S.M.L.-668 etc.
Maize: Makka -1, Birsa Makka-2, Suwan-1

Bihar:

Bhindi: Parvani Kranti, Arka Abhay, Arka Anamika, Barsha Uphar, KS 312, Okra 4, Punjab 7, Pant Bhindi 1.
Summer Maize: Suwan, Deoki, Ganga 11, Shaktiman 1 and 2.
Papaya: Redleady, Taiwan.
Summer moong: HUM-16, PS-16, Pusa Vishal, Samrat, Sona and SML 668.
Urad: Type 9.

List of Varieties (Madhya Pradesh)

Soybean: GS-9560
Moong: PDM-11, HUS-1, HUS-1, JM-721
Urad: Jawahar Urad-2, PDU-1, TPU-4

Jammu & Kashmir

Onion: Pusa Red, N-53.
Knolkhol: Purple Vienna and White Vienna.
Radish: Japanese White and Minowase.
Beans: Bush types: Contender and Arka Komal; and
Potato: Kufri Jyoti.
Tomato : Pusa Ruby, Hisar Arun, Hisar Lalit, Punjab Chuhara, Hybrids: Rupali and Meenakshi, **brinjal :** Pusa Purple Long, Pusa Purple Round, Pusa Purple Cluster, Pant Samrat, Pant Rituraj, Hybrid: Pusa Hybrid-5, Pusa Hybrid-6, Suphal and Saurabh) and **chillies :** NP 46A, Pusa Jawala, Hybrid: CH-1 and CH-3.
Mash : Mash Pant,U-19,T-9, **moong :** PDM-54,PS-16,PS-17,ML-131

Himachal Pradesh

Bhindi : P-8, Prabhini kranti, Arka anamika
Frenchbean : Contender

Delhi

Lady's finger: A-4 and Parbhani Kranti.
Spinach: Pusa Harit hybrid varieties.
Maize : African Tall
Green gram : Pusa Visal, Pusa 672, Pusa 9351, Punjab 668
Black gram : Pant Urd 19, Pant Urd 30, Pant Urd 35, PDU1.
Cluster bean : Pusa Komal, Pusa Sukamol

Punjab:

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), CoH-119, CoJ-88, CoS-8436 (mid maturing) and CoJ-89 (late maturing).
Chilli - CH-3/CH-1/Punjab Guchhedar and Punjab Surakh
Okra - Punjab Padmini or Punjab 7 or 8

Uttarakhand:

Moong & Urd :Pant Urd-19, Pant Urd-30, Pant Urd-31, Pant Urd-35 or Narendra Urd-1 etc.
Brinjal : Pant Samrat, Pant Rituraj, Pant Brinjal-4, ARU-1 etc.
Sugarcane : Co- Pant 84211, COS-8436, COS-88230, COS-96268 or recent released variety CO Pant & 3220 and moderate to late varieties like Co-Pant 97222, Co-Pant-96219, Co-Pant-90223. COS-1148, CO-167 etc.
Cucurbits: cucumber var. Pant Khira-1 or Balam Khira ; Long Melon var. Pant kakari-1 ; Bottle Gourd var. Pant Lauki-4, Pant Sankar Lauki-1 or Pant Sankar Lauki-2 ; Bitter Gourd var. Pant Karela-1 ; Water Melon etc.

Tomato : Avinash-2, Himsona, Himraja, Apurva,
Tomato: VL-Tomato
French bean:VL Boni Bean-1, VL Bean-2, Kantender, Pant Anupama etc

Uttar Pradesh:

Arhar: UPS-120, T-21,
Moong & Urd :Pant Urd-19, Pant Urd-30, Pant Urd-31, Pant Urd-35 or Narendra Urd-1 etc.

Rajasthan :

Sugarcane : CO 6617, CO7717, COS 95255, COS 767.
Summer Groundnut : TAG-24, SB-11, DH-86 and GG-2.
Moong : S.M.L – 668, **Fodder Jowar** (1st cut varieties): Raj Chari-1, Raj Chari-2, Raj Chari-3, (multicut varieties): S.S.G.-59, M.P. Chari-59, M.P. Chari, P.C.-9.
Fodder Bajra : Raj Bajra Chari-2, L-72, L-74, H.B.-11
Okra : improved varieties Pusa sawani, Pusa Makhmali, Parbhani, Kranti, Ark Abhay & Arka Anamika
Green gram : improved varieties K-851 (60-70 days), PDM-11 (60-65 DAYS), Pusa Baisakhi (60-80 days), RMG-268 (65-70 days).
Sorghum: for green fodder-SSG-59-3, MP Chari, Raj-Chari, Raj Chari-2 and SPV-837, for multicut - SSG-59-3.

Assam

Early ahu rice (direct seeded): Luit, Kopilee, Cauvery, Culture -1, Rasi, Lachit, Chilarai, Dichang, Banglami, Puthichapali, Nilajee, Hasakumra.
Transplanted early ahu rice: Rasi, Soket, IR-50, IR-36, Luit, Kopilee, Cauvery, Culture -1, Panjasali, Koijapori, Kaujuli, Hasakumora, Gobind.
Bao rice: Maguri, Kekua Bao, Negheri Bao, Pani Kekua, Padmapani, Tara Bao.
Jute:
Capsularis jute: JRC 212, JRC 321 (Sonali), JRC 7447 (Shyamali) and UPC 94 (Reshma).
Olitorius jute: JRO 524 (Navin), JRO 785 (Basudev), JRO 632 (Baisakhtissa), Set-2 (Bahagi).
Okra: Pusa Sawani, Parvani Kranti, Arka Anamika.
Black gram: T-9, Pant-U-19, UG-157, JU-78.
Green gram: Pratap, Kopergaon, T 44, AAU 34, AAU-39, SG 1, K-851 and ML-55.
Pumpkin: Arka Suryamukhi, Arka Chandan.
Ridge gourd: Pusa Nasdar, AAUJ-1, AAUJ-2, AAUC-3.
Sponge gourd: Pusa Chikni.
Bitter gourd: Long Green, Extra Long, Pusa Do Mousumi.
Cucumber: Chinese Green, Pusa Sanjog and Poinshetti.
Ginger: Nadia, Karkai, Maran, Jorhat, Chaina.
Turmeric: Shillong Type, CL-24, PTS-38, PCT-13, VK-145.
Banana:
Dwarf variety: Jahaji.
Medium tall variety: Chenichampa, Malbhog, Barjahaji.

Arunachal Pradesh:

Jhum rice: Bhalum 1, 2, 3 and 4.

Meghalaya:

Kharif maize: Vijay, RCM-76, Local white and yellow, DA-61-A and QPM.
Jute:
Capsularis jute: JRE-21, JRC-321, D-154, JRC-7447.
Olitorious jute: JRO-632, JRO-514, JRO-7835, JRO-878.
French bean: Naga local, Arka Komal.
Brinjal: Local Umroi, Mutakesh.
Bottle gourd: Pusa Summer, Prolific Long, Prolific Round, Pusa Meghdoot.

Tripura:

Jhum rice: Garo Malati, Binni.
Green gram: PDM 139.
Black gram: T-9, Panth Urd- 35.
Tomato: Anup.
Summer maize: HQPM 1, DMH 849, DMH 117.
Summer Sesamum:GT- 2, 4, 3 & 10.

Maharashtra

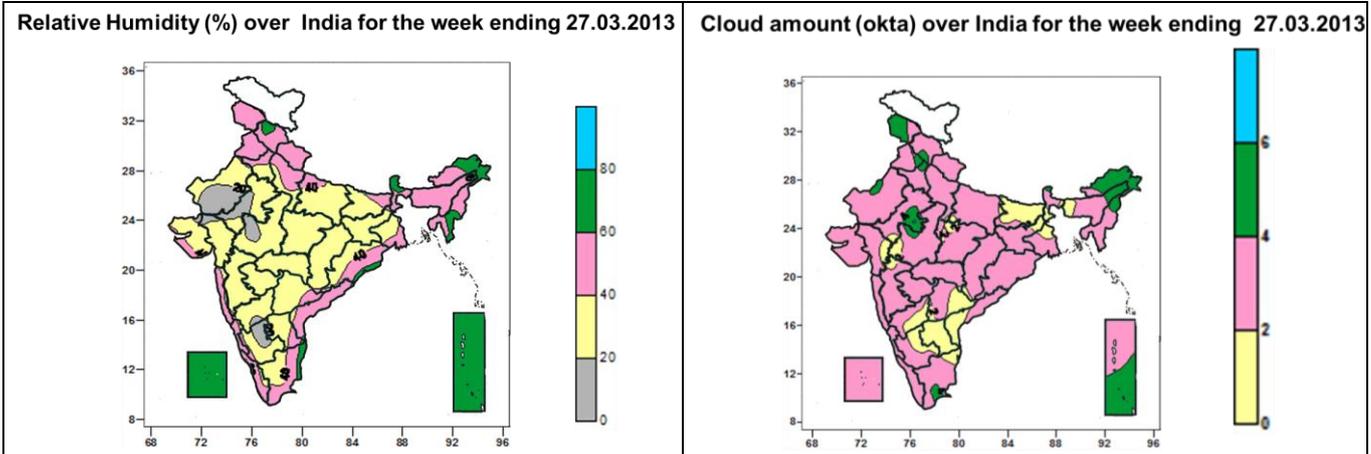
Summer Green Gram: AKM8802, Pusa Vaishakhi.

Gujarat

Green Gram: Guj. Mung- 3, 4, K-851.
Pearl millet: GHB-526 and GHB-558.

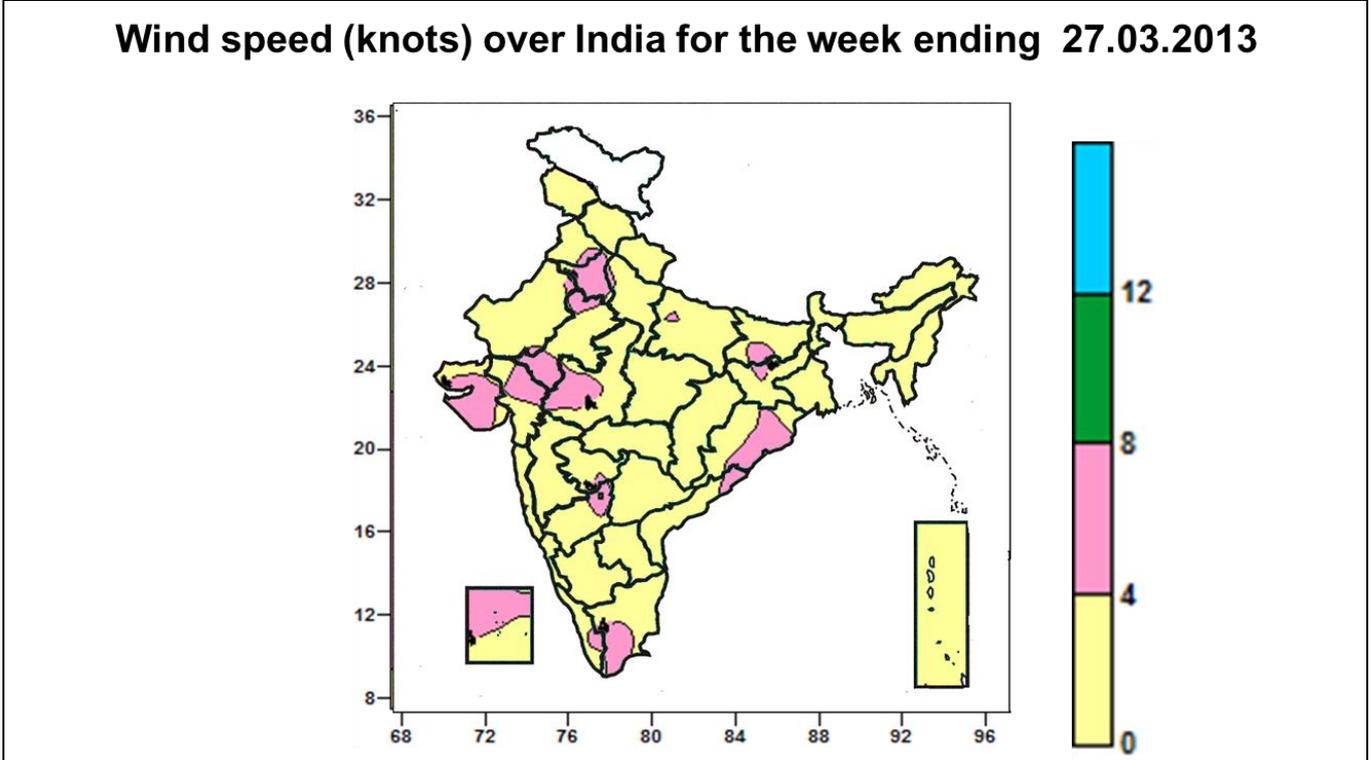
Annexure IV

Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 27.03.2013



Relative humidity ranged between 60 to 80% over many parts of Sikkim, Lakshadweep, Andaman & Nicobar Islands, some parts of Himachal Pradesh, Sub-Himalayan West Bengal, Arunachal Pradesh, Manipur, Tripura, Coastal Orissa, Coastal Tamil Nadu, 0 to 20 % over many parts of Rajasthan, some parts of West Madhya Pradesh, North & South Interior Karnataka, 20 to 60 % over remaining parts of the country.

Cloud amount 4 to 6 okta over many parts of Jammu & Kashmir, Arunachal Pradesh, Andaman & Nicobar Islands, some parts of Himachal Pradesh, Punjab, Haryana, Rajasthan, West Madhya Pradesh, Assam, Nagaland, 0 to 2 okta over many parts of Bihar, Coastal Andhra Pradesh, Raylaseema, some parts of East Rajasthan, East Uttar Pradesh, Jharkhand, West Bengal, Assam & Meghalaya, Madhya Maharashtra, Gujarat, West Madhya Pradesh, Coastal Andhra Pradesh, Telangana, South & North Interior Karnataka, Kerala, 2 to 4 okta over remaining parts of the country.



Wind speed ranged between 8 to 12 knots over some parts of Bihar, Jharkhand, North Interior Karnataka, 4 to 8 knots over many parts of Haryana, Delhi, Gujarat, Saurashtra, West Madhya Pradesh, some parts of Punjab, Uttar Pradesh, Bihar, Jharkhand, Orissa, Coastal Andhra Pradesh, Marathwada, North Interior Karnataka, Telangana, Tamil Nadu, Kerala, 0 to 4 knots over remaining parts of country.