

## Significant weather and realized rainfall during last week:

- Significant rainfall received in Sikkim, Ribhoi district of Meghalaya, Dakshin Kannada district of Coastal Karnataka, Kodagu district of South Interior Karnataka, few districts of Kerala, one or two districts of Tamil Nadu, Nellore district of Coastal Andhra Pradesh and Chittoor district of Rayalaseema. Mainly dry weather prevailed over remaining parts of the country.
- There was significant rainfall during last two days in Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Delhi

## Major Features of Weather Forecast up to 0830 hours IST of 18<sup>th</sup> March, 2013

- Rain/snow would occur at one or two places over Jammu & Kashmir and Himachal Pradesh during next 24 hours.
- Rain/thundershowers would occur at one or two places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Assam & Meghalaya.
- Rain/thundershowers would occur at one or two places over east Madhya Pradesh, Chhattisgarh, Vidarbha and Odisha.

## Regionwise Salient Advisories

### Northwest India

#### Major crops

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



- As there was significant rainfall during last two days in Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Delhi, farmers are advised to postpone irrigation to the standing crops in these states. There was no significant rain over the remaining parts of the region and mainly dry weather is likely to prevail, apply irrigation to the standing crops.

### Central India

#### Major crops

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



- Farmers are advised to apply irrigation to the standing crops and also apply irrigation in mango to prevent fruit dropping due to rise in temperature.

### East India

#### Major crops

- Gram, lentil (pod formation/maturity), Wheat (flowering / milking / dough stage) and potato (tuber formation / tuber maturity/ harvesting).
- Farmers are advised to postpone irrigation to the crops in Sikkim and apply irrigation to the standing crops in rest part of the region.

### Northeast India

#### Major crops

- Boro rice (active tillering / panicle initiation), early ahu rice (sowing / seedling), wheat (flowering / milky/ dough stage), rapeseed, mustard (capsule maturity / harvesting) potato (tuber maturity / harvesting.)
- Farmers are advised to apply irrigation to the standing crops.

### West India

#### Major crops

- New *suru* sugarcane (late planting / germination), summer groundnut (early vegetative / vegetative / flowering), summer bajra (early vegetative), summer groundnut (vegetative/flowering/pegging), wheat (milk / dough stage).
- Farmers are advised to apply irrigation to the standing crops in Gujarat and in Madhya Maharashtra and Marathwada regions of Maharashtra.

### South India

#### Major crops

- Sunflower (flowering / seed formation), rice fallow pulses (vegetative), *puncha* rice (grain formation / maturity stage), sugarcane (ripening / planting), summer sorghum, maize and cotton (sowing).
- Postpone irrigation to standing crops in Dakshin Kannada in Coastal Karnataka, Kodagu in South Interior Karnataka, Nellore in Coastal Andhra Pradesh, Chittoor in Rayalaseema, Alappuzha, Kannur, Ernakulam, Kottayam, Kozhikode, Thrissur, Wyanad district of Kerala and Pudukkotai, Thiruvapur, Tiruvallur, Vellore, Tirunelveli and Nilgiris in Tamil Nadu and apply irrigation to the standing crops in the remaining parts of the region.

(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.INDAGRIMET.GOV.IN>) of the Division

## Executive Summary

### Northwest India

- As there was significant rainfall during last two days in Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Delhi, farmers are advised to postpone irrigation to the standing crops in these states. There was no significant rain over the remaining parts of the region and mainly dry weather is likely to prevail, apply irrigation to the standing crops.
- In Himachal Pradesh, mend snow damaged plants and apply protective paste like Blitox to injury on exposed parts to prevent fungal and bacterial infections.
- In Sub Tropical Zone of Jammu & Kashmir, farmers are advised to constantly monitor wheat against attack of yellow rust; if symptoms appear, spray Propiconazole 25EC @ 0.1 % or Tebuconazole 25 EC @ 0.1 % or Triademefon 25 WP @ 0.1 per cent (1 ml / litre of water).
- In Delhi, present weather is favourable for incidences of powdery mildew in cucurbitaceous crops and in late sown pea; if symptoms appear, farmers are advised to spray Carbendazim @ 1.0 g per litre of water.
- In Arid Western Plain Zone of Rajasthan, infection like pox in sheep and goats and Ranikhet in poultry birds may occur due to present weather conditions; farmers are advised to undertake vaccination of livestock and poultry.

### Central India

- As mainly dry weather prevailed over the States of 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. Farmers in Chhattisgarh Plain Zone are advised to apply irrigation in mango to prevent fruits dropping due to rise in temperature.
- As per weather forecast of partial cloud and increase in temperature farmers in Satpura Plateau Zone of Madhya Pradesh are advised to harvest wheat, oilseed and pulse crops.
- As weather is favourable for the attack of aphid in mango, farmers in Jhabua Hills Zone of Madhya Pradesh are advised to spray Carboril @ 2.0 gm / litre of water.
- As temperature is increasing in Jhabua Hills Zone of Madhya Pradesh, there are chances of fruit dropping in mango; farmers are advised to spray Naphthalic Acetic Acid @ 20-25 ppm or Planofix @ 0.3 ml/litre of water or Kerathion @ 2.0 gm/ litre of water. Irrigation should be given to mango plant after fruit setting for good yield.
- In Bastar Plateau Zone of Chhattisgarh there are chances of attack of powdery mildew in pea and mustard. Farmers are advised to spray Karathane or Calixin pesticides @ 1 gram per litre of water for its control

### East India

- As mainly dry weather prevailed during last week except in Sikkim and no significant rainfall is likely over the region during the period over the States of the region, farmers are advised to apply irrigation to the standing crops in the region. Postpone irrigation to the crops in Sikkim.
- Due to prevailing dry weather condition, farmers in North West Alluvial Plain Zone of Bihar are advised to harvest matured potato and tobacco crop.
- Farmers in Jharkhand are advised to spray 100 mg of Streptocycline and Bavistin @ 0.5gm/litre of water solution to control wilt disease in tomato and brinjal.
- Temperature is now suitable for proper germination of cucurbits like pumpkin, bitter gourd and bottle gourd in North Eastern Plateau Zone of Odisha, farmers are advised to undertake sowing in the prepared field.
- Due to prevailing weather condition in Coastal Saline Zone of West Bengal, there is chance of attack of blast disease in *boro* rice; farmers are advised to spray Ediphenphos 50 EC @ 1 ml / liter of water.
- In East and South Eastern Coastal Plain Zone of Odisha, increase in temperature may favour increase in stem borer in the main rice field. As a control, place 4 Pheromone traps / acre, collect the adults and destroy them. Increase in difference between daily maximum and minimum temperature favours the infestation of blast in rice. Spray 1 g Beam / litre of water.

### Northeast India

- As there was no significant rain over the States of 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.
- Due to dry weather conditions in Mild Tropical Plain Zone of Tripura, farmers are advised to apply irrigation in *boro* rice as moisture stress may cause problem in emergence of tillers.
- 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. In tomato, reduced soil moisture hinders availability of calcium; farmers are advised to ensure weekly irrigation for optimum fruit setting.
- 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.

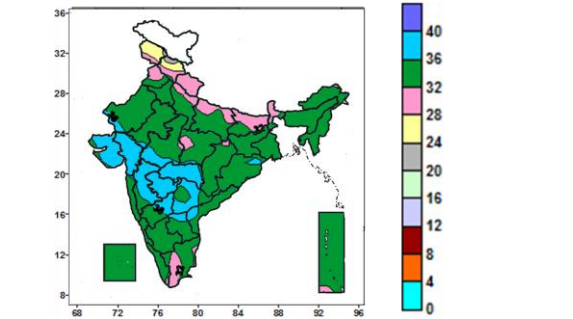
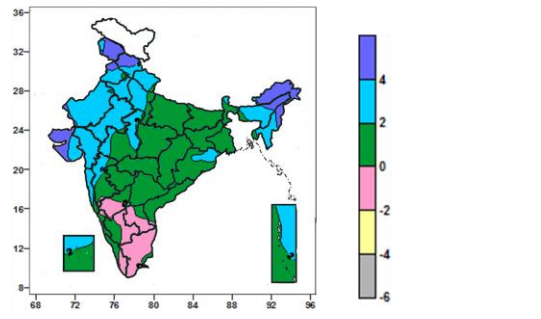
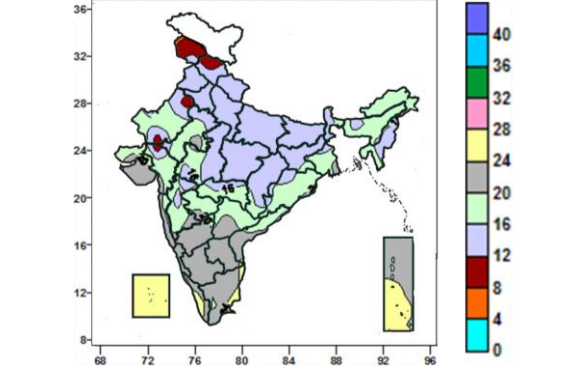
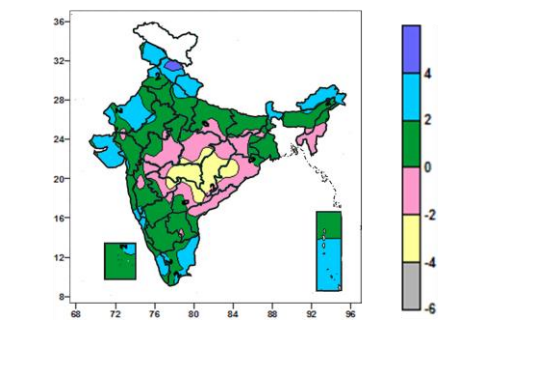
### West India

- As dry weather prevailed over Gujarat during last couple of weeks and dry weather is also likely during the period, farmers are advised to apply irrigation to summer groundnut, late sown wheat, gram, vegetables, fruit crops etc..
- As mainly dry weather prevailed over the State during last few weeks and mainly dry/dry weather is expected during the period, farmers in Madhya Maharashtra and Marathwada are advised to apply irrigation to summer bajra, summer groundnut, sugarcane and vegetables.
- Considering the rise in temperature, farmers in Ghat region and Konkan are advised to protect the new graft and newly planted fruit crops from sun burn by erecting temporary shade.
- Due to cloudy weather and rise in temperature, there may be incidence of aphids in vegetables and pulses in Konkan; spray Dimethoate 20 ml in 10 litres of water.
- Due to high temperature in Middle Gujarat Zone, North Gujarat Zone and North West Zone of Gujarat, there is chance of infestation of sucking pests in vegetables; spray Dimethoate 30 EC @ 10 ml in 10 litres of water.

### **South India**

- As significant rainfall occurred over Dakshin Kannada in Coastal Karnataka, Kodagu in South Interior Karnataka, Nellore in Coastal Andhra Pradesh, Chittoor in Rayalaseema, most of the districts in Kerala except Idukki, Kasargod, Kollam, Malappuram, Palakkad, Pathanamthitta, Thiruvananthapuram in Kerala and Pudukkottai, Thiruvallur, Tiruvallur, Vellore, Tirunelveli and Nilgiris in Tamil Nadu last week, postpone irrigation to the standing crops. Apply irrigation to the crops in the remaining districts, as mainly dry weather prevailed and would continue to prevail over the region.
- In the Problem Area Zone and Northern Zone of Kerala, farmers are advised to apply mulching with crop residues to conserve soil moisture in coconut gardens.
- Prevailing high humidity and cloudy weather in the Southern Zone of Tamil Nadu is conducive for thrips incidence in chilli. Flowering and fruit bearing will be affected due to this pest incidence. Farmers are advised to spray dimethoate at 500 ml/ ha is to control this pest.
- Due to prevailing weather in the Southern Dry Zone of Karnataka, there is possibility of occurrence of fruit rot and sucking pests in mango. Farmers are advised to spray 1.5 ml Rogar or 1% Bordeaux mixture.
- In the Problem Area Zone of Kerala, present weather condition favors the attack of brown plant hopper (BPH), outbreak of blast disease and swarming caterpillar in rice. Farmers are advised to remove the severely affected plants in order to provide air circulation into the crop canopy and thereby reduce the spread of the blast disease to the nearby plants.
- Increasing day temperatures are favourable for incidence of stem borer and leaf folder in rice in the Scarce Rainfall zone of Andhra Pradesh. Farmers are advised to spray Chlorpyrifos @2.5 ml or Cartap hydrochloride 2.0 gm or Acephate @1.5 gm per one litre of water for control of leaf folder and Cartap hydrochloride 50 SP @ 2g per litre for control of stem borer

## Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 13.03.2013

<p><b>Actual Mean Maximum Temperature (°C) in India for the week ending 13.03.2013</b></p> 	<p><b>Mean Maximum Temperature (°C) Anomaly in India for the week ending 13.03.2013</b></p> 
<p>Actual Mean Maximum temperature ranged between 36 to 40°C over many parts of Gujarat, Saurashtra &amp; Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Telangana, some parts of Rajasthan, West Madhya Pradesh, Orissa, Coastal Andhra Pradesh, Raylaseema, North Interior Karnataka, 28 to 32°C over many parts of Uttarakhand, Punjab, Bihar, Sub_Himalayan West Bengal &amp; Sikkim, some parts of Jammu &amp; Kashmir, Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Tamil Nadu, Kerala, Andaman &amp; Nicobar Islands, 24 to 28°C over many parts of Jammu &amp; Kashmir, some parts of Himachal Pradesh, 20 to 24°C over some parts of Jammu &amp; Kashmir, Himachal Pradesh, 32 to 36°C over remaining parts of the country.</p>	<p>Mean Maximum temperature anomaly ranged between 4 to 6°C over many parts of Jammu &amp; Kashmir, Himachal Pradesh, Arunachal Pradesh, Nagaland, Kutch, some parts of Punjab, Assam &amp; Meghalaya, Manipur, Saurashtra, 2 to 4°C over many parts of Uttarakhand, Punjab, Haryana, Delhi, West Uttar Pradesh, Rajasthan, Gujarat, Konkan, Assam, Mizoram, Tripura, some parts of Jammu &amp; Kashmir, Himachal Pradesh, Sikkim, Meghalaya, Manipur, West Madhya Pradesh, Madhya Maharashtra, Lakshadweep, Andaman &amp; Nicobar Islands, -2 to 2°C over rest of the country.</p>
<p><b>Actual Mean Minimum Temperature (°C) in India for the week ending 13.03.2013</b></p> 	<p><b>Mean Minimum Temperature (°C) Anomaly in India for the week ending 13.03.2013</b></p> 
<p>Actual Mean Minimum Temperature ranged between 24 to 28°C over many parts of Lakshadweep, some parts of Andaman &amp; Nicobar Islands, 20 to 24°C over many parts of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Konkan &amp; Goa, Saurashtra &amp; Kutch, Andaman &amp; Nicobar Islands, some parts of Madhya Maharashtra, Marathwada, 8 to 12°C over many parts of Jammu &amp; Kashmir, some parts of Himachal Pradesh, Haryana, West Rajasthan, Gujarat, 12 to 20°C over remaining parts of the country.</p>	<p>Minimum Temperature anomaly ranged between 4 to 6°C over some parts of Himachal Pradesh, 2 to 4°C over many parts of Jammu &amp; Kashmir, Himachal Pradesh, Uttarakhand, Sub-Himalayan West Bengal &amp; Sikkim, West Rajasthan, Arunachal Pradesh, Saurashtra &amp; Kutch, Tamil Nadu, Andaman &amp; Nicobar Islands, some parts of Punjab, West Uttar Pradesh, East Rajasthan, Gujarat, Assam &amp; Meghalaya, Goa, Madhya Maharashtra, North Interior Karnataka, Coastal Karnataka, Kerala, Lakshadweep Islands, -4 to -2°C over many parts of Vidarbha, Chattisgarh, some parts of East Madhya Pradesh, Marathwada, Orissa, Telangana, -2 to 2°C over rest of the country.</p>

## Significant weather and realized rainfall during last week

Significant rainfall received in Ribhoi district of Meghalaya, East Sikkim, North Sikkim, South Sikkim, West Sikkim districts of SHWB, Dakshin Kannada district of Coastal Karnataka, Kodagu district of South Interior Karnataka, Alappuzha, Kannur, Ernakulam, Kottayam, Kozhikode, Thrissur, Wyanad district of Kerala, Nilgiris, Pudukottai, Tirunelveli, Tiruvallur, Tiruvarur, Vellore of Tamil Nadu, Nellore district of Coastal Andhra Pradesh, Chittoor district of Rayalaseema. Mainly dry weather prevailed over rest parts of the country.

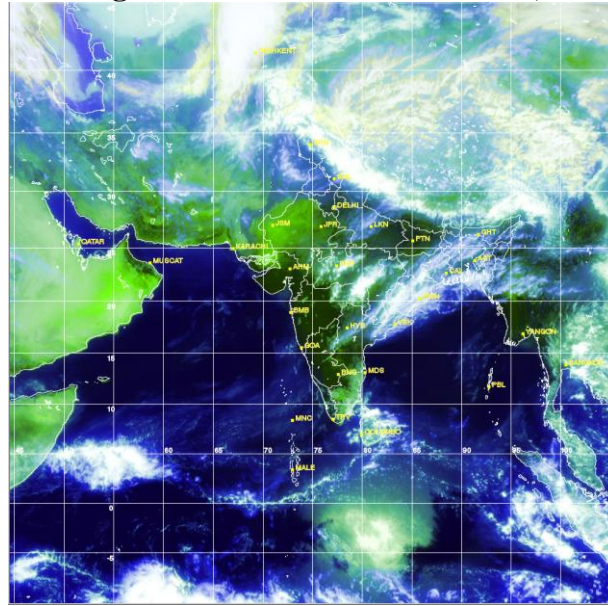
### Distribution of rainfall of the country during week ending on 13.03.2013

State/Districts	Actual	13.03.13			
<b>Assam &amp; Meghalaya</b>			Udupi	4.1	356
Baksa	6.3	-33	Uttar Kannada	0.6	100
Barpeta	4.8	-49	<b>North Interior Karnataka</b>		
Bongaigaon	2.0	-82	Bagalkote	0.0	-100
Cachar	5.2	-76	Belgaum	0.0	-100
Chirang	2.2	-81	Bidar	1.0	-65
Darrang	0.0	-100	Bijapur	0.6	15
Dhemaji	**	**	Dharwad	0.0	-94
Dhubri	0.0	-100	Gadag	1.7	456
Dibrugarh	5.5	-75	Gulbarga	1.5	71
East Garo Hills	0.0	-100	Haveri	0.0	-100
East Khasi Hills	2.0	-92	Koppal	0.1	-87
Goalpara	0.0	-100	Raichur	0.0	-100
Golghat	0.4	-95	Yadgir	0.0	-100
Hailakandi	0.5	-97	<b>South Interior Karnataka</b>		
Jaintia Hills	6.0	-76	Bangalore Rural	2.3	92
Jorhat	2.1	-84	Bangalore Urban	2.0	67
Kamrup(Rural)	1.5	-85	Bellary	0.8	-9
Kamrup(Metro)	1.5	-86	Chamarajnar	2.6	29
Karbi Anglong	5.3	-34	Chichballapur	3.0	490
Karimganj	6.1	-73	Chickmagalur	12.9	359
Kokrajhar	0.0	-100	Chitradurga	2.4	161
Lakhimpur	0.7	-95	Davangere	13.4	2133
Morigaon	11.4	5	Hassan	19.1	769
N.C.Hills	0.0	-100	Kodagu	63.9	1836
Nowgong	13.7	71	Kolar	4.9	188
Nalbari	1.7	-67	Mandya	6.5	554
Ribhoi	35.5	248	Mysore	2.2	55
Sonitpur	1.7	-80	Ramnagara	0.0	-100
Sibsagar	2.7	-80	Shimoga	2.3	91
South Garo Hills	0.0	-100	Tumkur	2.8	214
Tinsukia	7.7	-57	<b>Kerala</b>		
Udalgiri	2.8	-76	Alappuzha	21.9	111
West Garo Hills	0.0	-100	Kannur	37.8	2000
West Khasi Hills	4.0	-72	Ernakulam	20.2	242
<b>West Bengal</b>			Idukki	1.5	-81
<b>SHWB</b>			Kasaragod	17.8	674
Cooch Behar	0.0	-100	Kollam	2.4	-81
Darjeeling	3.8	-73	Kottayam	42.0	256
East Sikkim	52.4	329	Kozhikode	34.3	1533
Jalpaiguri	0.0	-100	Malappuram	17.6	552
Malda	0.0	-100	Palakkad	13.5	207
North Dinajpur	0.0	-100	Pathanamthitta	4.0	-75
North Sikkim	37.9	-11	Thiruvananthapuram	13.6	196
South Dinajpur	0.0	-100	Thrissur	26.2	1039
South Sikkim	39	219	Wyanad	47.1	1524
West Sikkim	26	-39	<b>Tamil Nadu</b>		
<b>Karnataka</b>			Ariyalur	6.5	38
<b>Coastal Karnataka</b>			Chennai	16.7	1292
Dakshin Kannada	32.7	1944	Coimbatore	13.0	80
			Cuddalore	19.3	222
			Dharmapuri	0.4	-88
			Dindigul	15.8	167
			Erode	0.9	-82
			Kanchipuram	13.7	950
			Kanyakumari	7.2	-18
			Karikal	3.0	-67
			Karur	1.2	-56
			Krishnagiri	1.2	-57
			Madurai	7.1	39
			Nagapattinam	5.7	-21
			Namakkal	1.2	-49
			Nilgiris	32.0	163
			Perambalur	8.1	326
			Puducherry	16.2	47
			Pudukottai	28.1	837
			Ramanathapuram	8.2	47
			Salem	0.8	-71
			Sivaganga	8.7	108
			Thanjavur	11.9	86
			Theni	12.5	42
			Tirunelveli	40.2	233
			Tirupur	0.5	-90
			Tiruvallur	21.0	1518
			Tiruvannamalai	14.7	373
			Tiruvarur	22.8	307
			Toothukudi	6.8	-4
			Trichy	8.3	197
			Vellore	25.0	1150
			Villupuram	17.9	539
			Virudhunagar	17.3	189
			<b>Andhra Pradesh</b>		
			<b>Coastal Andhra Pradesh</b>		
			East Godavari	0.0	-100
			Guntur	0.3	-90
			Krishna	0.0	-100
			Nellore	30.2	1675
			Prakasam	0.0	-100
			Sirkakulam	0.0	-100
			Visakhapatnam	0.0	-100
			Vizianagram	0.0	-100
			West Godavari	0.0	-100
			<b>Rayalaseema</b>		
			Anantapur	0.6	-54
			Chittoor	20.7	1488
			Cuddapah	5.2	417
			Kurnool	4.6	129

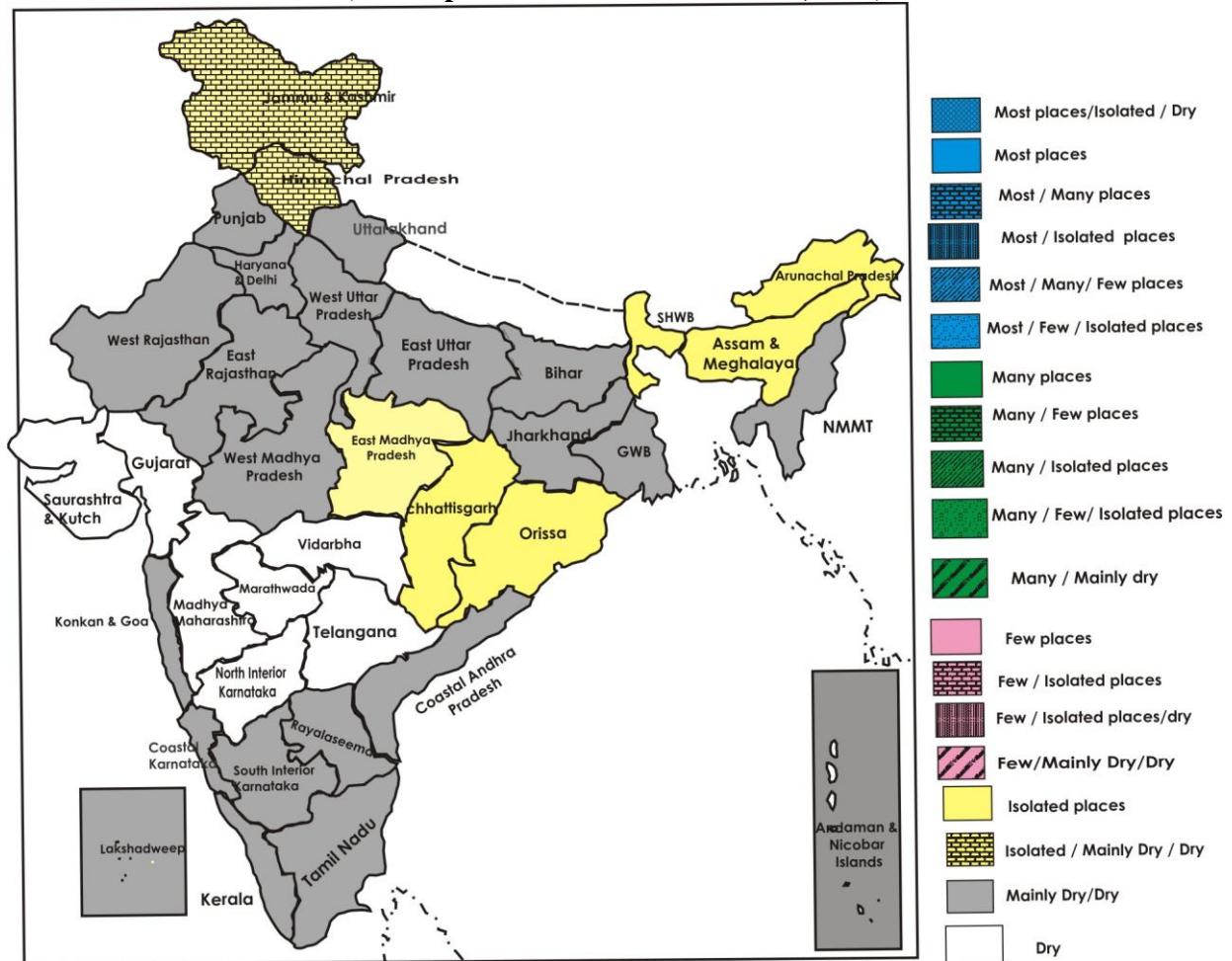
### Legends

	(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 15<sup>th</sup> March, 2013



**Weather Forecast**  
(Valid upto 0830 hours of 18<sup>th</sup> March, 2013)



### **Major Feature of Weather Forecast up to 0830 hours IST of 18<sup>th</sup> March, 2013**

- Rain/snow would occur at one or two places over Jammu & Kashmir and Himachal Pradesh during next 24 hours.
- Rain/thundershowers would occur at one or two places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Assam & Meghalaya.
- Rain/thundershowers would occur at one or two places over east Madhya Pradesh, Chhattisgarh, Vidarbha and Odisha.
- Maximum temperature would rise by 2-3°C over northwest, west and adjoining central India.
- Mainly dry weather would prevail over rest parts of the country.

### **Weather Warning during next 3 days**

No weather warning.

### **Weather Outlook for subsequent 4 days from 18<sup>th</sup> to 22<sup>nd</sup> March, 2013**

- Rain/thundershowers would occur at one or two places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Arunachal Pradesh.
- Rain/snow would occur over Jammu & Kashmir and Himachal Pradesh.
- Weather would be mainly dry over rest of the country.

## • Zonewise Agromet Advisories

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

- **Realised Rainfall:** Rain / snow occurred at many places over Jammu & Kashmir and Himachal Pradesh, at a few places over Uttarakhand and at one or two places over Punjab, north Haryana and east Uttar Pradesh during last two days. Rainfall also occurred in Delhi during this period. Weather remained mainly dry over rest parts of the region.
- **Weather Forecast:** Rain / snow would occur at one or two places over Jammu & Kashmir and Himachal Pradesh during next 24 hours. Mainly dry weather would prevail over rest parts of the region. Maximum temperature would rise by 2-3°C over the region.
- **Advisory:**
  - As there was significant rainfall during last two days in Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Delhi, farmers are advised to postpone irrigation to the standing crops in these states. There was no significant rain over the remaining parts of the region and mainly dry weather is likely to prevail, apply irrigation to the standing crops.
  - In Himachal Pradesh, mend snow damaged plants and apply protective paste like Blitox to injury on exposed parts to prevent fungal and bacterial infections.
  - In Sub Tropical Zone of Jammu & Kashmir, farmers are advised to constantly monitor wheat against attack of yellow rust; if symptoms appear, spray Propiconazole 25EC @ 0.1 % or Tebuconazole 25 EC @ 0.1 % or Triademefon 25 WP @ 0.1 per cent (1 ml / litre of water).
  - In Delhi, present weather is favourable for incidences of powdery mildew in cucurbitaceous crops and in late sown pea; if symptoms appear, farmers are advised to spray Carbendazim @ 1.0 g per litre of water.
  - Due to prevailing weather conditions in Central Plain Zone in Uttar Pradesh, there is chance of attack of pod borer in chickpea; farmers are advised to spray Endosulphan @ 1.25 litres / ha in 800-1000 litres of water to control the pest.
  - 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**
  - In Arid Western Plain Zone of Rajasthan, infection like pox in sheep and goats and Ranikhet in poultry birds may occur due to present weather conditions; farmers are advised to undertake vaccination of livestock and poultry.

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

- **Realised Rainfall:** Significant rainfall occurred in Sikkim and mainly 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 Odisha and Sub Himalayan West Bengal.
- **Advisories:**
  - As mainly dry weather prevailed during last week except in Sikkim and no significant rainfall is likely over the region during the period over the States of the region, farmers are advised to apply irrigation to the standing crops in the region. Postpone irrigation to the crops in Sikkim.
  - Due to prevailing dry weather condition, farmers in North West Alluvial Plain Zone of Bihar are advised to harvest matured potato and tobacco crop.
  - Farmers in Jharkhand are advised to spray 100 mg of Streptocycline and Bavistin @ 0.5gm/litre of water solution to control wilt disease in tomato and brinjal.
  - In view of prevailing dry weather condition, farmers in Jharkhand are advised to continue harvesting of potato, rapeseed and mustard and store the harvested produce at safe place.
  - Temperature is now suitable for proper germination of cucurbits like pumpkin, bitter gourd and bottle gourd in North Eastern Plateau Zone of Odisha, farmers are advised to undertake sowing in the prepared field.
  - Due to prevailing weather condition in Coastal Saline Zone of West Bengal, there is chance of attack of blast disease in *boro* rice; farmers are advised to spray Ediphenphos 50 EC @ 1 ml / liter of water.
  - In East and South Eastern Coastal Plain Zone of Odisha, increase in temperature may favour increase in stem borer in the main rice field. As a control, place 4 Pheromone traps / acre, collect the adults and destroy them. Increase in difference between daily maximum and minimum temperature favours the infestation of blast in rice. Spray 1 g Beam / 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.

- **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.

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

- **Realised Rainfall:** Mainly dry weather prevailed over the region.

- **Weather forecast:** Rain/thundershowers would occur at one or two places over east Madhya Pradesh, Chhattisgarh.

- Maximum temperature would rise by 2-3°C over the region.

- **Advisories:**

- As mainly dry weather prevailed over the States of 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. Farmers in Chhattisgarh Plain Zone are advised to give irrigation in mango to prevent fruits dropping due to rise in temperature.

- As per weather forecast of partial cloud and increase in temperature farmers in Satpura Plateau Zone of Madhya Pradesh are advised to harvest wheat, oilseed and pulse crops.

- As weather is favourable for the incidences of aphids in mango, farmers in Jhabua Hills Zone of Madhya Pradesh are advised to spray Carboril @ 2.0 gm / litre of water.

- As temperature is increasing in Jhabua Hills Zone of Madhya Pradesh, there are chances of fruit dropping in mango; farmers are advised to spray Naphthalic Acetic Acid @ 20-25 ppm or Planofix @ 0.3 ml/litre of water or Kerathion @ 2.0 gm/ litre of water. Irrigation should be given to mango plant after fruit setting for good yield.

- In Bastar Plateau Zone of Chhattisgarh there are chances of attack of powdery mildew in pea and mustard. Farmers are advised to spray Karathane or Calixin pesticides @ 1 gram per litre of water for its control.

- Other advisories are mentioned in Annexure – I.

- Stages of major crops are mentioned in Annexure II.

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

- **Realised Rainfall:** Mainly dry weather prevailed over most of the districts of the States of the region during last week.

- **Weather Forecast:** Rain / thundershowers would occur at one or two places over Arunachal Pradesh and Assam & Meghalaya.

- **Advisories:**

- As there was no significant rain over the States of 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.

- 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. In tomato, reduced soil moisture hinders availability of calcium; farmers are advised to ensure weekly irrigation for optimum fruit setting.

- Due to dry weather conditions in Mild Tropical Plain Zone of Tripura, farmers are advised to apply irrigation in *boro* rice as moisture stress may cause problem in emergence of tillers.

- 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.

- **Animal Husbandry**

- In Mild Tropical Plain Zone of Tripura, farmers are advised to feed / graze cattle during cooler hours and feed them fresh green fodder as temperature is rising.

- Prevailing weather conditions are congenial for the occurrence of foot and mouth disease in cattle in Mild Tropical Hill Zone of Nagaland; farmers are advised to take precautionary measures.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Dry weather prevailed over region during last week.
- **Rainfall Forecast:** Rain / thundershowers would occur at one or two places over Vidarbha. Dry or mainly dry weather would prevail over the remaining parts of the region during the period.
- **Advisories:**
  - As dry weather prevailed over Gujarat during last couple of weeks and dry weather is also likely during the period, farmers are advised to apply irrigation to summer groundnut, late sown wheat, gram, vegetables, fruit crops etc.
  - As mainly dry weather prevailed over the State during last few weeks and mainly dry/dry weather is expected during the period, farmers in Madhya Maharashtra and Marathwada are advised to apply irrigation to summer bajra, summer groundnut, sugarcane and vegetables.
  - In view of increasing day temperature, farmers are advised mulching with crop residues and other plant waste products in the orchards and in sugarcane field to minimize the rate of evaporation. Farmers of Konkan region are advised to use black polythene mulch (25  $\mu$  thickness) between 2 trenches or beds of the fruit crop nursery to control weeds and improve soil water conservation.
  - Considering the rise in temperature, farmers in Ghat region and Konkan are advised to protect the new graft and newly planted fruit crops from sun burn by erecting temporary shade.
  - Taking the advantage of prevailing dry weather, farmers of Madhya Maharashtra, Marathwada and Vidarbha are advised to complete the harvesting of wheat in morning hours. They are also advised to store the produce in cool and dry place.
  - As dry weather prevailed in last few weeks and is likely to continue in South Saurashtra Zone and North Gujarat Zone, apply irrigation in summer groundnut and in mango orchard.
  - As dry weather prevailed during last few weeks and also likely to prevail in South Gujarat Zone, apply irrigation in vegetables and fruit crops.
  - In view of prevailing dry weather and increasing temperatures in Middle Gujarat Zone, apply irrigation in summer groundnut, late sown wheat and gram.
  - Taking the advantage of dry weather in Bhal and Coastal Zone of Gujarat, farmers are advised for timely harvesting of matured *rabi* crops like wheat, mustard and chickpea.
  - Due to cloudy weather in South Konkan, there may be incidence of thrips on premature mango fruit; spray Spinosad 45% @ 2.5 ml in 10 litres of water.
  - Due to cloudy weather and rise in temperature, there may be incidence of aphids in vegetables and pulses in Konkan; spray Dimethoate 20 ml in 10 litres of water.
  - Due to rise in temperature, there may be attack of stem borer in sugarcane in Pune region; use 2 Phule Trichocard. Same may be used for 2-3 times at 10 days interval if required.
  - Due to high temperature in North Gujarat Zone there is chance of outbreak of aphids in fennel; apply Phosphamidon @ 3 ml or Dimethoate @ 10 ml or Monocrotophos @ 10 ml adding in 10 liters of water for effective control.
  - Due to high temperature in Middle Gujarat Zone, North Gujarat Zone and North West Zone of Gujarat, 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.
  - As temperature is increasing in South Gujarat Heavy Rainfall Zone, shower the animals with cold water two to three times in a day to protect cattle from summer heat. Also increase the green fodder quantity for feeding.

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

- **Realised Rainfall:** Significant rainfall occurred over Dakshin Kannada in Coastal Karnataka, Kodagu in South Interior Karnataka, Nellore in Coastal Andhra Pradesh, Chittoor in Rayalaseema, most of the districts in Kerala except Idukki, Kasargod, Kollam, Malappuram, Palakkad, Pathanamthitta, Thiruvananthapuram in Kerala and Pudukkotai, Tiruvarur, Tiruvallur, Vellore, Tirunelveli and Nilgiris in Tamil Nadu last week.
- **Rainfall Forecast:** Mainly dry weather would prevail over the region.
- **Advisories:**
  - As significant rainfall occurred over Dakshin Kannada in Coastal Karnataka, Kodagu in South Interior Karnataka, Nellore in Coastal Andhra Pradesh, Chittoor in Rayalaseema, most of the districts in Kerala except Idukki, Kasargod, Kollam, Malappuram, Palakkad, Pathanamthitta, Thiruvananthapuram in Kerala and Pudukkotai, Tiruvarur, Tiruvallur, Vellore, Tirunelveli and Nilgiris in Tamil Nadu last week, postpone irrigation to the standing crops. Apply irrigation to the crops in the remaining districts, as mainly dry weather prevailed and would continue to prevail over the region.

- In the Problem Area Zone and Northern Zone of Kerala, farmers are advised to apply mulching with crop residues to conserve soil moisture in coconut gardens.
  - Prevailing high humidity and cloudy weather in the Southern Zone of Tamil Nadu is conducive for thrips incidence in chilli. Flowering and fruit bearing will be affected due to this pest incidence. Farmers are advised to spray dimethoate at 500 ml/ ha to control this pest.
  - Due to prevailing weather in the Southern Dry Zone of Karnataka, there is possibility of occurrence of fruit rot and sucking pests in mango. Farmers are advised to spray 1.5 ml Rogar or 1% Bordeaux mixture.
  - In the Problem Area Zone of Kerala, present weather condition favors the attack of brown plant hopper (BPH), outbreak of blast disease and swarming caterpillar in rice. Farmers are advised to remove the severely affected plants in order to provide air circulation into the crop canopy and thereby reduce the spread of the blast disease to the nearby plants.
  - Increasing day temperatures are favourable for incidence of stem borer and leaf folder in rice in the Scarce Rainfall zone of Andhra Pradesh. Farmers are advised to spray Chlorpyrifos @2.5 ml or Cartap hydrochloride 2.0 gm or Acephate @1.5 gm per one litre of water for control of leaf folder and Cartap hydrochloride 50 SP @ 2g per litre for control of stem borer.
  - Other 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:**
    - Farmers in the North Eastern Zone of Tamil Nadu are advised to keep animals in a cool place to avoid heat stress, avoid grazing in hot hours of the day due to increase in day temperature and vaccinate calves above 3 months and sheep and goat above 2 months against Foot and Mouth disease and Sheep pox.
    - Farmers in the North East Transition Zone of Karnataka are advised to feed dry fodder to animals after uniform mixing with 2% urea and 10% molasses or jaggery to improve palatability, apply 4-6 inch thick hay thatch as a roofing material, spray water on the floor and roof of shelter periodically during peak hot hours to lower temperature thus reducing the heat load on animals, give mineral supplements based on the deficiency in the region. Make cool water available to the birds as precautionary measures for livestock under hot conditions.
    - As the day temperatures would reach 38°C in the North East Dry Zone of Tamil Nadu, heat stress in birds is likely to increase. Hence, farmers are advised to give due care to birds with summer management like monitoring for availability of water throughout day time and the temperature of the water flowing through the pipeline should be frequently evacuated to prevent rise in water temperature, to reduce the heat stress in poultry.

## Annexure I

### Other Advisories

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

- In Hill Zone of Uttarakhand, farmers are advised to prepare field for sowing of Chetaki dhan, pea, potato. Undertake sowing of tomato, pea and French bean.
- In Sub Tropical Zone and also in Intermediate Zone of Jammu & Kashmir, farmers are advised to continue sowing of bhindi, beans and cucurbits without any further delay. They are also advised to undertake planting of mango, guava, loquat, litchi, citrus etc. and deciduous plants, such as pear, peach, plum and grape-vine. Remove thatches / covering materials and provide support to the plants for their upright growth against wind.
- In Central Plain Zone of Uttar Pradesh, farmers are advised to continue sowing / transplanting of cucurbitaceous vegetables and lady's finger, sowing of autumn maize and planting of autumn sugarcane. Undertake harvesting of brinjal, chillies, leafy vegetable, potato, sugarcane, yellow pods of mustard and complete the harvest of potato. Undertake transplanting of papaya plants in new orchard.
- In Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh farmers are advised for nursery sowing / transplanting of tomato, chilli, capsicum, brinjal and cucurbits. Also it is advised for sowing of ageti bhindi and French bean in the field.
- 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.
- In Semi Arid Eastern Plain Zone of Rajasthan, farmers are advised to start sowing of summer okra, cucurbits, *zaid* crops viz. pearl millet fodder, sorghum fodder, green gram and okra.
- In Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan, farmers are advised to undertake sowing of summer moong, groundnut and summer green fodder. In Southern Humid Plain Zone, farmers are advised to complete sowing of *zaid* crops i.e. moong, groundnut and fodder crops.
- Farmers in Punjab are advised to undertake transplanting of chilli, sowing of okra and also advised to sow early summer and multicut fodder during this month to meet fodder scarcity during summer lean period.

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

- Farmers in North West and South Bihar Alluvial Plain Zone of Bihar are advised undertake sowing of summer mung and urad.
- Farmers in North Eastern Coastal Plain Zone of Odisha are advised to undertake planting of marigold as this is the ideal time for planting of marigold.
- Farmers of Mid Central Table Land Zone are advised to complete sowing of different summer vegetables. Prevailing temperature is now suitable for germination of cucurbits like pumpkin, bitter gourd and bottle gourd. Before sowing the seeds are to be soaked overnight in water.
- Farmers of East and South Eastern Coastal Plain Zone of Odisha are advised to undertake sowing of summer cow pea and complete sowing of sesame.
- Farmers of North Central Plateau Zone of Odisha are advised for sowing cucurbits and ladies finger.
- Due to fluctuation in temperature, stem borer attack has been widely noticed in rice in North Eastern Coastal Plain Zone of Odisha. Farmers are advised to use pheromone trap @20-25 no. per hectare. Apply Fipronil or Triazophos @2ml/litre when pest population reaches at ETL level.
- Fruit and shoot borer in brinjal has been found in Mid Central Table Land Zone of Odisha. Farmers are advised to install pheromone trap @12 nos /acre. Alternately spray 4 g Sevin WP or 2 ml Malathion in 1 litre of water. Thrips in chilli has been found. Spray 300 ml Ethion or 400 ml Carbosulphan in 200 litre water/acre.
- 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 to sow moong and different 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 New Alluvial Zone and Laterite and Red Soil Zone of West Bengal are advised to prepare land and undertake sowing of sesame.
- Farmers in Coastal Saline Zone and Old Alluvial Zone of West Bengal are advised to prepare land for planting of different summer vegetables such as okra and pointed gourd.
- Farmers in Terai Zone of West Bengal are advised to prepare land for sowing of jute.

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

- Farmers in Satpura Plateau of Madhya Pradesh are advised to undertake sowing of summer moong, urad and fodder crops like maize, jowar, bajra and lobia and harvest oilseed and pulse crops.
- Farmers in Gird Zone of Madhya Pradesh are advised to harvest mustard crop and undertake sowing of cucurbits like gourd, bottle gourd, cucumber and musk.
- Farmers in Bundelkhand Zone of Madhya Pradesh are advised to harvest mature pea, lentil, mustard and chickpea crops.
- Farmers in Jhabua Hills Zone of Madhya Pradesh are advised to undertake nursery preparation of papaya, summer vegetables like tomato, brinjal and chilli.
- Farmers in Kymore Plateau and Satpura Hill Zone of Madhya Pradesh are advised to make arrangements for harvesting of peas, arhar, lentil and gram crops
- Farmers in Central Narmada Valley Zone are advised to undertake sowing of ladies finger and spinach.
- Farmers in Gird Zone and Satpura Plateau Zone of Madhya Pradesh are advised to harvest matured mustard crop. They are also advised to sow summer crop urad and moong crops.
- Farmers in Chhattisgarh Plain Zone are advised to undertake harvesting of wheat and gram crop.

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

- In Upper Brahmaputra Valley Zone of Assam, farmers are advised to continue land preparation and sowing of summer pulses and summer vegetables.
  - In Hill Zone, Barak Valley Zone and Lower Brahmaputra Valley Zone of Assam, farmers are advised to continue nursery raising of early *ahu* rice.
  - In Barak Valley Zone of Assam, farmers are advised to continue land preparation and sowing of summer pulses and summer vegetables.
  - In Lower Brahmaputra Valley Zone of Assam, farmers are advised to continue sowing of maize, jute, summer pulses like black gram and green gram and summer vegetable crops like pumpkin, ridge gourd, sponge gourd, okra etc.
  - Farmers in North Bank Plain Zone of Assam are advised to continue sowing of summer vegetables like ridge gourd, cucumber, bitter gourd, okra etc. and undertake land preparation for sowing of summer pulses.
  - Farmers in Central Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of summer pulses, *Capsularis* jute and summer vegetables.
  - 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 and French bean. Also undertake sowing of cucurbits.
  - Farmers in Mild Tropical Hill Zone of Mizoram are advised to continue land preparation and sowing of okra, chilli, brinjal and cucurbits.
  - In Mild Tropical Plain Zone of Tripura, farmers are advised to continue land preparation and sowing of summer vegetables, summer maize and sesame.
  - Farmers in Sub Tropical Plain Zone of Manipur are advised to undertake intercultural operations in tomato, brinjal and chilli etc. and transplanting of seedlings of cucurbits. Also continue land preparation for nursery raising of *pre-kharif* rice.
  - Farmers in Mild Tropical Hill Zone of Nagaland are advised to undertake sowing of summer vegetables like okra, cucurbits, chilli, French bean, pea, land preparation for sowing of summer maize, ginger and turmeric and transplanting of chilli and brinjal.
  - In Barak Valley Zone of Assam, there is infestation of aphids, jassids and beetles in French bean; farmers are advised to spray Malathion 50 EC @ 1.5 ml / litre of water to control the attack.
- **Animal Husbandry**
    - In North Bank Plain Zone of Assam, farmers are advised that to control ranikhet disease in poultry, vaccination may be done during this period.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- In Middle Gujarat Zone, continue sowing of summer crops like pearl millet, cowpea, paddy and green gram.
- Carry out harvesting of early sown and timely sown wheat in early morning in Middle Gujarat Zone.
- Complete sowing of summer pearl millet and carry out sowing of pulses in Bhal and Coastal Zone of Gujarat.
- Complete sowing of summer crops under assured irrigation in South Gujarat Heavy Rainfall Zone, North Gujarat and North West Zone of Gujarat. Carryout hand weeding & intercultural operations in timely sown groundnut.
- In North Saurashtra Zone of Gujarat, continue sowing of summer vegetables like lady's finger, cluster bean, bottle gourd, sponge gourd, ridge gourd, bitter gourd, water melon and transplanting of tomato and brinjal. Also carry out sowing of summer sesamum, green gram, black gram and cluster bean (gum purpose).
- Due to increase in temperature, there is increase in intensity of occurrence of thrips in onion and garlic in South Gujarat Heavy Rainfall Zone. Spray Dimethoate @ 30 EC @ 10 ml or Prophenophos 40% + Cyarparmethrin 4% (Polytrin c 44 EC) @ 10 ml in 10 litres of water.

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

- In the Southern Zone of Kerala, farmers are advised to complete sowing of rice in this week.
- In the Northern Zone of Kerala, weather is favourable for incidence of powdery mildew disease in vegetables. If noticed, farmers are advised to apply wettable sulphur @3 g per litre of water.
- Farmers in the North East Transition Zone of Karnataka are advised to provide irrigation to sugarcane and mango as there will be no rainfall for next five days. As the mango fruits are in marble stage and this will help for the better development of fruits.
- High incidence of shoot and fruit borer is observed in the North East Transition Zone of Karnataka. Farmers are advised to spray carbaryl 4g per liter of water.
- Farmers in the North Transition Zone of Karnataka are advised to undertake harvesting of sugarcane, sorghum (October and November sown), wheat, and chick-pea.
- Incidences of powdery mildew are more due to warm and cloudy weather in the North Transition Zone of Karnataka. Farmers are advised to spray fungicide in three stages: First immediately after the initiation of flower, second after flowering and third after fruit set and spray 3 gm. water soluble Sulphur (80%) / 1 ml Tridomorph / 1 ml Hexaconozol / 3 gm. Carbendazim per liter of water to control powdery mildew.
- Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to undertake land preparation for sowing of potato, beans, peas, radish, turnip and knolkol and transplanting of cabbage.
- Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to undertake picking of cotton affected due to rains separately after 8 am in the morning and select short duration sucking pest tolerant entries for summer cotton cultivation.
- Farmers in the South Zone of Tamil Nadu are advised to take up sowing of summer irrigated pulses and pearl millet and provide irrigation to the summer irrigated cotton crop, as dry weather is expected in the coming days.

## Annexure II

### Major Crops

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

- Wheat (milky), pea (maturity/harvesting), radish (vegetative), pome and stone fruits (planting), cabbage, cauliflower (head formation/maturity), capsicum, tomato, brinjal (sowing), cucurbits, French bean, okra, fodder crops (chari, bajra) (sowing) in Himachal Pradesh.
- Cauliflower, cabbage, broccoli, tomato (flowering / fruiting), carrot (flowering / fruiting), pea, gram (flowering/pod filling) radish and turnip (flowering/ fruiting), mustard (maturity), onion (vegetative), coriander, fenugreek, spinach (vegetative), wheat (grain filling), lady's finger, French bean, cluster bean, summer radish, hybrid cluster bean (sowing), chilli, tomato, brinjal and cucurbits (nursery preparation / 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 (capsule formation/ maturity), wheat (late sown - jointing, normal / early sown - ear head emergence), barley (jointing / flag leaf initiation), pulses (pea, lentil, gram) (pod development), oat, berseem (vegetative) in Jammu & Kashmir.
- Wheat (flowering/milky), arhar (flowering / pod formation), ginger (vegetative), autumn sugarcane (vegetative), yellow sarson, mustard ( capsule formation), barley (ear head emergence / milky), oat (tillering / ear head emergence), chick pea, lentil (pod maturity/harvesting, moong, urd, okra (sowing), sugarcane, cucurbits (sowing) in Uttarakhand.
- Wheat (milky), sugarcane (harvesting), new sugarcane (planting), linseed, jai (flowering/pod formation), onion, garlic (vegetative), rapeseed, mustard, pea, lentil, gram (pod formation / maturity) maize (grain maturity/harvesting), moong, urad(sowing) in Uttar Pradesh.
- Wheat (ear head emergence), sugarcane (harvesting), potato (harvesting), new sugarcane (planting), mustard (capsule formation), maize (sowing / germination), summer pulses (field preparation for sowing), cucurbits (sowing), berseem (vegetative / cutting), fruit (planting) in Punjab.
- Wheat (ear head emergence), sugarcane (harvesting), new sugarcane (planting), mustard (capsule formation), 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 ( milky / dough/grain maturity), barley (milky /dough/ grain maturity), opium poppy (pre-flowering / flowering) in Rajasthan.

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

- Gram, lentil (pod formation / maturity), sunflower (head formation), maize (cob formation), sugarcane (planting), potato (tuber formation / tuber maturity / harvesting), mustard (capsule formation), urad, arhar (grain formation), winter vegetables (flowering / fruiting / harvesting), wheat (flowering / milk), pigeon pea (flowering / pod formation), summer vegetables (sowing / vegetative), moong, urd (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), rice (seedling), rapeseed, mustard (harvesting) in Jharkhand.
- Sugarcane (sprouting), banana (vegetative), mustard (capsule formation / capsule maturity), cowpea (pod formation / maturity), *rabi* groundnut (pod formation), fruit crops (planting / seedling), summer rice (seedling), wheat (milk / dough / maturity), tomato (flowering / fruiting), summer green gram, summer vegetables, summer groundnut (sowing) in Odisha.
- *Boro* rice (active tillering / panicle initiation), wheat (grain filling to maturity stage), sesame(sowing/vegetative), maize (vegetative), summer vegetables (planting), potato (tuber formation / maturity stage), 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.

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

- Ladies finger (flowering / fruiting), pigeon pea, gram (maturity/ harvesting), potato, onion (maturity/harvesting), sugarcane (vegetative/elongation), summer vegetables (sowing/ transplanting), wheat (grain filling/maturity/harvesting), maize (cob formation/ harvesting), lentil, mustard, linseed (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), vegetables (transplanting / vegetative), millet (flowering), wheat (grain formation/maturity), rice (transplanting), niger, kulthi (vegetative) in Chhattisgarh.

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

- *Boro* rice (active tillering / panicle initiation), early *ahu* rice (nursery raising / sowing / seedling), maize (sowing), jute (sowing), wheat (milk / dough), tomato (flowering / fruiting), summer pulses (sowing), okra (sowing / seedling), cucurbits (sowing) and summer vegetables (sowing) in Assam.
- Pea (pod formation / pod maturity), French bean, okra (sowing) and cucurbits (sowing) in Arunachal Pradesh.
- Pre-*kharif* rice (sowing / transplanting), *rabi* maize (vegetative), potato (tuber formation / harvesting), pea (pod formation / pod maturity), cauliflower, cabbage (sowing), rapeseed (pod formation / pod maturity), onion, garlic (vegetative / bulb formation), tomato, brinjal, chilli (transplanting / vegetative), beans (early vegetative / vegetative), cucurbits (transplanting / early vegetative), okra (sowing) in Manipur.
- *Rabi* maize (silking / tasselling / cob formation), *boro* rice (tillering), pea, lentil, toria, chilli, brinjal (vegetative / flowering / fruiting) in Meghalaya.
- Pea (harvesting), tomato (fruiting / harvesting), banana (vegetative / harvesting), maize (cob formation / maturity), okra, cucurbits (sowing) and chilli and brinjal (nursery raising) in Mizoram.
- *Rabi* maize (cob maturity), cabbage (head formation), mustard (flowering / capsule formation), tomato (flowering / fruiting), pea (pod maturity / harvesting), banana (fruiting), potato (tuber formation), cucurbits (germination), chilli, brinjal (transplanting), and okra and other summer vegetables (sowing) in Nagaland.
- *Boro* rice (active tillering), summer brinjal, tomato (flowering), potato (tuber maturity / harvesting), pea, bean (maturity / harvesting), summer green gram and black gram (vegetative), summer vegetable, summer maize, sesame (sowing) in Tripura.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- *Adsali*, pre seasonal & *suru* sugarcane (cane maturity / harvesting in Madhya Maharashtra and Marathwada), new *adsali* (tillering), new pre seasonal (early tillering), new *suru* sugarcane (early sprouting), wheat (grain maturity / harvesting), summer rice (tillering in South Konkan and early tillering / tillering in Western Ghat region and East Vidarbha), summer groundnut (flowering / pegging in South Konkan and early vegetative / vegetative in Madhya Maharashtra, Marathwada and Vidarbha), summer bajra (early vegetative in Pune and Nashik region) in Maharashtra.
- Pearl millet (sowing), pulses (sowing), summer groundnut (flowering / pegging), summer rice (tillering), summer vegetables (sowing / transplanting / vegetative), wheat (dough / maturity / harvesting), gram (pod maturity / harvesting), sugarcane (vegetative / elongation), potato (tuber maturity / harvesting), mustard (pod maturity / harvesting), 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 (pod development/pod maturity/harvest), *rabi* maize (tasselling/silking), sunflower (flowering / seed formation), *rabi* rice (panicle initiation), summer cotton (sowing), Bengal gram (harvesting), red gram (harvesting), cowpea and sesame (pod formation/ pod maturity), rice fallow pulses (vegetative), sugarcane (tillering), mango (flowering) and vegetables (all stages) in Andhra Pradesh.
- Cowpea, black gram and green gram (pod maturity/harvesting), pigeon pea (harvesting), chilli (fruiting), sunflower (harvesting), chick pea (pod development /harvesting), grapes (fruit development), Bengal gram (harvest), 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), sugarcane (harvesting/planting) in Karnataka.
- Coconut (harvesting), *puncha* rice (maturity/harvesting), vegetables (planting/seedling), *summer* rice (sowing), sugarcane (harvesting/land preparation for next crop), cardamom (new planting) in Kerala.
- *Samba* rice (maturity/harvesting), *thaladi* (maturity/ harvesting), sorghum (harvesting), rice fallow pulses (pod formation), rainfed groundnut (flowering/maturity), maize (flowering / maturity/harvesting), red gram (pod formation/maturity), summer sorghum, maize and cotton (sowing),vegetables (fruiting) in Tamil Nadu.



## **Annexure III**

### **List of Varieties**

#### **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.

#### **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

**Baby corn :** HM-4 hybrid

**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,

**Shimla Mirch:** P.R.C.-1, Mahabharat, California Wonder

**Dhan:** VL-Dhan 207, VL-Dhan 208 & VL - Dhan 209

**Pea:** VL Ageti Matar-7 or Vivek Matatr-10 specially

**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).

#### **Odisha**

**Groundnut:** Smruti and JL-24, TMV-2, Devi, Phule Pragati, ICGS-44, TAG-24, TG-3 and TG 38.

**Sugarcane:** CO 740, CO 6304, CO7219, COT 8201, Neelamadhava and Sabita.

**Sesame:** Vinayak, Kanak, Kalika, Uma, Usha.

**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, MSFH-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.

#### **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.

#### **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.

**Marigold:** Rajnigandha.

**Papaya:** Redleady, Taiwan.

**Summer moong:** HUM-16, PS-16, Pusa Vishal, Samrat, Sona and SML668.

**Urad:** Type 9.

#### **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.

**Jute:** JRC 321, UPC 94.

**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.

#### **Arunachal Pradesh:**

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

#### **Manipur :**

##### **French Bean:**

**Dwarf type:** Anupam, Pant Anupam.

**Pole type:** Tangkhul Hawaii (local variety).

#### **Tripura:**

**Green gram:** PDM 139.

**Black gram:** T-9, Panth Urd- 35.

**Tomato:** Anup.

#### **Maharashtra**

**Summer Green Gram:** AKM8802, Pusa Vaishakhi.

#### **Gujarat**

**Green Gram:** Guj. Mung- 3, 4, K-851.

**Cowpea:** Guj. Cowpea-4, 5, Pusa Falguni.

**Pearl millet:** GHB-526 and GHB-558.

**Tomato:** Pusa Hybrid, Pusa Rubi, Jungadh Rubi, Junagadh Tomato-1.

**Brinjal:** Junagadh Oblong, Junagadh Long, Guj. Brinjal-2.

**Lady's finger:** Guj. Hy. 2.

**Ridge gourd:** Pusa Nasdar, Jaipuri.

**Bottle gourd:** Junagadh Tender Long, Pusa Summer Prolific Long.

**Sponge guard:** Pusa Chikni.

**Bitter guard:** Priya, Pusa Damosmi.

**Cluster bean:** Pusa Sadabahar, Pusa Navbahar, IC-11388, Gujarat Guar-2.

**Water melon:** Sugar Baby, Arka Jyoti.

### Annexure IV

### Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 13.03.2013

