

Significant weather and realized rainfall during last week:

- Significant rainfall occurred in most of the districts of Himachal Pradesh, Jammu & Kashmir, many districts of Punjab, few districts of Uttarakhand, Haryana, one or two districts of Uttar Pradesh and Rajasthan. Mainly dry weather prevailed over rest parts of the country.

Major Feature of Weather Forecast up to 0830 hours IST of 4th March, 2013

- Rain/snow would occur at one or two places over Jammu & Kashmir on 1st March and mainly dry weather thereafter.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands.
- Slight fall in temperatures would occur over northwest India and central India during next 48 hours and increase thereafter.
- Mainly dry weather would prevail over rest parts of the country.

Regionwise Salient Advisory

Northwest India

Major crops

- Wheat (ear head emergence / flowering / milking), Mustard (flowering / capsule formation)



- Postpone irrigation to standing crops in most of the districts of Himachal Pradesh, Jammu & Kashmir, many districts of Punjab, few districts of Uttarakhand, Haryana, one or two districts of Uttar Pradesh and Rajasthan. As mainly dry weather will prevail over the region, apply irrigation to the standing crops in the remaining parts of the region where no significant rainfall occurred. (Detailed regionwise summery is given in page no.2)

Central India

Major crops

- Wheat (ear head emergence/flowering), autumn sugarcane (vegetative), yellow sarson, mustard (flowering / capsule formation)



- Farmers are advised to apply irrigation to the standing crops.

East India

Major crops

- Gram, lentil (pod formation/maturity), Wheat (flowering / milking / dough stage) and potato (vegetative / tuber formation).
- Farmers are advised to apply irrigation to the standing crops.

Northeast India

Major crops

- Boro rice (tillering / active tillering), early ahu rice (nursery raising / sowing), wheat (ear head emergence / flowering), 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 / early sprouting), summer groundnut (early vegetative / vegetative / flowering), summer bajra (germination / early vegetative), summer groundnut (sowing / germination / seedling / vegetative), wheat (milk / dough stage).
- As dry or mainly dry weather is expected during next 5 days, farmers in Madhya Maharashtra, Marathwada and Vidarbha are advised to apply irrigation to summer bajra (Pune and Nasik region), summer groundnut, sugarcane and vegetables.
- Under low humidity, high temperature and prevailing dry condition, apply irrigation to wheat, castor and orchards in North Gujarat and North West Gujarat; vegetables and mango in South Gujarat Zone and also to garlic in South Gujarat Heavy Rainfall Zone to meet evaporative demand of the crops.

South India

Major crops

- Sunflower (flowering / seed formation), rice fallow pulses (vegetative), *puncha* rice (tillering stage), sugarcane (vegetative / rationing).
- Farmers are advised to apply irrigation to the standing crops.

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India Meteorological Department, Shivajinagar, Pune.

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

Executive Summary

Northwest India

- As significant rainfall occurred in most of the districts in Himachal Pradesh, Jammu & Kashmir except Kargil and Ladakh (Leh) districts, Saharanpur district of West Uttar Pradesh, Almora, Bageshwar, Dehradun, Garhwal Tehri, Nainital districts of Uttarakhand, many districts of Punjab, Ambala, Bhiwani, Chandigarh, Jind, Panchkula, Panipat, Sonapat, Yamunanagar districts of Haryana and Hanumangarh district of West Rajasthan during last week, farmers are advised to postpone irrigation to the standing crops. As mainly dry weather will prevail over the region, apply irrigation to the standing crops in the remaining districts where no significant rainfall occurred.
- In Himachal Pradesh, farmers are advised to prune and mend snow damaged plants and apply protective paste like Blitox on parts exposed due to injury to prevent fungal and bacterial infections. Apply Bordeaux or Chaubatia paste on the pruning cuts of apple and stone fruits.
- In Himachal Pradesh, farmers are advised to drain out excess water from the crop fields.
- In Eastern Plain Zone of Uttar Pradesh, weather conditions are favourable for the occurrence of pod borer in gram, farmers are advised to spray Endosulphan @ 1.25 litres / ha in 800-1000 litres of water to control.

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.
- As dry weather is prevailing in Satpura Plateau Zone of Madhya Pradesh, farmers are advised to undertake harvesting of matured green peas, onion and potato.
- In Central Narmada Valley zone of Madhya Pradesh, present weather conditions are congenial for the incidence of leaf curl in tomato and chilly crops. Farmers are advised to spray Methyl demeton 25 E.C. @ 2.0 ml. or Emidachloprid @ 0.5 ml/l of water for the control of disease.
- Due to favourable weather conditions in Bastar Plateau Zone of Chhattisgarh, there are chances of purple blotch in onion and powdery mildew in mustard. Farmers are advised to monitor the crops for the diseases and undertake plant protection measures

East India

- As mainly dry / dry weather prevailed over the region and is likely to prevail over the States of this region during the period, farmers are advised to apply irrigation to the standing crops.
- Due to present weather condition in Laterite and Red Soil Zone of West Bengal, there is chance of attack of rust and blight diseases in wheat. Apply Mancozeb @ 2.5 to 3 g per litre to control the attack.
- Due to prevailing weather condition, there is chance of tikka disease in groundnut in Western Undulating Zone of Odisha. To control tikka disease, spray Bavistin 1.5g/litre of water. The current weather may favour the infestation of saw fly in mustard. To control saw fly, spray 400 ml Chloropyriphos or Triazophos/acre.
- In East and South Eastern Coastal Plain Zone of Odisha, increase in temperature may favour increase in stem borer in the main rice field. 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 Beam @ 1 g / 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.
- 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.
- As prevailing weather is favourable for development of blossom end rot in tomato in Mild Tropical Hill Zone of Nagaland, farmers are advised for mulching in tomato to conserve soil moisture.
- Weather is favourable for incidence of blight and fruit borer in tomato and chilli crops and also fruit borer in cabbage 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 and use 5 % neem extract or spray Endosulphan (35%) @ 12 ml or Dimethoate (30%) @ 10 ml in 10 litres of water for cabbage borer.
- In Temperate Sub Alpine Zone of Meghalaya, due to congenial weather, there is chance of attack of aphids in pea and lentil; farmers are advised to apply Dimethoate @ 2 ml per litre of water or Malathion 50 EC @ 1.5 ml per litre of water, if incidence is noticed.

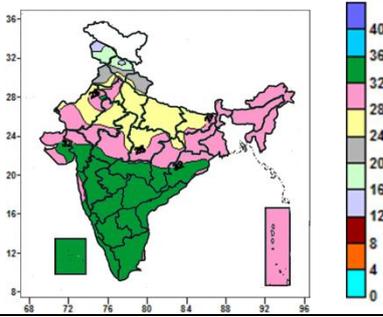
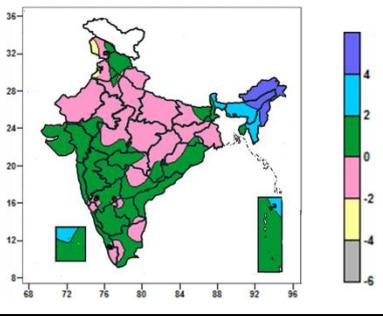
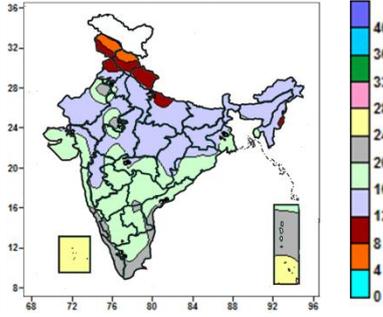
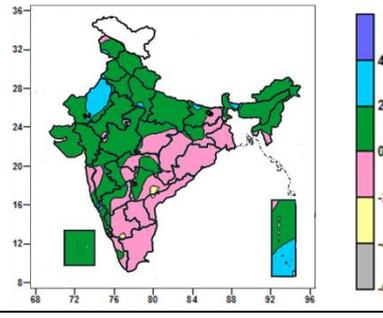
West India

- As dry or mainly dry weather is expected during next 5 days, farmers in Madhya Maharashtra, Marathwada and Vidarbha are advised to apply irrigation to summer bajra (Pune and Nasik region), summer groundnut, sugarcane and vegetables.
- Prevailing minimum temperature (around 18°C) in Vidarbha is favourable for germination of summer green gram; farmers are advised to sow recommended variety.
- Considering the rise in temperature (34-36 °C) in Madhya Maharashtra and Marathwada, farmers are advised to carry out mulching with crop residues and other plant waste products in the orchards to reduce the rate of evaporation.
- As mango is at pea / marble stage and considering the rise in maximum temperature in Konkan and Madhya Maharashtra, apply 150 to 200 litres of water per mango tree at 15 days interval to avoid fruit dropping.
- In Gujarat, under low humidity, high temperature and prevailing dry condition, apply irrigation to wheat, castor and orchards in North Gujarat and North West Zone of Gujarat, vegetables and mango in South Gujarat Zone and also to garlic in South Gujarat Heavy Rainfall Zone to meet evaporative demand of the crops.
- Due to prevailing cloudy weather, there may be incidence of thrips on pea size mango fruit in South Konkan. On the incidence of the pest, spray Spinosad 45 % @ 2.5 ml in 10 litres of water on the whole tree.
- Under prevailing conditions (rise in minimum temperature) in Western Maharashtra Scarcity Zone, there may be increase in infestation of thrips on onion; spray Cypermethrin 25 % @ 5 ml or Fipronil @ 15 ml in 10 litres of water at 10-15 days interval.

South India

- As mainly dry / dry weather prevailed over most parts of the region during last week and likely to continue, apply irrigation to the standing crops.
- In Problem areas Zone of Kerala, mulching with dried leaves is advised in coconut, nutmeg and banana crops for reducing evapotranspiration loss. It is the better time for cultivating cabbage and cauliflower.
- In Problem Area Zone of Kerala, weather is congenial for bud rot disease in coconut, where young palms are more susceptible. In the early stages, farmers are advised to cut and remove the affected tissues of the crown and burn them and spray Bordeaux mixture 1% on spindle leaves and crown of disease affected as well as neighbouring palms.
- Powdery mildew infestation is likely to be 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 water soluble Sulphur (80%) @ 3 gm. / Tridomorph @ 1 ml / Hexaconozol @ 1 ml / Carbendazim @ 3gm per liter of water to control powdery mildew.
- Warm and humid weather is congenial for incidence of stem borer, hispa and leaf folder in rice in high altitude zone of Andhra Pradesh. Farmers are advised to take appropriate plant protection measures.
- Weather is congenial for incidence of stem borer and leaf folder in rice in Northern Telangana Zone of Andhra Pradesh. Farmers are advised to spray Monocrotophos 36 SL @ 1.6 ml / lit (or) Chlorpyrifos 20EC @ 2.5 ml / litre of water.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 27.02.2013

<p>Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 27.02.2013</p> 	<p>Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 27.02.2013</p> 
<p>Actual Mean Maximum temperature ranged between 32 to 36$^{\circ}\text{C}$ over many parts of Orissa, Gujarat, South India(except Andaman & Nicobar Islands), some parts of Saurashtra & Kutch, Madhya Pradesh, Chattisgarh, 12 to 16$^{\circ}\text{C}$ over some parts of Jammu & Kashmir, Himachal Pradesh, 16 to 20$^{\circ}\text{C}$ over many parts of Jammu & Kashmir, some parts of Himachal Pradesh, 20 to 24 over many parts of Uttarakhand, Punjab, some parts of Himachal Pradesh, West Uttar Pradesh, 24 to 32$^{\circ}\text{C}$ over remaining parts of the country.</p>	<p>Mean Maximum temperature anomaly ranged between 4 to 6$^{\circ}\text{C}$ over many parts of Arunachal Pradesh, Nagaland, some parts of Assam & Meghalaya, Manipur, 2 to 4$^{\circ}\text{C}$ over many parts of Assam, Mizoram, Tripura, some parts of Sub-Himalayan West Bengal & Sikkim, Lakshadweep, Andaman & Nicobar Islands, 0 to 2$^{\circ}\text{C}$ over many parts of Himachal Pradesh, West India, South India, Orissa, some parts of Jammu & Kashmir, Punjab, Haryana, East Rajasthan, Madhya Pradesh, Chattisgarh, Bihar, Sub-Himalayan West Bengal, -4 to -2$^{\circ}\text{C}$ over some parts of Jammu & Kashmir, Punjab, -2 to 2$^{\circ}\text{C}$ over rest of the country.</p>
<p>Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 27.02.2013</p> 	<p>Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 27.02.2013</p> 
<p>Actual Mean Minimum Temperature ranged between 24 to 28$^{\circ}\text{C}$ over many parts of Lakshadweep, some parts of Andaman & Nicobar Islands, 20 to 24$^{\circ}\text{C}$ over many parts of Kerala, Andaman & Nicobar Islands, some parts of Andhra Pradesh, South Interior Karnataka, Tamil Nadu, 8 to 12$^{\circ}\text{C}$ over many parts of Uttarakhand, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, East Uttar Pradesh, 4 to 8$^{\circ}\text{C}$ over many parts of Jammu & Kashmir, some parts of Himachal Pradesh, 12 to 20$^{\circ}\text{C}$ over remaining parts of the country.</p>	<p>Minimum Temperature anomaly ranged between 2 to 4$^{\circ}\text{C}$ over many parts of West Rajasthan, some parts of Andaman & Nicobar Islands, -4 to -2$^{\circ}\text{C}$ over some parts of Telangana, Coastal Andhra Pradesh, South Interior Karnataka, -2 to 2$^{\circ}\text{C}$ over rest of the country.</p>

Significant weather and realized rainfall during last week:

- Significant rainfall occurred in most of the districts of Himachal Pradesh, Jammu & Kashmir except Kargil and Ladakh (Leh) districts, Saharanpur district of West Uttar Pradesh, Almora, Bageshwar, Dehradun, Garhwal Tehri, Nainital districts of Uttarakhand, many districts of Punjab, Ambala, Bhiwani, Chandigarh, Jind, Panchkula, Panipat, Sonapat, Yamunanagar districts of Haryana and Hanumangarh district of West Rajasthan. Mainly dry weather prevailed over rest parts of the country.

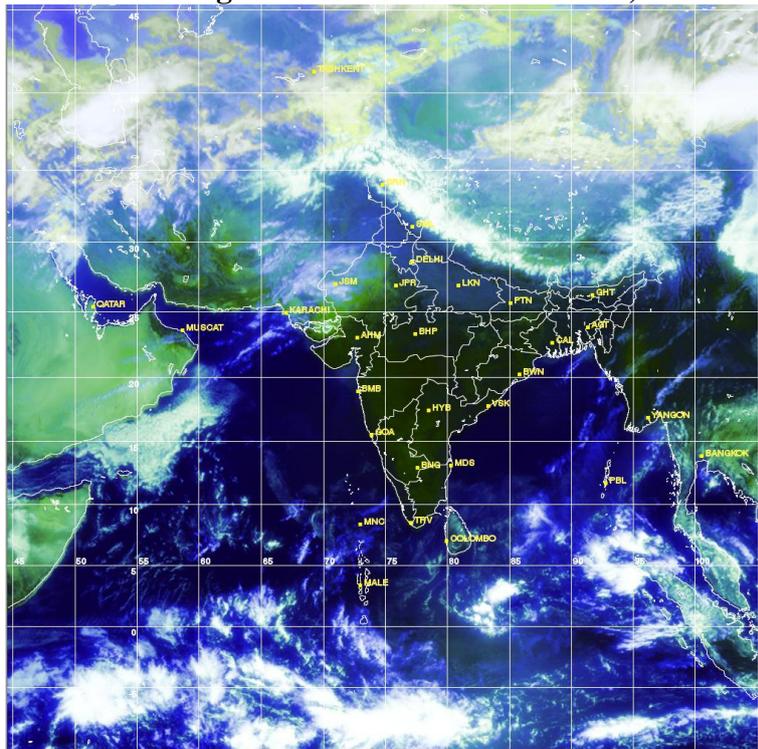
Distribution of rainfall of the country during week ending on 27.02.2013

State/Districts	Actual (mm)	% Dep.
Himachal Pradesh		
Bilaspur	33.0	128
Chamba	68.7	168
Hamirpur	41.7	251
Kangra	48.7	136
Kinnaur	28.0	29
Kullu	66.6	148
Lahaul and Spiti	25.5	-31
Mandi	29.1	97
Shimla	45.5	169
Sirmaur	28.5	164
Solan	46.3	273
Una	40.9	360
Punjab		
Amritsar	40.2	379
Barnala	1.0	-83
Bhatinda	19.0	313
Faridkot	34.0	1114
Fatehgarh Saheb	31.5	916
Ferozpur	2.0	-29
Gurdaspur	56.4	355
Hoshiarpur	38.9	342
Jalandhar	40.2	458
Kapurthala	44.7	1214
Ludhiana	30.2	503
Mansa	5.8	45
Moga	1.0	-68
Muktesar	10.0	127
Nawashahar	35.2	450
Patiala	32.4	458
Ropar	29.3	257
Sangrur	30.8	650
Mohali	**	**
TarnTaran	3.0	-46
Haryana		
Ambala	24.4	201
Bhiwani	24.0	861
Chandigarh	42.4	821
Faridabad	1.0	-74
Fatehabad	14.7	407
Gurgaon	4.0	122
Hissar	6.9	146
Jhajar	0.0	-100
Jind	59.2	796
Katihah	18.2	526
Karnal	9.5	107
Kurukshetra		
Kurukshetra	14.5	272
Mahendragarh		
Mahendragarh	8.5	325
Mewat		
Mewat	13.0	442
Palwal		
Palwal	13.7	427
Panchkkula		
Panchkkula	22.8	217
Panipat		
Panipat	35.3	1161
Rewari		
Rewari	0.0	-100
Rohtak		
Rohtak	0.0	-100
Sirsa		
Sirsa	4.0	33
Sonapat		
Sonapat	23.8	782
Yamunanagar		
Yamunanagar	26.0	247
Delhi		
Delhi	11.0	198
Jammu & Kashmir		
Anantnag		
Anantnag	106.6	318
Badgam		
Badgam	61.1	204
Bandipore		
Bandipore	**	**
Baramulla		
Baramulla	81.3	21
Doda		
Doda	173.8	291
Ganderwal		
Ganderwal	56.0	268
Jammu		
Jammu	70.7	324
Kargil		
Kargil	0.0	-100
Kathua		
Kathua	70.5	325
**Kistwar		
**Kistwar	**	**
Kulgam		
Kulgam	108.9	327
Kupwara		
Kupwara	100.4	196
Ladakh(Leh)		
Ladakh(Leh)	0.3	-73
Poonch		
Poonch	182.0	747
Pulwama		
Pulwama	66.3	357
Rajouri		
Rajouri	57.6	513
Ramban		
Ramban	165.5	273
Reasi		
Reasi	102.8	237
Samba		
Samba	55.4	232
Shopian		
Shopian	98.0	576
Srinagar		
Srinagar	65.0	328
Udhampur		
Udhampur	50.2	65
West Uttar Pradesh		
Agra		
Agra	1.2	-47
Aligarh		
Aligarh	5.3	90
Auraiya		
Auraiya	2.0	-26
Badaun		
Badaun	13.4	294
Baghpat		
Baghpat	6.9	188
Bareilly		
Bareilly	11.4	244
Bijnor		
Bijnor	9.9	93
Bulandsahar		
Bulandsahar	13	364
Etah		
Etah	4.7	103
Etawah		
Etawah	0.0	-100
Firozabad		
Firozabad	0.8	-44
GBNagar		
GBNagar	18.0	521
Ghaziabad		
Ghaziabad	12.7	338
Hamirpur		
Hamirpur	11.8	808
Jalaun		
Jalaun	4.7	133
Jhansi		
Jhansi	5.3	275
Jotirba Phule Nagar		
Jotirba Phule Nagar	1.5	-32
Kanshiramnagar		
Kanshiramnagar	13.0	400
Lalitpur		
Lalitpur	0.0	-100
Mahamaya Nagar		
Mahamaya Nagar	4.0	135
Mahoba		
Mahoba	0.0	-100
Mainpuri		
Mainpuri	3.2	52
Mathura		
Mathura	10.0	317
Meerut		
Meerut	5.9	90
Moradabad		
Moradabad	5.6	47
Muzzaffarnagar		
Muzzaffarnagar	12.9	279
Pilibhit		
Pilibhit	5.3	43
Rampur		
Rampur	16.9	260
Saharanpur		
Saharanpur	25.7	594
Shahjahanpur		
Shahjahanpur	13.8	377
Uttarakhand		
Almora		
Almora	23.6	252
Bageshwar		
Bageshwar	20.1	200
Chamoli		
Chamoli	18.5	-3
Champawat		
Champawat	11.0	55
Dehradun		
Dehradun	24.2	206
Garhwal Pauri		
Garhwal Pauri	13.6	126
Garhwal Tehri		
Garhwal Tehri	26.4	204
Haridwar		
Haridwar	18.4	159
Nainital		
Nainital	29.1	288
Pithorgarh		
Pithorgarh	18.2	26
Rudraprayag		
Rudraprayag	18.0	37
Udham Sing Nagar		
Udham Sing Nagar	13.7	327
Uttarkashi		
Uttarkashi	19.1	73
West Rajasthan		
Barmer		
Barmer	3.4	1042
Bikaner		
Bikaner	9.5	694
Churu		
Churu	11.3	772
Hanumangarh		
Hanumangarh	28.0	2054
Jaisalmer		
Jaisalmer	0.3	-32
Jalore		
Jalore	0.0	-100
Jodhpur		
Jodhpur	0.1	-84
Nagaur		
Nagaur	0.2	-88
Pali		
Pali	0.0	-100
Sri Ganganagar		
Sri Ganganagar	12.6	741

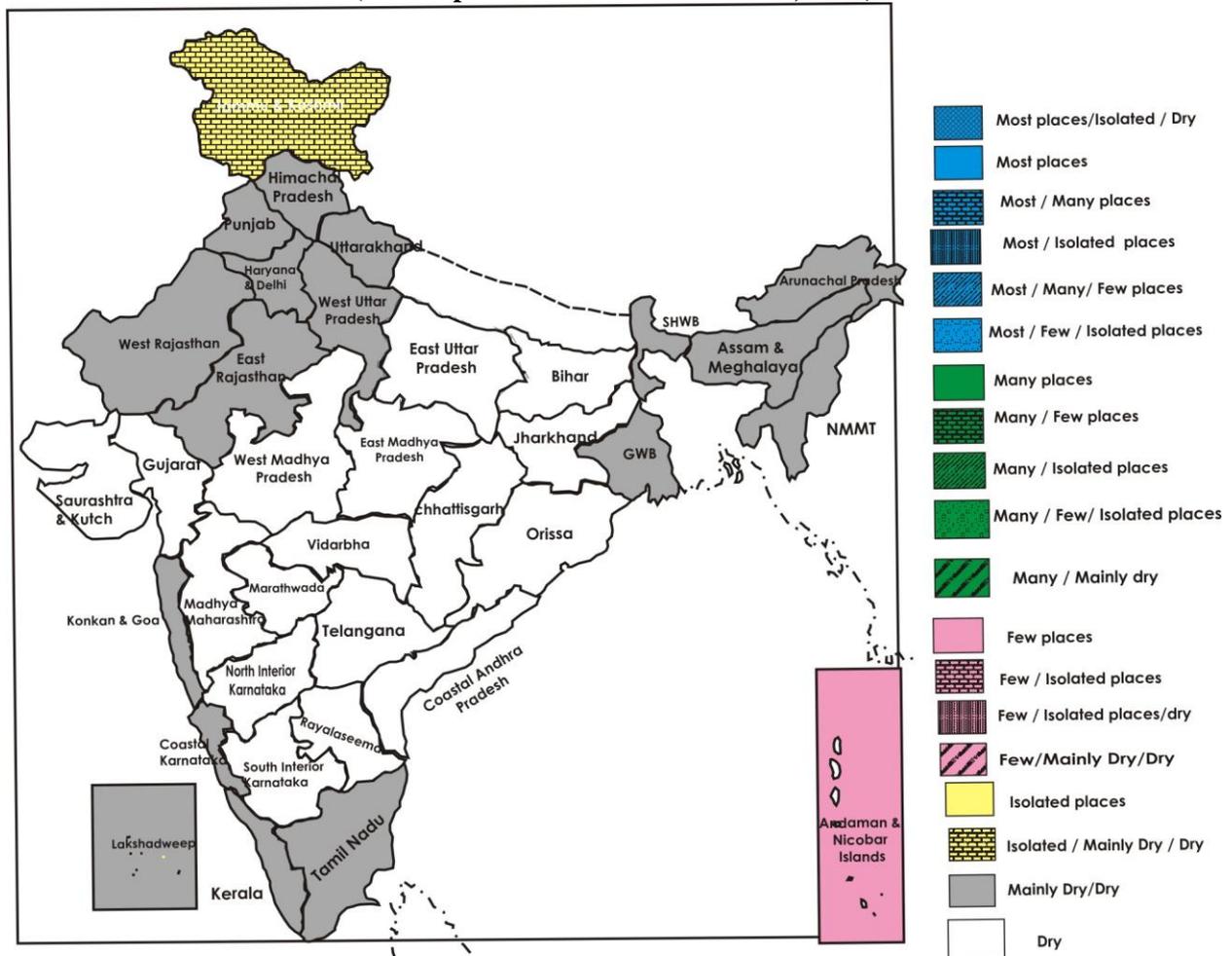
Legends

	(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 1st March, 2013



Weather Forecast
(Valid upto 0830 hours of 4th March, 2013)



Major Feature of Weather Forecast up to 0830 hours IST of 4th March, 2013

- Rain/snow would occur at one or two places over Jammu & Kashmir on 1st March and mainly dry weather thereafter.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands.
- Slight fall in temperatures would occur over northwest India and central India during next 48 hours and increase thereafter.
- Mainly dry weather would prevail over rest parts of the country.

Weather Warning during next 3 days

Nil

Weather Outlook for subsequent 4 days from 4th to 8th March, 2013

- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands till 4th March and decrease thereafter.
- Rain/thundershowers would occur at one or two places over extreme south peninsular India on 4th March and at a few places thereafter.
- A fresh feeble western disturbance may affect north Jammu & Kashmir from 4th March onwards.
- Mainly dry weather would prevail over rest parts of the country.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in most of the districts of Himachal Pradesh, Jammu & Kashmir except Kargil and Ladakh (Leh) districts, Saharanpur district of West Uttar Pradesh, Almora, Bageshwar, Dehradun, Garhwal Tehri, Nainital districts of Uttarakhand, many districts of Punjab, Ambala, Bhiwani, Chandigarh, Jind, Panchkula, Panipat, Sonapat, Yamunanagar districts of Haryana and Hanumangarh district of West Rajasthan during last week. Mainly dry weather prevailed over remaining parts of the region.
- **Weather Forecast:** Rain/snow would occur at one or two places over Jammu & Kashmir on 1st March and mainly dry weather thereafter. Mainly dry weather would prevail over rest parts of the region. Slight fall in temperature would occur over northwest India during next 48 hours and increase thereafter.
- **Advisory:**
 - As significant rainfall occurred in most of the districts in Himachal Pradesh, Jammu & Kashmir except Kargil and Ladakh (Leh) districts, Saharanpur district of West Uttar Pradesh, Almora, Bageshwar, Dehradun, Garhwal Tehri, Nainital districts of Uttarakhand, many districts of Punjab, Ambala, Bhiwani, Chandigarh, Jind, Panchkula, Panipat, Sonapat, Yamunanagar districts of Haryana and Hanumangarh district of West Rajasthan during last week, farmers are advised to postpone irrigation to the standing crops. As mainly dry weather will prevail over the region, apply irrigation to the standing crops in the remaining districts where no significant rainfall occurred.
 - In Himachal Pradesh, farmers are advised to prune and mend snow damaged plants and apply protective paste like Blitox on parts exposed due to injury to prevent fungal and bacterial infections. Apply Bordeaux or Chaubatia paste on the pruning cuts of apple and stone fruits.
 - In Himachal Pradesh, farmers are advised to drain out excess water from the crop fields.
 - In Bhabar and Tarai Zone of Uttarakhand, under the expected dry weather conditions, there are more chances of rodents to damage the wheat crop at milk stage. If heaps of soil is visible in the field, then farmers are advised immediately to follow combined common efforts for effective control. Put one tablet of Aluminum Phosphide in each hole and close the hole with soil immediately.
 - In Eastern Plain Zone of Uttar Pradesh, weather conditions are favourable for the occurrence of pod borer in gram, farmers are advised to spray Endosulphan @ 1.25 litres / ha in 800-1000 litres of water to control.
 - 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.

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

- **Realised Rainfall:** Mainly dry / dry weather prevailed over the region.
- **Weather Forecast:** Mainly dry / dry weather would prevail over the region.
- **Advisories:**
 - As mainly dry / dry weather prevailed over the region and is likely to prevail over the States of the region during the period, farmers are advised to apply irrigation to the standing crops.
 - As dry weather is prevailing, farmers in Jharkhand are advised to irrigate the mango and litchi orchard in 15 days interval as this is time of bearing flowers. Spray insecticide like Lamda syhalothrin @ 1 ml/2 litre of water and Bavistin @ 1gm/litre of water as a preventive measure against various diseases and insect pests.
 - Prevailing weather conditions are favourable for incidence of pod borer in pigeon pea. Farmers in Jharkhand are advised to undertake spraying of Endoxcarb and Monocrotophos @ 2 ml/litre of water at 15 days interval to control pod borer in pigeon pea.
 - Due to present weather condition in Laterite and Red Soil Zone of West Bengal, there is chance of attack of rust and blight diseases in wheat. Apply Mancozeb @ 2.5 to 3 g per litre of water to control the attack.
 - In the prevailing weather condition in New Alluvial Zone of West Bengal, there is chance of powdery mildew in sunflower and mango hopper in mango. To control powdery mildew disease, apply sulphex or 2 g Krilaxyl per litre of water and to control the attack of mango hopper spray 1.5 ml Monocrotophos per litre of water.
 - In Old Alluvial Zone of West Bengal, due to present weather conditions there may be chance of aphid attack in mustard at flowering stage, spray Imidachlorpid @ 1ml/5litre of water or Dimethoate @ 2ml/litre of water at 10-15 days interval.
 - Due to prevailing weather condition, there is chance of tikka disease in groundnut in Western Undulating Zone of Odisha. To control tikka disease, spray Bavistin 1.5g/litre of water. The current weather may favour the infestation of saw fly in mustard. To control saw fly, spray 400 ml Chloropyrifos or Triazophos/acre.
 - In East and South Eastern Coastal Plain Zone of Odisha, increase in temperature may favour increase in stem borer in the main rice field. 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 main field. 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.
- **Pisciculture**
 - Rise in temperature is favourable for growth of fishes in Western Plateau Zone and South Eastern Plateau Zone of Jharkhand. Farmers are advised to add cow dung and lime in the pond as natural foods for them and alternative feeds may also be used like rice bran and mustard cake (each of 5 kg per day per acre area of pond).
- **Animal husbandry:**
 - As temperature is increasing, provide balanced diet containing roughages, fats and protein to animals in Mid Central Table Land Zone of Odisha, Regular deworming is also suggested. Due to rise in temperature, give poultry birds drinking water 2-3 times per day.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Mainly dry weather prevailed over the region.
- **Weather forecast:** Dry weather would prevail over the region.
Slight fall in temperature would occur over Central India during next 48 hours and increase thereafter.
- **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.
 - In Central Narmada Valley zone of Madhya Pradesh, present weather conditions are congenial for the incidence of leaf curl in tomato and chilly crops. Farmers are advised to spray Methyl demeton 25 E.C. @ 2.0 ml. or Emidachloprid @ 0.5 ml/l of water for the control of disease.
 - Due to favourable weather conditions in Bastar Plateau Zone of Chhattisgarh, there are chances of purple blotch in onion and powdery mildew in mustard. Farmers are advised to monitor the crops for the diseases and undertake plant protection measures.
 - Other advisories are mentioned in Annexure – I.
 - Stages of major crops are mentioned in Annexure II.
- **Animal Husbandary**
 - Farmers in Satpura Plateau Zone of Madhya Pradesh are advised to keep cattle in shades due to increase in temperature.

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

- **Realised Rainfall:** Mainly dry weather prevailed over the States of the region during last week.
- **Weather Forecast:** Mainly dry weather would prevail over the States of the region.
- **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.
 - As prevailing weather is favourable for development of blossom end rot in tomato in Mild Tropical Hill Zone of Nagaland, farmers are advised for mulching in tomato to conserve soil moisture.
 - As mainly dry weather is prevailing, farmers in Sub Tropical Plain Zone of Manipur are advised to apply irrigation in rapeseed, field pea, maize and onion.
 - Due to favourable weather conditions, there is chance of attack of late blight in potato in North Bank Plain Zone of Assam. To control the attack, farmers are advised to spray Mancozeb @ 2.5 g / litre of water.
 - Weather is favourable for incidence of blight and fruit borer in tomato and chilli crops and also for cabbage borer 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 kenel extract or NPV @ 250-500 LE with 100 ml teepol / ha for fruit borer and use 5 % neem extract or spray Endosulphan (35%) @ 12 ml or Dimethoate (30%) @ 10 ml in 10 litres of water for cabbage borer.
 - In Temperate Sub Alpine Zone of Meghalaya, due to congenial weather, there is chance of attack of aphids in toria, pea and lentil; farmers are advised to apply Dimethoate @ 2 ml per litre of water or Malathion 50 EC @ 1.5 ml per litre of water, if incidence is noticed.
 - 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 Hill Zone of Nagaland and Sub-Tropical Hill Zone of Arunachal Pradesh, farmers are advised to provide good shelter by additional bulbs in poultry, heating system to cattle shed or tie gunny bag on the back of animals to protect from cool temperature.

- 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.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Rain occurred at a few places over Vidarbha on 24th February and at isolated places over South Madhya Maharashtra and Marathwada on 23rd and 24th February. Weather was mainly dry over Konkan and North Madhya Maharashtra. Mainly dry weather prevailed over Gujarat State.
- **Rainfall Forecast:** Dry or mainly dry weather would prevail over the States in the region.
- **Advisories:**
 - As dry or mainly dry weather is expected during next 5 days, farmers in Madhya Maharashtra, Marathwada and Vidarbha are advised to apply irrigation to summer bajra (Pune and Nasik region), summer groundnut, sugarcane and vegetables. Farmers in Konkan, East Vidarbha and Nasik (Ghat region) are advised to maintain water level upto 5 cm in main rice field at tillering stage.
 - Prevailing minimum temperature (around 18^oC) in Vidarbha is favourable for germination of summer green gram; farmers are advised to sow recommended variety.
 - Considering the rise in temperature (34-36^oC) in the Madhya Maharashtra and Marathwada, farmers are advised to carry out mulching with crop residues and other plant waste products in the orchards to reduce the rate of evaporation.
 - As day temperature is rising, farmers in Marathwada region are advised to spray 8 % Kaolin in banana orchards to reduce excessive evaporation.
 - As dry weather is expected, farmers in Madhya Maharashtra, Marathwada and Vidarbha are advised to complete harvesting of already matured *rabi* jowar, safflower, gram, maize and continue harvesting of wheat.
 - As mango is at pea / marble stage and considering the rise in maximum temperature in Konkan and Madhya Maharashtra, apply 150 to 200 litres of water per mango tree at 15 days interval to avoid fruit dropping.
 - Under low humidity and high temperature (32-35^oC) condition in North Gujarat and North West Zone of Gujarat, apply irrigation to wheat crop which is at milk / dough stage. Also apply irrigation in castor (reproductive stage) and orchards, to meet evaporative demand of the crops. As sky will remain clear, harvest the crops at proper maturity and carry out land preparation / sowing of summer crops like groundnut, pearl millet, green gram and cow pea under assured irrigation.
 - As there is increase in temperature in South Gujarat Zone, farmers are advised to irrigate vegetables at an interval of 3-4 days and in matured mango tree at an interval of 15 days. As dry weather prevailed during last few weeks and is also likely to prevail and garlic is at bulb development stage in South Gujarat Heavy Rainfall Zone, apply irrigation in garlic.
 - As temperatures are increasing in Middle Gujarat Zone and mainly dry weather is likely to prevail, apply irrigation in summer groundnut and late sown wheat crop.
 - In North Saurashtra Zone of Gujarat, as there is increase in temperature which is suitable for sowing, carry out sowing of summer vegetables like lady's finger, cluster bean, bottle gourd, sponge gourd, ridge gourd, bitter melon, water melon and transplanting of tomato and brinjal.
 - Taking the advantage of clear weather, carry out hand weeding and inter-cultural operations in castor in North West Zone of Gujarat.
 - Due to prevailing cloudy weather, there may be incidence of thrips on pea size mango fruit in South Konkan. On the incidence of the pest, spray Spinosad 45 % @ 2.5 ml in 10 litres of water on the whole tree.
 - Under prevailing conditions (rise in minimum temperature) in Western Maharashtra Scarcity Zone, there may be increase in infestation of thrips on onion; spray Cypermethrin 25 % @ 5 ml or Fipronil @ 15 ml in 10 litres of water at 10-15 days interval.
 - Due to high temperature and cloudy weather in North Gujarat, North West Zone and South Gujarat Heavy Rainfall Zone of Gujarat, there are chances of infestation of sucking pests in standing vegetables and fenugreek; spray Dimethoate 30 EC 0.1% to manage sucking pests in the crop.
 - 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.

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

- **Realised Rainfall:** Mainly dry weather prevailed over most parts of the region during last week.
- **Rainfall Forecast:** Mainly dry / dry weather would prevail over the region.
- **Advisories:**
 - As mainly dry / dry weather prevailed over most parts of the region during last week and likely to continue, apply irrigation to the standing crops.
 - In Problem areas Zone of Kerala, mulching with dried leaves is advised in coconut, nutmeg and banana crops for reducing evapotranspiration loss. It is the better time for cultivating cabbage and cauliflower.

- In Problem Area Zone of Kerala, weather is congenial for bud rot disease in coconut, where young palms are more susceptible. In the early stages, farmers are advised to cut and remove the affected tissues of the crown and burn them and spray Bordeaux mixture 1% on spindle leaves and crown of disease affected as well as neighbouring palms.
- Present weather conditions are congenial for cob borer infestation in maize in Eastern Dry Zone of Karnataka. Farmers are advised to spray Spinosad @1.0ml/ litre of water or Indoxycarb @ 1.5 ml/litre of water.
- Powdery mildew infestation is likely to be 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 3gm Carbendazim per liter of water to control powdery mildew.
- Increasing day temperatures are favorable for nut weevil incidence on mango and stem borer in rice in Scarce Rainfall Zone of Andhra Pradesh. For controlling nut weevil spray monocrotophos @1.6 ml or Fenetrothion 1.0 ml per litre of water. Spray Monocrotophos @ 36 SL 1.6 ml or Chlorpyriphos 20 EC @ 2.5 ml or Phosphamidon 40 SL@ 2.0 ml/litre of water, if stem borer is observed.
- Warm and humid weather is congenial for incidence of stem borer, hispa and leaf folder in rice in High Altitude Zone of Andhra Pradesh. Farmers are advised to take appropriate plant protection measures.
- Weather is congenial for incidence of leaf folder in rice and early shoot borer in sugarcane in Southern Zone of Andhra Pradesh. Farmers are advised to take appropriate plant protection measures.
- 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**
 - Rise in day time temperature may cause mild stress to birds in the North Western Zone of Tamil Nadu. Farmers are advised to add vitamin C in feed and water along with electrolytes will save the birds from stress.
 - Farmers in North East Transition Zone are advised to conserve fodder (hay, silage and in large heaps) to meet the requirement during lean period, give animals mineral supplements based on the deficiency in the region and feed dry fodder after uniform mixing with 2% urea and 10% molasses or jaggery to improve palatability.

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.
- In Bhabar and Tarai Zone of Uttarakhand, farmers are advised to continue plucking of matured French beans, pods of vegetable pea, harvesting of sugarcane crop and transplanting of brinjal in the field. Also undertake planting / sowing of sugarcane & sunflower.
- In Central Plain Zone of Uttar Pradesh, undertake sowing / planting of cucurbitaceous vegetable crops, autumn sugarcane, autumn maize and lady's finger.
- In Delhi, present temperature is favourable for direct sowing of cucurbitaceous crops, lady's finger, French bean, cluster bean and summer radish. Also undertake transplanting of marigold seedlings in fields.
- In Arid Western Plain Zone of Rajasthan, farmers are advised to prepare field for sowing of summer guar. If mustard capsules turned yellow, harvest and keep it in safe place.
- Farmers in Undulating Zone of Punjab are advised to undertake sowing of maize and plantation of fruit plants like pear, peach, plum, grapes etc.
- Farmers in Western Zone in Haryana are advised to prepare the field and transplant tomato and chilli and undertake sowing of cucurbits and Bhindi.

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

- Farmers in North West Alluvial Plain Zone of Bihar are advised to prepare field for sowing of summer mung and urd crops. As weather is likely to remain congenial in the forecasted period, farmers are advised to complete transplanting of *boro* rice crop.
- As dry weather is likely to prevail, farmers in North West Alluvial Plain Zone of Bihar farmers are advised to harvest matured potato and tobacco crop.
- As dry weather is likely to prevail, farmers in Jharkhand are advised to continue harvesting of potato, rapeseed and mustard and store the harvested products at safe place.
- Farmers of Mid Central Table Land Zone of Odisha are advised to undertake sowing of summer vegetables.
- Farmers of North Eastern Coastal Plain Zone of Odisha are advised to undertake sowing of summer green gram.
- Farmers in Jharkhand are advised to undertake sowing of summer vegetables like sponge gourd, bottle gourd, pumpkin, water melon, musk melon etc. Apply light irrigation after transplanting of seedlings.
- Farmers in New Alluvial Zone and Laterite and Red Soil Zone of West Bengal are advised to prepare land and undertake sowing of sesame and different summer vegetables such as Lady's finger, spinach, various leafy vegetables etc. Farmers are also advised for sowing of brinjal and chilli. In late sown wheat, apply irrigation at the time of flowering.
- Farmers are advised to undertake sowing of groundnut and prepare land for sowing of sesame and harvesting of potato in Laterite and Red soil Zone of West Bengal.
- Farmers in *Terai* Zone of West Bengal are advised to undertake transplanting of *boro* rice.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Farmers in Central Narmada Valley Zone of Madhya Pradesh are advised to undertake sowing of summer maize, lobia, sorghum, bajra, ladies finger and spinach crop.
- Farmers in Bundelkhand zone of Madhya Pradesh are advised to undertake sowing of gourd, white gourd, cucumber and round gourd.
- Farmers in Vindhya Plateau Zone of Madhya Pradesh are advised to undertake harvesting of gram.
- As dry weather is prevailing in Satpura Plateau Zone of Madhya Pradesh, farmers are advised to undertake harvesting of matured green peas, onion and potato.
- Farmers in Chhattisgarh northern hill zone are advised to undertake field preparation for sowing of moong and urad.
- Farmers in Baster and Narayanpur districts of Chhattisgarh are advised to undertake sowing high yielding variety of summer moong, urad and maize.

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

- In Hill Zone, Barak Valley Zone, Central Brahmaputra Valley Zone and Lower Brahmaputra Valley Zone of Assam, farmers are advised to continue nursery raising of early *ahu* rice.
- In Upper Brahmaputra Valley Zone and Barak Valley Zone of Assam, farmers are advised to continue land preparation and sowing of summer pulses.
- In Lower Brahmaputra Valley Zone of Assam, farmers are advised to continue land preparation and sowing of summer crops like pumpkin, ridge gourd, sponge gourd, okra etc.

- Farmers in North Bank Plain Zone of Assam are advised to continue land preparation and sowing of summer vegetables like ridge gourd, cucumber, bitter gourd, okra etc.
- 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 and French bean.
- Farmers in Mild Tropical Hill Zone of Mizoram are advised to continue land preparation and sowing of okra and cucurbits.
- In Central Brahmaputra Valley Zone of Assam, incidence of wilt disease and aphids has been observed in lentil and lathyrus; farmers are advised to drench the soil with Bavistin @ 1 ml / litre of water to protect the crop from wilt and apply Malathion 50 EC @ 2 ml / litre of water against aphids.
- 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.
- In Mild Tropical Plain Zone of Tripura, farmers are advised to undertake sowing of summer green gram and black gram and transplanting of summer brinjal and tomato. Undertake land preparation and sowing of summer vegetables, summer maize and sesame.
- Farmers in Sub Tropical Plain Zone of Manipur are advised for transplanting of tomato, chilli, cucurbits etc. Also continue land preparation for nursery raising of *pre-kharif* rice and sowing of okra, cauliflower and cabbage.
- Farmers in Mild Tropical Hill Zone of Nagaland are advised to continue nursery raising of cucurbits *viz.*, sponge gourd, bitter gourd and pumpkin. Continue land preparation for sowing of okra and transplanting of chilli and brinjal.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Harvest the matured bolls of cotton, matured pigeon pea early in the morning and matured spikes of castor in South Gujarat Heavy Rainfall Zone. Carry out weeding in citrus orchard and apply fertilizers. Cut mango malformation and apply Bordeaux paste on the cut portion. Spray 2% Potassium Nitrate in mango crop for effective control of fruit dropping and higher flower setting. In ratoon banana crop in South Gujarat Zone, apply first dose of nitrogen at 45-50 days of sowing for higher benefits.
- Carry out harvesting of cumin and isabgol in early morning in Middle Gujarat Zone.
- Carry out sowing of summer moong and summer groundnut under irrigation facility in South Saurashtra Zone of Gujarat. Apply irrigation in mango at 10 to 12 days interval.
- Continue sowing of summer sesame, green gram, black gram, cluster bean in North Saurashtra Zone of Gujarat.
- Carry out picking of capsules of castor during early morning hours in Bhal and Coastal Zone, North West Zone and Middle Gujarat Zone.

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 and as the rain will not be sufficient, take necessary steps to keep moisture in the field. In coconut fields planting of leguminous plants in the field, mixing and ploughing these plants in the soil during their flowering stage will improve the fertility of the soil. Mulching will help to retain water in the field.
- Farmers in the North Transition Zone of Karnataka are advised to undertake harvesting of sugarcane, wheat, and chick-pea.
- Incidence of blast, leaf folder and stem borer is observed in rice and smut on sugarcane and leaf webber on groundnut in the North Coastal Zone of Andhra Pradesh. Farmers are advised to take appropriate plant protection measures.
- Incidence of fruit fly is more in the North East Transition Zone of Karnataka. Farmers are advised to take up spraying of Malathion 2 ml or Methyl Parathion 1ml per litre to control the incidence.
- Attack of stem borer, leaf folder and white backed plant hopper is noticed in different paddy fields due to prevailing climatic condition in the Problem Area Zone of Kerala. Farmers are advised to keep trichocards in the fields to prevent the attack of leaf folder and stem borer, drain off the field completely to overcome white backed plant hooper.

Annexure II

Major Crops

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

- Wheat (jointing / ear head emergence / flowering), pea (pod formation / maturity), radish (vegetative), pome and stone fruits (planting), cabbage, cauliflower (head formation), tomato, brinjal (sowing) in Himachal Pradesh.
- Cauliflower, cabbage, broccoli, tomato (flowering / fruiting), carrot, (flowering / fruiting), pea, gram (flowering/pod filling) radish and turnip (flowering/ fruiting), mustard (capsule formation), onion (vegetative), coriander, fenugreek, spinach (vegetative), wheat (flowering), lady's finger (sowing), chilli, tomato, brinjal and cucurbits (nursery preparation / transplanting) in Delhi.
- *Rabi* cereal (wheat), pulses (pea and lentil), brown sarson, fodder oat (in dormant stage 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 - tillering / jointing, normal / early sown - active tillering / ear head emergence), barley (tillering / jointing / flag leaf initiation), pulses (pea, lentil, gram) (vegetative / flowering / pod formation), oat, berseem (vegetative) in Jammu & Kashmir.
- Wheat (ear head emergence/flowering), arhar (flowering / pod formation), ginger (vegetative), autumn sugarcane (vegetative), yellow sarson, mustard (flowering / capsule formation), barley (ear head emergence / milking), oat (tillering / ear head emergence), chick pea, lentil (flowering / pod formation), brinjal, chilli, lady's finger (vegetative / flowering / fruiting), moong, okra(sowing) in Uttarakhand.
- Wheat (ear head emergence/flowering), late sown wheat (tillering), barley (tillering / ear head emergence), sugarcane (harvesting), new sugarcane (planting), linseed, jai (vegetative / flowering), fodder berseem (vegetative / second cutting), radish, carrot (root development / harvesting), onion, garlic (vegetative), rapeseed, mustard, pea, lentil, gram (pod formation / maturity) maize (flowering / pod formation / grain formation) in Uttar Pradesh.
- Wheat (jointing/flag leaf/booting), sugarcane (harvesting), new sugarcane (planting), mustard (flowering / capsule formation), maize (sowing) in Punjab.
- Wheat (flag leaf/booting), sugarcane (harvesting), new sugarcane (planting), mustard (flowering / capsule formation), barseem (sowing / vegetative) in Haryana.
- Sugarcane (maturity / harvesting), maize (maturity), *capsicum*, guar, vegetables (tinda, water melon, pumpkin, cucumber, coriander, bhindi, ridge gourd) (sowing / germination / seedling), potato (tuber formation / maturity), mustard (flowering / capsule formation), gram (grain maturity / harvesting), wheat (ear head emergence / flowering / milking), barley (tillering), 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), mustard (capsule formation), urad, arhar (grain formation), winter vegetables (flowering / fruiting / harvesting), wheat (flowering/milking) and toria (pod formation/maturity), pigeon pea (flowering / pod formation), summer vegetables(sowing), mung, urd (sowing) in Bihar.
- Wheat (flowering stage), potato (vegetative / tuber formation), pigeon pea (pod formation), onion (transplanting), vegetables (vegetative / flowering / fruiting / harvesting), gram, linseed, lentil, pea (vegetative / flowering / pod formation), Rice (seedling), rapeseed, mustard (harvesting) in Jharkhand
- Sugarcane (germination), banana (vegetative), mustard, sesame (capsule formation/capsule maturity), cowpea (/pod formation/maturity), *rabi* groundnut (pod formation), fruit crops (planting / seedling), summer rice (seedling), wheat (dough/maturity), tomato (flowering to fruiting stage), summer green gram, summer vegetables, summer groundnut (sowing) in Odisha.
- *Boro* rice (transplanting/tillering), wheat (heading/ flowering /ripening), vegetable (flowering / fruiting), potato (tuberization to maturity stage), mango (flowering), tomato (flowering / fruiting), mustard (flowering /capsule formation), pointed gourd, cucumber (flowering), sunflower(flowering), groundnut (sowing/flowering), sesame (sowing), chilli (flowering/fruiting) in West Bengal.
- Ginger (sprouting / early vegetative), large cardamom (vegetative / primary flowering / secondary flowering), vegetables (vegetative), rice (grain formation / maturity) in Sikkim.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Ladies finger (flowering / fruiting), pigeon pea, gram (pod formation/ maturity/ harvesting), potato, onion (maturity/harvesting), sugarcane (planting/vegetative), *rabi* vegetables (flowering/fruiting), wheat (flowering/milky/grain filling), maize (vegetative), lentil, mustard, linseed (capsule formation/maturity) 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 flowering, niger, kulthi (vegetative) in Chhattisgarh.

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

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

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- *Adsali* sugarcane, pre seasonal sugarcane and *suru* sugarcane (cane maturity / harvesting in Madhya Maharashtra and Marathwada), new *adsali* sugarcane (tillering), new pre seasonal sugarcane (early tillering), new *suru* sugarcane (late planting / early sprouting), *rabi* jowar, safflower, maize and gram (maturity / harvesting in Madhya Maharashtra, Marathwada and Vidarbha), wheat (dough / grain maturity / harvesting), summer rice (tillering in South Konkan and early tillering / tillering in Western Ghat region and East Vidarbha), summer groundnut (vegetative / flowering in South Konkan and early vegetative in Madhya Maharashtra, Marathwada and Vidarbha), summer bajra (germination / early vegetative in Pune and Nashik region) in Maharashtra.
- Summer groundnut (sowing / germination / seedling / vegetative), Summer rice (seedling / transplanting / early tillering), summer vegetables (sowing / transplanting / vegetative), wheat (milk / dough), gram (pod development / pod maturity), cumin (maturity / harvesting), sugarcane (vegetative / elongation), castor (harvesting), winter vegetables (flowering / fruiting), chilli, brinjal (fruiting / harvesting), cauliflower (head formation / maturity / harvesting), potato (tuber formation / tuber maturity), mustard (pod development / maturity), jowar (grain formation / grain maturity), *rabi* fennel (flowering / pod formation), fenugreek (flowering / pod formation), maize (cob initiation / cob maturity) in Gujarat.

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

- *Rabi* groundnut (pod development/pod maturity/harvest), *rabi* maize (tasseling/silking), sunflower (flowering / seed formation), *rabi* rice (tillering), summer cotton (sowing), Bengal gram (pod development), red gram (pod development), cow pea and sesame (flowering / pod formation), rice fallow pulses (vegetative), sugarcane (planting/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 (germination/harvesting), chick pea (pod development /harvesting), grapes (fruiting), October sown wheat (maturity/harvest), Bengal gram (maturity/harvest), jowar (harvesting), ragi (ear head emergence), maize (grain filling/cob maturity), horse gram (flowering / pod formation), groundnut(harvesting), mango (flowering/fruit setting/fruit development), sugarcane (harvesting/planting) in Karnataka.
- Coconut (harvesting), *puncha* rice (tillering/), rubber (tapping discontinued), vegetables (sowing/ early vegetative), *summer* rice (sowing), cardamom (new planting) in Kerala.
- *Samba* rice (maturity/harvesting), *thaladi* (maturity/ harvesting), sorghum (maturity/harvesting), rice fallow pulses (vegetative), rainfed groundnut (maturity), cotton (vegetative/boll maturity), sugarcane (vegetative /ratooning), maize(maturity/harvesting), red gram (pod formation), 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.

Delhi

Lady's finger: A-4 and Parbhani Kranti.

Spinach: Pusa Harit hybrid varieties.

Punjab:

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), CoH-119, CoJ-88, CoS-8436 (mid maturing) and CoJ-89 (late maturing).

Uttarakhand:

Moong: Pant Urd-19, Pant Urd-30, Pant Urd-31, Pant Urd-35 or Narendra Urd-1 etc.

Urd :

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.

Sorghum : UPMC, Forage Lobia UPC-5286, UPC-5287 or Forage Maize like Vikram or African Tall

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

Uttar Pradesh:

Arhar: UPS-120, T-21,

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, Neelamadhaba 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, 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:

Boro Rice: Supriya, Jamini, Bhupen, IET-2233, Satabdi (IET-4786), Kitish (I.E.T.-4094), Ratna, Bikash etc.

Sesame: Rama, Tilottama, B64, B14.

Moong: Chaiti mung, Sonali, T44, PDM-84, Samrat, Basanti.

Groundnut: JL-24, J-11, AKG-12-24.

Jharkhand:

Onion: Pusa Red, Pusa Ratnar, N-53, Arka Nikatan, Arka Kalyan, Agrifound Dark Red.

Rice: IR-36, IR-64, Naveen, Lalat, MTU-1010.

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

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.

Kharif maize: Ganga-5, NLD, Dhawal, Naviot and Diara.

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: local variety (Tangkhul Hawaii).

Tripura:

Green gram: PDM 139.

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

Tomato: Anup.

Maharashtra

Summer Green Gram: AKM8802, Pusa Vaishakhi.

Gujarat

Groundnut: TAG-24, GG-2, 5 & 7, TG-37-A, GG-4, GG-26, GG-20.

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 Domsomi.

Cluster bean: Pusa Sadabahar, Pusa Navbahar, IC-11388.

Water melon: Sugar Baby, Arka Jyoti.

Annexure IV

Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 27.02.2013

