

# National Agromet Advisory Service Bulletin

**Friday 27<sup>th</sup> March 2015**

**(For the period 27<sup>th</sup> to 31<sup>st</sup> March 2015)**

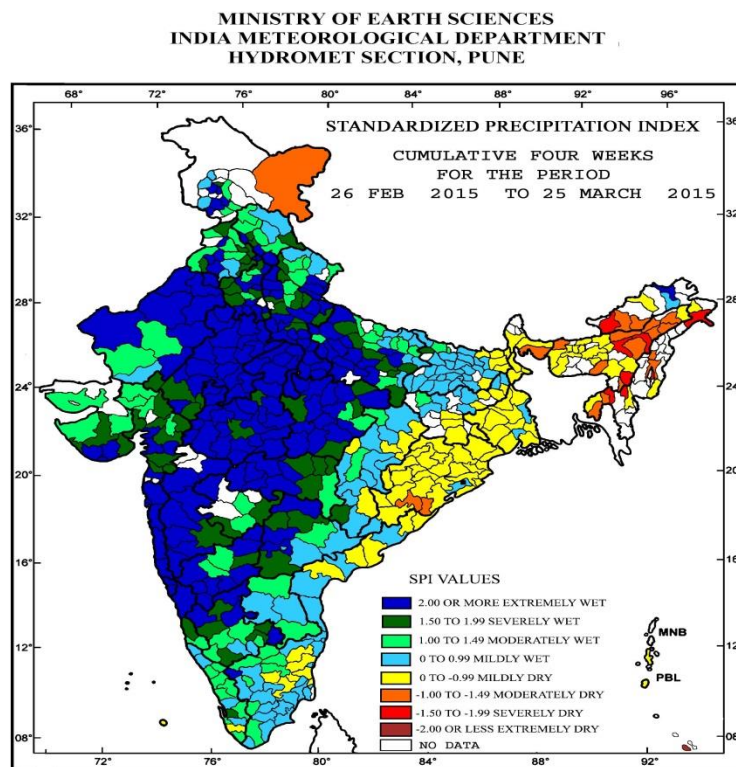


**Issued by**

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



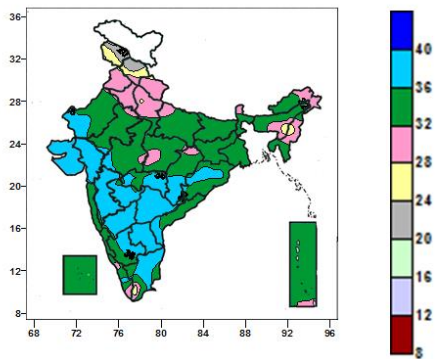
**Standardised Precipitation Index**  
**Four Weekly**  
**for the Period 26<sup>th</sup> February to 25<sup>th</sup> March 2015**



- Extremely/severely wet conditions experienced in most districts of Uttar Pradesh, Haryana, Rajasthan, Madhya Pradesh; many districts of Uttarakhand, Punjab, Himachal Pradesh, Gujarat, Maharashtra & Goa, Karnataka, Telangana; few districts of Jammu and Kashmir; Bijapur district of Chhattisgarh; Upper Siang district of Arunachal Pradesh; Gopalganj district of Bihar, The Nilgiris district of Tamil Nadu and Kottayam district of Kerala.
- Extremely /severely dry conditions experienced in Cachar, Darrang, Nagaon, Golaghat districts of Assam; Changlang, East Kameng districts of Arunachal Pradesh; North Tripura districts of Tripura; Imphal East district of Manipur, Kolasib district of Mizoram.
- Moderately dry conditions experienced in few districts of Assam; East Kameng, Papumpara districts of Arunachal Pradesh; East Khasi Hills district of Meghalaya; Senapati districts of Manipur; Kohima districts of Nagaland; Dhalai, South Tripura districts of Tripura; Cooch Behar districts of Sub Himalayan West Bengal; Gajapati, Rayagada districts of Odisha; Ladakh (Leh) district of Jammu and Kashmir.
- Rest of the country experienced moderately wet/ mild wet/dry conditions.

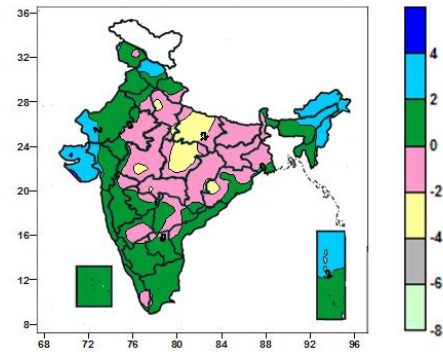
**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 25.03.2015**

**Actual Mean Maximum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 25.03.2015**



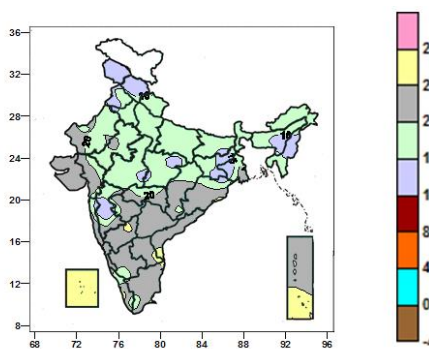
- 36 to 40 $^{\circ}\text{C}$  over Gujarat, Madhya Maharashtra, Marathwada, Telangana and Rayalaseema, many parts of Interior Karnataka, Tamil Nadu, Few parts of West Rajasthan, Odisha, Vidarbha and Chhattisgarh isolated parts of East Rajasthan, West Madhya Pradesh, Coastal Andhra Pradesh and Kerala.
- 32 to 36 $^{\circ}\text{C}$  over Konkan & Goa, Coastal Karnataka, Lakshadweep, Bihar, Jharkhand, West Bengal, Tripura and Mizoram, many parts of Madhya Pradesh, East Uttar Pradesh, Rajasthan, Chhattisgarh, Coastal Andhra Pradesh, Odisha, Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, few parts of Kerala and Vidarbha, isolated parts of Tamil Nadu, Interior Karnataka, Nagaland and West Uttar Pradesh.
- 28 to 32 $^{\circ}\text{C}$  over Punjab, Haryana & Delhi, Uttarakhand, Sikkim, many parts of West Uttar Pradesh, Nagaland, Manipur, few parts of Himachal Pradesh, Arunachal Pradesh, East Uttar Pradesh, Madhya Pradesh and isolated parts of Chhattisgarh, Mizoram.
- 20 to 28 $^{\circ}\text{C}$  over many parts of Jammu & Kashmir, Himachal Pradesh and isolated parts of Assam & Meghalaya, Manipur.

**Mean Maximum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 25.03.2015**



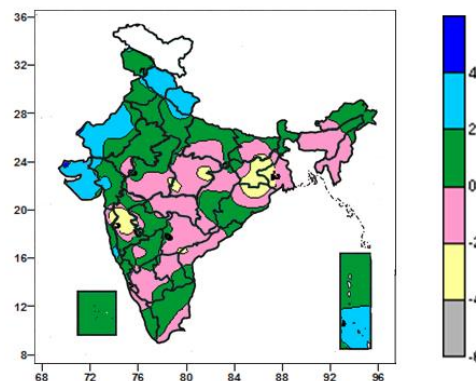
- 2 to 4 $^{\circ}\text{C}$  over Saurashtra & Kutch, Arunachal Pradesh, Nagaland, many parts of Himachal Pradesh, Manipur, Andaman & Nicobar Islands, few parts of Gujarat region, West Rajasthan, Assam & Meghalaya.
- -2 to 2 $^{\circ}\text{C}$  over entire country except Saurashtra & Kutch, Arunachal Pradesh, Nagaland, many parts of East Uttar Pradesh, East Madhya Pradesh, Himachal Pradesh, Manipur, Andaman & Nicobar Islands, few parts of Gujarat region, West Rajasthan, isolated parts of West Uttar Pradesh, West Madhya Pradesh, Chhattisgarh.
- -4 to -2 $^{\circ}\text{C}$  over many parts of East Uttar Pradesh, East Madhya Pradesh, isolated parts of West Uttar Pradesh, West Madhya Pradesh, Chhattisgarh.

**Actual Mean Minimum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 25.03.2015**



- 12 to 16 $^{\circ}\text{C}$  Jammu & Kashmir, Himachal Pradesh, Manipur, many parts of Nagaland, Punjab, Gangetic West Bengal, few parts of Assam & Meghalaya, Jharkhand, Madhya Maharashtra, East Madhya Pradesh and isolated parts of West Madhya Pradesh, Bihar, Odisha, Konkan and Mizoram.
- 16 to 24 $^{\circ}\text{C}$  over entire country except Jammu & Kashmir, Himachal Pradesh, Manipur, Lakshadweep, many parts of Nagaland, Punjab, Gangetic West Bengal, few parts of Assam & Meghalaya, Jharkhand, Madhya Maharashtra, East Madhya Pradesh, Andaman & Nicobar Islands and

**Mean Minimum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 25.03.2015**



- -4 to -2 $^{\circ}\text{C}$  over many parts of Jharkhand, Madhya Maharashtra, few parts of Gangetic West Bengal, Odisha, East Madhya Pradesh, isolated parts of Bihar, West Madhya Pradesh, Konkan, Telangana and Coastal Andhra Pradesh.
- -2 to 2 $^{\circ}\text{C}$  over entire country Saurashtra & Kutch, Himachal Pradesh, Uttarakhand, Jharkhand, Madhya Maharashtra, many parts of West Rajasthan, few parts of Gangetic West Bengal, Odisha, East Madhya Pradesh, Gujarat region, Andaman & Nicobar Islands and isolated parts of Bihar, West Madhya Pradesh, Konkan, Telangana

isolated parts of West Madhya Pradesh, Bihar, Odisha, Konkan and Mizoram.

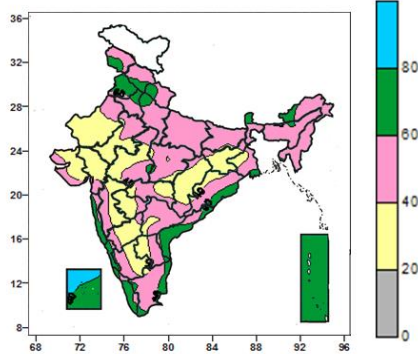
- 24 to 28°C over Lakshadweep, few parts of Andaman & Nicobar Islands and isolated parts of Madhya Maharashtra, Coastal Andhra Pradesh, Tamil Nadu and Kerala.

and Coastal Andhra Pradesh.

- 2 to 4°C over Saurashtra & Kutch, Himachal Pradesh, Uttarakhand, many parts of West Rajasthan, few parts of Gujarat region, Andaman & Nicobar Islands and isolated parts of Punjab, West Uttar Pradesh, Konkan & Goa.

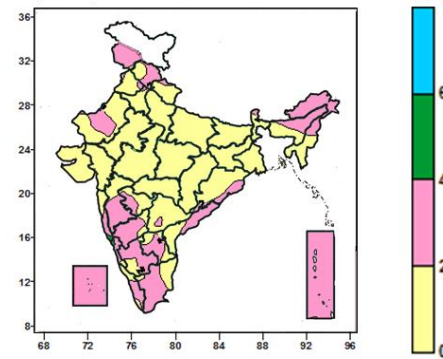
### Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 25.03.2015

**Relative Humidity (%) over India for the week ending 25.03.2015**



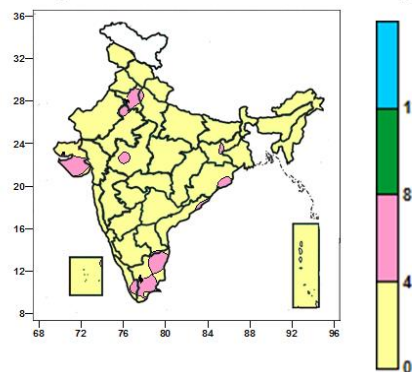
- 80 to 100% over few parts of Lakshadweep Islands
- 20 to 60% over entire country except Sikkim, Coastal Karnataka, Goa, Andaman & Nicobar Islands, many parts of Punjab, Coastal Andhra Pradesh, Kerala, Lakshadweep Islands, few parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana & Delhi, Konkan, Lakshadweep and isolated parts of Sub-Himalayan West Bengal, Arunachal Pradesh, Assam & Meghalaya, Tamil Nadu.
- 60 to 80% over Sikkim, Coastal Karnataka, Goa, Andaman & Nicobar Islands, many parts of Punjab, Coastal Andhra Pradesh, Kerala, Lakshadweep Islands, few parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana & Delhi, Konkan and isolated parts of Sub-Himalayan West Bengal, Arunachal Pradesh, Assam & Meghalaya, Tamil Nadu.

**Cloud amount (okta) over India for the week ending 25.03.2015**



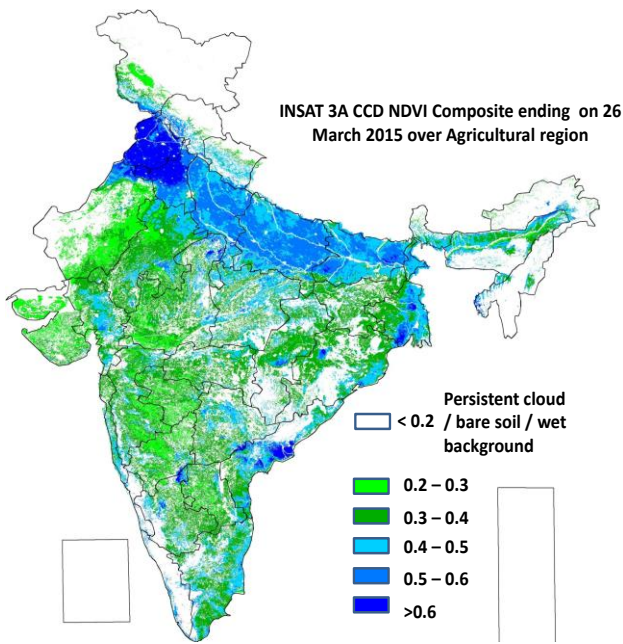
- 2 to 4 over Jammu & Kashmir, Arunachal Pradesh, Goa, Nagaland, Lakshadweep, Andaman & Nicobar Islands, many parts of Himachal Pradesh, Madhya Maharashtra, Rayalaseema, Karnataka, Tamil Nadu, Kerala, few parts of Marathwada, Konkan, Assam & Meghalaya, Coastal Andhra Pradesh, West Rajasthan and isolated Odisha, Telangana.
- 0 to 4 okta over entire country except Jammu & Kashmir, Arunachal Pradesh, Goa, Nagaland, Lakshadweep, Andaman & Nicobar Islands, many parts of Himachal Pradesh, Madhya Maharashtra, Rayalaseema, Karnataka, Tamil Nadu, Kerala, few parts of Marathwada, Konkan, Assam & Meghalaya, Coastal Andhra Pradesh, West Rajasthan and isolated Odisha, Telangana.

**Wind speed (knots) over India for the week ending 25.03.2015**



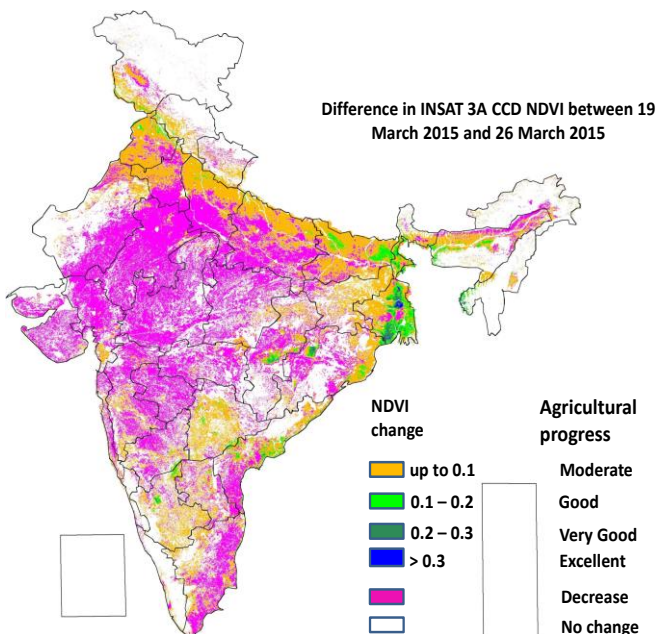
- 4 to 8 knots over many parts of Haryana, Delhi, Saurashtra, Tamil Nadu, few parts of Kerala; isolated parts of West Rajasthan, West Madhya Pradesh, Coastal Odisha, Jharkhand and Coastal Andhra Pradesh.
- 0 to 4 knots over entire country except many parts of Haryana, Delhi, Saurashtra, Tamil Nadu, few parts of Kerala; isolated parts of West Rajasthan, West Madhya Pradesh, Coastal Odisha, Jharkhand and Coastal Andhra Pradesh.

## INSAT 3A CCD NDVI COMPOSITE ENDING ON 26<sup>th</sup> MARCH 2015 OVER AGRICULTURAL REGION OF INDIA



- Very good (NDVI>0.6) agricultural vigour is observed over Punjab, northern parts of Haryana, few patches of north Rajasthan, southern parts of Gangetic West Bengal and coastal region of Andhra Pradesh. Vegetation is good (NDVI: 0.4 - 0.6) over Uttar Pradesh, Bihar and some parts East Rajasthan, central Telangana, coastal parts of Odisha and Tamil Nadu. The NDVI remained within the range of 0.3 to 0.4 over few parts in Madhya Maharashtra, Saurashtra and North interior Karnataka.

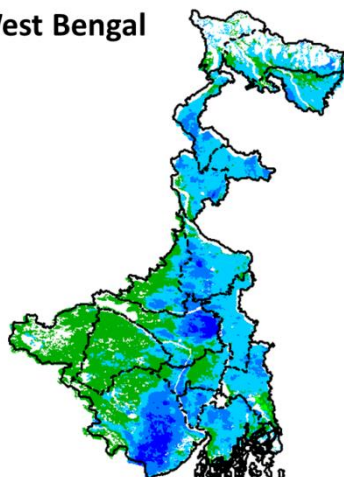
### Difference in INSAT 3A CCD NDVI between 19<sup>th</sup> March 2015 and 26<sup>th</sup> March 2015



- Decrease in NDVI was observed in East Rajasthan, Gujarat, West Madhya Pradesh, southern parts of Haryana and Uttar Pradesh and in some parts of Madhya Maharashtra, Marathwada, East Madhya Pradesh, Chhattisgarh, Odisha and coastal parts of Tamil Nadu and Andhra Pradesh. Moderate change in NDVI was observed over coastal parts of Andhra Pradesh, Telangana and South interior Karnataka and parts of Gangetic West Bengal, Punjab and Bihar.

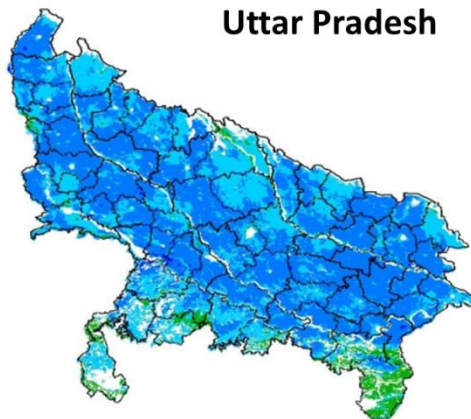
**INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 26<sup>th</sup> MARCH  
2015 FOR DIFFERENT STATES**

**West Bengal**



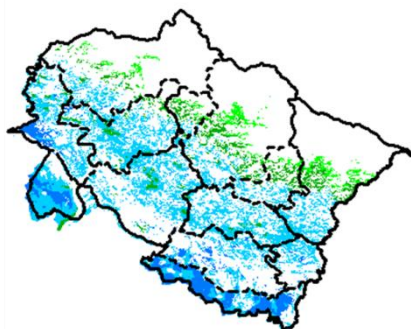
Agricultural vigour is good over most of the central parts of West Bengal, whereas southern part show higher values of NDVI varying from 0.4-0.6. NDVI values are normal over south western part of state.

**Uttar Pradesh**



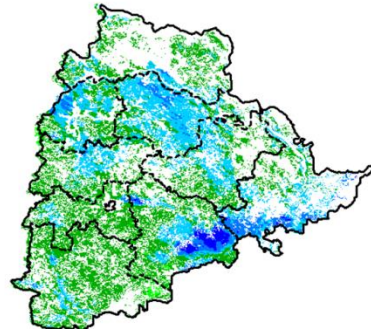
Agricultural vigour is good over the entire state of Uttar Pradesh where NDVI values varies from 0.5 -0.6. NDVI values are normal over south eastern part of state.

**Uttarakhand**



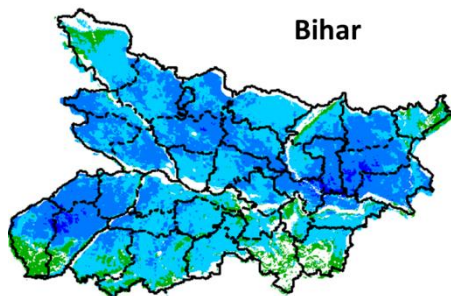
NDVI values vary from 0.2 - 0.5 over Uttarakhand. Higher values are seen in the southern part of Uttarakhand.

**Telangana**



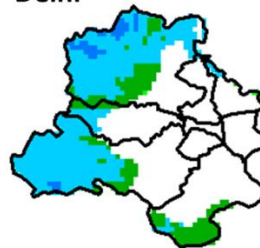
NDVI values vary from 0.2 - 0.5 over Telangana. Higher (> 0.5) values are seen in the eastern and northern part of Telangana.

**Bihar**



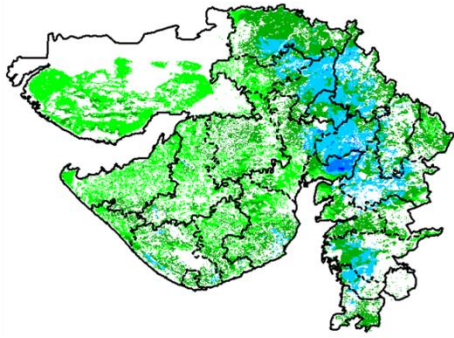
The entire state of Bihar shows comparatively a high value (0.4-0.6) of NDVI, except for few pockets in south eastern and South western Bihar region.

**Delhi**



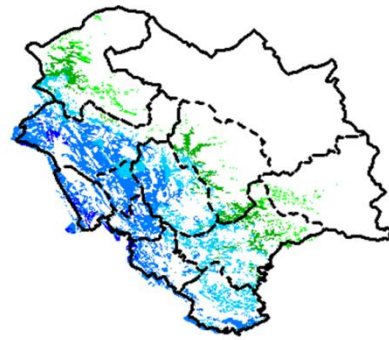
Agriculture vigour is good over western part of Delhi. NDVI values lies between 0.4-0.5. NDVI values are normal over central and eastern part of the state.

## Gujarat



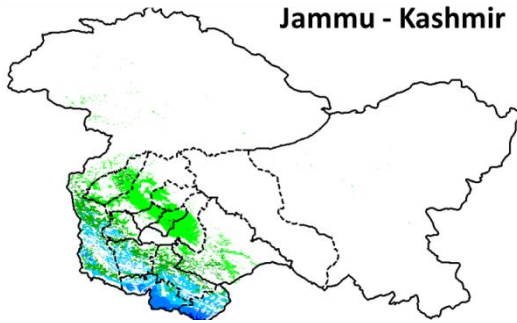
Agriculture vigour is good over northern and central part of Gujarat where NDVI values lies between 0.4-0.5. Whereas normal NDVI is observed in Kutch and Saurashtra.

## Himachal Pradesh



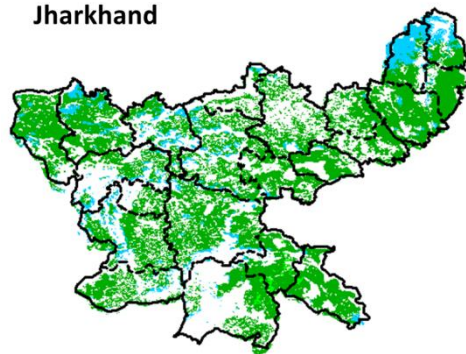
Agriculture vigour is good over southern and south western parts of Himachal Pradesh with NDVI values varying between 0.4-0.6. Whereas, isolated patches of normal NDVI are observed in the state.

## Jammu - Kashmir



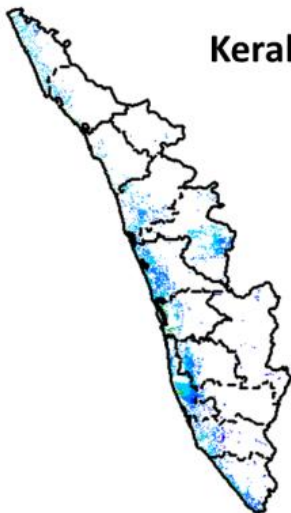
Agriculture vigour is normal all over Jammu and Kashmir. NDVI values vary in between 0.4-0.5 in south western parts. NDVI values are good over southern part of state (0.4-0.6).

## Jharkhand



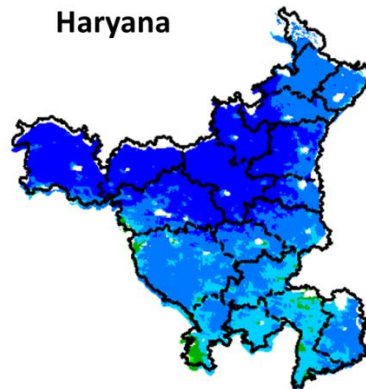
Agriculture vigour is normal 0.3-0.4 over entire state of Jharkhand. NDVI values vary in between 0.4-0.5 in North eastern parts.

## Kerala



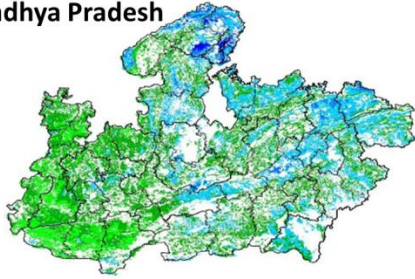
In central and south coastal parts of Kerala show NDVI values are greater than 0.5, whereas rest of agricultural vigour of Kerala shows good values of NDVI.

## Haryana



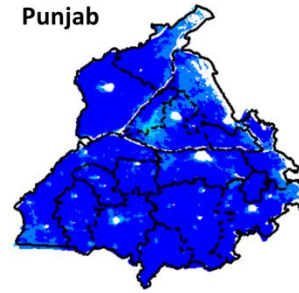
Agriculture vigour is good; NDVI values ( $> 0.6$ ) entire state of Haryana. Except few patches in southern part shows normal values.

### Madhya Pradesh



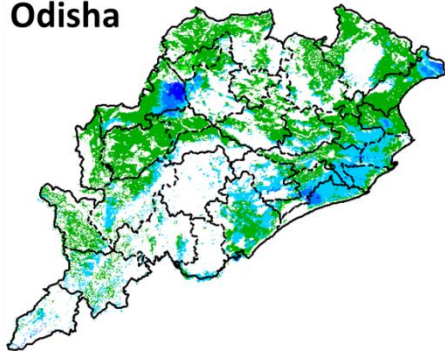
Agricultural vigour is good over eastern and northern region of Madhya Pradesh showing higher values of NDVI varies from 0.4 - 0.5. The overall Vegetation vigour is good over the entire state of Madhya Pradesh.

### Punjab



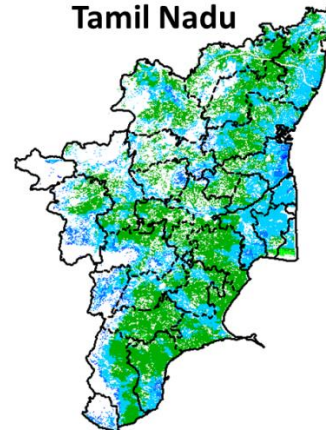
Agricultural vigour is comparatively good over entire state of Punjab with NDVI values greater than 0.6.

### Odisha



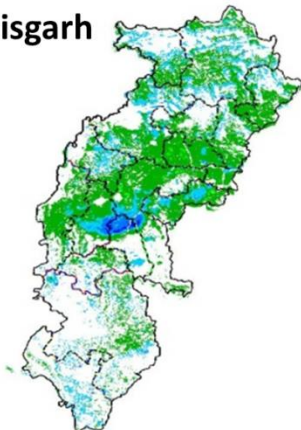
Agricultural vigour is good in eastern and western parts of Odisha with NDVI values of 0.4 - 0.5. Rest of the part is with normal NDVI values.

### Tamil Nadu



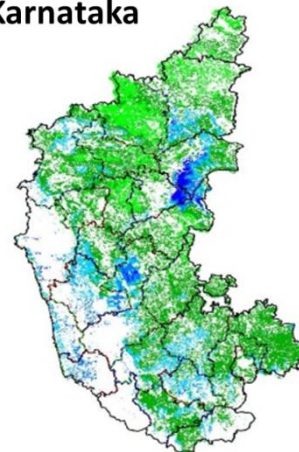
Agricultural vigour is normal over Tamil Nadu with NDVI values varying from 0.3 - 0.5. In the coastal and western parts NDVI values varies between 0.4-0.5.

### Chhattisgarh



Agriculture vigour is good all over western and southern part of Chhattisgarh where NDVI values lies in between 0.4-0.5. NDVI values are normal over eastern, central and northern part of the state.

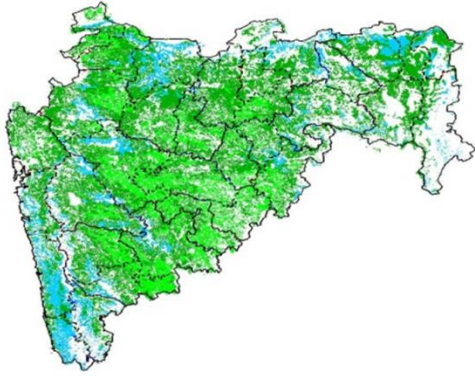
### Karnataka



Agriculture vigour is good over some pockets in eastern and western coastal parts of Karnataka which lies in between 0.4-0.6. Rest of the part show normal condition where NDVI values vary up to 0.2-0.4

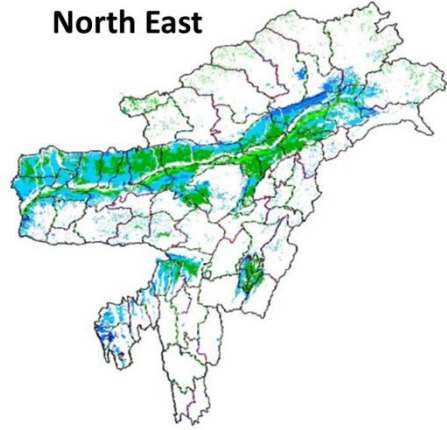


### Maharashtra



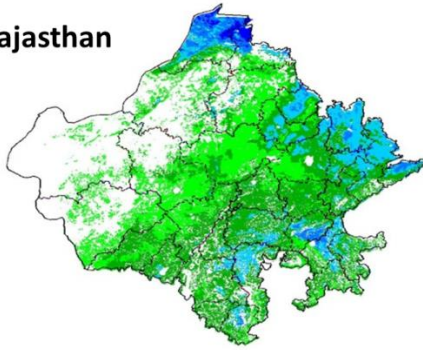
Agricultural vigour is good over Western coastal with NDVI values of 0.4 - 0.5. Whereas, NDVI is moderate over central and southern parts of Marathwada, Vidarbha and Madhya Maharashtra region.

### North East



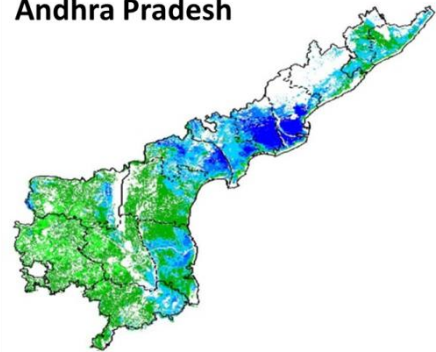
Agriculture vigour is good in valleys of northern hilly range of North-East states which covers part of Assam. NDVI values vary from 0.2-0.4 in this region. In north-east part of Assam, Normal NDVI conditions are observed all over NE region.

### Rajasthan



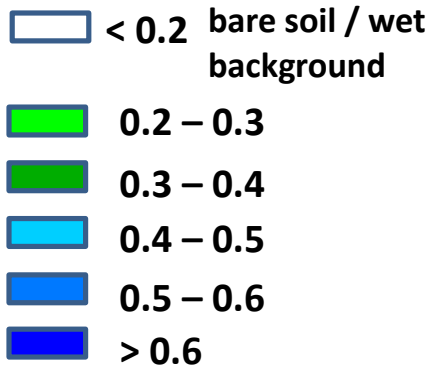
In the eastern, north eastern and north western part of Rajasthan NDVI shows higher values from 0.5-0.6. Whereas, Agricultural vigour is good (0.4-0.5) over north eastern part. Few patches in central Rajasthan show NDVI values varying from 0.2 - 0.3.

### Andhra Pradesh



Agriculture vigour is very good (0.5 - 0.6) over central and coastal parts of Andhra Pradesh. The NDVI is normal over rest of the part of the state.

### Persistent cloud /



## Weather Forecast for next 5 days valid upto 0830 hours of 1<sup>st</sup> April 2015

- Maximum temperatures would rise by 1-2° C over northwest, central and west India during next 2-3 days and fall by 2-4° C thereafter. No significant change in minimum temperatures likely over the same region.
- Heat wave conditions would continue to prevail over southwest Madhya Pradesh and Konkan & Goa during next 24 hours and abate thereafter.

### 5-Day Rainfall Forecast (MORNING)

DATED: 27-03-2015

S.N	MET. SUB-DIVISION	Forecast				
		27-03-15	28-03-15	29-03-15	30-03-15	31-03-15
1	A & N Islands	SCT	SCT	ISOL	ISOL	ISOL
2	Arunachal Pradesh	ISOL	SCT	SCT	FWS	FWS
3	Assam & Meghalaya	SCT	SCT	FWS	FWS	FWS
4	Nag, Mani, Mizo & Tripura	ISOL	SCT	SCT	SCT	FWS
5	SHWB & Sikkim	SCT	SCT	ISOL	SCT	SCT
6	Gangetic West Bengal	ISOL	ISOL	ISOL	ISOL	SCT
7	Odisha	ISOL	ISOL	ISOL	ISOL	SCT
8	Jharkhand	ISOL	ISOL	DRY	ISOL	SCT
9	Bihar	ISOL	DRY	DRY	ISOL	SCT
10	East Uttar Pradesh	DRY	DRY	DRY	ISOL	SCT
11	West Uttar Pradesh	DRY	DRY	ISOL	SCT	SCT
12	Uttarakhand	DRY	DRY	ISOL	SCT	FWS
13	Haryana, Chd & Delhi	DRY	DRY	ISOL	ISOL	SCT
14	Punjab	DRY	ISOL	ISOL	SCT	SCT
15	Himachal Pradesh	DRY	ISOL	FWS	WS	FWS
16	Jammu & Kashmir	DRY	SCT	FWS	WS	FWS
17	West Rajasthan	ISOL	ISOL	ISOL	SCT	ISOL
18	East Rajasthan	ISOL	ISOL	ISOL	SCT	SCT
19	West Madhya Pradesh	DRY	DRY	ISOL	SCT	ISOL
20	East Madhya Pradesh	DRY	DRY	DRY	ISOL	ISOL
21	Gujarat Region	ISOL	DRY	DRY	ISOL	DRY
22	Saurashtra, Kutch & Diu	DRY	DRY	DRY	ISOL	DRY
23	Konkan & Goa	ISOL	DRY	DRY	ISOL	ISOL
24	Madhya Maharashtra	ISOL	DRY	DRY	ISOL	ISOL
25	Marathwada	DRY	DRY	DRY	ISOL	ISOL
26	Vidarbha	DRY	DRY	DRY	ISOL	ISOL
27	Chhattisgarh	DRY	DRY	DRY	ISOL	ISOL
28	Coastal Andhra Pradesh	DRY	DRY	ISOL	ISOL	ISOL
29	Telangana	DRY	DRY	DRY	DRY	ISOL
30	Rayalaseema	DRY	DRY	DRY	DRY	DRY
31	Tamilnadu & Pudd.	ISOL	ISOL	ISOL	ISOL	ISOL
32	Coastal Karnataka	ISOL	ISOL	ISOL	ISOL	SCT
33	N I Karnataka	DRY	DRY	DRY	ISOL	ISOL
34	S I Karnataka	DRY	DRY	DRY	ISOL	ISOL
35	Kerala	ISOL	ISOL	ISOL	SCT	SCT
36	Lakshadweep	DRY	ISOL	ISOL	ISOL	ISOL

% of stations reporting rainfall			
% Stations	Category	% Stations	Category
76-100	Widespread/Most Places (WS)	26-50	Scattered/ few places (SCT)
51-75	Fairly Widespread/Many Places (FWS)	1-25	Isolated (ISOL)
No Rain	Dry		

### Weather Warning during next 5 days

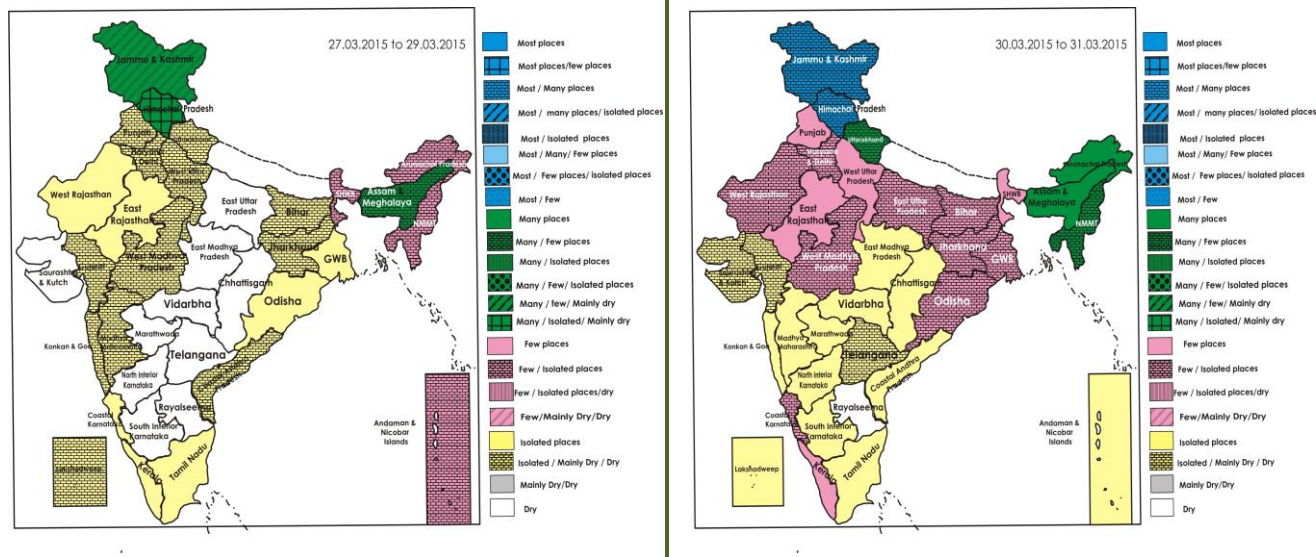
- **27 March (Day 1):** No weather warning.
- **28 March (Day 2):** Thunderstorms accompanied with squall would occur at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **29 March (Day 3):** Thunderstorms accompanied with hail would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, Himachal Pradesh, Uttarakhand, Rajasthan and West Uttar Pradesh. Thunderstorms accompanied with squall would occur at isolated places over Bihar, Odisha, Jharkhand, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Heavy rain would occur at isolated places over Jammu & Kashmir and Himachal Pradesh.
- **30 March (Day 4):** Thunderstorms accompanied with hail would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, Himachal Pradesh, Uttarakhand, East Rajasthan and Uttar Pradesh. Thunderstorms accompanied with squall would occur at isolated places over Bihar, Odisha, Jharkhand, west Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Heavy rain would occur at isolated places over Jammu & Kashmir and Himachal Pradesh.

- **31 March (Day 5):** Thunderstorm accompanied with isolated squall would occur over Assam & Meghalaya. Heavy rain would occur at isolated places over Jammu & Kashmir.

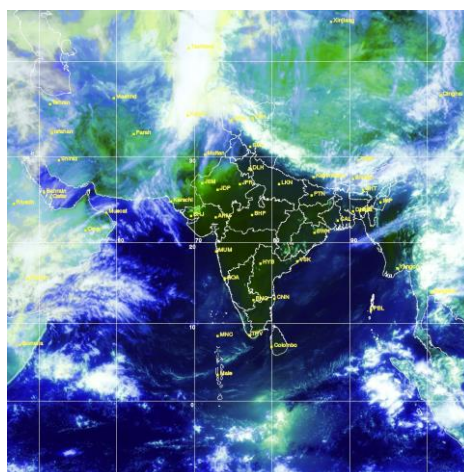
### Weather Outlook for subsequent 2 days From 1<sup>st</sup> April 2015 to 3<sup>rd</sup> April 2015

- Fairly widespread precipitation would occur over western Himalayan region & northeastern states.
- Scattered rain/thundershower would occur over plains of northwest India.
- Isolated rain/thundershower would also occur over central, east and south peninsular India.

### Weather Forecast Map (Valid upto 0830 hours of 1<sup>st</sup> April, 2015)



Satellite image dated, 27.03.2015, 0545 UTC



### Salient Advisories

- As thunderstorm accompanied with hailstorm would occur at isolated places in **Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Rajasthan** and **Uttar Pradesh** on 29<sup>th</sup> and 30<sup>th</sup> March, farmers are advised to use hail nets for orchard crops to protect from mechanical damage. Provide mechanical support to young fruit plants and vegetables to prevent the crops from lodging due to strong winds. Also undertake propping in sugarcane.
- As rain/thundershowers would occur at many/most places along with heavy rain at isolated places over **Jammu & Kashmir** on 29<sup>th</sup> to 31<sup>st</sup> March and **Himachal Pradesh** on 29<sup>th</sup> to 30<sup>th</sup> March, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested produces at safer places. Also it is

advised to make arrangement for adequate drainage in standing crop fields to remove excess water.

- As rain/thundershowers would occur at many places over **Assam & Meghalaya** on 29<sup>th</sup> to 31<sup>st</sup> March, over Arunachal Pradesh on 30<sup>th</sup> & 31<sup>st</sup> March, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested produces at safer places.
- As thunderstorm accompanied with squall would occur at isolated places over **Assam & Meghalaya** and **Nagaland, Manipur, Mizoram & Tripura** during the period, provide mechanical support to chilli, tomato, banana and young fruit plants.
- As heat wave conditions would continue to prevail over southwest **Madhya Pradesh & Konkan** during next 24 hours, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave, also undertake mulching with straw/polythene to conserve soil moisture.
- Due to prevailing heat wave conditions in **Konkan** in Maharashtra, there may be immature fruit dropping in mango, apply 80 – 100 litres of water per tree at 7 days interval, also apply mulch with grass in lateritic soil to avoid the water loss. Farmers are also advised to spray NAA @ 2 g or Gibberellic acid @ 1 g + 2 kg urea / 100 litres of water solution.

### *Detailed Zonewise Agromet Advisories*

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



*Wheat*



*Sugarcane*



*Banana*



*Cabbage*

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Jammu & Kashmir and Himachal Pradesh on 30<sup>th</sup>; at many places over Uttarakhand on 31<sup>st</sup>; over Jammu & Kashmir and Himachal Pradesh on 29<sup>th</sup> and 31<sup>st</sup>; at a few places over East Uttar Pradesh and Haryana & Delhi on 31<sup>st</sup>; over West Uttar Pradesh, East Rajasthan and Punjab on 30<sup>th</sup> and 31<sup>st</sup>; over West Rajasthan on 30<sup>th</sup>; over Jammu & Kashmir on 28<sup>th</sup>; at isolated places over East Uttar Pradesh on 30<sup>th</sup>; over West Uttar Pradesh and Uttarakhand on 29<sup>th</sup>; over Haryana & Delhi on 29<sup>th</sup> and 30<sup>th</sup>; over Punjab on 28<sup>th</sup> and 29<sup>th</sup>; over Himachal Pradesh on 28<sup>th</sup>; over West Rajasthan from 27<sup>th</sup> to 29<sup>th</sup> and on 31<sup>st</sup>; over East Rajasthan from 27<sup>th</sup> to 29<sup>th</sup>. Dry weather would prevail over the region during rest of the period. Maximum temperatures would rise by 1-2° C over northwest, India during next 2-3 days and fall by 2-4° C thereafter. No significant change in minimum temperatures likely over the region.
- **Weather Warning:** Thunderstorms accompanied with hail would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, Himachal Pradesh and Uttarakhand on 29<sup>th</sup> and 30<sup>th</sup>; over Rajasthan and West Uttar Pradesh on 29<sup>th</sup> and over East Rajasthan and Uttar Pradesh on 30<sup>th</sup>. Heavy rain would occur at isolated places over Jammu & Kashmir on 29<sup>th</sup>, 30<sup>th</sup> and 31<sup>st</sup> and over Himachal Pradesh on 29<sup>th</sup> and 30<sup>th</sup>.
- **Weather Outlook:** Fairly widespread precipitation would occur over western Himalayan region. Scattered rain/thundershower would occur over plains of northwest India.
- **Advisories:**
  - As thunderstorm accompanied with hail would occur at isolated places in Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Rajasthan and Uttar Pradesh on 29<sup>th</sup> and 30<sup>th</sup> March, farmers are advised to use hail nets for orchard crops to protect from mechanical damage. Provide mechanical support to young fruit plants and vegetables to prevent the crops from lodging due to strong winds. Also undertake propping in sugarcane.
  - As rain/thundershower would occur at many/most places along with heavy rain at isolated places over Jammu & Kashmir on 29<sup>th</sup> to 31<sup>st</sup> March and Himachal Pradesh on 29<sup>th</sup> to 30<sup>th</sup> March, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the

standing crops. Harvest the matured crop immediately and store the harvested produces at safer places. It is also advised to make arrangement for adequate drainage in standing crop fields to remove excess water.

▪ **Jammu & Kashmir:**

- In Valley Temperate Zone of Jammu & Kashmir, undertake planting of potato, transplanting of seedlings of cauliflower, cabbage, knolkhol after current spells of heavy rain.
- In the present cloudy condition, there may be incidence of red pumpkin beetle in cucurbits. To control spray Chloropyriphos @ 2 ml/litre of water and also monitor potato and tomato crop for leaf roll and tomato leaf curl, respectively. Remove virus infected plants. Then spray Imidacloprid @ 0.5ml/litre of water after current spells of rain.

▪ **Uttarakhand:**

- As rain/thundershower would occur at many places over Uttarakhand on 31<sup>st</sup> March, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested produces at safer places.
- In Hill Zone of Uttarakhand, undertake land preparation for sowing of peas and planting of potato.
- Due to humid and cloudy weather, there is chance of mealy bug infestation in mango plant in Sub humid sub tropic Zone of Uttarakhand. To control the insect, dust Methyl Parathion 2% @ 250 g per tree in the soil around the trunk on a non-rainy day.
- In Bhabar and Tarai Zone of Uttarakhand, due to cloudy conditions, there are chances of blight in late sown wheat crop, to control spray Propiconazol 25 EC or Tilt @ 200 ml per 250 ml water per acre on a non-rainy day.

▪ **Rajasthan:**

- In Arid Western Zone of Rajasthan, undertake harvesting of matured cumin, isabgol, and mustard on bright sunny days to prevent shattering losses.
- In Arid Western Zone of Rajasthan, rise in temperature and humid conditions may promote infestation of powdery mildew disease in mango and may result in dropping of flowers and fruits. To control, spray Karathane @ 1 ml/litre of water on a non-rainy day.
- In Semi - arid eastern plain of Rajasthan, in the present weather, early sown summer cucurbits are likely to be affected by red pumpkin beetle. To control, apply Carboryl 5% @ 20 kg/ha on a non-rainy day.

▪ **Punjab, Haryana and Delhi:**

- As there is possibility of rain at a few places in Punjab on 30<sup>th</sup> and 31<sup>st</sup> March, complete the harvesting the early sown matured mustard crop at the earliest and keep the harvested crop at safe places.
- In Western Semi-Arid Zone of Delhi, continue sowing of ladies finger, cucurbitaceous crops and nursery sowing of vegetables like chilli, tomato and brinjal.
- In Western Zone of Punjab, prepare the field for transplanting of summer vegetables viz. chilli, tomato and bell pepper, undertake sowing of cucumber, bottle gourd, pumpkin, muskmelon, watermelon, bitter gourd.
- In Western Plain Zone of Punjab complete planting of sugarcane. Undertake transplanting of chilli.
- In Western Zone of Haryana, continue transplanting of young seedlings of tomato and chilli.
- In the prevailing minimum temperature (around 18°C) with humidity, black rust may appear in wheat crop in Western Semi-Arid Zone of Delhi. For control, spray Dithane M 45 @ 2.5 grams per litre of water on a non-rainy day.
- In Western Zone of Haryana, due to humid weather, there may be attack of aphids in late sown wheat crop, if appearance observed, spray 400 ml Malathion 50 E. C. in 250 litre water per acre on a non-rainy day.
- Due to cloudy weather, there is possibilities of pod borer in the gram in Western Zone of Haryana; spray Carbaril 50 W.P. @ 400 g or Monocrotophas 36 S.L @ 200 ml with 100 litres of water per acre on a non-rainy day.
- In Central Plain Zone of Punjab aphid damages have been reported in wheat; spray Imidacloprid 200 SL @ 40 ml or Thiamethoxam 25 WG @ 20 g in 80-100 litres of water per acre on a non-rainy day using knap sack sprayer or in 30 litres of water per acre with power sprayer.

▪ **Himachal Pradesh:**

- In the prevailing weather, continue sowing of moong, pea and mash in lower hills region of Mid Hills Sub Humid Zone after current spells of heavy rain.
- Undertake sowing of okra, French bean and ridge/sponge gourd, tomato, brinjal, chilli and capsicum in mid hill areas and sunflower in high hill areas of Sub-Montane and Low Hills Sub- Tropical Zone. Continue sowing of moong, mash, chari and bajra in lower hills region and direct sowing of cucumber, summer squash, bitter gourd, bottle gourd. Undertake sowing after current spells of heavy rain.
- Due to humid weather condition, there is chance of powdery mildew in wheat in Sub-Montane and Low Hills Sub-Humid Tropical Zone. Spray Hexaconazole @ 1 ml per litre of water after current spells of rain and repeat the spray after 15 days interval.
- Due to cloudy weather, there are chances of incidence of collar rot in apple in Mild Hills Sub Humid Zone. For control, spray Ridomil @ 75 g per 20 litres of water or Bavistin @ 15-20 g / 20 litres of water or Dithane-M-45 @ 90-100 g / 15 litres of water after current spells of rain.

▪ **Uttar Pradesh:**

- Undertake harvesting of harvesting of matured gram and mustard in Eastern and Central Plain Zone. In Eastern Plain Zone, continue planting of sugarcane and complete sowing of urad, moong and vegetables.
- Complete sowing of urad, moong and lobia, planting of sugarcane and undertake harvesting of matured peas, gram and mustard in Central Plain Zone.
- Under prevailing humid weather condition, there is chance of fruit borer in gram, lentil and peas in Western Plain Zone. Spray Monocrotophos @ 0.5 ml per litre of water on a non-rainy day.
- Suitable varieties for sowing are given in Annexure II.

• **Animal Husbandry**

- Keep animals indoor during thunderstorm/ hail storm periods in Northern States.

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



*Sugarcane*

*Wheat*

*Okra*

*Onion*

- **Realised Rainfall:** Dry weather prevailed over the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over West Madhya Pradesh on on 30<sup>th</sup>; at isolated places over West Madhya Pradesh on 29<sup>th</sup> and 31<sup>st</sup>; over East Madhya Pradesh and Chhattisgarh on 30<sup>th</sup> and 31<sup>st</sup>. Dry weather would prevail over the region during rest of the period. Maximum temperatures would rise by 1-2° C over central India during next 2-3 days and fall by 2-4° C thereafter. No significant change in minimum temperatures likely over the region. Heat wave conditions would continue to prevail over southwest Madhya Pradesh during next 24 hours and abate thereafter.
- **Weather Warning:** Nil.
- **Weather Outlook:** Isolated rain/thundershower would occur over central India.
- **Advisories:**
  - As heat wave conditions would continue to prevail over southwest Madhya Pradesh during next 24 hours, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave, mulching with straw/polythene to conserve soil moisture.
  - In Satpura Plateau Zone, as mainly dry weather would prevail, continue harvesting of matured wheat, gram and potato.
  - In Malwa Plateau Zone and Vindhya Plateau Zone, as mainly dry weather would prevail, continue harvesting of matured wheat and gram. Continue transplanting of summer vegetables like tomato, brinjal, chilli, cabbage and cauliflower on the prepared beds.
  - In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, continue sowing of moong, urad and vegetables.
  - In Jhabua Hill Zone and Grid Zone, continue sowing of moong, cucurbitaceous vegetables and harvesting of matured wheat and vegetables.
  - In Bundelkhand Zone, continue harvesting of matured wheat, potato and sowing of summer moong and okra.
  - Due to increasing temperature and humid weather, there are chances of attack of sucking pests in vegetables in Vindhya Plateau Zone of Madhya Pradesh; spray Ethofenprox 10 EC @ 1 litre/500 litres of water.
  - Due to rise in temperature there are chances of attack of powdery mildew in summer vegetables in Nimar Valley Zone, apply Carbendazaim @ 1g/litre of water.
- **Chhattisgarh:**
  - In Chhattisgarh Plain Zone, as dry weather is prevailing, continue harvesting of matured wheat and gram. Undertake sowing of summer moong and planting of sugarcane.
  - In North Hill Zone of Chhattisgarh, as mainly dry weather is likely to prevail, continue harvesting of wheat, gram, pea, mustard, pigeon pea and lentil. In view of increasing temperature, apply irrigation in summer rice, sugarcane and summer vegetable crops. Continue planting of spring sugarcane and sowing of summer moong, sesame and groundnut.
  - Suitable varieties for sowing are given in Annexure II.
- **Animal Husbandry**
  - Provide clean water, balanced and nutrients rich food to the milch animals in Madhya Pradesh. De-worm the cattle.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



*Banana*

*Sugarcane*

*Wheat*

*Mango*

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Konkan & Goa and Madhya Maharashtra on 27<sup>th</sup>, 30<sup>th</sup> and 31<sup>st</sup> and dry weather would prevail on 28<sup>th</sup> and 29<sup>th</sup>. Dry weather would prevail over Marathwada and Vidarbha from 27<sup>th</sup> to 29<sup>th</sup> and rain/thundershowers would occur at isolated places thereafter. Rain/thundershowers would occur at isolated places over Gujarat region on 27<sup>th</sup> and 30<sup>th</sup>; dry weather would prevail on 28<sup>th</sup>, 29<sup>th</sup> and 31<sup>st</sup>. Dry weather would prevail over Saurashtra & Kutch from 27<sup>th</sup> to 29<sup>th</sup> and 31<sup>st</sup>; rain/thundershowers would occur at isolated places on 30<sup>th</sup>. Maximum temperatures would rise by 1-2° C over west India during next 2-3 days and fall by 2-4° C thereafter. No significant change in minimum temperatures likely over the region. Heat wave conditions would continue to prevail over Konkan & Goa during next 24 hours and abate thereafter.
- **Weather Warning:** Nil.
- **Advisories:**
  - **Maharashtra:**
    - In Konkan, as heat wave conditions would continue to prevail during next 24 hours, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave, mulching with straw/polythene to conserve soil moisture. Maintain water level upto 8-10 cm at panicle initiation/flowering stage of summer rice and finger millet. Harvest matured summer okra and watermelon fruits and pulses like wal, kulthi during morning hours to avoid pod cracking. As there is more evaporation, apply irrigation to the groundnut at 10-12 days interval at pegging/ pod development stage. Due to prevailing heat wave conditions, there may be immature fruit dropping in mango, apply 80 – 100 litres of water per tree at 7 days interval, also apply mulch with grass in lateritic soil to avoid the water loss. Farmers are also advised to spray NAA @ 2 g or Gibberellic acid @ 1 g + 2 kg urea / 100 litres of water solution. Mango is at maturity stage at some parts of south Konkan, harvest matured fruits early in the morning or in the evening and keep in shed to prevent the spongy tissue disease and protect from heat.
    - In Madhya Maharashtra, as mainly dry weather would prevail apply irrigation to summer groundnut at an interval of 8 to 10 days depending upon soil texture. Also apply irrigation to vegetables and irrigation in sugarcane by alternate furrow method, if there is water stress condition. Also apply mulch with trash to preserve soil moisture. Complete harvesting of matured late sown wheat and keep the harvested produce in safe place.
    - In Marathwada, as dry weather would prevail apply irrigation to sugarcane, summer groundnut and vegetables. Apply the mulch with crop residue or other waste material to preserve soil moisture in the field. As temperature is prevailing above 38°C in many parts of the region, apply drip irrigation to the banana plant. Cover the banana bunch with dried banana leaves or gunny bag to protect from bright sunshine.
    - In Vidarbha, as dry weather would prevail, apply irrigation to summer groundnut, moong and vegetables and orchards (orange and sweet lime). Apply the mulch with crop residue or other waste material to preserve soil moisture in the field. Maintain upto 5 cm water level in summer rice field (tillering) in east Vidarbha.
    - Considering increase in humidity in Pune region there may be more infestation of powdery mildew in vegetables and mango flowers, spray Sulphur WS @ 20 g per 10 litres of water at 10 days interval for 2 to 3 times, if infestation is more spray Carbendazim @10 g per 10 litres of water.
  - **Gujarat:**
    - In North West Zone and North Gujarat Zone, due to high temperature forecast apply light and frequent irrigation in vegetable crops. Complete harvesting of wheat and undertake harvesting of matured papaya fruits.
    - In North Gujarat Zone, carryout weeding, intercultural operations and apply first irrigation in groundnut after 18 to 20 DAS. Spray a solution of 200 mg NAA + 200 g urea in 10 litres of water to enhance the fruit size and reduce fruit dropping in mango orchard.
    - Use wheat straw and banana straw as a mulch (12.5 kg/plant) in banana orchards for conservation of soil moisture in Middle Gujarat Zone. Undertake harvesting of matured wheat in the early morning hours in clear weather and harvesting of matured papaya fruits. Continue sowing of okra, cowpea and green gram.
    - Continue sowing of green gram, cowpea and pearl millet in Bhal and Coastal Zone of Gujarat. Apply light and frequent irrigation in vegetable crops as high temperatures are likely to prevail.
    - For conservation of moisture, carryout weeding and intercultural operations in timely sown crops (paddy, green gram and cowpea) in South Gujarat Heavy Rainfall Zone.

- Due to prevailing high temperatures there may be attack of sucking pests (jassid, aphid and white fly) in green gram and cowpea in South Gujarat Heavy Rainfall Zone; for control, spray the crop with Diamethoate 30% or Acephate @ 15 g/10 litre of water.
- Suitable varieties for sowing are given in Annexure II.
- **Animal Husbandry**
- As heat wave conditions would prevail at isolated places Konkan, grazing /feeding of cattle/goats may be done during morning/ evening hours. Keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Avoid feeding between 11 to 15 hrs.

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



*Rice*



*Mustard*



*Okra*



*Cabbage*

- **Realised Rainfall:** Rainfall occurred in Tawang, Upper Siang and Upper Subansiri districts of Arunachal Pradesh. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Arunachal Pradesh on 27<sup>th</sup>; at a few places on 28<sup>th</sup> and 29<sup>th</sup> and at many places thereafter. Rain/thundershowers would occur at a few places over Assam & Meghalaya on 27<sup>th</sup> and 28<sup>th</sup> and at many places thereafter. Rain/thundershowers would occur at isolated places over Nagaland, Manipur, Mizoram & Tripura on 27<sup>th</sup>; at a few places from 28<sup>th</sup> to 30<sup>th</sup> and at many places thereafter.
- **Weather Warning:** Thunderstorms accompanied with squall would occur at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 28<sup>th</sup>, 29<sup>th</sup> and 30<sup>th</sup>.
- **Weather Outlook:** Fairly widespread precipitation would occur over northeastern states.
- **Advisories:**
  - As rain/thundershowers would occur at many places over Assam & Meghalaya on 29<sup>th</sup> to 31<sup>st</sup> March and over Arunachal Pradesh on 30<sup>th</sup> and 31<sup>st</sup> March, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested produces at safer places.
  - As thunderstorm accompanied with squall at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during the period, provide mechanical support to chilli, tomato, banana and young fruit plants.
  - **Assam & Meghalaya, Arunachal Pradesh:**
    - In Assam, continue normal sowing of summer crops like green gram, black gram, maize under normal weather conditions and maintain 5 cm of standing water in the field of *boro* rice.
    - In Central Bramhaputra Valley Zone of Assam, undertake sowing of normal direct seeded *ahu* rice, *bao* rice and summer pulses. Also undertake harvesting of wheat immediately in clear weather.
    - In Lower Bramhaputra Valley Zone of Assam, undertake nursery bed preparation for transplanted normal *ahu* rice.
    - In flood affected low lying areas of North Bank Plain Zone of Assam, farmers are advised to collect suitable varieties of *bau* rice such as Maguri, Panikekua, Amona, Negheri etc. as March-April is the ideal time of sowing. Undertake nursery bed preparation for transplanted early *ahu* rice and sowing of direct seeded *ahu* rice.
    - In Hill Zone of Assam, continue land preparation for transplanting of early *ahu* rice.
    - In Arunachal Pradesh, continue land preparation for sowing of *jhum* rice, sowing of summer vegetables and other agricultural operations under normal weather conditions.
    - In Meghalaya, continue sowing of maize in High & Mid Altitude region.
    - In Lower Bramhaputra Valley Zone of Assam, due to cloudy weather, there is chance of sheath blight on *boro* rice. Spray Carbendazim @ 0.5g/litre or Hexaconazole @ 2ml/litre after current spells of rain.
    - In Barak Valley Zone and Central Bramhaputra Valley Zone of Assam, due to hot and humid weather, there is chance of stem borer on *boro* rice. Spray Chloropyriphos(20%) @ 2ml/litre after current spells of rain.
    - In Meghalaya, due to humid weather, there is chance of attack of brown spot disease in *boro* rice. Spray Carbendazim @ 1 g / litre of water after current spells of rain.
  - **Manipur, Mizoram, Nagaland and Tripura:**
    - As rain/thundershower would occur at many places over Manipur, Mizoram, Nagaland and Tripura on 31<sup>st</sup> March, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and store the harvested produces at safer places.



- In Manipur, continue transplanting of pre-*khari*f rice and maintain 5-8 cm water after 3-4 days of transplanting. Continue planting of ginger and turmeric. Also, apply irrigation to passion fruit, pineapple and other fruit crops and undertake mulching with dry grass at the basin to conserve the soil moisture.
- In Mizoram, as mainly dry weather is prevailing, apply mulch of dry leaves or paddy husk to a thickness of about 8 cm in the basin of *khasi* mandarin, banana and oil plams.
- In Nagaland, undertake land preparation for maize.
- In Tripura, undertake land preparation for *jhum* rice.
- In Tripura, due to cloudy and humid weather, there is chance of attack of yellow stem borer in *boro* rice; apply Fipronil @ 2 g per litre of water after current spells of rain to manage the attack.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- In Northeastern States, keep cattle/goats indoor during thunderstorm period.
- In Northeastern States, vaccinate poultry against Ranikhet disease, pigs against swine fever and cattle & goats against the Foot and Mouth disease during summer season.
- In Meghalaya, during summer season, keep the poultry house well ventilated during day time.

## EAST INDIA [JHARKHAND, BIHAR, ODISHA, WEST BENGAL & SIKKIM, ANDAMAN & NICOBAR ISLANDS]



*Sugarcane*

*Wheat*

*Rice*

*Onion*

- **Realised Rainfall:** Rainfall occurred in North Sikkim district of Sikkim. Weather remained mainly dry/dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands on 27<sup>th</sup> and 28<sup>th</sup>; over Sub-Himalayan West Bengal & Sikkim on 27<sup>th</sup>, 28<sup>th</sup>, 30<sup>th</sup> and 31<sup>st</sup>; over Gangetic West Bengal, Jharkhand, Bihar and Odisha on 31<sup>st</sup>; at isolated places over Andaman & Nicobar Islands from 29<sup>th</sup> to 31<sup>st</sup>; over Sub-Himalayan West Bengal & Sikkim on 29<sup>th</sup>; over Gangetic West Bengal and Odisha from 27<sup>th</sup> to 30<sup>th</sup>, over Jharkhand on 27<sup>th</sup>, 28<sup>th</sup> and 30<sup>th</sup>; over Bihar on 27<sup>th</sup> and 30<sup>th</sup>. Dry weather would prevail over Jharkhand on 29<sup>th</sup>; over Bihar on 28<sup>th</sup> and 29<sup>th</sup>.
- **Weather Warning:** Thunderstorms accompanied with squall would occur at isolated places over Bihar, Odisha and Jharkhand on 29<sup>th</sup> and 30<sup>th</sup> and over West Bengal & Sikkim on 30<sup>th</sup>.
- **Weather Outlook:** Isolated rain/thundershower would occur over east India.
- **Advisories:**
  - **Andaman and Nicobar Islands:**
    - In South, North & Middle Andaman, undertake weeding and earthing up in vegetables. Mulch with dry grass in newly planted cucurbits for weed suppression and moisture conservation.
  - **Odisha:**
    - In East and South Eastern Coastal Plain Zone of Odisha, continue sowing of sesame and complete sowing of green and black grams.
    - In Western Undulating Zone, the transplanted onion crop is at bulb development (11-12week) stage. Irrigate the crop at 7days interval.
    - Undertake plucking of matured green gram and black gram preferably during morning hours in North Central Plateau Zone.
    - In East and South Eastern Coastal Plain Zone of Odisha, *alternaria* blight in tomato and cole crops has been found and may spread in the prevailing humid weather. Spray Dethane-M-45 @3 g / litre of water. Also fungal leaf blight in brinjal and tomato has occurred. Spray Saaf or Sixer or Companion @1 g in 1 litre of water on a non rainy day.
    - In East and South Eastern Coastal Plain Zone of Odisha, due to rise in temperature and dry soil condition, white grubs may pose serious problems in groundnut. Spray Dimethoate or Imidacloprid @ 50 ml in 200 litres of water per acre for control. Rise in temperature may also favour the egg laying of stem borer in rice in the main field over this region. To manage the borer butterflies, place 4 Pheromon Traps/acre, collect the adults and destroy them by burying under soil or by burning. Spray Prophenophos @ 2 ml per litre of water on a non rainy day.
  - **Bihar:**
    - In North West Alluvial Plain Zone of Bihar, undertake harvesting of matured wheat under prevailing dry

weather condition. Undertake intercultural operations and apply irrigation in onion.

- In North East Alluvial Zone of Bihar, maintain minimum water level (2-3cm) in the *boro* rice field. Continue land preparation and sowing of moong.
- In South Bihar Alluvial Zone, as mainly dry weather is prevailing, apply irrigation to onion, vegetables and maize and continue harvesting of mustard.
- In North East Alluvial Zone of Bihar, due to fluctuation in temperature, there are chances of aphids in wheat; spray Imidacloprid 17.8 SL @ 1 ml/3 litres of water or Thiomethoxam 25WDG @ 1 g /3 litres of water on a non rainy day.

▪ **Jharkhand:**

- In South Eastern Plateau Zone, as dry weather is prevailing, continue harvesting of early sown wheat and apply irrigation to late sown wheat.
- In Western Plateau Zone, apply irrigation to wheat and complete sowing of moong.
- In Central & North Eastern Plateau Zone, continue sowing of summer maize with assured irrigation and okra. Undertake sowing of moong.
- As no significant rain is expected, apply irrigation at regular interval in mango orchard to prevent fruit dropping in mango and litchi in Western Plateau Zone of Jharkhand.
- Suitable varieties for sowing are given in Annexure II.

• **Animal Husbandry**

- In North West Alluvial Plain Zone of Bihar, as day temperature is increasing, give special attention to milch animals with regard to feed and water. Provide plenty of clean water to the animals and keep them in the shaded place.

**SOUTH INDIA [TAMIL NADU, TELANGANA, ANDHRA PRADESH, KARNATAKA, KERALA]**



*Sorghum*

*Sugarcane*

*Chilli*

*Rice*

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry during the period; over Coastal Karnataka from 27<sup>th</sup> to 30<sup>th</sup>; over Kerala from 27<sup>th</sup> to 29<sup>th</sup>; over Interior Karnataka on 30<sup>th</sup> and 31<sup>st</sup>; at a few places over Coastal Karnataka on 31<sup>st</sup>; over Kerala on 30<sup>th</sup> and 31<sup>st</sup>; dry weather would prevail over these regions during rest of the period. Dry weather would prevail over Rayalaseema during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Isolated rain/thundershower would occur over south peninsular India.
- **Advisories:**
  - **Andhra Pradesh:**
    - In the High Altitude Tribal Zone, maintain 5 cm of water in rice during panicle initiation to physiological maturity (upto 10 Days before harvest) of the crop. Spray Urea solution @ 20 g/litre of water in groundnut crop during severe moisture stress conditions.
    - Present dry condition is congenial for incidence of sucking pests in *rabi* pulses in the Krishna Godavari Zone. Undertake spraying of Chlorpyrifos @ 2 ml per litre of water for control.
    - Undertake spraying of Sulphur @ 3 g/litre of water to control powdery mildew in mustard in Kurnool district in the Scarce Rainfall Zone.
    - Prevailing temperature conditions are congenial for incidence of stem borer in rice in the North Coastal Zone. Spray Acephate 1 g/litre of water or Chlorpyrifos @ 2.5 ml/litre of water during evening hours.
  - **Telangana:**
    - As mainly dry weather would prevail, apply irrigation in Orange orchards to maintain optimum moisture in the soil for increasing fruit size in Southern Zone.
    - Prevailing high temperature conditions are congenial for the incidence of stem borer in transplanted rice in the Southern Telangana Zone. To control, spray Cartaphydrochloride @ 2 g or Acephate @ 1.5 g/litre of water.
    - Prevailing temperature conditions are congenial for hispa incidence in rice in the Northern Telangana Zone. Spray Profenophos @ 2.0 ml or Chlorpyrifos @ 2.5 ml per litre of water.
  - **Karnataka:**
    - As dry weather is prevailing, provide irrigation to mango at marble stage for better development of fruits and in ratoon sugarcane in the North East Dry Zone. Also apply irrigation in groundnut crop in the Hill Zone.
    - Undertake land preparation for planting of ginger and turmeric in the Southern Transition Zone.

- Prevailing humid and high temperature is congenial for incidences of sucking pests, thrips, and powdery mildew in mango in the Central Dry Zone, North Dry Zone and North Transition Zone. To control, undertake spraying of Carbaryl @ 4 g + 1 g Bavistin dissolved in one litre of water.
- **Kerala:**
  - Continue mulching in banana basins and provide irrigation twice a week in the Southern Zone and in nutmeg and coconut fields in Problem Area Zone to reduce soil temperature and conserve soil moisture.
  - Prevailing high temperature and cloudy weather is congenial for incidence of blast in rice in the Problem Area Zone. Spray Kitazin @ 1ml/litre of water for control on a non rainy day.
  - The existing weather conditions (high temperature and humidity) are congenial for the incidence of leaf folder in rice and mosaic disease in chilli in the Southern Zone. Open the rolled leaves and spray Ekalux to control leaf folder and spray Kiriyaath- Garlic emulsion on the lower surface of leaves on a non rainy day to control mosaic disease in chilli.
- **Tamil Nadu:**
  - As mainly dry weather is expected in the next five days, irrigate sesame, sugarcane and summer cotton fields in the Cauvery Delta Zone. Continue harvesting matured *thaladi* rice.
  - Undertake land preparation for cultivation of irrigated pearl millet and provide irrigation to all standing crops as per requirement in the Western Zone.
  - Due to increasing temperature, apply the nutrients through fertigation or foliar spray to vegetables, since vegetable crops are at flowering to fruiting stage in the Southern Zone.
  - As mainly dry weather is expected in the coming days, irrigate sugarcane and banana crop using drip irrigation system.
  - In the North Western Zone, leaf hopper and mealy bug menace is seen in cotton plants due to increase in temperature in. To control leaf hopper, spray Imidacloprid @ 40 mg/10 litres of water/ acre of and to control mealy bugs, spray Prophanophos @ 40 ml/ 10 litres of water/ acre.
- **Animal Husbandry**
  - Anthrax disease is noticed in some parts of the Northern Telangana Zone and Scarce Rainfall Zone of Andhra Pradesh. Vaccinate animals at the earliest.
  - Due to increase in temperature and decrease in relative humidity, provide shade to milch animals and sprinkle water on them for reducing body heat in the Eastern Dry Zone of Karnataka and Western Zone of Tamil Nadu.
  - Undertake vaccination in cattle for foot and mouth disease, black quarter, Haemorrhagic Septicaemia and Enterotoxemia before onset of monsoon in the Southern Transition Zone of Karnataka.

**Districtwise realised rainfall and % departure for past three weeks is given below in Annexure I.**

**Annexure I**  
**Week by week Rainfall Distribution**

Sub-Divisions	11.03.15		18.03.15		25.03.15	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>						
Anjaw	**	**	**	**	**	**
Changlang	0.1	-99	0.0	-100	3.1	-97
Dibang Valley	59.0	-14	37.0	-59	18.0	-70
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	18.8	-13	11.9	-48	0.0	-100
Kurung Kumey	**	**	**	**	**	**
Lohit	20.5	-23	7.6	-81	7.8	-84
Lower Dibang Valley	25.8	-62	40.5	-55	0.4	-99
Lower Subansari	**	**	**	**	**	**
Papumpara	1.3	-91	0.0	-100	0.1	-99
Tawang	4.0	-65	0.0	-100	31.0	79
Tirap	0.4	-99	0.2	-99	3.6	-90
Upper Siang	117.0	39	123.0	51	30.8	-65
Upper Subansari	0.0	-100	7.0	-70	20.2	-25
West Kameng	0.0	-100	0.0	-100	0.0	-100

West Siang	30.0	32	13.0	-30	7.5	-10
<b>Assam&amp;Meghalaya</b>						
<b>Assam</b>						
Baksa	5.2	8	0.0	-100	0.0	-100
Barpeta	3.5	-28	0.0	-100	0.0	-100
Bongaigaon	10.6	22	0.0	-100	0.0	-100
Cachar	0.6	-97	0.0	-100	0.0	-100
Chirang	10.4	20	0.0	-100	0.0	-100
Darrang	0.0	-100	0.0	-100	0.0	-100
Dhemaji	8.0	-34	1.0	-95	1.0	-95
Dhubri	0.8	-88	0.0	-100	0.0	-100
Dibrugarh	3.3	-80	0.0	-100	2.4	-92
Goalpara	11.1	22	0.0	-100	0.0	-100
Golghat	0.0	-100	0.0	-100	1.9	-90
Hailakandi	3.4	-61	0.0	-100	0.0	-100
Jorhat	2.4	-81	0.0	-100	1.5	-93
Kamrup(Rural)	1.0	-86	0.0	-100	1.6	-92
Kamrup(Metro)	3.2	-57	0.0	-100	0.0	-100
Karbi Anglong	0.5	-91	0.0	-100	0.0	-100
Karimganj	0.5	-98	0.0	-100	0.0	-100
Kokrajhar	0.9	-85	0.0	-100	0.0	-100
Lakhimpur	2.5	-79	0.3	-99	0.0	-100
Morigaon	0.0	-100	0.0	-100	0.0	-100
N.C.Hills	0.0	-100	0.0	-100	0.0	-100
Nowgong	0.0	-100	0.0	-100	0.0	-100
Nalbari	7.4	40	0.0	-100	0.0	-100
Sonitpur	0.0	-100	0.0	-100	0.2	-99
Sibsagar	0.0	-100	0.0	-100	4.1	-80
Tinsukia	3.7	-76	1.4	-96	3.5	-92
Udalgiri	2.8	-76	0.0	-100	2.2	-85
<b>Meghalaya</b>						
East Garo Hills	9.5	83	0.0	-100	9.7	80
East Khasi Hills	0.4	-99	0.0	-100	0.3	-99
Jaintia Hills	0.0	-100	0.0	-100	19.0	-17
Ribhoi	1.4	-81	0.0	-100	0.0	-100
South Garo Hills	1.0	-82	0.0	-100	0.0	-100
West Garo Hills	0.0	-100	0.4	-92	0.0	-100
West Khasi Hills	4.0	-57	0.0	-100	9.0	-35
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	22.8	188	0.0	-100	9.1	-73
Champhai	**	**	**	**	**	**
Kolasib	3.0	-74	0.0	-100	0.0	-100
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	7.0	37	0.0	-100	0.0	-100
Serchhip	6.1	0	0.0	-100	16.1	-59
<b>Manipur</b>						

Bishnupur	**	**	**	**	**	**
Chandel	1.0	-81	0.0	-100	0.0	-100
Churachandpur	**	**	**	**	**	**
Imphal east	0.0	-100	0.0	-100	0.2	-99
Imphal west	0.0	-100	0.0	-100	0.0	-100
Senapati	1.0	-89	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**
Thoubal	0.0	-100	0.0	-100	0.0	-100
Ukhrul	**	**	**	**	**	**
<b>Nagaland</b>						
Dimapur	0.4	-96	0.0	-100	0.0	-100
Kephire	**	**	**	**	**	**
Kohima	0.4	-95	0.0	-100	0.4	-97
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	1.0	-94
Tuensang	**	**	**	**	**	**
Wokha	0.0	-100	0.0	-100	0.0	-100
Zunheboto	**	**	**	**	**	**
<b>Tripura</b>						
Dhalai	4.0	-66	0.0	-100	0.0	-100
North Tripura	0.3	-98	0.0	-100	0.0	-100
South Tripura	4.2	-45	0.0	-100	0.0	-100
West Tripura	6.2	-9	0.0	-100	0.0	-100
<b>Himachal Pradesh</b>						
Bilaspur	22.1	49	37.8	289	0.0	-100
Chamba	60.3	98	62.9	172	0.0	-100
Hamirpur	27.3	158	31.9	175	0.0	-100
Kangra	31.7	87	50.9	135	0.0	-100
Kinnaur	52.9	154	8.6	-68	0.0	-100
Kullu	46.0	51	29.1	-20	0.0	-100
Lahaul and Spiti	31.0	-16	14.5	-69	0.0	-100
Mandi	28.2	60	18.9	-10	0.0	-100
Shimla	40.9	139	20.4	11	0.0	-100
Sirmaur	21.5	131	17.1	84	0.0	-100
Solan	33.3	130	40.7	206	0.0	-100
Una	21.1	134	42.8	328	0.0	-100
<b>Punjab</b>						
Amritsar	1.6	-80	10.9	31	0.0	-100
Barnala	0.0	-100	0.0	-100	0.0	-100
Bhatinda	2.7	-24	26.0	983	0.0	-100
Faridkot	3.0	0	55.9	832	0.0	-100
Fatehgarh Saheb	5.3	-8	32.0	553	0.0	-100
Ferozpur	2.7	-11	15.7	214	0.0	-100
Gurdaspur	14.7	18	82.9	568	0.0	-100
Hoshiarpur	5.0	-48	19.1	99	0.0	-100
Jalandhar	7.0	11	26.0	278	0.0	-100

Kapurthala	8.1	29	35.9	633	0.0	-100
Ludhiana	4.3	-45	12.6	187	0.0	-100
Mansa	3.0	11	2.2	0	0.0	-100
Moga	3.6	3	53.4	1383	0.0	-100
Muktesar	7.0	159	26.8	483	0.0	-100
Nawashahar	4.6	-53	23.9	241	0.0	-100
Patiala	6.3	-7	12.5	303	0.0	-100
Ropar	8.6	-50	14.6	14	0.0	-100
Sangrur	13.7	327	0.5	-84	0.0	-100
Mohali	9.5	23	18.4	175	0.0	-100
TarnTaran	0.3	-92	26.7	550	0.0	-100
<b>Haryana,Chd,Delhi</b>						
<b>Haryana</b>						
Ambala	16.9	161	9.9	26	0.0	-100
Bhiwani	8.0	232	0.4	-69	0.0	-100
Chandigarh	13.2	62	18.9	293	0.0	-100
Faridabad	18.4	384	4.6	254	0.0	-100
Fatehabad	13.8	759	8.8	265	0.0	-100
Gurgaon	7.3	249	2.0	67	0.0	-100
Hissar	6.6	200	16.5	1272	0.0	-100
Jhajar	19.0	629	1.8	-11	0.0	-100
Jind	20.0	334	4.3	65	0.0	-100
Katihai	6.0	100	8.2	204	0.0	-100
Karnal	14.5	253	0.0	-100	0.0	-100
Kurukshetra	15.4	157	3.4	-23	0.0	-100
Mahendragarh	0.0	-100	22.0	1365	0.0	-100
Mewat	9.0	400	9.4	683	0.0	-100
Palwal	10.4	550	7.0	1650	0.0	-100
Panchkkula	38.7	515	25.9	516	0.0	-100
Panipat	9.0	290	0.0	-100	0.0	-100
Rewari	17.0	900	8.6	682	0.0	-100
Rohtak	4.0	-25	0.0	-100	0.0	-100
Sirsa	6.3	247	2.8	10	0.0	-100
Sonepat	8.4	82	0.0	-100	0.0	-100
Yamunanagar	14.9	122	9.3	-9	0.0	-100
<b>Delhi</b>						
Central Delhi	26.0	550	0.0	-100	0.0	-100
East Delhi	8.0	100	3.0	-3	0.0	-100
New Delhi	10.6	164	3.3	5	0.0	-100
North Delhi	15.9	298	0.0	-100	0.0	-100
North East Delhi	0.0	-100	1.0	-68	0.0	-100
North West Delhi	9.3	133	0.0	-100	0.0	-100
South Delhi	10.6	165	3.9	24	0.0	-100
South West Delhi	14.2	255	1.5	-53	0.0	-100
West Delhi	6.0	50	0.0	-100	0.0	-100
<b>Jammu &amp; Kashmir</b>						
Anantnag	66.2	72	79.4	126	7.3	-80
Badgam	94.4	302	61.5	238	12.0	-59
Bandipore	**	**	**	**	**	**

Baramula	82.6	76	52.9	-24	14.0	-89
Doda	94.2	78	123.6	171	0.8	-99
Ganderbal	68.4	183	51.2	128	4.2	-86
Jammu	30.9	94	106.5	905	0.1	-99
Kargil	**	**	**	**	**	**
Kathua	13.4	-39	136.6	883	0.0	-100
Kistwar	**	**	**	**	**	**
Kulgam	84.7	119	158.4	351	8.3	-77
Kupwara	59.8	5	58.0	18	8.3	-83
Ladakh(Leh)	0.6	-84	0.0	-100	0.0	-100
Poonch	**	**	**	**	**	**
Pulwama	57.9	127	76.6	326	8.3	-72
Rajouri	50.4	367	81.1	1230	0.2	-99
Ramban	139.6	164	149.8	229	1.5	-98
Reasi	49.0	68	139.8	354	1.6	-96
Samba	17.9	13	54.7	416	0.0	-100
Shopian	**	**	**	**	**	**
Srinagar	83.1	243	71.3	217	10.9	-63
Udhampur	41.6	42	139.9	354	0.0	-100
<b>East Madhya Pradesh</b>						
Anuppur	2.0	-64	16.6	305	0.0	-100
Balaghat	0.8	-75	9.8	276	0.0	-100
Chhatarpur	0.0	-100	13.9	891	0.0	-100
Chindwara	7.0	84	25.9	464	0.0	-100
Damoh	0.0	-100	28.1	1773	0.0	-100
Dindori	11.2	133	10.2	467	0.0	-100
Jabalpur	0.0	-100	34.5	1466	0.0	-100
Katni	0.0	-100	25.9	1750	0.0	-100
Mandla	0.4	-91	27.3	468	0.0	-100
Narsingpur	0.0	-100	36.3	2925	0.0	-100
Panna	0.0	-100	32.8	1722	0.0	-100
Rewa	0.0	-100	17.7	787	0.0	-100
Sagar	0.0	-100	28.9	933	0.0	-100
Satna	0.0	-100	17.8	889	0.0	-100
Seoni	7.3	62	36.6	510	0.0	-100
Shahdol	0.5	-88	20.1	1017	0.0	-100
Sidhi	0.0	-100	8.0	150	0.0	-100
Singrauli	0.0	-100	8.9	394	0.0	-100
Tikamgarh	0.0	-100	46.5	7650	0.0	-100
Umariya	0.0	-100	22.2	517	0.0	-100
<b>West Madhya Pradesh</b>						
Agar	0.0	-100	24.4	200	0.0	-100
Alirajpur	0.0	-100	12.3	1950	0.0	-100
Asoknagar	0.0	-100	31.8	3869	0.0	-100
Badwani	0.0	-100	10.0	4883	0.0	-100
Betul	3.8	247	50.0	2174	0.0	-100
Bhind	0.0	-100	45.8	7525	0.0	-100
Bhopal	0.0	-100	29.3	2830	0.0	-100
Burhanpur	0.0	-100	42.9	3478	0.0	-100

Datia	0.0	-100	53.3	5819	0.0	-100
Dewas	0.0	-100	21.8	2322	0.0	-100
Dhar	0.0	-100	21.0	6886	0.0	-100
Guna	0.0	-100	32.8	3180	0.0	-100
Gwalior	1.2	-23	80.3	5632	0.0	-100
Harda	0.0	-100	22.4	3100	0.0	-100
Hosangabad	0.2	-92	32.0	1352	0.0	-100
Indore	0.0	-100	54.5	6716	0.0	-100
Jhabua	0.0	-100	8.9	200	0.0	-100
Khandwa	0.0	-100	10.8	1253	0.0	-100
Khargone	0.2	-33	29.3	9650	0.0	-100
Mandsaur	0.0	-100	12.1	5925	0.0	-100
Morena	0.0	-100	65.9	10888	0.0	-100
Neemuch	0.0	-100	16.3	2622	0.0	-100
Raisen	0.0	-100	20.7	1119	0.0	-100
Rajgarh	0.0	-100	39.8	3522	0.0	-100
Ratlam	0.0	-100	11.7	1564	0.0	-100
Sehore	0.0	-100	22.9	1980	0.0	-100
Shajapur	0.0	-100	39.9	4881	0.0	-100
Sheopur Kalani	0.0	-100	82.0	9011	0.0	-100
Shivpuri	0.0	-100	42.3	10475	0.0	-100
Ujjain	0.0	-100	39.6	5557	0.0	-100
Vidisha	0.0	-100	35.6	1994	0.0	-100
<b>Chhattisgarh</b>						
Bastar	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.2	-95	4.6	-5	0.0	-100
Dantewara	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100
Durg	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	0.0	-100	0.0	-100
Koriya	0.0	-100	5.3	130	0.0	-100
Kawardha	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100
Narayanpur	0.0	-100	0.0	-100	0.0	-100
Raigarh	0.0	-100	0.0	-100	0.0	-100
Raipur	0.0	-100	0.0	-100	0.0	-100
Rajandgaon	0.0	-100	0.0	-100	0.0	-100
Surguja	0.0	-100	3.3	-2	0.0	-100
<b>East Uttar Pradesh</b>						
Allahabad	0.0	-100	9.4	839	0.0	-100
Ambedkar Nagar	0.0	-100	41.0	2178	0.0	-100
Azamgarh	0.0	-100	11.0	633	0.0	-100
Bahraich	0.0	-100	12.9	659	0.0	-100
Ballia	0.0	-100	2.7	69	0.0	-100
Balrampur	0.0	-100	3.0	150	0.0	-100



Banda	0.0	-100	21.2	1825	0.0	-100
Barabanki	0.0	-98	20.0	1437	0.0	-100
Basti	0.0	-100	3.1	107	0.0	-100
Chandauli	0.0	-100	5.2	420	0.0	-100
Deoria	0.0	-100	2.5	32	0.0	-100
Faizabad	0.0	-100	2.9	378	0.0	-100
Farrukhabad	0.8	-70	8.1	440	0.0	-100
Fatehpur	0.0	-100	11.3	605	0.0	-100
Gazipur	0.0	-100	22.1	3057	0.0	-100
Gonda	0.0	-100	6.6	633	0.0	-100
Gorakhpur	0.0	-100	1.8	-18	0.0	-100
Hardoi	0.5	-84	19.3	914	0.0	-100
Jaunpur	0.0	-100	4.8	435	0.0	-100
Kannauj	0.0	-100	5.6	367	0.0	-100
Kanpur City	0.8	-45	50.6	3514	0.0	-100
Kanpur Dehat	0.0	-100	23.8	1489	0.0	-100
Kaushambi	0.0	-100	21.4	1426	0.0	-100
Kheri	0.0	-100	4.4	302	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100
Lucknow	1.3	-44	24.6	1657	0.0	-100
Maharajganj	0.0	-100	0.8	-17	0.0	-100
Mau	0.0	-100	3.7	182	0.0	-100
Mirzapur	0.0	-100	5.5	817	0.0	-100
Pratapgarh	0.0	-100	21.0	2900	0.0	-100
RaiBareilly	0.0	-100	9.3	519	0.0	-100
Sahuji Maharajnagar	0.0	-100	4.7	159	0.0	-100
Sant Kabirnagar	0.0	-100	8.0	344	0.0	-100
Sant Ravidas Nagar	0.0	-100	16.0	1500	0.0	-100
Shrawasti	**	**	**	**	**	**
Sidharthnagar	0.0	-100	1.0	-57	0.0	-100
Sitapur	0.0	-100	16.1	1359	0.0	-100
Sonbhadra	0.0	-100	8.4	225	0.0	-100
Sultanpur	0.0	-100	7.4	365	0.0	-100
Unnao	0.8	-53	35.8	1886	0.0	-100
Varanasi	0.0	-100	14.9	1142	0.0	-100
<b>West Uttar Pradesh</b>						
Agra	0.0	-99	34.1	2519	0.0	-100
Aligarh	4.0	27	8.8	629	0.0	-100
Auraiya	0.0	-100	24.0	2082	0.0	-100
Badaun	4.3	-13	3.2	111	0.0	-100
Baghpat	10.3	281	0.0	-100	0.0	-100
Bareilly	3.6	-14	1.3	4	0.0	-100
Bijnor	15.6	143	0.0	-100	0.0	-100
Bulandsahar	3.2	-26	6.0	94	0.0	-100
Etah	4.3	6	12.1	767	0.0	-100
Etawah	0.0	-100	49.7	3004	0.0	-100
Firozabad	0.0	-100	30.5	3289	0.0	-100
GBNagar	3.0	11	0.0	-100	0.0	-100
Ghaziabad	5.5	62	2.6	28	0.0	-100

Hamirpur	0.0	-100	40.0	3900	0.0	-100
Jalaun	0.0	-100	21.0	1809	0.0	-100
Jhansi	0.0	-100	27.3	2384	0.0	-100
Jotiba Phule Nagar	1.5	-61	1.3	-42	0.0	-100
Kanshiramnagar	2.4	-40	10.0	488	0.0	-100
Lalitpur	0.0	-100	24.0	1900	0.0	-100
Mahamaya Nagar	5.0	28	13.0	1200	0.0	-100
Mahoba	0.0	-100	19.0	2614	0.0	-100
Mainpuri	0.3	-89	15.3	1294	0.0	-100
Mathura	1.0	-69	20.0	1150	0.0	-100
Meerut	23.3	417	0.0	-100	0.0	-100
Moradabad	2.2	-35	1.7	-19	0.0	-100
Muzzaffarnagar	8.3	136	3.0	11	0.0	-100
Pilibhit	0.0	-100	1.3	-33	0.0	-100
Rampur	5.4	5	0.0	-100	0.0	-100
Saharanpur	15.3	193	0.0	-100	0.0	-100
Shahjahanpur	1.9	-66	11.1	455	0.0	-100
<b>Uttarakhand</b>						
Almora	3.3	-73	17.3	157	0.0	-100
Bageshwar	5.0	-59	12.0	79	0.0	-100
Chamoli	17.5	0	9.3	-44	0.0	-100
Champawat	0.5	-94	12.5	119	0.0	-100
Dehradun	9.0	-27	14.2	36	0.0	-100
Garhwal Pauri	11.1	15	2.3	-58	0.0	-100
Garhwal Tehri	19.6	24	4.1	-56	0.0	-100
Haridwar	17.4	172	5.0	-22	0.0	-100
Nainital	3.0	-68	13.5	141	0.0	-100
Pithorgarh	8.6	-55	22.3	123	5.0	-76
Rudraprayag	33.9	52	11.0	-41	0.0	-100
Udham Sing Nagar	0.5	-89	1.9	19	0.0	-100
Uttarkashi	17.2	-17	12.7	-22	0.0	-100
<b>Bihar</b>						
Araria	0.0	-100	0.0	-100	0.0	-100
Arwal	0.0	-100	4.2	363	0.0	-100
Aurangabad	0.0	-100	6.4	482	0.0	-100
Banka	0.0	-100	1.8	-8	0.0	-100
Begusarai	0.0	-100	8.5	215	0.0	-100
Bhabua	0.0	-100	1.6	129	0.0	-100
Bhagalpur	0.0	-100	2.8	73	0.0	-100
Bhojpur	0.0	-100	0.0	-100	0.0	-100
Buxar	**	**	**	**	**	**
Darbhanga	0.0	-100	0.0	-100	0.0	-100
East Champaran	0.0	-100	0.0	-100	0.0	-100
Gaya	0.0	-100	6.3	230	0.0	-100
Gopalganj	0.0	-100	0.0	-100	0.0	-100
Jahanabad	0.0	-100	4.5	271	0.0	-100
Jamui	0.0	-100	6.4	300	0.0	-100
Kathihar	0.0	-100	0.0	-100	0.0	-100
Khagadia	0.0	-100	5.3	789	0.0	-100

Kishanganj	0.0	-100	0.0	-100	0.0	-100
Lakhisarai	0.0	-100	4.6	254	0.0	-100
Madhepura	0.0	-100	0.0	-100	0.0	-100
Madhubani	0.0	-100	0.0	-100	0.0	-100
Monghyar	0.0	-100	**	**	**	**
Muzaffarpur	0.0	-100	0.8	-48	0.0	-100
Nalanda	0.0	-100	6.2	523	0.0	-100
Nawada	0.0	-100	6.0	567	0.0	-100
Patna	0.0	-100	2.1	-2	0.0	-100
Purnea	0.0	-100	0.4	-83	0.0	-100
Rohtas	0.0	-100	3.0	173	0.0	-100
Saharsha	0.0	-100	0.0	-100	0.0	-100
Samstipur	0.0	-100	0.0	-100	0.0	-100
Saran	0.0	-100	2.0	33	0.0	-100
Sheikpura	0.0	-100	7.2	694	0.0	-100
Sheohar	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	**	**	0.0	-100	0.0	-100
Siwan	**	**	1.6	-6	0.0	-100
Supaul	0.0	-100	0.2	-93	0.0	-100
Vaishali	0.0	-100	0.0	-100	0.0	-100
West Champaran	0.0	-100	0.7	-61	0.0	-100
<b>Jharkhand</b>						
Bokaro	0.0	-100	0.8	-85	0.0	-100
Chatra	0.0	-100	3.0	36	0.0	-100
Deoghar	0.0	-100	0.0	-100	0.0	-100
Dhanbad	0.0	-100	0.0	-100	0.0	-100
Dumka	0.0	-100	0.0	-100	0.0	-100
East Singbhum	0.0	-100	0.0	-100	0.1	-98
Garhwa	**	**	**	**	**	**
Giridih	0.3	-78	2.7	-34	0.0	-100
Godda	0.0	-100	6.2	589	0.0	-100
Gumla	**	**	**	**	**	**
Hazaribagh	0.1	-96	2.4	9	**	**
Jamtara	0.0	-100	0.0	-100	**	**
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderrna	0.0	-100	0.0	-100	0.0	-100
Latehar	0.0	-100	7.8	77	0.0	-100
Lohardagga	0.0	-100	**	**	**	**
Pakur	0.0	-100	0.0	-100	0.0	-100
Palamau	0.0	-100	19.0	897	0.0	-100
Ramgarh	0.0	-100	0.0	-100	**	**
Ranchi	0.0	-100	0.0	-99	0.0	-100
Sahebganj	0.0	-100	7.4	131	0.0	-100
Saraikelela	0.0	-100	**	**	0.0	-100
Simdega	0.0	-100	0.0	-100	0.0	-100
West Singbhum	0.0	-100	0.0	-100	0.0	-100
<b>East Rajasthan</b>						
Ajmer	0.0	-100	39.2	200	0.0	-100
Alwar	1.0	-41	37.5	5253	0.0	-100

Banswara	0.0	-100	0.7	257	0.0	-100
Baran	0.0	-100	34.9	6875	0.0	-100
Bharatpur	0.7	-63	29.4	4100	0.0	-100
Bhilwara	0.0	-100	51.0	16900	0.0	-100
Bundi	0.0	-100	78.3	19483	0.0	-100
Chittorgarh	0.0	-100	17.5	5733	0.0	-100
Dausa	0.0	-100	47.4	6671	0.0	-100
Dholpur	0.0	-100	32.5	5317	0.0	-100
Dungarpur	0.0	-100	0.3	200	0.0	-100
Jaipur	0.0	-100	41.4	13702	0.0	-100
Jhalawar	0.0	-100	17.1	4163	0.0	-100
Jhunjhunu	0.9	-43	10.7	1090	0.0	-100
Karauli	0.0	-100	40.0	9900	0.0	-100
Kota	0.0	-100	50.3	25056	0.0	-100
Pratapgarh	0.0	-100	5.4	2600	0.0	-100
Rajsamand	0.0	-100	32.1	10614	0.0	-100
Sawai Madhopur	0.0	-100	44.9	22338	0.0	-100
Sikar	0.0	-100	24.6	3410	0.0	-100
Sirohi	0.0	-100	9.3	9171	0.0	-100
Tonk	0.0	-100	49.3	8119	0.0	-100
Udaipur	0.0	-100	14.1	1910	0.0	-100
<b>West Rajasthan</b>						
Barmer	0.0	-100	0.7	553	0.0	-100
Bikaner	5.6	457	20.1	1338	0.0	-100
Churu	0.0	-97	18.1	1105	0.0	-100
Hanumangarh	0.0	-100	22.0	2344	0.0	-100
Jaisalmer	2.3	200	1.3	221	0.0	-100
Jalore	0.0	-100	0.8	200	0.0	-100
Jodhpur	0.3	233	2.2	1011	0.0	-100
Nagaur	0.0	-100	16.6	5417	0.0	-100
Pali	0.0	-100	22.9	200	0.0	-100
Sri Ganganagar	2.3	30	19.9	665	0.0	-100
<b>Gujarat Region</b>						
Ahmedabad	0.0	-100	2.3	2234	0.0	-100
Anand	0.0	-100	2.3	200	0.0	-100
Banaskantha	0.0	-100	2.2	2142	0.0	-100
Baroda	0.0	-100	0.2	91	0.0	-100
Broach	0.0	-100	1.5	200	0.0	-100
DNH	**	**	**	**	**	**
Dahod	0.0	-100	0.9	200	0.0	-100
Daman	0.0	-100	**	**	**	**
Dangs	0.0	-100	1.0	400	0.0	-100
Gandhinagar	0.0	-100	1.4	200	0.0	-100
Kheda	0.0	-100	2.2	2100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100
Narmada	0.0	-100	7.8	7700	0.0	-100
Navsari	0.0	-100	1.4	200	0.0	-100
Panchmahal	0.0	-100	0.2	200	0.0	-100
Patan	0.0	-100	3.4	200	0.0	-100

Sabarkantha	0.0	-100	0.7	614	0.0	-100
Surat	0.0	-100	3.0	200	0.0	-100
Tapi	0.0	-100	2.6	200	0.0	-100
Valsad	0.0	-100	0.0	-100		
<b>S K &amp; Diu region</b>						
Amreli	0.0	-100	6.7	6623	0.0	-100
Bhavnagar	0.0	-100	0.5	200	0.0	-100
Diu	0.0	-100	1.6	200	0.0	-100
Jamnagar	0.0	-100	0.2	200	0.0	-100
Junagarh	0.0	-100	2.3	200	0.0	-100
Kutch	0.0	-100	0.0	-100	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	1.3	1175	0.0	-100
Surendranagar	0.0	-100	1.0	200	0.0	-100
<b>Maharashtra &amp; Goa</b>						
<b>Konkan &amp; Goa</b>						
Mumbai City	0.0	-100	0.6	500	0.0	-100
Mumbai Suburban	0.0	-100	1.7	1600	0.0	-100
North Goa	0.0	-100	0.0	-100	0.0	-100
Raigad	0.0	-100	0.7	200	0.0	-100
Ratnagiri	0.0	-100	0.0	-100	0.0	-100
Sindhudurg	0.0	-100	0.0	-100	0.0	-100
South Goa	0.0	-100	0.0	-100	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100
<b>Madhya Maharashtra</b>						
Ahmednagar	9.7	2333	21.8	5341	0.0	-100
Dhule	**	**	**	**	**	**
Jalgaon	0.0	-100	28.3	3050	0.0	-100
Kolhapur	0.0	-100	0.5	-33	0.0	-100
Nandurbar	3.4	200	9.7	9600	**	**
Nasik	0.0	-100	13.4	13300	0.0	-100
Pune	0.8	275	0.9	185	0.0	-100
Sangli	4.4	780	1.7	478	0.0	-100
Satara	0.1	-67	0.5	5	0.0	-100
Solapur	1.2	480	1.1	36	0.0	-100
<b>Marathwada</b>					**	**
Aurangabad	1.5	191	25.8	3119	0.0	-100
Beed	10.5	1206	1.7	66	**	**
Hingoli	5.6	522	5.4	114	**	**
Jalna	2.4	169	20.1	1154	**	**
Latur	5.9	270	2.2	-4	0.0	-100
Nanded	2.5	-25	8.8	532	0.0	-100
Usmanabad	3.7	643	0.2	-78	0.0	-100
Parbhani	4.4	129	0.4	-81	0.0	-100
<b>Vidarbha</b>						
Akola	4.9	132	26.1	1351	0.0	-100
Amraoti	4.8	302	16.0	565	0.0	-100
Bhandara	0.0	-100	13.3	303	0.0	-100
Buldhana	4.3	167	24.1	1910	0.0	-100

Chandrapur	6.9	121	6.9	109	0.0	-100
Gadchiroli	3.6	32	0.8	-80	0.0	-100
Gondia	0.0	-100	7.4	131	0.0	-100
Nagpur	3.2	-36	9.1	153	0.0	-100
Wardha	0.1	-93	10.2	183	0.0	-100
Washim	27.3	1506	7.5	648	0.0	-100
Yeotmal	3.5	46	6.1	109	0.0	-100
<b>Odisha</b>						
Angul	0.0	-100	0.0	-100	0.0	-100
Balasore	0.3	-97	0.1	-98	1.9	-68
Bargarh	0.0	-100	0.0	-100	0.0	-100
Bhadrak	1.6	-87	0.0	-100	0.5	-84
Bolangir	0.0	-100	0.3	-92	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.5	-92	0.0	-100	0.6	-88
Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.6	-92
Gajapati	0.1	-99	0.1	-99	3.1	-79
Ganjam	1.2	-84	3.5	-53	0.9	-78
Jagatsingpur	3.4	-50	0.0	-100	0.0	-100
Jajpur	0.0	-100	0.0	-100	3.5	-6
Jharsuguda	0.0	-100	0.0	-100	0.0	-100
Kalahandi	0.0	-100	2.5	-14	2.9	-49
Kandhamal	1.0	-88	0.2	-96	0.0	-100
Kendrapara	0.0	-100	0.0	-100	0.0	-100
Keonjhar	1.4	-88	1.7	-69	0.7	-81
Khurda	8.8	45	0.0	-100	6.2	20
Koraput	6.7	203	0.0	-100	0.0	-100
Malkangiri	6.0	54	0.0	-100	0.0	-100
Mayurbhanj	0.0	-100	0.1	-98	2.6	-74
Nawapara	0.5	-86	0.0	-100	1.4	-71
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.9	-82	0.0	-100	0.4	-94
Puri	0.2	-94	0.0	-100	0.7	-89
Rayagada	0.1	-99	1.1	-84	0.0	-99
Sambalpur	0.0	-100	0.0	-100	0.0	-100
Sonepur	0.0	-100	0.0	-100	0.0	-100
Sundargarh	0.0	-100	0.0	-100	0.0	-100
<b>West Bengal &amp; Andaman Nicobar Islands</b>						
<b>A &amp; N ISLAND</b>						
Nicobar	0.0	-100	0.0	-100	0.0	-100
North & Middle Andaman	0.0	-100	0.0	-100	0.0	-100
South Andaman	0.0	-100	0.0	-100	0.0	-100
<b>GWB</b>						
Bankura	0.0	-100	0.0	-100	0.0	-100
Birbhum	0.3	-93	0.0	-100	0.0	-100
Burdwan	0.0	-100	0.0	-100	0.0	-100
East Midnapore	0.0	-100	0.0	-100	0.7	-94
Hooghly	0.9	-67	0.0	-100	0.0	-100

Howrah	0.0	-100	0.0	-100	0.0	-100
Kolkata	12.3	186	0.0	-100	0.0	-100
Murshidabad	0.0	-100	0.0	-100	0.0	-100
Nadia	5.1	6	0.0	-100	0.0	-100
24 Pargana (N)	4.0	10	0.0	-100	0.0	-100
Purulia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (S)	3.0	-54	0.0	-100	0.0	-100
West Midnapore	0.0	-100	0.0	-100	0.2	-98
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	0.0	-100	0.0	-100	0.0	-100
Darjeeling	0.0	-100	0.0	-100	0.0	-100
East Sikkim	0.0	-99	0.0	-100	1.3	-89
Jalpaiguri	0.0	-100	0.0	-100	0.0	-100
Malda	0.0	-100	2.0	-17	0.0	-100
North Dinajpur	0.0	-100	0.0	-100	0.0	-100
North Sikkim	22.8	-44	0.0	-100	22.7	-59
South Dinajpur	0.0	-100	0.0	-100	0.0	-100
South Sikkim	0.0	-100	0.0	-100	0.0	-100
West Sikkim	1.5	-96	0.0	-100	5.0	-91
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshina Kannada	17.0	552	0.4	-76	0.0	-100
Udupi	12.4	854	0.5	-50	0.0	-100
Uttara Kannada	5.0	1567	0.0	-100	1.0	30
<b>N I Karnataka</b>						
Bagalkote	4.3	512	0.7	-34	0.0	-100
Belagavi	9.6	1272	1.7	40	0.4	-79
Bidar	32.2	1190	1.5	-36	0.0	-100
Dharwad	61.4	15250	0.1	-95	0.0	-97
Gadag	35.8	8860	0.0	-100	0.0	-100
Haveri	18.1	3529	0.8	-6	0.0	-100
Kalaburgi	29.0	2800	0.5	-39	0.0	-100
Koppal	12.4	1666	0.9	80	0.0	-100
Raichur	17.1	1329	0.0	-100	0.0	-100
Vijayapura	10.2	1178	0.5	-50	0.0	-100
Yadgir	22.0	3571	0.1	-91	0.0	-100
<b>S I Karnataka</b>						
Ballari	0.3	-82	0.7	2	0.0	-100
Bangalore Rural	17.8	1880	0.0	-100	0.0	-100
Bangalore Urban	6.9	431	0.4	-75	0.0	-100
Chamarajanagar	11.6	274	0.0	-100	0.0	-100
Chikaballapur	4.4	130	0.0	-100	0.0	-100
Chikkamagaluru	25.4	520	6.8	171	0.8	-60
Chitradurga	12.2	774	2.1	613	0.0	-100
Davangere	7.5	732	0.3	-59	0.0	-100
Hassan	25.4	551	2.9	68	0.0	-100
Kodagu	21.1	358	13.6	354	0.0	-100
Kolar	15.1	482	0.0	-100	0.0	-100
Mandya	8.6	246	0.0	-100	0.0	-100

Mysuru	19.6	600	9.0	372	0.0	-100
Ramanagara	11.9	396	0.0	-100	0.0	-100
Shivamogga	16.4	1070	9.7	712	0.0	-100
Tumakuru	9.2	253	0.1	-88	0.0	-100
<b>Kerala</b>						
Alappuzha	33.3	389	31.0	154	0.0	-100
Kannur	7.9	231	3.0	87	0.0	-100
Ernakulam	16.0	171	12.0	90	0.0	-100
Idukki	16.4	131	6.9	-18	0.0	-100
Kasaragod	0.0	-100	0.0	-100	0.0	-100
Kollam	8.2	-34	7.7	-47	0.0	-100
Kottayam	25.9	142	63.3	636	0.0	-100
Kozhikode	10.1	236	13.7	205	0.0	-100
Malappuram	10.1	407	24.1	864	0.0	-100
Palakkad	8.3	136	12.9	194	0.0	-100
Pathanamthitta	27.6	101	14.2	1	0.5	-97
Thiruvananthapuram	17.6	226	24.3	228	0.0	-100
Thrissur	8.2	214	30.1	786	0.0	-100
Wynad	32.4	1309	13.0	218	0.0	-100
<b>Tamil Nadu</b>						
Ariyalur	0.0	-100	0.5	-81	0.0	-100
Chennai	0.0	-100	0.0	-100	0.0	-100
Coimbatore	10.0	42	9.5	144	0.0	-100
Cuddalore	0.0	-100	0.0	-100	0.0	-100
Dharmapuri	19.8	360	0.0	-100	0.0	-100
Dindigul	4.2	-25	15.4	202	0.0	-100
Erode	16.1	222	0.0	-100	0.0	-100
Kanchipuram	0.0	-100	0.0	-100	0.0	-100
Kanyakumari	8.9	58	12.6	-2	0.0	-100
Karikal	0.0	-100	0.0	-100	0.0	-100
Karur	6.6	64	1.1	125	0.0	-100
Krishnagiri	18.9	425	0.0	-100	0.0	-100
Madurai	0.2	-96	17.7	269	0.0	-100
Nagapattinam	0.0	-100	0.0	-100	0.0	-100
Namakkal	2.3	-12	0.0	-100	0.0	-100
Nilgiris	75.8	434	58.0	706	0.0	-100
Perambalur	0.0	-100	0.0	-100	0.0	-100
Puducherry	0.0	-100	0.0	-100	0.0	-100
Pudukottai	0.0	-100	6.1	78	0.0	-100
Ramanathapuram	0.0	-100	22.6	253	0.0	-100
Salem	23.4	550	3.4	128	0.0	-100
Sivaganga	0.0	-100	27.8	491	0.0	-100
Thanjavur	0.0	-100	6.5	111	0.0	-100
Theni	18.7	89	20.5	189	0.0	-100
Tirunelveli	7.7	-31	50.4	297	0.0	-100
Tirupur	15.0	234	0.3	-89	0.0	-100
Tiruvallur	1.2	-7	0.0	-100	0.0	-100
Tiruvannamalai	0.3	-93	0.0	-100	0.0	-100
Tiruvarur	0.0	-100	11.3	176	0.0	-100



Toothukudi	0.5	-92	16.4	91	0.0	-100
Trichy	0.0	-100	0.4	-79	0.0	-100
Vellore	5.6	117	0.0	-100	0.0	-100
Villupuram	0.0	-100	0.0	-100	0.0	-100
Virudhunagar	5.7	-30	14.9	122	0.0	-100
<b>Andhra Pradesh</b>						
<b>Coastal Andhra Pradesh</b>						
East Godavari	0.4	-91	0.0	-100	0.0	-100
Guntur	0.0	-100	0.0	-100	0.0	-100
Krishna	2.2	-30	0.0	-100	0.0	-100
Nellore	9.0	460	0.0	-100	0.0	-100
Prakasam	0.4	-87	0.0	-100	0.0	-100
Sirkakulam	1.4	-62	0.0	-100	0.0	-100
Visakhapatnam	7.4	100	0.0	-100	0.0	-100
Vizianagram	2.6	-29	0.0	-100	0.6	-79
West Godavari	0.0	-100	0.0	-100	0.0	-100
<b>Rayalaseema</b>						
Anantapur	2.4	13	0.0	-100	0.0	-100
Chittoor	8.2	193	0.0	-100	0.0	-100
Cuddapah	0.0	-100	0.0	-100	0.0	-100
Kurnool	1.9	-9	0.0	-100	0.0	-100
<b>Telangana</b>						
Adilabad	21.3	913	4.9	145	0.0	-100
Hyderabad	2.5	-36	0.0	-100	0.0	-100
Karimnagar	18.5	516	0.0	-100	0.0	-100
Khammam	3.8	52	0.0	-100	0.0	-100
Mehabubnagar	10.4	697	0.0	-100	0.0	-100
Medak	31.9	999	0.0	-100	0.0	-100
Nalgonda	1.5	-59	0.0	-100	0.0	-100
Nizamabad	14.0	382	2.6	35	0.0	-100
Rangareddy	24.0	1312	0.0	-100	0.0	-100
Warangal	23.2	604	0.0	-100	0.0	-100

### 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

## Annexure II List of varieties

### Karnataka

**Sunflower:** Mordern, K.B.S.H-1, 41, 42 and 44

**Maize:** Ganga-11, Deccan-103, N.A.C-6002 & 6004, Nityashree

**Groundnut:** ICGS-11, K-134, Chintamani-2(KCH-2)

**Ragi:** Indaf-5, GPU-26 and 48

**Sugar-cane:** Co-86032, Co-94012

### Tamil Nadu:

**Irrigated sesame:** TMV 4, TMV 6 and SVPR1

**Cotton:** MCU-5, Surabhi and SVPR-2

### Assam

**Direct seeded ahu rice:** Banglami, Rangadoria, Ahu joha, Rasi, Banglami, Rangadoria, Ahu joha, Rasi.

• Early sowing semi dwarf variety of ahu rice: Luit, Kopilee, Cauvery, Culture -1, Rasi, IR-36.

• Tall variety of ahu rice: Panjasail, Koijapori, Laujuli and Hasakumra.

**Bau rice:** Maguri, Panikekua, Amona, Negheri.

**ahu rice:** Govind, IR-50, IR-36, Rashi, Lachit, Gopinath.

**Summer green gram:** T-44, AAU-34, AAU-39, Pratap, Kopergaon, K-85, ML-55.

**Summer black gram:** T-9, Pant U-19, JU-78.

**Sunflower:** Jwalamukhi.

**Okra :** Pusa Sawani, Arka Anamika, Parbhdani Kranti.

**Capsularis Jute:** JRC 212, JRC 321(Sonali), JRC 7447 (Shyamali) and UPC 94(Reshma).

**Olitorius Jute:** JRO 524 (Navin), JRO 785 (Basudev), JRO 632(Baisakhtissa), Set-2 (Bahagi) and Tarun.

**Kharif Maize :** Hybrid variety : Ganga 5, Hi starch. Composite variety like NLD, Dhawal, Naviot, Diara.

**Cucumber:** Pusa Sanyog, Chinese Green etc.

**Ridge Gourd:** Pusa Nasdar and selected local varieties.

**Sugarcane:** Kolong, Luhit, Dhansiri, Co 1148, Co 6315, Co 997, 80/77 (Co BLN 9104), 43/83 (Co BLN 9605).

**Summer sesame:** TC 25, Vinayak.

**Ginger:** Rio-de-Generio, Nadia, Moran, Jorhat.

### Arunachal Pradesh

**Jhum rice:** Bhalum1,2,3 & 4.

### Manipur

**Pre-kharif Rice:** RC Maniphou 4, 5 and 12.

**Okra:** Pusa Sawani, Arka Anamika.

### Tripura:

**Urd:** T-9, PanthUrd 35.

**Green Gram:** PDM 139 (Samrat), TMV 37.

**Cowpea:** Maharaja, Kasi Kanchan

### Meghalaya

**Maize (High & Mid altitude region):** Vijay Composite, DA 61A, RCM 75, 76, Vivek Hybrid 25, Vivek QPM-1.

**Okra:** Pusa A-4, VRO-6, Pusa Sawani, Arka Anamika, Parbhani Kranti.

**Brinjal:** Local Umroi, Muta Kesh, Narrow

### Odisha

**Sunflower:** Morden, Sunrise, Surya and Hybrid varieties like KBSH-1, KBSH-3 and MSFH.

**Groundnut:** Smruti, TAG-27, TAG – 24 and JL-24

**Onion:** Nasik Red, Patna Red, Pune Red, Bellary Red, Pusa Ratnar, Pusa Madhavi, Arka Niketan ,Arka Pragati

**Ragi:** HYVs. like Subhra, Vairabi, Dibyasingh, Nilachala, Subhra, Godavari and Chilka.

**Okra:** Utkal Gourav, Arka Anamika, Varsha Uphar, Parvani kranti and all available hybrid varieties

**Bitter gourd:** Pusa Domousumi, Coimbatore long green, and Arka Harit,

**Ridge gourd:** Pusa Najdar, Jaypur long, and any local variety

**Cluster bean:** Pusa Naubahar

**Cow pea:** Arka Garima, Utkal Manika, Selection-2-6-3 and pusa Kamal.

**Sesame:** Uma, Kalika, Kanak, Nirmala, Prachi, Usha.T

### Bihar

**Sweet Potato:** Cross 4 and Rajendra shakarkand 35

**Okra:** Parvani kranti, Arka abhay, Arka anamika, Barsha Uphar, KS 312, Okra 4, Punjab 7, Pant Bhindi 1  
**Pumpkin:** Rajendra Chamatkar, Pusa samar prolific long and pusa samer prolific  
**Sponge gourd:** Rajendra nanua-1, Pusa chikni, Pusa priya, Kalyanpur chikni, DL-11  
**Bitter gourd:** Pusa Do mausmi, Pusa Vivesh, Arka Harit, Koyambatoor long, Kalyanpur Barahmasi, Pant kerila  
**Moong:** Pusa Vishal, Samrat, SML-668, Sona varieties are recommended for moong  
**Urd:** Pant U-19 and Pant U-31, Uttra and Type-9 for Urd.  
**Maize:** Suwan, Deevki, Ganga-11, Shaktiman-1 and Shaktiman-2

#### Jharkhand:

**Summer rice:** IR-36, IR-64, Naveen, lalat, Parijat (80-85 days).

**Summer maize:** Birsa Makka-1, Birsa Makka-2, Suwan-1 (Hybrid), HQPM (Hybrid)

**Green gram:** mung S.M.L.- 668

**Sugarcane:** BO 147

**Okra:** Improved varieties – Pusa A - 4, Prabhani Kranti, Arka Anamika, Versha Uphar & Hybrid varieties – Sonal and Sarika

#### Chhattisgarh

**Sweet Corn:** NS- 680 or Suger-75

#### Jammu & Kashmir

**Onion:** Agrifound Parvati, Pusa red, N-53.

#### Uttarakhand

**Tomato:** VL Tomato-3, Pant T-3, Him Sona, Him Shikhar.

**Capsicum:** California Vander, Pus Dipti, Anupam. Heera, Indira, Supriya & Bharat.

**Potato:** Kufri- Jyoti, Ashok, Anand

**Moong:** Pant Moong-2, Pant Moong-4, Pant Moong-5, Pant Moong-6, Narendra Moong-1

#### Himachal Pradesh

**Wheat:** HPW-155, HPW-89, HPW-147, HPW-236, HPW-211 in low and mid hill and HPW-155, HPW-236, HPW-42 in high hill

**Late variety of Cauliflower:** broccoli

**Cauliflower:** Pusa-snowwall

**Radish:** Japanese white, Chinese pink and mino early white

**Turnip:** PTWG-1

**Carrot:** Pusa kesar

**Fenugreek:** I.C. 74, Kasoori

#### East Uttar Pradesh

**Wheat:** Narendra-1012, HD-2824, 2733, HP-1731, UP-2382, PWD-343, CVW-38, DBW-39, UO-2382, HUW-510

**Wheat (Late varieties):** Malaveey-234, HP-1633, H-1744, Narendra-1014, UP-2425

**Onion:** Pusa red, Kalynpur red, light red

**Lentil:** T-8, Pant L-406, 234

**Chilli:** Patasi-1, Jwala, Sadabahar

**Lobia:** lobia 263, Pusa Phaguni

**Tomato:** Pant T-2, Azad T-2, Narendra-1,2,4,5,6

**Maize:** Navjyoti, Kanchan, Gaurav, Surya, Navin, Shweta, Azad Uttam, Prakash, Deccan-115, MMH-135, Ganga-11, Pusa, Maize-2, JH-3459

**Urd:** T-9, Narendra-1, Azad-1, Uttar Azad-2, Shekhar-2

**Okra:** VRO-6, VRO-5.

#### West Uttar Pradesh:

**Wheat (non-irrigated):** K-9644, Maghar (K-8027), Mandakini (K-9351), Indra (K-8962), Gomati (K-9465), HDR-77, HD-2888

**Wheat (Irrigated):** K-307, DBW-17, PBW-343,502,550, GW-366, K-1006, 607,402, DVW-39

KRL-210, 213, 19, K-8434(Prasad), NW-1067

**Lentil:** Narendra-1, DPL-62, Pant-5, L-4076, K-75, HUL-57, Shekhar-3, 2, IPL-81

**Sunflower:** No.1, PAC- 302, SH-322

**Ladies finger:** VRO-6, VRO-5

#### Punjab

**Sugarcane:** CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89

#### Rajasthan

**Groundnut:** T.A.G.24, T.G.37A, G.G.2, D.H.86.

#### Maharashtra

##### Madhya Maharashtra

**Groundnut:** SB-11, JL-286, Phule Unati, TPG-41, TG-26 or JL-501.

**Sunflower:** SS-56, Modern, EC-68414 or bhanu and hybrid varieties like KBSH-1 or phule Raviraj or MSFH-17.

### **Marathwada**

**Jowar:** Parbhani Moti or Parbhani Jyoti.

**suru Sugarcane:** CO-86032, COM- 7125, CO-8014 or CO-740

**Okra:** Parbhani Kranti

### **Vidarbha**

**Groundnut:** TAG-24, TG-26 or SB-11.

**Water Melon:** Sugar baby, Arka Jyoti or Arka Manik.

**Okra:** Arka Anamika, Parbhani Kranti, Akola Bahar or Phule Utkarsha.

**Sesamum:** AKT-101 or NT-11-99.

### **Gujarat**

**Green gram:** Guj. Mung-3, 4.

**Cluster bean:** Pusa sadabahar, Pusa navbahar, IC-11388.

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

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