

National Agromet Advisory Service Bulletin

Friday 13th March 2015

(For the period 13th to 17th March 2015)

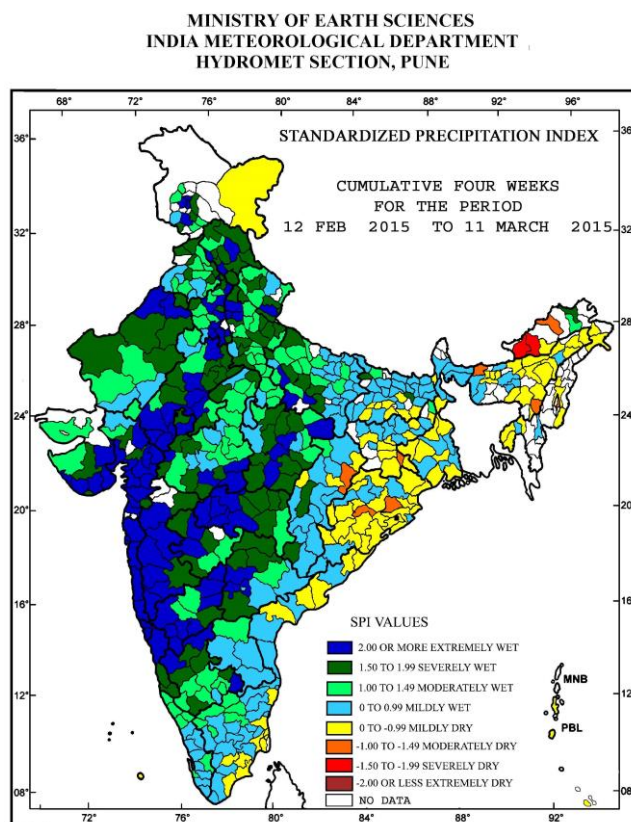


Issued by

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



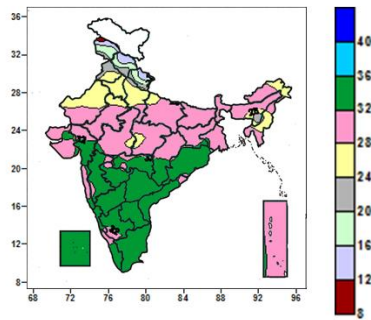
Standardised Precipitation Index
Four Weekly
for the Period 12th February to 11th March 2015



- Extremely/severely wet conditions experienced in most districts of Himachal Pradesh, Gujarat State, Maharashtra & Goa, many districts of Uttarakhand, Haryana, Madhya Pradesh, Rajasthan, Karnataka, Telangana; few districts of Jammu and Kashmir, Punjab and Durg, Bijapur districts of Chhattisgarh; Upper Siang district of Arunachal Pradesh; Gopalganj, Khagaria districts of Bihar.
- Extremely /severely dry conditions experienced in East Kameng, West Kameng districts of Arunachal Pradesh.
- Moderately dry conditions experienced in Upper Subansiri district of Arunachal Pradesh; Cachar, Kokrajhar districts of Assam; Imphal East district of Manipur, Boudhgarh, Dhenkanal districts of Odisha; Seraikela district of Jharkhand; Raigarh district of Chhattisgarh.
- Rest of the country experienced moderately wet/ mild wet/dry conditions.

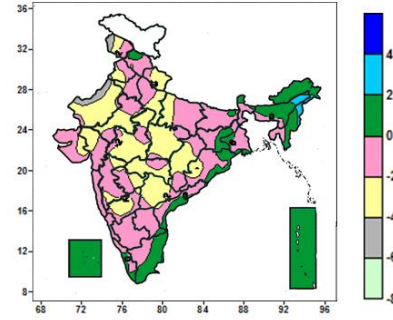
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 11.03.2015

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 11.03.2015



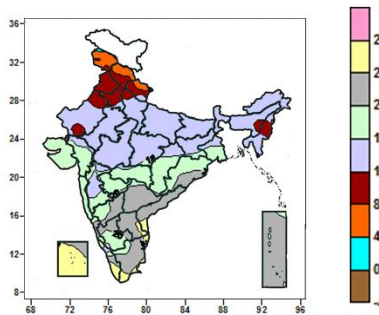
- 28 to 36 $^{\circ}\text{C}$ over the country except Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, many parts of West Uttar Pradesh, West Rajasthan, few parts of Arunachal Pradesh, Mizoram, East Uttar Pradesh, Assam & Meghalaya and isolated parts of Madhya Pradesh and West Uttar Pradesh,
- 24 to 28 $^{\circ}\text{C}$ over Haryana & Delhi, many parts of West Uttar Pradesh, West Rajasthan, few parts of Arunachal Pradesh, Mizoram, Punjab, East Uttar Pradesh, Assam & Meghalaya and isolated parts of Madhya Pradesh.
- 20 to 24 $^{\circ}\text{C}$ over many parts of Punjab, few parts of Uttarakhand, Himachal Pradesh, isolated parts of Jammu & Kashmir and West Uttar Pradesh.
- 16 to 20 $^{\circ}\text{C}$ over few parts Jammu & Kashmir, isolated parts of Himachal Pradesh and Uttarakhand.
- 12 to 16 $^{\circ}\text{C}$ over few parts of Himachal Pradesh, isolated parts of Jammu & Kashmir, Uttarakhand.
- 8 to 12 $^{\circ}\text{C}$ over isolated parts of Jammu & Kashmir.

Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 11.03.2015



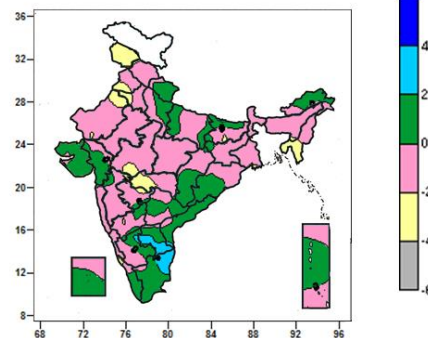
- -6 to -4 $^{\circ}\text{C}$ isolated parts of Jammu & Kashmir, West Rajasthan.
- -4 to 0 $^{\circ}\text{C}$ over entire country except Sikkim, Arunachal Pradesh, Mizoram, Lakshadweep, Andaman & Nicobar Islands, many parts of Assam & Meghalaya, Tamil Nadu, Manipur, few parts of Jharkhand, isolated parts of Jammu & Kashmir, West Rajasthan, Odisha, Coastal Andhra Pradesh, Rayalaseema, Bihar, Sub-Himalayan West Bengal, Kerala.
- 0 to 2 $^{\circ}\text{C}$ over Sikkim, Arunachal Pradesh, Mizoram, Lakshadweep, Andaman & Nicobar Islands, many parts of Assam & Meghalaya, Tamil Nadu, Manipur, Nagaland, few parts of Jharkhand, isolated parts of Odisha, Coastal Andhra Pradesh, Rayalaseema, Bihar, Sub-Himalayan West Bengal, Kerala.
- 2 to 4 $^{\circ}\text{C}$ over many parts of Nagaland, isolated parts of Assam.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 11.03.2015



- 0 to 4 $^{\circ}\text{C}$ over isolated parts of Jammu & Kashmir
- 4 to 8 $^{\circ}\text{C}$ over many parts of Jammu & Kashmir, few parts of Himachal Pradesh, Uttarakhand.
- 8 to 12 $^{\circ}\text{C}$ over Punjab, many parts of Haryana, Delhi, Himachal Pradesh, Uttarakhand, Manipur, few parts of West Rajasthan and isolated parts of West Uttar Pradesh, Assam & Meghalaya.
- 12 to 16 $^{\circ}\text{C}$ over East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Tripura, Mizoram, Madhya Pradesh, many parts of Rajasthan, West Uttar Pradesh, Assam & Meghalaya, Mizoram, Jharkhand, Madhya Maharashtra, few parts of Gangetic West Bengal, Nagaland, Delhi and isolated parts of Haryana, Vidarbha, Gujarat and Chhattisgarh.
- 16 to 20 $^{\circ}\text{C}$ over Konkan & Goa, many parts of Gangetic West

Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 11.03.2015



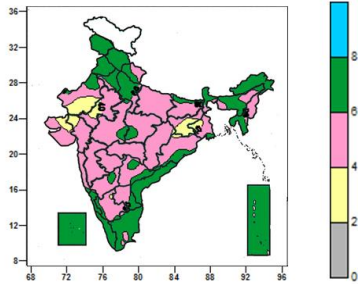
- -4 to -2 $^{\circ}\text{C}$ over Jammu & Kashmir, Tripura, Mizoram, few parts of Punjab, Haryana, West Rajasthan, Vidarbha, West Madhya Pradesh, isolated parts of Bihar, Assam.
- -2 to 2 $^{\circ}\text{C}$ over entire country except Jammu & Kashmir, Tripura, Mizoram, few parts of Punjab, Haryana, West Rajasthan, Vidarbha, West Madhya Pradesh, Tamil Nadu, Rayalaseema, isolated parts of Bihar, Assam.
- 2 to 4 $^{\circ}\text{C}$ over few parts of Tamil Nadu, Rayalaseema.

Bengal, Gujarat, Marathwada, Vidarbha, Chhattisgarh, Odisha, Karnataka, few parts of Madhya Maharashtra, isolated parts of East Madhya Pradesh, Jharkhand, Telangana, Kerala, Tamil Nadu, Andaman & Nicobar Islands.

- 20 to 28^oC over Andhra Pradesh, Lakshadweep, many parts of Andaman & Nicobar Islands, Telangana, Kerala, Tamil Nadu, few parts of Odisha, isolated parts of Karnataka Chhattisgarh and Marathwada.

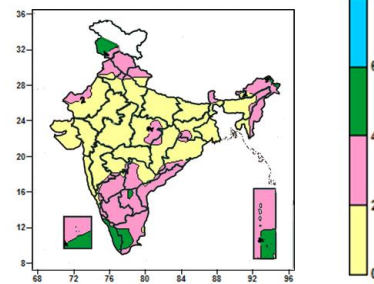
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 11.03.2015

Relative Humidity (%) over India for the week ending 11.03.2015



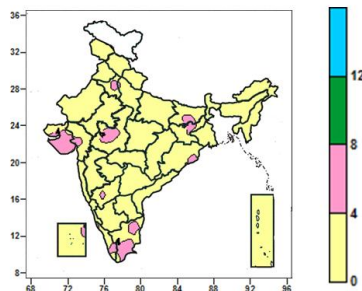
- 60 to 80% over Jammu & Kashmir, Himachal Pradesh, Punjab, Sikkim, Arunachal Pradesh, Tripura, Coastal Andhra Pradesh, Coastal Karnataka, Kerala, Lakshadweep, Andaman & Nicobar Islands, many parts of Uttarakhand, Haryana & Delhi, West Uttar Pradesh, Sub-Himalayan West Bengal, Assam & Meghalaya, Tamil Nadu, few parts of Coastal Odisha, Rayalaseema, Mizoram, isolated parts of Bihar, Interior Karnataka, Telangana, Madhya Pradesh and West Rajasthan.
- 40 to 60% over entire country except Jammu & Kashmir, Himachal Pradesh, Punjab, Sikkim, Arunachal Pradesh, Tripura, Coastal Andhra Pradesh, Coastal Karnataka, Kerala, Lakshadweep, Andaman & Nicobar Islands, many parts of Uttarakhand, Haryana & Delhi, West Uttar Pradesh, Sub-Himalayan West Bengal, Assam & Meghalaya, Jharkhand, West Rajasthan, Tamil Nadu, few parts of Rayalaseema, Mizoram, Gujarat, isolated parts of Bihar, Interior Karnataka, Telangana, Madhya Pradesh and Rajasthan, Gangetic West Bengal, Odisha.
- 20 to 40% over many parts of Jharkhand, West Rajasthan, few parts of Gujarat and isolated parts of Gangetic West Bengal, Odisha, East Rajasthan.

Cloud amount (okta) over India for the week ending 11.03.2015



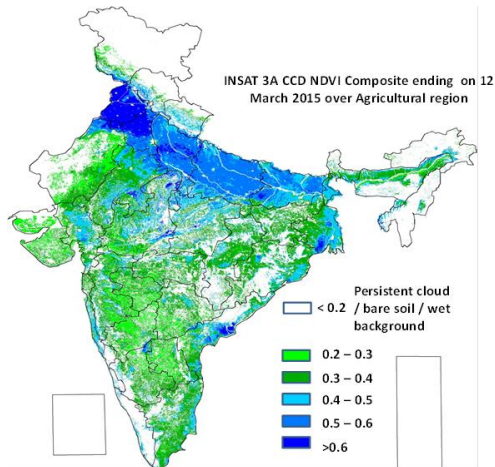
- 4 to 6 okta over many parts of Jammu & Kashmir, Kerala, few parts of Tamil Nadu, Lakshadweep and Andaman Nicobar Islands, isolated parts of Rayalaseema, Arunachal Pradesh.
- 0 to 4 okta over entire country except many parts of Jammu & Kashmir, Kerala, few parts of Tamil Nadu, Lakshadweep and Andaman Nicobar Islands, isolated parts of Rayalaseema, Arunachal Pradesh.

Wind speed (knots) over India for the week ending 11.03.2015



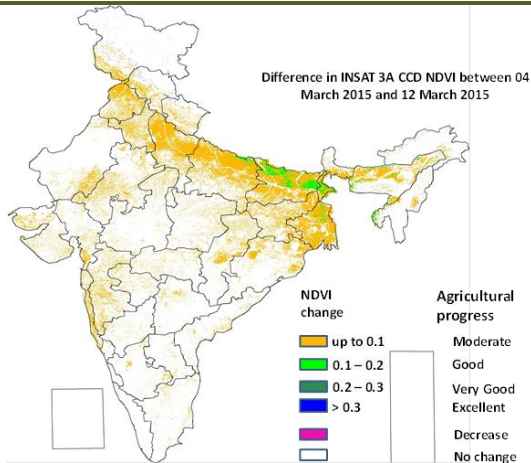
- 4 to 8 knots over many parts of Saurashtra, Tamil Nadu, isolated parts of West Madhya Pradesh, Bihar, Jharkhand, Haryana, Odisha, Kerala, North Interior Karnataka and Lakshadweep.
- 0 to 4 knots over entire country except many parts of Saurashtra, Tamil Nadu, isolated parts of West Madhya Pradesh, Bihar, Jharkhand, Haryana, Odisha, Kerala, North Interior Karnataka and Lakshadweep.

INSAT 3A CCD NDVI COMPOSITE ENDING ON 12th MARCH 2015 OVER AGRICULTURAL REGION OF INDIA



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

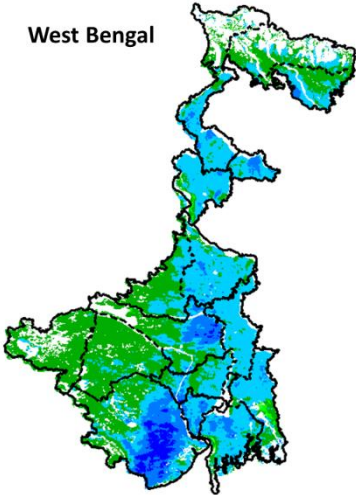
Difference in INSAT 3A CCD NDVI between 4th March 2015 and 12th March 2015



- Good progress in NDVI was observed in north Bihar. Moderate change in NDVI was observed over Punjab, Haryana, east and west Uttar Pradesh, Chhattisgarh, coastal parts of Odisha, Gangetic West Bengal, Bihar and coastal parts of Andhra Pradesh. Not much change was observed in Madhya Pradesh, Gujarat, Telangana, Andhra Pradesh and Maharashtra.

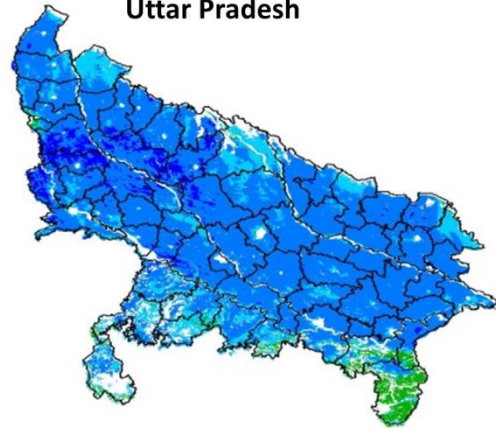
INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 12th MARCH 2015 FOR DIFFERENT STATES

West Bengal



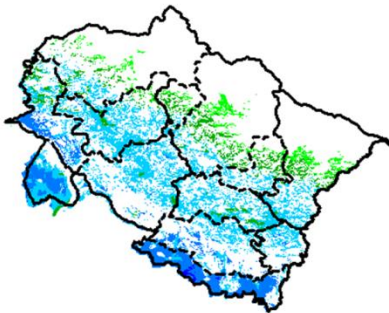
Agricultural vigour is good over most of the central parts of West Bengal, whereas southern part show higher values of NDVI varying from 0.4-0.6.

Uttar Pradesh



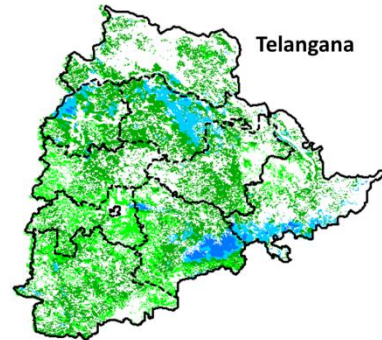
Agricultural vigour is good over the entire state of Uttar Pradesh where NDVI values varies from 0.5 -0.6.

Uttarakhand



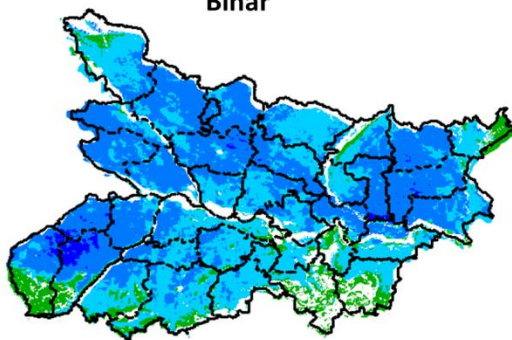
NDVI values vary from 0.2 - 0.5 over Uttarakhand. Higher (>0.6) values are seen in the southern part of Uttarakhand.

Telangana



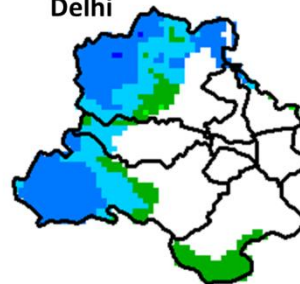
NDVI values vary from 0.2 - 0.5 over Telangana. Higher (> 0.5)values are seen in the southern and northern part of Telangana.

Bihar



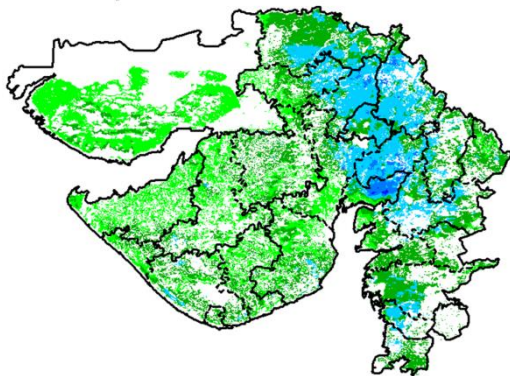
The entire state of Bihar shows comparatively a high value (0.4-0.6) of NDVI, except for few pockets in south eastern and South western Bihar region.

Delhi



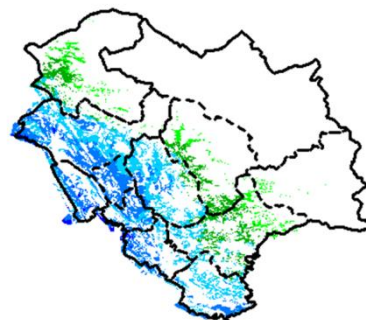
Agriculture vigour is good over western part of Delhi. NDVI values lies between 0.4-0.5. NDVI values are normal over central and western part of the state.

Gujarat



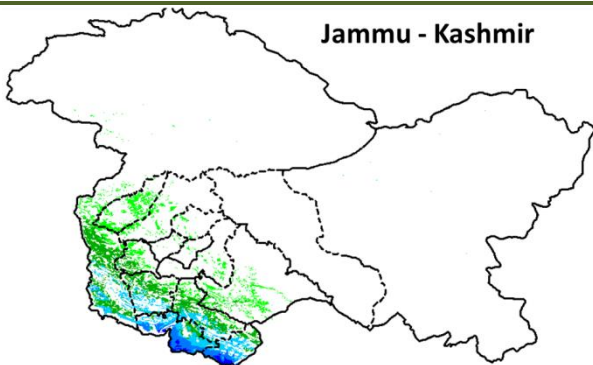
Agriculture vigour is good over northern and central part of Gujarat where NDVI values lies between 0.4-0.5. Whereas normal NDVI is observed in Kutch and Saurashtra.

Himachal Pradesh



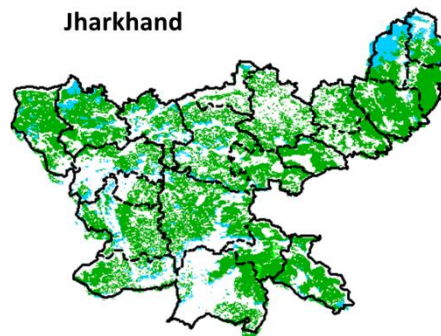
Agriculture vigour is good over southern and south western parts of Himachal Pradesh with NDVI values varying between 0.4-0.6. Whereas, isolated patches of normal NDVI are observed in the state.

Jammu - Kashmir



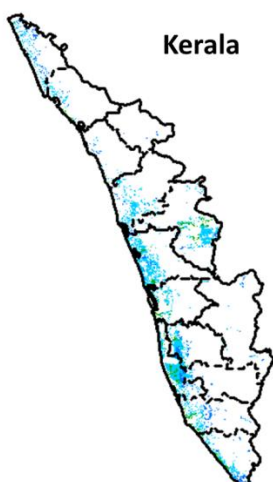
Agriculture vigour is normal all over Jammu and Kashmir. NDVI values vary in between 0.4-0.5 in south western parts.

Jharkhand



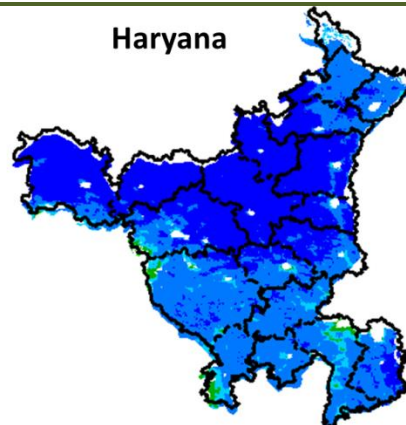
Agriculture vigour is normal 0.4-0.5 over entire state of Jharkhand.

Kerala



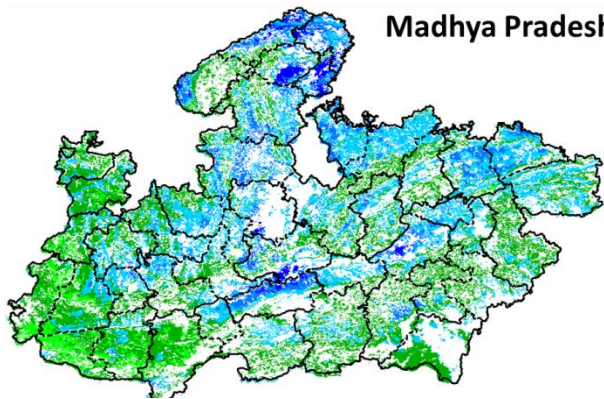
In central and south coastal parts of Kerala show NDVI values are greater than 0.5, whereas rest of agricultural vigour of Kerala shows good values of NDVI.

Haryana



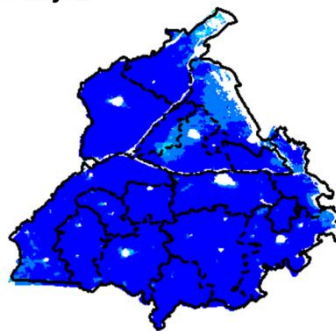
Agriculture vigour is good; NDVI values (> 0.6) entire state of Haryana.

Madhya Pradesh



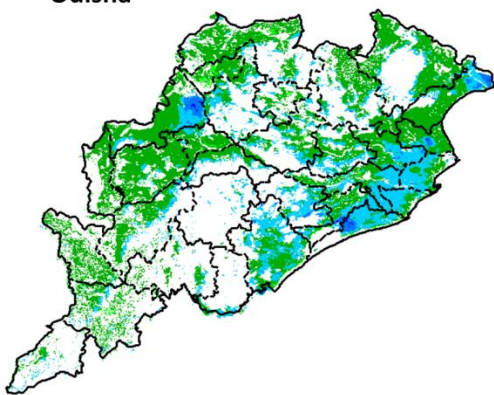
Agricultural vigour is good over central, eastern and northern region of Madhya Pradesh showing higher values of NDVI varies from 0.5 - 0.6. The overall Vegetation vigour is good over the entire state of Madhya Pradesh.

Punjab



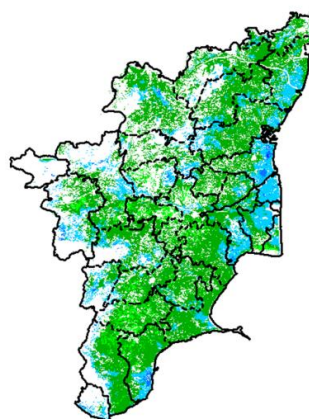
Agricultural vigour is comparatively good over entire state of Punjab with NDVI values greater than 0.6.

Odisha



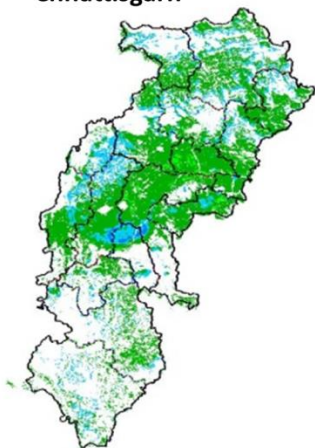
Agricultural vigour is good in eastern parts of Odisha with NDVI values of 0.4 - 0.5. rest of the part is with normal NDVI values.

Tamil Nadu



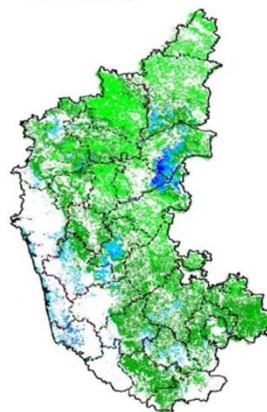
Agricultural vigour is normal over Tamil Nadu with NDVI values varying from 0.3 - 0.5. In the North coastal

Chhattisgarh



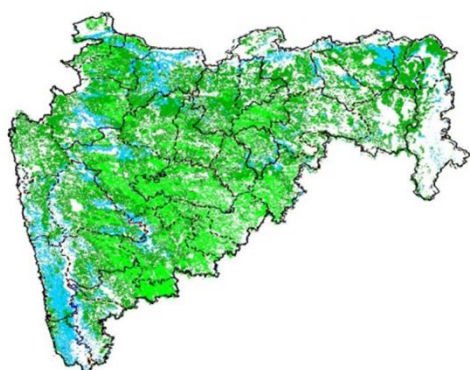
Agriculture vigour is good all over western and southern part of Chhattisgarh where NDVI values lies in between 0.4-0.5. NDVI values are normal over eastern, central and northern part of the state.

Karnataka



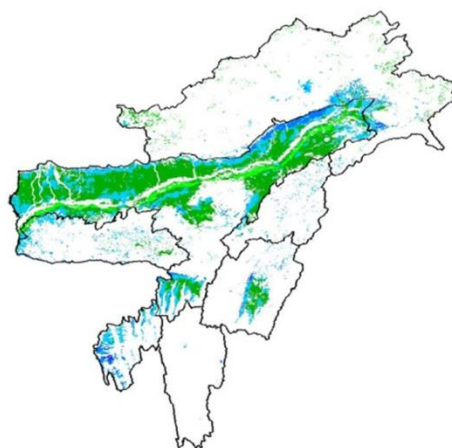
Agriculture vigour is good over some pockets in eastern and western coastal parts of Karnataka which lies in between 0.3-0.5. Rest of the part show normal condition where NDVI values vary up to 0.2-0.3

Maharashtra



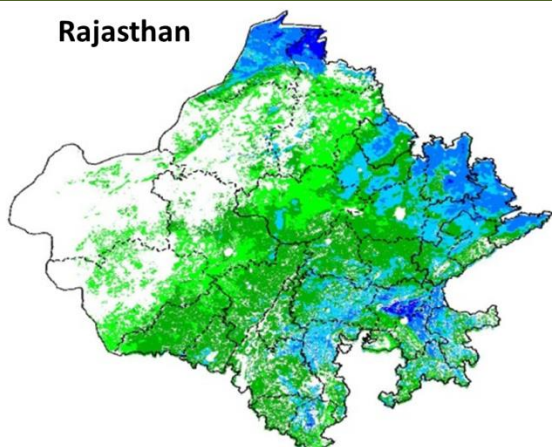
Agricultural vigour is good over Western coastal, Vidarbha and northern Marathwada region of Maharashtra with NDVI values of 0.4 - 0.5. Whereas, NDVI is moderate over central and southern parts of Marathwada region.

North East



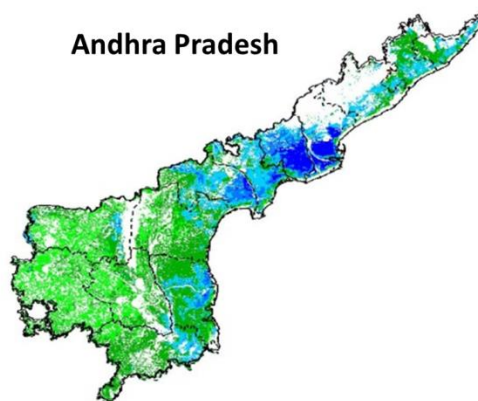
Agriculture vigour is good in valleys of northern hilly range of North-East states which covers part of Assam. NDVI values vary from 0.2-0.4 in this region. In north-east part of Assam, NDVI values are more than 0.6. Isolated patches of normal NDVI conditions are observed all over NE region.

Rajasthan



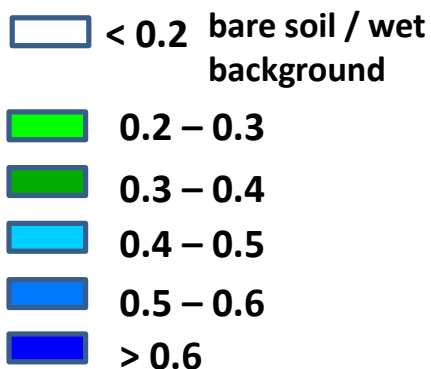
In the eastern, north eastern and north western part of Rajasthan NDVI shows higher values from 0.5-0.6. Whereas, Agricultural vigour is good (0.4-0.5) over southern part. Few patches in central Rajasthan show NDVI values varying from 0.2 - 0.3.

Andhra Pradesh



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

Persistent cloud /



Weather Forecast for next 5 days valid upto 0830 hours of 18th March 2015

- Maximum temperatures would fall by 2-4°C over northwest and central India during next 48 hours.
- Minimum temperatures would rise by 2-3°C over northwest India during next 3 days.
- Strong surface wind would prevail over plains of northwest and adjoining central India on 14th & 15th.

5-Day Rainfall Forecast (MORNING)

DATED: 13-03-2015

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

% 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

- **13 March (Day 1):** Thunderstorms accompanied with isolated hailstorm would occur over Punjab, Haryana, Chandigarh & Delhi, Rajasthan, Madhya Pradesh, Vidarbha, Madhya Maharashtra and Marathwada.
Heavy rain would occur at isolated places over Tamil Nadu & Pudducherry.
- **14 March (Day 2):** Thunderstorms accompanied with isolated hailstorm would occur over Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Rajasthan, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Madhya Maharashtra and Marathwada.
Heavy rain would occur at isolated places over Punjab, Tamil Nadu & Pudducherry and Kerala.
- **15 March (Day 3):** Heavy rain/snow would occur at isolated places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand.
Heavy rain would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Tamil Nadu & Pudducherry and Kerala.
Thunderstorms accompanied with isolated hailstorm would occur over Himachal Pradesh, Uttarakhand,

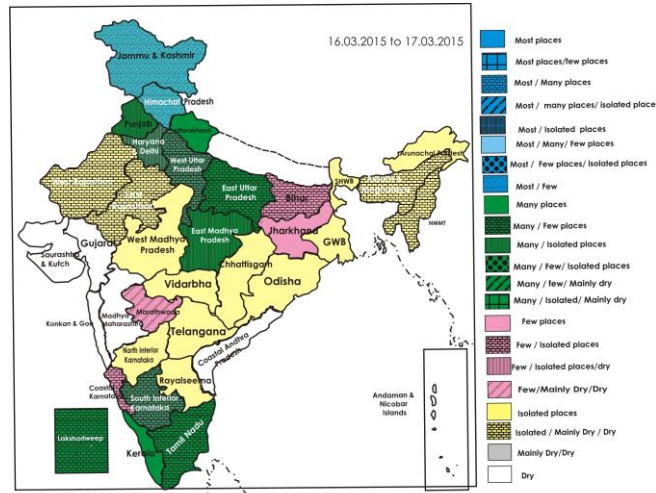
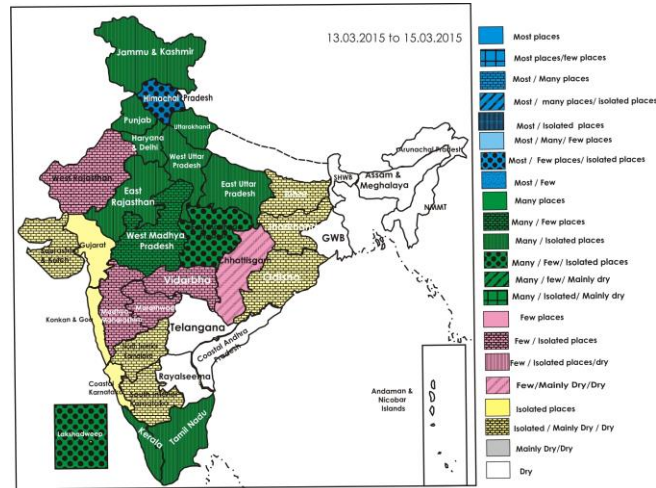
Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha and Chhattisgarh.

- **16 March (Day 4):** Heavy rain would occur at isolated places over Tamil Nadu & Pudducherry and Kerala. Thunderstorms accompanied with isolated hailstorm would occur over East Uttar Pradesh and Bihar.
- **17 March (Day 5):** No weather warning.

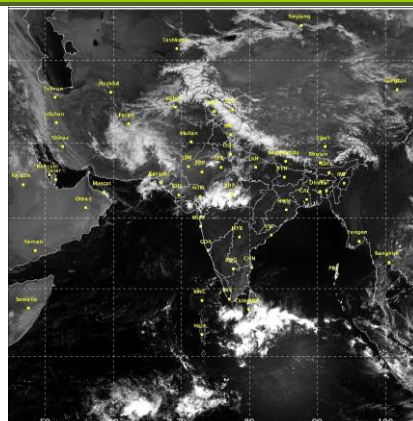
Weather Outlook for subsequent 2 days From 18th March 2015 to 20th March 2015

- Considerable decrease in the rain/thundershower activity over northwest, central and east India.
- Rain/thundershower would occur at isolated places over northeastern states and extreme south peninsular India.

Weather Forecast Map (Valid upto 0830 hours of 18th March, 2015)



Satellite image dated, 13.03.2015, 0600 UTC



Salient Advisories

- As thunderstorms accompanied with isolated hailstorm would occur over **Punjab, Haryana, Chandigarh & Delhi, Rajasthan, Madhya Pradesh** on during next three days, over **Himachal Pradesh, Uttarakhand** and **Uttar Pradesh** on 14th and 15th and over **East Uttar Pradesh** on 16th March, it is advised to use hail nets for orchard crops to protect from mechanical damage. Also provide mechanical support to young fruit plants and vegetables to prevent the crops from lodging due to strong winds.
- As rain/thundershowers would occur at many places over **Punjab, Haryana, Chandigarh** and **Delhi** on 14th, 15th and 16th March, rain/snow would occur at many/most places in **Jammu & Kashmir** on 14th, 15th and 16th, over **Himachal Pradesh** on 15th and 16th March and over **Uttarakhand** on 15th, 16th and 17th March along with heavy rain/snow at isolated places on 15th March, postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and keep harvested produce at safe places. Provide adequate drainage in standing crops to avoid water stagnation.
- As thunderstorms accompanied with isolated hailstorm would occur over **Madhya Maharashtra, Marathwada** on 13th and 14th and over **Vidarbha** on 13th, 14th and 15th March, farmers are advised to use hailnets in grape orchards in **Madhya Maharashtra** (Nasik, Sangli and Pune region) and **Marathwada** (Latur, Osmanabad and Aurangabad) and for orange/ sweet lime orchards in Vidarbha to protect from mechanical damage. Cover the new banana bunch with skating bags to protect from hail. Provide mechanical support to banana and vegetable crops.
- As rain/thundershowers would occur at many places over **Kerala** on 15th, 16th and 17th March, over **Tamil Nadu** on 15th and 16th and over **South Interior Karnataka** on 17th March, along with heavy rain at isolated places over **Kerala** and **Tamil Nadu** on 14th to 16th March, postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and keep harvested produce at safe places. Provide adequate drainage in standing crops to avoid water stagnation.

Detailed Zonewise Agromet Advisories

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



Sorghum



Sugarcane



Chilli



Rice

- **Realised Rainfall:** Rainfall occurred over Bidar, Dharwad, Gadag, Kalaburgi and Yadgir districts in North Interior Karnataka; Chikkamagaluru, Hassan and Kodagu districts in South Interior Karnataka; Nilgiris and Salem districts in Tamil Nadu; Alapuzha, Kottayam and Pathanamthitta and Wynad districts in Kerala and Adilabad, Medak, Rangareddy and Warangal districts in Telangana. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Tamil Nadu on 15th and 16th, over Kerala on 15th, 16th and 17th; at a few places over Tamil Nadu and Coastal Karnataka on 17th, over South Interior Karnataka on 16th; at isolated places over Tamil Nadu and Kerala on 13th and 14th, over Coastal Karnataka on 13th, 14th, 15th and 16th; over South Interior Karnataka on 15th, North Interior Karnataka on 15th, 16th and 17th, over Telangana and Rayalaseema on 16th and 17th March, dry weather would prevail during rest of the period. Dry weather would prevail over Coastal Andhra Pradesh during the period.
- **Weather Warning:** Heavy rain would occur at isolated places over Tamil Nadu during next 4 days and over Kerala on 14th, 15th and 16th March.
- **Weather Outlook:** Rain/thundershower would occur at isolated places over extreme south peninsular India.
- **Advisories:**
 - As rain/thundershowers would occur at many places over Kerala on 15th, 16th and 17th March, over Tamil Nadu

on 15th and 16th and over South Interior Karnataka on 17th March , along with heavy rain at isolated places over Kerala and Tamil Nadu on 14th to 16th March, postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and keep harvested produce at safe places. Provide adequate drainage in standing crops to avoid water stagnation.

▪ **Andhra Pradesh:**

- Prevailing weather conditions (increase in day temperature) are congenial for incidences of downy mildew disease and hoppers in mango in the Scarce Rainfall Zone. To control downy mildew disease, spray Wettable Sulphur @ 3g/litre of water and Kerathane 1ml/litre of water if the disease is severe and to control mango hoppers, spray Carbaryl 3g/litre of water at early stage of flowering and Monochrotophos @1.6-2 ml/litre of water at the time of flowering.
- Prevailing cloudy weather is congenial for attack of thrips, aphids and *anthrocanose* in mango orchards in the Southern Zone. To control, spray Dimethioate @ 2 ml/litre of water.

▪ **Telangana:**

- Prevailing temperature conditions are congenial for incidence of sucking pest complex in sesamum in the Northern Telangana Zone. Undertake spraying of Dimethoate @ 2.0 ml/litre of water or Acephate @ 1.5 g/litre of water or Monocrotophos @ 1.6 ml/litre of water. High incidence of shoot and fruit borer is observed in brinjal. Undertake plant protection measures.
- Prevailing weather conditions are congenial for the incidence of hoppers and *anthracnose* in mango. To control, spray Imidacloprid @ 0.5 ml + Hexaconazole @ 2 ml or Monocrotophos @ 1.6 ml + Carbendazim @ 1 g per litre of water in the Southern Telangana Zone.

▪ **Karnataka:**

- Due to cloudy weather leaf spot was noticed in isolated pockets of North East Dry Zone, to control undertake spraying of Hexaconazole 1 ml/litre or Carbendazim 1g/litre of water.
- Increase in temperature followed by cloudy weather is congenial for incidence of case worm in rice in the Coastal Zone. Drop granules of Carbofuran 3G @ 20 kg/ha, in whorls for control.
- Incidence of sucking pest in water melon is more in some areas in the North East Dry Zone. Spray Imidacloprid @ 0.5 ml/litre of water.

▪ **Kerala:**

- Continue land preparation for planting of pepper and cultivation of turmeric and ginger in the High Altitude Zone.
- Prevailing cloudy weather and light rain is congenial for incidences of diseases like powdery mildew and shoot borer in vegetables in the High Altitude Zone. Apply Wettable Sulphur @ 2-3 g for controlling powdery mildew and spray Carbaryl 50% @ 3 gram/ litre to control shoot borer after current spells of rain.
- Prevailing weather is congenial for the incidence of fruit fly in vegetables in the Central Zone. Remove and destroy the affected and decayed fruits and use special pheromone traps. If the attack is not reduced, apply Malathion @ 0.2% suspension containing sugar or jaggery at 10 g/litre of water fortnightly at flowering and fruit initiation after current spells of rain.

▪ **Tamil Nadu:**

- As rainfall is expected, undertake summer ploughing to control weeds and pest and diseases and land preparation for sowing of *cumbu* in the Western Zone. Complete the rice harvest as soon as possible.
- Due to dry weather conditions incidence of sucking pest will be more in vegetables in the North Eastern Zone. Spray Neem Seed Kernel extract @ 5 per cent to control white fly and jassids incidence in bhendi, brinjal and tomato. Tikka leaf spot incidence was found in groundnut. Spray Carbendazim @ 1 ml/ litre of water or Mancozeb or Chlorothalonil @ 2 ml/ litre of water.
- Prevailing increase in temperature is conducive for the incidence of wilt disease in tomato at vegetative to flowering stage in the Southern Zone. To control mix 2.5 kg of Trichoderma Viride @1% WP in 150 Kg of compost or Farm Yard Manure and apply this mixture in field after current spells of rain.
- Suitable varieties for sowing are given in Annexure II.

• **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.
- Vaccinate animals for foot and mouth disease in the Western Zone of Tamil Nadu.
- Due to increase in day temperature, animals should not be allowed to graze during noon hours, provide cool drinking water and shade to the animals to reduce heat stress in the North Eastern Zone. Add Vitamin C containing medicines in the feed of birds to relieve them from stress related immune suppression in the North Western Zone.

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



Rice



Mustard



Okra



Cabbage

- **Realised Rainfall:** Rainfall occurred in Dibang Valley, Lohit, Lower Dibang Valley, Upper Siang and West Siang districts of Arunachal Pradesh; Aizwal district of Mizoram. Mainly dry weather prevailed over rest parts of the region.
- **Weather Forecast:** Dry weather would prevail over the Arunachal Pradesh during next 3 days; over Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura during next 4 days and rain/thundershowers would occur at isolated places thereafter.
- **Weather Warning:** Nil
- **Weather Outlook:** Rain/thundershower would occur at isolated places over the region.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - In Assam, maintain 5cm of standing water in the field of *boro* rice.
 - In Assam & Meghalaya, normal sowing of summer crops and other agricultural operations are carried out under normal weather conditions.
 - In Arunachal Pradesh, undertake land preparation for *jhum* rice and okra.
 - In Central Brahmaputra Valley Zone and North Plain Bank Zone of Assam, continue nursery bed preparation for early ahu rice.
 - In Meghalaya, continue land preparation for sowing of maize in High & Mid Altitude region.
 - In Meghalaya, due to humid weather, there is chance of attack of blast /brown spot disease in *boro* rice. Spray Carbendazim @ 1g/litre of water against blast/brown spot.
 - In Hill Zone of Assam, due to humid and cloudy weather, there is chance of blast spots in *boro* rice, spray Mancozeb 0.2% @2gm/litre or Ediphenphos 0.1% @ 1gm/litre of water for control of the disease.
 - **Manipur, Mizoram, Nagaland and Tripura:**
 - In Nagaland, Manipur, Mizoram and Tripura, continue normal sowing of summer crops and other agricultural operations under normal weather conditions.
 - In Manipur, continue nursery bed preparation of pre-*kharif* rice.
 - In Tripura, maintain 4 to 5cm standing water in the fields of *boro* rice. As dry weather is prevailing, apply irrigation and undertake mulching in standing crops.
 - In Tripura, due to cloudy weather, there is chance of attack of yellow stem borer in *boro* rice, apply Fipronil @ 2g per litre of water to manage the attack.
 - In Manipur, due to cloudy weather, there is chance of attack of stem borer in maize, apply few granules of Carbofuran 3G at maize whorl.
 - Suitable varieties are given in Annexure II.
- **Animal Husbandry**
 - In Nagaland and Tripura, increasing temperature with increasing humidity may cause discomfort to the cattle. Take proper precautions.

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, Mainly dry weather prevailed over rest part of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Jharkhand on 16th and 17th, Bihar on 17th; at isolated places over Jharkhand on 15th, Bihar on 15th and 16th, Odisha on 15th, 16th and 17th, West Bengal & Sikkim on 16th and 17th March, dry weather would prevail during rest of the period.
- **Weather Warning:** Thunderstorms accompanied with isolated hailstorm would occur over Bihar on 16th March.
- **Weather Outlook:** Considerable decrease in the rain/thundershower activity over east India.
- **Advisories:**
 - **West Bengal:**
 - In Sub-Himalayan West Bengal & Sikkim and Gangetic West Bengal, undertake normal sowing of summer crops and other agricultural operations under normal weather conditions.
 - In Hill Zone of West Bengal undertake land preparation for sowing of *kharif* maize in normal weather condition.
 - As mainly dry weather would prevail, continue harvesting of lentil in Old Alluvial Zone.
 - In New Alluvial Zone of West Bengal, as dry weather is prevailing, apply irrigation in rice and maintain 2-3cm standing water at tillering stage. Undertake land preparation for sowing of sesame and moong.
 - In prevailing humid weather condition, stem borer attack may be found in rice in New Alluvial Zone of West Bengal. To control, apply Cartap 4 G @ 25 kg/ha or Phorate 10 G @ 10 kg/ha.
 - In Hill Zone, due to cloudy weather condition, there are chances of attack of aphids in French beans, butter beans and broad beans during its pod filling stage. To control aphids, spray Dimethoate @ 1.5ml/litre of water or Monocrotophos @ 2 ml/litre of water.
 - **Andaman and Nicobar Islands:**
 - In South, North & Middle Andaman, cloudy weather is congenial for incidence thrips and leaf hopper in vegetables. To control, spray Imidacloprid @ 2 ml/litre and Acephate @ 2 g/litre alternatively once in two weeks.
 - **Odisha:**
 - In East and South Eastern Coastal Plain Zone of Odisha, complete sowing of maize as late sowing of maize afterwards may reduce the yield due to high temperature during April and May.
 - In Western Undulating Zone of Odisha and Mid Central Table Land Zone of Odisha, due to rise in temperature coupled with humidity, attack of stem borer has been aggravated in rice. To control, spray Triazophos @ 2 ml/litre of water.
 - In East and South Eastern Coastal Plain Zone of Odisha, cloudy and humid weather may favour infestation of powdery mildew in pulses. Spray Copper Oxychloride @ 1 kg or Dethane-M 45@ 800 g /acre in 200 litres of water.
 - In East and South Eastern Coastal Plain Zone of Odisha, current temperature may favour the infestation of thrips in groundnut. Spray Dimethoate or 50 ml Imidachloprid in 200 litres of water per acre to control it.
 - In East and South Eastern Coastal Plain Zone of Odisha, high variations in between day and night temperatures favours the infestation of blast in summer rice. Spray Tricychlazole @ 0.6 g or Ediphonphos @ 1 ml in litre of water. Withhold top dressing of urea for five days after the spraying.
 - In East and South Eastern Coastal Plain Zone of Odisha, increased temperature may favour the egg laying of stem borer in rice in the main field. To attract the borer butterflies, place 4 Pheromon Traps/acre, collect the adults and destroy them by burying them under soil or by burning. Spray 2 ml Prophenophos per litre of water.
 - In Mid Central Table Land Zone of Odisha, infestation of mango hopper is commonly observed at flowering / fruit setting stage. To control it, keep the mango orchards clean and if necessary spray recommended insecticides like Methyl Dematon @ 2 ml/litres of water.
 - **Bihar:**
 - As thunderstorms accompanied with isolated hailstorm would occur over Bihar on 16th March, farmers are advised to use hailnets for orchard crops to protect from mechanical damage. Also undertake propping in sugarcane and provide mechanical support to vegetables and young fruit plants to prevent the crops from lodging due to strong winds. Keep already harvested crops at safe places and undertake harvesting of matured crops immediately.
 - In South Bihar Alluvial Zone, as dry weather would prevail, apply irrigation in maize, onion and sugarcane. Continue harvesting of mustard.
 - In North West Alluvial Plain Zone of Bihar, continue sowing of summer vegetables, okra, green gram/ black gram and maize. As dry weather is prevailing, apply irrigation in sugarcane, maize, wheat and summer vegetables and undertake harvesting of mustard and potato.
 - In North East Alluvial Zone of Bihar, as dry weather would prevail, apply irrigation to wheat and maize crop. Continue harvesting of matured mustard crop. Maintain minimum water level (2-3cm) in the *boro* rice field. Continue land preparation and sowing of moong.
 - In North East Alluvial Zone of Bihar, due to fluctuation in temperature, there are chances of aphids in wheat, spray Imidacloprid 17.8 SL @ 1ml/3 litre of water or Thiomethoxam 25WDG 1g /3 litre of water on a non rainy

day.

▪ **Jharkhand:**

- In South Eastern Plateau Zone and Western Plateau Zone, as mainly dry weather is prevailing, apply irrigation to wheat. Continue sowing of moong and summer vegetables. Undertake harvesting of mustard, chick pea and peas.
- In Central & North Eastern Plateau Zone of Jharkhand, due to high humidity and fluctuation in temperature, there is chance of powdery mildew disease in mango/litchi, spray Kara then @ 1 ml or Sulfex @ 2 g per litre of water on a non rainy day.
- 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 lot of clean water to the animals and keep them in the shaded place.
- In Bihar, keep animals in sheds during thunderstorm/hail storm period.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane

Wheat

Okra

Onion

- **Realised Rainfall:** Mainly dry/dry weather prevailed over the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over East Madhya Pradesh on 15th and 16th, over West Madhya Pradesh on 14th and 15th, at a few places over East Madhya Pradesh on 14th, over West Madhya Pradesh on 12th, over Chhattisgarh on 15th; at isolated places over East Madhya Pradesh on 13th and 17th and over West Madhya Pradesh and Chhattisgarh on 16th and 17th. Dry weather would prevail over Chhattisgarh on 12th and 13th March.

Maximum temperatures would fall by 2-4°C over central India during next 48 hours.

Strong surface wind would prevail over plains of central India adjoining to northwest India on 14th & 15th.

- **Weather Warning:** Thunderstorms accompanied with isolated hailstorm would occur over Madhya Pradesh on 13th, 14th and 15th March and over Chhattisgarh on 14th and 15th March.
- **Weather Outlook:** Considerable decrease in the rain/thundershower activity over central India.
- **Advisories:**

- As thunderstorms accompanied with isolated hailstorm would occur over Madhya Pradesh during next three days and over Chhattisgarh on 14th and 15th March, farmers are advised to use hailnets for orchard crops to protect from mechanical damage. Also undertake propping in sugarcane and provide mechanical support to vegetables and young fruit plants to prevent the crops from lodging due to strong winds. Keep already harvested crops at safe places and undertake harvesting of matured crops immediately in Chhattisgarh.

▪ **Madhya Pradesh:**

- As rain/thundershowers would occur at many places over East Madhya Pradesh on 15th and 16th March and over West Madhya Pradesh on 14th and 15th March, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- In Satpura Plateau Zone, continue sowing of cucurbitaceous crops, okra, green gram, black gram and cowpea and, undertake sowing of okra, pumpkin and bitter guard in Bundelkhand Zone utilising the expected rainfall.
- Due to the rain during past week, there are chances of incidence of powdery mildew in mango and vegetables in Kymore Plateau and Satpura Hill Zone, spray Carbendazim @ 10 g/10 litres water after current spells of rain.
- Due to cloudy weather there are chances of attack of pod borer in chickpea in Bundelkhand Zone, spray Quinolphos @ 2.0 ml per litre of water after current spells of rain.
- Due to continuous cloudy weather, there may be flower dropping in mango in Vindhya Plateau Zone of Madhya Pradesh, spray Planofix 100 ppm @ 1 ml/3 litres of water after current spells of rain.

▪ **Chhattisgarh:**

- Undertake sowing of okra, cowpea, sweet corn, sunflower and transplanting of tomato in Bastar Plateau Zone. Undertake harvesting of mustard.
- In North Hill Zone of Chhattisgarh, as mainly dry weather is likely to prevail, undertake harvesting of potato, gram, pea, mustard and lentil crops. Complete transplanting of summer rice by end of March. As temperature is congenial, undertake sowing of cucurbitaceous vegetables like Pumpkin, cucumber, sponge gourd and planting

of spring sugarcane.

- Due to the cloudy weather condition prevailed during past week, there is chances of infestation of thrips in groundnut in Plain Zone of Chhattisgarh, for control, spray Methyl Demeton or Dimethoate @ 1.5 ml/litre of water.
- Suitable varieties for sowing are given in Annexure II.
- **Animal Husbandry**
- In Madhya Pradesh, keep animals in sheds during thunderstorm/hail storm period.

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



Wheat



Sugarcane



Banana



Cabbage

- **Realised Rainfall:** Rainfall occurred in all districts of Himachal Pradesh, all districts of Jammu & Kashmir except Kathua, Ladakh (Leh) and Samba, Rudraprayag district of Uttarakhand, Central Delhi district of Delhi, Jind and Panchkula districts of Haryana, Meerut district of West Uttar Pradesh. Mainly dry/dry weather prevailed over rest parts of the region.
- **Weather Forecast:** Rain/snow would occur at most places over Jammu & Kashmir on 16th, Himachal Pradesh on 15th and 16th; at many places over Jammu & Kashmir on 14th and 15th, Uttarakhand on 15th, 16th and 17th; at a few places over Jammu & Kashmir on 17th, Himachal Pradesh on 14th and 17th; at isolated places over Jammu & Kashmir, Himachal Pradesh on 13th, Uttarakhand on 13th and 14th March. Rain/thundershowers would occur at many places over Punjab, Haryana & Delhi on 14th, 15th and 16th, Uttar Pradesh on 15th and 16th, East Rajasthan on 14th and 15th, at a few places over Uttar Pradesh on 17th, West Rajasthan on 14th and 15th March; at isolated places over Punjab, Haryana & Delhi on 13th and 17th, Uttar Pradesh on 13th and 14th, Rajasthan on 13th and 16th March, dry weather would prevail over Rajasthan on 17th March.
Maximum temperatures would fall by 2-4°C over northwest India during next 48 hours.
Minimum temperatures would rise by 2-3°C over northwest India during next 3 days.
Strong surface wind would prevail over plains of northwest India on 14th & 15th.
- **Weather Warning:** Heavy rain/snow would occur at isolated places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand and heavy rain would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi and Uttar Pradesh on 15th March.
Thunderstorms accompanied with isolated hailstorm would occur over Punjab, Haryana, Chandigarh & Delhi on 13th 14th and 15th March, over Rajasthan on 13th and 14th, over East Rajasthan on 15th, over Himachal Pradesh, Uttarakhand and Uttar Pradesh on 14th and 15th, over East Uttar Pradesh on 16th March.
- **Weather Outlook:** Considerable decrease in the rain/thundershower activity over northwest India.
- **Advisories:**
 - As thunderstorms accompanied with isolated hailstorm would occur over Punjab, Haryana, Chandigarh & Delhi, East Rajasthan during next three days, over Himachal Pradesh, Uttarakhand and Uttar Pradesh on 14th and 15th and over East Uttar Pradesh on 16th March, it is advised to use hail nets for orchard crops to protect from mechanical damage. Also provide mechanical support to young fruit plants and vegetables to prevent the crops from lodging due to strong winds.
 - As rain/thundershowers would occur at many places over Punjab, Haryana, Chandigarh and Delhi on 14th, 15th and 16th March, rain/snow would occur at many/most places in Jammu & Kashmir on 14th, 15th and 16th, over Himachal Pradesh on 15th and 16th March and over Uttarakhand on 15th, 16th and 17th March along with heavy rain/snow at isolated places on 15th March, postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and keep harvested produce at safe places. Provide adequate drainage in standing crops to avoid water stagnation.
 - **Jammu & Kashmir:**
 - In Sub Tropical and Intermediate Zone of Jammu & Kashmir, drain out excess water from wheat, pulses and vegetable fields.
 - In Cold Arid Zone of Jammu & Kashmir undertake nursery raising of cruciferous crops viz, capsicum, chilli, paprika and onion in green houses & trenches.
 - **Uttarakhand:**

- In Bhabar and Tarai Zone of Uttarakhand, undertake sowing of moong and urad after current spells of heavy rain.
- In Hill Zone of Uttarakhand, undertake nursery sowing of tomato, brinjal, cucumber and capsicum in poly house.
- 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 after current spells of rain.
- **Rajasthan:**
 - As rain/thundershowers would occur at many places over East Rajasthan on 14th and 15th March, postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and keep harvested produce at safe places.
 - In Flood Prone Eastern Plain Zone of Rajasthan, due to partly cloudy weather condition, there is possibility of loose smut attack in wheat crop. For control, collect smut affected ears in polythene bags and destroy by burning to prevent its spread and spray solution of Mancozeb 75 WP @ 2% after current spells of rain.
 - In Arid Western Zone of Rajasthan, prevailing weather conditions may increase the infestation of aphids and other sucking pests in gram and late sown mustard crops. To control spray Thiomethoxam (25 WG) @ 100 g or Dimethoate 30 EC @ 1200 ml per hectare on a non rainy day.
- **Punjab, Haryana and Delhi:**
 - Due to rain during past 2-3 days, water logging was observed in vegetable nurseries and other standing crops, drain out the excess water from the crop fields.
 - In Western Semi-Arid Zone of Delhi, continue sowing of ladies finger, cucurbitaceous crops and nursery sowing of vegetables like chilli, tomato and brinjal after current spells of heavy rain.
 - 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 after current spells of heavy rain.
 - In Western Zone of Haryana, continue transplanting of young seedlings of tomato and chilli after current spells of heavy rain.
 - Prevailing humid weather is conducive for severe attack of aphids in mustard in Western Plain Zone of Punjab; monitor the crop regularly and spray Actara 25 WG @40g /acre after current spells of rain.
 - Due to variable weather in Western Zone of Haryana, there is possibilities of pod borer in the gram, spray 400 gram Carbaril 50 W.P. or 200 ml monocrotophas 36 S.L with 100 litres of water per acre, on a non rainy day and attack of white rust in late sown crop, spray 600 gram mencozeb, Dithane M- 45 or Endofil M-45 mixed with 250 to 300 litre water/acre after current spells of rain
- **Himachal Pradesh:**
 - Complete the pruning work in apple and stone fruits. Remove dead, broken and diseased wood and apply Chaubatia paste on the cut ends after current spells of rain. Arrange for adequate drainage to avoid water stagnation in the orchards.
 - Undertake sowing of moong, mash, chari and bajra lower hills region of Sub-Montane and Low Hills Sub-Tropical Zone 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 @ 1ml 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:**
 - As rain/thundershowers would occur at many places over Uttar Pradesh on 15th and 16th March, postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Harvest the matured crop immediately and keep harvested produce at safe places.
 - In Eastern Plain Zone, undertake planting of sugarcane and complete sowing of urad, moong and vegetables utilising the expected rainfall.
 - Undertake sowing of okra, planting of sugarcane, sowing of urd, moong and vegetables in Central Plain Zone utilising the expected rainfall.
 - Under humid weather condition, there is chance of attack of pod borer in pigeon pea and gram in Central Plain Zone. Spray Malathion 50% @ 2 litres/ha. For control of fruit borer in chickpea, spray Monocrotophos @ 1 ml/litre of water twice at fortnightly interval. For control of powdery mildew in pea, spray Mancozeb @ 2g per litre of water after current spells of rain.
 - Under prevailing dry 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 after current spells of rain.
 - Suitable varieties for sowing are given in Annexure II.
- **Animal Husbandry**
 - In Punjab, Haryana, Chandigarh & Delhi, Himachal Pradesh, Uttarakhand, Uttar Pradesh and east Rajasthan, keep cattle/goats indoor during the period of thunderstorm/hailstorm.

- Protect calves against ecto-parasites, get them dewormed with Piperazine liquid @ 4 ml/kg body weight in Sub-Montane and Low Hills Sub-tropical Zone of Himachal Pradesh.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Banana

Sugarcane

Sorghum

Mango

- **Realised Rainfall:** Rainfall occurred in Washim district of Vidarbha. Weather was mainly dry/dry over Konkan & Goa, Madhya Maharashtra, Marathwada and Gujarat during last week.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Madhya Maharashtra on 14th, Marathwada on 15th and 16th, Vidarbha on 15th; at isolated places over Madhya Maharashtra on 13th and 15th, Marathwada on 13th and 14th, Vidarbha on 13th, 14th, 16th and 17th, Konkan and Gujarat region on 13th, 14th and 15th, Saurashtra & Kutch on 13th and 14th March, dry weather would prevail during rest of the period.
- **Weather Warning:** Thunderstorms accompanied with isolated hailstorm would occur over Vidarbha on 13th, 14th and 15th, over Madhya Maharashtra and Marathwada on 13th and 14th March.
- **Advisories:**
 - As thunderstorms accompanied with isolated hailstorm would occur over Madhya Maharashtra, Marathwada and Vidarbha on 13th, 14th and 15th March, farmers are advised to use hail nets for orchard crops to protect from mechanical damage. Also undertake propping in sugarcane and provide mechanical support to banana and vegetables to prevent the crops from lodging due to strong winds.
 - **Maharashtra:**
 - In Konkan, maintain water level upto 8-10 cm at tillering/panicle initiation of summer rice and finger millet. Considering the wind speed (14-18 kmph), provide mechanical support to newly planted mango, cashew, coconut and arecanut grafts. Harvest matured summer okra and watermelon fruits and pulses like *wal*, *kulthi* during sunny hours and keep harvested produce in safer places.
 - In Madhya Maharashtra, as there was rain in some pockets of Solapur, Sangli, Satara, Ahmednagar and Pune and rain is expected at a few places on 14th and isolated on rest of the day along with thunderstorm accompanied with hailstorm on 13th & 14th, harvest the matured jowar, wheat and late sown gram on a non rainy day. Keep the harvested produce in safer place. Postpone irrigation to summer groundnut and vegetables in Solapur, Sangli, Satara, Ahmednagar and Pune districts. As thunderstorm accompanied with isolated hailstorm is expected, grape growers (Nasik, Sangli and Pune region) are advised to use hailnet to protect from mechanical damage. Matured grapes, papaya and banana fruits may be harvested at the earliest. Cover the new banana bunch with skating bags to protect from hail. Provide mechanical support to banana, papaya and vegetable crops. Make arrangement to drain excess out water to avoid waterlogging in onion, vegetables and orchards in North Madhya Maharashtra. Apply fertilizers on a non rainy day.
 - In Marathwada, as there was rain in many parts region and rain/thundershowers would occur at isolated places during next 48 hours and at a few places during subsequent 48 hours and thunderstorm accompanied with hailstorm would occur at isolated places on 13th and 14th March, harvest the matured jowar, wheat and late sown gram and matured fruits and flowers on a non rainy day. Keep the harvested produce in safer place. As thunderstorm accompanied with isolated hailstorm is expected on 13th and 14th March, grape growers (Latur, Osmanabad and Aurangabad) are advised to use hailnet to protect from mechanical damage. Matured grapes, sweet lime and banana fruits may be harvested at the earliest. Cover the new banana bunch with skating bags to protect from hail. Drain out the excess water from safflower field. Due to rain along with hail and squally winds there was dropping of leaves in orange and sweet lime, for recurrent of new flush spray Gibberellic acid @ 1 g + 1 Kg urea for 100 litres of water on a non rainy day. Provide mechanical support to banana and vegetables to prevent the crop from lodging due to squally wind. Apply fertilizers on a non rainy day.
 - In Vidarbha, as there was rain in Akola, Amravati, Wasim and Buldhana during last 2-3 days and rain would also occur at a few places on 15th and isolated on rest of the day and thunderstorm accompanied with hailstorm would occur at isolated places during next 72 hours, Postpone the irrigation to summer groundnut, moong and vegetables in Akola, Amravati, Wasim and Buldhana districts. Harvest the matured wheat and late sown gram and matured orange on a non rainy day. Keep the harvested produce in safer place. Due to rain and squally wind, there may be lodging in banana and vegetables, provide mechanical support. Due to untimely rain there was fruit dropping in orange, collect dropped fruits and infested leaves and branches and destroy. To avoid further spread of pest and disease clean the orchards. Maintain upto 5 cm water level in summer rice field (tillering) in east Vidarbha. Apply fertilizers on a non rainy day.

- Due to cloudy and humid weather in South Konkan region, there may be attack of thrips on immature mango fruits, spray Spinosad @ 2.5 ml per 10 litres of water on the whole tree.
- Prevailing cloudy and rainy weather is favourable for incidence of thrips and blight in onion and garlic in Western Maharashtra Scarcity Zone, spray Carbosulfan @10 ml plus Mancozeb @ 25 g in 10 litres water with 10 ml sticker by hand pump on a non rainy day.
- **Gujarat:**
 - Apply irrigation in wheat (dough stage), complete sowing of summer vegetable crops (ladies finger, cluster bean, cow pea, bitter gourd, bottle gourd, small gourd) in South Gujarat Heavy Rainfall Zone. Carry out picking of castor capsules during early morning hours.
 - Continue sowing of okra, cluster bean and cowpea and transplanting of brinjal during evening hours in Middle Gujarat Zone and Bhal and Coastal Zone.
 - As rain is expected in Bhal and Coastal Zone, complete harvesting and threshing of wheat, chickpea, mustard and castor and keep the harvested produce at safe places.
 - Complete sowing of bajra, green gram, cowpea and vegetable crops in North Gujarat Zone.
 - In North Saurashtra Zone, continue sowing of green gram and complete sowing of vegetable crops.
 - In South Saurashtra Zone, as mainly dry weather would prevail, carry out weeding in garlic.
 - Due to increase in temperature, thrips infestation in groundnut is observed above ETL in North Saurashtra Zone; for control, spray Profenofos @ 20 ml per 10 litres of water.
 - Suitable varieties for sowing are given in Annexure II.
- **Animal Husbandry**
 - Anthrax vaccination and tablet for controlling karamia disease is advised for cattle in South Gujarat Heavy Rainfall Zone.

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

Annexure I
Week by week Rainfall Distribution

Sub-Divisions	25.02.15		04.03.15		11.03.15	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	6.6	-89	17.4	-71	0.1	-99
Dibang Valley	7.0	-90	131.0	249	59.0	-14
East Kameng	0.0	-10	0.0	-100	0.0	-100
East Siang	31.4	44	83.3	272	18.8	-13
Kurung Kumey	**	**	**	**	**	**
Lohit	10.0	-62	53.6	95	20.5	-23
Lower Dibang Valley	4.6	-93	105.9	182	25.8	-62
Lower Subansari	**	**	**	**	**	**
Papumpara	7.3	-58	4.4	-71	1.3	-91
Tawang	0.0	-100	23.0	290	4.0	-65
Tirap	4.4	-81	2.8	-84	0.4	-99
Upper Siang	11.6	-80	219.4	228	117.0	39
Upper Subansari	16.0	3	12.6	2	0.0	-100
West Kameng	0.8	-93	0.8	-86	0.0	-100
West Siang	3.0	-87	27.0	41	30.0	32
Assam&Meghalaya						
Assam						
Baksa	0.0	-100	14.8	164	5.2	8
Barpeta	4.8	-50	0.0	-99	3.5	-28
Bongaigaon	4.8	-54	0.5	-93	10.6	22
Cachar	6.9	-61	4.2	-79	0.6	-97

Chirang	21.0	102	23.0	238	10.4	20
Darrang	0.0	-100	0.0	-100	0.0	-100
Dhemaji	1.0	-91	35.0	169	8.0	-34
Dhubri	1.4	-51	8.7	20	0.8	-88
Dibrugarh	4.0	-74	17.7	9	3.3	-80
Goalpara	2.4	-59	1.0	-72	11.1	22
Golghat	5.6	30	0.6	-92	0.0	-100
Hailakandi	22.5	8	0.0	-100	3.4	-61
Jorhat	10.7	18	2.4	-73	2.4	-81
Kamrup(Rural)	8.4	29	12.5	108	1.0	-86
Kamrup(Metro)	2.2	-66	17.1	185	3.2	-57
Karbi Anglong	0.3	-97	6.9	-22	0.5	-91
Karimganj	2.0	-81	5.3	-57	0.5	-98
Kokrajhar	1.3	-86	0.4	-84	0.9	-85
Lakhimpur	4.4	-62	11.7	-10	2.5	-79
Morigaon	11.4	15	7.4	100	0.0	-100
N.C.Hills	0.0	-100	25.1	18	0.0	-100
Nowgong	4.8	-7	3.7	-27	0.0	-100
Nalbari	3.0	-25	10.3	69	7.4	40
Sonitpur	1.7	-71	3.4	-29	0.0	-100
Sibsagar	7.9	-32	7.4	-22	0.0	-100
Tinsukia	3.7	75	36.2	84	3.7	-76
Udalgiri	2.5	-42	8.7	108	2.8	-76
Meghalaya						
East Garo Hills	3.4	-11	9.0	-55	9.5	83
East Khasi Hills	9.8	16	11.4	7	0.4	-99
Jaintia Hills	1.0	-94	10.0	39	0.0	-100
Ribhoi	0.0	-100	6.9	123	1.4	-81
South Garo Hills	10.0	335	10.0	-16	1.0	-82
West Garo Hills	0.4	-83	22.4	88	0.0	-100
West Khasi Hills	9.0	-20	12.0	97	4.0	-57
NMMT						
Mizoram						
Aizwal	15.0	16	0.0	-100	22.8	188
Champhai	**	**	**	**	**	**
Kolasib	10.0	-34	0.0	-100	3.0	-74
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	0.0	-100	7.0	37
Serchhip	**	**	0.0	-100	6.1	0
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	2.0	-44	0.0	-100	1.0	-81
Churachandpur	**	**	**	**	**	**
Imphal east	3.6	-59	1.8	-90	0.0	-100
Imphal west	0.3	-96	0.0	-100	0.0	-100
Senapati	4.0	11	1.0	-89	1.0	-89
Tamenglong	**	**	**	**	**	**

Thoubal	9.0	27	1.0	-92	0.0	-100
Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	13.1	1531	4.0	-32	0.4	-96
Kephire	**	**	**	**	**	**
Kohima	13.4	29	3.8	-61	0.4	-95
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paran	**	**	**	**	**	**
Phek	7.0	-33	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**
Wokha	10.0	0	0.0	-100	0.0	-100
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	36.5	95	0.0	-100	4.0	-66
North Tripura	23.1	79	0.0	-100	0.3	-98
South Tripura	1.9	-87	0.1	-99	4.2	-45
West Tripura	12.9	14	1.1	-87	6.2	-9
Himachal Pradesh						
Bilaspur	54.0	238	131.4	742	22.1	49
Chamba	109.8	329	118.0	184	60.3	98
Hamirpur	57.4	332	90.3	405	27.3	158
Kangra	50.7	126	100.4	402	31.7	87
Kinnaur	60.3	146	177.2	695	52.9	154
Kullu	105.0	313	114.0	319	46.0	51
Lahaul and Spiti	72.3	104	152.5	291	31.0	-16
Mandi	81.4	402	94.4	455	28.2	60
Shimla	63.2	245	83.2	373	40.9	139
Sirmaur	19.7	83	162.5	1364	21.5	131
Solan	39.6	123	176.2	995	33.3	130
Una	45.6	347	133.9	1213	21.1	134
Punjab						
Amritsar	37.6	276	29.8	389	1.6	-80
Barnala	0.0	-100	14.8	411	0.0	-100
Bhatinda	3.2	-52	35.3	881	2.7	-24
Faridkot	11.0	224	18.8	887	3.0	0
Fatehgarh Saheb	7.5	34	51.3	927	5.3	-8
Ferozpur	3.0	-21	10.3	203	2.7	-11
Gurdaspur	44.8	213	80.3	499	14.7	18
Hoshiarpur	27.9	147	48.4	437	5.0	-48
Jalandhar	19.6	131	30.1	313	7.0	11
Kapurthala	31.2	699	64.8	998	8.1	29
Ludhiana	11.9	61	51.4	772	4.3	-45
Mansa	3.0	-33	19.4	385	3.0	11
Moga	0.0	-100	35.1	1363	3.6	3
Muktesar	8.5	102	24.5	717	7.0	159
Nawashahar	17.5	61	74.6	966	4.6	-53
Patiala	4.4	-44	56.6	893	6.3	-7

Ropar	26.6	186	72.2	903	8.6	-50
Sangrur	7.2	19	22.4	386	13.7	327
Mohali	20.2	211	49.3	517	9.5	23
TarnTaran	41.4	492	33.1	480	0.3	-92
Haryana,Chd,Delhi						
Haryana						
Ambala	9.9	58	86.8	1027	16.9	161
Bhiwani	1.1	-72	17.1	756	8.0	232
Chandigarh	22.3	153	74.0	825	13.2	62
Faridabad	0.0	-100	66.4	1560	18.4	384
Fatehabad	2.5	-37	27.2	907	13.8	759
Gurgaon	0.0	-100	36.8	1128	7.3	249
Hissar	0.9	-81	23.1	790	6.6	200
Jhajar	2.4	-31	64.7	1648	19.0	629
Jind	1.1	-53	43.9	399	20.0	334
Katihah	4.0	-11	26.4	595	6.0	100
Karnal	1.3	-76	71.6	1362	14.5	253
Kurukshetra	0.4	-92	41.2	741	15.4	157
Mahendragarh	0.0	-100	18.5	702	0.0	-100
Mewat	0.0	-100	48.1	1825	9.0	400
Palwal	0.0	-100	41.0	1106	10.4	550
Panchkkula	15.7	36	64.7	740	38.7	515
Panipat	1.0	-80	63.1	1137	9.0	290
Rewari	0.0	-100	81.3	4415	17.0	900
Rohtak	0.0	-100	32.2	475	4.0	-25
Sirsa	2.2	-52	50.5	2004	6.3	247
Sonepat	0.3	-93	69.0	1253	8.4	82
Yamunanagar	6.4	-25	123.5	1336	14.9	122
Delhi						
Central Delhi	0.0	-100	82.0	1244	26.0	550
East Delhi	0.0	-100	35.0	474	8.0	100
New Delhi	2.2	-63	78.3	1184	10.6	164
North Delhi	0.0	-100	99.8	1536	15.9	298
North East Delhi	0.0	-100	0.0	-100	0.0	-100
North West Delhi	0.0	-100	99.3	1528	9.3	133
South Delhi	0.2	-97	68.7	1026	10.6	165
South West Delhi	5.9	-1	81.3	1233	14.2	255
West Delhi	1.0	-83	71.0	1064	6.0	50
Jammu & Kashmir						
Anantnag	85.5	185	109.5	241	66.2	72
Badgam	50.1	171	75.1	244	94.4	302
Bandipore	**	**	**	**	**	**
Baramula	99.5	76	90.9	87	82.6	76
Doda	118.0	130	157.2	219	94.2	78
Ganderbal	63.6	274	105.0	430	68.4	183
Jammu	58.9	196	115.2	773	30.9	94
Kargil	**	**	**	**	**	**
Kathua	43.6	94	111.0	1094	13.4	-39
Kistwar	**	**	**	**	**	**

Kulgam	64.0	113	154.3	381	84.7	119
Kupwara	114.5	242	73.4	86	59.8	5
Ladakh(Leh)	1.7	16	0.6	-60	0.6	-84
Poonch	**	**	**	**	**	**
Pulwama	78.1	478	91.5	458	57.9	127
Rajouri	59.9	192	116.5	1139	50.4	367
Ramban	138.9	171	154.4	213	139.6	164
Reasi	76.6	114	209.0	441	49.0	68
Samba	39.5	98	109.5	730	17.9	13
Shopian	**	**	**	**	**	**
Srinagar	90.2	430	71.2	260	83.1	243
Udhampur	120.0	235	111.3	188	41.6	42
East Madhya Pradesh						
Anuppur	0.0	-100	33.4	329	2.0	-64
Balaghat	0.0	-100	59.0	1374	0.8	-75
Chhatarpur	0.0	-100	27.9	1369	0.0	-100
Chindwara	0.0	-100	44.3	768	7.0	84
Damoh	0.0	-100	35.5	1124	0.0	-100
Dindori	0.0	-100	54.4	822	11.2	133
Jabalpur	0.0	-100	62.5	2132	0.0	-100
Katni	0.0	-100	47.0	1324	0.0	-100
Mandla	0.0	-100	92.3	1389	0.4	-91
Narsingpur	0.0	-100	38.0	1126	0.0	-100
Panna	0.0	-100	45.6	1973	0.0	-100
Rewa	0.0	-100	24.6	811	0.0	-100
Sagar	0.0	-100	17.8	410	0.0	-100
Satna	0.0	-100	55.6	2678	0.0	-100
Seoni	1.4	-46	54.1	817	7.3	62
Shahdol	0.0	-100	40.8	750	0.5	-88
Sidhi	0.0	-100	41.8	1800	0.0	-100
Singrauli	0.0	-100	54.1	3082	0.0	-100
Tikamgarh	0.0	-100	32.5	2221	0.0	-100
Umaria	0.0	-100	27.5	409	0.0	-100
West Madhya Pradesh						
Agar	0.0	-100	0.0	-100	0.0	-100
Alirajpur	0.0	-100	5.9	1073	0.0	-100
Asoknagar	0.0	-100	12.8	1721	0.0	-100
Badwani	0.0	-100	0.0	-100	0.0	-100
Betul	0.0	-100	63.8	1723	3.8	247
Bhind	0.0	-100	39.7	1885	0.0	-100
Bhopal	0.0	-100	16.0	967	0.0	-100
Burhanpur	0.0	-100	29.0	1511	0.0	-100
Datia	0.0	-100	18.9	1248	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	0.0	-100	1.0	414	0.0	-100
Guna	0.0	-100	6.1	336	0.0	-100
Gwalior	0.1	-96	15.5	814	1.2	-23
Harda	0.0	-100	27.1	1491	0.0	-100
Hosangabad	0.0	-100	48.0	1744	0.2	-92

Indore	0.0	-100	1.5	392	0.0	-100
Jhabua	0.0	-100	18.7	18633	0.0	-100
Khandwa	0.0	-100	26.7	1469	0.0	-100
Khargone	0.0	-100	6.6	1217	0.2	-33
Mandsaur	0.0	-100	22.8	2747	0.0	-100
Morena	0.0	-100	14.8	490	0.0	-100
Neemuch	0.0	-100	13.0	2067	0.0	-100
Raisen	0.0	-100	19.5	984	0.0	-100
Rajgarh	0.0	-100	2.0	100	0.0	-100
Ratlam	0.0	-100	7.6	1420	0.0	-100
Sehore	0.0	-100	18.8	1006	0.0	-100
Shajapur	0.0	-100	7.2	794	0.0	-100
Sheopur Kalani	0.0	-100	17.5	1650	0.0	-100
Shivpuri	0.0	-100	20.0	1074	0.0	-100
Ujjain	0.0	-100	9.2	922	0.0	-100
Vidisha	0.0	-100	14.6	1364	0.0	-100
Chhattisgarh						
Bastar	1.7	-40	5.9	74	0.0	-100
Bijapur	0.0	-100	30.5	3706	0.0	-100
Bilaspur	0.0	-100	20.8	278	0.2	-95
Dantewara	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	10.7	269	0.0	-100
Durg	0.0	-100	30.5	724	0.0	-100
Janjgir	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	2.9	-57	0.0	-100
Kanker	0.0	-100	12.8	220	0.0	-100
Korba	0.0	-100	11.0	80	0.0	-100
Koriya	0.0	-100	15.5	1838	0.0	-100
Kawardha	0.0	-100	1.5	-65	0.0	-100
Mahasumund	0.0	-100	1.8	-42	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	12.6	231	0.0	-100
Rajandgaon	0.0	-100	19.5	427	0.0	-100
Surguja	0.0	-100	10.0	156	0.0	-100
East Uttar Pradesh						
Allahabad	0.0	-100	38.0	1708	0.0	-100
Ambedkar Nagar	0.0	-100	2.1	5	0.0	-100
Azamgarh	0.0	-100	31.7	993	0.0	-100
Bahraich	0.0	-100	19.5	679	0.0	-100
Ballia	0.0	-100	3.9	285	0.0	-100
Balrampur	0.0	-100	8.5	286	0.0	-100
Banda	0.0	-100	80.0	3379	0.0	-100
Barabanki	0.0	-100	20.9	849	0.0	-98
Basti	0.0	-100	16.0	742	0.0	-100
Chandauli	0.0	-100	6.0	186	0.0	-100
Deoria	0.0	-100	13.5	864	0.0	-100
Faizabad	0.0	-100	13.2	50	0.0	-100
Farrukhabad	0.0	-100	19.6	991	0.8	-70

Fatehpur	0.0	-100	19.7	884	0.0	-100
Gazipur	0.0	-100	13.9	633	0.0	-100
Gonda	0.0	-100	17.5	775	0.0	-100
Gorakhpur	0.0	-100	26.2	1208	0.0	-100
Hardoi	0.0	-100	32.4	1145	0.5	-84
Jaunpur	0.0	-100	14.1	730	0.0	-100
Kannauj	0.0	-100	19.0	660	0.0	-100
Kanpur City	0.0	-100	67.3	3641	0.8	-45
Kanpur Dehat	0.0	-100	25.2	1382	0.0	-100
Kaushambi	0.0	-100	39.3	1688	0.0	-100
Kheri	0.0	-100	69.4	2674	0.0	-100
Kushi nagar	0.0	-100	5.3	196	0.0	-100
Lucknow	0.0	-100	46.5	2223	1.3	-44
Maharajganj	0.0	-100	4.0	233	0.0	-100
Mau	0.0	-100	4.5	87	0.0	-100
Mirzapur	0.0	-100	12.7	262	0.0	-100
Pratapgarh	0.0	-100	42.1	1583	0.0	-100
RaiBareilly	0.0	-100	18.2	1196	0.0	-100
Sahuji Maharajnagar	0.0	-100	62.5	3372	0.0	-100
Sant Kabirnnagar	0.0	-100	7.5	369	0.0	-100
Sant Ravidas Nagar	0.0	-100	37.0	1662	0.0	-100
Shrawasti	**	**	**	**	**	**
Sidharthnagar	0.0	-100	5.3	253	0.0	-100
Sitapur	0.0	-100	31.8	759	0.0	-100
Sonbhadra	0.0	-100	18.7	1001	0.0	-100
Sultanpur	0.0	-100	18.0	902	0.0	-100
Unnao	0.0	-100	37.5	1463	0.8	-53
Varanasi	0.0	-100	12.1	348	0.0	-100
West Uttar Pradesh						
Agra	0.0	-100	27.0	1399	0.0	-99
Aligarh	0.0	-100	36.4	1483	4.0	27
Auraiya	0.0	-100	36.5	1487	0.0	-100
Badaun	0.0	-100	37.0	1269	4.3	-13
Baghpat	0.0	-100	92.5	2884	10.3	281
Bareilly	0.6	-88	64.3	1975	3.6	-14
Bijnor	0.4	-94	47.4	691	15.6	143
Bulandsahar	0.0	-100	30.9	929	3.2	-26
Etah	0.0	-100	22.1	783	4.3	6
Etawah	0.0	-100	14.2	610	0.0	-100
Firozabad	0.0	-100	17.1	1038	0.0	-100
GBNagar	0.0	-100	27.5	525	3.0	11
Ghaziabad	0.0	-100	49.1	1041	5.5	62
Hamirpur	0.0	-100	15.6	607	0.0	-100
Jalaun	0.0	-100	20.5	1181	0.0	-100
Jhansi	0.0	-100	11.9	645	0.0	-100
Jotiba Phule Nagar	0.0	-100	59.5	1703	1.5	-61
Kanshiramnagar	0.0	-100	10.0	567	2.4	-40
Lalitpur	0.0	-100	9.0	400	0.0	-100
Mahamaya Nagar	0.0	-100	21.3	967	5.0	28

Mahoba	0.0	-100	11.8	490	0.0	-100
Mainpuri	0.0	-100	23.2	1189	0.3	-89
Mathura	0.0	-100	5.5	90	1.0	-69
Meerut	0.0	-100	81.3	1667	23.3	417
Moradabad	0.2	-96	51.6	1158	2.2	-35
Muzzaffarnagar	1.4	-75	47.6	1883	8.3	136
Pilibhit	0.0	-100	47.9	2182	0.0	-100
Rampur	0.4	-93	68.9	943	5.4	5
Saharanpur	0.0	-100	86.0	2588	15.3	193
Shahjahanpur	0.0	-100	48.4	2320	1.9	-66
Uttarakhand						
Almora	0.8	-92	113.7	906	3.3	-73
Bageshwar	19.0	88	56.8	402	5.0	-59
Chamoli	18.8	-10	97.7	437	17.5	0
Champawat	1.5	-84	129.5	1389	0.5	-94
Dehradun	8.8	-33	126.3	1369	9.0	-27
Garhwal Pauri	2.7	-71	66.6	1089	11.1	15
Garhwal Tehri	21.6	95	124.1	854	19.6	24
Haridwar	1.8	-80	96.0	832	17.4	172
Nainital	4.4	-58	161.4	1893	3.0	-68
Pithorgarh	21.6	32	108.1	738	8.6	-55
Rudraprayag	27.2	30	88.3	445	33.9	52
Udham Sing Nagar	0.5	-89	74.0	4253	0.5	-89
Uttarkashi	36.6	138	103.3	584	17.2	-17
Bihar						
Araria	6.7	291	2.4	26	0.0	-100
Arwal	0.0	-100	0.0	-100	0.0	-100
Aurangabad	0.0	-100	3.4	19	0.0	-100
Banka	0.0	-100	0.0	-100	0.0	-100
Begusarai	0.0	-100	0.0	-100	0.0	-100
Bhabua	0.0	-100	7.9	139	0.0	-100
Bhagalpur	2.3	1	1.6	-35	0.0	-100
Bhojpur	0.0	-100	8.3	388	0.0	-100
Buxar	0.0	-100	0.0	-100	**	**
Darbhanga	0.0	-100	14.8	825	0.0	-100
East Champaran	0.0	-100	22.0	1732	0.0	-100
Gaya	0.0	-100	7.6	321	0.0	-100
Gopalganj	0.0	-100	29.7	1647	0.0	-100
Jahanabad	0.0	-100	1.2	-25	0.0	-100
Jamui	0.0	-100	0.3	-88	0.0	-100
Kathihar	5.3	103	0.0	-100	0.0	-100
Khagadia	16.4	1947	0.0	-100	0.0	-100
Kishanganj	1.9	12	0.0	-100	0.0	-100
Lakhisarai	0.0	-100	0.0	-100	0.0	-100
Madhepura	0.0	-100	4.2	147	0.0	-100
Madhubani	0.0	-100	6.4	220	0.0	-100
Monghyar	**	**	0.4	-87	0.0	-100
Muzaffarpur	0.0	-100	7.8	550	0.0	-100
Nalanda	0.0	-100	2.8	-20	0.0	-100

Nawada	0.0	-100	0.0	-100	0.0	-100
Patna	0.0	-100	6.6	214	0.0	-100
Purnea	3.9	11	1.2	-32	0.0	-100
Rohtas	0.0	-100	9.0	109	0.0	-100
Saharsha	0.0	-100	6.0	233	0.0	-100
Samstipur	1.2	-60	12.1	707	0.0	-100
Saran	0.0	-100	7.1	255	0.0	-100
Sheikpura	0.0	-100	3.0	-9	0.0	-100
Sheohar	**	**	15.0	1567	0.0	-100
Sitamarhi	0.0	-100	0.0	-100	**	**
Siwan	0.0	-100	0.0	-100	**	**
Supaul	4.8	46	5.0	231	0.0	-100
Vaishali	0.0	-100	6.0	445	0.0	-100
West Champaran	0.0	-100	10.3	503	0.0	-100
Jharkhand						
Bokaro	0.9	-76	7.9	203	0.0	-100
Chatra	0.0	-100	7.6	322	0.0	-100
Deoghar	0.0	-100	1.9	27	0.0	-100
Dhanbad	1.2	-74	3.1	-33	0.0	-100
Dumka	5.0	85	5.0	85	0.0	-100
East Singbhum	0.0	-100	1.5	-76	0.0	-100
Garhwa	0.0	-100	12.2	771	**	**
Giridih	2.4	-1	3.5	13	0.3	-78
Godda	7.3	127	4.1	51	0.0	-100
Gumla	**	**	**	**	**	**
Hazaribagh	0.1	-96	9.0	114	0.1	-96
Jamtara	5.7	49	2.6	30	0.0	-100
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderrna	0.0	-100	6.5	161	0.0	-100
Latehar	0.0	-100	4.0	-8	0.0	-100
Lohardagga	0.0	-100	12.0	118	0.0	-100
Pakur	0.0	-100	0.8	-71	0.0	-100
Palamau	0.0	-100	14.6	483	0.0	-100
Ramgarh	0.0	-100	3.0	-32	0.0	-100
Ranchi	0.0	-100	4.1	-40	0.0	-100
Sahebganj	12.8	814	1.0	25	0.0	-100
Saraikela	0.0	-100	0.0	-100	0.0	-100
Simdega	**	**	**	**	0.0	-100
West Singbhum	0.0	-100	1.1	-86	0.0	-100
East Rajasthan						
Ajmer	0.0	-98	10.2	2459	0.0	-100
Alwar	0.0	-100	59.0	2085	1.0	-41
Banswara	0.0	-100	6.1	2967	0.0	-100
Baran	0.0	-100	7.0	900	0.0	-100
Bharatpur	0.0	-100	30.9	1136	0.7	-63
Bhilwara	0.0	-100	12.9	1192	0.0	-100
Bundi	0.0	-100	39.0	5468	0.0	-100
Chittorgarh	0.0	-100	23.4	5741	0.0	-100
Dausa	0.0	-100	25.2	1473	0.0	-100

Dholpur	0.0	-100	33.5	1663	0.0	-100
Dungarpur	0.0	-100	18.8	18733	0.0	-100
Jaipur	0.0	-100	24.0	2079	0.0	-100
Jhalawar	0.0	-100	12.4	1274	0.0	-100
Jhunjhunu	0.5	-81	22.3	1140	0.9	-43
Karauli	0.0	-100	21.3	1230	0.0	-100
Kota	0.0	-100	22.2	2124	0.0	-100
Pratapgarh	0.0	-100	13.6	3300	0.0	-100
Rajsamand	0.0	-100	7.1	1329	0.0	-100
Sawai Madhopur	0.0	-100	23.3	1358	0.0	-100
Sikar	0.0	-100	10.9	625	0.0	-100
Sirohi	0.0	-100	5.3	963	0.0	-100
Tonk	0.0	-100	33.8	2153	0.0	-100
Udaipur	0.0	-100	13.6	4433	0.0	-100
West Rajasthan						
Barmer	0.0	-100	3.0	1410	0.0	-100
Bikaner	0.0	-100	34.3	1920	5.6	457
Churu	0.0	-100	30.1	1784	0.0	-97
Hanumangarh	0.0	-100	39.8	2388	0.0	-100
Jaisalmer	0.0	-100	10.9	2614	2.3	200
Jalore	0.0	-100	0.4	100	0.0	-100
Jodhpur	0.0	-100	8.3	728	0.3	233
Nagaur	0.0	-100	23.2	1832	0.0	-100
Pali	0.0	-100	2.2	175	0.0	-100
Sri Ganganagar	1.7	-32	32.1	1905	2.3	30
Gujarat Region						
Ahmedabad	0.0	-100	3.8	200	0.0	-100
Anand	0.0	-100	16.4	200	0.0	-100
Banaskantha	0.0	-100	0.1	-71	0.0	-100
Baroda	0.0	-100	4.6	200	0.0	-100
Broach	0.0	-100	7.4	200	0.0	-100
DNH	**	**	**	**	**	**
Dahod	0.0	-100	6.6	200	0.0	-100
Daman	0.0	-100	0.0	-100	0.0	-100
Dangs	0.0	-100	5.0	200	0.0	-100
Gandhinagar	0.0	-100	5.2	1200	0.0	-100
Kheda	0.0	-100	1.4	200	0.0	-100
Mehsana	0.0	-100	4.3	4233	0.0	-100
Narmada	0.0	-100	16.7	200	0.0	-100
Navsari	0.0	-100	2.5	200	0.0	-100
Panchmahal	0.0	-100	1.1	200	0.0	-100
Patan	0.0	-100	0.3	-38	0.0	-100
Sabarkantha	0.0	-100	9.4	4577	0.0	-100
Surat	0.0	-100	5.9	200	0.0	-100
Tapi	0.0	-100	3.2	200	0.0	-100
Valsad	0.0	-100	10.4	200	0.0	-100
S K & Diu region						
Amreli	0.0	-100	10.8	200	0.0	-100
Bhavnagar	0.0	-100	6.4	200	0.0	-100

Diu	0.0	-100	3.4	200	0.0	-100
Jamnagar	0.0	-100	1.7	190	0.0	-100
Junagarh	0.0	-100	6.0	200	0.0	-100
Kutch	0.0	-100	2.1	925	0.0	-100
Porbandar	0.0	-100	11.0	10867	0.0	-100
Rajkot	0.0	-100	5.7	200	0.0	-100
Surendranagar	0.0	-100	1.5	200	0.0	-100
Maharashtra & Goa						
Konkan & Goa						
Mumbai City	0.0	-100	13.0	4233	0.0	-100
Mumbai Suburban	0.0	-100	11.3	3667	0.0	-100
North Goa	0.0	-100	40.3	200	0.0	-100
Raigad	0.0	-100	41.0	200	0.0	-100
Ratnagiri	0.0	-100	36.5	200	0.0	-100
Sindhudurg	0.0	-100	45.9	45800	0.0	-100
South Goa	0.0	-100	30.8	200	0.0	-100
Thane	0.0	-100	21.9	200	0.0	-100
Madhya Maharashtra						
Ahmednagar	0.0	-100	33.3	5458	9.7	2333
Dhule	**	**	0.0	-100	**	**
Jalgaon	0.0	-100	20.0	2122	0.0	-100
Kolhapur	0.0	-100	30.0	9903	0.0	-100
Nandurbar	**	**	0.0	-100	3.4	200
Nasik	0.0	-100	21.1	5175	0.0	-100
Pune	0.0	-100	40.0	39888	0.8	275
Sangli	0.0	-100	24.5	12157	4.4	780
Satara	0.0	-100	25.2	12496	0.1	-67
Solapur	0.0	-100	13.8	1875	1.2	480
Marathwada						
Aurangabad	0.0	-100	15.9	1669	1.5	191
Beed	0.0	-100	16.9	1587	10.5	1206
Hingoli	**	**	19.6	833	5.6	522
Jalna	0.0	-100	18.5	1959	2.4	169
Latur	0.0	-100	11.9	467	5.9	270
Nanded	0.0	-100	21.4	2037	2.5	-25
Usmanabad	0.0	-100	14.8	956	3.7	643
Parbhani	0.0	-100	14.4	799	4.4	129
Vidarbha						
Akola	0.0	-100	79.6	5586	4.9	132
Amraoti	0.0	-100	55.0	2797	4.8	302
Bhandara	0.0	-100	59.8	1829	0.0	-100
Buldhana	0.0	-100	22.3	1388	4.3	167
Chandrapur	0.2	-87	40.7	944	6.9	121
Gadchiroli	0.0	-100	27.4	1043	3.6	32
Gondia	0.1	-94	49.7	1281	0.0	-100
Nagpur	4.9	132	50.8	1441	3.2	-36
Wardha	0.0	-100	51.8	1227	0.1	-93
Washim	0.0	-100	37.9	2128	27.3	1506
Yeotmal	0.0	-100	46.0	2201	3.5	46

Odisha						
Angul	0.0	-100	2.2	-75	0.0	-100
Balasore	10.2	22	6.2	-43	0.3	-97
Bargarh	0.0	-100	6.1	3	0.0	-100
Bhadrak	0.0	-100	0.6	-92	1.6	-87
Bolangir	0.0	-100	4.3	-19	0.0	-100
Boudh	0.0	-100	0.7	-93	0.0	-100
Cuttack	0.0	-100	0.1	-99	0.5	-92
Deogarh	0.0	-100	5.6	-6	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.0	-100
Gajapati	1.8	-76	1.0	-87	0.1	-99
Ganjam	0.0	-99	4.1	-34	1.2	-84
Jagatsingpur	3.6	-46	1.1	-85	3.4	-50
Jajpur	0.0	-100	0.3	-98	0.0	-100
Jharsuguda	0.0	-100	3.0	-56	0.0	-100
Kalahandi	0.0	-100	1.0	-80	0.0	-100
Kandhamal	0.6	-87	1.6	-84	1.0	-88
Kendrapara	2.5	-66	3.3	-75	0.0	-100
Keonjhar	0.0	-100	5.2	-54	1.4	-88
Khurda	0.8	-92	0.0	-99	8.8	45
Koraput	0.0	-100	1.1	-71	6.7	203
Malkangiri	3.0	30	2.0	43	6.0	54
Mayurbhanj	0.0	-100	6.5	-53	0.0	-100
Nawapara	0.0	-100	0.4	-92	0.5	-86
Nawarangpur	0.0	-100	2.8	37	0.0	-100
Nayagarh	0.0	-100	3.5	-57	0.9	-82
Puri	0.0	-100	0.0	-100	0.2	-94
Rayagada	0.0	-100	0.9	-85	0.1	-99
Sambalpur	0.0	-100	6.8	15	0.0	-100
Sonepur	0.0	-100	0.3	-94	0.0	-100
Sundargarh	0.0	-100	1.4	-78	0.0	-100
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	9.3	-10	0.0	-100	0.0	-100
North & Middle Andaman	0.0	-100	0.0	-100	0.0	-100
South Andaman	0.5	-89	0.0	-100	0.0	-100
GWB						
Bankura	0.8	71	2.2	-53	0.0	-100
Birbhum	3.8	-5	3.5	25	0.3	-93
Burdwan	4.5	-18	2.4	-47	0.0	-100
East Midnapore	0.1	-98	11.5	62	0.0	-100
Hooghly	2.8	-72	4.3	29	0.9	-67
Howrah	1.0	-82	0.0	-100	0.0	-100
Kolkata	0.4	-95	8.8	26	12.3	186
Murshidabad	3.5	-8	0.5	-85	0.0	-100
Nadia	2.6	-20	3.5	35	5.1	6
24 Pargana (N)	0.5	-91	6.0	62	4.0	10
Purulia	0.1	-99	1.2	-78	0.0	-100
24 Pargana (S)	0.0	-100	5.9	-45	3.0	-54

West Midnapore	4.4	51	9.3	10	0.0	-100
SHWB & Sikkim						
Cooch Behar	11.7	194	0.7	-78	0.0	-100
Darjeeling	1.9	-76	16.3	133	0.0	-100
East Sikkim	0.7	-94	23.5	74	0.0	-99
Jalpaiguri	7.8	65	9.3	93	0.0	-100
Malda	0.6	-81	0.5	-81	0.0	-100
North Dinajpur	5.3	200	1.5	-12	0.0	-100
North Sikkim	2.2	-92	31.9	61	22.8	-44
South Dinajpur	7.7	31	8.1	212	0.0	-100
South Sikkim	0.0	-100	7.7	-43	0.0	-100
West Sikkim	1.3	-95	5.3	-73	1.5	-96
Karnataka						
Coastal Karnataka						
Dakshina Kannada	2.0	297	1.4	200	17.0	552
Udupi	0.0	-100	0.0	-100	12.4	854
Uttara Kannada	0.0	-100	17.4	200	5.0	1567
N I Karnataka						
Bagalkote	0.0	-100	3.0	333	4.3	512
Belgavi	0.0	-100	20.4	4993	9.6	1272
Bidar	0.0	-100	21.7	2607	32.2	1190
Dharwad	0.0	-100	1.2	31	61.4	15250
Gadag	0.0	-100	6.4	959	35.8	8860
Haveri	0.0	-100	0.2	-43	18.1	3529
Kalaburgi	0.0	-100	5.7	1314	29.0	2800
Koppal	0.0	-100	1.0	156	12.4	1666
Raichur	0.0	-100	0.6	-31	17.1	1329
Vijayapura	0.0	-100	1.0	-26	10.2	1178
Yadgir	0.0	-100	3.0	273	22.0	3571
S I Karnataka						
Ballari	0.0	-100	21.4	919	0.3	-82
Bangalore Rural	0.0	-100	0.2	0	17.8	1880
Bangalore Urban	0.0	-100	21.5	794	6.9	431
Chamarajanagar	0.0	-100	18.2	856	11.6	274
Chikaballapur	0.0	-100	35.2	1752	4.4	130
Chikkamagaluru	0.4	-68	0.0	-96	25.4	520
Chitradurga	0.0	-100	4.1	929	12.2	774
Davangere	0.0	-100	0.0	-100	7.5	732
Hassan	0.0	-100	0.0	-100	25.4	551
Kodagu	4.8	119	0.1	-90	21.1	358
Kolar	0.0	-100	32.9	2252	15.1	482
Mandya	0.0	-100	5.2	418	8.6	246
Mysuru	0.0	-100	4.9	714	19.6	600
Ramanagara	0.0	-100	5.3	250	11.9	396
Shivamogga	0.0	-100	0.4	19	16.4	1070
Tumakuru	0.0	-100	2.1	63	9.2	253
Kerala						
Alappuzha	0.0	-100	27.4	335	33.3	389
Kannur	0.0	-100	1.3	567	7.9	231

Ernakulam	0.0	-100	9.7	185	16.0	171
Idukki	0.0	-100	48.6	465	16.4	131
Kasaragod	0.0	-100	6.0	200	0.0	-100
Kollam	0.0	-100	20.0	104	8.2	-34
Kottayam	0.0	-99	25.9	685	25.9	142
Kozhikode	0.0	-100	11.3	1510	10.1	236
Malappuram	0.0	-100	3.0	900	10.1	407
Palakkad	0.0	-100	7.9	393	8.3	136
Pathanamthitta	13.4	-94	25.8	165	27.6	101
Thiruvananthapuram	0.0	-100	6.8	61	17.6	226
Thrissur	0.0	-100	0.1	-94	8.2	214
Wynad	0.0	-100	0.5	-67	32.4	1309
Tamil Nadu						
Ariyalur	0.0	-100	0.0	-100	0.0	-100
Chennai	0.0	-100	0.0	-100	0.0	-100
Coimbatore	0.0	-100	7.5	200	10.0	42
Cuddalore	0.0	-100	0.4	-93	0.0	-100
Dharmapuri	0.0	-100	15.6	499	19.8	360
Dindigul	0.0	-100	9.7	150	4.2	-25
Erode	0.0	-100	3.7	74	16.1	222
Kanchipuram	0.0	-100	0.0	-100	0.0	-100
Kanyakumari	0.0	-100	22.0	261	8.9	58
Karikal	0.0	-100	0.0	-100	0.0	-100
Karur	0.0	-100	1.8	9	6.6	64
Krishnagiri	0.0	-100	2.2	55	18.9	425
Madurai	0.0	-100	0.0	-100	0.2	-96
Nagapattinam	0.0	-100	0.0	-100	0.0	-100
Namakkal	0.0	-100	1.5	3	2.3	-12
Nilgiris	0.0	-100	3.8	-28	75.8	434
Perambalur	0.0	-100	1.0	-33	0.0	-100
Puducherry	0.0	-100	0.2	-95	0.0	-100
Pudukottai	0.0	-100	3.2	18	0.0	-100
Ramanathapuram	0.0	-100	0.5	-91	0.0	-100
Salem	0.0	-100	7.8	223	23.4	550
Sivaganga	0.0	-100	3.1	-10	0.0	-100
Thanjavur	0.0	-100	0.4	-91	0.0	-100
Theni	0.0	-100	16.5	162	18.7	89
Tirunelveli	1.3	-100	21.7	96	7.7	-31
Tirupur	0.0	-100	12.6	742	15.0	234
Tiruvallur	0.0	-100	0.1	-97	1.2	-7
Tiruvannamalai	0.0	-100	1.5	-23	0.3	-93
Tiruvarur	0.0	-100	0.0	-100	0.0	-100
Toothukudi	0.0	-100	7.8	6	0.5	-92
Trichy	0.0	-100	2.0	-5	0.0	-100
Vellore	0.0	-100	5.5	403	5.6	117
Villupuram	0.0	-100	0.0	-100	0.0	-100
Virudhunagar	0.0	-100	10.0	133	5.7	-30
Andhra Pradesh						
Coastal Andhra Pradesh						

East Godavari	0.0	-100	0.0	-100	0.4	-91
Guntur	0.0	-100	0.7	-33	0.0	-100
Krishna	0.0	-100	0.1	-92	2.2	-30
Nellore	0.0	-100	133.6	8808	9.0	460
Prakasam	0.0	-100	2.7	28	0.4	-87
Sirkakulam	0.1	-98	0.0	-100	1.4	-62
Visakhapatnam	0.2	-96	0.0	-99	7.4	100
Vizianagram	0.6	-86	1.0	-75	2.6	-29
West Godavari	0.0	-100	0.9	-64	0.0	-100
Rayalaseema						
Anantapur	0.0	-100	3.7	149	2.4	13
Chittoor	0.0	-100	56.4	4598	8.2	193
Cuddapah	0.0	-100	8.2	1274	0.0	-100
Kurnool	0.0	-100	45.5	4453	1.9	-9
Telangana						
Adilabad	0.0	-100	27.2	777	21.3	913
Hyderabad	0.0	-100	14.4	749	2.5	-36
Karimnagar	0.0	-100	17.1	755	18.5	516
Khammam	0.0	-100	2.8	39	3.8	52
Mehabubnagar	0.0	-100	13.7	1417	10.4	697
Medak	0.0	-100	14.5	1012	31.9	999
Nalgonda	0.0	-100	1.5	32	1.5	-59
Nizamabad	0.0	-100	22.7	1789	14.0	382
Rangareddy	0.0	-100	13.9	3370	24.0	1312
Warangal	0.0	-100	6.3	426	23.2	604

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, Kojjapori, Laujuli and Hasakumra.

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 : PusaSawani, ArkaAnamika, ParbhdaniKranti.

Jute : JRC 321(Sonali) and UPC 94 (Reshma).

Kharif Maize : Hybrid variety : Ganga 5, Hi starch.

Composite variety like NLD, Dhawal, Naviot, Diara.

Cucumber: PusaSanyog, Chinese Green etc.

Ridge Gourd : PusaNasdar and selected local varieties.

Sugarcane : Kolong, Luhit, Dhansiri, Co 1148.

Arunachal Pradesh

Jhum rice: Bhalum1,2,3 & 4.

Manipur

Okra : PusaSawani, ArkaAnamika.

Tripura:

Urd: T-9, PanthUrd 35.

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

Cowpea : Maharaja, KasiKanchan

Meghalaya

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

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, Ultra 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-snowball

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 Utakarsha.

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

Gujarat

Groundnut: GG-2, 4 and GG-20, TAG-24, TG-37-A, TPG-41, GG-2, GJG-3.

Sesamum: G.Til-2, G.Til-3.

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

Green gram: Guj. Mung-3, 4.

Brinjal: Junagadh oblong, Junagadh long, Guj. Bringle-2.

Lady' finger: Guj. Hy.-1 & 2.

Ridge gourd: Pusa nasdar, Jaipuri.

Bottle gourd: Junagadh tender long, Pusa summer prolific long.

Sponge Gourd: Pusa chikni.

Bitter Gourd: Priya, Pusa domosmi.

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

Watermelon: Sugar baby, Arka jyoti.