



# *National Agromet Advisory Service Bulletin*

**Friday 11<sup>th</sup> December 2015**

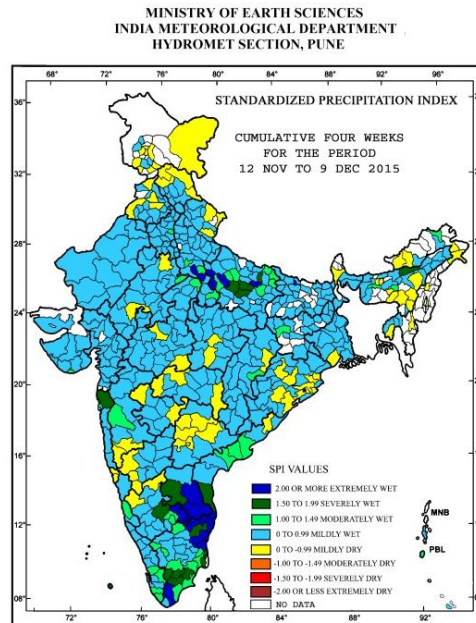
**(For the period 11<sup>th</sup> to 15<sup>th</sup> December 2015)**



***Issued by***

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

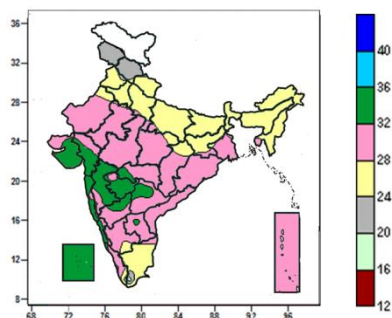
**Standardised Precipitation Index**  
**Four Weekly for the Period 12<sup>th</sup> November to 9<sup>th</sup> December 2015**



- Extremely/severely wet conditions experienced in few districts of Andhra Pradesh; Tamil Nadu & Puducherry; Sonitpur district of Assam; Sheohar district of Bihar; Ambedkar Nagar, Kannauj, Kanpur Dehat, Pratapgarh, Raebareli, Sant Kabir Nagar, Sultanpur, Unnao, Etawah, Firozabad districts of Uttar Pradesh; Thane district of Konkan & Goa; Kolar, Tumkur, Chickballapur districts of Karnataka; Lakshadweep district of Lakshadweep Islands.
- Rest of the country experienced moderately wet/mildly dry/wet conditions.

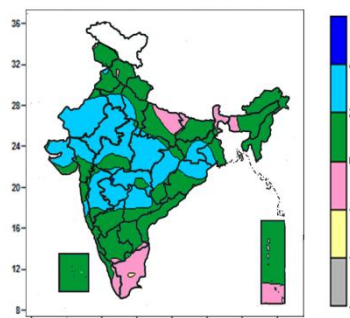
**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 09.12.2015**

**Actual Mean Maximum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 09.12.2015**



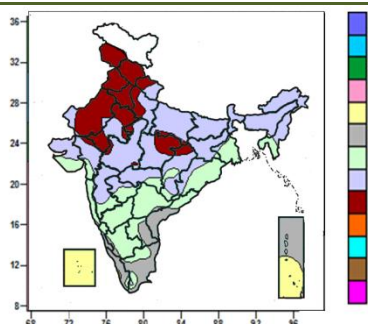
- Mean maximum temperature was between 28 to  $36^{\circ}\text{C}$  over the country except Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, Bihar, Sub-Himalayan West Bengal, many parts of North East India, Uttar Pradesh, Jharkhand, Tamil Nadu, some parts of Chhattisgarh and isolated pockets of Gangetic West Bengal, Rajasthan, East Madhya Pradesh, South Interior Karnataka and Kerala where it was between 16 and  $28^{\circ}\text{C}$ .

**Mean Maximum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 09.12.2015**



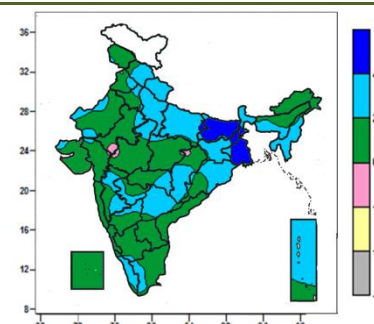
- Mean maximum temperature was above normal by 2 to  $4^{\circ}\text{C}$  over East Rajasthan, Marathwada, many parts of West Rajasthan, Haryana & Delhi, Central India, Jharkhand, Gujarat, Telangana, Madhya Maharashtra, Vidarbha, some parts of West Uttar Pradesh, Gangetic West Bengal, Odisha, Konkan and isolated pockets of Punjab, East Uttar Pradesh and North Interior Karnataka.
- Mean maximum temperature was below normal by 2 to  $4^{\circ}\text{C}$  over isolated pockets of Tamil Nadu.
- It was normal to near normal in remaining parts of the Country.

**Actual Mean Minimum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 09.12.2015**



- Mean minimum temperature was between 8 to  $12^{\circ}\text{C}$  over Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana & Delhi, many parts of Rajasthan, some parts of Uttarakhand, West Uttar Pradesh, East Madhya Pradesh and isolated pockets of East Uttar Pradesh, West Madhya Pradesh, Gujarat region and Chhattisgarh.
- It was between 12 to  $16^{\circ}\text{C}$  over rest of the country except Tripura, Konkan & Goa, Karnataka, Telangana, Andhra Pradesh, Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Islands, many parts of Gangetic West Bengal, Odisha, some parts of Mizoram, Gujarat, Madhya Maharashtra Vidarbha, Marathwada and isolated pockets of Chhattisgarh where it was between 16 and  $28^{\circ}\text{C}$ .

**Mean Minimum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 09.12.2015**

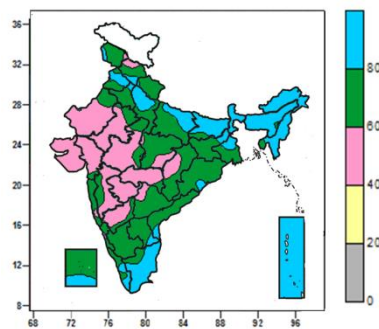


- Mean minimum temperature was above normal by 4 to  $6^{\circ}\text{C}$  over many parts of Bihar, Gangetic West Bengal, some parts of Sub-Himalayan West Bengal and isolated pockets of East Uttar Pradesh and Jharkhand.
- Mean minimum temperature was above normal by 2 to  $4^{\circ}\text{C}$  over Uttarakhand, Jharkhand, Manipur, Mizoram, Tripura, many parts of Himachal Pradesh, Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Nagaland, Odisha, Chhattisgarh, Telangana, Madhya Maharashtra, Kerala, Andaman & Nicobar Islands, some parts of Punjab, Haryana, West Rajasthan, West Madhya Pradesh, Vidarbha, Marathwada, Tamil Nadu and isolated pockets of East Rajasthan, Gangetic West Bengal, Gujarat State, East Madhya Pradesh and Interior Karnataka.
- It was normal to near normal in remaining parts of the country.



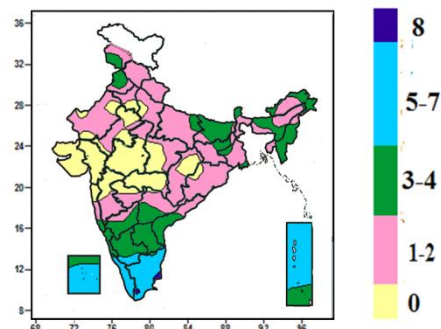
## Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 09.12.2015

### Relative Humidity (%) over India for the week ending 09.12.2015



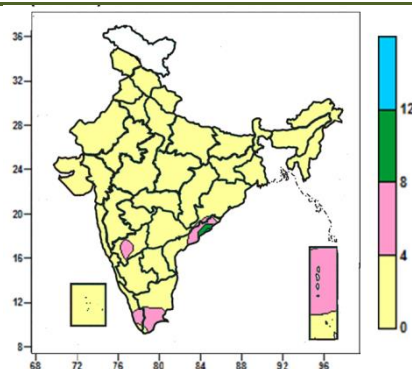
- Mean Relative humidity was above 80% over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Andaman & Nicobar Islands, many parts of Bihar, Tripura, Tamil Nadu, some parts of Punjab, Uttar Pradesh, Gangetic West Bengal, Kerala, Lakshadweep and isolated pockets of Jammu & Kashmir, Himachal Pradesh, Haryana, Jharkhand, Odisha, Coastal Andhra Pradesh, Rayalaseema.
- Mean Relative humidity was between 60 to 80% over rest of the country except Marathwada, many parts of Rajasthan, Gujarat, West Madhya Pradesh, Madhya Maharashtra, Vidarbha, North Interior Karnataka, some parts of Himachal Pradesh, East Madhya Pradesh, Chhattisgarh and isolated pockets of Jammu & Kashmir, Konkan, Telangana where it was between 40 to 60%.

### Cloud amount (okta) over India for the week ending 09.12.2015



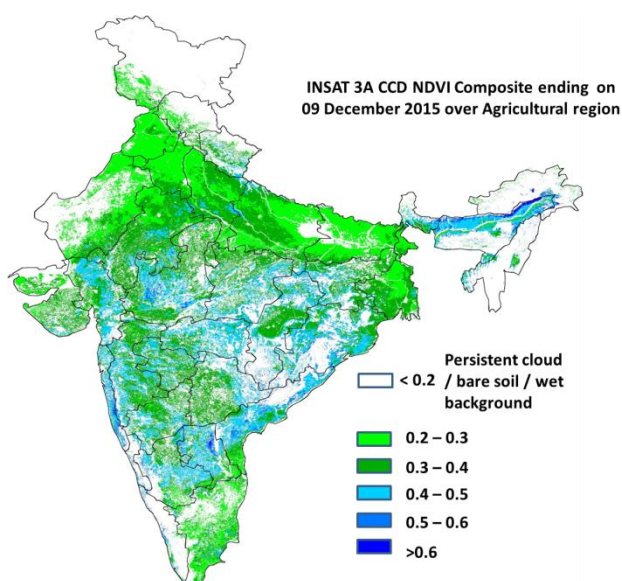
- Sky remained cloudy (8 okta) over isolated pockets of Tamil Nadu.
- Sky remained cloudy (5-7okta) over many parts of Kerala, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, some parts of South Interior Karnataka
- Sky remained partly cloudy/mainly clear/clear sky (3 to 4/ 1 to 2/0 okta) over rest of the country.

### Wind speed (knots) over India for the week ending 09.12.2015



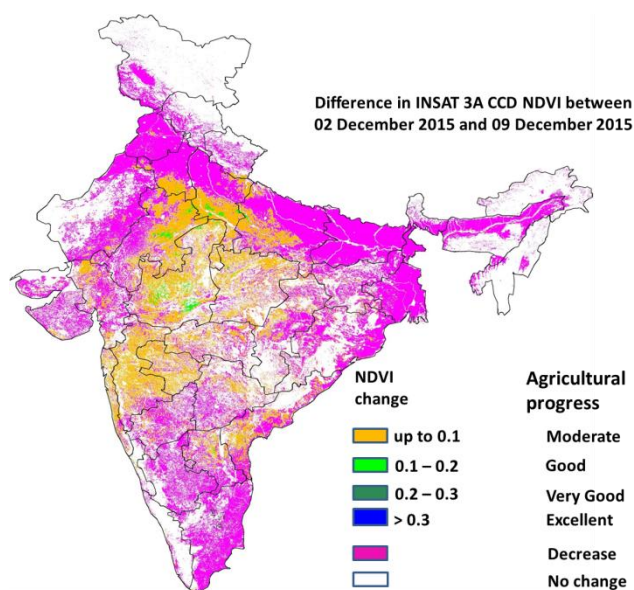
- Mean wind speed was 8 to 12 knots over isolated pockets of Coastal Andhra Pradesh.
- Mean wind speed was 4 to 8 knots over many parts of Andaman & Nicobar Islands, some parts of Tamil Nadu, Kerala, North Interior Karnataka and Coastal Andhra Pradesh and isolated pockets of Odisha.
- It was less than 4 knots over rest of the country.

## INSAT 3A CCD NDVI COMPOSITE ENDING ON 9<sup>th</sup> December 2015 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is good in some patches over coastal and western Andhra Pradesh, Odisha, Assam, Maharashtra, Vidarbha, Madhya Pradesh, Gujarat, Karnataka, Jharkhand and Telangana, where NDVI varies from 0.4 to 0.6. Agricultural growth was moderate 0.2 to 0.4 over most parts of Rajasthan, Punjab, Haryana, Uttar Pradesh, West Bengal, Bihar and Tamil Nadu.

### Difference in INSAT 3A CCD NDVI between 2<sup>nd</sup> and 9<sup>th</sup> December 2015



- Decrease in NDVI was observed in Uttar Pradesh, West Rajasthan, Bihar, West Bengal, Odisha, Gujarat, Punjab, Haryana, Tamil Nadu, Karnataka, Kerala, Telangana, Coastal Andhra Pradesh and North East regions. A moderate progress (up to 0.1) in NDVI is observed over Maharashtra, Madhya Pradesh, patches in Andhra Pradesh, remaining parts of Telangana, East Rajasthan and southern part of West Uttar Pradesh.

- INSAT 3A CCD NDVI composite maps for the week ending on 9<sup>th</sup> December 2015 for different States are given below in Annexure II.

## Weather Forecast for next 5 days valid upto 0830 hours of 16<sup>th</sup> December 2015

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- Moderate fog would occur at isolated pockets of Punjab, Haryana, Chandigarh & Delhi, north Rajasthan, Gangetic West Bengal, Odisha, Assam Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 2-3 days.
- Fall in minimum temperatures by 2-4°C over northwest India from tomorrow and over central India from 13<sup>th</sup> December.

### 5 Day Rainfall Forecast (MID DAY) 11<sup>th</sup> December 2015

Met Sub-divisions	11 Dec	12 Dec	13 Dec	14 Dec	15 Dec
1. Andaman & Nicobar Islands	ISOL	ISOL	ISOL	ISOL	ISOL
2. Arunachal Pradesh	SCT	FWS	SCT	ISOL	ISOL
3. Assam & Meghalaya	ISOL	SCT	ISOL	DRY	DRY
4. N. M. M. & T.	ISOL	ISOL	ISOL	ISOL	DRY
5. S.H. West Bengal & Sikkim	DRY	ISOL	ISOL	DRY	DRY
6. Gangetic West Bengal	DRY	DRY	ISOL	ISOL	DRY
7. Orissa	DRY	DRY	ISOL	ISOL	DRY
8. Jharkhand	DRY	DRY	DRY	DRY	DRY
9. Bihar	DRY	DRY	DRY	DRY	DRY
10. East Uttar Pradesh	ISOL	DRY	DRY	DRY	DRY
11. West Uttar Pradesh	ISOL	DRY	DRY	DRY	DRY
12. Uttarakhand	FWS	ISOL	DRY	DRY	DRY
13. Haryana, Chd & Delhi	ISOL	DRY	DRY	DRY	DRY
14. Punjab	ISOL	DRY	DRY	DRY	DRY
15. Himachal Pradesh	WS	ISOL	DRY	DRY	DRY
16. Jammu & Kashmir	WS	ISOL	DRY	DRY	DRY
17. West Rajasthan	DRY	DRY	DRY	DRY	DRY
18. East Rajasthan	DRY	DRY	DRY	DRY	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
21. Gujrat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	ISOL	DRY	DRY	DRY	DRY
24. Madhya Maharashtra	ISOL	DRY	DRY	DRY	DRY
25. Marathwada	ISOL	ISOL	DRY	DRY	DRY
26. Vidharbha	ISOL	ISOL	DRY	DRY	DRY
27. Chhattisgarh	ISOL	ISOL	ISOL	DRY	DRY
28. Coastal Andhra Pradesh	DRY	DRY	ISOL	ISOL	ISOL
29. Telangana	ISOL	ISOL	ISOL	ISOL	ISOL
30. Rayalaseema	DRY	DRY	DRY	DRY	DRY
31. Tamilnadu & Puducherry	SCT	SCT	SCT	ISOL	ISOL
32. Coastal Karnataka	ISOL	ISOL	ISOL	ISOL	DRY
33. North Interior Karnataka	ISOL	ISOL	ISOL	ISOL	DRY
34. South Interior Karnataka	ISOL	ISOL	ISOL	DRY	DRY
35. Kerala	SCT	SCT	SCT	ISOL	ISOL
36. Lakshadweep	WS	SCT	SCT	SCT	ISOL

#### % Station Reporting Rainfall

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

### Weather Warning during next 5 days

- **11 December (Day 1):** Heavy rain/snow would occur at isolated places over Jammu & Kashmir and Himachal Pradesh. Dense to very dense fog would occur at isolated pockets of Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, north Rajasthan. Dense fog at isolated pockets of Bihar, West Bengal & Sikkim and Odisha.
- **12 December (Day 2):** Dense to very dense fog would occur at isolated pockets of Punjab, Haryana,

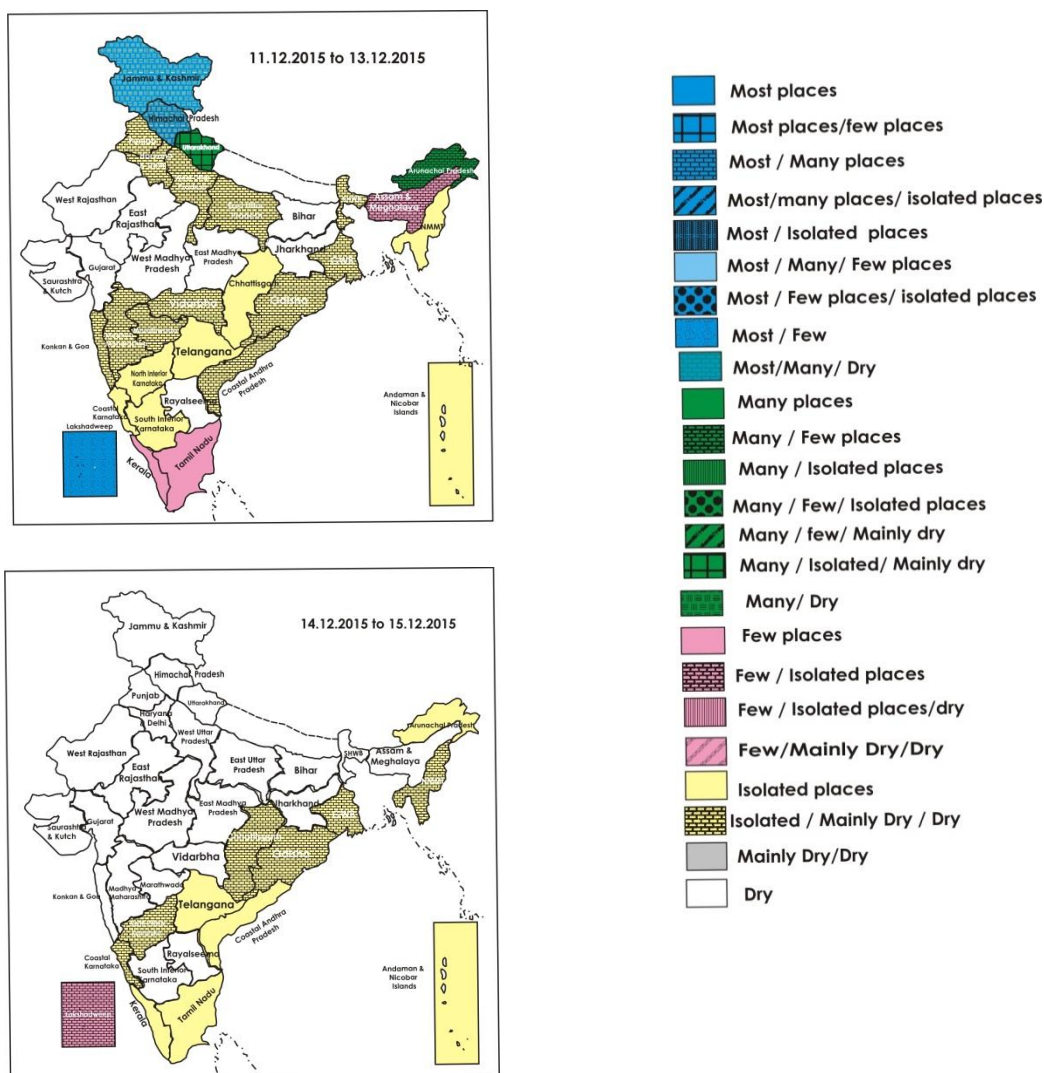
Chandigarh & Delhi, Uttar Pradesh, north Rajasthan. Dense fog at isolated pockets of Bihar, West Bengal & Sikkim and Odisha.

- **13 December (Day 3):** Moderate to dense fog would occur at isolated pockets of Haryana, Chandigarh & Delhi, Uttar Pradesh and north Rajasthan.
- **14 December (Day 4):** No weather warning.
- **15 December (Day 5):** No weather warning.

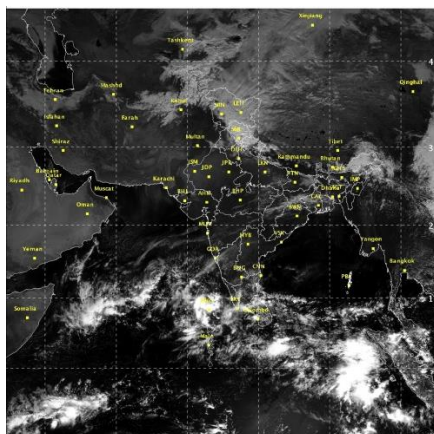
### Weather Outlook for subsequent 2 days from 16<sup>th</sup> to 18<sup>th</sup> December 2015

- Rain/thundershower would occur at isolated places over south peninsular India and northeastern states.
- Rain/snow would occur at isolated places over western Himalayan region.

### Weather Forecast Map (Valid upto 0830 hours of 16<sup>th</sup> December, 2015)







### Salient Advisories

- In the North Eastern Zone and Cauvery Delta Zone of **Tamil Nadu**, due to rain during last few weeks, flooding/water logging is reported in standing crops like *Samba/Thaladi* rice, sugarcane and vegetable crop fields. Drain out excess water from the crop fields. In Karaikal and Puducherry districts of Coastal Zone, drain out excess water from the rice fields maintaining a thin film of water and undertake gap filling by thinning the excess seedlings tillers or using fresh *Thaladi* seedlings. Undertake foliar spray of 1% Urea (5 kg Urea in 500 litres of water/ha) along with 0.5 %  $\text{ZnSO}_4$  (2.5 kg in 500 litres of water) on a non rainy day and apply top dressing with 80 kg of urea, 20 kg of Potash and 25 kg of  $\text{ZnSO}_4$  (separately) for one hectare of rice after recovery.
- In the Krishna Godavari Zone of **Andhra Pradesh**, undertake sowing of *rabi* black gram, green gram and Bengal gram using the realized rainfall, spray 5% salt solution for prevention of pre-harvested sprouting on rice, if the crop is affected due to recent rains and undertake harvesting of *kharif* rice, maize, black, red and green gram. In the Southern Zone, continue sowing of *rabi* groundnut (Dharani, Kadiri-6, Narayan, TAG-24, ICGV-9114, TLG-45), sunflower, red gram, jowar and other fodder crops and new rice nurseries (NLR-34449, MTU-1010) in areas where nurseries were damaged due to heavy rains.
- As dense to very dense fog would occur at isolated pockets of **Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh** and **north Rajasthan**, dense fog would occur at isolated pockets of **Bihar, West Bengal & Sikkim, Odisha** and moderate fog would occur at isolated pockets of **Assam, Meghalaya, Nagaland, Manipur, Mizoram** and **Tripura** in the morning hours during next 2 days, monitor standing crops for incidence of pest and diseases and potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
- As rain/snow would occur at most places in **Jammu & Kashmir** and **Himachal Pradesh** on 11<sup>th</sup> December along with heavy rain/snow at isolated places, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields.
- As dry weather is prevailing, apply irrigation in wheat at CRI stage in **Rajasthan, Madhya Pradesh, Gujarat, Chhattisgarh, Uttar Pradesh** and **Uttarakhand**.
- Complete sowing of Bengal gram in **Chhattisgarh, Rajasthan** and **Uttar Pradesh** and continue sowing of mustard/rapeseed in **Assam & Meghalaya, West Bengal & Sikkim, Bihar, Jharkhand, Odisha, Chhattisgarh, Uttar Pradesh** and **Uttarakhand** with irrigation facilities. Complete sowing of normal varieties of wheat in **Punjab, Haryana, Rajasthan, Madhya Pradesh, Bihar, Jharkhand** and **Uttar Pradesh** under assured irrigation.
- In Western Zone and Undulating Plain Zone of **Punjab**, due to prevailing foggy weather condition, there is chances of attack of late blight in potato crop, for control, spray Indofil-M-45 / Kavach / Antracol @ 500-700 g per acre or Blitox @ 750-1000 g per acre in 250-350 litres of water per acre at weekly interval.



## Detailed Zonewise Agromet Advisories

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



**Banana**



**Groundnut**



**Land preparation/sowing**



**Cotton**

- **Realised Rainfall:** Rainfall occurred in all the districts of Tamilnadu except Dharmapuri, Erode, Krishnagiri and Vellore; Alappuzha, Ernakulam, Idukki, Kollam, Kottayam, Thiruvananthapuram and Thrissur districts of Kerala; Nellore district of Coastal Andhra Pradesh. Weather remained mainly dry over rest of the region.
- **Advisories:**
  - **Tamil Nadu:**
    - In the North Eastern Zone and Cauvery Delta Zone, due to heavy rain during past few weeks, flooding/ water logging is reported in standing crops like *Samba/Thaladi* rice, sugarcane and vegetable crop fields. Drain out excess water from the crop fields.
    - In Karaikal and Puducherry districts of Coastal Zone, drain out excess water from the rice fields maintaining a thin film of water and undertake gap filling by thinning excess seedlings tillers or using fresh *Thaladi* seedlings. Undertake foliar spray of 1% Urea (5 kg Urea in 500 litres of water/ha) along with 0.5 % ZnSO<sub>4</sub> (2.5 kg in 500 litres of water) on a non rainy day and apply top dressing with 80 kg of urea, 20 kg of Potash and 25 kg of ZnSO<sub>4</sub> (separately) for one hectare of rice after recovery.
    - In the South Zone, drain out excess water from rice, cotton, green and black gram, maize, sorghum, pearl millet, sunflower, sugarcane and chilli crop fields. Protect banana crop from strong wind by providing support. Undertake harvesting of matured blackgram and greengram crops in clear weather.
    - In the Western Zone, high soil moisture and humidity is congenial for incidence of leaf spot disease in turmeric. To control, spray Carbendazim @ 500g in 500 litres water per hectare.
    - Present rainy and wet weather conditions are congenial for incidences of bacteria leaf blight and blast in rice in the North Western Zone. Undertake foliar spraying of *Pseudomonas* @ 2 g and *Tricoderma Viride* @ 2g/litre of water. If the incidence is severe, go for foliar spraying of *Bacteriamycin* @ 6 g/acre and Copper Oxychloride @ 2 g/litre of water on a non rainy day.
    - In the High Altitude Hilly Zone, incidence of thrips is observed in vegetables. To control thrips, spray Dimethoate 30 % EC @ 1ml/litre of water on a non rainy day with any sticking agent.
  - **Andhra Pradesh:**
    - In the Scarce Rainfall Zone, continue sowing of *rabi* groundnut.
    - In the Krishna Godavari Zone, undertake sowing of *rabi* black gram, green gram and Bengal gram using the realized rainfall, spray 5 % salt solution for prevention of pre-harvested sprouting on rice, if the crop is affected due to recent rains and undertake harvesting of *kharif* rice, maize, black, red and green gram.
    - In the Southern Zone of Andhra Pradesh, continue sowing of *rabi* groundnut (Dharani, Kadiri-6, Narayan, TAG-24, ICGV-9114, TLG-45), sunflower, redgram, jowar and other fodder crops and new rice nurseries (NLR-34449, MTU-1010) in areas where nurseries were damaged due to heavy rains.
    - In the Scarce Rainfall Zone, sucking pest and pink boll worm incidence was noticed in cotton due to prevailing weather conditions. To control sucking pest, spray Thiodicarb @ 1.5g/litre of water and Cypermethrin @ 1ml/litre of water to control pink boll worm.
    - Drain out excess water from blackgram and greengram fields and apply Copper Oxychloride @ 3g and Mancozeb @ 2.5 g/litre of water at vegetative stage to avoid leaf spot and root rot diseases in the Southern Zone.
  - **Telangana:**
    - In the Southern Telangana Zone, continue nursery sowing of short duration varieties of rice upto 1<sup>st</sup> fortnight of December.
    - In the Northern Telangana Zone, continue harvesting of rice and picking cotton in clear weather.
    - In the Northern Telangana Zone, incidence of thrips in chillies and leaf galls & thrips in mangoes is noticed in some parts of district due to prevailing weather conditions. Spray Monocrotophos @ 1.6 ml/litre of water to control leaf galls & thrips and 1.5 g Acephate (or) Spinosad @ 0.3 ml/litre of water to control thrips.
    - In the Southern Telangana Zone, incidences of white fly, aphids and thrips were noticed in different vegetable crops. To control white fly, spray Traizophos @ 2 ml or Acetamiprid @ 0.2 g per litre of water, Dimethoate @ 2 ml per litre of water to control aphids and Acephate @ 1.5 g per litre or Fipronil @ 2 ml per litre of water to control thrips.

- **Karnataka:**
  - Continue harvesting of ragi and groundnut in the Eastern Dry Zone. Continue harvesting of rice in Coastal Zone and Southern Dry Zone.
  - Continue harvesting of rice and maize in the Southern Transition Zone on bright sunny days.
  - Continue planting of sugarcane in the North East Dry Zone, harvesting of rice and cotton picking in the North East Dry and Hill Zone.
  - Undertake land preparation for sowing of pulses like Black gram and Green gram after harvesting of rice in the Southern Dry Zone and Hill Zone.
- **Kerala:**
  - Continue cultivation of winter vegetables like cabbage and cauliflower in the Central Zone.
  - In the Problem Area Zone, prevailing weather conditions are congenial for incidences of bacterial wilt in bitter melon, cowpea and solanaceous vegetables and downy mildew in cucurbits. To control bacterial wilt, undertake drenching with 1% Bleaching Powder solution @ 10g/litre of water and spray Indofil @ 4g/litre of water to control downy mildew on a non rainy day.
  - In the Central Zone, leaf folder attack is observed in rice (panicle initiation stage) fields. To control it, use trichogramma cards @ 2CC per acre and replace the cards every two weeks. If the attack is severe, spray Quinalphos @ 2ml/ litre of water on a non rainy day.
  - In the Southern Zone, there is chance of mosaic disease in bhindi due to prevailing weather conditions. Apply Rogor (Dimethoate) @ 1.5 ml/litre of water to control vectors like white fly, green hopper etc. on a non rainy day and undertake uprooting and destruction of affected plants and collateral hosts.
  - Suitable varieties for sowing are given in Annexure III.
- **Animal Husbandry**
  - In the North Eastern Zone of Tamil Nadu, avoid feeding of wet dry fodders to the animals which will prevent detrimental effect caused by aflatoxin and other mycotoxin, dry the grains used for the preparation concentrates and keep them free from fungal growth, undertake fumigation of livestock shed by using neem and notchi leaves to keep the mosquitoes and other vectors away from the animals, keep sheep and goats in elevated area to avoid foot rot and apply neem oil to the foot, avoid stagnation of water nearby animal shed to prevent vector born diseases to the animals.
  - Increase energy and adjust other nutrients in the poultry feed by using fresh feed and high moisture maize with caution in the North Western Zone of Tamil Nadu. Protect the poultry shed against high wind in the Western Zone.
  - Vaccinate the live stock for Black Quarter and foot and mouth diseases in the North East Transition Zone of Karnataka.
  - Due to low temperature in morning and night hours, maintain the optimum room temperature in Sericulture, Poultry and Dairy unit by providing electric bulb for creating warm room temperature in the Southern Dry Zone of Karnataka.

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



**Mustard**



**Land preparation/sowing**



**Okra**



**Cabbage**

- **Realised Rainfall:** Rainfall occurred in Lower Dibang Valley district of Arunachal Pradesh; Chirang, Goalpara, Kamrup Metro and Sonitpur districts of Assam and North Tripura district of Tripura. Mainly dry weather prevailed over remaining parts of the region.
  - **Advisories:**
    - As moderate fog would occur at isolated pockets of Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura in the morning hours during next 2 days, monitor standing crops for incidence of pest and diseases and potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
  - **Assam, Meghalaya & Arunachal Pradesh:**
    - In Lower Brahmaputra Valley Zone, continue nursery sowing of *boro* rice with varieties IR50, Cauvery, Banglami, Joymati, Bishnuprasad, Jyotiprasad, Kanaklata Swarnav etc. are suitable particularly for LBVZ for December sowing. Continue harvesting of *Sali* rice. Complete sowing of rapeseed & mustard.
    - In Barak Valley Zone, continue nursery bed preparation for *boro* rice, cauliflower, cabbage, knol khol and complete planting of potato.



- In Central Brahmaputra Valley Zone of Assam, continue nursery sowing of *boro* rice, sowing of wheat, *rabi* pulses and nursery sowing of cole crops. Continue the harvesting and threshing of matured *Sali* rice. Relay cropping with pea, linseed, lathyrus etc. in the rice field may be a profitable practice for farmers. For, relay cropping, farmers are advised to sow suitable varieties of pea, linseed, lathyrus etc in standing crop of *Sali* paddy at 20-25 days before harvesting of the crop.
- In North Bank Plain Zone, continue sowing of rapeseed & mustard, nursery sowing of cabbage, cauliflower, brinjal, tomato and knol khol and planting of potato. Continue harvesting of matured *Sali* rice.
- In Upper Brahmaputra Valley Zone of Assam, continue nursery sowing of *boro* rice and harvesting of *Sali* rice.
- In Hill Zone of Assam, continue nursery sowing of *boro* rice and land preparation and sowing of lentil, early variety potato and planting of winter vegetables.
- In Arunachal Pradesh, complete transplanting of cole crops (cabbage, cauliflower, broccoli, knolkhol etc.) and harvesting of rice.
- In Meghalaya, continue sowing of pea, lentil & toria under zero tillage in harvested rice fields.
- In Hill Zone, North Bank Plain Zone and Lower Brahmaputra Valley Zone of Assam, humid weather is favorable for attack of aphids and saw fly in rapeseed/ mustard. To control aphids and saw fly, spray Dimethoate (Rogar) 30EC or Chloropyriphos @ 0.5 litre/ha with a spray volume 500-700 litre/ha for hand sprayer & 200-250 litre/ha for power sprayer.
- In Upper Brahmaputra Valley Zone and Barak Valley Zone of Assam, humid weather is favorable for attack of saw fly in rapeseed/ mustard. To control saw fly, spray Chloropyriphos 20 EC @ 5 ml/litre of water. Also spray Malathion 50 EC @ 1.5 ml/litre against leaf eating caterpillars in cole crops.
- In Arunachal Pradesh, to control cut worm in pea, drench the root zone of pea with Chlorpyriphos 20 EC @ 2ml/litre of water.
- **Nagaland, Manipur, Mizoram and Tripura:**
  - In Manipur, continue transplanting of onion, planting of potato and sowing of *rabi* maize.
  - In Mizoram, continue nursery sowing of brinjal and chilli. Continue sowing of pea, mustard and toria and harvesting of banana and passion fruit.
  - In Nagaland, continue harvesting of matured wetland rice.
  - In Tripura, complete planting of potato. Continue sowing of *rabi* legumes like mustard, lentil. Apply mulching after irrigation in cole crop and tomato.
  - In Nagaland, apply Neem Seed Kernel Extract (NSKE) against aphids and painted bugs in cruciferous vegetables like cabbage, cauliflower.
  - In Tripura, due to decreasing night temperature there is chance of attack of aphids in banana. Apply Dimethoate (Rogor) or Imidacloprid @ 0.8ml per litre of water. Also weather is conducive for the attack of cut worm in cole crop and tomato. Farmers are advised to take preventive measures against cut worm.
  - Suitable varieties are given in Annexure III.
- **Animal Husbandry**
  - In Northeastern states, to control Anthrax disease of cow/ buffalo, vaccinate with Anthrax spore vaccine.
  - In Arunachal Pradesh, provide artificial heating through lighting of electric bulb @ 2 watt/chick in damp cold areas or during night time to protect the poultry birds (day old to 25 days old) from low temperature.
  - In Nagaland, lower temperature affect the egg production, increased the mortality and increase the bacterial and viral diseases in poultry. Increase the energy value of feed through oil and carbohydrates.

### WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



**Cotton**



**Sugarcane**



**Land preparation/sowing**



**Wheat**

- **Realised Rainfall:** Weather remained mainly dry/dry over the region.
- **Advisories:**
  - **Maharashtra:**
    - In Konkan, undertake sowing of *rabi* rice. Continue sowing of *rabi* groundnut, short duration crops like cowpea, wal and kulthi with irrigation facilities. Continue sowing of sunflower. Before sowing, soak the seeds in water for 12 hrs and dried in shed. Continue sowing of mustard. Farmers are advised to apply 50 g of urea per bed 15 days after sowing of vegetable seedlings for healthy growth of the seedlings.
    - In Madhya Maharashtra, complete sowing of irrigated wheat. Undertake harvesting of old adsali and pre seasonal sugarcane.
    - In Marathwada, apply protective irrigation and continue intercultural operations like weeding and fertilizer



application to sugarcane, *rabi* jowar, gram, wheat and vegetables. As per the availability of water farmers are advised to prepare nursery for the vegetable crops like chili, tomato and brinjal. The nursery should be prepared in shade. Use shadenet for shade. Continue harvesting of old adsali and preseasonal sugarcane. Apply micro irrigation through drip and sprinkler irrigation for orchard crops like banana, pomegranate, sweet lime and orange. Also apply mulch of crop residue.

- In Vidarbha, complete harvesting of matured rice. Continue picking of cotton bolls in West Vidarbha during morning hours in 15-20 days interval. Avoid irrigation during boll bursting. Apply protective irrigation to vegetable crops, gram, sugarcane and orchards like orange and sweet lime in Central Vidarbha region.
- Due to cloudy weather conditions in Madhya Maharashtra, there may be attack of pod borer pest in gram; first spray 5% neem ark on the crop and after 10 to 15 days spray heliokil @ 500 ml per 500 litres of water per hectare.
- Due to cloudy weather conditions in Marathwada region, there may be attack of sap sucking pest in vegetables; spray Metarhizium @ 40 g or Imidacloprid @ 3 ml per 10 litres of water.

#### ■ **Gujarat:**

- In Gujarat, as dry weather is prevailing, apply irrigation to wheat (CRI stage) crop in North Saurashtra Zone, to potato, vegetable, fennel and mustard (flower initiation stage) crops during evening hours in North Gujarat Zone, to mustard and (light irrigation) to vegetables in North West Zone and to cotton at 15- 20 days interval according the type of soil, vegetable crops in Bhal and Coastal Zone.
- Carry out hand weeding in castor in Bhal and Coastal Zone. Continue thinning in mustard crop by keeping 10 to 15 cm distance within row for better growth in North West Zone.
- Continue transplanting of onion seedlings in North Gujarat Zone, intercultural operations in vegetable (brinjal, chilli, tomato, cabbage, and cauliflower) crops in North Gujarat Zone and North West Zone.
- Due to cold weather condition there are chances of powdery mildew in cucurbits in Bhal and Coastal Zone; dust 300 mesh Sulphur @ 20 kg/ha to manage the disease; apply second dose after 15 days for effective control.
- Suitable varieties for sowing are given in Annexure III.

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



**Groundnut**



**Wheat**



**Land preparation/sowing**



**Mustard**

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands; North Sikkim district of Sikkim; Weather remained mainly dry/dry over rest of the region.

#### ● **Advisories:**

- As dense fog would occur at isolated pockets of Bihar, Odisha and West Bengal & Sikkim in the morning hours during next 2 days, monitor standing crops for incidence of pest and diseases and potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.

#### ■ **West Bengal:**

- Taking advantage of prevailing mainly dry weather, complete harvesting of *Aman* rice in West Bengal.
- In Terai Zone, undertake land preparation and sowing of wheat, mustard, lentil and planting of potato.
- In Old Alluvial Zone, undertake seed bed preparation of *boro* rice. Continue land preparation and sowing of wheat, lentil and planting of potato.
- In Hill Zone, undertake land preparation for sowing of mustard and planting of potato.
- In Coastal Saline Zone, continue nursery bed preparation of *boro* paddy. Prepare upland fields for planting of potato.
- In Laterite and Red soil Zone and New Alluvial Zone, continue sowing of wheat, mustard and complete planting of potato by middle of December. Give light irrigation to maintain the optimum moisture content in the soil.

#### ■ **Andaman and Nicobar Islands:**

- In North, Middle & South Andaman, undertake intercultural operations and weeding in vegetables.
- In North, Middle & South Andaman, due to humid weather, there may be attack of shoot and fruit borer and thrips in brinjal and chilli. To control shoot and fruit borer, apply Chlorpyrifos @ 2 ml/litre of water and for control of thrips, apply Acephate @ 1 g/litre of water.

#### ■ **Odisha:**

- Continue transplanting of onion in Western undulating Zone. Continue sowing of linseed and gram, planting of potato and continue sowing/transplanting of onion in North Central Plateau Zone.

- In East and South Eastern Coastal Plain Zone, continue sowing of wheat, Bengal gram, mustard and planting of potato.
- In Eastern Ghat High Land Zone, continue sowing of wheat and planting of potato.
- In East and South Eastern Coastal Plain Zone, the prevailing cloudy weather may aggravate the infestation of aphids in pulses and powdery mildew in pulses and cole crops. Spray Imidachloprid @ 5 ml or Metacystox @ 20 ml per 10 litre of water to control aphid and spray Sulfex @ 50 g per 10 litre water to control powdery mildew.
- In Western Undulating Zone, there is chance of occurrence of helicoverpa/American boll worm on cotton crop, spray Profenophos @ 30ml/15litre of water or Spinosad @ 6ml/15litre of water. Also for control of spotted Bollworm, spray Flubendiamide @ 3.75ml/15litres of water.
- In East and South Eastern Coastal Plain Zone, mustard is found to be affected by Crocidollemma and aphids. Spray Dimethoiate @ 400 ml in 200 litres of water for controlling aphids and Ethofenprox or Deltamethrin @ 200 ml in 200 litres of water per acre.
- **Bihar:**
  - In South Alluvial Plain Zone, continue sowing of wheat and complete sowing of gram, lentil, & rai and fodder crops like berseem, oats and lucern. Undertake weeding in maize, gram, lentil, pea, rai, linseed and mustard after 20-25 days of sowing.
  - In North West Alluvial Plain Zone, complete sowing of gram and continue sowing of wheat. Undertake weeding in potato, maize, garlic and in vegetable crops such as brinjal, cauliflower, tomato, pea and cabbage. Apply light irrigation in mustard crop which is in flowering stage.
  - In North East Alluvial Plain Zone, continue sowing of wheat and gram, complete the sowing of pea & lentil crops, complete planting of potato, continue sowing of maize, garlic, rajma. Continue inter-cultural operations in vegetables and other crops.
  - In North West Alluvial Plain Zone, present weather condition is conducive for the attack of termite/cut worm in newly transplanted vegetable and maize crop, to control, spray Chlorpyrifos (Dursbaan) 20EC @ 2-3ml/litre of water.
  - In North West Alluvial Plain Zone, present weather condition is conducive for attack of Diamond Back Moth (DBM) in cabbage/cauliflower, for control, spray Dimethoate 30 EC@1ml/litre of water.
  - In North West Alluvial Plain Zone, present weather condition is conducive for the infestation of viral attack in tomato & chilli crop. Infected plant should be uprooted and buried in the soil, to control, spray Imidacloprid @ 0.3 ml/litre of water.
  - In North East Alluvial Plain Zone, present weather is conducive for attack of fruit fly infestation in Cucurbits. To control, use four Nomate cube Pheromone traps per acre or apply Monocrotophos @ 2 ml + 100g Jaggery (gur) per litre of water.
- **Jharkhand:**
  - In South Eastern Plateau Zone, continue sowing of *rabi* crops like wheat, chickpea, mustard, lentil, linseed and sunflower & undertake raising of seedlings of winter season vegetables like onion, brinjal, cabbage, cauliflower, tomato, capsicum etc. short duration French bean and leafy vegetables. Continue intercultural operation in horse gram, toria, pigeon pea, safflower, lobia, urad and moong bean.
  - In North Eastern Plateau Zone, continue sowing of pea, mustard, lentil and improved wheat variety under irrigated condition, continue weeding and inter cultural operation in gram, potato. Apply irrigation in mustard crop at regular interval. Continue harvesting of matured pigeon pea.
  - In Western Plateau Zone, continue land preparation for sowing of gram, linseed, mustard, rapeseed, barley, pea & rainfed wheat and continue transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato & brinjal,
  - In Western Plateau Zone, present weather is conducive for the occurrence of powdery mildew in green pea crop, to control, spray Karathen @ 1 ml per litre of water or Sulfex @ 3 g per litre of water.
  - In North Eastern Plateau Zone, present weather is conducive for the occurrence of pod borer in pigeon pea crop, to control, Spray of Endoxcarb and Monocrotophos @ 2 ml /litre water solution in 15 days interval.
  - In South Eastern Plateau Zone, due to humid weather, infestation of early and late blight intensity will become more prominent in potato crops, to control, spray, Krilaksil or Ridomil chemical @ 1.5 g per litre of water.
  - Suitable varieties for sowing are given in Annexure III.
- **Animal Husbandry:**
  - In Sub-Himalayan West Bengal & Bihar, low temperature condition may adversely affect the milk production and performance of domestic animals. Farmers are advised to give protein enriched diet to the animals & do not keep the animal in the open during night hours.



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



*Cauliflower*



*Land preparation/sowing*



*Okra*



*Wheat*

- **Realised Rainfall:** Weather remained dry over the region.

- **Advisories:**

- **Madhya Pradesh:**

- In Madhya Pradesh, apply irrigation in wheat at CRI stage in Satpura Plateau Zone, Malwa Plateau Zone, Nimar Valley Zone and in Bundelkhand Zone.
    - In Malwa Plateau Zone, apply irrigation in vegetables and undertake earthing up in potato.
    - In Kymore Plateau and Satpura Hill Zone, continue sowing of wheat and harvesting of early sown vegetable pea.
    - Continue nursery sowing of onion in Nimar Valley Zone. Continue nursery preparation for onion and vegetables like tomato, chilli, brinjal, cabbage and cauliflower in Vindhya Plateau Zone.
    - In Bundelkhand Zone, undertake sowing of late varieties of wheat (GW 173, DI 7082, HI 1454 and HI 1418).
    - Continue sowing of wheat in Jhabua Hill Zone. Apply irrigation in gram, mustard and vegetables.
    - Continue sowing of late variety (JW-173, MP 40 10) of wheat in Grid Zone. Apply irrigation in mustard and green pea.
    - In Bundelkhand Zone, due to humid weather there are chances of leaf blight disease in tomato, spray Methyl Dematon 25 E.C. @ 2.0 g per litre of water.
    - In Vindya Plateau Zone, in the prevailing weather there are chances of attack of fruit and stem borer in vegetables, spray Trizophos 40 EC @ 80 ml per hectare.

- **Chhattisgarh:**

- Apply irrigation in wheat at CRI stage in Chhattisgarh.
    - In North Hill Zone, complete sowing of gram, lentil, linseed, mustard, pea, garlic and planting of potato and wheat under irrigated conditions.
    - In Plain Zone, continue sowing of French bean, round gourd and *rabi* vegetables. Complete sowing of wheat by 15<sup>th</sup> December.
    - Continue sowing of gram, pulses, pea and safflower and nursery preparation for vegetables like cabbage, cauliflower, chilli, planting of potato and sowing of sweet potato in Bastar Plateau Zone.
    - Suitable varieties are given in Annexure III.

- **Animal Husbandry**

- Provide green fodder, minerals etc. along with balance feed and fresh water to milch animals. Cows and buffaloes should be vaccinated against foot & mouth disease in Madhya Pradesh.

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



*Wheat*



*Land preparation/sowing*



*Mustard*



*Cabbage*

- **Realised Rainfall:** Weather remained dry over the region.

- **Advisories:**

- As dense to very dense fog would occur at isolated pockets of Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh and north Rajasthan in the morning hours during next 2 days, monitor standing crops for incidence of pest and diseases and potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.

- **Jammu & Kashmir:**



- As rain/snow would occur at most places in Jammu & Kashmir along with heavy rain/snow at isolated places on 11<sup>th</sup> December, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields.
- In Sub Tropical Zone, continue sowing of mid and late season pea varieties viz P-88, P-89, MatarAgeta.
- In Valley Temperate Zone, continue sowing of leafy vegetables and planting of garlic and transplanting of onion crops. Continue sowing of wheat and oat, brown sarson, peas, pulses, lentil and berseem as fodder crops.
- In Cold Arid Zone of Jammu & Kashmir, complete harvesting of Chinese cabbage, palak, kale, spinach and lettuce. Continue nursery raising of apricot, apple, peach, walnut, plum & cherry.
- In Intermediate Zone, undertake hoeing operation in one month old wheat on a non rainy day. Apply Metribuzine @ 175 g a.i./ha in 500 liters of water for effective control of broad leaf weeds as well as grassy weeds especially *Phalaris minor* (Sitti) at 35-40 days after sowing and undertake hand weeding/ hoeing in mustard and gobhisarson, rabi pulses from 4 to 8 weeks after sowing.
- In Sub Tropical Zone, present weather condition is favourable for attack of leaf webber in mustard and cutworm in chickpea. If attack is severe, spray Carbaryl (Sevin) @ 1 g/litre of water in mustard and to control cutworm, apply Chlorpyrifos 20EC @ 2 litres mixed with 25kg of dry sand against cutworm.
- **Uttarakhand:**
  - In Bhabar and Tarai Zone, continue sowing of wheat, barley, oats, mustard and planting of potato and onion under optimum soil moisture and planting of Autumn sugarcane, garlic & vegetable pea. Temperature conditions are favourable for top dressing (1/2 kg Urea per Nali) in toria of 30 days old after weeding & thinning operations. Apply irrigation in coriander, spinach, radish, mustard, at CRI stage in wheat and garlic. Undertake weeding and thinning operations in standing crops like pea, chickpea, rajmash etc. Complete harvesting of matured vegetable pea.
  - In Hill Zone, complete harvesting of vegetable pea, continue sowing of methi, coriander, palak and toria and transplanting of radish, broccoli, cabbage, cauliflower, garlic. Also continue transplanting of onion, planting of potato. Continue sowing of wheat, mustard, gram and lentil in unirrigated high hill region.
  - In Sub humid Sub tropic Zone, continue sowing of wheat, mustard, pea and lentil.
  - In Bhabar and Tarai Zone, under humid weather conditions, there are chances of incidence of aphids in toria and mustard crops at flowering & pod formation stage, spray Imidachlorpid 200SL @ 3ml per 10litre of water.
- **Himachal Pradesh:**
  - As rain/snow would occur at most places in Himachal Pradesh along with heavy rain/snow at isolated places on 11<sup>th</sup> December, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields.
  - In Sub-Montane and Low Hills Sub-Tropical Zone, complete sowing of wheat, barley, gobhisarson and sarson. Continue transplanting of tomato in raised bed and cauliflower (early group & late group), cabbage, knolkhol, broccoli and Chinese cabbage. Also continue direct sowing of radish, carrot, turnip, palak, methi in mid hill areas and planting of potato in lower and mid hills regions. Undertake sowing of pulses and oilseeds as intercrop with wheat. Continue training and pruning work in tea gardens.
  - In Mid Hills sub-Humid Zone, continue transplanting of onion and harvesting of ginger after current spells of rain.
  - Under prevailing weather conditions, there are chances of attack of cutworms in vegetables in Sub-Montane and Low Hills Sub-Tropical Zone. For control, spray Chlorpyrifos 20 EC @ 2.5 ml/litre of water. For the control of damping off disease in vegetable crops mix thoroughly Dithane M 45 dust @10-15 g in 1X 3m beds after current spells of rain.
- **Rajasthan:**
  - In West Rajasthan, undertake land preparation for late sowing of wheat and apply first irrigation to wheat after 20- 25 days of sowing and in barley. Continue weeding and hoeing operations in cumin and vegetables in Arid Western Plain Zone. Continue sowing of wheat, barley, fenugreek and lucern. Continue sowing of wheat, barley, gram, garlic, fenugreek, mustard, fennel, onion, carrot, lucern and taramira when average daily temperature remains between 20–25<sup>0</sup>C in Transitional Plain Zone of Inland Drainage.
  - Continue sowing of wheat and gram and apply first irrigation to barley after 20- 25 days of sowing, apply irrigation in sugarcane in Irrigated Northwestern Plain Zone.
  - In East Rajasthan, continue sowing of wheat, barley, gram, mustard, lentil, lucern and planting of potato, apply irrigation in wheat crop at CRI stage and in potato also undertake nipping in gram to enhance branching in Flood Prone Eastern Plain Zone. Continue sowing of wheat in Southern Humid Plain Zone. Continue sowing of late sown wheat and complete transplanting of *rabi* onion in Semi-Arid Eastern Plain Zone.
  - Undertake late sowing of wheat, continue sowing of wheat, barley, flax seeds and coriander in South-eastern Humid Plain Zone. Continue sowing of wheat, barley and opium, apply irrigation in barley at 30 – 35 days, mustard at 35- 40 days, gram and vegetables, apply light irrigation in garlic, continue nursery preparation of chilli, brinjal and tomato alongwith hoeing and weeding in vegetables, in Sub Humid Southern Plain and Aravali Hill Zone.
  - In Flood Prone Eastern Plain Zone, due to prevailing weather, there is a chance of incidence of mustard saw fly in mustard crop, spray Malathion 50 EC @ 1 ml/litre water to control.
  - In Semi-Arid Eastern Plain Zone, in the present weather, there may be attack of leaf curl & mosaic in papaya,

spray Dimethoate 30 EC @ 1 ml per litre water.

- In Sub Humid Southern Plain and Aravali Hill Zone, in the present temperature condition, there is a chance of incidence of shoot fly in wheat. Spray Monocrotophos 36 SL @ 500 ml per acre for control.
- **Punjab, Haryana and Delhi:**
  - In Western Plain Zone of Punjab, continue harvesting of early maturing variety of sugarcane. Continue sowing of wheat, gram, kabuli gram, mustard, radish, carrot, turnip, onion, tomato, planting of sugarcane under assured irrigation.
  - In Western Zone of Punjab, continue sowing of wheat, complete picking of cotton and picking should be done only after the full sunshine and kept in moisture free room/space. Continue nursery sowing of rabi onion, tomato and sowing of radish, turnip and carrot, land preparation for sowing of potato and transplanting of tomato, cauliflower, brinjal and cabbage.
  - In Undulating Plain Zone of Punjab, continue sowing of wheat, raya, planting of fruit plants viz. citrus, mango, litchi, guava, loquat, ber, amla and papaya. Undertake intercultural operations in all vegetable crops as per their requirement.
  - In Central Plain Zone of Punjab, continue harvesting of early matured varieties of sugarcane like CoJ-64, CoJ-85 and Co 118. Continue sowing of wheat, gobhisarson, lentil, raya, gram, onion, pea, fodder crops lucerne, oats and senji.
  - In Sub-Montane Undulating Zone of Punjab, continue sowing of raya, gobisarson and taramira.
  - In Western Zone of Haryana, continue sowing of wheat, Bengal gram kabulichana and vegetables like pea, potato, carrot and sowing of mustard and berseem, oat as fodder crops. Complete picking of cotton after sunrise when dew is completely evaporated.
  - In Eastern zone of Haryana, complete sowing of wheat, barseem and mustard.
  - In Western Semi-Arid Zone of Delhi, continue sowing of late variety of wheat, gram, oat, lentil, early mustard and sowing of barseem for fodder. Complete sowing of sarson sag, spinach, coriander, fenugreek, turnip, radish, carrot and pea. Continue transplanting of rabi onion, tomato, cabbage, broccoli and early cauliflower on raised bed. Also continue sowing of garlic-G-1, 41, 50, 282 in raised bed. Apply irrigation as per requirement to timely sown wheat crop, which are about 21-25 days old and are at CRI stage. Undertake thinning and weeding operations and apply light irrigation in timely sown mustard crop. Undertake earthing up in potato, if plants has attained height of 15–20 cm.
  - In Western Zone and Undulating Plain Zone of Punjab, due to prevailing foggy weather condition, there may be chances of attack of late blight in potato crop, for control, spray Indofil-M-45 / Kavach / Antracol @ 500-700 g per acre or Blitox @ 750-1000 g per acre in 250-350 litres of water per acre at weekly interval.
  - In Undulating Plain Zone of Punjab, due to humid weather condition, there may be chances of attack of pink stem borer in wheat, for control, spray Quinalphos 25 EC @ 800 ml in 100 litres of water per acre.
  - In Western Zone of Punjab, there is chances of attack of diamond back moth or tobacco caterpillar in cauliflower and cabbage, for control, spray Dipel 8L @ 300 ml per acre or Halt WP 7 @ 300 g or Success 2.5 SC @ 250 ml per acre or Proclaim @ 70 g or Avant @ 130 ml per acre or Ekalux @ 200-400 ml or Fenvalerate @ 100 ml in 80-100 liters of water, in the evening at 7 days interval.
- **Uttar Pradesh:**
  - In Central Pain Zone, continue harvesting of matured maize, pearl millet, sorghum, sugarcane and rice. Continue sowing of late variety of wheat, oat, maize, autumn sugarcane, vegetable pea, garlic, barley, linseed, lentil, kabuli gram, toria, gram, pea, mustard, pointed gourd, parval gourd, radish, turmeric, fenugreek, coriander, carrot, spinach, root beat. Complete planting of potato and continue planting of cabbage, capsicum, chilli, brinjal, tomato and cauliflower. Continue nursery sowing/transplanting of *rabi* onion and tomato. Undertake sowing/transplanting of crops under assured irrigation.
  - In Central Pain Zone, apply first irrigation in wheat crop at CRI stage after 20-35 days of sowing. Apply second irrigation in mustard crop at onset of flowering stage after 55-65 days of sowing. Apply light irrigation in vegetable pea at onset of flowering stage and in toria at pod formation stage. Undertake intercultural operation in winter maize after 20-25 days of sowing followed by irrigation. Undertake intercultural operation in late sown potato crop and apply 80-107 kg urea at the time of earthing. Undertake weeding operation in pea, mustard, gram and all vegetables.
  - In Eastern Plain Zone, continue sowing of late variety of wheat, gram, lentil and mustard. Continue sowing of vegetable pea and toria and sowing of winter vegetables, fenugreek, coriander, garlic, carrot, radish, spinach.
  - In Western Plain Zone, continue harvesting of early maturing variety of sugarcane. Continue sowing of wheat, linseed, gram, mustard, barseem and nursery sowing of tomato, cauliflower, onion, planting of autumn sugarcane and potato. Continue sowing of toria and transplanting of brinjal and tomato. Irrigate wheat crop at 21 days after sowing and standing crops of sugarcane at 15 days interval.
  - In Bundelkhand Zone, complete sowing of pea, gram, lentil, jou and continue sowing of wheat, linseed, flaxseed, mustard. Continue sowing of vegetable pea, palak, coriander, carrot and planting/transplanting of cauliflower, cabbage, tomato, chilli and brinjal. Irrigate all vegetables as per requirement. Apply first Irrigate in timely sown wheat crop after sowing of 21 days.
  - In North Eastern Plain Zone, continue sowing of wheat, toria, mustard, pea, gram, rabi maize, potato, linseed and lentil under assured irrigation.

- In Central Plain Zone, under prevailing weather condition, there may be chances of attack of painted bug in mustard, for control, spray Dimethoate 30 EC or Methyl-o- Demeton 25 EC or Chlorpyrifos 20 EC @ 1 litre or Monocrotophos 36 SL @ 500 ml in 600-700 litres of water per hectare.
- In Central Plain Zone, under prevailing weather condition, there may be chances of attack of cut worm in potato, for control, spray Chlorpyrifos 20 EC @ 2 litres in 700-800 litres of water per hectare.
- In Central Plain Zone, under prevailing weather condition, there may be chances of attack of mosaic in brinjal, chilly, tomato, for control, spray Methyl-o- Demeton 25 EC @ 2 liters in 700-800 litres of water per hectare.
- **Horticulture**
  - In Undulating Plain Zone of Punjab, protect newly planted fruit plants from low night temperature for their proper growth. Cover the nursery of plants with rice straw, plastic sheets.
  - In Mild Hills Sub Humid Zone, undertake preparation of tree basins for apple and stone fruits.
  - In Sub Montane and Low Hills Sub Humid Zone of Himachal Pradesh, weather is conducive for the attack of leaf minor in new growth of citrus, spray Matasystox or Malathion @ 10 ml in 10 litre of water.
- **Floriculture**
  - Continue nursery preparation of winter flowers in polyhouses. Blue beetle attack is seen in roses and balsam in Sub Montane and Low Hills Sub Humid Zone of Himachal Pradesh. For control spray Cypermethrin @ 0.05 ml per litre of water.
- **Animal Husbandry**
  - In Undulating Plain Zone of Punjab, protect animals from low night temperature. Spread straw/gunny bags on the floor during night time.

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

### Annexure I

#### Week by week Rainfall Distribution

	25.11.15		02.12.15		09.12.15	
Sub-Divisions	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>						
Anjaw	**	**	**	**	**	**
Changlang	0.0	-100	0.0	-100	7.8	-10
Dibang Valley	**	**	**	**	**	**
East Kameng	0.0	-100	0.0	-100	3.4	-21
East Siang	0.0	-100	0.0	-100	9.2	156
Kurung Kumey	**	**	**	**	**	**
Lohit	0.0	-100	0.0	-100	8.7	81
Lower Dibang Valley	0.0	-100	0.0	-100	28.8	443
Lower Subansari	**	**	**	**	**	**
Papumpare	0.0	-100	0.0	-100	17.1	3320
Tawang	0.0	-100	3.0	-61	4.0	43
Tirap	0.0	-100	0.0	-100	18.0	429
Upper Siang	3.6	-85	0.0	-100	11.8	93
Upper Subansari	0.0	-100	0.0	-100	**	**
West Kameng	0.0	-100	0.0	-100	8.0	186
West Siang	**	**	**	**	**	**
<b>Assam&amp;Meghalaya</b>						
<b>Assam</b>						
Baksa	0.0	-100	0.0	-100	15.0	1567
Barpeta	0.0	-100	0.0	-100	2.4	161
Bongaigaon	0.0	-100	0.0	-100	5.0	4901
Cachar	0.0	-100	0.0	-100	7.4	638
Chirang	0.0	-100	0.0	-100	20.6	20502



Darrang	**	**	**	**	**	**
Dhemaji	0.0	-100	**	**	4.0	167
Dhubri	0.0	-100	0.0	-100	11.0	3567
Dibrugarh	0.0	-100	0.0	-100	6.3	133
Goalpara	0.0	-100	0.0	-100	32.4	3140
Golghat	0.0	-100	0.0	-100	15.5	932
Hailakandi	0.0	-100	0.0	-100	12.8	12700
Jorhat	0.0	-100	0.0	-100	18.1	624
Kamrup(Rural)	0.0	-100	0.0	-100	11.0	2100
Kamrup(Metro)	0.0	-100	0.0	-100	20.0	3900
Karbi Anglong	0.0	-100	0.0	-100	4.7	135
Karimganj	0.0	-100	0.0	-100	17.0	169400
Kokrajhar	0.0	-100	0.0	-100	5.6	833
Lakhimpur	0.0	-100	0.0	-100	9.3	522
Morigaon	0.0	-100	0.0	-100	15.8	15702
N.C.Hills	0.0	-100	0.0	-100	0.0	-100
Nowgong	0.0	-100	0.0	-100	8.0	1228
Nalbari	0.0	-100	0.0	-100	2.2	2100
Sonitpur	0.0	-100	0.0	-100	48.9	2124
Sibsagar	0.0	-100	0.0	-100	16.2	523
Tinsukia	0.0	-100	0.0	-100	11.7	586
Udalgiri	0.0	-100	0.0	-100	13.5	744
<b>Meghalaya</b>						
East Garo Hills	0.0	-100	0.0	-100	0.0	-100
East Khasi Hills	0.0	-100	0.0	-100	3.4	324
Jaintia Hills	0.0	-100	0.0	-100	2.0	300
Ribhoi	0.0	-100	0.0	-100	0.4	-82
South Garo Hills	**	**	**	**	**	**
West Garo Hills	0.0	-100	0.0	-100	12.0	5901
West Khasi Hills	0.0	-100	0.0	-100	1.0	150
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	0.0	-100	0.0	-100	1.1	-79
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	**	**	**	**	**	**
Serchhip	**	**	**	**	**	**
<b>Manipur</b>						
Bishnupur	**	**	**	**	**	**
Chandel	**	**	**	**	**	**
Churachandpur	**	**	**	**	**	**
Imphal east	0.0	-100	0.0	-100	0.2	-98
Imphal west	0.0	-100	0.0	-100	11.2	600
Senapati	**	**	**	**	**	**
Tamenglong	**	**	**	**	**	**
Thoubal	0.0	-100	0.0	-100	**	**

Ukhrul	**	**	**	**	**	**
<b>Nagaland</b>						
Dimapur	0.0	-100	0.5	-71	4.6	207
Kephire	**	**	**	**	**	**
Kohima	0.0	-100	0.0	-100	2.2	1000
Longleng	**	**	**	**	**	**
Mokokchung	0.0	-100	0.0	-100	6.0	186
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	**	**	**	**	**	**
Tuensang	**	**	**	**	**	**
Wokha	0.0	-100	0.0	-100	17.0	3300
Zunheboto	**	**	**	**	**	**
<b>Tripura</b>						
Dhalai	0.0	-100	0.0	-100	2.7	440
NorthTripura	0.0	-100	0.0	-100	34.0	1600
SouthTripura	0.0	-100	0.0	-100	0.4	-61
West Tripura	0.0	-100	0.0	-100	6.2	671
<b>Himachal Pradesh</b>						
Bilaspur	0.0	-100	1.8	-47	0.0	-100
Chamba	0.0	-100	6.1	10	0.0	-100
Hamirpur	0.0	-100	5.6	27	0.0	-100
Kangra	0.0	-100	1.9	-62	0.0	-100
Kinnaur	0.0	-100	6.0	28	0.0	-100
Kullu	0.0	-100	12.1	81	0.0	-100
Lahaul and Spiti	0.0	-100	2.5	-66	0.0	-100
Mandi	0.0	-100	6.9	156	0.0	-100
Shimla	0.0	-100	9.3	257	0.0	-100
Sirmaur	0.0	-100	0.5	-81	0.0	-100
Solan	0.0	-100	12.2	230	0.0	-100
Una	0.0	-100	0.0	-100	0.0	-100
<b>Punjab</b>						
Amritsar	0.0	-100	0.0	-100	0.0	-100
Barnala	0.0	-100	0.0	-100	0.0	-100
Bhatinda	0.0	-100	0.0	-100	0.0	-100
Faridkot	0.0	-100	0.0	-100	0.0	-100
Fatehgarh Saheb	0.0	-100	0.0	-100	0.0	-100
Ferozpur	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	0.0	-100	0.0	-100	0.0	-100
Hoshiarpur	0.0	-100	0.0	-100	0.0	-100
Jalandhar	0.0	-100	0.0	-100	0.0	-100
Kapurthala	0.0	-100	0.0	-100	0.0	-100
Ludhiana	0.0	-100	0.0	-100	0.0	-100
Mansa	0.0	-100	0.0	-100	0.0	-100
Moga	0.0	-100	0.0	-100	0.0	-100
Muktesar	0.0	-100	0.0	-100	0.0	-100
Nawashahar	0.0	-100	0.0	-100	0.0	-100
Patiala	0.0	-100	0.2	-78	0.0	-100
Ropar	0.0	-100	0.0	-100	0.0	-100

Sangrur	0.0	-100	0.0	-100	0.0	-100
Mohali	0.0	-100	0.0	-100	0.0	-100
TarnTaran	0.0	-100	0.0	-100	0.0	-100
<b>Haryana,Chd,Delhi</b>						
<b>Haryana</b>						
Ambala	0.0	-100	0.1	-98	0.0	-100
Bhiwani	0.0	-100	0.0	-100	0.0	-100
Chandigarh	0.0	-100	0.2	-85	0.0	-100
Faridabad	0.0	-100	0.0	-100	0.0	-100
Fatehabad	0.0	-100	0.0	-100	0.0	-100
Gurgaon	0.0	-100	0.0	-100	0.0	-100
Hissar	0.0	-100	0.0	-100	0.0	-100
Jhajar	0.0	-100	0.0	-100	0.0	-100
Jind	0.0	-100	0.0	-100	0.0	-100
Katihai	0.0	-100	0.0	-100	0.0	-100
Karnal	0.0	-100	0.0	-100	0.0	-100
Kurukshetra	0.0	-100	0.0	-100	0.0	-100
Mahendragarh	0.0	-100	0.0	-100	0.0	-100
Mewat	0.0	-100	0.0	-100	0.0	-100
Palwal	0.0	-100	0.0	-100	0.0	-100
Panchkkula	0.0	-100	0.7	-86	0.0	-100
Panipat	0.0	-100	0.0	-100	0.0	-100
Rewari	0.0	-100	0.0	-100	0.0	-100
Rohtak	0.0	-100	0.0	-100	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.0	-100	0.0	-100	0.0	-100
Yamunanagar	0.0	-100	0.0	-100	0.0	-100
<b>Delhi</b>						
Central Delhi	0.0	-100	0.0	-100	0.0	-100
East Delhi	0.0	-100	0.0	-100	0.0	-100
New Delhi	0.0	-100	0.0	-100	0.0	-100
North Delhi	0.0	-100	0.0	-100	0.0	-100
North East Delhi	0.0	-100	0.0	-100	0.0	-100
North West Delhi	0.0	-100	0.0	-100	0.0	-100
South Delhi	0.0	-100	0.0	-100	0.0	-100
South West Delhi	0.0	-100	0.0	-100	0.0	-100
West Delhi	0.0	-100	0.0	-100	0.0	-100
<b>Jammu &amp; Kashmir</b>						
Anantnag	0.0	-100	0.9	-91	0.0	-100
Badgam	0.0	-100	3.4	-39	0.0	-100
Bandipore	**	**	**	**	**	**
Baramula	0.0	-100	0.1	-98	0.0	-100
Doda	0.0	-100	13.0	-14	0.0	-100
Ganderbal	0.0	-100	0.0	-100	0.0	-100
Jammu	0.0	-100	0.0	-100	0.0	-100
Kargil	**	**	**	**	**	**
Kathua	0.0	-100	0.0	-100	0.0	-100
Kistwar	**	**	**	**	**	**
Kulgam	0.0	-100	0.0	-100	0.0	-100



Kupwara	0.0	-100	0.0	-100	0.0	-100
Ladakh(Leh)	0.0	-100	0.0	-100	0.0	-100
Poonch	**	**	**	**	**	**
Pulwama	0.0	-100	3.5	-34	0.0	-100
Rajouri	0.0	-100	0.0	-100	0.0	-100
Ramban	0.0	-100	1.7	-89	0.0	-100
Reasi	0.0	-100	0.0	-100	0.0	-100
Samba	0.0	-100	0.0	-100	0.0	-100
Shopian	**	**	**	**	**	**
Srinagar	0.0	-100	4.5	-10	0.0	-100
Udhampur	0.0	-100	0.0	-100	0.0	-100
<b>East Madhya Pradesh</b>						
Anuppur	0.0	-100	0.0	-100	0.0	-100
Balaghat	0.0	-100	0.0	-100	0.0	-100
Chhatarpur	0.0	-100	8.4	139	1.2	-66
Chindwara	0.0	-100	0.0	-100	0.0	-100
Damoh	0.0	-100	0.0	-100	0.0	-100
Dindori	0.0	-100	0.0	-100	0.0	-100
Jabalpur	0.0	-100	0.0	-100	0.0	-100
Katni	0.0	-100	0.0	-100	0.0	-100
Mandla	0.0	-100	0.0	-100	0.0	-100
Narsingpur	0.0	-100	0.0	-100	0.0	-100
Panna	0.0	-100	0.0	-100	0.0	-100
Rewa	0.0	-100	0.0	-100	0.0	-100
Sagar	0.0	-100	0.0	-100	0.0	-100
Satna	0.0	-100	0.0	-100	0.0	-100
Seoni	0.0	-100	0.0	-100	0.0	-100
Shahdol	0.0	-100	0.0	-100	0.0	-100
Sidhi	0.0	-100	0.0	-100	0.0	-100
Singrauli	0.0	-100	0.0	-100	2.3	28
Tikamgarh	0.0	-100	0.0	-100	0.0	-100
Umaria	0.0	-100	0.0	-100	0.0	-100
<b>West Madhya Pradesh</b>						
Agar	0.0	-100	0.0	-100	0.0	-100
Alirajpur	11.1	185	0.0	-100	0.0	-100
Asoknagar	0.0	-100	0.0	-100	0.5	-92
Badwani	0.7	-63	0.0	-100	0.0	-100
Betul	0.0	-100	0.0	-100	0.0	-100
Bhind	0.0	-100	5.7	528	0.0	-100
Bhopal	0.0	-100	0.0	-100	0.0	-100
Burhanpur	0.0	-100	0.0	-100	0.0	-100
Datia	0.0	-100	7.0	367	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	1.5	-41	0.0	-100	0.0	-100
Guna	0.0	-100	0.0	-100	0.0	-100
Gwalior	0.0	-100	3.3	154	0.0	-100
Harda	0.0	-100	0.0	-100	0.0	-100
Hosangabad	0.0	-100	0.0	-100	0.0	-100

Indore	0.0	-100	0.0	-100	0.0	-100
Jhabua	0.0	-100	0.0	-100	0.0	-100
Khandwa	0.0	-100	0.0	-100	0.0	-100
Khargone	0.0	-100	0.0	-100	0.0	-100
Mandsaur	0.0	-100	0.0	-100	0.0	-100
Morena	0.0	-100	4.6	820	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	0.0	-100	0.0	-100
Rajgarh	0.0	-100	0.0	-100	0.0	-100
Ratlam	0.0	-100	0.3	-88	0.0	-100
Sehore	0.0	-100	0.0	-100	0.0	-100
Shajapur	0.0	-100	0.0	-100	0.0	-100
Sheopur Kalani	0.0	-100	6.0	445	0.0	-100
Shivpuri	0.0	-100	3.5	84	0.0	-100
Ujjain	0.0	-100	3.0	-23	0.0	-100
Vidisha	0.0	-100	0.0	-100	0.0	-100
<b>Chhattisgarh</b>						
Bastar	0.0	-100	0.0	-100	2.6	219
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.0	-100	0.0	-100	0.0	-100
Dantewara	0.0	-100	0.0	-100	0.0	-89
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	0.0	-100	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			0.0	-100
<b>East Uttar Pradesh</b>						
Allahabad	0.0	-100	0.0	-100	1.2	22
Ambedkar Nagar	0.0	-100	22.0	10900	5.0	1567
Azamgarh	0.0	-100	1.3	-13	16.8	5500
Bahraich	0.0	-100	0.0	-100	0.0	-100
Ballia	0.0	-100	0.0	-100	0.0	-100
Balrampur	0.0	-100	0.0	-100	0.0	-100
Banda	0.0	-100	3.0	20	3.2	102
Barabanki	0.0	-100	3.5	332	0.6	-18
Basti	0.0	-100	0.0	-100	0.0	-100
Chandauli	0.0	-100	0.0	-100	0.0	-100
Deoria	0.0	-100	0.0	-100	0.0	-100
Faizabad	0.0	-100	0.0	-100	0.0	-100
Farrukhabad	0.0	-100	0.5	-17	0.0	-100

Fatehpur	0.0	-100	1.9	14	5.6	328
Gazipur	0.0	-100	0.0	-100	0.1	-87
Gonda	0.0	-100	0.0	-100	1.0	25
Gorakhpur	0.0	-100	0.0	-100	0.0	-100
Hardoi	0.0	-100	1.9	109	0.0	-100
Jaunpur	0.0	-100	0.0	-100	1.2	50
Kannauj	0.0	-100	22.0	2344	0.0	-100
Kanpur City	0.0	-100	12.5	1977	0.5	-46
Kanpur Dehat	0.0	-100	22.0	3571	3.8	860
Kaushambi	0.0	-100	0.0	-100	0.0	-100
Kheri	0.0	-100	0.0	-100	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100
Lucknow	0.0	-100	8.6	757	0.2	-83
Maharajganj	0.0	-100	0.0	-100	0.0	-100
Mau	0.0	-100	0.0	-100	0.0	-100
Mirzapur	0.0	-100	0.0	-100	0.7	30
Pratapgarh	0.0	-100	6.0	500	10.0	1900
RaiBareilly	0.0	-100	6.9	1280	2.3	275
Sahuji Maharajnagar	0.0	-100	2.5	178	6.0	650
Sant Kabirnnagar	0.0	-100	0.0	-100	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100
Shrawasti	0.0	-100	**	**	**	**
Sidharthnagar	0.0	-100	0.0	-100	0.0	-100
Sitapur	0.0	-100	0.0	-100	0.0	-100
Sonbhadra	0.0	-100	0.0	-100	4.6	658
Sultanpur	0.0	-100	4.6	1042	0.7	47
Unnao	0.0	-100	23.5	3817	0.0	-100
Varanasi	0.0	-100	0.0	-100	0.7	-41
<b>West Uttar Pradesh</b>						
Agra	0.0	-100	2.9	617	0.0	-100
Aligarh	0.0	-100	4.7	689	0.0	-100
Auraiya	0.0	-100	0.0	-100	0.0	-100
Badaun	0.0	-100	2.4	300	0.0	-100
Baghpat	0.0	-100	0.0	-100	0.0	-100
Bareilly	0.0	-100	0.0	-100	0.0	-100
Bijnor	0.0	-100	0.0	-100	0.0	-100
Bulandsahar	0.0	-100	0.0	-100	0.0	-100
Etah	0.0	-100	2.3	112	0.0	-100
Etawah	0.0	-100	28.5	5600	0.0	-100
Firozabad	0.0	-100	16.8	3250	0.0	-100
GBNagar	0.0	-100	0.0	-100	0.0	-100
Ghaziabad	0.0	-100	0.0	-100	0.0	-100
Hamirpur	0.0	-100	5.3	385	4.0	400
Jalaun	0.0	-100	3.7	267	0.0	-100
Jhansi	0.0	-100	0.3	-84	0.0	-100
Jotiba Phule Nagar	0.0	-100	0.0	-100	0.0	-100
Kanshiramnagar	0.0	-100	0.0	-100	0.0	-100
Lalitpur	0.0	-100	0.0	-100	4.0	167

Mahamaya Nagar	0.0	-100	6.5	983	0.0	-100
Mahoba	0.0	-100	6.0	362	0.0	-100
Mainpuri	0.0	-100	9.7	870	0.0	-100
Mathura	0.0	-100	3.0	329	0.0	-100
Meerut	0.0	-100	0.0	-100	0.0	-100
Moradabad	0.0	-100	0.0	-100	0.0	-100
Muzzaffarnagar	0.0	-100	0.0	-100	0.0	-100
Pilibhit	0.0	-100	0.0	-100	0.0	-100
Rampur	0.0	-100	0.0	-100	0.0	-100
Saharanpur	0.0	-100	0.0	-100	0.0	-100
Shahjahanpur	0.0	-100	0.0	-100	0.0	-100
<b>Uttarakhand</b>						
Almora	0.0	-100	1.1	-48	0.0	-100
Bageshwar	0.0	-100	0.0	-100	0.0	-100
Chamoli	0.0	-100	0.3	-92	0.0	-100
Champawat	0.0	-100	0.0	-100	0.0	-100
Dehradun	0.0	-100	2.0	-3	0.0	-100
Garhwal Pauri	0.0	-100	0.2	-90	0.0	-100
Garhwal Tehri	0.0	-100	3.1	343	0.0	-100
Haridwar	0.0	-100	0.8	-47	0.0	-100
Nainital	0.0	-100	0.5	-76	0.0	-100
Pithorgarh	0.0	-100	0.8	-69	0.0	-100
Rudraprayag	0.0	-100	0.8	-83	0.0	-100
Udham Sing Nagar	0.0	-100	0.0	-100	0.0	-100
Uttarkashi	0.0	-100	5.9	556	0.0	-100
<b>Bihar</b>						
Araria	0.0	-100	0.0	-100	0.0	-100
Arwal	**	**	0.0	-100	0.0	-100
Aurangabad	**	**	0.0	-100	0.0	-100
Banka	0.0	-100	0.0	-100	0.0	-100
Begusarai	**	**	0.0	-100	0.0	-100
Bhabua	**	**	0.0	-100	0.0	-100
Bhagalpur	0.0	-100	0.0	-100	0.0	-100
Bhojpur	0.0	-100	0.0	-100	0.0	-100
Buxar	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	0.0	-100
Gopalganj	0.0	-100	0.0	-100	0.0	-100
Jahanabad	0.0	-100	0.0	-100	0.0	-100
Jamui	0.0	-100	0.0	-100	0.0	-100
Kathihar	0.0	-100	0.0	-100	0.0	-100
Khagadia	**	**	0.0	-100	0.0	-100
Kishanganj	0.0	-100	0.0	-100	0.0	-100
Lakhisarai	0.0	-100	0.0	-100	0.0	-100
Madhepura	0.0	-100	0.0	-100	0.0	-100
Madhubani	**	**	0.0	-100	0.0	-100
Monghyar	**	**	0.0	-100	0.0	-100
Muzaffarpur	0.0	-100	0.0	-100	0.0	-100



Nalanda	**	**	0.0	-100	0.0	-100
Nawada	0.0	-100	0.0	-100	0.0	-100
Patna	0.0	-100	0.0	-100	0.0	-100
Purnea	0.0	-100	0.0	-100	0.0	-100
Rohtas	0.0	-100	0.0	-100	0.0	-100
Saharsha	**	**	0.0	-100	0.0	-100
Samstipur	**	**	0.0	-100	0.0	-100
Saran	0.0	-100	0.0	-100	0.0	-100
Sheikpura	0.0	-100	0.0	-100	0.0	-100
Sheohar	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	0.0	-100	0.0	-100	0.0	-100
Siwan	0.0	-100	0.0	-100	0.0	-100
Supaul	0.0	-100	0.0	-100	0.0	-100
Vaishali	0.0	-100	0.0	-100	0.0	-100
West Champaran	0.0	-100	0.0	-100	0.0	-100
<b>Jharkhand</b>						
Bokaro	0.0	-100	0.0	-100	0.0	-100
Chatra	0.0	-100	0.0	-100	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	6.2	3000
Garhwa	0.0	-100	0.0	-100	0.0	-100
Giridih	0.0	-100	0.0	-100	0.0	-100
Godda	0.0	-100	0.0	-100	0.0	-100
Gumla	0.0	-100	0.0	-100	**	**
Hazaribagh	0.0	-100	0.0	-100	**	**
Jamtara	**	**	0.0	-100	**	**
Khunti	0.0	-100	0.0	-100	**	**
Koderrna	0.0	-100	0.0	-100	0.0	-100
Latehar	0.0	-100	0.0	-100	15.0	1264
Lohardagga	0.0	-100	0.0	-100	1.1	22
Pakur	0.0	-100	0.0	-100	0.0	-100
Palamau	0.0	-100	0.0	-100	10.2	101900
Ramgarh	0.0	-100	0.0	-100	**	**
Ranchi	0.0	-100	0.0	-100	2.1	75
Sahebganj	0.0	-100	0.0	-100	0.0	-100
Saraikela	0.0	-100	0.0	-100	0.0	-100
Simdega	0.0	-100	0.0	-100	**	**
West Singbhum	0.0	-100	0.0	-100	4.2	740
<b>East Rajasthan</b>						
Ajmer	0.0	-100	0.0	-100	0.0	-100
Alwar	0.0	-100	0.0	-100	0.0	-100
Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	1.6	-29	0.0	-100
Bharatpur	0.0	-100	3.7	311	0.0	-100
Bhilwara	0.0	-100	0.5	-67	0.0	-100
Bundi	0.0	-100	0.0	-100	0.0	-100
Chittorgarh	0.0	-100	0.0	-100	0.0	-100

Dausa	0.0	-100	0.0	-100	0.0	-100
Dholpur	0.0	-100	7.2	696	0.0	-100
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.0	-100	0.0	-100	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	0.0	-100	0.0	-100
Karauli	0.0	-100	9.0	800	0.0	-100
Kota	0.0	-100	0.9	-53	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100
Rajsamand	0.0	-100	0.0	-100	0.0	-100
Sawai Madhopur	0.0	-100	2.8	293	0.0	-100
Sikar	0.0	-100	0.0	-100	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-100	0.0	-100	0.0	-100
Udaipur	0.0	-100	0.0	-100	0.0	-100
<b>West Rajasthan</b>						
Barmer	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100
Churu	0.0	-100	0.0	-100	0.0	-100
Hanumangarh	0.0	-100	0.0	-100	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.0	-100
Nagaur	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-100	0.0	-100
<b>Gujarat Region</b>						
Ahmedabad	0.0	-100	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	2.1	-64	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
DNH	**	**	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100
Daman	**	**	0.0	-100	0.0	-100
Dangs	8.5	39	0.0	-100	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.1	-82
Mehsana	0.0	-100	0.0	-100	0.0	-100
Narmada	0.0	-100	0.0	-100	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	0.0	-100	0.0	-100	0.0	-100
Surat	0.0	-100	0.0	-100	0.0	-100
Tapi	0.4	-92	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100
<b>S K &amp; Diu region</b>						
Amreli	2.5	-6	0.0	-100	0.0	-100

Bhavnagar	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.0	-100	0.0	-100	0.0	-100
Junagarh	1.9	-25	0.0	-100	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	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.0	-100
<b>Maharashtra</b>						
<b>Konkan &amp; Goa</b>						
Mumbai City	1.5	-17	0.0	-100	0.0	-100
Mumbai Suburban	1.6	-11	0.0	-100	0.0	-100
North Goa	0.6	-89	0.0	-100	0.0	-100
Raigad	16.5	345	0.0	-100	0.0	-100
Ratnagiri	9.1	74	0.0	-100	0.0	-100
Sindhudurg	6.1	1	0.0	-100	0.0	-100
South Goa	1.4	-77	0.0	-100	0.0	-100
Thane	49.4	1957	0.0	-100	0.0	-100
<b>Madhya Maharashtra</b>						
Ahmednagar	22.7	392	0.0	-100	0.0	-100
Dhule	0.5	-90	0.0	-100	0.0	-100
Jalgaon	1.9	-69	0.0	-100	0.0	-100
Kolhapur	0.9	-87	0.0	-100	0.0	-100
Nandurbar	1.0	-73	0.0	-100	0.0	-100
Nasik	24.3	334	0.0	-100	0.0	-100
Pune	48.8	857	0.0	-100	0.0	-100
Sangli	1.5	-74	0.0	-100	0.0	-100
Satara	15.0	114	0.0	-100	0.0	-100
Solapur	4.3	3	0.0	-100	0.5	-75
<b>Marathwada</b>						
Aurangabad	2.6	-54	0.0	-100	0.0	-100
Beed	18.6	221	0.0	-100	0.0	-100
Hingoli	0.0	-100	0.0	-100	0.0	-100
Jalna	1.6	-77	0.0	-100	0.0	-100
Latur	3.3	-30	0.0	-100	0.0	-100
Nanded	0.0	-100	0.0	-100	0.0	-100
Usmanabad	6.7	103	0.0	-100	0.0	-100
Parbhani	0.0	-100	0.0	-100	0.0	-100
<b>Vidarbha</b>						
Akola	0.0	-100	0.0	-100	0.0	-100
Amraoti	0.0	-100	0.0	-100	0.0	-100
Bhandara	0.0	-100	0.0	-100	0.0	-100
Buldhana	0.0	-100	0.0	-100	0.0	-100
Chandrapur	0.0	-100	0.0	-100	0.0	-100
Gadchiroli	0.0	-100	0.0	-100	0.0	-100
Gondia	0.0	-100	0.0	-100	0.0	-100
Nagpur	0.0	-100	0.0	-100	0.0	-100
Wardha	0.0	-100	0.0	-100	0.0	-100

Washim	0.0	-100	0.0	-100	0.0	-100
Yeotmal	0.0	-100	0.0	-100	0.0	-100
<b>Odisha</b>						
Angul	0.0	-100	0.0	-100	0.0	-100
Balasore	0.0	-100	0.0	-100	3.4	1040
Bargarh	0.0	-100	0.0	-100	0.0	-100
Bhadrak	0.0	-100	0.0	-98	0.1	-91
Bolangir	0.0	-100	0.0	-100	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.0	-100	0.0	-100	0.0	-100
Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.0	-100
Gajapati	0.0	-100	0.1	-62	0.1	-83
Ganjam	0.0	-100	0.0	-100	0.1	-99
Jagatsingpur	0.0	-100	0.0	-100	1.2	521
Jajpur	0.0	-100	0.0	-100	0.0	-100
Jharsuguda	0.0	-100	0.0	-100	0.0	-100
Kalahandi	0.0	-100	0.0	-100	0.0	-100
Kandhamal	0.0	-100	0.0	-100	0.0	-100
Kendrapara	0.0	-100	0.0	-100	0.0	-100
Keonjhar	0.0	-100	0.0	-100	2.4	307
Khurda	0.0	-100	0.0	-100	0.0	-99
Koraput	0.0	-100	2.4	20	1.2	-18
Malkangiri	0.0	-100	1.0	-23	0.0	-100
Mayurbhanj	0.0	-100	0.0	-100	2.3	200
Nawapara	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	0.0	-100	0.0	-100
Puri	0.2	-97	0.0	-100	0.0	-100
Rayagada	0.0	-100	0.3	-38	0.0	-100
Sambalpur	0.0	-100	0.0	-100	0.1	-78
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	63.6	-20	131.7	120	41.7	-44
North & Middle Andaman	11.0	-70	52.3	63	79.2	174
South Andaman	58.8	-14	144.7	227	84.5	116
<b>GWB</b>						
Bankura	0.0	-100	0.0	-100	0.2	-33
Birbhum	0.0	-100	0.0	-100	0.0	-63
Burdwan	0.0	-100	0.0	-100	0.2	100
East Midnapore	0.0	-100	0.0	-100	0.8	-73
Hooghly	0.0	-100	0.0	-100	1.8	200
Howrah	0.0	-100	0.0	-100	1.0	400
Kolkata	0.0	-100	0.0	-100	2.6	86
Murshidabad	0.0	-100	0.0	-100	0.0	-100
Nadia	0.0	-100	0.0	-100	1.1	450



24 Pargana (N)	0.0	-100	0.0	-100	1.9	383
Purulia	0.0	-100	0.0	-100	1.3	151
24 Pargana (S)	0.5	-91	0.3	-94	3.8	112
West Midnapore	0.0	-100	0.0	-100	2.8	830
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	0.0	-100	0.0	-100	2.4	200
Darjeeling	0.0	-100	0.0	-100	3.8	46
East Sikkim	0.0	-100	0.0	-100	1.0	-81
Jalpaiguri	0.0	-100	0.0	-100	7.2	1700
Malda	0.0	-100	0.0	-100	0.0	-100
North Dinajpur	**	**	**	**	**	**
North Sikkim	0.0	-100	0.0	-100	37.5	1072
South Dinajpur	0.0	-100	0.0	-100	0.0	-100
South Sikkim	0.0	-100	0.0	-100	0.0	-100
West Sikkim	0.0	-100	0.0	-100	0.0	-100
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshina Kannada	35.3	120	8.4	47	1.7	-58
Udupi	76.3	437	1.2	-86	2.6	-57
Uttara Kannada	11.9	58	0.1	-98	0.1	-97
<b>N I Karnataka</b>						
Bagalkote	3.3	6	0.0	-100	0.0	-100
Belagavi	3.5	-25	0.0	-100	0.0	-100
Bidar	0.0	-100	2.6	-25	0.0	-100
Dharwad	5.6	-21	0.1	-99	0.0	-100
Gadag	8.7	88	2.2	-44	0.0	-100
Haveri	2.5	-65	0.2	-96	0.1	-95
Kalaburgi	0.5	-87	2.7	1	1.6	-12
Koppal	3.8	52	0.0	-100	0.0	-100
Raichur	2.6	-15	0.6	-71	2.1	-26
Vijayapura	10.1	215	0.8	-67	0.0	-100
Yadgir	0.1	-98	9.7	286	0.0	-100
<b>S I Karnataka</b>						
Ballari	4.6	34	0.3	-91	0.2	-97
Bangalore Rural	27.4	188	14.2	103	0.2	-96
Bangalore Urban	38.2	235	4.5	-30	1.3	-82
Chamarajanagar	26.6	63	19.4	142	7.8	-12
Chikaballapur	71.8	590	10.9	70	0.0	-100
Chikkamagaluru	19.1	54	3.7	-17	3.6	3
Chitradurga	22.4	386	1.5	-47	1.2	-68
Davangere	7.6	18	0.0	-100	0.7	-83
Hassan	19.3	62	7.1	123	1.5	-55
Kodagu	14.2	-24	0.6	-91	2.9	-22
Kolar	79.3	520	6.4	-15	1.0	-89
Mandya	22.5	105	6.0	174	3.8	-37
Mysuru	21.0	58	3.7	42	7.3	36
Ramanagara	27.0	176	6.6	14	0.9	-87
Shivamogga	9.5	11	0.1	-99	0.4	-87
Tumakuru	43.5	373	3.7	-19	0.9	-81

<b>Kerala</b>						
Alappuzha	45.5	27	21.8	14	38.9	77
Kannur	52.6	180	7.8	-11	14.0	77
Ernakulam	72.3	135	11.6	-17	68.7	282
Idukki	58.5	92	21.0	37	67.0	272
Kasaragod	30.5	82	6.9	35	12.1	120
Kollam	28.8	-17	55.8	189	39.0	110
Kottayam	29.9	-6	31.8	98	33.3	143
Kozhikode	28.8	32	0.1	-99	1.9	-84
Malappuram	32.6	24	2.8	-70	6.2	-32
Palakkad	9.3	-67	1.5	-87	14.5	43
Pathanamthitta	52.5	41	23.0	43	11.5	-41
Thiruvananthapuram	56.2	88	31.5	67	56.8	140
Thrissur	38.7	35	1.7	-84	34.2	133
Wayanad	23.0	4	7.0	-22	3.5	-53
<b>Tamil Nadu</b>						
Ariyalur	114.2	160	117.0	257	100.1	71
Chennai	217.5	165	347.3	550	124.4	110
Coimbatore	36.3	46	10.2	-31	24.7	39
Cuddalore	152.3	146	156.6	205	271.8	279
Dharmapuri	54.1	140	34.6	113	10.8	-42
Dindigul	63.2	96	37.7	72	76.6	194
Erode	22.7	10	45.5	192	15.2	-13
Kanchipuram	238.6	258	459.0	898	160.2	194
Kanyakumari	52.0	49	27.6	31	57.7	185
Karikal	234.3	137	134.2	81	364.7	360
Karur	30.0	18	26.5	63	40.9	121
Krishnagiri	48.8	171	17.9	74	4.7	-65
Madurai	60.5	125	28.5	66	41.7	156
Nagapattinam	172.2	84	167.3	125	324.2	189
Namakkal	26.6	42	28.3	88	26.9	101
Nilgiris	125.7	256	36.4	23	49.4	103
Perambalur	77.3	125	48.0	78	66.7	90
Puducherry	297.2	192	426.9	645	302.9	312
Pudukottai	76.2	103	50.6	74	106.1	227
Ramanathapuram	55.2	54	47.2	42	90.6	120
Salem	56.6	119	31.2	61	33.8	49
Sivaganga	67.0	149	58.1	142	49.1	94
Thanjavur	100.1	85	91.5	138	139.9	145
Theni	99.8	291	20.1	45	46.2	198
Tirunelveli	195.3	410	67.8	131	123.6	348
Tirupur	16.8	-27	30.3	103	48.3	187
Tiruvallur	180.1	230	342.6	733	67.1	47
Tiruvannamalai	77.1	116	106.1	338	43.7	26
Tiruvarur	134.0	77	149.3	150	223.8	173
Toothukudi	106.9	187	39.7	55	40.5	36
Trichy	61.9	87	37.1	80	54.2	91
Vellore	118.8	318	81.0	326	14.2	-42

Villupuram	126.1	181	237.3	594	113.1	161
Virudhunagar	92.3	172	24.0	8	66.0	247
<b>Andhra Pradesh</b>						
<b>Coastal Andhra Pradesh</b>						
East Godavari	20.3	50	8.9	-14	0.0	-100
Guntur	6.5	-53	0.6	-91	0.3	-92
Krishna	7.2	-42	2.3	-62	0.0	-100
Nellore	126.8	127	130.8	249	30.2	-32
Prakasam	41.6	106	20.5	95	9.5	-12
Sirkakulam	0.0	-99	0.0	-99	0.0	-100
Visakhapatnam	6.7	-50	1.8	-76	0.0	-100
Vizianagram	0.0	-100	0.0	-99	0.0	-99
West Godavari	13.6	17	4.3	-48	0.0	-100
<b>Rayalaseema</b>						
Anantapur	30.1	491	8.0	95	0.7	-86
Chittoor	125.9	375	102.5	370	10.0	-59
Cuddapah	79.9	501	41.4	376	6.0	-52
Kurnool	5.8	61	11.2	228	0.1	-96
<b>Telangana</b>						
Adilabad	0.0	-100	0.0	-100	3.4	64
Hyderabad	0.5	-83	0.0	-100	0.0	-100
Karimnagar	0.0	-100	0.0	-100	0.4	-85
Khammam	0.0	-99	0.0	-99	0.0	-100
Mehabubnagar	0.0	-100	4.3	54	0.1	-97
Medak	0.0	-100	0.0	-100	0.0	-100
Nalgonda	1.4	-66	1.1	-55	0.0	-100
Nizamabad	0.0	-98	0.0	-98	0.0	-100
Rangareddy	0.1	-96	0.6	-71	0.0	-100
Warangal	0.0	-100	0.1	-96	0.0	-100

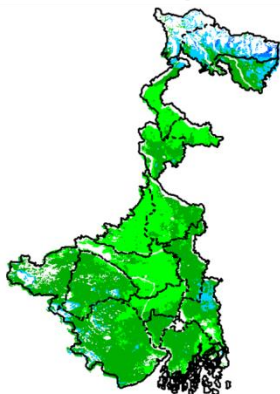
#### Legends

	(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

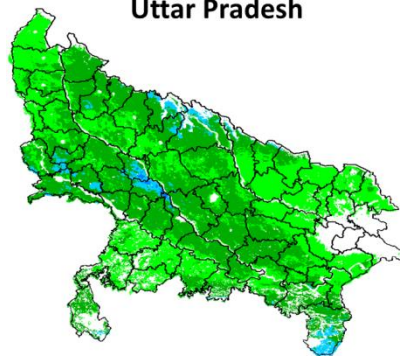
**INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON  
09<sup>th</sup> December 2015 FOR DIFFERENT STATES**

**West Bengal**



Agricultural vigour is good in South-eastern and Northern part of West Bengal where NDVI is varying from 0.4-0.6, whereas few patches in West and Central part show moderate NDVI (0.2-0.4)

**Uttar Pradesh**



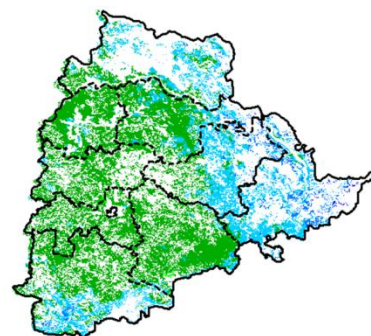
Agricultural vigour is moderate over the entire state of Uttar Pradesh where NDVI value varies from 0.2 -0.4. whereas few patches in north-western part shows higher values of NDVI (0.4-0.5)

**Uttarakhand**



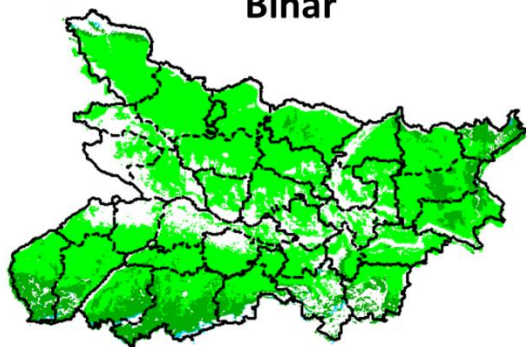
Agriculture vigour is good over South-Eastern and Western part of Uttarakhand with NDVI value varies from 0.4-0.5. whereas rest of the state shows moderate values of NDVI (0.3 - 0.4).

**Telangana**



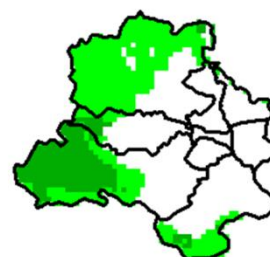
Agriculture vigour is good over North and Eastern parts of Telangana (NDVI 0.4-0.6). Rest of the region shows moderate values of NDVI (0.3-0.4)

**Bihar**



Agriculture vigour is moderate all over Bihar where NDVI value lies between 0.2-0.4.

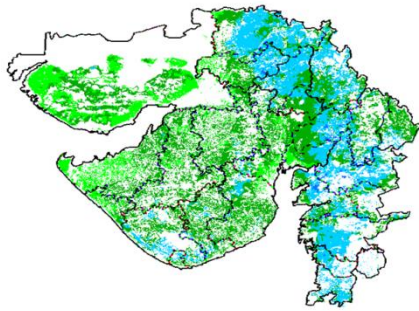
**Delhi**



Agriculture vigour is moderate all over Delhi where NDVI value lies between 0.2-0.3.

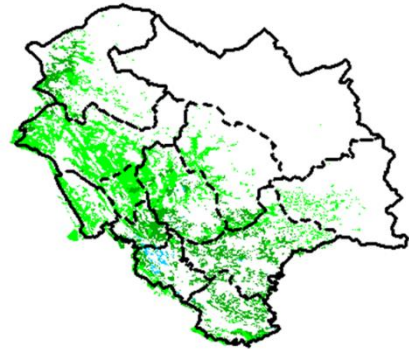


### Gujarat



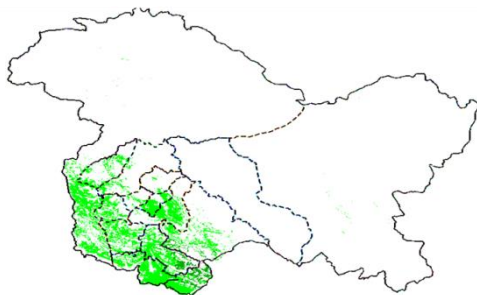
Agriculture vigour is moderate in Kutch and Saurashtra whereas, good agricultural vigour is observed over Gujarat region where NDVI values lie between 0.4-0.5.

### Himachal Pradesh



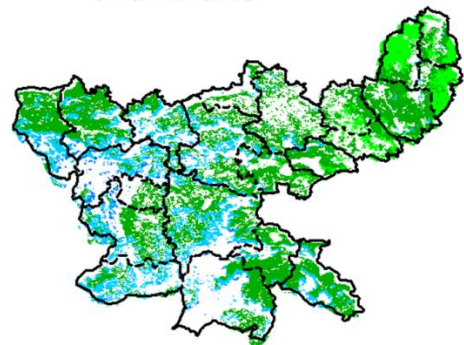
Agriculture vigour is Moderate over entire state of Himachal Pradesh where NDVI values are 0.2 – 0.4.

### Jammu & Kashmir



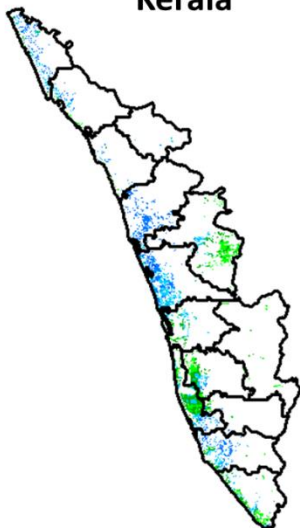
Agriculture vigour is Normal over entire state of Jammu & Kashmir where NDVI values are 0.2 – 0.3.

### Jharkhand



Agriculture vigour is good over entire state of Jharkhand, NDVI value varies from 0.4 - 0.5. Except for patches in north western and eastern region where NDVI is moderate (0.3-0.4).

### Kerala



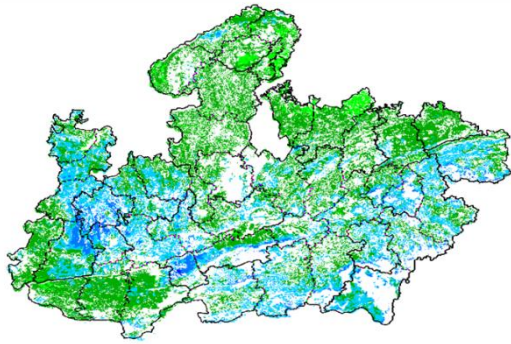
Agriculture vigour is good over central and northern Kerala where NDVI value lies between 0.4-0.6 whereas southern coast showing normal values of NDVI (0.2 - 0.4).

### Haryana



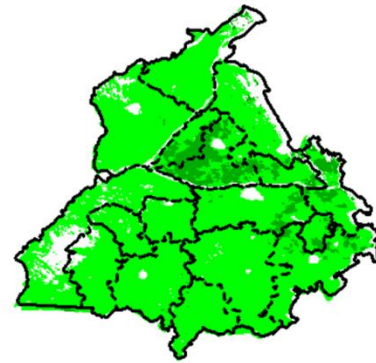
Agriculture vigour is Moderate over entire state of Haryana where NDVI value lies between 0.2 – 0.4.

### Madhya Pradesh



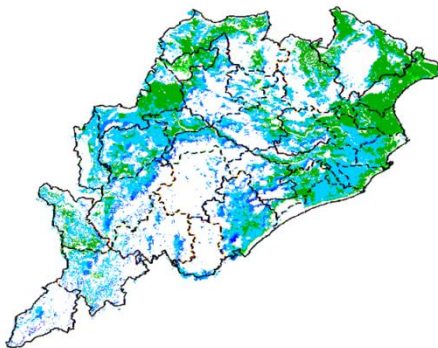
Agriculture vigour is good over south western and eastern part of Madhya Pradesh. NDVI varies from 0.4-0.5 and rest of the part shows moderate values of NDVI (0.2 – 0.4).

### Punjab



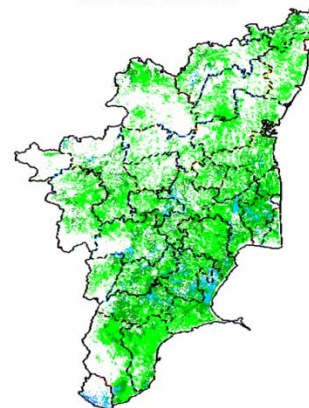
Agricultural vigour normal over entire state of Punjab where NDVI value lies between 0.2-0.4.

### Odisha



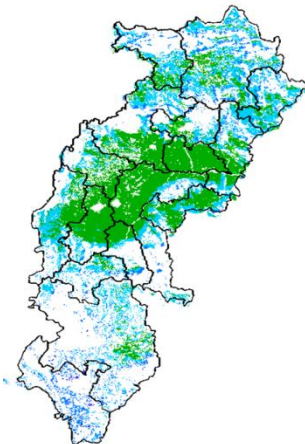
Agricultural vigour is good over entire state of Odisha with NDVI value ranging between 0.4 – 0.6 except few patches over north-east and west where NDVI is moderate (0.3 -0.4).

### Tamil Nadu



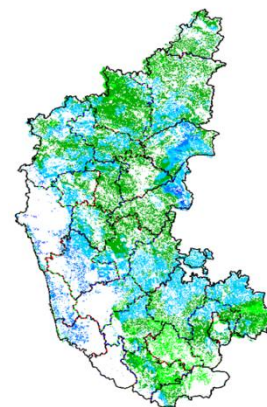
Agricultural vigour moderate over entire state of Tamilnadu (0.2 – 0.4).

### Chhattisgarh



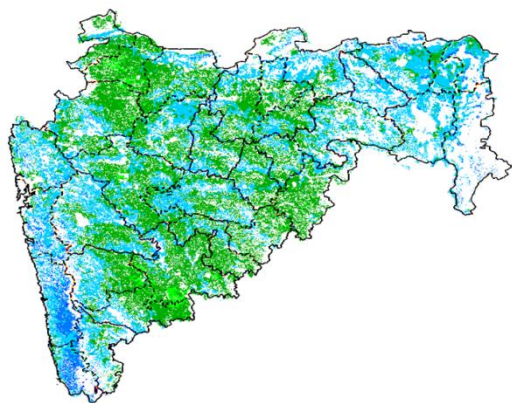
Agriculture vigour is good in northern and southern parts of Chhattisgarh where NDVI values are between 0.4-0.5 except central part which shows moderate values of NDVI.

### Karnataka



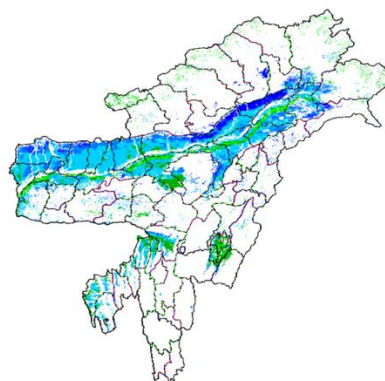
The agriculture vigor is good over the entire state. Higher values of NDVI are observed in interior, southern and eastern part of the State (NDVI 0.4-0.6) whereas few patches in north and north-west show moderate NDVI.

### Maharashtra



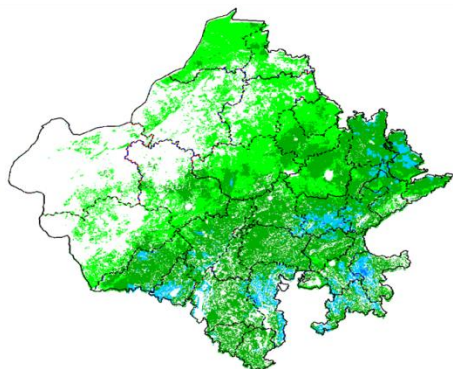
Agricultural vigour is good over Coastal Maharashtra and Vidharbha region with NDVI values from 0.4-0.6, whereas Moderate values of NDVI are observed over Madhya Maharashtra and Marathwada region (0.2-0.4).

### North East Region



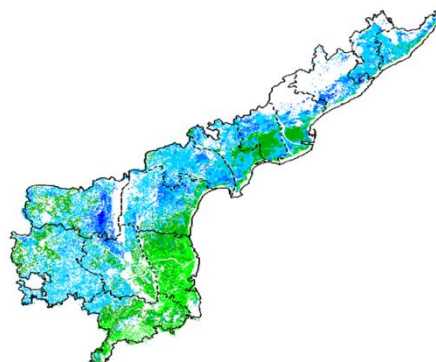
Agriculture vigour is very good in North-East states where NDVI varies from 0.4-0.6.

### Rajasthan

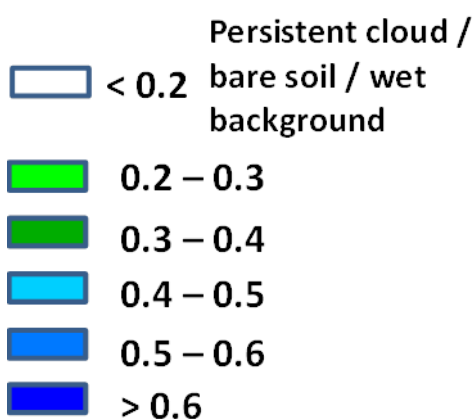


Agriculture vigour is good (0.4-0.6) in some patches over southern part of Rajasthan whereas moderate values of NDVI are observed over the entire state (0.2-0.4).

### Andhra Pradesh



Agriculture vigour is good over entire state of Andhra Pradesh where NDVI vary between 0.4-0.6. except southern coastal part which shows normal values of NDVI (0.2-0.3).





## Annexure III

### List of varieties

#### North Interior Karnataka

**Pearl millet:** ICTP 8203 and ICMV 221

**Horse gram :**KBH-1, PHG-9

**Rabi sorghum :**Maldandi and Mugati

**Bengal gram:** JJ-11, KAK-2 and Vishal, JG-11, Annigeri-1

**Chickpea:** A-1, JG-11, Jaki-9218

**Safflower:** A-1

**Ragi:** Indaf-7, 9 and 15

**Sunflower:** Morden, KBSH-1, KBSH-41, KBSH-42, KBSH-44 and KBSH-53.

**Maize:** Deccan-103, Vijaya composite and Ganga-11

**Cowpea:** TVX-944, KBC-1 , KM-8 and PKB-4 (vegetable purpose)

**Field bean :** HA-1,3 and 4

**Horse gram :**KBH-1, PHG-9

#### Tamil Nadu

**Late Samba/ Thaladi rice:** (ADT 38, ADT 46, ADT 49, Improved white Ponni, IR 20, ASD 19, Paiyur1, TRY 1, TRY 3, Co 48, Co 49, BPT 5204 and Co 50)

#### Kerala

**Rice:** Mundakan

**Banana:**Nendran

#### Telangana

**Rabi red gram:**(LRG 41, ICPL 87119, MRG 66, ICPL 85063, WRG 27, MRG 1004, WRG 53, WRG-65)

**Greengram:**(MGG-295, MGG-348, MGG-347 WGG-2, WGG-37, LGG-460, TM-96-2)

**Black gram:**(LBG-20 (Teja), , LBG-623, WBG-26 (Usha), PBG-1, LBG-752, MBG-207,PU 31)

#### Assam

**Early cauliflower:** Pusa Katki, Pusa Deepali and Early Kunwari.

**Mid cauliflower :**Pusa Snowball.

**Brinjal :** Pusa Kranti, Pusa Purple Long, Pusa Purple Cluster, Pusa Bhairav, JC-2, BWR-12.

**Califlower :**Japanese, Pusa synthetic, Pusa snowball and Main Crop Patna.

**Cabbage:** Golden Acre, Pride of India, Pusa Mukta.

**Tomato :** Punjab Chhuhara, S-12, Punjab Kesri, Pusa Early Dwarf, Sioux,Pusa Ruby, VC- 48-1, Arka Abha (BWR-1), Arka Alok (BWR-5), BT-1, Bilahi-1, Bilahi-2.

**Potato :**Kufri Chandramukhi, Kufri Jyoti, Kufri Megha, Kufri Badshah, Kufri Sindhuri.

**Broccoli :** Early Danish Giant, De Cicco Green Bud, Sparton Early, Coastal and Atlantic.

**Black gram :** KU 301, USJD 113, PU 19, T-9, T-27, Pant U-19, T-122, Saonia mah.

**Green gram :** Pratap, SG 21-5, T-44, Kopergaon, K-851, ML-56, ML-131,SG-1 (Pratap).

**Kharrifsesame :** Gauri, Madhabi, ST-1683, Punjab Til No.1.

**Radish :**Pusa Desi, Pusa Chetki, Pusa Himani.

**Knolkhol:** White Vienna, Purple Vienna.

**Carrot :**Nantes, Pusa Kesar.

**Onion :**Pusa Red, Pusa Ratnar, Pusa white (Round), Pusa white (Flat), N-53, Agrifound Light Red, Punjab Red Round, Pusa Madhuri, Arka Niketan.

#### Meghalaya

**Cauliflower:** Meghalaya Local.

**Cabbage :** Meghalaya: H-139, Pride of India.

**Pea: Arkel (for vegetables),** TRC P8, TRC P9, Prakash, Rachna.

**French bean :** Naga Local.

**Potato:** Kufri Joyti, Kufri Megha, Kufri Giriraj, Kufri Girdhari, Kufri Himsona, Kufri Himalini.

**Broccoli :** Puspa, Aiswarya.

**Carrot :** New Karoda, Nantesh.

**Radish :** Local genotype.

**Mustard :** Varuna, Krishna, TM 4; Rapeseed- M 27, TS 38, TR 48, TR 67.

#### Manipur

**Cauliflower:** White shot, adopt White flash.

**Cabbage:** Rareball.

**French bean :** Pant Anupam, Anupam, Tangkhul Hawaii (local).

**Pea:** Arkel or Azad.

**Onion :** Nasik Red.



### **West Bengal:**

**Mango:** Himsagar, Mallicka, Langra

**Guava:** Safeda, L-49

**Coconut:** Eastcoastal, Hazari

**Banana :-** Mortoman, Chapa, Kathali, Singapuri,

**Mustard:-** Agrani(B-54), Panchali (T.W.C.-3), B-9, Rai-5 and Bhagiroti (R.W.-351).

### **Bihar**

**Potato:** KufriJyoti, Kufri Ashoka, Pukharaj

**Toria:** R.A.U.T.S.17, Panchali, P.T.303

**Rapeseed:** RAUTS-17, Panchali, PT-303, Bhawani

**Pulses:** K-75, PL77, KLS-218

**Lentil:** BR-25, Pant L 406, Malika, Arun

**Rai:** Varuna pusa, Kranti

**Maize:** Dhml117, Shaktiman-1, Dewki&Lakshmi

**Kidney Pea:** PDR-14, IIDR 96-4, IIPR 98-5

**Rai:** Varuna, Pusabold, Kranti

**Sarson:** RajendraSarson, Swarna

**Peas:** Ratna, Aprnaharbajan Malbai mater15

**Garlic:** Jamuna Safed-2(G-50), Jamuna safed-3(G-282) Jamuna-4(G-323)

### **Jharkhand**

**Lentil:** P.L.-406, P.L.-639, K.L.S -218, K-75

**Barley:** Jyoti, Ratna, D.L.-36, B.R.-32

**Linseed:** Sweta, Shubhra, T-397

**Mustard:** Panchali, Bhavani, Pusa Jaikisan, Sivani, Varuna& Kranti

**Toria:** BR-23, T.-9, P.T.-303

**Chick Pea:** Birsa chana-3, B.G.-372, 256, K WR-108

**Field Pea:** Rachna, DDR-23, Swarnrekha

**Onion:** N-53, Pusa red, Arka niketan, Arka kalia

**Gram:** KAK-2, ICC-2, Pusa 256, Pusa-372

### **Odisha:**

**Mango:** Baiganpalli, Totapuri, Bombay green, Suvarnarekha, Neelam, Himsagar,, Langra, Dusheri, Amrapalli, Mallika, Ratna, Ramkella, Alphanso and Keshar, etc.

**Cashewnut:** Vengrulla-1.4, BPP-4, Bhubaneswar-1, VRI-2, Hybrid 2-17

**Green gram:** K 851, PDM 11, PDM 54, OUM 115.

**Black gram:** T 9, PU 11, PU 19 and PU 30.

**Horse gram:** Urmi.

### **Jammu & Kashmir**

**Cabbage:** Golden Acre, Pride of India and Pusa Mukta.

**Cauliflower:** Giant Snow Ball, Pant Gobh 2 & 3 and Pusa Synthetic.

**Pea :** AP-1, Bonnevillea, Rachna and Arkel);

**Chickpea :** K-468, Gourav);

**Lentil :** L-4147, L-9/12, PL-406)

**Wheat :** PBW-175, PBW-396, RSP-81(Jitto)

**Mustard :** Pusa Bold, RSPR-01, RSPR-03, Kranti.

### **Uttarakhand**

**Sugarcane: varieties** Co-238, Co-241, Co Pant 3220, Co Pant 84211, COS-8436, COS-88230 etc. and medium to late sown varieties like Co Pant 90223, Co Pant-96219, COS-97222, COS-767, COS-1148

**Barley :** Jyoti, Vijaya, or Jagrati

**Oat :** UPO-50, UPO-212, JHO-822, Kent

### **Himachal Pradesh**

**Wheat:** Hs-277, HPW-251 and VL-616

**Cauliflower:** snowball and Giant snowball.

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

**Turnip:** PTWG-1

**Carrot:** Pusakesar

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

**Peas :** Mater ageta-6 (early variety).

**Cabbage:** Pride of India, golden achor and hybrid

### **East Uttar Pradesh**

**Sorghum:** Pusa chari-23, SSG-98-8MFSH-3, Pant-5 and MP chari

**Lobia:** Russian Joint, UPC-5286, UPC-5287, NP-3, Bundhel lobia-2, UPC-9202 and UPC-4200

**Sugarcane:** coj-64, cos-96268, cos-98231, cos-767, cos-84, cos-32, copant-84212, Ko.Sha.-88230, 95255, Ko.Sha.-95436, 01235.

**Tomato:** pusa early, pusa ruby, HS 101.

**Cauliflower:** pusa Dipali.  
**Pearl Millet:** Raj WCC-75, ICMB-155, Pusa-322,23, ICMH-451.  
**Seasame:** T-4,78, Shekhar, Pragati, Tarun.  
**Pigeon Pea:** Bahar, Narendra Arhar-1, Azad, Pusa-9.  
**Jute:** Jute Reshma, NDC (2007), NDC-2028, NDC-9102.  
**Okra:** PusaSawani, VarsaUphar, Azad kranti.  
**Brinjal:** Pant Samrat, Pant Rituraj, Pusa hybrid-6.  
**Guava:** Sardar( Lucknow-49).  
**Kabuli gram:** chamatkar, Puse-1003, Subhra  
**Pea:** Rachna, Pantmatar-5, Aparna, Malviya Matar-2, Malviya Matar-15, Shikha and Sapna.  
**Cabbage:** Japani, Pusa Dieepali, Pusa Kartiki  
**Toria:** TA-9, Bhawani, PT-30 and PT-507  
**Potato:** Kufri Chandramukhi, Kufri Sadabahar, Kufri Ashoka

### **West Uttar Pradesh**

**Ladies finger:** VRO-6, VRO-5.  
**Pigeon pea:** T-21, UPAS 120.  
**Cotton:** H777, Dhanalakshami, HD107.  
**For fodder Jowar:** JS 120, Lobia 88.  
**gram:** P.D.G.-3, G.P.F.-2, C-235, Gourav, KGD-1168, JG-16, Avrodhi  
**sugarcane:** ko.sha 88230, ko.sha 8436, ko 0238, ko.sha 07250 or U.P. 0512.  
**barseem:** V.L.1, V.L.10, maskavi, jai.  
**onion:** pusa red, pusa white.  
**Mustard:** Varuna, Narendra-Rai 8501, Rohoni (timely sowing), Aashirwaad and Vardan (late sowing), Vaibhav, Maya.  
**Jou:** Manjula, Jagruti, Gitanjali.  
**Pea:** Azad P-3, Jai, Indra, Prakash.  
**Lentil:** KLB-320, K-75, DPL-62.  
**Linseed:** Padmini, Sharda, Laxmi.

### **Punjab**

**Sugarcane:** CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89, CO118, COJ85, COJ64.  
**Rice:** Pusa-44, T.R-112 and T.R-113.  
**Onion:** Punjab Naroya, Punjab White and PRO 6.  
**Pea:** Punjab 89 and MithiPhali, Matar Ageta-7, Arkel and Matar Ageta-6.  
**Gram :** PDG-4, PDG-3, GPF-2, PBG 5 and PBG-1, PBG-7.  
**Kabuli gram** (L 552, L 550 & BG-1053)  
**Mustard:** PBR 357, RLC-1, PBR-210, RLM-619, PBR-91, PBR-97, RLC-1, PBR 210 and PBR 91,  
 Gobhi sarson GSC-7, GSC-6, GSL-1, GSL-2, Hyola (PAC-401), African sarson PC-5.  
**Radish:** Punjab Pasand and Japanese white.  
**Turnip:** L-1.  
**Carrot:** Punjab Black Beauty, Punjab Carrot Red and PC-34.

### **Delhi**

**Mustard:** Pusa Sarson-25, Pusa Sarson-26, Pusa Agrni, Pusa Taraka and Pusa Mahak, Pusa Jai Kisan, Pusa Jagannath, Pusa Sarson-25, Pusa Sarson-26, Pusa Agrni, Pusa Taraka, Pusa Mahak. Pusa Saag-1; Bathua- Pusa Bathua-1  
**Radish:** PusaChetki.  
**Spinach:** PusaBharti.  
**Amaranths:** PusalalChaulai, PusaKiran.  
**Ladyfinger:** Pusa A-4.  
**early potato:** Kufri Badshah, Kufri Surya.  
**Pea:** Pusa Pragati, Arkel  
**Carrot:** Pusa Rudhira-;  
**Radish:** Japani White, Hill queen, French Radish;  
**Spinach:** All Green, Pusa Bharti;  
**Fenugreek:** Pusa Kasuri;  
**Coriander:** Pant Haritama, Hybrids;  
**Turnip:** Pusa Swati, Local Red variety

### **East Rajasthan**

**Radish:** PusaChetki, Japanese white & hill queen.  
**Carrot:** PusaKeshar  
**Cowpea:** Short durC-152, RS-9, FS-68, RC-19 and RC-101, C-152, RS-9.  
**Mustard:** Pusa Jai Kisan (Bio-902), PR-15 (Kranti), T-59 (Varuna), Giriraj, RGN-73, Bio-902 (PusaJaikisan), RH-9304 (Vasundhara), RH-9802 (SwarnJyoti), RH-8812 (Laxmi), RB-50.  
**Gram:** RSG-888 (Anubhav), CSJD-884 (Aakash), RSG-44, Pusa-209, C-235, H-208, Pratap raj chana, RSG-888, Dahod yellow, ICCV-10 and Pratap Chana-1.  
**Cauliflower:** Pusa snow ball K-1, Hisar-1, Dania and Selection-7  
**Onion:** Punjab safed goal, Udaipur 102, nasik red.

### **West Rajasthan**

**Cowpea:** RC-19, RC-101, RCP-27.

**Mustard:** PusaJai Kisan, RH-30, RH-8812, Pusa Gold and PR-15, RGN-13, 73, 268226, 48, Laxmi, Bio-902, T-59, Pusa bold, Arawali and RGN-48 and late sown RGN145, 236.

**Gram:** GNG-469, 466, GNG-663, RSG-888, RSG-44, RSG-945, RSG-807, GNG-1581 and C-235, GNG-1466, 236.

**Oat :** OS 6, OS 9

**Berseem:** BL 10, BL 22

**Cauliflower:** Pusa snow ball K-1, Hisar-1, Dania and Selection-7

**Radish:** (Pusa Rashmi).

**Carrot:** Pusa Keshar

### **Madhya Maharashtra**

**Rabi jowar:** Selection-3, Phule Mauli, Phule Chitra, Phule Mauli, Maldandi- 35-1, Phule Vasudha, Phule Yashoda, C.S.V.-22, Phule Yashoda, Phule Vasudha, C.S.V. 22.

**Gram:** Vijay, Vishal, Digvijay

**Safflower:** Bhima, Phule Kusuma, Sharada, Girna or D.S.H. 129

**Wheat:** NIAW-301 (Trimbak), NIAW-917 (Tapowan), NIDW-295 (Godavari), Late sowing- NIDW-15 (Panchavati), Irrigated- NIAW-34.

### **Marathwada**

**Rabi jowar:** Selection 3, Phule Malauli, Phule Anuradhada, Phule Vasudha, Phule Yeshodha, Parbhani Moti, CSV-22, PKV-Kranti, CSH-15, CSH-19.

**Safflower:** Shardha, Parbhani-12, Parbhani-40, Nari-6, Annegiri-1, Phule Kusum.

**Gram:** BDN-9-3, BDNG-979, Vishwas, Phule G-12, Vijay, Vishal, Digvijay.

**Fodder jowar:** Ruchira R-4-11, Nilva, MP chari, Pusa Chari, IS 4776, SG-14, MKV Chari.

### **Vidarbha**

**Gram:** Saki 9516, Hirva chafa, Vijay, ICCV-10.

**Wheat:** N 59, NI 5439, AKDW 299716, MACS 1967

### **Konkan**

**Groundnut:** TG-26, TAG-24, TPG-41, Konkan Gaurav, Konkan Tapora

**Mustard:** Pusa bold, Varuna.

**Sunflower:** Modern, S.S.56, B.S.H – 1.

### **Gujarat**

**Wheat:** GW 496, GW 273, GW 173, GW 1 (unirrigated), Lok-1, GW-366, GW- 190.

**Chickpea:** Gujarat chana-2 (unirrigated), Gujarat Gram-1, Gujarat Gram-3 (irrigated), Dahod Pila, ICC-4.

**Mustard:** Varuna, Gujarat Mustard 1, 2, 3 (in high temperature), 4.

**Garlic:** Gujarat Garlic-3, 4 or Local.

**Pea (vegetable):** Pusa Pragati, Pusa Rudhira.

**Onion:** Junagadh local (pili patti), Talaja red, Agri found dark red, Pusa White flat, Pusa Red, Nashik Lal, N 53 & H 48.

**Cumin:** Guj. Cumin- 2 and 4.

**Coriander:** Guj. Cor. -1 & 2.

**Carrot:** Patan Local, Pusa Kesar and Pusa Chamdagni.

**Raddish:** Pusa Hemadri, White ICL, Japanees White, Pusa Rashmi, Pusa Chetaki.

**Cabbage:** Kranti, Golden Acaire Pride of India, Coppen Market.

**Cauliflower:** Pusa Early, Pusa Dipali, Pusa Kartiki, Early Kuvvari for early maturity and for medium duration select the Pusa synthetic, Early Snowball, Snowball.

**Brinjal:** Guj. Brinjal 6, P.L.R. 1, Junagadh Lambagoal, Mahicco-11, 16.

**Fennel:** Gujarat fennel-2, 11 and 12.

### **Madhya Pradesh:**

**Wheat:** JW 1203, JW1215, HI 1544 (Irrigated).

JW 3288, JW 3211, JW 3020, HI 1531(1 or 2 irrigation).

JW 3288, JW 3173 (non irrigated).

**Gram:** JG 130, JG 11, JG 315, JG 16.

**Chickpea:** KAK 2, JGK 1.

**Lentil:** RVL 31, JL 2.

**Mustard:** RVM 2, RGN 73, Pusa Jai Kisan.

### **Chhattisgarh:**

**Wheat:** Lok-1, W.H. 147, Kanchan & Raj(irrigated).

C 308, Sujata, H.W. 2004, Ratan, H.I.-8627 & H.I. 1531 (Partially irrigated).

**Linseed:** R.L.C. 92 (Indira Alsi), Dipika (R.L.C.-78), Indira Alsi (R.L.C.-81), Kartika (R.L.C.-76), Jawahar 552 (R.L.C.-552), Kiran (R.L.C.-6).

**Safflower:** J.S.F.-1, J.S.I-7, J.S.H.-129.