



National Agromet Advisory Service Bulletin



Friday 25th November 2016

(For the period 25th to 29th November 2016)



Issued by

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

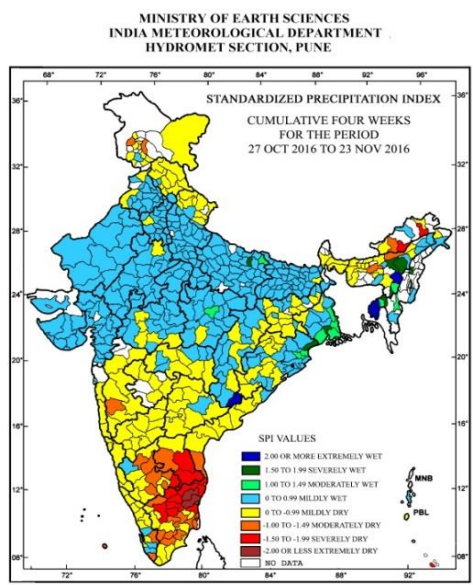
Weblink For

District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

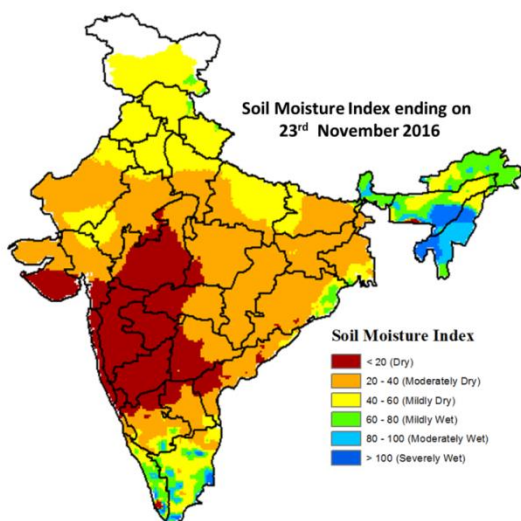
Northeast Monsoon watch: Northeast monsoon rainfall activity over southeast India continues to remain subdued.

Standardised Precipitation Index Four Weekly for the period 27th October to 23rd November 2016



- Extremely/severely wet conditions experienced in most districts of Tripura; few districts of Assam; Kolkata district of West Bengal; Balasore, Malkangiri districts of Odisha; Sant Kabir Nagar district of Uttar Pradesh.
- Extremely/Severely dry conditions experienced in few districts of Arunachal Pradesh; Tamil Nadu & Puducherry; Chittoor, Cuddapah districts of Andhra Pradesh; Kolar district of Karnataka.
- Moderately dry conditions experienced in few districts of Tamil Nadu & Puducherry; East Kameng district of Arunachal Pradesh; Kamrup, Shonitpur districts of Assam; Anantnag, Baramula districts of Jammu & Kashmir; Satara district of Maharashtra; Nellore, Anantapur districts of Andhra Pradesh; Bangalore Urban, Chamaraajanagar, Chitradurga, Davangere, Mandya, Tumkur, Chickballapur districts of Karnataka; Trivandrum, Idukki districts of Kerala; Lakshadweep district of Lakshadweep.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

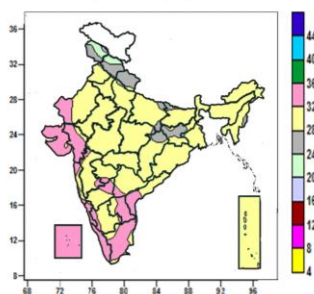
Soil Moisture Index for the week ending on 23rd November 2016



- Soil moisture index indicates severely and moderately wet condition in many parts of North-East Region and some parts of Kerala and Tamil Nadu. Mild wet condition in many parts of North-East Region, Sub-Himalayan West Bengal & Sikkim and some parts of Himachal Pradesh, Jammu & Kashmir, Odisha, Tamil Nadu, South Interior Karnataka and Kerala. Mild dry in many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, Uttar Pradesh, Tamil Nadu and some parts of North-East Region, Rajasthan, West Bengal and Odisha. Rest of the country shows Moderately dry and dry condition.

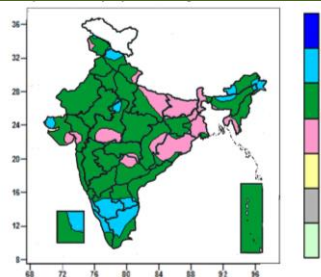
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 23.11.2016

Actual Mean Maximum Temperature (°C) in India for the week ending 23.11.2016



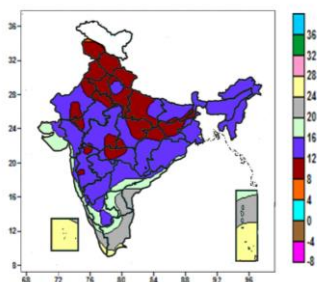
- Mean maximum temperature was between 32 to 36°C over Lakshadweep, Kerala, many parts of Gujarat, Coastal Karnataka, Rayalaseema, Tamil Nadu, some parts of West Rajasthan, Konkan & Goa, Madhya Maharashtra, Telangana, Interior Karnataka, Coastal Andhra Pradesh and isolated pockets of Marathwada.
- Mean maximum temperature was between 24 to 32°C over rest of the Country except some parts of Jammu & Kashmir and Himachal Pradesh, where it was between 16 to 24°C.

Mean Maximum Temperature (°C) Anomaly in India for the week ending 23.11.2016



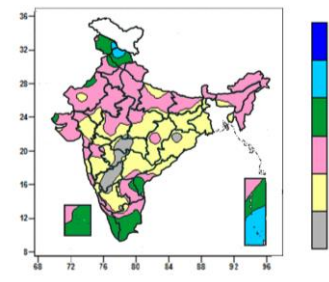
- Mean maximum temperature was above normal by 2 to 4°C over many parts of South Interior Karnataka, Tamil Nadu, Kerala, some parts of Himachal Pradesh, Arunachal Pradesh, Assam, Kutch, Coastal Karnataka, Rayalaseema, Lakshadweep and isolated pockets of Jammu & Kashmir, East Rajasthan, West Madhya Pradesh and Coastal Andhra Pradesh.
- It was normal to near normal over rest of the country.

Actual Mean Minimum Temperature (°C) in India for the week ending 23.11.2016



- Mean minimum temperature was between 4 to 8°C over isolated pocket of Jammu & Kashmir.
- Mean minimum temperature was between 8 to 12°C over Himachal Pradesh, Punjab, Haryana & Delhi, many parts of Jammu & Kashmir, Uttarakhand, Uttar Pradesh, Jharkhand, East Madhya Pradesh, some parts of Rajasthan, West Madhya Pradesh, Chhattisgarh, Vidarbha and isolated pockets of Bihar, West Bengal and Madhya Maharashtra.
- Mean minimum temperature was between 12 to 16°C over Sikkim, North East India, Marathwada, many parts of Bihar, West Bengal, Rajasthan, West Madhya Pradesh, Chhattisgarh, Odisha, Gujarat Region, Vidarbha, Madhya Maharashtra, North Interior Karnataka, Telangana, some parts of Saurashtra & Kutch, Konkan, South Interior Karnataka and isolated pockets of Coastal Andhra Pradesh, Coastal Karnataka and Tamil Nadu.
- Mean minimum temperature was between 16 to 24°C over rest of the country except many parts of Lakshadweep, some parts of Andaman & Nicobar Islands and isolated pockets of Kerala and Tamil Nadu, where it was between 24 to 28°C.

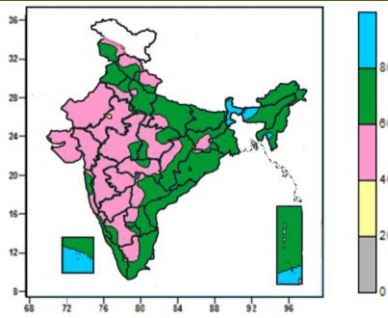
Mean Minimum Temperature (°C) Anomaly in India for the week ending 23.11.2016



- Mean minimum temperature was above normal by 2 to 4°C over some parts of Himachal Pradesh, Andaman & Nicobar Islands and isolated pockets of Jammu & Kashmir.
- Mean minimum temperature was normal to near normal over rest of the country except Jharkhand, Gangetic West Bengal, many parts of Tripura, Gujarat Region, East Madhya Pradesh, Chhattisgarh, Odisha, Madhya Maharashtra, Vidarbha, Telangana, South Interior Karnataka, some parts of East Uttar Pradesh, Sub Himalayan West Bengal, Bihar, Assam & Meghalaya, East Rajasthan, West Madhya Pradesh, Marathwada, Konkan, North Interior Karnataka, Coastal Karnataka, Coastal Andhra Pradesh and isolated pockets of West Rajasthan, Saurashtra, Rayalaseema and Tamil Nadu, where it was below normal by 2 to 4°C and many parts of North Interior Karnataka, some parts of Vidarbha, Marathwada and isolated pockets of Madhya Pradesh, Odisha, Coastal Karnataka and South Interior Karnataka, where it was below normal by 4 to 6°C.

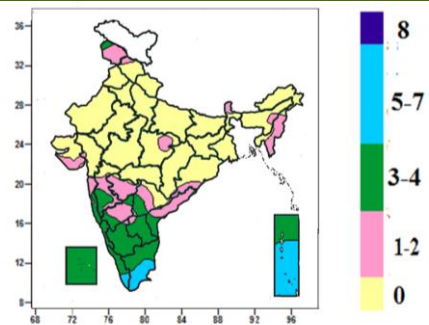
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 23.11.2016

Relative Humidity (%) over India for the week ending 23.11.2016



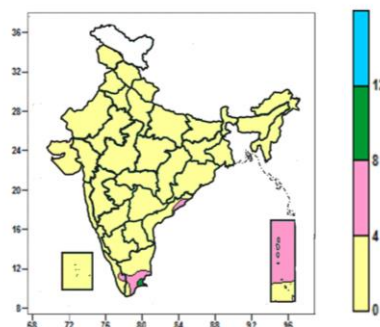
- Mean Relative Humidity was above 80% over many parts of Sub-Himalayan West Bengal & Sikkim, Lakshadweep, some parts of Assam, Mizoram and Andaman & Nicobar Islands and isolated pockets of Bihar.
- Mean Relative Humidity was between 60 to 80% over Punjab, Arunachal Pradesh, Meghalaya, Nagaland, Manipur, Tripura, Coastal Andhra Pradesh, many parts of Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh, Bihar, Jharkhand, Mizoram, Assam, Gangetic West Bengal, Chhattisgarh, Jharkhand, Odisha, Telangana, Rayalaseema, Coastal Karnataka, Kerala, Tamil Nadu, Andaman & Nicobar Islands, some parts of Uttarakhand, Haryana, Madhya Pradesh, Konkan, Vidarbha, South Interior Karnataka and isolated pockets of Sikkim, East Rajasthan, Kutch and Madhya Maharashtra.
- Mean Relative Humidity was between 40 to 60% over rest of the Country except isolated pocket of East Rajasthan, where it was between 20 to 40%.

Cloud amount (okta) over India for the week ending 23.11.2016



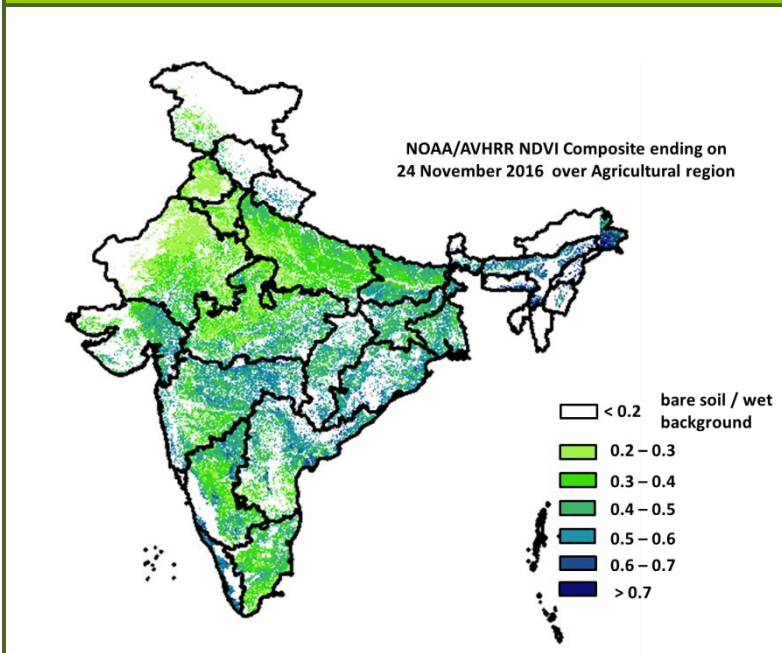
- Sky remained generally cloudy (5-7okta) over many parts of Andaman & Nicobar Islands and some parts of Kerala and Tamil Nadu.
- Sky remained partly cloudy (3-4 okta) over Coastal Karnataka, Lakshadweep, many parts of Konkan & Goa, South Interior Karnataka, Rayalaseema, Kerala, Tamil Nadu, some parts of Madhya Maharashtra, Telangana, North Interior Karnataka, Coastal Andhra Pradesh, Andaman & Nicobar Islands and isolated pocket of Jammu & Kashmir.
- Sky remained mainly clear/clear sky (1-2 okta/0 okta) over rest of the country.

Wind speed (knots) over India for the week ending 23.11.2016



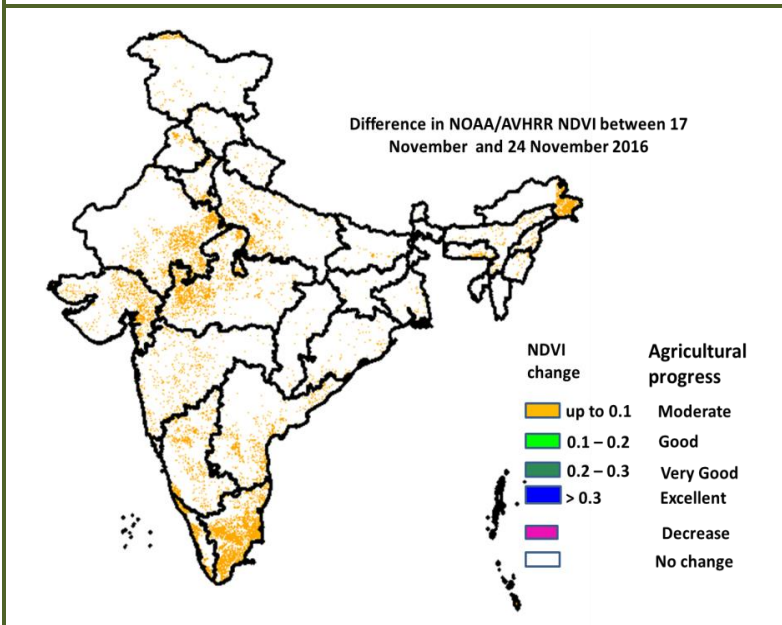
- Mean wind speed was between 0 to 4 knots over the country except many parts of Andaman & Nicobar Islands, some parts of Tamil Nadu and isolated pockets of Coastal Andhra Pradesh and Kerala, where it was between 4 to 8 knots.

NOAA/AVHRR NDVI composite ending on 24th November 2016 over Agricultural region of India



- Agricultural vigour is very good in east Madhya Pradesh, south Bihar, Odisha, West Bengal, Vidarbha region, patches in Karnataka, Kerala, Telangana, North Andhra Pradesh, Gujarat and North-east where NDVI value are > 0.7. Agriculture vigour is good in Gujarat where NDVI varies from 0.5 to 0.7. NDVI is moderate in Rajasthan, Punjab, Haryana, west Madhya Pradesh, Uttar Pradesh, Madhya Maharashtra, southern region of Andhra Pradesh, Karnataka and Tamil Nadu (NDVI 0.3 to 0.5).

Difference in NOAA/AVHRR NDVI between 17th and 24th November 2016



- Moderate progress in NDVI was observed in patches in west Madhya Pradesh, Rajasthan, Uttar Pradesh, Maharashtra, Gujarat, Karnataka, Kerala, Andhra Pradesh and Tamil Nadu.

- NOAA/AVHRR NDVI composite maps for the week ending on 24th November 2016 for different States are given in Annexure II.

Weather Forecast for next 5 days valid upto 0830 hours of 30th November 2016

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- No significant change in minimum temperatures over northwest India outside Uttar Pradesh where it is very likely to fall by 1-2°C during next 2 days.
- Prevailing minimum temperatures below normal by 1-2°C over Gangetic West Bengal & by 2-3°C over Jharkhand & Odisha likely to continue for next 3 days.
- Minimum temperatures very likely to fall by 1-2°C over some parts of East Madhya Pradesh, Chhattisgarh and Vidarbha and no significant change over West Madhya Pradesh during next 2 days.
- Dense to Moderate fog at isolated places likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and shallow fog/mist at isolated places over Punjab, Haryana and Uttar Pradesh during next 3 days.

5 Day Rainfall Forecast (MID DAY) 25th November 2016

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

% 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

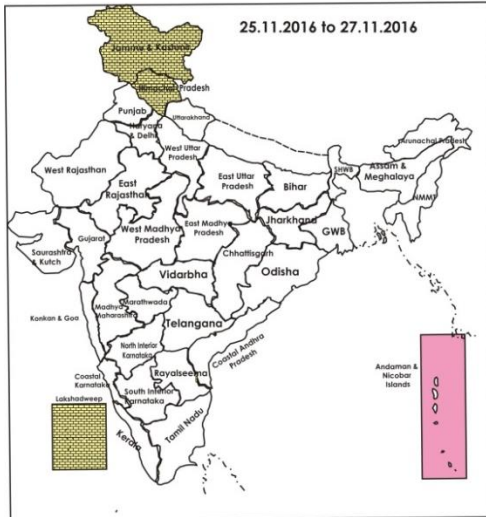
- **25 November (Day 1):** Dense fog very likely at isolated places over south Assam and Nagaland, Manipur, Mizoram & Tripura.
- **26 November (Day 2):** Dense fog very likely at isolated places over south Assam and Nagaland, Manipur, Mizoram & Tripura.

- No weather warning from 27th to 29th November.

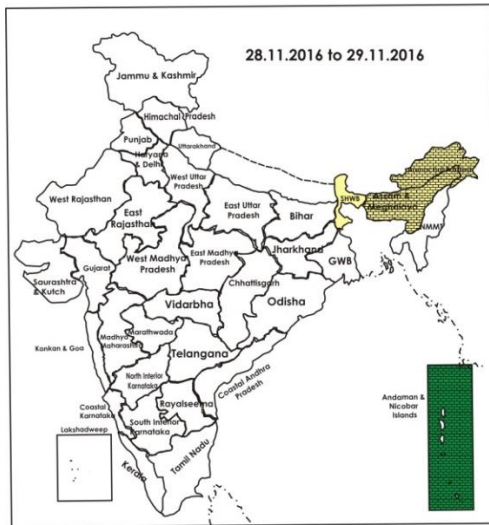
Weather Outlook for subsequent 2 days from 30th November to 2nd December 2016

- Rain very likely at a few places over Tamilnadu and at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, southern parts of Kerala and Andaman & Nicobar Islands.

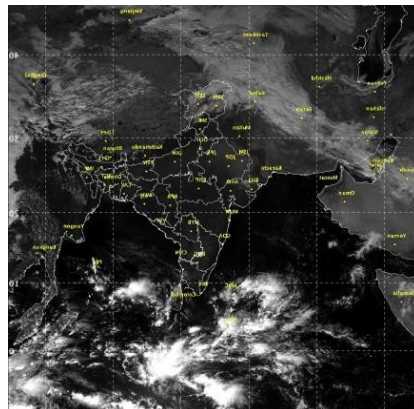
Weather Forecast Map (valid upto 0830 hours 30th November 2016)



- Most places
- Most/Few places/Dry
- Most/ Few places
- Most / Many places
- Most/Many / Isolated places
- Most / Isolated places
- Most / Many/ Few places
- Most / Few / Isolated places
- Most/Many places/ Dry
- Most / Isolated places/ Dry
- Many places
- Many / Few places
- Many / Isolated places
- Many / Few / Isolated places
- Many / Few places/ Dry
- Many / Isolated places/Dry
- Many places/ Dry
- Few places
- Few / Isolated places
- Few/ Isolated places/Dry
- Few places/Dry
- Isolated places
- Isolated places/ Dry
- Dry



Satellite image dated, 25.11.2016, 0600 UTC



Salient Advisories

- As dense fog very likely at isolated places over **south Assam, Nagaland, Manipur, Mizoram and Tripura** on 25th & 26th November, shallow fog/mist very likely at isolated places over **Punjab, Haryana, Uttar Pradesh** during next 3 days, monitor potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
- In **East Madhya Pradesh**, as minimum temperatures very likely to fall by 1-2 °C over some parts for next 2 days, apply light irrigation/sprinkler irrigation in vegetable nurseries during evening/night hours to protect from cold injury. In **Assam**, to protect the seedling of Boro rice from cold during night, cover the seedling with polythene sheet to help growth and development of the seedling. In Gurdaspur and Hoshiarpur districts of **Punjab**, irrigate young fruit plants and orchard trees at regular interval for proper growth and to avoid adverse effects of low temperature.
- In **Madhya Maharashtra**, as minimum temperature is prevailing is below normal and likely to continue for next 2 days, apply light irrigation to newly planted banana, fig and grape orchards and vegetables. In **Vidarbha**, minimum temperatures are very likely to fall by 1-2°C over some parts of Vidarbha during next 2 days, apply light irrigation to orchards and vegetables.
- In view of the subdued rainfall activity, continue transplanting of *Thaladi* season rice under irrigation in Cauvery Delta Zone and Southern Zone of **Tamil Nadu** and continue sowing of rice under irrigation in Problem Area Zone of **Kerala**.
- As dry weather is prevailing, apply one irrigation to Bengal gram crop at 30-35 days (before flowering) in **Rayalaseema**. Provide protective irrigation to wheat, Bengal gram, pigeon pea, vegetable and niger crops in Bidar district of North East Transition Zone and in cotton, red gram, maize, sunflower crops as per requirement in North East Dry Zone of **Norh Interior Karnataka**. In **Coastal Andhra Pradesh**, at present rainfed red gram is facing moisture stress. Hence, provide irrigation at flowering, pod initiation and pod development stages in areas having irrigation facility. Spray KNO₃ 10g/litre of water in jowar and Bengal gram to save the crop from dry spell.
- Continue sowing of wheat in **Jammu & Kashmir, Punjab, Haryana & Delhi, Rajasthan, Uttar Pradesh** under pre sowing irrigation if adequate moisture is not available in the fields. Continue sowing of rice and *rabi* maize in **Telangana**. Continue sowing of wheat, maize and mustard in **Bihar** and **Jharkhand**, mustard, pea and wheat in **Chhattisgarh** and **Madhya Pradesh**. Continue sowing of rapeseed, mustard and planting of potato in **Assam** and continue nursery raising of *Boro* rice. Continue planting of potato and sowing of pea in **Meghalaya**. Continue sowing of mustard, raya and gram in **Haryana**.
- In **East Madhya Pradesh**, keep animals in sheds during night hours and cover the floor with paddy straw litter to protect from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy. Provide artificial light during night time in poultry house.
- In Lower Bramhapurtra Valley Zone of **Assam**, to protect poultry from cold, gunny bags or plastic sheath curtains should be installed on the side walls of shed and bedding material (litter) should be increased by six inches. Care should be taken not to restrict ventilation.

Detailed Zonewise Agromet Advisories

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



Banana



Rice



Sugarcane



Red gram

- **Realised Rainfall:** Rainfall occurred in Kanyakumari, Nagapattinam, Ramanathapuram, Tirunelveli, Tiruvarur and Toothukudi districts of Tamil Nadu. Weather remained mainly dry/dry over rest of the region.
- **Realised Temperature:** Minimum temperatures are appreciably below normal (3.1°C to 5.0°C) at a few places over Interior Karnataka; below normal (1.6°C to 3.0°C) at many places over Telangana and Coastal Andhra Pradesh, at a few places over Coastal Karnataka and Tamilnadu and at isolated places over Rayalaseema.
- **Advisories:**
 - **Tamil Nadu:**
 - In view of subdued rainfall activity, continue transplanting of Thaladi rice with irrigation in Ariyalur, Nagapattinam, Perambalur, Thanjavur, Thiruvarur and Trichy districts of Cauvery Delta Zone.
 - In the Western Zone, since the wind speed is expected to be around 9 kmph, undertake double line propping of mid season planted sugarcane to prevent lodging. Spray 1% Urea +2% DAP + 1% KCl on medium duration Samba rice (panicle initiation stage) to improve flowering and also grain setting percentage.
 - In the South Zone, in Tirunelveli and Thoothukudi districts, continue direct wet seeding of rice and machine transplanting method to hasten the sowing/transplanting in rice areas, undertake sowing of rainfed crops like cumbu, horsegram, Bengal gram, coriander, senna and panivaragu utilising the realized rainfall during last week. Thinning should be done in early sown rainfed crops in order to maintain of the plant population as well as soil moisture.
 - In the North Western Zone, to improve drought resistance in small onion crop, PPFM (Pink Pigmented Facultative Methylo trophic) Methylo Bacterium solution (200ml/200 litres of water) can be sprayed thrice at 20 days or one month intervals.
 - In the Western Zone, anticipated low minimum temperature and high wind speed in the coming five days may induce infection of leaf spot disease in irrigated turmeric which is likely to increase. To control, spray Carbendazim @ 500g/ha (or) Mancozeb @ 1 Kg/ha (or) Copper oxy Chloride @ 1.25 Kg/ha in 500 litres of water.
 - In the High Rainfall Zone, spray 0.25% Copper Oxy chloride to control leaf spot in cinnamon and Carbendazim @ 1g /litre of water mixed with wetting agent to control leaf spot disease in banana.
 - In the High Altitude Zone, widespread root grub infestation is noticed in hill horticultural crops. To control, apply Entomopathogenic fungus *Beauveria* and *Metarrhizium* @ kg per acre along with well decomposed organic manure.
 - In the Southern Zone (Kannivadi), due to prevailing light cloudy weather, incidence of white fly/sucking pests is noticed in cotton and other vegetable crops. To control, use, 'Yellow Sticky trap' - 10 traps per acre.
 - In the South Zone, incidence of thrips is noticed in chilli. To control, spray Imidachloprid 17.8 % SL @ 3 ml/ 10 l of water or Dimethoate 30% EC @ 1 ml/litre of water.
 - **Andhra Pradesh:**
 - In the Krishna Godavari Zone, to overcome present dry condition, spray Potassium Nitrogen @ 2% for recovery of pulses seedlings.
 - In the High Altitude Tribal Zone, continue nursery sowing of rabi rice (MTU 1010, NLR 34449 (Nellore sannalu, Prabha), undertake seed treatment with Carbendazim @ 3g/kg seed to prevent seed borne diseases in rabi rice nursery. (sowing stage). Continue harvesting of *kharif* rice and picking of cotton.
 - In the Scarce Rainfall Zone of Rayalaseema, give one irrigation to Bengal gram crop at 30-35 days (before flowering) to fetch higher yields and undertake inter cultivation. Continue sowing of *rabi* groundnut under assured irrigation.
 - In Chittoor, Nellore and Kadapa districts of Southern Zone, continue sowing groundnut under irrigation after proper seed treatment. In Nellore district, continue sowing of green gram (varieties LGG-407, 410,460 and ML-267) after seed treatment with Thiomethaxom @ 5 g./kg of seed. At present rainfed red gram is facing drought situation. Hence, provide irrigation at flowering, pod initiation and pod development stages which in turn helps to increase the yield in areas having irrigation facility. Spray KNO₃ 10g/litre of water in jowar and Bengal gram to save the crop from dry spell.
 - In the North Coastal Andhra Pradesh, prevailing weather conditions (low temperature and partially cloudy) are

congenial for incidence of blast in rice (grain filling stage). To control, spray Tricyclazole 0.6 g/litre of water.

- In Ananthapur district of Scarce Rainfall Zone of Rayalaseema, BPH(brown plant hopper) incidence was noticed in rice(flowering to harvesting stage). To control, spray Applaud (Buprofezin) @ 330 ml/acre on the base of the crop.
- In the High Altitude Tribal Zone, undertake seed treatment with Carbendazim @ 3g/kg seed to prevent seed borne diseases in rabi rice nursery(sowing stage).
- In the Krishna Godavari Zone, due to prevailing dry weather conditions, sucking complex (white fly, jassids and thrips) may attack rabi pulses. To control, place yellow traps 15-20 per acre.
- **Telangana:**
 - In North Telangana Zone, continue sowing of rice and *rabi* maize. Cover entire nursery bed with polythene sheets in the night and remove in the morning to avoid the effect of cool temperatures on germination and growth of nursery. Provide one irrigation to Bengal gram crop at 30 - 35 days (before flowering) to fetch higher yields.
 - In Adilabad, Khammam, Karimnagar and Nizamabad districts of North Telangana Zone, monitor for incidence of semilooper and spodoptera in castor. If noticed, arrange birds perches @ 10 per acre and spray Acephate @ 1.5 g or Novoluron @ 1 ml or 1.5 g Thiodicarb/litre of water.
 - In Mahabubnagar, Nalgonda, Medak, Rangareddy, Khammam and Warangal districts (South Telangana Zone), tikka leaf spot was noticed in groundnut (flowering stage). To control, spray Chlorothalonil @ 2 g/litre or Hexaconazole @ 2 ml/litre or Tebuconazole @ 1 ml/litre of water
- **Kerala:**
 - In the Northern Zone, continue mulching in coconut basins and planting of bananas.
 - In Idukki and Wynad districts of High Altitude Zone, continue planting of ginger, mulching in pepper and arecanut fields and harvesting of pepper, cardamom and ginger.
 - In Kuttanadu region of the Problem Area Zone, continue sowing of rice. It is advised to coat the seeds with the bio fungicide *Pseudomonas* before sowing to protect the rice plants from seed borne diseases. *Pseudomonas* could be dissolved in the water used for soaking the seeds @ 10g/Kg seed for 12-14 hours and then drain the water and keep for sprouting. Undertake mulching in nutmeg fields to prevent drought.
 - In Thiruvananthapuram district of the Southern Zone, continue tapping of rubber.
 - In the Northern Zone, apply Bordeaux mixture @1% to the inflorescences and leaves of arecanut to control mahali disease.
 - In the Central Zone, prevailing weather conditions are congenial for incidence of leaf spot disease in snake gourd. To control, apply Mancozeb @ 3g/litre of water. Repeat it after 2weeks. Give 500 gm each of Micro food/palm and common salt to prevent yellowing of coconut tender leaves.
 - In the Problem Area Zone, apply *Beauveria/Lecanicillium lecanii* @10 g/litre of water to control sucking pests/ leaf feeding insects in vegetables. If initial symptom of mosaic disease is noticed in cucurbits, cut and remove the affected plant parts and apply Tubuconazol @ 1ml/litre of water to control powdery mildew.
 - In Thiruvananthapuram district in Southern Zone, intermittent rains and cloudy conditions are conducive for the attack of rice case worm. As a control measure, drain off water from the fields. If the infestation is severe, apply 2 Kg. Carbaryl 50 WP @ 80 g/ 10 cent. Weather conditions may also accelerate the attack of insect vectors which spread virus diseases in vegetables (growing stage). Apply Rogour (Dimethoate 30 E. C) @ 1.5 ml/litre of water to control vectors
 - In Idukki and Wynad districts of High Altitude Zone, apply 25 g Phorate or 20 g Carbofuran around the rhizome for reducing nematode population in bananas. Incidence of pseudostem weevil is noticed widely in 3-4 months old banana. To control, remove the dry outer sheathes of the pseudostem of all infested and uninfested plants and spray Carbaryl 50 WP @ 4g/litre of water on pseudostem.
- **Karnataka:**
 - Provide irrigation to cotton at boll development stage, red gram, maize, sunflower crops as per requirement in North East Dry Zone. Undertake harvesting of rice, planting of sugarcane Undertake picking of matured bolls of cotton.
 - Continue picking of matured pods of red gram; provide protective irrigation to ragi in Bengaluru Rural, Bengaluru Urban, Ramnagara, Chikaballapura and Kolar districts of Eastern Dry Zone.
 - Provide protective irrigation to wheat, Bengal gram, pigeon pea, vegetable and niger crops in Bidar district of North East Transition Zone.
 - In Dharwad, Belagavi and Haveri districts of North Transition Zone, undertake intercultural operations in *rabi* crops to control the weeds and for moisture conservation.
 - Continue sowing of chickpea (dry land and irrigated), wheat (irrigated), Dicocum wheat in Vijayapura, Bagalkote and Gadag districts of North Dry Zone. Apply irrigation to already sown *rabi* crops as per requirement.
 - Infestation of Bacterial blight disease in pomegranate is observed in Central Dry Zone; spray the crop with Streptomycin Sulphate 0.5 g + Copper oxy-Chloride 2 g dissolved in one liter water. Then take up spraying of micro nutrients viz. 1 g Zinc Sulphate + 1 g Magnesium Sulphate + 1 g Borax + 1 g Calcium dissolved in one litre of water.
 - Incidence of woolly aphid in the sugarcane field is seen in patches in North Dry Zone; spray Chlorpyrifos @2 ml or Melathion @ 2 ml or Metasystox @1.5 ml dissolved in one liter of water to the infected and surrounding area up to five meters.

- Incidence of myrid and mealy bugs is noticed in late sown cotton (boll development stage) in North East Dry Zone; to control, spray Monocrotophos @ 2 ml or Profenophos @ 2 ml per litre of water. Brown plant hopper is noticed in paddy crop; to control, spray the crop with Chloropyriphos @ 2.0 ml or Monocrotophos @ 1.5 ml dissolved in one litre of water.
- Weather conditions are favorable for ragi blast disease in ragi in Eastern Dry Zone; if noticed, spray Mancozeb @ 2 g/litre (100 gram/acre) or Zainab @ 2.5 g/litre (500 gram/acre). If wilt disease is noticed in red gram field, drenching with Carbendazim 50 WP @2 g/litre of water is advised. Remove and burn the wilt infected plants in field.
- Suitable varieties for sowing are given in Annexure III.
- ❖ **Animal Husbandry**
- In Scarce Rainfall Zone of Rayalaseema of Andhra Pradesh, prevailing weather conditions are congenial for incidence of blue tongue disease in sheep. Vaccinate the animals, provide artificial brooding to chicks to maintain adequate temperature and sides should be covered with curtains during cool hours of the day. Wet litter material should be removed regularly. Ensure proper cross ventilation to avoid ammonia accumulation.
- In the Southern Zone of Tamil Nadu (Kannivadi), due to moderate humid conditions, mastitis disease may affect the milch animals. Clean the udder with 1% Potassium Permanganate solution, before and after milking.
- In the Western Zone of Tamil Nadu, high calories feed may be given to animal poultry to tackle anticipated low temperature.
In the Southern Zone of Andhra Pradesh, as the night temperatures are falling down (21°C to 15°C), protect the poultry of all ages by creating normal temperature in the poultry sheds by infrared bulbs, artificial incubators etc and provide light and ventilation for the sheds.
- In Southern Dry Zone, maintain optimum room temperature in silkworm and poultry rearing houses.

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



Banana



Rice



Cauliflower



Land preparation/Sowing

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Temperature:** Minimum temperatures are below normal (1.6°C to 3.0°C) at many places over Assam & Meghalaya.
- **Advisories:**
 - As dense fog very likely at isolated places over south Assam, Nagaland, Manipur, Mizoram and Tripura on 25th & 26th November., monitor potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
 - **Assam, Meghalaya & Arunachal Pradesh:**
 - In Dhemaji, Lakhimpur, Sonitpur, Dibrugarh, Golghat, Jorhat and Sibsagar districts of Upper Brahmaputra Valley Zone of Assam, continue sowing of toria and planting of potato. Continue harvesting of matured *Sali* rice and undertake nursery sowing of *boro* rice.
 - In Karimganj, Hailakandi and Cachar districts of Barak Valley Zone of Assam, continue nursery raising for winter vegetables and planting of potato. Undertake land preparation for transplanting of Boro rice and continue harvesting of *Sali* rice. To protect the seedling of boro rice from cold night, cover the seedling with polythene sheet to help growth and development of the seedling.
 - In Karbi Anglong and NC Hills districts of Hill Zone of Assam, continue nursery sowing of *Boro* rice. Continue land preparation and sowing of lentil and land preparation and planting of potato.
 - In Marigaon and Nagaon districts of Central Brahmaputra Valley Zone of Assam, continue nursery preparation of *boro* paddy. Complete the sowing of *rabi* pulses and continue sowing of rapeseed and mustard, nursery sowing of brinjal, cole crops, Complete the planting of potato tuber within Mid November and continue land preparation and sowing of wheat.
 - In Barpeta, Bongaigaoin, Dhubri and Goalpara districts of Lower Brahmaputra Valley Zone of Assam, continue sowing of pumpkin, radish, tomato, onion, planting of potato and nursery preparation of cabbage, cauliflower, knol khol and sowing of lentil, oats, rapeseed and mustard. Continue harvesting of matured *Sali* rice. Undertake nursery sowing of *boro* rice.
 - In North Bank Plain Zone of Assam, continue land preparation and sowing of rapeseed/mustard. Continue planting of potato. Undertake harvesting of matured *Sali* rice and sowing of *rabi* vegetables as cabbage,

cauliflower and knol khol. Undertake nursery bed preparation for sowing of *boro* rice.

- In Arunachal Pradesh, cover bunches of banana with bunch covers or sacks or locally available materials to protect from low night temperatures.
- In Meghalaya, continue nursery sowing/transplanting of cauliflower/cabbage/broccoli, planting of potato and sowing of pea. Also continue harvesting of matured Upland rice, *Sali/kharif* rice and groundnut.
- In Hill Zone of Assam, Furadon granule @ 205g/plant should be applied at 20 days after transplanting to avoid fruit and shoot borer infestation in brinjal.
- In Upper Brahmaputra Valley Zone of Assam, due to favourable weather conditions, there is chance of attack of Gundhi bug in *Sali* rice at milky stage. To control, Malathion 5% dust @ 2.5 kg/bigha of land is recommended. Holding fires around the field at night hours will also reduce the gundhi bug population.
- In North Bank Plain Zone, to control leaf eating caterpillars in cole crops, Spray Malathion 50 EC @ 1.5 ml/litre of water.
- In Arunachal Pradesh, undertake drenching with 0.05% Dichlorvos at base of citrus plant for rectification of trunk-borer. Spray Sulfex @ 2 g/litre water against powdery mildew on black gram & green gram at vegetative stage. Drench young vegetable seedling with Chlorpyrifos 20 EC @ 2 ml/litre water (in evening time) against cut-worm.

▪ **Nagaland, Manipur, Mizoram and Tripura:**

- In Nagaland, toria and linseed should be sown as second crop utilizing the residual moisture in the field after the harvest of early to medium duration paddy varieties. Sow zero tillage lentil and pea after rice by opening small furrow between rice stubbles. Continue harvesting of TRC/WRC rice and transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal etc. Continue sowing of toria and *rabi* maize.
- In Manipur, continue sowing of field pea, lentil and nursery raising and transplanting of cole crops/onion and planting of potato. Continue land preparation for sowing rapeseed/mustard and pea. Continue harvesting of *kharif* rice, soybean, groundnut and black gram.
- In Mizoram, continue harvesting of *khasi* mandarin/acid lime, oil palm, banana and colocasia. Undertake nursery bed preparation for sowing of tomato and onion.
- In Tripura, undertake sowing of toria, sesame and lentil. Thinning and weeding along with gap filling may be done in the field of *rabi* Maize. Light irrigation in cole crops & tomato on every alternate day may be given for better establishment and smooth growth.
- In Manipur, to control leaf blotch & leaf spot in ginger/turmeric, application of Carbendazim @ 0.1% alternately with spraying of Mancozeb (2.5 g/litre) is also recommended.
- In Mizoram, apply insecticide like Imidacloprid 0.5 ml or Phosolone 1.5 ml or Acephate 1.0 g or Dimethoate 2 ml/litre of water against banana rhizome weevil disease in banana.
- Suitable varieties for sowing are given in Annexure III.

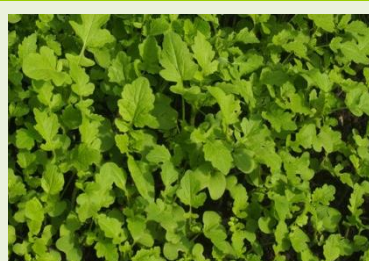
❖ **Animal Husbandry**

- In Arunachal Pradesh, undertake disinfecting the animal/bird sheds with lime powder/ bleaching powder/ 4% NaOH at regular interval.
- In Lower Brahmaputra Valley Zone of Assam, to protect poultry from cold, gunny bags or plastic sheath curtains should be installed on the side walls of shed and bedding material (litter) should be increased by six inches. Care should be taken not to restrict ventilation.
- In Central Brahmaputra Valley Zone of Assam, The cattle, goat and pigs should be vaccinated against BQ, HS, Foot and mouth disease. Vaccination to control the ranikhet disease of poultry may be done during this period.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Maize



Mustard



Rice



Land preparation/Sowing

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Temperature:** Minimum temperatures are appreciably below normal (3.1°C to 5.0°C) at many places over Vidarbha; below normal (1.6°C to 3.0°C) at many places over Madhya Maharashtra, at a few places over Konkan & Goa.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, continue intercultural operations in vegetable fields and mango, cashew and sapota orchards. Undertake sowing of watermelon variety 'Sugar baby' on one side of ridges with a spacing of 4 x 1 m, before

sowing undertake seed treatment with Thiram @ 3 gms/kg of seed. For healthy growth of vegetable seedlings, apply urea @ 50 g per bed 15 days after sowing. Transplanting of seedlings should be done 5 to 6 weeks after sowing. Undertake planting of seasonal fodder crops viz. maize and sorghum.

- In Madhya Maharashtra, as minimum temperature is prevailing is below normal and likely to continue for next 2 days, apply light irrigation to newly planted banana, fig and grape orchards and vegetables. Continue intercultural operations and application of fertilizers in sugarcane, rabi jowar, maize and vegetable crops like onion, brinjal, tomato, okra and guar. Continue picking fully opened cotton bolls during morning hours in North Madhya Maharashtra.
- In Marathwada, complete sowing of late irrigated wheat upto 15th December. Apply top dressing of Nitrogen to oat fodder crop and vegetable crop. Apply irrigation in vegetables during night hours.
- In Vidarbha, minimum temperatures are very likely to fall by 1-2°C over some parts of Vidarbha during next 2 days, apply light irrigation to orchards and vegetables. In areas where wheat sowings are delayed (beyond 15th November), use varieties recommended for delayed sowings in the region - AKW-381, HI-977, HD-2501, AKW-1071 (Purna) and NIAW-34. Undertake sowing of fenugreek, spinach, radish, capsicum and carrot. Undertake nursery sowing of onion/tomato. Complete harvesting of already matured *kharif* rice.
- Due to diurnal variation of temperature in Pune region, there may be attack of thrips in safflower; spray Dimethoate 30% EC @ 725 ml per 500 litres of water per hectare.

▪ **Gujarat:**

- Under present weather condition, spread plastic or fodder on the soil as mulch for maintaining moisture in vegetable field in South Gujarat Zone. Undertake mulching in sugarcane crop with its leaves for control of stem borer and to prevent moisture in the field. Complete sowing of wheat in November. Continue picking of matured capsules of castor during early morning hours.
 - Complete sowing of wheat, gram, cumin and fenugreek, planting of potato in North Gujarat Zone. Carry out weeding and intercultural operations in mustard, chili, tomato and rabi fennel. Undertake harvesting of sorghum at physiological maturity; continue harvesting of matured fruits of custard apple.
 - Complete sowing of wheat and cumin in North West Zone. Carry out intercultural operations in mustard, chili and tomato. Undertake harvesting of matured custard apple.
 - Complete nursery preparation for seedlings of cabbage, cauliflower and broccoli, sowing of *rabi* pulses (Indian bean, gram, green gram), sweet corn, off season okra and planting of sugarcane in South Gujarat Heavy Rainfall Zone.
 - Continue sowing of wheat, maize and cumin under assured irrigation facility in Middle Gujarat Zone.
 - Complete sowing of wheat, garlic, cumin, onion, coriander, pea (vegetable purpose) and carrot in Rajkot, Amreli, Jamnagar and Surendranagar districts of North Saurashtra Zone. Apply irrigation in pigeon pea (through drip system) and in lemon orchard at regular interval to prevent fruit cracking and for fast development of fruits.
 - Complete sowing of wheat, gram, cumin, garlic and coriander, picking of matured cotton bolls during morning hours and picking of matured clusters of castor in South Saurashtra Zone.
 - In Middle Gujarat Zone, present temperatures and low humidity favours infestation of jassid and white fly in castor; to control, spray Imidacloprid 17.8 % @ 5 ml or Thiomethoxam @ 6 g in 10 litres of water. In South Gujarat Zone, in mango orchard, dust the Methyl Parathion 2% powder around the tree for effective control of mealy bug.
 - Weather condition is favorable for outbreak of thrips in chili and tomato in North Gujarat Zone and North West Zone; to control, spray Methyl-o-Dematone 25 E.C. or Dimethoate 30 E.C. @ 10 ml/10 litres water. Also weather condition is favorable for outbreak of fruit fly in ber in North Gujarat Zone and North West Zone; to control, spray Canithione 50 E.C. @ 10 ml or Malathione 50 E.C. @ 20 ml + 10 litre of water.
 - Due to prevailing weather conditions there is chance of infestation of pink bollworm in cotton in North Saurashtra Zone; install 5 pheromone trap/acre for monitoring and to control spray Acephate 75 % SP @ 15 g and Abamectin 10 ml/10 litres of water.
 - Suitable varieties for sowing are given in Annexure III.
- #### ❖ **Animal Husbandry**
- Provide adlib warm water to lactating animals, keep young calves indoors during night time to protect from cold, provide 6-8 kg good quality dry roughage with 15-20 kg green fodder to the animals in Gujarat State.

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



Red gram



Okra



Maize



Rice

- **Realised Rainfall:** Rainfall occurred in South Andaman district of Andaman & Nicobar Islands. Weather remained dry over rest of the region.
- **Realised Temperature:** Minimum temperatures are markedly below normal (5.0°C or less) at isolated places over interior Odisha; below normal (1.6°C to 3.0°C) at many places over Gangetic West Bengal, at a few places over coastal Odisha.
- **Advisories:**
 - **Odisha:**
 - In East and South Eastern Coastal Plain Zone, continue *pyra* cropping of green gram, black gram, lentil and mustard and planting of potato. Continue sowing of irrigated mustard. Continue harvesting of medium duration varieties of rice.
 - In East, South Eastern and in North Eastern Coastal Plain Zone, weather is optimum for sowing of garlic in irrigated upland and medium land and planting of potato.
 - In Kalahandi and Nuapara districts of Western Undulating Zone, cover the vegetable nurseries to protect from low temperatures. Irrigate the vegetable seedling nursery during evening hours. Continue sowing of groundnut and mustard and nursery sowing of onion. Continue harvesting of matured direct seeded rice. Keep watch on false smut disease during grain development stage. If noticed spray Carbendazim or Matalaxyl + Mancozeb 2g/litre of water.
 - In Mayurbhanj and Keonjhar districts, continue sowing of green pea in fallow uplands and nursery raising of tomato, cauliflower and cabbage.
 - In North Eastern Coastal Plain Zone, prevailing cloudy weather with high humidity will increase the incidence of blast and sheath blight of kharif rice. To control it spray Tebuconazole + Trifloxystrobin 75WG @ 200g/ha in 500 litres of water or spray Tricyclazole @ 0.5g/litre of water.
 - In Kalahandi and Nuapara districts of Western Undulating Zone, sucking pests like aphids, jassids infestation may occur in cotton crop at boll development to boll bursting stage. Spray Buprofezin 2ml/litre water for controlling sucking pests.
 - In East and South Eastern Coastal Plain Zone, medium duration arhar is at flowering stage and is found to be affected by pod borer. Spray 800 ml neem based pesticides or 250 LE NPV in 200 litre of water per acre for control.
 - **West Bengal:**
 - In Burdwan, Murshidabad, Nadia, North 24 Parganas districts of New Alluvial Zone, undertake land preparation for sowing of wheat and planting of potato. Continue nursery raising of brinjal and tomato. In late sown *Aman* rice, maintain 2-3 cm standing water in the fields. Continue harvesting of early transplanted *Aman* rice. Continue sowing of winter vegetables.
 - In Purba Midnapore and South 24-parganas districts of Coastal Saline Zone, undertake sowing of lentil and continue sowing upto 1st week of December. Treat the seeds with Thirum @ 3g/kg of seed and sow @ 4-5kg/bigha. Prepare upland fields for planting of potato. Treat the seeds by soaking for two minutes with Methoxy Mercuric Chloride @100g/per quintal of seeds. Complete the post harvesting operation of rice like threshing, sun drying etc. in clear weather.
 - In Laterite and Red Soil Zone, complete the field preparation for sowing of wheat crop as early as possible. Undertake planting of potato. Apply fertilizer 17.4 kg Urea, 66 kg SSP and 13.5 kg MOP per bigha at the time of planting.
 - In Malda & Dakshin Dinajpur districts, undertake land preparation for sowing of wheat, mustard & potato after completing the harvesting of rice crop. Complete the sowing of lentil as soon as possible. Before seed sowing, seed should be treated with Carbendazim 50% W.P. and with Rhizobium culture. Prepare seed bed for sowing of brinjal, before sowing of seed it may be treated with Tricoderma viride.
 - In Terai Zone of West Bengal, undertake sowing of wheat. Treat the seeds before sowing with Captan @ 2 g/kg of seed. Seed rate 15kg/bigha and application of fertilizers per bigha at the time of sowing 17.5 kg-Urea, 50 kg-SSP, 13 kg-MOP, 2.5 KG-Sulphur, 3kg-Zinc Sulphate and 1.5 kg-Borax.
 - In Old Alluvial Zone, prevailing weather condition is favourable for attack of Sucking pest, fruit & shoot borer in chilli. To control sucking pests of chilli, spray with Acephate 50% + Imidachloropid 1.8% @ 2 g/litre of water.

To control fruit & shoot borer, spray Neem oil @ 2 ml/litre of water.

▪ **Andaman and Nicobar Islands:**

- As rain/thundershowers likely at many places over Andaman and Nicobar Islands on 29th Nov., postpone irrigation to standing crops.
- In North, Middle & South Andaman, prepare the land and sow the seed of bhindi after seed treatment with *Tricoderma viride* @ 4 g/kg of seed. Do periodical cleaning of coconut crown and garden to manage pest and diseases.
- In North, Middle & South Andaman and Nicobar, undertake periodical cleaning of coconut crown and garden to manage pest and diseases.

▪ **Bihar:**

- In Araria, Katihar, Kishanganj, Madhepura, Purnea, Saharsa and Supaul districts in North East Alluvial Zone, continue sowing of wheat, maize and mustard. After harvesting of rice crop, cultivation of lentil in upland to medium land may be undertaken. Transplanting of mature seedlings of cauliflower, cabbage, broccoli may also be done in raised bed. Undertake earthing-up in potato if crop has attained a height of 15-22 cm. Undertake sowing of improved varieties of Berseem.
- In Darbhanga, East Champaran, Gopalganj, Samastipur, West Champaran districts of North West Alluvial Plain Zone, continue sowing of gram, maize, lentil and potato and land preparation for sowing of wheat and planting of potato. Complete harvesting and threshing of rice crop. Undertake Weeding in vegetables crops. Provide light irrigation in vegetables such as cauliflower, cabbage, tomato, pea, chilli, brinjal, garlic etc as per soil moisture.
- In South Bihar Alluvial Zone, undertake land preparation for sowing of good quality seeds of wheat. Keeping in view of weather, farmers are advised for sowing of gram, lentil and sowing of oat and barseem for fodder purpose. Ploughing and planking should be done properly to conserve the moisture in the soil.
- In North East Alluvial Zone, humidity & temperature conditions are favourable for fruit and shoot borer infestation in okra and brinjal, apply Emamectin benzoate @ 1g/2 litre or (Profenfos 40% EC+ Cypermethrin 4% EC) @ 2.5 ml/litre of water.

▪ **Jharkhand:**

- In South Eastern Plateau Zone, undertake harvesting of matured rice. In harvested fields, continue land preparation and sowing of mustard, wheat, lentil, gram and cultivation of potato and green pea.
- In Western Plateau Zone, after harvesting of rice, plough the fields immediately and undertake sowing of different *rabi* crops. Farmers having at least 4 irrigation facility may proceed for the cultivation of potato and wheat and those who have at least 2 - 3 irrigation facility, may cultivate gram, lentil, pea, linseed, barley etc. Seeds of pulse crops must be treated with Rhizobium culture before sowing.
- In Central and North Eastern parts of Jharkhand, continue sowing of gram and planting of potato.
- In South Eastern Plateau Zone, present weather is conducive for occurrence of pests like hairy caterpillar on groundnut crop. So, in early stage of caterpillar, apply Dichlorvos @ 0.5 ml per litre of water. For control of adult caterpillar, provide bamboo perch in the fields for predatory birds.
- In South Eastern Plateau Zone, low land rice crop are at milky stage and this stage is susceptible to the attack of Gundhi bug. To control the insects, dusting of Chlorpyrifos/Quinolphos/Methyl Parathion dust @ 10 kg per acre is recommended.
- In South Eastern Plateau Zone, there may be attack of leaf eating and sucking pests in pigeon pea at flowering stage, for control, spray Monochrotophos @ 1 ml or Chlorpyrifos @ 1.5 ml per liter of water during evening time.
- In South Eastern Plateau Zone, green pea crop is mostly seen with the infestation of leaf eating insects and can be controlled by spraying of prepared concentration of neem or tobacco leaf extract diluted in the ratio of 1:10 liters or neem oil @ 5 ml per liter of water. Also attack of leaf eating insects have been increased in cucurbitaceous crops. Spray, Imidachlorpid @ 1g or Kung fu @ 2 ml per litre of water for control.
- Suitable varieties for sowing are given in Annexure III.

❖ **Animal Husbandry**

- In Jharkhand, weather is favourable for Foot and Mouth Disease (FMD), vaccinate FMD vaccine to the cattle with the consultation of veterinary doctor. Also due to decrease in temperature, PPR Disease may increase in goat & sheep, farmers are advised to vaccinate their animal with PPR vaccine @ 1ml S/C.
- In Old Alluvial Zone of West Bengal, keep animals in covered shed to protect from low temperature during night.

CENTRAL INDIA [M.P., CHHATTISGARH]



Maize



Cabbage



Mustard



Land preparation/Sowing

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Temperature:** Minimum temperatures are appreciably below normal (3.1°C to 5.0°C) at many places over Chhattisgarh; at a few places over East Madhya Pradesh and at isolated places over West Madhya Pradesh.
- **Advisories:**
 - **Madhya Pradesh:**
 - In East Madhya Pradesh, as minimum temperatures very likely to fall by 1-2 °C over some parts for next 2 days, apply light irrigation /sprinkler irrigation in vegetable nurseries during evening/night hours to protect from cold injury.
 - In Indore and Ujjain districts, apply first irrigation at CRI stage in wheat and apply split dose of nitrogen. Apply irrigation in potato, pea, coriander and other vegetable.
 - In Nimar Valley Zone, undertake nursery preparation for onion.
 - In Gwalior, Bhind, Morena, Guna, Ashoknagar and Shivpuri districts, continue sowing of pea, gram and wheat. Apply irrigation in vegetables.
 - In Chhindwara and Betul districts, continue nursery preparation for tomato, chilli, brinjal, cabbage, cauliflower and sowing of garlic, coriander etc. Complete sowing of linseed, safflower and wheat. Undertake intercultural operations in standing crops.
 - In Vindhya Plateau Zone, continue nursery preparation for winter vegetables like brinjal, chilli, cabbage, cauliflower, tomato and onion and sowing of green pea and garlic. Complete sowing of lentil, wheat and gram. Apply irrigation in early sown gram and wheat.
 - In Tikamgarh, Chhatarpur and Datia districts, continue seed bed preparation for sowing of onion. Continue sowing of pea, coriander and garlic. Continue sowing of wheat in irrigated areas. Apply irrigation in vegetables.
 - In Jhabua, Alirajpur and Dhar districts, continue transplanting of vegetables. Continue sowing of wheat and planting of potato. Continue picking up of matured bolls of cotton.
 - In Jabalpur, Rewa, Satna districts, continue sowing of mustard, gram, lentil and pea. Continue nursery preparation for cauliflower and cabbage. Continue sowing of wheat. Continue harvesting of late maturing varieties of rice. Apply irrigation in vegetables.
 - In Kymore Plateau and Satpura Hill Zone, there is possibility of attack of leaf curl disease in chilli and tomato, spray Methyl dameton @ 2.0 ml or Imidacloprid @ 0.5 ml per litre of water.
 - In Bundelkhand Zone, due to humid weather there are chances of attack of aphids in cucurbit crops, spray Methyl Dematon 25 E.C. @ 2.0 ml per litre of water.
 - **Chhattisgarh:**
 - In North Hill Zone, continue transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal etc. Continue seed bed preparation for onion and sowing of wheat, potato and garlic. Continue sowing of late varieties of chickpea. Undertake sowing of leafy vegetables.
 - In Chhattisgarh Plain Zone, continue nursery sowing of cauliflower, cabbage, KnolKhol, tomato, brinjal, chillies and capsicum. Continue sowing of wheat, pulses and oilseeds.
 - In Bastar Plateau Zone, continue harvesting of matured rice and sowing of pea. Continue sowing of oilseeds, pulses and wheat.
 - In North Hill Zone, due to humid weather there are chances of attack of powdery mildew disease in pea, spray Karathen @ 1 ml per litre of water or Sulfex @ 3 g per litre of water.
 - Suitable varieties for sowing are given in Annexure III.
 - ❖ **Animal Husbandry**
 - In East Madhya Pradesh, keep animals in sheds during night hours and cover the floor with paddy straw litter to protect from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy. Provide artificial light during night time in poultry house.
 - In Chhattisgarh, keep animals in shed during night hours, cover the floor with paddy straw litter to protect from cold.

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



Mustard



Maize



Cauliflower



Land preparation/Sowing

- **Realised Rainfall:** Weather remained dry over the region.
- **Advisories:**
 - As shallow fog/mist very likely at isolated places over Punjab, Haryana and Uttar Pradesh during next 3 days, monitor potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
 - **Rajasthan:**
 - In East Rajasthan, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, continue sowing of wheat, barley, gram. Continue thinning operation in mustard crop. Continue weeding and hoeing operation in vegetables. Continue nursery sowing of chilli, brinjal and tomato for rabi season.
 - In Arid Western Plain Zone, in Barmer, Churu, Jalore, Jodhpur, Pali districts, continue sowing of wheat. Apply light irrigation to cumin crop immediately after sowing and 2nd irrigation after 5 to 6 days of sowing. Undertake weeding and hoeing operation in mustard crops. In Jaisalmer and Bikaner districts, undertake sowing of wheat and barley. Continue sowing of cumin, isabgol and fenugreek. At the time of sowing treat the cumin and fenugreek seed by Carbendazim @ 2 g per kg seed.
 - In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, continue sowing of wheat, barley. Continue sowing of fenugreek and cumin.
 - In Alwar, Bharatpur, Dhauhpur, Karauli, Sawaimadhapur districts of Flood Prone Eastern Plain Zone, undertake sowing of wheat. Continue planting of potato. Continue weeding and thinning operations in mustard crop within 20-25 days after sowing. Undertake sowing of Lucerne.
 - In Dungarpur and Banswara districts of Southern Humid Plain Zone, continue sowing of gram. In gram, for control of wilt & root rot, treat soil with Trichoderma enriched FYM, treat seed with Trichoderma @ 8 g/kg seed or Carbendazim @ 2.5g/kg seed, for control of termite treat seed with Chlorpyrifos 20 EC @ 8 ml/ kg seed in gram.
 - In Arid Western Plain Zone and in Irrigated North Western Plain Zone, prevailing weather condition is congenial for attack of painted bug and saw fly in mustard crop, for control, broadcast Methyl Parathion 2% or Malathion 5% dust @ 24 kg/ha during morning or evening time and repeat after 15 days if required.
 - In Alwar, Bharatpur, Dhauhpur, Karauli, Sawaimadhapur districts of Flood Prone Eastern Plain Zone, prevailing weather condition is congenial for attack of leaf minor in mustard crop, for control spray Monochrotophos @ 1 litre per 600- 800 litres of water.
 - **Jammu & Kashmir:**
 - In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, continue sowing of wheat under rain fed/irrigated condition as per availability of moisture. Continue sowing of mustard and pea. Continue land preparation for transplanting of onion and garlic crop.
 - In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, continue sowing of late varieties of wheat and mustard in irrigated areas. Continue sowing of lentil and transplanting of vegetables like cauliflower and cabbage. Undertake nursery sowing of brinjal and tomato.
 - In Valley Temperate Zone of Jammu and Kashmir, complete sowing of wheat, oats and peas. Continue sowing of methi, coriander and spinach. Undertake transplanting of onion in main field. Continue planting of garlic and pran.
 - In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, there may be leaf curling due to attack of white fly in early sown tomato which is at flowering and fruiting stage. Spray Dimethoate @ 1.5ml/litre of water as a control measure.
 - In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, due to prevailing weather condition, there may be attack of Aphid on toria at flowering stage. To control, spray Dimethoate 30 EC/Rogor @ 2ml/litre of water.
 - **Uttarakhand:**
 - In Udhampur district of Bhabar and Tarai Zone, complete normal sowing of gram in the second fortnight of November in irrigated condition. Undertake sowing of wheat and coriander. If moisture is not available in the fields, then pre-irrigation should be given.
 - In Nainital district of Bhabar and Tarai Zone, continue sowing of wheat. Undertake sowing of pea in irrigated

valley in the field after seed treatment. In irrigated valley, undertake sowing of fenugreek, spinach and coriander.

- In Nainital district of Bhabar and Tarai Zone, to protect the pea crop from stem fly attack, Carbofuran 3 CG @ 25Kg/ha should be applied in the field with manure and seed at the time of sowing the seed.
- In Tehri Garhwal, Chamoli, Champawat, Pithoragarh, Rudraprayag and Uttarkashi districts of Hill Zone, continue sowing of wheat, gram, mustard and lentil. Continue transplanting of nursery of onion crop. Continue sowing of carrot, spinach, methi, dhania and radish.. Toria crop is at flowering stage , keep proper moisture in the field.
- In Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone, complete harvesting of short and medium maturing varieties of paddy. Continue sowing of mustard, gram, lentil and chickpea. Weather condition is suitable for sowing of *rabi* maize and potato crop.

▪ **Himachal Pradesh:**

- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, continue sowing of gobhi sarson, early pea, wheat, barley and oat. Continue sowing of sarsonsaag, bathua, radish, spinach, fenugreek, coriander, turnip. Complete planting of potato in lower regions. Undertake transplanting of cauliflower (late group), cabbage, knolkhol, broccoli and Chinese cabbage and continue direct sowing of radish, carrot, turnip, palak, methi, carrot, broccoli, lettuce in mid hill areas. Continue transplanting of mid season cauliflower in low hillareas. Undertake sowing of berseem, lucerne and oats for fodder for *rabi* season.
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, in Bilaspur, Solan, Shimla and Sirmaur districts, continue sowing of pea in low and mid hill region. Undertake transplanting of cole crops i.e. cabbage, cauliflower, broccoli, brussel's sprout, knoll-khol and Chinese cabbage in raised beds.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts, apply Blitox or Copper Hydroxide @ 600 g per 200 litre of water after harvesting apple orchards and apply Blitox @ 600 g per 200 litres of water or Bourdeaux mixture (1%) after harvesting Pomegranate orchards.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts present weather is conducive for attack of woolly apple aphid in apple trees, for control, spray Ektara @ 200 g or Marshal @ 200 ml.
- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul&Spiti, present weather is conducive for fall of leaves in apple trees, for control spray mixture of Mancozeb @ 500 gm and Carbendazim @ 100 g in 20 litres of water at 20 days interval.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for the attack of termites in vegetables and crops, for control spray Chlorpyriphos 20 EC @ 4ml/litre of water.

▪ **Punjab, Haryana and Delhi:**

- In Western Zone of Punjab, complete sowing of long duration variety of wheat. Continue transplanting of 4-6 weeks old seedlings of cabbage, mid season cauliflower, chinese cabbage and broccoli. Continue sowing of English radish, turnip, carrot, tomato and chilli and seed bed preparation for onion. Apply light irrigation in onion after 10 days of sowing .
- In Faridkot and Ferozepur districts of Punjab, apply need based irrigation to the sugarcane crop. Intercropping of wheat, raya, toria, gobhisarson, pea, gram, potato, cabbage, radish, garlic *etc.* can be done with the sugarcane crop.
- In Gurdaspur and Hoshiarpur districts, continue sowing of wheat. Continue sowing of raya and gobisarson under irrigated conditions. Complete sowing of pea and other winter vegetables. Continue transplanting of cauliflower and cabbage. Irrigate the vegetable crops at regular interval as per crop need as dry weather is expected in coming days.
- In Western Zone of Haryana, undertake field preparation and sowing of wheat under optimum soil moisture condition. In Eastern Zone of Haryana, continue sowing of wheat. Complete harvesting of matured rice crop. Apply irrigation in vegetables and sugarcane as per requirement. Continue harvesting of early varieties of sugarcane.
- In Western Semi-Arid Zone of Delhi, continue sowing of wheat. In view of dry weather forecast for the next five days, farmers are advised to dry the harvested paddy crop in the field for 2-3 days before threshing operation. Complete sowing of pea. Also complete planting of potato and continue sowing of *rabi* onion. Continue transplanting of mature seedlings of cauliflower, cabbage, broccoli and tomato. Continue sowing of Sarsonsaag, radish, spinach, fenugreek, coriander and turnip. Carry out thinning and weeding operation in timely sown mustard crop.

▪ **Uttar Pradesh:**

- In Central Plain Zone of Uttar Pradesh, continue sowing of wheat and complete sowing of gram and pea during the week. Continue nursery sowing of onion. Complete sowing of winter vegetable like spinach, fenugreek, coriander, carrot, radish, tomato, vegetable pea etc during the week. Undertake hoeing and weeding operation in mustard crop and timely sown potato crop. Apply light irrigation to toria crop as per requirement. Undertake hoeing and weeding operation in brinjal, cauliflower, cabbage, tomato and capsicum.
- In Central Plain Zone of Uttar Pradesh, apply 1st irrigation in wheat crop after 20-25 days of sowing, at CRI stage and after 40-45 days at tillering stage. Give first irrigation to French bean just before flowering stage and 2nd irrigation at pod development stage. Give first irrigation to barley crop after 30-36 days at tillering stage. Apply regular irrigation in winter season sugarcane for better growth.

- In Eastern Plain Zone of Uttar Pradesh, continue sowing of wheat, jou, mustard. Continue sowing of gram, pea and lentil.
- In Western Plain Zone of Uttar Pradesh, continue planting of winter sugarcane and potato, sowing of gram, pea, wheat etc. as intercrop. Continue planting of potato. Continue sowing of wheat crop, before sowing, seeds should be treated with Bavistin or Thiram @ 2 to 2.5 g per kg of seed. Recommended dose of fertilizer for N: P: K is 120, 50 and 40 kg/ha. Continue sowing of *rabi* onion, before sowing seeds should be treated with Captan @ 2.5 g/kg of seeds. Continue transplanting of matured seedlings of cauliflower, cabbage, broccoli and tomato in raised beds.
- In Bundelkhand Zone of Uttar Pradesh, complete sowing of linseed, mustard, vegetable pea, gram, pea, jou and lentil in irrigated areas. Continue sowing of linseed, mustard. Continue transplanting of mid seasonal brinjal, chilli, tomato, cabbage, cauliflower. Apply irrigation to spinach, fenugreek, radish, cabbage, carrot, coriander as per requirement.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of cutworm in potato crop, for control, spray Chlorpyrifos 20 EC @ 2 litres in 700 to 800 litres of water per hectare.
- In Eastern Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of pod fly in pigeon pea, for control spray Emidachloprid @ 1 ml per litre of water per hectare.
- Suitable varieties for sowing are given in Annexure III.
- ❖ **Horticulture**
- In Western zone of Punjab, continue planting of fruit plants like mango, sweet orange, mandarin, lime, lemon, litchi, guava, loquat and papaya.
- In Gurdaspur and Hoshiarpur districts of Punjab, irrigate young fruit plants and orchard trees at regular interval for proper growth and to avoid adverse effects of low temperature.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition there may be chances of fruit fall in ber, for control spray Superfixhormones@ 1.00ml in 4-5 litres of water.
- In Dungarpur and Banswara districts of Southern Humid Plain Zone, prevailing weather condition is congenial for attack of mealy bug in horticultural crops, for control spray Profenophos 50 EC @ 2ml per litre of water or Emidachloprid 17.8 SL @ 0.6 ml per litre of water add washing powder as sticker.
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, prevailing weather condition is congenial for attack of leaf curl & mosaic in Papaya, for control uproot & burn the affected plants and spray Dimethoate 30 EC @ 1 ml per litre of water or Methyl Demeton 25 EC @ 1 ml per litre of water.
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, there may be attacked by mealy bug insect on mango, guava & pomegranate. To control , apply Qinalphos 1.5 % per tree in soil at a depth of 10-25 cm.
- In Himachal Pradesh present weather is conducive for the attack of leaf minor in new growth of citrus, for control spray Matasystox or Malathion @ 10 ml in 10 litres of water.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, undertake preparation of field and sowing of seeds for raising of root stocks of stone fruits like peach, plum and apricot and nut crops like almond, walnut and pecannut.
- In Nainital district of Bhabar and Tarai Zone chilling should be done in the seeds of temperate fruits like apple, pear, peach, plum, khumani before sowing in the nursery. In high hills, pruning of temperate fruit trees like apple, pear, peach, plum etc should be started. Layout and digging of pits should be started for the transplanting of apple and other seed bearing fruit seedlings in winter season.
- ❖ **Floriculture**
- In Himachal Pradesh, undertake transplanting of Chrysanthemum and Marigold in raised bed. Undertake sowing of gladiolus. In present weather conditions, undertake sowing of winter annuals. Undertake pruning and intercultural operations in rose, apply Bavistin paste in the cut portion to protect the crop against attack of fungal diseases.
- In Valley Temperate Zone of Jammu and Kashmir, undertake planting of spring flowering bulbs of tulip, iris and daffodils etc. Undertake transplanting of winter flowering annuals.
- ❖ **Apiculture**
- In Himachal Pradesh, give the winter packing immediately to bee colonies. Check the colonies for nector and give artificial food to honey bees as there is scarcity of flowers during these days. And keep colonies in sun on clear day.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, give sugar feeding (1:1). Migrate colonies to areas having floral resources (near toria/vegetable crops). Provide winter packing to bee colonies to protect them from cold. Reduce the entrance. Sulphur dusting/oxalic acid spray @ 3.5% in one litre of water is recommended at fortnight intervals to control ectoparasitic mites.
- ❖ **Animal Husbandry**
- In Arid Western Plain Zone of Rajasthan, in Jaisalmer and Bikaner districts, vaccinate the livestock against foot and mouth disease and adopt protection measures against mastitis.
- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul & Spiti, there may be attack of ringworm (fungal infection) in animals, for control, after clipping hair and scrubbing with soap and water, apply

- Salicylic or Benzoic acid ointment (2 to 5%) or Iodine once daily until lesions heal.
- In Udham Singh Nagar district of Bhabar and Tarai Zone, Toxocara vitulorum (patera) are found in the food tube of buffalo calf in the age of 1-4 month. More than 50% buffalo calf die because of delay in treatment. Piperazine should be given to the infected calf on identification of Patera disease. To save the buffalo calf from patera disease, 10-15CC Neem oil should be given to the calf immediately after 10 days of his birth. Again after 10 days, 10-15 CC Neem oil should be given. Chenopodium album oil can also be given as a fodder to animals to save the calf/animals from patera disease.
 - In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, calcium should be supplemented in the diet of dairy animal as rice straw feeding leads to depletion of Ca levels in the blood thereby reduces milk yield and general health condition. Deworming of all livestock needs to be done against helminths using fenbendazole or closantel.
 - In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, Nomads are advised to vaccinate and deworm their flocks in order to avoid the economic losses caused by viral and parasitic diseases.
- ❖ **Poultry**
- In Himachal Pradesh, ensure plenty of drinking water to the poultry birds, proper space for egg laying of birds and provide 14 to 16 hours light including day light. Normal feeding schedule should be continued and add mineral in the diet if stress is observed. Present weather is conducive for the spread of IBD and Ranikhet disease, follow recommended schedule of vaccination for new lot of layers chicks. As temperature is falling, make the arrangements for protection from cold in the poultry houses.
 - In Faridkot and Ferozepur districts of Punjab, keep curtains ready for poultry sheds for winter season.

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

Annexure I

Week by week Rainfall Distribution

Sub-Divisions	09.11.16		16.11.16		23.11.16	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	19.7	-12	0.0	-100	0.0	-100
Dibang Valley	14.0	-30	0.0	-100	0.0	-100
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	0.2	-98	0.0	-100	0.0	-100
Kurung Kumey	**	**	**	**	**	**
Lohit	13.2	53	0.6	-92	0.6	-100
Lower Dibang Valley	23.6	18	0.0	-100	0.0	-100
Lower Subansari	**	**	**	**	**	**
Papumpare	1.2	-73	0.0	-100	0.0	-100
Tawang	60.0	545	0.0	-100	0.0	-100
Tirap	24.8	84	0.0	-100	0.0	-100
Upper Siang	0.0	-100	0.0	-100	0.0	-100
Upper Subansari	0.0	-100	0.0	-100	0.0	-100
West Kameng	0.0	-100	0.0	-100	0.0	-100
West Siang	0.6	-96	0.0	-100	0.0	-100
Assam&Meghalaya						
Assam						
Baksa	0.0	-100	0.0	-100	0.0	-100
Barpeta	0.0	-100	0.0	-100	0.0	-100
Bongaigaon	0.0	-100	0.0	-100	0.0	-100
Cachar	64.7	528	0.6	-92	0.0	-100
Chirang	0.0	-100	0.0	-100	0.0	-100

Darrang	**	**	**	**	**	**
Dhemaji	3.0	-52	0.0	-100	0.0	-100
Dhubri	0.0	-100	0.0	-100	0.0	-100
Dibrugarh	14.8	143	0.0	-100	0.0	-100
Goalpara	0.0	-100	0.1	-99	0.0	-100
Golaghat	34.8	462	0.0	-100	0.0	-100
Hailakandi	98.0	870	0.0	-100	0.0	-100
Jorhat	15.8	113	0.1	-99	0.0	-100
Kamrup(Rural)	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	0.2	-96	0.0	-100	0.0	-100
Karbi Anglong	85.0	1317	0.0	-100	0.0	-100
Karimganj	241.8	306	0.0	-100	0.0	-100
Kokrajhar	0.0	-100	0.0	-100	0.0	-100
Lakhimpur	3.1	-50	0.0	-100	0.0	-100
Morigaon	2.8	-52	0.0	-100	0.0	-100
N.C.Hills	180.7	921	0.0	-100	0.0	-100
Nagaon	62.8	657	0.0	-100	0.0	-100
Nalbari	0.0	-100	0.0	-100	0.0	-100
Sonitpur	0.1	-98	0.0	-100	0.0	-100
Sibsagar	19.7	319	0.0	-100	0.0	-100
Tinsukia	17.2	97	0.0	-100	0.0	-100
Udalgiri	2.4	-50	0.5	-83	0.5	-100
Meghalaya						
East Garo Hills	0.0	-100	0.0	-100	0.0	-100
East Khasi Hills	23.9	91	0.0	-100	0.0	-100
Jaintia Hills	0.0	-100	0.0	-100	0.0	-100
Ribhoi	5.1	1	0.0	-100	0.0	-100
South Garo Hills	1.0	-86	0.0	-100	0.0	-100
West Garo Hills	0.0	-100	0.0	-100	0.0	-100
West Khasi Hills	6.0	-10	0.0	-100	0.0	-100
NMMT						
Mizoram						
Aizwal	88.7	235	0.0	-100	0.0	-100
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	32.5	57	1.5	-92	0.0	-100
Mamit	**	**	**	**	**	**
Saiha	36.0	29	1.0	-95	0.0	-100
Serchhip	91.7	341	0.0	-100	0.0	-100
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	47.0	238	0.0	-100	0.0	-100
Churachandpur	**	**	**	**	**	**
Imphal east	57.4	278	1.1	-86	0.0	-100
Imphal west	24.4	64	28.5	296	0.0	-100
Senapati	**	**	**	**	**	**
Tamenglong	**	**	**	**	**	**
Thoubal	66.0	424	0.0	-100	0.0	-100

Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	65.1	135	0.0	-100	0.0	-100
Kephire	48.0	340	1.0	-86	0.0	-100
Kohima	66.2	456	0.0	-100	0.0	-100
Longleng	**	**	**	**	**	**
Mokokchung	20.0	35	0.0	-100	0.0	-100
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	63.0	429	1.0	-83	0.0	-100
Tuensang	**	**	**	**	**	**
Wokha	128.0	324	0.0	-100	0.0	-100
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	115.8	764	0.0	-100	0.0	-100
NorthTripura	153.9	913	0.0	-100	0.0	-100
SouthTripura	188.2	1054	0.0	-100	0.0	-100
West Tripura	195.8	1454	0.0	-100	0.0	-100
Himachal Pradesh						
Bilaspur	0.0	-100	0.0	-100	0.0	-100
Chamba	0.0	-100	0.0	-100	0.0	-100
Hamirpur	0.0	-100	0.0	-100	0.0	-100
Kangra	0.0	-100	0.0	-100	0.0	-100
Kinnaur	0.0	-100	0.0	-100	0.0	-100
Kullu	0.0	-100	0.0	-100	0.0	-100
Lahaul and Spiti	0.0	-100	0.0	-100	0.0	-100
Mandi	0.0	-100	0.0	-100	0.0	-100
Shimla	0.0	-100	0.0	-100	0.0	-100
Sirmaur	0.0	-100	0.0	-100	0.0	-100
Solan	0.0	-100	0.0	-100	0.0	-100
Una	0.0	-100	0.0	-100	0.0	-100
Punjab						
Amritsar	0.0	-100	3.0	114	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	0.1	-93	0.0	-100
Hoshiarpur	0.0	-100	0.7	-70	0.0	-100
Jalandhar	0.0	-100	0.5	-50	0.0	-100
Kapurthala	0.0	-100	1.3	79	0.0	-100
Ludhiana	0.0	-100	2.2	345	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	0.0	-100	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
Haryana,Chd,Delhi						
Haryana						
Ambala	0.0	-100	0.0	-100	0.0	-100
Bhiwani	0.0	-100	0.0	-100	0.0	-100
Chandigarh	0.0	-100	0.1	-96	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
Katihah	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	0.0	-100	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
Delhi						
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	**	**	**	**	**	**
Jammu & Kashmir						
Anantnag	0.0	-100	0.0	-100	0.0	-100
Badgam	0.0	-100	0.0	-100	0.0	-100
Bandipore	**	**	**	**	**	**
Baramula	0.0	-100	0.0	-100	0.0	-100
Doda	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100
Rajouri	0.0	-100	0.0	-100	0.0	-100
Ramban	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100
Udhampur	0.0	-100	0.0	-100	0.0	-100
East Madhya Pradesh						
Anuppur	0.0	-100	0.0	-100	0.0	-100
Balaghat	0.0	-100	0.0	-100	0.0	-100
Chhatarpur	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100
Tikamgarh	0.0	-100	0.0	-100	0.0	-100
Umaria	0.0	-100	0.0	-100	0.0	-100
West Madhya Pradesh						
Agar	0.0	-100	0.0	-100	0.0	-100
Alirajpur	0.0	-100	0.0	-100	0.0	-100
Asoknagar	0.0	-100	0.0	-100	0.0	-100
Badwani	0.0	-100	0.0	-100	0.0	-100
Betul	0.0	-100	0.0	-100	0.0	-100
Bhind	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	0.0	-100	0.0	-100	0.0	-100
Guna	0.0	-100	0.0	-100	0.0	-100
Gwalior	0.0	-100	0.0	-100	0.0	-100
Harda	0.0	-100	0.0	-100	0.0	-100
Hoshangabad	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	0.0	-100	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	0.0	-100	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	0.0	-100	0.0	-100
Shivpuri	0.0	-100	0.0	-100	0.0	-100
Ujjain	0.0	-100	0.0	-100	0.0	-100
Vidisha	0.0	-100	0.0	-100	0.0	-100
Chhattisgarh						
Balod	0.0	-100	0.0	-100	0.0	-100
Baloda Bazar	0.0	-100	0.0	-100	0.0	-100
Balrampur	0.0	-100	0.0	-100	0.0	-100
Bastar	0.0	-100	0.0	-100	0.0	-100
Bemetara	0.0	-100	0.0	-100	0.0	-100
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	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100
Durg	0.0	-100	0.0	-100	0.0	-100
Gariaband	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
Kabirdham	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100
Kondagaon	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
Mahasumund	0.0	-100	0.0	-100	0.0	-100
Mungeli	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
Rajnandgaon	0.0	-100	0.0	-100	0.0	-100
Sukma	0.0	-100	0.0	-100	0.0	-100
Surajpur	0.0	-100	0.0	-100	0.0	-100
Surguja	0.0	-100	0.0	-100	0.0	-100
East Uttar Pradesh						
Allahabad	0.0	-100	0.0	-100	0.0	-100
Ambedkar Nagar	0.0	-100	0.0	-100	0.0	-100
Azamgarh	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	0.0	-100
Barabanki	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	0.0	-100
Fatehpur	0.0	-100	0.0	-100	0.0	-100
Gazipur	0.0	-100	0.0	-100	0.0	-100
Gonda	0.0	-100	0.0	-100	0.0	-100
Gorakhpur	0.0	-100	0.0	-100	0.0	-100
Hardoi	0.0	-100	0.0	-100	0.0	-100
Jaunpur	0.0	-100	0.0	-100	0.0	-100
Kannauj	0.0	-100	0.0	-100	0.0	-100
Kanpur City	0.0	-100	0.0	-100	0.0	-100
Kanpur Dehat	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	0.0	-100
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	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100
RaiBareilly	0.0	-100	0.0	-100	0.0	-100
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnmagar	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	0.0	-100
Sultanpur	0.0	-100	0.0	-100	0.0	-100
Unnao	0.0	-100	0.0	-100	0.0	-100
Varanasi	0.0	-100	0.0	-100	0.0	-100
West Uttar Pradesh						
Agra	0.0	-100	0.0	-100	0.0	-100
Aligarh	0.0	-100	0.0	-100	0.0	-100
Auraiya	0.0	-100	0.0	-100	0.0	-100
Badaun	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100
Etawah	0.0	-100	0.0	-100	0.0	-100

Firozabad	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100
Jalaun	0.0	-100	0.0	-100	0.0	-100
Jhansi	0.0	-100	0.0	-100	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	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	0.0	-100
Mahoba	0.0	-100	0.0	-100	0.0	-100
Mainpuri	0.0	-100	0.0	-100	0.0	-100
Mathura	0.0	-100	0.0	-100	0.0	-100
Meerut	0.0	-100	0.0	-100	0.0	-100
Moradabad	0.0	-100	0.0	-100	0.0	-100
Muzaffarnagar	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
Uttarakhand						
Almora	0.0	-100	0.0	-100	0.0	-100
Bageshwar	0.0	-100	0.0	-100	0.0	-100
Chamoli	0.0	-100	0.0	-100	0.0	-100
Champawat	0.0	-100	0.0	-100	0.0	-100
Dehradun	0.0	-100	0.0	-100	0.0	-100
Garhwal Pauri	0.0	-100	0.0	-100	0.0	-100
Garhwal Tehri	0.0	-100	0.0	-100	0.0	-100
Haridwar	0.0	-100	0.0	-100	0.0	-100
Nainital	0.0	-100	0.0	-100	0.0	-100
Pithoragarh	0.0	-100	0.0	-100	0.0	-100
Rudraprayag	0.0	-100	0.0	-100	0.0	-100
Udham Sing Nagar	0.0	-100	0.0	-100	0.0	-100
Uttarkashi	0.0	-100	0.0	-100	0.0	-100
Bihar						
Araria	0.0	-100	0.0	-100	0.0	-100
Arwal	0.0	-100	0.0	-100	0.0	-100
Aurangabad	0.0	-100	0.0	-100	0.0	-100
Banka	0.0	-100	0.0	-100	0.0	-100
Begusarai	0.0	-100	0.0	-100	0.0	-100
Bhabua	0.0	-100	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	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	0.0	-100
Monghyar	0.0	-100	0.0	-100	0.0	-100
Muzaffarpur	0.0	-100	0.0	-100	0.0	-100
Nalanda	0.0	-100	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	0.0	-100
Samstipur	0.0	-100	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
Jharkhand						
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	0.0	-100
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	0.0	-100
Hazaribagh	0.0	-100	0.0	-100	0.0	-100
Jamtara	**	**	**	**	**	**
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderrna	0.0	-100	0.0	-100	0.0	-100
Latehar	0.0	-100	0.0	-100	0.0	-100
Lohardagga	0.0	-100	0.0	-100	0.0	-100
Pakur	0.0	-100	0.0	-100	0.0	-100
Palamau	0.0	-100	0.0	-100	0.0	-100
Ramgarh	**	**	**	**	**	**
Ranchi	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100
West Singbhum	0.0	-100	0.0	-100	0.0	-100

East Rajasthan						
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	0.0	-100	0.0	-100
Bharatpur	0.0	-100	0.0	-100	0.0	-100
Bhilwara	0.0	-100	0.0	-100	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	0.0	-100	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	0.0	-100	0.0	-100
Kota	0.0	-100	0.0	-100	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	0.4	-6	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
West Rajasthan						
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
Gujarat Region						
Ahmedabad	0.0	-100	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100
Aravalli	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
Chhota Udepur	0.0	-100	0.0	-100	0.0	-100
DNH	0.0	-100	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100
Daman	0.0	-100	**	**	**	**
Dangs	0.5	-81	0.0	-100	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100
Mahisagar	0.0	-100	0.0	-100	0.0	-100

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	0.0	-100	0.0	-100	0.0	-100
Vadodara	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100
S K & Diu region						
Amreli	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.0	-100	0.0	-100
Botad	0.0	-100	0.0	-100	0.0	-100
Devbhoomi Dwarka	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Gir Somnath	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-100	0.0	-100	0.0	-100
Morbi	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
Maharashtra						
Konkan & Goa						
Mumbai City	0.0	-100	0.0	-100	0.0	-100
Mumbai Suburban	0.0	-100	0.0	-100	0.0	-100
North Goa	0.0	-100	6.6	-50	0.0	-100
Raigad	0.0	-100	0.0	-100	0.0	-100
Ratnagiri	0.0	-100	0.0	-100	0.0	-100
Sindhudurg	0.0	-100	4.1	-61	1.7	-100
South Goa	0.0	-100	9.8	-21	0.6	-75
Thane	**	**	**	**	**	**
Madhya Maharashtra						
Ahmednagar	0.0	-100	0.0	-100	0.0	-100
Dhule	0.0	-100	**	**	**	**
Jalgaon	0.0	-100	0.0	-100	0.0	-100
Kolhapur	0.0	-100	4.8	-38	0.1	-99
Nandurbar	0.0	-100	**	**	**	**
Nasik	0.0	-100	0.0	-100	0.0	-100
Pune	0.0	-100	0.0	-100	0.0	-100
Sangli	0.0	-100	2.9	-57	1.0	-100
Satara	0.0	-100	0.0	-100	0.0	-100
Solapur	0.0	-100	3.1	-47	0.0	-100
Marathwada						
Aurangabad	0.0	-100	0.0	-100	0.0	-100
Beed	0.0	-100	0.0	-100	**	**

Hingoli	0.0	-100	0.0	-100	**	**
Jalna	0.0	-100	0.0	-100	0.0	-100
Latur	0.0	-100	0.0	-100	0.0	-100
Nanded	0.0	-100	0.0	-100	0.0	-100
Osmanabad	0.0	-100	**	**	**	**
Parbhani	0.0	-100	0.0	-100	0.0	-100
Vidarbha						
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
Odisha						
Angul	4.9	-33	0.0	-100	0.0	-100
Balasore	56.9	199	0.0	-100	0.0	-100
Bargarh	0.2	-93	0.0	-100	0.0	-100
Bhadrak	56.8	176	0.0	-100	0.0	-100
Bolangir	0.0	-100	0.0	-100	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	20.5	-13	0.0	-100	0.0	-100
Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	11.4	-37	0.0	-100	0.0	-100
Gajapati	18.1	-56	0.0	-100	0.0	-100
Ganjam	17.1	-57	0.0	-100	0.0	-100
Jagatsingpur	83.1	123	0.0	-100	0.0	-100
Jajpur	34.5	56	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	1.9	-91	0.0	-100	0.0	-100
Kendrapara	84.7	84	0.0	-100	0.0	-100
Keonjhar	3.3	-71	0.0	-100	0.0	-100
Khurda	11.5	-60	0.0	-100	0.0	-100
Koraput	0.8	-94	0.0	-100	0.0	-100
Malkangiri	1.0	-57	0.0	-100	0.0	-100
Mayurbhanj	8.9	19	0.0	-100	0.0	-100
Nawapara	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.1	-98	0.0	-100	0.0	-100
Nayagarh	2.5	-93	0.0	-100	0.0	-100
Puri	63.2	106	0.0	-100	0.0	-100
Rayagada	0.2	-99	0.0	-100	0.0	-100
Sambalpur	0.0	-100	0.0	-100	0.0	-100
Sonepur	0.0	-100	0.0	-100	0.0	-100
Sundargarh	0.1	-98	0.0	-100	0.0	-100

West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	71.8	-11	9.6	-86	5.9	-92
North & Middle Andaman	91.2	47	0.2	-99	0.0	-100
South Andaman	63.3	-8	0.5	-99	32.1	-54
GWB						
Bankura	0.0	-100	0.0	-100	0.0	-100
Birbhum	0.0	-100	0.0	-100	0.0	-100
Burdwan	0.0	-100	0.0	-100	0.0	-100
East Midnapore	67.9	630	0.0	-100	0.0	-100
Hooghly	12.4	226	0.0	-100	0.0	-100
Howrah	37.2	155	0.0	-100	0.0	-100
Kolkata	64.3	684	0.0	-100	0.0	-100
Murshidabad	0.0	-100	0.0	-100	0.0	-100
Nadia	17.3	541	0.0	-100	0.0	-100
24 Pargana (N)	29.5	220	0.0	-100	0.0	-100
Purulia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (S)	37.9	44	0.0	-100	0.0	-100
West Midnapore	3.8	-44	0.0	-100	0.0	-100
SHWB & Sikkim						
Cooch Behar	0.0	-100	0.0	-100	0.0	-100
Darjeeling	0.0	-100	0.0	-100	0.0	-100
East Sikkim	0.0	-100	0.0	-100	0.0	-100
Jalpaiguri	0.0	-100	0.0	-100	0.0	-100
Malda	0.0	-100	0.0	-100	0.0	-100
North Dinajpur	**	**	**	**	**	**
North Sikkim	0.0	-100	0.0	-100	0.0	-100
South Dinajpur	0.0	-100	0.0	-100	0.0	-100
South Sikkim	0.0	-100	0.0	-100	0.0	-100
West Sikkim	**	**	**	**	**	**
Karnataka						
Coastal Karnataka						
Dakshina Kannada	0.0	-100	14.1	-22	0.0	-100
Udupi	0.0	-100	6.5	-59	0.0	-100
Uttara Kannada	0.1	-99	9.2	-7	0.0	-100
NI Karnataka						
Bagalkote	0.0	-100	0.0	-100	0.0	-100
Belagavi	0.0	-100	9.9	48	0.5	-92
Bidar	0.0	-100	0.0	-100	0.0	-100
Dharwad	0.0	-100	5.3	-30	0.0	-100
Gadag	0.0	-100	0.0	-100	0.0	-100
Haveri	0.0	-100	16.6	65	0.0	-100
Kalaburgi	0.0	-100	0.0*	-99	0.0	-100
Koppal	0.0	-100	0.0	-100	0.0	-100
Raichur	0.0	-100	0.0	-100	0.0	-100
Vijayapura	0.0	-100	0.0	-100	0.0	-100
Yadgir	0.0	-100	2.3	-37	0.0	-100
SI Karnataka						

Ballari	0.0	-100	0.0	-100	3.1	-52
Bangalore Rural	0.0	-100	0.0	-100	0.0	-100
Bangalore Urban	0.0	-100	0.0	-100	0.0	-100
Chamarajanagar	1.3	-94	0.0	-100	0.0	-100
Chikaballapur	1.8	-90	0.0	-100	0.0	-100
Chikkamagaluru	0.0	-100	11.2	-16	0.0	-100
Chitradurga	0.0	-100	0.1	-98	0.0	-100
Davangere	0.0	-100	0.0	-100	0.0	-100
Hassan	0.0	-100	2.8	-76	0.0	-100
Kodagu	1.0	-96	4.9	-66	0.3	-99
Kolar	0.0	-100	0.0	-100	0.7	-94
Mandya	0.0	-100	0.0	-100	0.0	-100
Mysuru	0.0	-100	0.0	-100	0.0	-100
Ramanagara	0.0	-100	0.0	-100	0.0	-100
Shivamogga	1.2	-92	34.3	265	0.0	-100
Tumakuru	0.0	-100	1.2	-88	0.0	-100
Kerala						
Alappuzha	18.7	-69	21.8	-52	2.2	-94
Kannur	8.2	-72	0.0	-100	0.0	-100
Ernakulam	37.8	-21	27.8	-29	0.0	-100
Idukki	9.5	-84	6.6	-85	1.0	-97
Kasaragod	0.0	-100	0.0	-100	0.0	-100
Kollam	99.3	32	16.3	-73	8.6	-78
Kottayam	52.6	-17	13.5	-68	8.8	-71
Kozhikode	7.0	-85	0.1	-99	0.0	-100
Malappuram	6.7	-84	1.2	-96	0.0	-100
Palakkad	21.6	-58	0.1	-99	0.0	-100
Pathanamthitta	108.3	61	42.5	-32	17.5	-57
Thiruvananthapuram	23.2	-64	3.0	-94	12.7	-57
Thrissur	2.5	-94	3.2	-91	0.0	-100
Wyand	0.0	-100	0.0	-100	0.0	-100
Tamil Nadu						
Ariyalur	16.4	-75	2.0	-96	2.6	-94
Chennai	37.6	-63	14.9	-86	0.6	-99
Coimbatore	11.6	-77	1.3	-96	0.0	-100
Cuddalore	8.4	-91	8.5	-88	3.9	-94
Dharmapuri	3.4	-90	0.0	-100	0.0	-100
Dindigul	23.2	-59	5.7	-84	0.3	-99
Erode	12.5	-71	0.2	-99	0.0	-100
Kanchipuram	7.7	-91	8.1	-88	4.7	-92
Kanyakumari	35.6	-51	19.3	-64	29.0	-18
Karaikal	79.4	-54	35.0	-70	12.4	-81
Karur	4.9	-89	0.5	-98	0.3	-99
Krishnagiri	1.1	-95	0.0	-100	0.0	-100
Madurai	9.0	-84	0.3	-99	0.3	-99
Nagapattinam	51.5	-57	17.1	-83	45.1	-48
Namakkal	3.3	-91	2.3	-89	0.0	-100
Nilgiris	12.6	-80	69.3	50	0.6	-98
Perambalur	22.8	-53	0.5	-98	0.0	-100

Puducherry	2.9	-98	4.6	-94	0.0	-100
Pudukottai	9.5	-77	3.6	-89	8.2	-79
Ramanathapuram	30.0	-52	6.9	-82	40.4	12
Salem	0.6	-99	2.0	-93	0.0	-100
Sivaganga	5.5	-90	5.6	-80	9.0	-67
Thanjavur	17.1	-77	17.2	-60	13.3	-73
Theni	17.0	-67	3.2	-90	1.3	-95
Tirunelveli	31.7	-54	31.3	-39	21.3	-43
Tirupur	27.2	-40	0.0	-100	0.0	-100
Tiruvallur	14.1	-81	2.0	-97	0.0	-100
Tiruvannamalai	4.4	-91	1.3	-97	0.0	-100
Tiruvarur	28.6	-68	29.0	-56	29.7	-59
Toothukudi	23.2	-61	38.8	-5	22.8	-40
Trichy	1.3	-97	1.1	-97	0.0	-100
Vellore	3.1	-91	0.5	-99	0.0	-100
Villupuram	7.0	-88	2.5	-94	0.0	-100
Virudhunagar	27.3	-54	6.6	-83	8.5	-74
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	9.8	-57	0.3	-97	0.0	-100
Guntur	0.5	-98	0.0	-100	1.0	-94
Krishna	1.3	-95	1.6	-82	5.0	-63
Nellore	6.1	-93	8.5	-89	3.9	-93
Prakasam	0.0	-100	3.1	-86	1.4	-94
Sirkakulam	36.9	17	0.0	-100	0.0	-100
Visakhapatnam	2.5	-86	0.1	-99	0.0	-100
Vizianagram	2.0	-89	0.0	-100	0.0	-100
West Godavari	0.3	-99	1.5	-87	0.2	-99
Rayalaseema						
Anantapur	0.1	-99	0.7	-92	0.2	-95
Chittoor	4.5	-88	2.0	-95	1.4	-94
Cuddapah	1.1	-96	0.1	-99	4.1	-68
Kurnool	0.0	-100	0.2	-97	0.0	-100
Telangana						
Adilabad	0.0	-100	0.0	-100	0.0	-100
Hyderabad	0.0	-100	0.0	-100	0.0	-100
Karimnagar	0.0	-100	0.0	-100	0.0	-100
Khammam	0.0	-100	0.3	-83	0.0	-100
Mehabubnagar	0.0	-100	2.3	-25	0.0	-100
Medak	0.0	-100	0.0	-100	0.0	-100
Nalgonda	0.0	-100	0.0	-100	0.0	-100
Nizamabad	0.0	-100	0.0	-100	0.0	-100
Rangareddy	0.0	-100	0.0	-100	0.0	-100
Warangal	0.0	-100	0.0	-100	0.0	-100

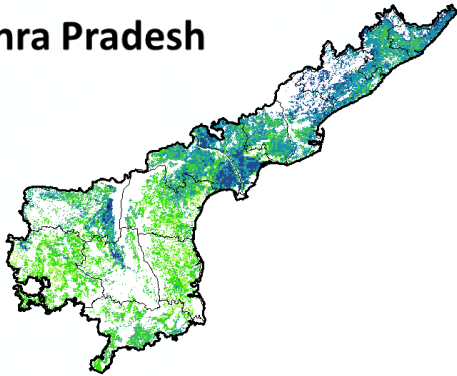
Legends

	(20% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-20 to -59%) deficient rainfall	**	Data not available

Annexure II

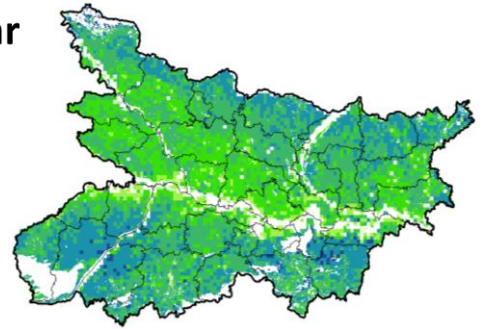
NOAA/AVHRR NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON
24th November 2016 FOR DIFFERENT STATES

Andhra Pradesh



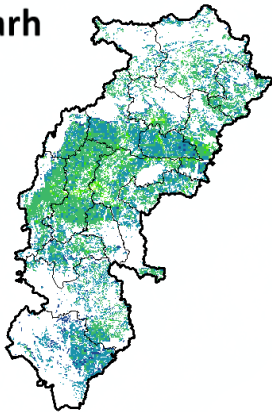
Agriculture vigour is moderate over central and southern part whereas, northern parts show good to very good NDVI in the state of Andhra Pradesh.

Bihar



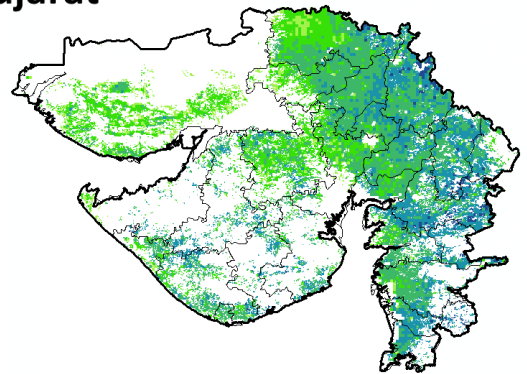
Agriculture vigour is moderate over central parts of Bihar whereas southern and patches in northern part shows good NDVI values.

Chhattisgarh



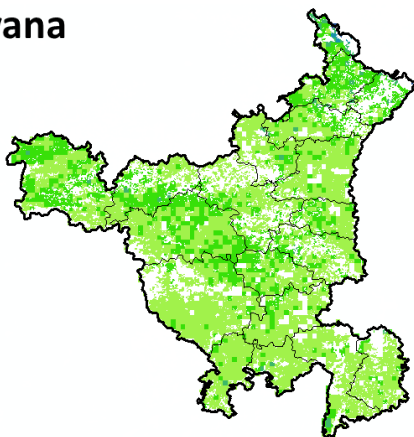
Agriculture vigour is good in southern region whereas, very good vigour is seen in central and northern region of Chhattisgarh.

Gujarat



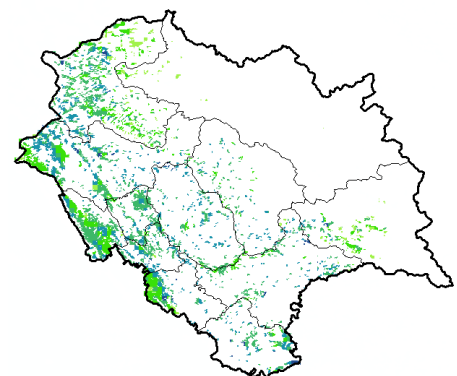
Moderate NDVI values are observed in patches in Kutch region whereas, good to very good NDVI is observed in Saurashtra and Gujarat.

Haryana



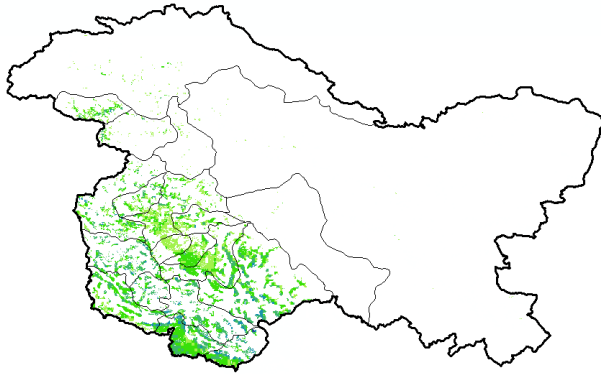
Moderate agriculture vigour is observed over entire state of Haryana.

Himachal Pradesh



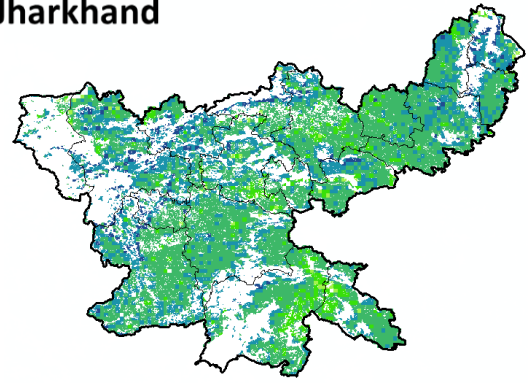
Agriculture vigour is moderate to good over few patches of Himachal Pradesh.

Jammu & Kashmir



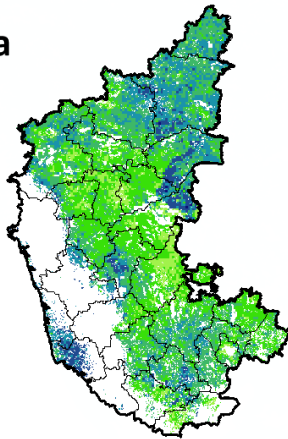
Agriculture vigour is moderate over entire state of Jammu & Kashmir.

Jharkhand



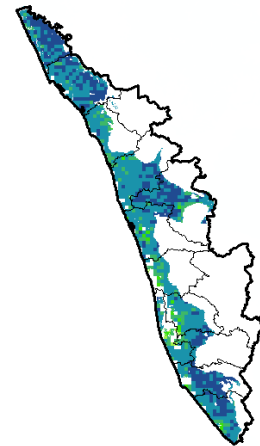
Agriculture vigour is very good over few patches in central region of Jharkhand whereas, remaining states shows good NDVI values.

Karnataka



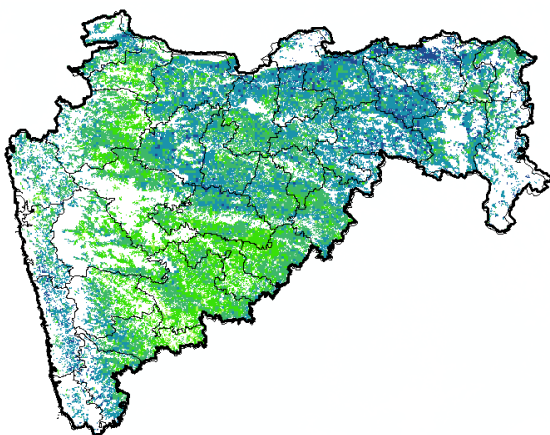
Agriculture vigour is moderate over patches in central region of the state whereas good vigour is observed in the northern and patches in southern regions.

Kerala



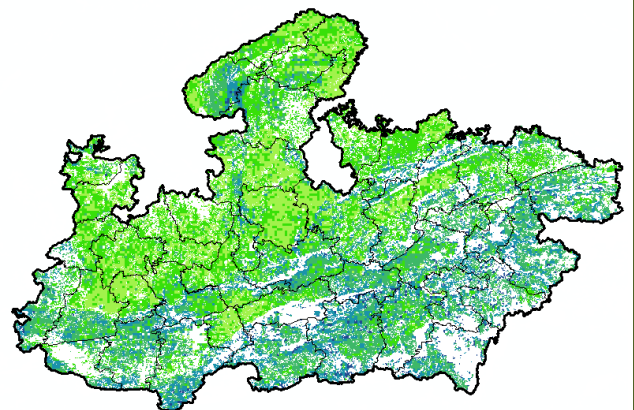
Agriculture vigour is good over entire state of Kerala except central part which shows moderate NDVI values.

Maharashtra



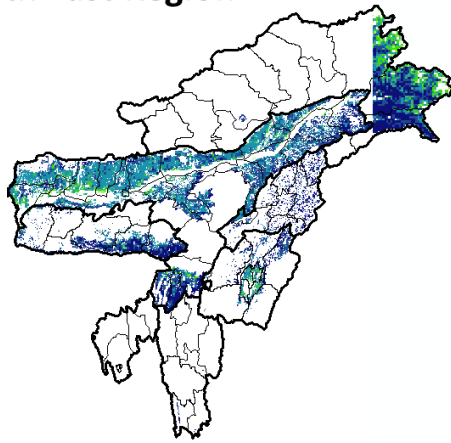
Agricultural vigour is moderate over central Maharashtra whereas, good to very good vigour is observed in the north and eastern regions.

Madhya Pradesh



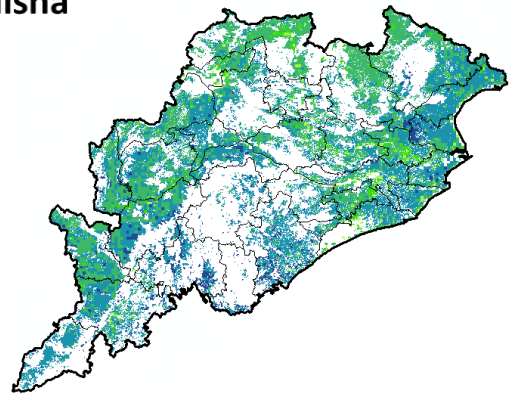
Agriculture vigour is moderate over patches in eastern and northern region of the state of Madhya Pradesh whereas, good vigour is observed over western and southern region.

North East Region



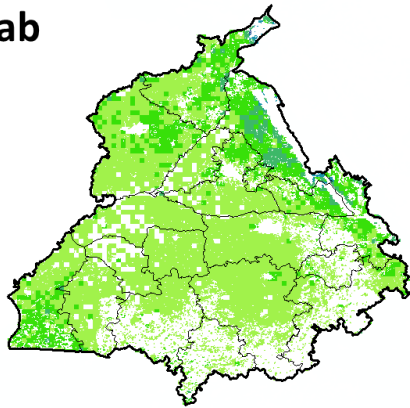
Agriculture vigour is good & very good over north-east states of country.

Odisha



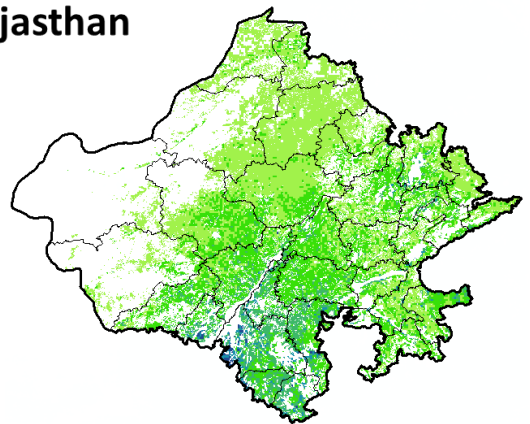
Agricultural vigour is moderate over few patches in coastal region of Odisha whereas, good vigour is observed in entire state.

Punjab



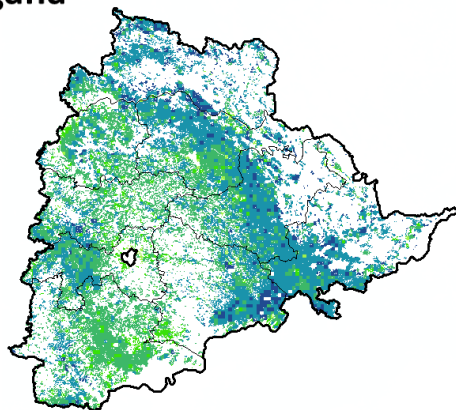
Agricultural vigour is moderate over entire state of Punjab.

Rajasthan



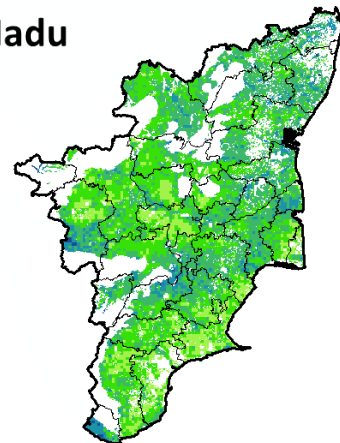
Agriculture vigour is moderate over western and northern Rajasthan whereas, good vigour is observed over southern region.

Telangana

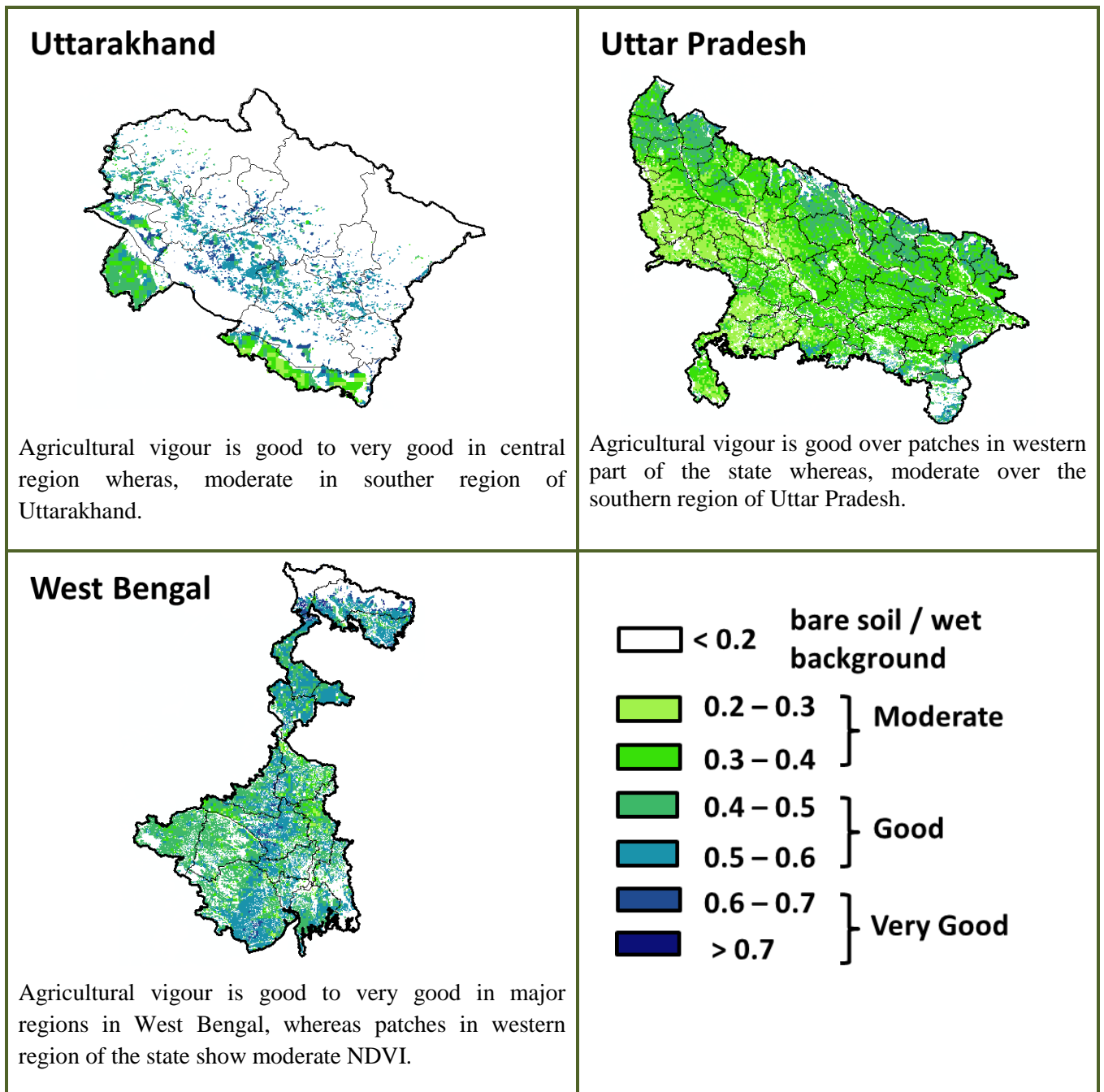


Agriculture vigour is good to very good over entire state of Telangana whereas, moderate vigour is observed in patches in the southern region.

Tamil Nadu



Agricultural vigour is good in patches in northern part of Tamil Nadu, whereas rest of the part shows moderate NDVI.



* For New Delhi NOAA/AVHRR NDVI COMPOSITE Map is not available due to some problem in data set.

Annexure III

- Assam**
- Okra:** Pusa Sawani, Arka Anamika, Parbhdani Kranti.
- Cauliflower :** Early Kunwari, Pusa Ketki, Pusa Dipali.
- Winter brinjal:** Pusa Kranti, Pusa Purple Long, Pusa Purple Round, Pusa Vairab, Pant Samra.
- Pumpkin:** Arke Suryamukhi, Arka Chandan.
- Radish :** Pusa Desi, Pusa Chetki.
- 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).
- Brinjal :** Cluster, Barbengena, JC-1, Kuchia, Pusa Kranti, Pusa Purple Long (for long varieties).
Pusa Purple Round, Pusa Vairab, JC-2, BWR-12 (round varieties).
- Potato :** Kufri Chandramukhi, Kufri Jyoti, Kufri Megha, Kufri Badshah, Kufri Sindhuri.
- Onion :** Pusa Red, Pusa Ratnar, Pusa white (Round), Pusa white (Flat), N-53, Agrifound Light Red, Punjab Red Round, Pusa Madhuri, Arka Niketan.
- Cauliflower :** Early Kunwari, Pusa Katki and Pusa Deepali (for early maturity).
Improved Japanese, Pusa Synthetic, Pusa Snowhall (for mid maturity).
Snowball-16, Pusa Snowball, K-1 and Hissar 1 (for late maturity)etc.

Cabbage :Golden Acre, Pride of India, Pusa Mukta (Sel – 8) (for early maturity).
Drum Head and Eclipse Drum Head (for late maturity).

Knol-Khol :White Vienna (for early maturity).
Purple Viena (for late maturity).

Manipur

Pea :Arkel.

Tripura

Tomato: Trishul, Allrounder, T- 1408, T- 1458, Anup.

Cauliflower: CFL- 4048, Pusa early synthetic, Kamaya, Suhasi.

Cabbage: BC- 76, Pusa Drum Head, Pusa Synthetic.

Broccoli: Everest, Ayeshwaria.

Odisha

Green pea: Rachana, Arkel. and T -163.

Mustard:Parbhathi, Anuradha, TS-29 & M-27.

Garlic: Phawari, Rajalbadi, Jamnagar and G-282

Potato: Kufri Chandramukhi, Kufri Chamatkar, Kufri Jyoti, Kufri Sinduri and Kufri Alankar, etc

Bihar

Pigeon pea: Bahar, Pusa-9, Narendra Arher-1, Rajendra Arher-1 and Maalvia-13.

Sesame : Kanak, kalika, Uma, Usha, Tilottama, Neelima and Prachi

Green gram : K -851, PDM -54, PDM -11, OUM 11-5

Balck gram : T-9, Pant-U-19. Pant –U-30, Pant –U-11

Niger : Deomali

Horsegram : Urmi, DS 1-2-2, DS 1-2

Jharkhand

Mustard: Shivani, Varuna, Pusa bold, Kranti, Pusa jaikisan , Vardan etc.

Potato: Kufri Ashoka, Kufri Pukhraj, Kufri Lalima, Kufri Pushkar and Kufri Kanchan.

Toria: BR-23,T.-9, P.T. 303, Panchali and Bhavani.

Gram: KAK-2, ICC-2, HK94-134(Kabuli) and Pusa 256, Pusa 372, Pant G-114, KWR 108, ICC 37.

Lentil:P.L.- 406, P.L.-639, D.P.L.-15, D.P.I.- 62 etc.

Green pea: Arkel or Azad pea.

Wheat: HDR-77, K-8027, C-306, Birsa genhu – 3 etc. HDR-77, K-8027, C-306, Birsa genhu – 3 etc.

Linseed:Sweta, Shubhra, T-397 etc.

West Bengal

Coconut: Eastcoastal, Hazari

Banana:Mortoman, Chapa, Kathali, Singapuri,

Mustard:Varuna, Sita and Bhagirathi.

Jute : Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali etc.

Cabbage :Pride of India, Pusa early, Kranti.

Cauliflower : Jawhar moti, Bharat Jyoti, Early banaras.

Uttarakhand

Wheat:HS-562, VL-616, VL-829, VL-802, VL-802

Onion:VL-Pyaj-3,Nasik Red,Pusa Red

Pea: Vivek 10,Vivek 11,Pant 3,

Radish:Meenu early, Japanese white, PusaHimani.

Carrot:PusaVrishi,

Rai:Varuna, Rohini, Krishna, Kanti, Vardan, Vaibhav, Basanti, Narendra, Early rai-4, Urvashi and varieties

Yellow Mustard: Ragini, Binoy (B-9), Pant peeli Sarso-1.

Jammu and Kashmir

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

Pea: AP-1, Bonnevillea, Rachna and Arkel

Chickpea: K-468, Gourav

Lentil: L-4147, L-9/12,PL-406.

Berseem:Vardan, mascavi, pusa giant, BL-1

Potato: Kufri Badshah, K.Sinduri, K.Chipsona & K.Sona

Gram: C-235,Gaurav,K-468,SCS-3,PBG-1

Toria: RSPT-1 and RSPT-2

Himachal Pradesh

Cauliflower: snowball and Giant snowball.

Radish: Japanese white, Chinese pink and mino early white

Turnip: PTWG-1

Carrot: Pusakesar

Peas : Mater ageta-6 (early variety).

Cabbage: Pride of India, golden achor and hybrid

East Uttar Pradesh

Wheat: PVW-343, UP-2338, WH-542, K-9107, K-9006, HP-1731, NW-1012, UP-2382, HUW-468, PVW-443, HD-2733, HD-2824, K-307, K-9423, NW-1067, KRL-210, KRL-213, PBW-323, CBW-38, DBW-39, UP2332 and HUW510, C-306, K-65,78,8027 and HUW-533.

Mustard: varuna, Rohini, kranti, krushna, vardan, vaibhav, narendra rai (8501).

Onion: Kalyanpur Lal gol, Pusa ratnakar, Agrifound lite red, bargandi, KP, Orient, Rosi.

Jou: Azad, K-141/11.

Turmeric: Kasturi, Paspu, Amlapuram, Madhukar, Sugna, Rajendra

Ginger -suprabha, suruchi, surbhi and Himgiri

Arahar: Bahar, Amar, Narendra Arahar-1,2, pusa-2001, pusa-991, pusa-992, parasmanak, UPAS 120.

Moong: Type-27, 56

Toria: TA-9, Bhawani, PT-30, PT-507, TA-36, PT-303.

Potato: Kufri Ashoka, Kufri Chandramukhi and Kufri Jawahar (Improved varieties of potato) Kufri Badshah, Kufri Satlaj, Kufri Khalima (inferior varieties), Kufri Ashoka, Kufri Chandramukhi, Kufri sadabahar.

Gram: JCP-105, K-850, Pusa-256, Avrodhi, Pusa-256, KWR-108, DCP-92-3, KDG-1168, K-850, and Kabuli chana: HK-94-134.

Mustard: Narendra ageti, rai-4, Varuna (T59), Basti (Pili), rohini, Maya, Narendra swarna-rai-8(pili), Narendra rai (NDR-8501), vaibhav.

Kabuli gram: chatmatkar, Puse-1003, Subhra as good varieties.

Pea: Rachna, Pantmatar-5, Aparna Malviya Matar-2, Malviya Matar-15, Shikha and Sapna are good varieties.

Radish: kalyanpur No.1, Pusa Rashmi, Hisar selection-1, Japani Safed, pusa Chetaki, Pusa Himani, Pusa desh, Arka Nishant and Jaunpuri.

Cabbage: Pusa snowball, Pusa snowball II, Snowball 16 and Pusa snowball K1

West Uttar Pradesh

Wheat: magahar, mandakini, C-306, Loak-1, k-9465, and kathia meghdoot, H.D. 2687, H.D. 2851, H.D. 2894, H.D. 2967, H.D. 3086, D.B.W.-17.

Barseem: V.L.1, V.L.10, maskavi, jai, K-8027, K-9565, Mandakini.

Baby corn: M.H.-4.

Toria: bhavani

Mustard: Urvashi, Rohini, Maya, Giriraj, Vardan, Vaibhav

Linseed: Parvati, sharda, Padmini

Vegetable pea: Azad-3, Aakril

Gram: Zaki-9218, KGD-1168, KWR-108, Uday

Pea: KPRM-522, KPRM-400, Vikas, Prakash

Lentil: DPL-62, Malika

Potato: Kufri Badshah, Kufri Bahar, Kufri Aanand, Chipsona-1, Chipsona-2, Chipsona-3.

Punjab

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89, CO118, COJ85, COJ64.

Onion: Punjab Naroya, Punjab White and PRO 6.

Radish: Punjab Pasand and Japanese white.

Turnip: L-1.

Carrot: Punjab Black Beauty, Punjab Carrot Red and PC-34.

Tomato: TH-1, Punjab Ratta, Punjab NR 7, Punjab Chuhara, Punjab Upma, Castle Rock.

Okra: Punjab-8 and Punjab-7

Cauliflower: Pusa Snow Ball-1, Pusa Snow Ball K-1

Wheat: PBW 725, PBW 677, HD-3086, WH 1105, PBW 621, HD 2967.

Kabuli gram: L 552, L 550 & BG-1053.

Raya: RLC3, PBR 357, PBR 210, RLC-1, , RLM-619, PBR-91

Gram: C 235, HC 5

un-irrigated/rainfed (HC 1)

Delhi

Wheat: H.D. 2687, H.D. 2851, H.D. 2894, H.D. 2967, H.D. 3086, D.B.W.-17

Gram: Kabuli type - Pusa 267, Pusa 1003, Pusa Chatmatkar; local type – C235, Pusa 246, P.B.G. 1, Pusa 372.

Pea: Pusa Pragati, Arkel, Azad Matar-3, Pant Matar-3 and Bournville.

Potato: Kufri Badshah, Kufri Bahar, Kufri Aanand, Chipsona-1, Chipsona-2, Chipsona-3.

East Rajasthan:

Wheat: Raj-1555, Raj-3765, Lok-1, WH-147, GW-190, GW-322 and GW-273. The suitable varieties for unirrigated wheat are HI-1500 and HI-1531. Raj-4037, Raj-3777, Raj-4120, Raj-4037, Raj-4069, Raj-4238 and MP-3288.

Barley: RD-2552, RD-2052, RD-2035, RD-2503, RD-2715, RD-2660, RD-2508 and Jyoti, RD 2668
Gram: RSG 44, Dahod yellow, GNG 16, ICCV 10, RSG 888, GNG 469 and Pratap chana 1, RSG-895, RSG-973, RSG-896, RSG-902, RSG-991 and GNG-1581
Lentil: T 36, BL 406, Sihore 74-7 and K 75
Sorghum: CSH-6, CSH-9, CSV-10, CSV-15, TG37-A, DH-86, Pratap Mungfali-1.
Maize: Aravali Makka-1, Pratap Makka-1, Pratap Makka-5, Pratap Hybrid Maize-1, Pratap Hybrid Maize-2 and bio-9637, Hybrid varieties are-MahiDhawal, PEHM- 2, Pratap Hybrid Maize-1, Pratap Makka-3, Pratap Makka-5, Bio-9637, Bio-9681, Pratap HQPM-1, Pratap Hybrid Maize-3, Pratap Makka-9, Ageti-76, Bassi Selected, MahiKanchan
Greengram:RMG-62, RMG-268. RMG-492 & RMG-344, IPM-02-3.
Cowpea: FS-68, RC-19 and RC-101.
Moth: RMO-40, IPCMO-912, RMO-257, RMO-225, RMO-435 (Vikash) (improved varieties)
Pea(early): Arkil, Hara bona, VL-3, Jawahar Matar-4, Matar Ageti-6 improved varieties.
Cauliflower: Pusa snow ball K-1, Hisar-1, Dania and Selection-7 are improved varieties.
Carrot:PusaKeshar is improved variety.
Mustard: Pusa jai kisan, RH-30, Pusa bold, Laxmi, kranti, Pusa Jai Kisan, PR-15 (Kranti), Vashundra, RRN 573, RGN-73, Bio-902 (Pusa Jaikisan), Aashirwad, RH-9304 (Vasundhara), RH-9802 (Swarn Jyoti), RH-8812 (Laxmi).
Radish: Japanese white & hill queen.

West Rajasthan

Wheat: Raj-3077, Raj-3777, Raj-4037, Raj-1482, WH-147 and Loak-1.
Jou: RD-2052, RD-2035, RD-57, RD-31, and Bilada-2, RD-2660, RD-2552, RD-2592 or Mald varieties RD-2503, DWRUB-52(timely sowing) or DWRUB-64(late sowing)
Cumin: RZ-19, RZ-209, GG-4, RZ-223.
Isabgol: RI 89 & GI-2.
Fenugreek :RMt 1 & RMt305.
Bhindi: Ark Anamika, varshauphar, Parbhanikranti, pusamakhamli.
Groundnut: HNG-123, HNG-69, ICHG-00440, HNG-10, TG-37 A, Girnar-2, R.G.-425, GG-20, TG-39.
Gram: c-235, RSG-44, GNG-663(vardan), RSG-888, GNG-469(samrat), GNG_1581(gangour), for kabulichana-GNG-1499(gouri) and GNG-1292
Mustard: RGN-13, RGN-73, Laxmi, Pusa bold, RGN-298, RGN-229, RGN-48, barni (timely sowing) RGN-145, RGN-236 (for late sowing), Bio-902, T-59, Pusa bold, Arawali and RGN-48,
Radish: Japanese white & hill queen.
Garlic: lava, maleva
Onion: Pusa red, Nasik red, Udaipur-102, pusa white flate

Madhya Pradesh

Wheat: (Irrigated- JW 1203, 1215, HI 1544).
Non irrigated- JW 3288, 3173. HI-1500, HI- 1531, HW-2004, JWS-17.
Gram: JG 130, JG 218, JG 11, JG 16, JG 6, JG 315, RVJ 202, JAKI-92-18, RVG-201, RVG-203.
Garlic: G 282, 223.
Lentil: RVL 31, JL 2.
Mustard: Pusa Jaikisan, RH-749, RH-406, IJ-31, NRCHB-101, RVM- 1, RVM-2.

Chhattisgarh

Mustard:Shiwani, Varuna, Pusa Bold, BR-40. Mustard.
Wheat:Lok-1, W.H. 147, Kanchan & Raj, C 308, Sujata, H.W. 2004, Ratan, H.I.-8627 & H.I. 1531.
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.
Sugarcane:CO 86032, CO 419, CO 1305, CO J 86-141, CO 6304, CO 8338, CO 6217, CO 775, CO J 2087.

Maharashtra

Jowar :Maldandi (M-35 – 1), SPV-655, SPV-839, Phule Yashoda, Parbhani Moti, Swati.
Wheat: NIAW-301 (Trimbak), NIAW-917 (Tapovan), NIDW-295 (Godavari), Late sowing- NIDW-15 (Panchavati), NIAW- 1495, NIAW-5439, MACS-1967, Ajinta.
For irrigated- NIAW-34, Tapovan, Godavari, Trimbak and PBN – 51.
Linseed: PKV NL-260, NL-97, NL-142 and NL-165.

Gujarat

Wheat: Lok-1, GW-496, GW -503, GW -273, GW -322.
Mustard: Gujarat Mustard 1, 2, 3, 4, Varuna.
Chick pea: Gujarat chana-2 (Unirrigated), Gujarat chana-3 (irrigated), Dahod Yellow, Chaffa.
Maize: Ganga safed -2, GM -6.
Cumin: Gujarat cumin-1, GC-2, GC 3 or MC-43.
Garlic: Gujarat Garlic-4 or Local, GG- 2,3,4, G-41, 50, 282.
Carrot: Patan Local, Pusa Kesar and Pusa Chamdagni.
Cabbage: Kranti, Golden Acare Pride of India, Coppin Market.

Coriander: Gujarat Coriander-1, Gujarat Coriander-2.

Pea: Pusa Pragati.

Carrot: Pusa Rudhira, Pusa Kesar.

Fenugreek: Gujarat Fenugreek -1.

Karnataka

Sorghum: DSH-4, M-35-1, Muguthi, DSV-4, DSV-5, Maldandi, CSV-29R, SPV-2217, BJV-44.

Safflower : A-1, A-2, S-144.

Sunflower: Morden, KBSH-1, 41, 44 & 52.

Cowpea: KBC-1, 2.

Ragi: GPU 26, 45, 48, Indaf 7, 9, 15.

Field bean: Hebbal Avare-3, 4.

Rabi sorghum: Maldandi Muguthi, DSV-4, DSV-5, BJV-44 variety or Hybrid-DSH-4, M 35-1 Muguthi, CSV-29R, SPV-2217.

Chickpea: A-1, GBS-964, JG-11, BGD-103, GB-1105, Annigeri-1, ICCV-10, BG-1105, JG-1, KAK-2, Vishal.

Wheat: DWR-162, DWR-225, DWR-415, 185, 195, DWR-2006, DWR-1006, DDK-1001, DWR-137, HD-2189, UAS-304, 428.

Niger : KBN-1, No.71, RCR-18.

Sugarcane: CO-86032, 740, 671.

Andhra Pradesh

Sorghum: CSH-9, CSH-13, CSH-14, PSV-15, PSV-19

Bajra: ICTP 8203, PBH 3

Korra: Prasad, Krishnadevaraya, Narashimharaya, Srilakshmi, Surya nandi

Cowpea: C 152 GC3 CO-4 CO-5

Sunflower: NDSH1 KBSH1 KBSH 44 DRSH 1

Green gram: LGG 407 LGG 450 LGG 460 MGG 295 ML 267, LGG 410, TM 96-2.

Field bean: TFB-1 TFB-5

black gram: LBG-752, LBG-20, T-9, LBG-623, PU-31, LB-402, LBG-709 and LBG-787.

Bengal gram: JG-11, LBEG-7, JG-130. Nadyal-1 and swetha.

Tamil Nadu

Samba rice: CR 1009 and ADT 50.

Telangana

Cotton: American Cotton varieties, Desi Cotton varieties (G. arboreum. L and G. herbaceum. L, Intra/Inter – specific Cotton hybrids, Bt. cotton.