

National Agromet Advisory Service Bulletin

Friday 26th December 2014

(For the period 26th to 30th December 2014)



Issued by

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

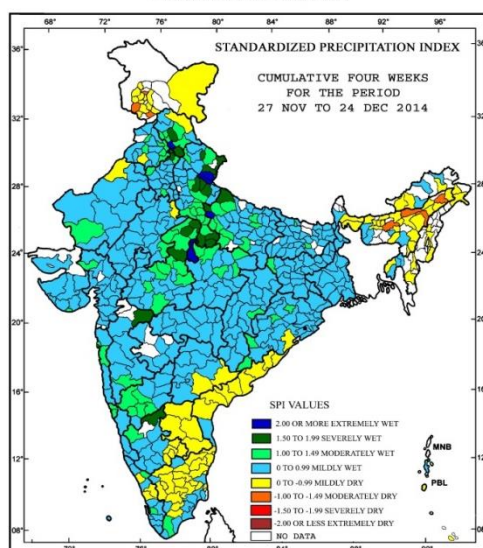


Standardised Precipitation Index

Four Weekly

for the Period 27th November to 24th December 2014

MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE

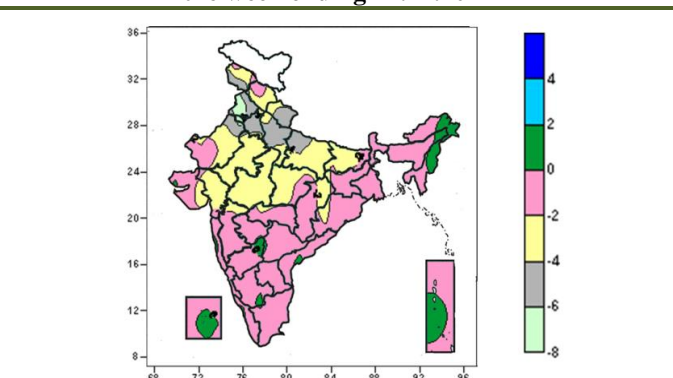
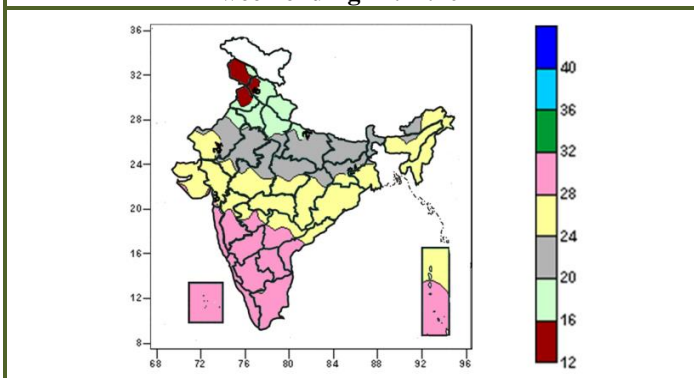


- Extremely/severely wet conditions in few districts of Uttarakhand and Uttar Pradesh; Ambala, Panchkula and Chandigarh districts of Punjab and Haryana; Mandi and Sirmaur districts of Himachal Pradesh; Bhind, Ashoknagar and Gwalior districts of Madhya Pradesh; Mumbai City and Jalgaon districts of Maharashtra and Bellary district of Karnataka.
- Extremely/ moderately/ severely dry conditions experienced in Kamrup, Sonitpur, Dibrugarh and Golaghat districts of Assam; Udhampur, Rajouri and Srinagar districts of Jammu & Kashmir.
- Rest of the country experienced moderately wet, mild wet/dry conditions.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 24.12.2014

Actual Mean Maximum Temperature (°C) in India for the week ending 24.12.2014

Mean Maximum Temperature (°C) Anomaly in India for the week ending 24.12.2014



- 28 to 32°C over many parts of South India, Konkan & Goa, Madhya Maharashtra, Marathwada.
- 24 to 28°C over Vidarbha and Odisha, many parts of West Rajasthan, Gujarat, West Madhya Pradesh, Chhattisgarh, Gangetic West Bengal, North East India, some parts of Jharkhand, Rajasthan, East Madhya Pradesh, Madhya Maharashtra, Marathwada, Telangana, Coastal Andhra Pradesh and Andaman & Nicobar Islands.
- 16 to 24°C over Uttarakhand and Haryana, many parts of Himachal Pradesh, Delhi, Uttar Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Rajasthan, East Madhya Pradesh, some parts of Jammu &

- 0 to 2°C over many parts of Nagaland, Manipur, some parts of Arunachal Pradesh, Interior Karnataka, Lakshadweep and Andaman & Nicobar Islands.
- 2 to 0°C over entire country except many parts of North India, Gujrat region, Madhya Pradesh, Bihar, some parts of Saurashtra, Jharkhand, Chhattisgarh, Odisha, Vidarbha, Madhya Maharashtra.
- 4 to -2°C over many parts of Himachal Pradesh, East Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Gujarat region, some parts of Jammu & Kashmir, Uttarakhand, West Uttar Pradesh, Jharkhand, Chhattisgarh, Vidarbha, Saurashtra and Madhya

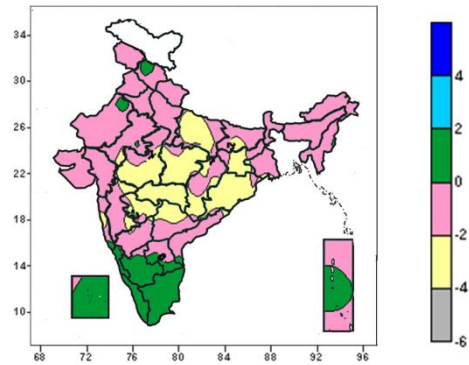
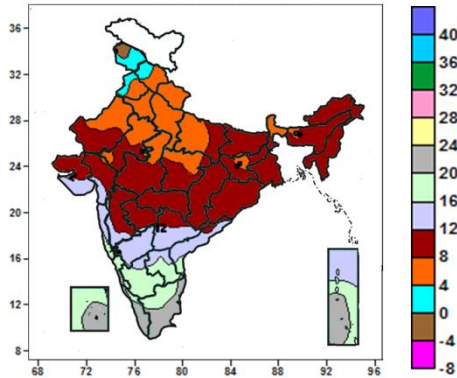
Kashmir, Punjab, West Madhya Pradesh, Chhattisgarh, Arunachal Pradesh and Assam.

Maharashtra.

- 8 to -4°C over many parts of Uttarakhand, Punjab, Haryana, Delhi, West Uttar Pradesh, some parts of Jammu & Kashmir, West Rajasthan, East Uttar Pradesh.

Actual Mean Minimum Temperature (°C) in India for the week ending 24.12.2014

Mean Minimum Temperature (°C) Anomaly in India for the week ending 24.12.2014



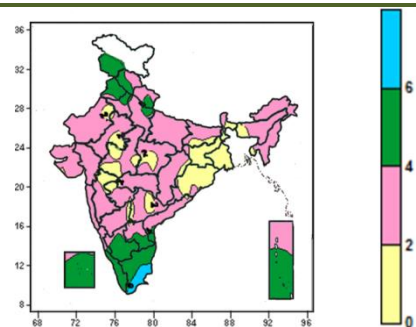
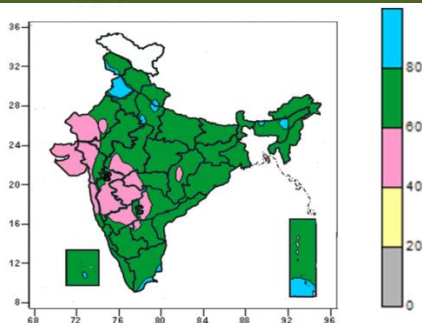
- 4 to 0°C over some parts of Jammu & Kashmir.
- 0 to 4°C over many parts of Jammu & Kashmir, some parts of Himachal Pradesh and Punjab.
- 4 to 8°C over Uttarakhand, Haryana, Delhi and Sikkim many parts of Himachal Pradesh, Punjab, Uttar Pradesh, Rajasthan, Sub-Himalayan West Bengal, some parts of Madhya Pradesh, Assam, Bihar and Jharkhand.
- 8 to 12°C over Gangetic West Bengal, Odisha and Vidarbha, many parts of North East India, Bihar, Jharkhand, Central India, Gujarat, Madhya Maharashtra, Marathwada, some parts of East Uttar Pradesh, Sub-Himalayan West Bengal, Telangana and Coastal Andhra Pradesh.
- 12 to 16°C over many parts of Konkan, North Interior Karnataka, Coastal Andhra Pradesh and Telangana, some parts of Gujarat, Madhya Maharashtra, Marathwada, Rayalaseema, South Interior Karnataka and Andaman & Nicobar Islands.
- 16 to 20°C over many parts of Coastal & South Interior Karnataka, Goa, Rayalaseema, some parts of Coastal Andhra Pradesh, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands and Kerala.
- 20 to 24°C over many parts of Tamil Nadu, Kerala, some parts of Lakshadweep and Andaman & Nicobar Islands.

- 0 to 2°C over Tamil Nadu and Kerala many parts of Coastal & South Interior Karnataka, Lakshadweep Islands, some parts of Himachal Pradesh, West Rajasthan, Goa, Coastal Andhra Pradesh, Rayalaseema and Andaman & Nicobar Islands.
- 2 to 0°C over entire country except many parts of East Uttar Pradesh, Madhya Pradesh, Jharkhand, Vidarbha, Marathwada, Coastal & South Interior Karnataka, Tamil Nadu, Kerala, Lakshadweep Islands, some parts of Uttarakhand, West Rajasthan, Bihar, Gangetic West Bengal, Odisha, Chhattisgarh, East Rajasthan, Konkan, Madhya Maharashtra, Telangana, Goa, Coastal Andhra Pradesh, Rayalaseema, and Andaman & Nicobar Islands.
- 4 to -2°C over Vidarbha, many parts of East Uttar Pradesh, Madhya Pradesh, Jharkhand, Marathwada, some parts of Bihar, Gangetic West Bengal, Odisha, Chhattisgarh, East Rajasthan, Konkan, Madhya Maharashtra and Telangana.

Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 24.12.2014

Relative Humidity (%) over India for the week ending 24.12.2014

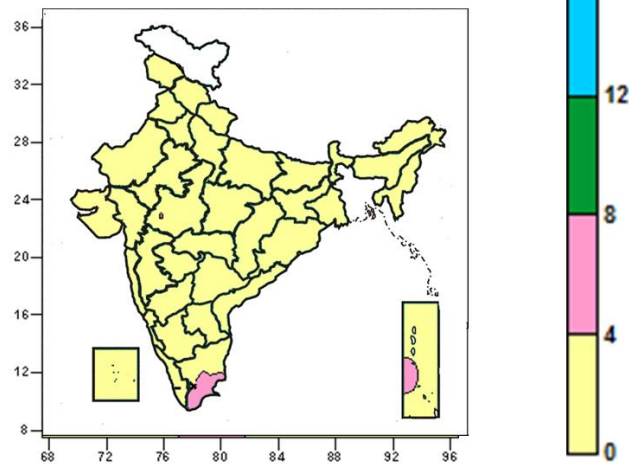
Cloud amount (okta) over India for the week ending 24.12.2014



- 80 to 100% over many parts of Punjab, some parts of Jammu & Kashmir, Uttarakhand, West Uttar Pradesh and Assam & Meghalaya.
- 60 to 80% over entire country except many parts of Punjab, West Rajasthan, Gujarat, Konkan & Goa, Madhya Maharashtra, Marathwada, North Interior Karnataka, some parts of Jammu & Kashmir, Uttarakhand, West Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Chhattisgarh, Telangana, Rayalaseema and Assam & Meghalaya.
- 40 to 60% over many parts of West Rajasthan, Gujarat, Konkan, Madhya Maharashtra, Marathwada, North Interior Karnataka, some parts of East Rajasthan, West Madhya Pradesh, Chhattisgarh, Telangana and Rayalaseema.

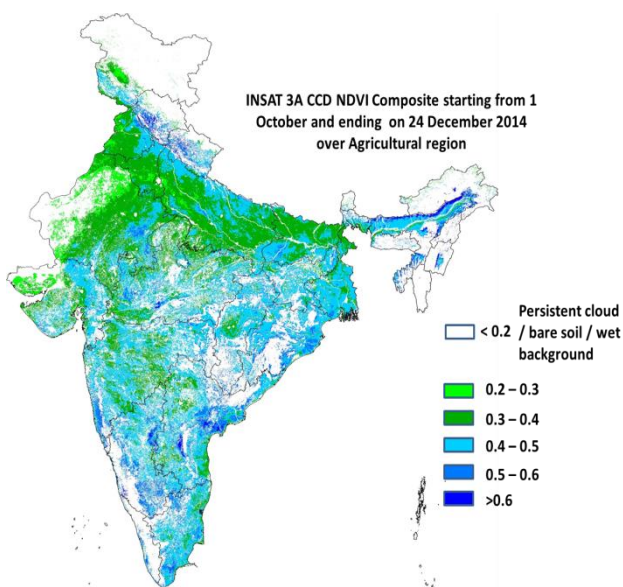
- 6 to 8 okta over some parts of Tamil Nadu.
- 4 to 6 okta over many parts of Jammu & Kashmir, Punjab, Himachal Pradesh, South Interior Karnataka, Rayalaseema, Kerala, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, some parts of Uttarakhand, West Uttar Pradesh, Coastal Andhra Pradesh and Coastal Karnataka.
- 0 to 4 okta over entire country except Tamil Nadu, many parts of Jammu & Kashmir, Punjab, Himachal Pradesh, South Interior Karnataka, Rayalaseema, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Uttarakhand, West Uttar Pradesh, Coastal Andhra Pradesh and Coastal Karnataka.

Wind speed (knots) over India for the week ending 24.12.2014



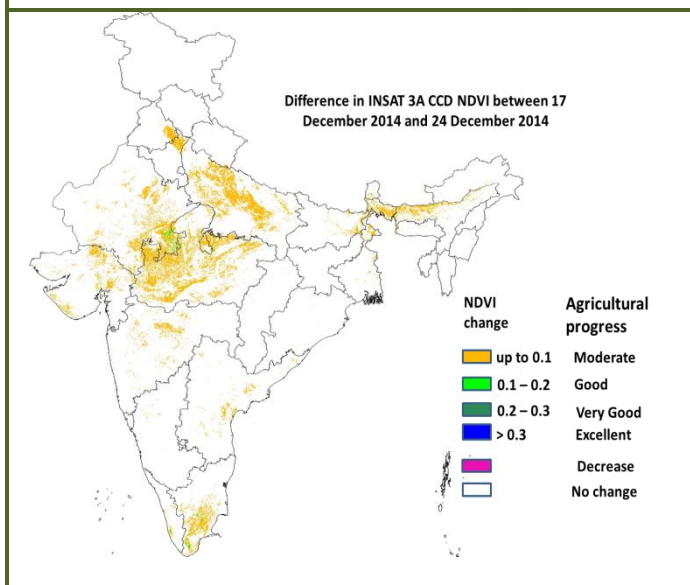
- 4 to 8 knots over some parts of Tamil Nadu and Coastal Andaman & Nicobar.
- 0 to 4 knots over entire country except some parts of Tamil Nadu and Coastal Andaman & Nicobar.

**INSAT 3A CCD NDVI COMPOSITE OVER AGRICULTURAL REGION
01st October to 24th December 2014**



- Agricultural vigour is good over most parts of western and southern India, few pockets in south east Punjab, Northern part of Haryana, western, northern and central UP, eastern Rajasthan, central, southern and western Gujarat and MP as NDVI varied between 0.4 to 0.5 up to 24th December 2014. In some parts of southern Bihar, the NDVI showed significant increase and varied between 0.4 - 0.5. The NDVI remained within the range of 0.3 to 0.4 over most parts of Indo Gangetic plains.

Difference in INSAT 3A CCD NDVI between 17th December 2014 and 24th December 2014



- Positive change in NDVI was observed over central and northern part of UP, South eastern part of Punjab and Northern part of Haryana, few pockets in Northern Gujarat, few pockets in Maharashtra and some parts of western Rajasthan. Few pockets in central MP and eastern Rajasthan are observed with a 0.1 – 0.2 change in NDVI. Not much change was observed in rest of India.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 29th December, 2014).

- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 24 hours and at many places thereafter.
- Rain/thundershowers would occur at isolated places over Kerala and Lakshadweep during the period.
- Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry during next 48 hours and at a few places thereafter.
- Rain/snow would occur at isolated places over Jammu & Kashmir during next 24 hours and dry weather would prevail thereafter.
- Dry weather would prevail over rest parts of the country during the period.
- Fog would occur at most places over Punjab, Haryana & Delhi, Rajasthan, Uttar Pradesh, north Madhya Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 3 days.

Weather Warning during next 3 days

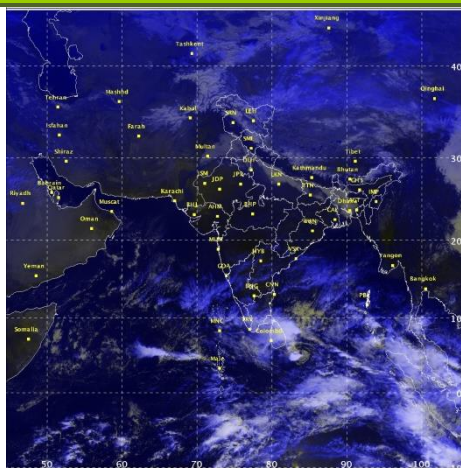
- 26 December (Day 1):** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at many places over Punjab, Haryana & Delhi, Uttar Pradesh, north Rajasthan, north Madhya Pradesh, Bihar and Sub-Himalayan West Bengal & Sikkim. Dense fog (Visibility 200 m or less) would occur at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Cold day conditions would prevail at isolated places over Punjab, Haryana & Delhi, Uttar Pradesh and Bihar. Ground frost would occur at isolated places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh. Cold wave conditions would prevail at isolated places over West Rajasthan, Jharkhand and Odisha.
- 27 December (Day 2):** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at many places over Bihar and Sub-Himalayan West Bengal & Sikkim; at a few places over Punjab, Haryana & Delhi, Uttar Pradesh, north Rajasthan and north Madhya Pradesh. Dense fog (Visibility 200 m or less) would occur at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Cold day conditions would prevail at isolated places over Punjab, Haryana & Delhi, Uttar Pradesh and Bihar. Ground frost would occur at isolated places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh. Cold wave conditions would prevail at isolated places over West Rajasthan, Jharkhand and Odisha. Fishermen are advised not to venture into deep sea off Tamil Nadu coast.
- 28 December (Day 3):** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at a few places over Punjab, Haryana & Delhi, Uttar Pradesh, north Rajasthan, north Madhya Pradesh, Bihar and Sub-Himalayan West Bengal & Sikkim. Dense fog (Visibility 200 m or less) would occur at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Cold day conditions would prevail at isolated places over

Punjab, Haryana & Delhi, Uttar Pradesh and Bihar. Ground frost would occur at isolated places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh. Fishermen are advised not to venture into deep sea off Tamil Nadu coast.

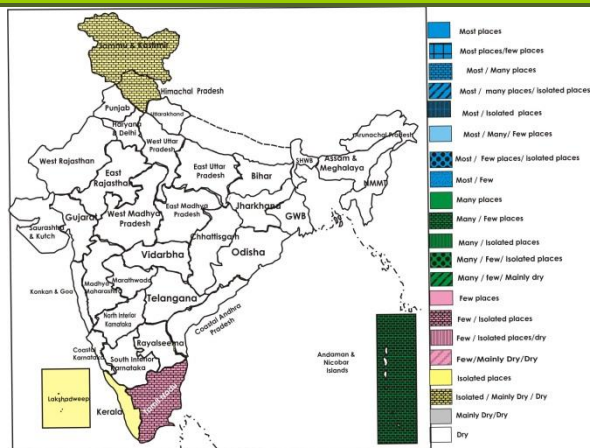
Weather Outlook for subsequent 4 days from 29th December 2014 to 02nd January 2015.

- Rain/thundershowers would occur at many places over Andaman & Nicobar Islands.
- Rain/thundershower would occur at many places over Tamil Nadu & Coastal Andhra Pradesh on 28th & 29th and decrease thereafter, over Gangetic West Bengal on 30th & 31st; over Odisha from 29th onwards and over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura from 31st onwards.
- Rain/thundershower would occur at a few places over Kerala on 28th & 29th and decrease thereafter.
- Weather would be dry over rest of the country.

Satellite image dated, 26.12.2014, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 29th December 2014)



Salient Advisories in view of Cold Wave and Cold Day

- As cold wave conditions would prevail over **West Rajasthan, Odisha and Jharkhand** on 26th and 27th December and cold day conditions would prevail over **Bihar** during the period, apply light and frequent irrigation in standing crops & young fruit plants to protect from cold / frost injury. Also, arrange for smoking around the crop fields during night hours.
- As cold day conditions would prevail at isolated places over **Punjab, Haryana & Delhi** and **Uttar Pradesh** and ground frost would occur at isolated places over **Punjab, Haryana & Delhi, Uttar Pradesh** and **north Rajasthan** during the period, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during night hours to protect the crops from cold/frost injury.
- In **North Madhya Maharashtra** to protect grapes from cold injury (fruit cracking especially in black grapes), apply drip irrigation for half an hour during morning hours / apply mulch with crop residue. Arrange smoke (smudging) in grapes, banana and fig orchards in Pune during night. For protection of banana, apply mulch of organic material at base of trunk, apply light and frequent irrigation during evening and cover the trunk with dried leaves. Make arrangement for artificial wind breaks using gunny bags or any cloths around orchards. Cover rice nursery with polythene to protect rice seedlings from cold in Western Ghat Region. Apply light irrigation to vegetables, sugarcane, safflower, *rabi* jowar, gram, wheat and pomegranate orchards to protect from cold.

Detailed Zonewise Agromet Advisories

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



Land preparation

Sugarcane

Cotton

Rice Transplanting

- **Realised Rainfall:** Rainfall occurred in Ariyalur, Cuddalore, Karaikal, Nagapattinam, Perambalur, Puducherry, Pudukottai, Ramanathapuram, Sivaganga, Thanjavur, Tirunelveli and Thiruvarur districts of Tamil Nadu. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Kerala during the period. Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry during next 48 hours and at a few places thereafter. Dry weather would prevail over rest of the region during the period.
- **Weather Warning:** Fishermen are advised not to venture into deep sea off Tamil Nadu coast on 27th and 28th.
- **Weather Outlook:** Rain/thundershower would occur at many places over Tamil Nadu & Coastal Andhra Pradesh and at a few places over Kerala on 28th & 29th and decrease thereafter. Weather would be dry over rest of the region.
- **Advisories:**
 - **Andhra Pradesh:**
 - Complete harvesting of *kharif* rice in the Krishna Godavari Zone.
 - Under limited water resource conditions, instead of rice, zero tillage maize, sunflower and castor is recommended in Kurnool district in the Scarce Rainfall Zone. Low temperature and high RH turns cotton leaves to reddish brown tinge. Spraying of Agrominmax (Micronutrient mix) 5gram/lit, 3 grams Blitox, 10 grams Urea, 10 grams Magnesium sulphate /lit of water is recommended.
 - Due to prevailing low temperature conditions in few parts of Kurnool district in the Scarce Rainfall Zone Tikka leaf spot incidence in groundnut and aphids incidence in jowar was noticed . Spray Hexaconazole @ 1ml/lit of water is to control tikka leaf spot and Methyl Dematon 2ml/lit of water to control aphids.
 - **Telangana:**
 - As low night temperatures may prevail in the Southern Telangana Zone, it may cause cold injury in rice nurseries. To overcome cold injury and for better nursery growth, cover the nursery beds with polythene sheet during night and remove in the morning, irrigate the nursery bed every day in the evening and let out the water in the morning and apply 2 kg urea for 200 m² nursery area at 10-15 days after sowing.
 - Apply Carbofuran 3G @ 160 g in one cent of nursery at 10-12 days after sowing to prevent the incidence of rice stem borer in the Southern Telangana Zone.
 - Complete sowing of *rabi* rice and black gram in the Northern Telangana Zone.
 - **Karnataka:**
 - Continue harvesting of ragi in the Eastern Dry Zone.
 - Continue sowing of maize after harvest of rice under irrigation in the North East Dry Zone.
 - Continue sowing of short duration pulses immediately after harvest of rice and maize in the Southern Transition Zone.
 - In the Hill Zone, continue picking of cotton and sowing of pulses in areas where rice harvesting has been completed.
 - Continue harvesting of chilli and cotton in the North Transition Zone and and picking of cotton and chilli in the North Dry Zone.
 - Present weather is congenial for the incidence of helicoverpa insect in Bengal gram in the North East Transition Zone. Spray insecticides like Profenophos or Chlorpyrifos @ 2 ml/litre or Indoxacarb @ 0.3 ml/l or Spinosad @ 0.2ml per liter of water to manage the insects.
 - **Kerala:**
 - Undertake crown cleaning, phytosanitation, provision of proper drainage, regulation of shade and adopt a comprehensive management package against the mid-whorl yellowing in coconut fields in the Southern Zone.
 - BPH attack is found in late sown rice nurseries in the Northern Zone due to prevailing humid weather. Drain the field and spray Acephate®+wetting agent (Acephate® 75SP @ 3g+wetting agent 1ml per litre of water) on the rice stem to manage the attack.

▪ **Tamil Nadu:**

- Undertake cultivation of hybrid, short duration and disease resistant black gram varieties such as Co-6, Vamban - 6,7 and green gram varieties such as Co- 7, 8, Vamban- 2, 3 in the North Western Zone.
- In the Cauvery Delta Zone, brown leaf spot incidence is noticed in *samba / thaladi* rice fields due to humid weather conditions. To control this, spray Carbendazim 200 g/acre (or) Mancozeb 400g/acre in 200 litre of water.
- Due to continuous rain in the past weeks, tuber rot has been noticed in irrigated tapioca in the Western Zone. Spot drenching with Copper Oxy chloride at 2.5 g/litre of water would reduce the incidence.
- Prevailing weather with high cloud cover and humidity is congenial for incidences blast disease in rice crop at all growth stages in the South Zone. For controlling this disease, spray Tricyclozole 75 WP @ 500g/ ha.
- Due to cloudy weather, spray systemic and contact fungicides once in 7 days interval to control late blight in potato in the High Altitude Hilly Zone.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- Farmers are advised to keep vigil against the spread of avian flu in the Problem Area Zone of Kerala due to prevailing humid weather. Disinfect the infected premises to avoid further spread.

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



Rice



Okra



Cole Crops (Nursery)



Green Gram

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. Fog would occur at most places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 3 days.
- **Weather Warning:** Dense fog (Visibility 200 m or less) would occur at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during the period.
- **Weather Outlook:** Rain/thundershower would occur at many places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura from 31st onwards. Weather would be dry over rest of the region.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - In Assam, continue nursery raising and sowing of *boro* rice.
 - In Lower Bramhaputra Valley Zone of Assam, continue sowing of maize.
 - In North Bank Plain Zone of Assam, continue transplanting of early sown varieties of boro rice like Boro1, Boro 2, Dinanath and Swarnabh seedlings in low lying areas.
 - Continue transplanting of *boro* rice of about 45 days old (5- 6 leave stage) seedlings in Lower Bramhaputra Valley Zone of Assam. Apply 1st irrigation early sown wheat varieties at crown root initiation stage (30-35 days after sowing).
 - In Meghalaya, continue nursery raising of *boro* rice in low lying areas and sowing of Zero tillage pea, lentil and toria. Apply irrigation to mustard/rapeseed at flowering stage.
 - In Lower Bramhaputra Valley Zone, North Bank Plain Zone, Barak Valley Zone and Upper Bramhaputra Valley Zone of Assam, due to foggy and cloudy conditions, blight disease may become severe in potato. Spray Mancozeb 75 WP 2g/litre or Ridomil MZ-27 (64% Mancozeb + 8% Metalaxyl) 2g/litre followed by Dithane M-45 @ 2.5 g in 1litre of water for control. Also spray Dithane Z-78 @ 25 g in 10 litre of water against late blight in tomato.
 - Due to foggy weather there is chance of infestation of aphid/ saw fly in rapeseed/ mustard in North Bank Plain Zone, Central Bramhaputra Valley Zone, Lower Bramhaputra Valley Zone and Barak Valley Zone of Assam. Spray Malathion 50Ec @ 2 ml/ litre of water or Dimethoate 30EC or Chloropyriphos @ 0.5 l/ha for control.
 - In Hill Zone of Assam, due to foggy weather, there is chance of late blight in tomato. Apply Ridomil MZ-72 (2g/ litre) and Indofil M-45 2.5 g / litre to prevent the disease.
 - Due to foggy weather condition, there is chance of late & early blight disease in potato in Meghalaya. Spray Mancozeb 75% WP @ 1.5- 2.0 kg/ha or Copper Oxy Chloride 50% WP @ 2.5 kg/ha or Chlorothalonil 75% WP @ 1.25 kg/ha.
 - **Nagaland, Manipur, Mizoram and Tripura:**
 - In Manipur, continue sowing of *rabi* maize, transplanting of tomato and sowing of cucurbits. Apply light

irrigation in rapeseed / mustard, pea, lentil, potato.

- In Mizoram, continue harvesting of rice. Apply irrigation to banana, brinjal, early cole crops, pea, tomato, mustard and toria.
- In Nagaland, apply light irrigation in toria, pea, vegetables, cole crops.
- In Mild Tropical Plain Zone of Tripura, apply light irrigation on every alternate day in cole crops, mustard and lentil.
- In Tripura, due to the prevailing foggy condition there may be infestation of early blight in potato. Apply Cymoxanil+ Mancozeb or Metalaxyl+ Mancozeb @ 1.5gm per litre of water for control of early blight. Also due to decrease in night temperature, there is chance of infestation of Pseudo stem weevils on banana. Apply Dimethoate (Rogor) or Imidacloprid @ 0.8ml per litre of water.
- In Mizoram, apply Imidachloprid 1.5 ml/litre of water against aphid infestation in pea due to foggy weather condition.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- Continue vaccination in poultry to control *ranikhet* disease in Lower and Upper Bramhaputra Valley Zone of Assam.
- In Assam, Arunachal Pradesh, Meghalaya, Manipur, Nagaland and Tripura provide artificial heating through lighting of electric bulb to protect poultry birds (day old to 25 days old) from low temperature. Cover poultry and pig house with gunny bags/ polythene sheet to prevent the expose of animal to cool night.
- **Fishery**
- During winter season, apply Potash @ 4-5 mg/litre of water /Sukrena WS @ 1 litre per bigha of water/ lime in required doses to protect the fish population against various bacterial diseases in Central and Upper Bramhaputra Valley Zone, North Bank Plain Zone and Lower Bramhaputra Valley Zone of Assam.

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



Sugarcane

Groundnut

Onion

Rice

- **Realised Rainfall:** Rainfall occurred in Nicobar district of Andaman and Nicobar Islands. Weather remained dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 24 hours and at many places thereafter. Dry weather would prevail over rest of the region during the period. Fog would occur at most places over Bihar and Sub-Himalayan West Bengal & Sikkim during next 3 days.
- **Weather Warning:** Dense (visibility 200 m or less) to very dense fog (visibility 50 m or less) would occur at many places over Bihar and Sub-Himalayan West Bengal & Sikkim on 26th and 27th and at a few places on 28th. Cold day conditions would prevail at isolated places over Bihar during the period. Cold wave conditions would prevail at isolated places over Jharkhand and Odisha on 26th and 27th.
- **Weather Outlook:** Rain/thundershowers would occur at many places over Andaman & Nicobar Islands. Rain/thundershower would occur at many places over Gangetic West Bengal on 30th & 31st; over Odisha from 29th onwards. Weather would be dry over rest of the region.
- **Advisories:**
 - As cold wave conditions would prevail over Odisha and Jharkhand on 26th and 27th December and cold day conditions would prevail over Bihar during the period, apply light and frequent irrigation in standing crops & young fruit plants to protect from cold / frost injury. Also, arrange for smoking around the crop fields during night hours.
 - **West Bengal:**
 - In New Alluvial Zone, continue seed bed preparation for nursery sowing of *boro* rice. To protect the rice seedlings from cold, cover the nursery bed with polythene or keep stagnant water in the nursery bed especially during the night-time. Keep 2 to 3 cm stagnant water.
 - In Coastal Saline Zone, remove morning fog from the seedlings of *boro* rice by stirring by rope.
 - In Laterite and Red Soil Zone, continue seed bed preparation, nursery sowing and transplanting of *boro* rice.
 - In Old Alluvial and Terai Zone, continue seed bed preparation for nursery sowing of *boro* rice.

- In Laterite and Red Soil Zone, early morning fog may cause attack of saw fly and aphids in mustard. For controlling of mustard saw fly dusting with 2% Methyl Parathion @20-25 kg /ha and for aphids, spraying Malathion 50 EC @ 0.005% is advised.
- In Coastal Saline Zone, due to dense fog during morning hours, there is chance of late blight attack in potato. Spray Diethane M-45 @ 2.5 g/litre of water or Copper Oxi Chloride @ 4 g/litre of water as preventive measure. There is also chance of yellowing of seedlings, seedling death and root rot in *boro* rice due to low temperature. Apply SAF @ 2 g/litre of water.
- In Old Alluvial Zone, due to foggy condition, there is chance of the attack of late blight in potato. Spraying of Mancozeb @ 2 g /litre of water and Blitox @ 4 g/litre of water alternately at 10-12 days interval by completely wetting the leaves is advised. Also due to prevailing weather conditions, aphid infestation and leaf curling may occur in tomato. To control, spray Imidachlorpid @1ml/7.5 litre of water followed by Trichoderma viridae @4g/litre of water or Blitox @ 4g/litre of water.
- In Terai Zone, due to low temperature and foggy weather, there is chance of attack of late blight in potato. To prevent attack spraying of Mancozeb (2 gm /litre of water) and Blitox (4 gm/litre of water) alternately at 10-12 days interval by completely wetting the leaves are necessary.
- **Andaman and Nicobar:**
 - As rain/thundershowers would occur at many places over Andaman & Nicobar Islands on 27th and 28th December, postpone irrigation, intercultural operations, application of fertilizers and plant protection measures in standing crops.
 - In North and Middle Andaman, in the prevailing weather, severe incidence of defoliating pests and borer pests are observed in pulse and fruit crops. Spray Malathion @ 2ml/litre after current spells of rain.
- **Odisha:**
 - In Western Undulating Zone, continue land preparation and sowing of green gram, black gram and sunflower in residual moisture immediately after harvesting of rice. Apply irrigation in transplanted cabbage, cauliflower and tomato which are at two to three week stage.
 - In East and South Eastern Coastal Plain Zone, complete nursery sowing of rice, sowing of wheat and *rabi* pulses. Continue transplanting of onion. Undertake weeding and hoeing in groundnut and potato. Apply irrigation in wheat at CRI stage.
 - In North Eastern Plateau Zone, continue sowing of wheat, groundnut, gram, peas and onion. Continue harvesting of rice. As dry weather is prevailing, apply irrigation to potato. Continue transplanting of chilli.
 - In North Eastern Coastal Plain Zone of Odisha, continue sowing of rapeseed and mustard.
 - In East and South Eastern Coastal Plain Zone of Odisha, the prevailing weather may aggravate the infestation of aphids in pulses and powdery mildew in pulses and cole crops. Spray Imidachlopid @ 5 ml or Metacystox @ 20 ml per 10 litre water to control aphid and spray Sulfex @ 50 g per 10 litre water to control powdery mildew.
 - In Western Undulating Zone of Odisha, present weather is congenial for occurrence of alternaria blight in mustard at vegetative stage. For controlling the disease, spray Indofil M 45@3g/lit of water.
- **Bihar:**
 - In North East Alluvial Zone of Bihar, continue sowing of late sown irrigated wheat varieties. Apply light irrigation in wheat crop which is about 20-25 days old and also apply urea @ 30 kg/acre after two days of irrigation. Undertake nursery sowing of *boro* rice. As low temperature is prevailing, apply light irrigation at evening time in tomato, chilli and other vegetable crops.
 - In North West Alluvial Plain Zone of Bihar, low temperature and foggy weather is favourable for the attack of early and late blight in potato crops; spray Indofil M-45, for better result mix sticker 1ml/liter of water.
- **Jharkhand:**
 - In South Eastern Plateau Zone of Jharkhand, complete sowing of wheat upto end of December, continue planting of potato. Timely sown wheat crop is at crown root initiation stage apply irrigation at this stage.
 - In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of wheat. As dry weather is prevailing apply irrigation to already sown wheat crop at CRI stage, mustard and gram. Prepare nursery bed for onion and land preparation for sowing of vegetables like long gourd, round gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon.
 - In Western Plateau Zone, undertake intercultural operations in pulses and oilseeds to conserve soil moisture and control weeds.
 - In Jharkhand, low temperature and foggy weather is favourable for the attack of early and late blight disease in early planted potato crop; spray Krilaksil or Ridomil MZ @ 1.5 g per litre of water to control the disease.
 - In Western Plateau Zone, pigeon pea is at pod formation/grain filling stage which is vulnerable for attack of Pod borer insects. Monitor the crops and spray Indoxacarb @ 0.5 ml per litre of water.
 - Suitable varieties are given in Annexure II.
- **Animal Husbandry**
 - In Hill Zone and Terai Zone of West Bengal, provide artificial heating through lighting of electric bulb to protect poultry birds (day old to 25 days old) from low temperature. Cover poultry house with gunny bags/ polythene sheets to protect them from cold.
 - North East Alluvial Zone of Bihar, protect the milch animals from cold by keeping under covered shelter and

provide warm water for drinking for better milk yield.

- To protect from cold, dairy animal should be covered with gunny sack/ sheet in the evening in Central & North Eastern Plateau Zone of Jharkhand and also provide calcium and jaggery time to time. To prevent from Swine fever disease in pigs, farmers are advised to vaccinate against swine fever

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane

Land preparation

Okra

Onion

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. Fog would occur at most places over north Madhya Pradesh during next 3 days.
- **Weather Warning:** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at many places over north Madhya Pradesh on 26th and at a few places on 27th and 28th.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - As mainly dry weather is prevailing, apply irrigation in early sown potato, wheat and vegetables in Satpura Plateau Zone. Apply 1st irrigation in wheat, gram and vegetables in Jhabua Hill Zone. Undertake picking of matured bolls of cotton.
 - As mainly dry weather is prevailing, apply irrigation in early sown wheat and mustard crops in Bundelkhand Zone. Undertake weeding and hoeing in onion and garlic crops.
 - Apply 1st irrigation in wheat at CRI stage and vegetables like tomato, brinjal and chilli and pick up matured fruits in Kymore Plateau and Satpura Hill Zone. Continue intercultural operations in chickpea, mustard, lentil and early sown wheat and vegetables.
 - Continue transplanting of onion, tomato, brinjal, chilli, cabbage and cauliflower in Malwa Plateau Zone. As dry weather is prevailing apply irrigation in wheat, newly planted fruit plants and chickpea.
 - Due to partly cloudy weather, there are chances of attack of stem borer and fruit borer in tomato, brinjal and okra in Vindhya Plateau Zone and Grid Zone; for control spray Trizophos @ 800ml per ha.
 - Due to partly foggy and cloudy sky, potato crop may be affected by early blight in Bundelkhand Zone, spray Mancozeb @ 2.5 ml per litre of water.
 - Due to cloudy weather, there are chances of attack of caterpillars in gram in Madhya Pradesh. Spray Quinalphos @ 25 EC per 500-600 litre of water.
 - **Chhattisgarh:**
 - In North Hill Zone, if sowing of wheat has been delayed, undertake sowing of varieties like GW-173, Lok-1 or Arpa. Continue planting of Autumn sugarcane. Continue earthing up in potato crops and apply Urea @ 50kg per acre.
 - Complete sowing of wheat under irrigated condition in Plain Zone of Chhattisgarh, Apply irrigation in wheat (at CRI stage) and vegetables.
 - Continue sowing of late varieties of wheat and sugarcane in Bastar Plateau Zone. As mainly dry weather is prevailing, apply irrigation in wheat (after 20-25 days of sowing), gram and potato.
 - Suitable varieties are given in Annexure II.
- **Animal Husbandry**
 - As there is decrease in temperature, protect animals from cold in Madhya Pradesh and Chhattisgarh. Increase light duration in poultry farms.

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



Land preparation

Sugarcane

Bottle Gourd

Onion

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/snow would occur at isolated places over Jammu & Kashmir during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over rest of the region during the period. Fog would occur at most places over Punjab, Haryana & Delhi, Rajasthan and Uttar Pradesh during next 3 days.
- **Weather Warning:** Dense (Visibility 200 m or less) to very dense fog (Visibility 50 m or less) would occur at many places over Punjab, Haryana & Delhi, Uttar Pradesh and north Rajasthan on 26th and at a few places on 27th and 28th . Cold day conditions would prevail at isolated places over Punjab, Haryana & Delhi and Uttar Pradesh during the period. Ground frost would occur at isolated places over Punjab, Haryana & Delhi, north Rajasthan and Uttar Pradesh during the period. Cold wave conditions would prevail at isolated places over West Rajasthan on 26th and 27th.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - As cold day conditions would prevail at isolated places over Punjab, Haryana & Delhi and Uttar Pradesh and ground frost would occur at isolated places over Punjab Haryana & Delhi, Uttar Pradesh and north Rajasthan during the period and cold wave condition would prevail at isolated places over West Rajasthan on 26th and 27th December, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during nights to protect the crops from cold/frost injury.
 - **Jammu & Kashmir:**
 - Continue sowing of radish (Japanese White & Minowase) in Intermediate Zone of Jammu & Kashmir. Undertake hoeing cum intercultural operations in mustard, *rabi* pulses like lentil, pea and gram to control weeds and conserve moisture.
 - Continue sowing of peas and planting of garlic in Valley Temperate Zone of Jammu & Kashmir. Apply top dose of urea @ 3.6 kg/kanal. Undertake hand weeding /hoeing in saffron to reduce infestation by weeds.
 - Apply irrigation in wheat at crown root initiation (20-30 days after sowing), oilseed, mustard and pulses in Sub-tropical Zone of Jammu & Kashmir and then apply first dose of (25%) urea as top dressing.
 - Under prevailing low temperature and cloudy weather, there are chances of occurrence of cabbage butterfly in cabbage/ cauliflower. To control apply Malathion @ 0.2 ml/litre of water.
 - **Himachal Pradesh:**
 - Continue sowing of oilseeds and pulses as mixed/intercrops with wheat in Sub-Montane and Low Hills Sub-Humid Tropical Zone with available soil moisture. Undertake intercultural operation in already sown wheat by spraying Isoproturon 75 WP @ 70 g per 30 litres of water.
 - In Mid Hills Sub-Humid Zone, continue transplanting of late season cauliflower (Pusa-snowball) and cabbage and planting of onion at a distance of 15X10cm. complete sowing of pea, radish, turnip, methi and spinach with available soil moisture.
 - Continue sowing of Chinese cabbage, cabbage and coriander in High Hill Dry Temperate Zone with available soil moisture.
 - Under prevailing low temperature and cloudy weather there are chances of occurrence of downy mildew in cauliflower and garlic in Sub-Montane and Low Hills Sub-Humid Tropical Zone. Spray Redomil M-Z @ 25 g per litre of water at 15 days interval in cauliflower. For control of downy mildew in garlic, spray Diathane M 45 @ 2.5 g or Bavistine 1 g per litre of water.
 - Under prevailing low temperature condition, there are chances of attack of woolly apple aphid in apple orchards in Mid Hills Sub-Humid Zone. To control, apply Thiamethoxam (Ektara 100gms) or Carbosulfan (Marshal 100ml) or Chlorpyrifos (Durmet 200ml) in 100litres of water
 - **Uttarakhand:**
 - In Hill Zone and Sub Humid Sub Tropical Zone of Uttarakhand, continue land preparation for sowing of peas. Undertake top dressing of urea in mustard, vegetables like radish, spinach and coriander.
 - Undertake harvesting of potato in clear weather in Bhabar and Tarai Zone of Uttarakhand. Apply 2nd irrigation in wheat crop of 40 to 45 days after sowing. Continue weeding & thinning operations in pea, chickpea, rajmah and garlic.

- In Bhabar and Tarai Zone of Uttarakhand, due to low temperature and fog/frost, there are chances of late blight in potato, to control spray Menkozeb @ 2g/l water.
- **Punjab, Haryana and Delhi:**
- In Western Zone and Western Plain Zone of Punjab provide polythene sheet/Sarkanda/Kahi/ rice straw to save the plants from frost. Dwarf vegetable varieties can be protected from frost injury by covering with 100 gauge thick white plastic bags of 35 x 25 cm size.
- In Undulating Plain Zone of Punjab, apply light irrigation and cover the newly planted plants with thatches for protection from cold and apply light irrigation in mustard in the evening to protect from cold/frost injury.
- In Western Semi-arid Zone of Delhi, continue sowing of late varieties of wheat at seed rate of 125 kg seed /ha. Also undertake transplanting of mature seedlings of tomato, cauliflower, cabbage, knolkhol and broccoli crop in the raised bed.
- Under prevailing dry weather condition, continue harvesting of rice in Western Zone of Haryana. As temperatures are conducive, complete late sowing of wheat. Apply irrigation in already sown wheat at CRI stage. Undertake transplanting of onion, mature seedlings of tomato, cauliflower and cabbage.
- Due to foggy weather in Western Semi-arid Zone in Delhi, white rust may be noticed in mustard, spray Dithane-M-45 @ 2 gram/ litre of water or Chlorothalonil 75 WP @1 gram/ litre of water.
- Due to foggy weather conditions, there is chance of incidence of late blight disease on potato in Western Zone of Punjab. To control, spray Indofil-M-45/Kavach/Antracol @500-700g/acre at weekly interval.
- Present weather is favourable for attack of top borer in sugarcane in Eastern Zone of Haryana, apply Carbofuran 3G @13 kg or Phorate 10G @ 8 kg in furrows.
- Present weather condition is favourable for attack of painted bug in mustard crops in Western Semi-arid Zone in Delhi; if attack is severe, spray Carbaryl (Sevin) @ 2 g/litre of water.
- **Uttar Pradesh:**
- Complete sowing of late varieties of wheat up to end of December in Bundelkhand Zone and Eastern Plain Zone. Undertake harvesting of matured cauliflower, cabbage, tomato, chilli, brinjal.
- Taking advantage of last week rain, apply first dose of urea as top dressing in wheat, lentil and sarson crops in Central Plain Zone of Uttar Pradesh. Continue sowing of lentil with seed rate of 55-75 kg/ha and harvesting of cauliflower, gourd, brinjal and tomato. Raise the nursery of onion.
- Continue sowing of sunflower and continue sowing of late varieties of wheat in Western Plain Zone of Uttar Pradesh. Apply irrigation to early sown wheat after 21 days after sowing and to sugarcane crop at 20 days interval.
- Under prevailing humid weather condition, there are chances of incidence of powdery mildew in wheat in Central Plain Zone. Spray 75% Isoproturan @ 1.5kg per hectare or Sulfofuran 75WG @ 33g dissolved in 500-600 litre water before first irrigation on 30 days after sowing. For control of blight disease in gram, spray Zinc manganese Carbamate @ 2 kg per 1000 litres of water at the interval of 10 days.
- Foggy weather is conducive for the incidence of blight disease in potato in Central Plain Zone of Uttar Pradesh. For control, spray Macozeb or Blitox 0.2 % @ 2 g per litre of water.
- Under foggy weather condition, there are chances of attack of aphids in toria in Central Plain Zone of Uttar Pradesh. Spray Methyl-O-Demeton 25% EC or Chloropyrifos 20% EC @ 1 litre per 600-700 litres of water per ha.
- Under prevailing dry weather condition, there are chances of attack of aphids in toria in Ballia and Deoria districts of Eastern Plain Zone of Uttar Pradesh. Spray Malathion 50 EC @ 2 litres or Monocrotophos 36 SL 600-800 ml in 600-800 litres of water per ha.
- **Rajasthan:**
- Undertake weeding and intercultural operations after irrigation in early sown wheat crop in Flood Prone Eastern Plain Zone of Rajasthan. Undertake nipping to enhance branching in gram.
- As ground frost would occur during the period, apply dilute sulphuric acid @ 0.1% (1 litre H₂SO₄ in 1000 litres of water) or Thiourea @ 500 ppm (500 gm thiourea in 1000 litres of water) or light irrigation in standing crops to protect the crops from frost attack in Semi-Arid Eastern Plain Zone of Rajasthan.
- Complete sowing of gram and apply irrigation after 45 days of sowing in South Eastern Humid Plain Zone of Rajasthan. Apply first irrigation in mustard after 35-40 days of sowing and then undertake application of nitrogen.
- Continue sowing of wheat, barley, fenugreek, lucerne in Transitional Plain Zone of Inland Drainage.
- Due to low temperature and high humidity, sawfly infestation may occur in mustard in Flood Prone Eastern Plain Zone of Rajas. To control, apply 5% Melathion or 5% Carbaryl powder @20-25 kg/ha.
- Suitable varieties are given in Annexure II.
- **Floriculture**
- Under prevailing dry weather condition, continue harvesting of tuberose in Central Plain Zone of Uttar Pradesh.
- Current temperature is favourable for nursery raising of winter flowers in poly houses in Sub Montane and Low Hills Sub-Tropical Zone of Himachal Pradesh. Present weather is conducive for attack of mites in carnation. For control, spray Cypermythrin @0.05% at 15 days interval.
- Complete transplanting of winter season annuals in Valley Temperate Zone of Jammu & Kashmir.

- **Animal Husbandry:**

- Due to low night temperature, keep cattle in cowsheds to protect them from cold in Himachal Pradesh and Central Plain Zone of Uttar Pradesh. Also give 40-50g mineral mixture with the daily feed. Also make arrangements in poultry houses for protection of birds from cold in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. Undertake vaccination for IBD and Ranikhet disease as there are chances of spread of these diseases.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Onion

Sugarcane

Cotton

Mango

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Maharashtra:**
 - As dry weather would prevail, apply light irrigation to gram and vegetables, orange and sweet lime orchards in Vidarbha. Apply fertilizers and continue intercultural operations in wheat, gram, vegetables and orchards. Complete picking fully opened cotton bolls during morning hours. Avoid irrigation during boll bursting. Complete nursery sowing of *rabi* rice. For better germination of seed cover nursery bed with plastic or dried fodder for 2-3 days.
 - In Konkan, apply irrigation, fertilizers and undertake intercultural operations in vegetable crops and mango and cashew orchards. As minimum temperatures prevailing above 14°C, complete sowing of *rabi* groundnut. Select among varieties TG-26, TAG-24, TPG-41, Konkan Gaurav and Konkan Tapora. Complete nursery sowing of *rabi* rice and finger millet by selecting improved variety. Complete sowing of watermelon variety 'Sugar Baby' on one side of ridges with a spacing of 4 x 1 m.
 - In North Madhya Maharashtra to protect grapes from cold injury (fruit cracking especially in black grapes), apply drip irrigation for half an hour during morning hours / apply mulch of crop residue. Make smoke (smudging) in grapes, banana and fig orchards in Pune during night. For protection of banana, apply mulch of organic material at base of trunk, apply light and frequent irrigation during evening and cover the trunk with dried leaves. Make arrangement for artificial wind breaks using gunny bags or any cloths around orchards. Cover rice nursery with polythene to protect rice seedlings from cold in Western Ghat Region. Apply light irrigation to vegetables, sugarcane, safflower, *rabi* jowar, gram, wheat and pomegranate orchards to protect from cold. Continue intercultural operations like weeding and apply fertilizer application in sugarcane, vegetables, gram and wheat. Complete picking fully opened cotton bolls during morning hours. Start harvesting of already matured red gram.
 - In Marathwada, prevailing low minimum temperature may affect fruit growth of banana, orange and sweet lime. Farmers are advised to apply light and frequent irrigation in the evening and arrange smoking in the orchards at night. Cover new banana bunch with skating bag. Make arrangement for artificial wind breaks around orchards. Apply organic material or plastic (black) mulch in mango orchard. As dry weather is prevailing and is likely to continue, apply irrigation to sugarcane, *rabi* jowar, safflower, gram, vegetables and wheat. Continue intercultural operation like hoeing, weeding to sugarcane, wheat, gram and vegetables. Complete picking fully opened cotton bolls during morning hours. Start harvesting of already matured red gram.
 - Prevailing low minimum temperature (around 10°C) in Pune region is favourable for the incidence of powdery mildew in cucumber, ridge gourd, bottle gourd, chilli and gaur; spray water soluble Sulphur 80 % @ 20 g per 10 litres of water. In cucumber spray Carathane @5 ml per 10 litres water instead of Sulphur.
 - Cloudy weather prevailed during last week in Marathwada region is favourable for more attack of pod borer in gram; spray Profenophos 50% @ 20 ml per 10 litres water.
 - Due to cloudy weather in Konkan there may be attack of hoppers on mango flowering; spray Imidachloprid 17.8 % @ 3 ml + Carbendazim @10 g per 10 litres of water.
 - **Gujarat:**
 - Under prevailing dry weather in North Gujarat Zone, apply irrigation in mustard, cotton and fennel. Undertake harvesting of matured fruits of vegetables. Carry out weeding in isabgol, amaranth and fennel and earthing up operation in fennel. Spray 20 ml 2-4-D Ethyle easter or Metasulfuron 0.8 gm/10 liters of water to control broad

- leafy weeds in wheat crop.
- Apply irrigation in wheat, cotton and mustard in North West Zone. Carryout weeding in cumin and isabgol crop.
 - Apply irrigation in wheat (booting stage) in South Gujarat Heavy Rainfall Zone. Carry out hand weeding and intercultural operations in castor crops.
 - In South and North Saurashtra Zone, apply irrigation in cotton crop. Carryout weeding in garlic crop.
 - Apply irrigation in potato crop at 8-10 days interval in Middle Gujarat Zone.
 - Under cold and dry weather condition in Bhal and Coastal Zone of Gujarat, apply light irrigation in fennel crop, cotton and fruit crops.
 - There is a chance of outbreak of rust in mustard crop due to low temperature in Bhal and Coastal Zone of Gujarat; spray Mencozeb 0.2% @ 30 g plus 25 ml of concentrated desi soap solution in 10 liters of water for control.
 - There is chance of early blight disease in potato crop due to low temperature in North West Zone; spray Mencozeb 0.2% @ 30 gram plus 25 ml of concentrated desi soap solution in 10 litre of water. Spray next three doses at the interval of 10 days.
 - Suitable varieties are given in Annexure II.
 - **Animal Husbandry**
 - In Gujarat, provide warm water to lactating animals. Keep the animals inside the sheds and provide dry bedding and use heaters inside cattle sheds to protect them from cold. Clean animal byres and spray Neon insecticide 1 to 1.5ml per liter of water for control of ectoparasites in animal house.
 - **Poultry**
 - In some parts of Maharashtra, as minimum temperature is low, protect poultry birds from cold winds by providing curtain/clothing from outside the poultry shed. Provide proper heat to small chicks of poultry with the help of electric bulbs.

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

Annexure I
Week by week Rainfall Distribution

Sub-Divisions	10.12.14		17.12.14		24.12.14	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Karnataka						
Coastal Karnataka						
Dakshin Kannada	4.1	-23	34.4	574	0.0	-100
Udupi	4.2	-47	21.5	357	0.0	-100
Uttar Kannada	0.1	-98	25.8	658	0.0	-100
N I Karnataka						
Bagalkote	0.0	-100	19.3	566	0.0	-100
Belgaum	0.0	-100	19.8	761	0.0	-100
Bidar	0.0	-100	11.5	857	0.0	-100
Bijapur	0.0	-100	7.6	301	0.0	-100
Dharwad	0.0	-100	21.4	970	0.0	-100
Gadag	0.0	-100	30.8	1522	0.0	-100
Gulbarga	0.0	-100	9.0	460	0.0	-100
Haveri	0.0	-100	12.0	447	0.0	-100
Koppal	0.0	-100	16.4	447	0.0	-100
Raichur	0.0	-100	7.8	331	0.0	-100
Yadgir	0.0	-100	4.3	257	0.0	-100
S I Karnataka						
Bangalore Rural	0.0	-100	1.3	-68	2.7	196
Bangalore Urban	0.0	-100	1.6	-64	0.5	-74
Bellary	0.0	-100	49.9	1747	0.0	-100

Chamarajnar	2.0	-78	8.3	84	0.0	-100
Chichballapur	0.0	-100	10.1	189	0.7	-42
Chickmagalur	4.4	41	10.6	141	0.0	-100
Chitradurga	0.0	-100	12.6	405	0.0*	-89
Davangere	0.0	-100	24.6	1790	0.0	-100
Hassan	1.6	-52	14.7	320	0.0	-100
Kodagu	7.1	66	17.7	176	0.0	-100
Kolar	0.0	-100	9.0	76	0.0*	-98
Mandya	0.3	-96	21.6	535	0.1	-85
Mysore	2.3	-60	25.7	787	0.0	-100
Ramnagara	0.0	-100	5.1	15	0.0	-100
Shimoga	5.9	79	21.2	608	0.0	-100
Tumkur	0.0	-100	9.0	191	0.0	-100
Kerala						
Alappuzha	17.8	-17	28.0	189	3.1	-45
Kannur	0.0	-100	29.8	338	0.0	-100
Ernakulam	15.5	-22	75.8	589	0.1	-99
Idukki	2.3	-88	35.4	272	7.4	16
Kasaragod	0.7	-90	24.0	379	0.0	-100
Kollam	5.6	-70	21.2	120	3.8	-51
Kottayam	23.6	67	50.7	534	13.1	104
Kozhikode	0.3	-97	8.8	31	0.0	-100
Malappuram	4.9	-48	37.4	467	0.0	-100
Palakkad	3.5	-65	7.6	39	0.0	-100
Pathanamthitta	3.1	-83	69.2	454	0.0	-100
Thiruvananthapuram	11.7	-51	53.4	445	6.1	-48
Thrissur	0.2	-98	18.4	261	0.0	-100
Wynad	4.0	-53	53.8	703	0.0	-100
Tamil Nadu						
Ariyalur	6.5	-89	43.0	66	29.7	0
Chennai	9.2	-85	35.8	9	0.1	-99
Coimbatore	5.2	-70	19.4	57	1.1	-76
Cuddalore	10.0	-86	74.1	101	41.7	45
Dharmapuri	0.0	-100	14.3	37	1.6	-69
Dindigul	0.2	-99	38.6	91	17.0	11
Erode	2.9	-85	16.2	100	0.0	-100
Kanchipuram	4.5	-92	41.6	35	1.0	-93
Kanyakumari	5.9	-68	12.4	0	13.3	7
Karikal	1.5	-98	2.6	-96	61.9	-8
Karur	1.4	-93	3.1	-67	8.9	1
Krishnagiri	0.0	-100	32.9	399	0.0	-100
Madurai	1.0	-94	4.5	-69	8.8	-21
Nagapattinam	1.3	-99	50.1	6	63.6	16
Namakkal	0.0	-100	10.2	42	0.5	-90
Nilgiris	22.2	-8	58.3	208	4.2	-48
Perambalur	2.2	-94	15.7	-12	22.7	42
Puducherry	2.0	-97	32.4	-30	24.7	-37
Pudukottai	3.5	-90	28.9	68	46.4	167
Ramanathapuram	0.6	-99	7.8	-63	51.9	116

Salem	0.7	-97	22.7	97	1.3	-81
Sivaganga	11.9	-53	19.1	6	40.6	147
Thanjavur	1.4	-98	42.4	84	63.9	149
Theni	1.1	-93	27.3	82	7.0	-7
Tirunelveli	15.4	-37	99.7	310	25.9	33
Tirupur	0.2	-99	22.2	131	1.7	-76
Tiruvallur	4.1	-91	57.6	107	2.1	-86
Tiruvannamalai	0.1	-99	56.6	172	0.2	-98
Tiruvarur	2.0	-98	23.1	-30	89.2	141
Toothukudi	2.4	-90	32.5	60	13.5	-20
Trichy	1.0	-97	12.1	-15	17.9	30
Vellore	0.0	-100	21.7	56	0.2	-97
Villupuram	1.7	-96	59.9	116	2.9	-82
Virudhunagar	1.9	-89	14.2	-14	6.0	-39
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	0.0	-100	1.3	-60	0.0	-100
Guntur	0.0	-100	0.3	-96	0.0	-100
Krishna	0.0	-100	0.1	-99	0.2	113
Nellore	30.2	-29	49.9	93	5.0	-61
Prakasam	0.0	-100	8.4	-40	0.5	7
Sirkakulam	0.0	-100	0.0	-100	0.0	-100
Visakhapatnam	0.0	-100	0.0	-100	0.0	-100
Vizianagram	0.0	-100	0.0	-97	0.0	-100
West Godavari	0.0	-100	2.1	-61	0.0	-100
Rayalaseema						
Anantapur	0.0	-100	3.3	5	0.0	-100
Chittoor	0.6	-97	20.6	63	3.9	-45
Cuddapah	0.0	-100	6.5	42	0.0	-100
Kurnool	0.0	-100	1.7	0	0.0	-100
Telangana						
Adilabad	0.0	-100	0.1	-95	0.0	-100
Hyderabad	0.0	-100	0.2	-75	0.0	-100
Karimnagar	0.0	-100	0.8	-4	0.0	-100
Khammam	0.0	-100	0.0	-100	0.0	-100
Mehabubnagar	0.0	-100	5.2	1628	0.0	-100
Medak	0.0	-100	0.3	-45	0.0	-100
Nalgonda	0.0	-100	0.6	-81	0.0	-100
Nizamabad	0.0	-100	3.9	335	0.0	-100
Rangareddy	0.0	-100	1.2	50	0.0	-100
Warangal	0.0	-100	0.0	-99	0.0	-100
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	0.0	-100	0.0	-100	0.0	-100
Dibang Valley	**	**	**	**	**	**
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	0.6	-89	4.2	-58	0.7	-82
Kurung Kumey	**	**	**	**	**	**
Lohit	0.0	-100	0.0	-100	0.0	-100

Lower Dibang Valley	4.3	-19	2.6	-90	0.0	-100
Lower Subansari	**	**	**	**	**	**
Papumpara	12.7	12550	0.0	-100	0.8	300
Tawang	1.0	-74	8.0	-49	1.0	-73
Tirap	0.0	-100	0.0	-100	0.0	-100
Upper Siang	24.2	297	8.0	-71	0.3	-98
Upper Subansari	5.2	73	20.0	285	2.2	57
West Kameng	0.0	-100	0.0	-100	0.0	-100
West Siang	5.0	14	8.5	-30	1.0	-84
Assam&Meghalaya						
Assam						
Baksa	0.0	-100	0.0	-100	0.0	-100
Barpeta	0.0	-100	0.0	-99	0.0	-100
Bongaigaon	0.0	-100	0.2	-94	0.0	-100
Cachar	0.0	-100	0.0	-100	0.0	-100
Chirang	0.0	-100	0.0	-100	0.0	-100
Darrang	0.0	-100	0.0	-100	0.0	-100
Dhemaji	0.0	-100	0.0	-100	0.0	-100
Dhubri	0.0	-100	2.8	295	0.1	33
Dibrugarh	0.0	-100	0.0	-100	0.0	-100
Goalpara	0.0	-100	0.0	-100	0.0	-100
Golghat	0.0	-100	0.0	-100	0.0	-100
Hailakandi	0.0	-100	0.0	-100	0.0	-100
Jorhat	0.0	-100	0.0	-100	0.0	-100
Kamrup(Rural)	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	0.0	-100	0.0	-100	0.0	-100
Karbi Anglong	0.0	-100	0.0	-100	0.0	-100
Karimganj	0.0	-100	0.0	-100	0.0	-100
Kokrajhar	0.0	-100	0.1	-96	0.6	200
Lakhimpur	3.8	82	0.2	-97	0.0	-100
Morigaon	0.0	-100	0.0	-100	0.6	100
N.C.Hills	0.0	-100	0.0	-100	0.0	-100
Nowgong	0.0	-100	0.0	-100	0.3	-52
Nalbari	0.0	-100	0.0	-100	0.0	-100
Sonitpur	0.1	-97	0.1	-99	0.0	-100
Sibsagar	0.0	-100	0.0	-100	0.0	-100
Tinsukia	0.0	-100	0.0	-100	0.0	-100
Udalgiri	0.4	-79	0.0	-100	0.0	-100
Meghalaya						
East Garo Hills	0.0	-100	0.0	-100	0.0	-100
East Khasi Hills	0.0	-100	0.0	-100	0.8	-11
Jaintia Hills	0.0	-100	0.0	-100	0.0	-100
Ribhoi	0.0	-100	0.0	-100	7.0	1650
South Garo Hills	0.0	-100	0.0	-100	0.0	-100
West Garo Hills	0.0	-100	0.0	-100	0.0	-100
West Khasi Hills	0.0	-100	0.0	-100	0.0	-100
NMMT						
Mizoram						
Aizwal	0.0	-100	0.0	-100	0.0	-100

Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	0.0	-100	0.0	-100	0.0	-100
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	0.0	-100	0.0	-100
Serchhip	0.0	-100	0.0	-100	0.0	-100
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	0.0	-100	0.0	-100	0.0	-100
Churachandpur	**	**	**	**	**	**
Imphal east	0.0	-100	0.0	-100	0.0	-100
Imphal west	0.0	-100	0.0	-100	0.0	-100
Senapati	0.0	-100	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**
Thoubal	0.0	-100	0.0	-100	0.0	-100
Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	0.0	-100	0.0	-100	2.4	100
Kephire	**	**	**	**	**	**
Kohima	0.0	-100	0.0	-100	0.6	20
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Parent	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	0.0	-100	0.0	-100	0.0	-100
North tripura	0.0	-100	0.0	-100	0.0	-100
South tripura	0.0	-100	0.0	-100	0.0	-100
West tripura	0.0	-100	0.0	-100	0.0	-100
Himachal Pradesh						
Bilaspur	0.0	-100	63.9	1154	0.0	-100
Chamba	0.0	-100	33.4	137	0.0	-100
Hamirpur	0.0	-100	55.5	650	0.0	-100
Kangra	0.0	-100	43.8	347	0.0	-100
Kinnaur	0.0	-100	39.3	469	0.0	-100
Kullu	0.0	-100	72.9	898	0.0	-100
Lahaul and Spiti	0.0	-100	14.1	1	2.5	-85
Mandi	0.0	-100	94.4	1248	0.0	-100
Shimla	0.0	-100	63.0	1025	0.0	-100
Sirmaur	0.0	-100	88.2	1060	0.0	-100
Solan	0.0	-100	122.5	1490	0.0	-100
Una	0.0	-100	55.1	1622	0.0	-100
Punjab						
Amritsar	0.0	-100	0.2	-96	0.0	-100

Barnala	0.0	-100	11.3	436	0.0	-100
Bhatinda	0.0	-100	0.3	-82	0.0	-100
Faridkot	0.0	-100	0.0	-100	0.0	-100
Fatehgarh Saheb	0.0	-100	27.0	831	0.0	-100
Ferozpur	0.0	-100	0.3	-90	0.0	-100
Gurdaspur	0.0	-100	18.5	118	0.0	-100
Hoshiarpur	0.0	-100	23.3	482	0.0	-100
Jalandhar	0.0	-100	18.7	379	0.0	-100
Kapurthala	0.0	-100	21.0	400	0.0	-100
Ludhiana	0.0	-100	14.1	441	0.0	-100
Mansa	0.0	-100	4.4	214	0.0	-100
Moga	0.0	-100	14.3	741	0.0	-100
Muktesar	0.0	-100	0.0	-100	0.0	-100
Nawashahar	0.0	-100	42.6	890	0.0	-100
Patiala	0.0	-100	28.2	841	0.0	-100
Ropar	0.0	-100	40.4	911	0.0	-100
Sangrur	0.0	-100	26.1	801	0.0	-100
Mohali	0.0	-100	42.3	2390	0.0	-100
TarnTaran	0.0	-100	0.0	-100	0.0	-100
Haryana,Chd,Delhi						
Haryana						
Ambala	0.0	-100	60.4	1019	0.0	-100
Bhiwani	0.0	-100	5.9	1074	0.0	-100
Chandigarh	0.0	-100	90.0	1244	0.0	-100
Faridabad	0.0	-100	7.0	1067	0.0	-100
Fatehabad	0.0	-100	14.3	1333	0.0	-100
Gurgaon	0.0	-100	2.7	142	0.0	-100
Hissar	0.0	-100	2.4	144	0.0	-100
Jhajar	0.0	-100	0.0	-100	0.0	-100
Jind	0.0	-100	3.1	110	0.0	-100
Katihah	0.0	-100	8.0	896	0.0	-100
Karnal	0.0	-100	14.4	658	0.0	-100
Kurukshetra	0.0	-100	12.6	424	0.0	-100
Mahendragarh	0.0	-100	1.8	41	0.0	-100
Mewat	0.0	-100	3.0	131	0.0	-100
Palwal	0.0	-100	4.6	667	0.0	-100
Panchkkula	0.0	-100	60.0	2122	0.0	-100
Panipat	0.0	-100	1.8	67	0.0	-100
Rewari	0.0	-100	9.3	833	0.0	-100
Rohtak	0.0	-100	10.2	629	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.0	-100	0.4	-14	0.0	-100
Yamunanagar	0.0	-100	41.1	648	0.0	-100
Delhi						
Central Delhi	0.0	-100	17.0	844	0.0	-100
East Delhi	0.0	-100	18.0	900	0.0	-100
New Delhi	0.0	-100	12.3	581	0.0	-100
North Delhi	0.0	-100	21.4	1089	0.0	-100
North East Delhi	0.0	-100	16.0	789	0.0	-100

North West Delhi	0.0	-100	0.0	-100	0.0	-100
South Delhi	0.0	-100	26.4	1364	0.0	-100
South West Delhi	0.0	-100	10.2	464	0.0	-100
West Delhi	0.0	-100	12.0	567	0.0	-100
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	0.8	-94
Doda	0.0	-100	17.2	-31	0.0	-100
Ganderbal	0.0	-100	0.0	-100	0.0	-100
Jammu	0.0	-100	0.0	-100	0.0	-100
Kargil	0.0	-100	**	**	**	**
Kathua	0.0	-100	10.2	42	0.0	-100
Kistwar	**	**	**	**	**	**
Kulgam	0.0	-100	0.0	-100	0.0	-100
Kupwara	0.0	-100	0.0	-100	1.6	-87
Ladakh(Leh)	0.0	-100	0.1	-89	0.0	-100
Poonch	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	0.0	-100	0.0	-100
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	2.3	153	0.0	-100
Balaghat	0.0	-100	14.6	257	0.0	-100
Chhatarpur	0.0	-100	33.6	2300	0.0	-100
Chindwara	0.0	-100	3.7	107	0.0	-100
Damoh	0.0	-100	7.9	394	0.0	-100
Dindori	0.0	-100	14.8	377	0.0	-100
Jabalpur	0.0	-100	6.1	221	0.0	-100
Katni	0.0	-100	19.4	1840	0.0	-100
Mandla	0.0	-100	20.2	494	0.0	-100
Narsingpur	0.0	-100	1.0	-44	0.0	-100
Panna	0.0	-100	11.8	973	0.0	-100
Rewa	0.0	-100	14.9	726	0.0	-100
Sagar	0.0	-100	5.3	277	0.0	-100
Satna	0.0	-100	14.7	1125	0.0	-100
Seoni	0.0	-100	6.0	122	0.0	-100
Shahdol	0.0	-100	21.0	1650	0.0	-100
Sidhi	0.0	-100	5.6	195	0.0	-100
Singrauli	0.0	-100	0.0	-100	0.0	-100
Tikamgarh	0.0	-100	47.5	6686	0.0	-100
Umariya	0.0	-100	6.2	210	0.0	-100
West Madhya Pradesh						

Alirajpur	0.0	-100	0.0	-100	0.0	-100
Asoknagar	0.0	-100	46.1	5662	0.0	-100
Badwani	0.0	-100	11.5	621	0.0	-100
Betul	0.0	-100	3.9	87	0.0	-100
Bhind	0.0	-100	29.1	7169	0.0	-100
Bhopal	0.0	-100	21.3	509	0.0	-100
Burhanpur	0.0	-100	34.4	1047	0.0	-100
Datia	0.0	-100	31.7	2785	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	0.0	-100	7.5	843	0.0	-100
Guna	0.0	-100	29.4	3167	0.0	-100
Gwalior	0.0	-100	38.2	3368	0.0	-100
Harda	0.0	-100	9.6	298	0.0	-100
Hosangabad	0.0	-100	22.9	1172	0.0	-100
Indore	0.0	-100	18.9	949	0.0	-100
Jhabua	0.0	-100	0.0	-100	0.0	-100
Khandwa	0.0	-100	18.0	429	0.0	-100
Khargone	0.0	-100	1.4	-43	0.0	-100
Mandsaur	0.0	-100	6.4	967	0.0	-100
Morena	0.0	-100	15.2	2429	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	27.2	1193	0.0	-100
Rajgarh	0.0	-100	20.2	1249	0.0	-100
Ratlam	0.0	-100	0.7	-61	0.0	-100
Sehore	0.0	-100	2.3	10	0.0	-100
Shajapur	0.0	-100	20.0	1900	0.0	-100
Sheopur Kalani	0.0	-100	12.0	1614	0.0	-100
Shivpuri	0.0	-100	19.0	3700	0.0	-100
Ujjain	0.0	-100	10.0	2400	0.0	-100
Vidisha	0.0	-100	36.6	2718	0.0	-100
Chhattisgarh						
Bastar	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.0	-100	6.0	101	0.0	-100
Dantewara	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100
Durg	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	0.0	-100	0.0	-100
Koriya	0.0	-100	1.8	77	0.0	-100
Kawardha	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100
Narayanpur	0.0	-100	0.0	-100	0.0	-100
Raigarh	0.0	-100	0.0	-100	0.0	-100
Raipur	0.0	-100	0.0	-100	0.0	-100
Rajandgaon	0.0	-100	0.0	-100	0.0	-100
Surguja	0.0	-100	3.7	425	0.0	-100

East Uttar Pradesh						
Allahabad	0.0	-100	9.7	2335	0.0	-100
Ambedkar Nagar	0.0	-100	18.0	3500	0.0	-100
Azamgarh	0.0	-100	1.5	1400	0.0	-100
Bahraich	0.0	-100	9.0	372	0.0	-100
Ballia	0.0	-100	0.1	-67	0.0	-100
Balrampur	0.0	-100	5.5	293	0.0	-100
Banda	0.0	-100	14.2	1670	0.0	-100
Barabanki	0.0	-100	7.1	492	0.0	-100
Basti	0.0	-100	12.0	823	0.0	-100
Chandauli	0.0	-100	1.5	150	0.0	-100
Deoria	0.0	-100	1.0	25	0.0	-100
Faizabad	0.0	-100	6.8	426	0.0	-100
Farrukhabad	0.0	-100	10.5	1993	0.0	-100
Fatehpur	0.0	-100	21.4	4173	0.0	-100
Gazipur	0.0	-100	0.7	625	0.0	-100
Gonda	0.0	-100	7.1	545	0.0	-100
Gorakhpur	0.0	-100	6.2	786	0.0	-100
Hardoi	0.0	-100	13.2	1367	0.0	-100
Jaunpur	0.0	-100	0.0	-100	0.0	-100
Kannauj	0.0	-100	67.4	11133	0.0	-100
Kanpur City	0.0	-100	11.4	1325	0.0	-100
Kanpur Dehat	0.0	-100	10.6	5200	0.0	-100
Kaushambi	0.0	-100	1.4	250	0.0	-100
Kheri	0.0	-100	18.6	1446	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100
Lucknow	0.0	-100	5.1	325	0.0	-100
Maharajganj	0.0	-100	5.0	355	0.0	-100
Mau	0.0	-100	0.0	-100	0.0	-100
Mirzapur	0.0	-100	1.5	150	0.0	-100
Pratapgarh	0.0	-100	1.0	233	0.0	-100
RaiBareilly	0.0	-100	7.8	2492	0.0	-100
Sahuji Maharajnagar	0.0	-100	6.5	983	0.0	-100
Sant Kabirnagar	0.0	-100	0.5	-72	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100
Shrawasti	**	**	**	**	**	**
Sidharthnagar	0.0	-100	0.0	-100	0.0	-100
Sitapur	0.0	-100	16.5	1733	0.0	-100
Sonbhadra	0.0	-100	3.4	162	0.0	-100
Sultanpur	0.0	-100	1.9	383	0.0	-100
Unnao	0.0	-100	6.0	900	0.0	-100
Varanasi	0.0	-100	1.9	287	0.0	-100
West Uttar Pradesh						
Agra	0.0	-100	9.8	1533	0.0	-100
Aligarh	0.0	-100	6.6	247	0.0	-100
Auraiya	0.0	-100	7.0	900	0.0	-100
Badaun	0.0	-100	13.7	1273	0.0	-100
Baghpat	0.0	-100	2.7	350	0.0	-100
Bareilly	0.0	-100	22.5	3119	0.0	-100

Bijnor	0.0	-100	15.5	605	0.0	-100
Bulandsahar	0.0	-100	8.7	567	0.0	-100
Etah	0.0	-100	8.0	1233	0.0	-100
Etawah	0.0	-100	12.0	2300	0.0	-100
Firozabad	0.0	-100	9.1	1713	0.0	-100
GBNagar	0.0	-100	9.0	1025	0.0	-100
Ghaziabad	0.0	-100	3.7	273	0.0	-100
Hamirpur	0.0	-100	20.3	10025	0.0	-100
Jalaun	0.0	-100	18.7	6122	0.0	-100
Jhansi	0.0	-100	34.5	8525	0.0	-100
Jotiba Phule Nagar	0.0	-100	15.0	1775	0.0	-100
Kanshiramnagar	0.0	-100	5.0	355	0.0	-100
Lalitpur	0.0	-100	43.3	4233	0.0	-100
Mahamaya Nagar	0.0	-100	2.3	289	0.0	-100
Mahoba	0.0	-100	24.8	3443	0.0	-100
Mainpuri	0.0	-100	9.4	2250	0.0	-100
Mathura	0.0	-100	0.0	-100	0.0	-100
Meerut	0.0	-100	1.9	36	0.0	-100
Moradabad	0.0	-100	33.8	4731	0.0	-100
Muzzaffarnagar	0.0	-100	10.8	882	0.0	-100
Pilibhit	0.0	-100	8.3	314	0.0	-100
Rampur	0.0	-100	29.8	2192	0.0	-100
Saharanpur	0.0	-100	16.5	535	0.0	-100
Shahjahanpur	0.0	-100	6.5	439	0.0	-100
Uttarakhand						
Almora	0.0	-100	63.8	1151	0.0	-100
Bageshwar	0.0	-100	41.5	714	0.0	-100
Chamoli	0.0	-100	55.0	696	0.0	-100
Champawat	0.0	-100	72.0	929	0.0	-100
Dehradun	0.0	-100	32.0	581	0.0	-100
Garhwal Pauri	0.0	-100	16.6	538	0.0	-100
Garhwal Tehri	0.0	-100	15.8	116	0.0	-100
Haridwar	0.0	-100	17.3	541	0.0	-100
Nainital	0.0	-100	83.5	1842	0.0	-100
Pithorgarh	0.0	-100	78.0	1179	0.0	-100
Rudraprayag	0.0	-100	58.7	1074	0.0	-100
Udham Sing Nagar	0.0	-100	46.4	2475	0.0	-100
Uttarkashi	0.0	-100	24.9	211	0.0	-100
Bihar						
Araria	0.0	-100	0.5	-55	0.0	-100
Arwal	0.0	-100	0.0	-100	0.0	-100
Aurangabad	0.0	-100	0.5	-44	0.0	-100
Banka	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	0.2	-86	0.0	-100
Bhojpur	0.0	-100	0.0	-100	0.0	-100
Buxar	**	**	**	**	**	**
Darbhanga	0.0	-100	**	**	0.0	-100

East Champaran	0.0	-100	4.2	423	0.0	-100
Gaya	0.0	-100	2.7	289	0.0	-100
Gopalganj	0.0	-100	5.3	379	0.0	-100
Jahanabad	0.0	-100	1.2	15	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	1.0	43	0.0	-100
Madhepura	0.0	-100	0.0	-100	0.0	-100
Madhubani	0.0	-100	**	**	**	**
Monghyar	**	**	**	**	0.0	-100
Muzaffarpur	0.0	-100	1.7	325	0.0	-100
Nalanda	0.0	-100	2.3	278	0.0	-100
Nawada	0.0	-100	3.6	3500	0.0	-100
Patna	0.0	-100	0.1	-67	0.0	-100
Purnea	0.0	-100	0.0	-100	0.0	-100
Rohtas	0.0	-100	0.1	-83	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	2.2	617	0.0	-100
Sheohar	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	0.0	-100	4.0	186	0.0	-100
Siwan	0.0	-100	0.0	-100	0.0	-100
Supaul	0.0	-100	0.2	-80	0.0	-100
Vaishali	0.0	-100	3.9	1850	0.0	-100
West Champaran	0.0	-100	3.1	63	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	0.1	-87	0.0	-100
Garhwa	0.0	-100	12.5	1983	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	0.3	-85	0.0	-100
Jamtara	0.0	-100	0.0	-100	0.0	-100
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderrna	0.0	-100	0.0	-100	0.0	-100
Latehar	0.0	-100	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	9.2	1431	0.0	-100
Ramgarh	0.0	-100	0.0	-100	0.0	-100
Ranchi	0.0	-100	0.0	-100	0.0	-100

Sahebganj	0.0	-100	0.0	-100	0.0	-100
Saraikele	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	2.1	51	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	0.6	-36	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	0.0	-100	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
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
DNH	**	**	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100
Daman	**	**	**	**	**	**
Dangs	0.0	-100	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
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
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
Diu	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
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 & Goa						
Konkan & Goa						
Mumbai City	0.0	-100	30.0	1665	0.0	-100
Mumbai Suburban	0.0	-100	1.5	-12	0.0	-100
North Goa	0.0	-100	24.3	492	0.0	-100
Raigad	0.0	-100	24.1	1753	0.0	-100
Ratnagiri	0.0	-100	4.8	167	0.0	-100
Sindhudurg	0.0	-100	18.9	720	0.0	-100
South Goa	0.0	-100	23.9	470	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100
Madhya Maharashtra						
Ahmednagar	0.0	-100	3.4	56	0.0	-100
Dhule	**	**	0.3	-81	**	**
Jalgaon	0.0	-100	52.6	3660	0.0	-100
Kolhapur	0.0	-100	8.6	219	0.0	-100
Nandurbar	**	**	1.6	172	**	**
Nasik	0.0	-100	16.4	811	0.0	-100
Pune	0.0	-100	12.2	511	0.0	-100
Sangli	0.0	-100	18.3	664	0.0	-100
Satara	0.0	-100	2.8	-14	0.0	-100
Solapur	0.0	-100	5.4	81	0.0	-100
Marathwada						
Aurangabad	0.0	-100	15.2	333	0.0	-100
Beed	**	**	0.0	-100	**	**
Hingoli	0.0	-100	**	**	**	**
Jalna	0.0	-100	0.0	-100	**	**
Latur	0.0	-100	4.5	463	0.0	-100
Nanded	0.0	-100	0.0	-100	0.0	-100

Usmanabad	0.0	-100	0.2	-91	0.0	-100
Parbhani	0.0	-100	0.0	-100	0.0	-100
Vidarbha						
Akola	0.0	-100	5.1	199	0.0	-100
Amraoti	0.0	-100	5.2	247	0.0	-100
Bhandara	0.0	-100	0.0	-100	0.0	-100
Buldhana	0.0	-100	12.7	604	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	0.4	-83	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	0.0	-100	0.0	-100	0.0	-100
Balasore	0.0	-100	0.1	-97	0.0	-100
Bargarh	0.0	-100	0.0	-100	0.0	-100
Bhadrak	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.0	-100
Gajapati	0.0	-100	0.0	-100	0.0	-100
Ganjam	0.0	-100	0.0	-100	0.0	-100
Jagatsingpur	0.0	-100	0.0	-100	0.0	-100
Jajpur	0.0	-100	0.0	-100	0.0	-100
Jharsuguda	0.0	-100	0.0	-100	0.0	-100
Kalahandi	0.0	-100	0.0	-100	0.0	-100
Kandhamal	0.0	-100	0.0	-100	0.0	-100
Kendrapara	0.0	-100	0.0	-100	0.0	-100
Keonjhar	0.0	-100	0.2	-84	0.0	-100
Khurda	0.0	-100	0.0	-100	0.0	-100
Koraput	0.0	-100	0.0	-100	0.0	-100
Malkangiri	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	0.0	-100	0.0	-100	0.0	-100
Nawapara	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	0.0	-100	0.0	-100
Puri	0.0	-100	0.0	-100	0.0	-100
Rayagada	0.0	-100	0.1	-89	0.0	-100
Sambalpur	0.0	-100	0.0	-100	0.0	-100
Sonepur	0.0	-100	0.0	-100	0.0	-100
Sundargarh	0.0	-100	0.0	-100	0.0	-100
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	19.5	71	21.4	-66	72.5	43
North & Middle Andaman	37.2	20	0.1	-99	3.1	-69

South Andaman	2.2	-95	3.0	-91	15.5	20
GWB						
Bankura	0.0	-100	0.6	-48	0.0	-100
Birbhum	0.0	-100	0.8	-17	0.0	-100
Burdwan	0.0	-100	0.5	-47	0.0	-100
East Midnapore	0.0	-100	0.1	-98	0.0	-100
Hooghly	0.0	-100	0.0	-100	0.0	-100
Howrah	0.0	-100	0.0	-100	0.0	-100
Kolkata	0.0	-100	0.0	-100	0.0	-100
Murshidabad	0.0	-100	0.0	-100	0.0	-100
Nadia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (N)	0.0	-100	0.0	-100	0.0	-100
Purulia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (S)	0.0	-100	0.1	-96	0.0	-100
West Midnapore	0.0	-100	0.0	-100	0.0	-100
SHWB & Sikkim						
Cooch Behar	0.0	-100	0.1	-95	0.0	-100
Darjeeling	0.0	-100	1.4	29	0.0	-100
East Sikkim	0.0	-100	3.8	-20	0.0	-100
Jalpaiguri	0.0	-100	0.1	-93	0.0	-100
Malda	0.0	-100	0.0	-100	0.0	-100
North Dinajpur	0.0	-100	0.0	-100	0.0	-100
North Sikkim	0.0	-100	13.6	240	0.0	-100
South Dinajpur	0.0	-100	0.0	-100	0.0	-100
South Sikkim	0.0	-100	1.9	-60	0.0	-100
West Sikkim	0.0	-100	2.0	-50	0.0	-100

Legends

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

Annexure II List of varieties

Tamil Nadu

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

Direct seeded rice: (White Ponni or ADT 39)

Assam

Green gram: T-44, Kopergaon, K-851, ML-56, ML-131 etc.

Black gram : T-9, T-27, Pant U-19, T-122.

Radish : Pusa Deshi, Pusa Chetki, Pusa Himani

Cauliflower : Improved Japanese, Pusa Synthetic, Pusa Snowhall and Main Crop Patna.

Early maturity Cabbage varieties : Golden Acre, Pride of India, Pusa Mukta (Sel – 8).

Early maturity Knol Khol : White Vienna.

Winter brinjal : Pusa Kranti, Pusa Purple Long, Pusa Purple Round, Pusa Vairab, Pant Samrat

Meghalaya

Pigeon pea: short duration : UPAS-120, ICPL 87. long duration WB 20, Pusa 9 & Sarita.

Cabbage: H-139, Pride of India

Cauliflower: Meghalaya Local

Carrot: New Karoda, Nantesh

Radish: Local genotype

Broccoli: Puspa, Aiswarya

French bean: Naga Local

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

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

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

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

Sesame: Kanak, Kalika, Uma, Usha, Tilotama, Nilima, Prachi

Greengram: K-851, PDM-11, PDM-54, OUM-11-5

Blackgram: T-9, Pant U-11, Pant U-19, Pant U-30

Cowpea: SEB-2, Pusa Barsati Niger: Deomali, Niger-1 and for Okra: Utkal Gourav.

West Bengal

Banana: Mortoman, Chapa, Kathali, Singapuri.

Tomato: Avinash-2, 448.

Cabbage: Pride of India, Pusa early, Kranti.

Cauliflower: Jawhar moti, Bharat Jyoti, Early banaras

Bihar

Shakarkand: Rajendra Shakarkand- 5, Rajendra Shakarkand-35, Rajendra Shakarkand-43, Rajendra Shakarkand-47, Kalmegh and Rajendra Shakarkand-92.

Pigeon Pea: arhar: Bahar, Pusa 9, Narendra Arhar 1

Urd: T-9, Pant U-19, Pant Urd 31, PDU-1

Radish: Pusa Chetki, Pusa Himani, Pusa Rashmi, Japani Saphed

Pointed gourd: Rajendra Parwal-1, Rajendra parwal-2, FP1 and 3

Boro rice: Gutum, Prabhat, Richaria, Dhanlaxmi, Saroj Rajendra Bhagyati, and R.A.U

Jharkhand:

Urd: T 9, Pant U 19, 30, 35 and Birsa urd 1

Moong: Pusa Vishal, S M L 668, K 885, P S 16, Pant Moong 2 and P D M 11.

Arhar: Birsa Arhar (210 days), Bahar (240 Days) and ICPH 2671 (210 days),

Maize: short duration variety: Birsa Vikas Maize-2 and medium duration variety: Birsa Maize-1.

Madhya Pradesh

Gram: JG-130, JG-11, JG-315, JG-16

Wheat: Sujata, HW-2004, HI-1500

Winter Sugarcane: KJN 86-572, KJN 86-141

Green Pea: Arkel, PSM-3, Jawahar Pea 1, Jawahar Pea 2

Chickpea: J.G-11, J.G-74

Chhattisgarh

Gram: JG-16, JG-11, JG-74, Vaibhav

Linseed: RLC-92, Indira-32

Wheat: GW-273, Lok-1

Mustard: Pusa Bold

Jammu & Kashmir

Berseem: Mescavi, Pusa Giant, BL-1 and Vardan

Uttarakhand

Pea: VL Ageti Mater-7, Vivel Mater-10, Pant Subjee Mater-3, Azad Mater-3 and Arkel

Potato: Kufri- Jyoti, Ashok, Anand

Toria : Pant Toria-30, 303, 507 or local varieties.

Himachal Pradesh

Peas: Palam Triloki, Arkel, VL-7 and Matar Ageta

Late variety of Cauliflower: broccoli

East Uttar Pradesh

Cabbage: Imprabad Japani, Pusa chipali and Pusa kartiki

Radish: Japani white, Pusa chetakij, Hisar Muli No.1 and kalyanpur-1

Toria: T-9, T-36, Pant -30,303, B-9

Potato: Kuferi - Chandramukhi, Bahar

Mustard: Basati, Maya, Kanti, Urvashi, Narendra, Swarna-8, Narendra Ageti-4

Ageti Matar: Kashi - Nandini,Uday, Mukti, Arkel, Azad-3

West Uttar Pradesh:

Toria: Sangam, TL-17, 67

Ageti matar: Azad P-3, Arkel

Maharashtra

Madhya Maharashtra

rabi jowar: Selection-3, Phule Mauli, Phule Anuradha in light soil, Phule Chitra, Maldandi-35-1 in medium soil and Phule Vasudha, Phule Yashodha in black soil

Safflower: Bhima or Phule Kusuma

Marathwada

Jowar: Parbhani Moti or Parbhani Jyoti.