

# National Agromet Advisory Service Bulletin

**Friday 17<sup>th</sup> January 2014**

**(For the period 17<sup>th</sup> to 21<sup>st</sup> January 2014)**



**Issued by**

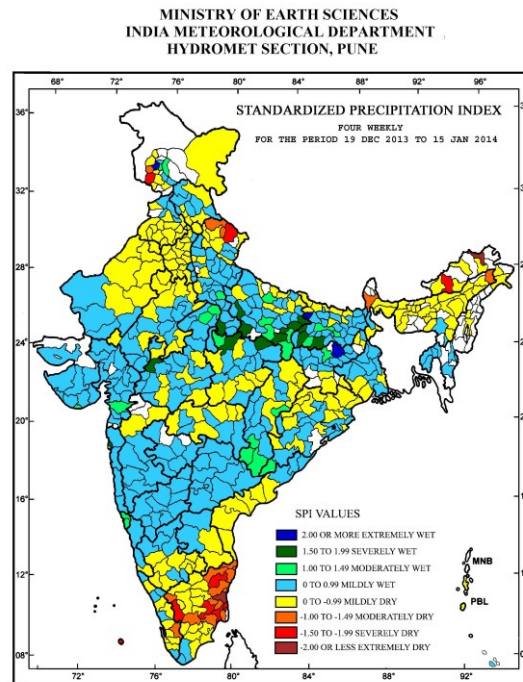
**National Agrometeorological Advisory Service Centre,**

**Agricultural Meteorology Division,**

**India Meteorological Department, Shivajinagar, Pune.**



## Standardised Precipitation Index (four weekly)

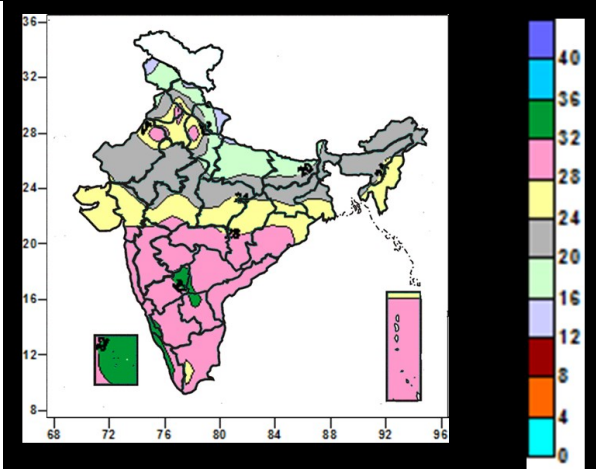


### Four-weekly SPI values (immediate past four week)

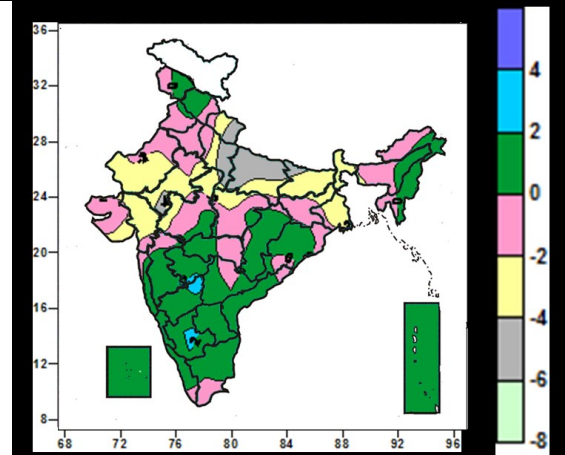
- Extremely wet/severely wet conditions experienced over some parts of West Uttar Pradesh, Bihar, Giridih district of Jharkhand and Ratlam of Madhya Pradesh.
- Moderately dry/ severely dry conditions experienced over many parts of coastal Tamil Nadu, some interior parts of Tamil Nadu, Idukki district of Kerala, Poonch and Rajouri districts of Jammu and Kashmir, Rudrapur, Uttarkashi and Chamoli districts of Uttarakhand, Darjeeling district of West Bengal, East Kameng district of Arunachal Pradesh and Tinsukia district of Assam.
- Rest of the country experienced mild wet/dry conditions.

**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 15.01.2014**

**Actual Mean Maximum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 15.01.2014**



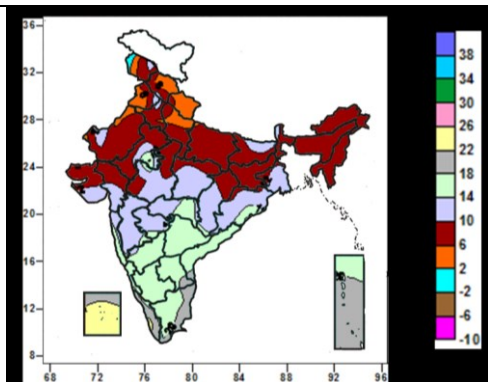
**Mean Maximum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 15.01.2014**



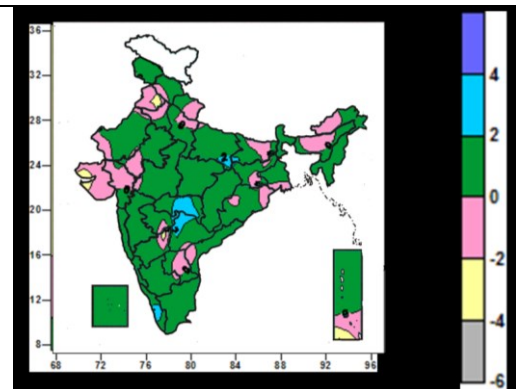
- 32 to 36 $^{\circ}\text{C}$  over many parts of Lakshadweep Island, some parts of Coastal & North Interior Karnataka, Telanagana, Raylaseema, Kerala.
- 24 to 32 $^{\circ}\text{C}$  over many parts of West India, South India, Central India, Haryana, Delhi, 'Manipur, Mizoram, Tripura, Andaman & Nicobar Islands, some parts of Punjab, Himachal Pradesh, West Uttar Pradesh, Rajasthan, Nagaland, Sikkim, Gangetic West Bengal, Jharkhand.
- 16 to 24 $^{\circ}\text{C}$  over many parts of North India (except Haryana & Delhi), East India, Arunachal Pradesh, Assam & Meghalaya, some parts of Central India, Gujarat, Nagaland.
- 12 to 16 $^{\circ}\text{C}$  over some parts of Jammu & Kashmir.

- 2 to 4 $^{\circ}\text{C}$  over some parts of Marathwada, South & North Interior Karnataka.
- -2 to 2 $^{\circ}\text{C}$  over many parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, North East India, Jharkhand, Orissa, Saurashtra & Kutch, Central India, Nagland, Manipur, Mizoram, Orissa, Chattisgarh, Maharashtra, South India, Lakshadweep, Andaman & Nicobar islands, some parts of Rajasthan, Himachal Pradesh, West Uttar Pradesh, Gujarat.
- -6 to -2 $^{\circ}\text{C}$  over many parts of Uttarakhand, Uttar Pradesh, Rajasthan, West Bengal & Sikkim, Gujrat, Bihar, some parts of Assam, Jharkhand, Madhya Pradesh, Saurashtra.

**Actual Mean Minimum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 15.01.2014**



**Mean Minimum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 15.01.2014**



- -2 to 2 $^{\circ}\text{C}$  over some parts of Jammu & Kashmir.
- 2 to 6 $^{\circ}\text{C}$  over many parts of Himachal Pradesh, Uttarakhand, Punjab, some parts of Jammu & Kashmir, Haryana, West Rajasthan, West Uttar Pradesh.
- 6 to 10 $^{\circ}\text{C}$  over North East India, Sub-Himalayan West Bengal, Uttar Pradesh, Jharkhand, Haryana, Delhi, many parts of Bihar, Jammu & Kashmir, Rajasthan, Gujarat, Saurashtra & Kutch, some parts of Sikkim, Gangetic West Bengal, Madhya Pradesh, Himachal Pradesh, Punjab, Uttarakhand, Himachal Pradesh, North Chattisgarh, North Orissa.
- 10 to 14 $^{\circ}\text{C}$  over many parts Maharashtra, Central India, Odisha south Gangetic West Bengal, some parts of Jammu & Kashmir,

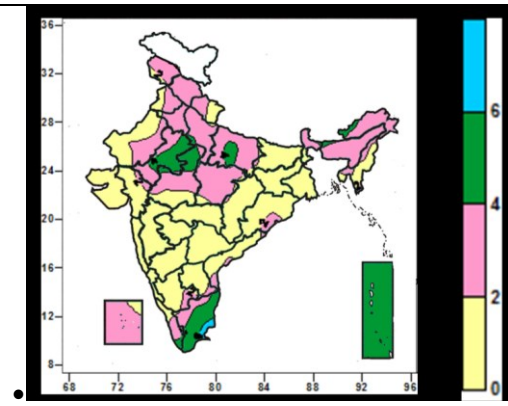
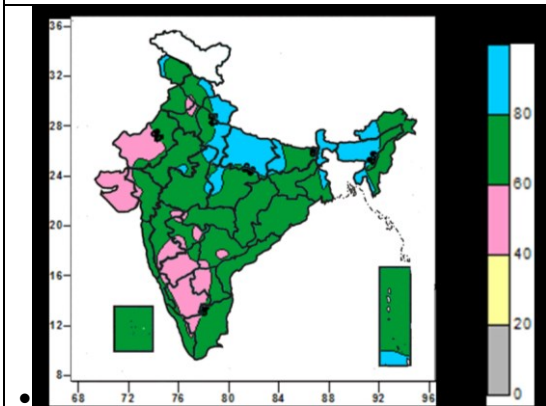
- -4 to -2 $^{\circ}\text{C}$  over some parts of Punjab, Saurashtra & Kutch, North Interior Karnataka, Andaman & Nicobar Islands.
- -2 to 2 $^{\circ}\text{C}$  over all parts of country (except some parts of West Uttar Pradesh, Bihar, Vidarbha, Telanagana, Kerala, North Interior Karnataka, Punjab, Saurashtra & Kutch, Andaman & Nicobar Islands).
- 2 to 4 $^{\circ}\text{C}$  over some parts of West Uttar Pradesh, Bihar, Vidarbha, Telanagana, Kerala.

Punjab, Haryana, Himachal Pradesh, Bihar, Sikkim, Rajasthan, south Gujarat, Saurashtra.

- 14 to 22°C over South India and parts of Odisha.

**Relative Humidity (%) over India for the week ending 15.01.2014**

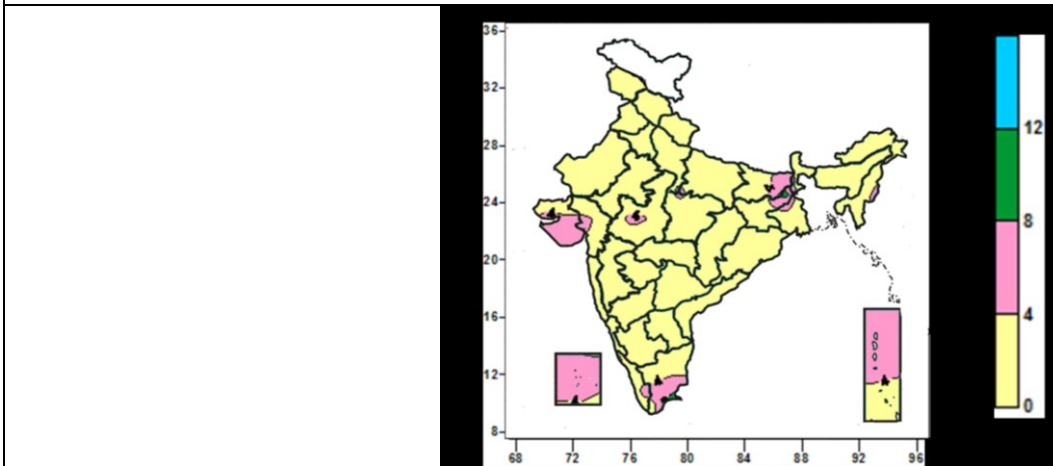
**Cloud amount (okta) over India for the week ending 15.01.2014**



- 80 to 100% over many parts of Uttarakhand, Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Assam, some parts of Jammu & Kashmir, Himachal Pradesh, East Rajasthan, Gangetic West Bengal, Arunachal Pradesh, Tripura, Madhya Pradesh, Andaman & Nicobar Islands.
- 40 to 80% over entire country (except many parts of Uttarakhand, Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Assam, some parts of Jammu & Kashmir, Himachal Pradesh, East Rajasthan, Gangetic West Bengal, Arunachal Pradesh, Tripura, Madhya Pradesh, Andaman & Nicobar Islands).

- 6 to 8 okta over some parts of Tamil nadu.
- 4 to 6 okta over many parts of Tamil Nadu, East Rajasthan, Andaman & Nicobar Islands, some parts of Uttar Pradesh, Assam, Arunachal Pradesh, West Madhya Pradesh, Kerala.
- 0 to 4 okta over entire country (except many parts of Tamil Nadu, East Rajasthan, Andaman & Nicobar Islands, some parts of Uttar Pradesh, Assam, Arunachal Pradesh, West Madhya Pradesh, Kerala).

**Wind speed (knots) over India for the week ending 15.01.2014**



- 4 to 8 knots over many parts over Saurashtra, Lakshadweep, Andaman & Nicobar Islands, some parts of, Bihar, Jharkhand, West Bengal, Manipur, Gujarat, West Madhya Pradesh, Kerala, Tamil Nadu.
- 0 to 4 knots over entire country (except many parts over Saurashtra, Lakshadweep, Andaman & Nicobar Islands, some parts of Bihar, Jharkhand, West Bengal, Manipur, Gujarat, West Madhya Pradesh, Kerala, Tamil Nadu).

## Weather Forecast

### Weather Forecast for next 3 days (upto 0830 hours IST of 20<sup>th</sup> January, 2014)

- Rain/snow would occur at isolated places over Jammu & Kashmir and Himachal Pradesh during next 24 hours and at a few places subsequent 24 hours and isolated thereafter.
- Rain/snow would occur at isolated places over Uttarakhand during next 24 hours and at a few places thereafter.
- Rain/thundershowers would occur at isolated places over Punjab, west Rajasthan during next 24 hours and mainly dry thereafter.
- Rain/thundershowers would occur at isolated places over Haryana, east Rajasthan, west Madhya Pradesh and Vidarbha during next 48 hours .
- Rain/thundershowers would occur at many places over Uttar Pradesh, east Madhya Pradesh and Bihar during next 48 hours.
- Rain/thundershowers would occur at isolated places over Chhattisgarh, Jharkhand and Sub-Himalayan West Bengal & Sikkim on 18<sup>th</sup>.
- Rain/thundershowers would occur at isolated places over Arunachal Pradesh during next 24 hours and mainly dry thereafter.
- Rain/thundershowers would occur at isolated places over southcoastal Karnataka, south Kerala, Lakshadweep and Andaman & Nicobar Islands.
- Weather would be mainly dry/dry over rest of the country.
- No significant change in minimum temperatures over northwest and adjoining central & east India.
- Very dense to dense fog would occur at a few places over Punjab, Haryana & Delhi, Uttar Pradesh, Bihar, north Madhya Pradesh, Sub-Himalayan West Bengal and moderate fog would occur at a few places over Gangetic West Bengal, Assam & Meghalaya, Manipur and Tripura and at isolated places over Jharkhand and Odisha during next 48 hours.

### Weather Warning during next 3 days

#### 17 January (Day 1):

- Dense to very dense fog (visibility < 50 M) would occur at isolated places over Haryana, Delhi, Uttar Pradesh, north Madhya Pradesh and Bihar and dense fog (visibility < 200 M) would also occur at isolated places over Punjab, Sub-Himalayan West Bengal & Sikkim.
- Cold day conditions would prevail at a few places over Haryana & Delhi, Uttar Pradesh, north Madhya Pradesh and Bihar.

#### 18 January (Day 2):

- Dense to very dense fog(visibility < 50 M) would occur at isolated places over Haryana, Delhi, Uttar Pradesh, Bihar and dense fog (visibility < 200m) would also occur at isolated places over Sub-Himalayan West Bengal & Sikkim.
- Cold day conditions would prevail at isolated places over Uttar Pradesh, Bihar, east Madhya Pradesh.
- Hail storm may occur at isolated places over Uttar Pradesh & west Madhya Pradesh.

#### 19 January (Day 3):

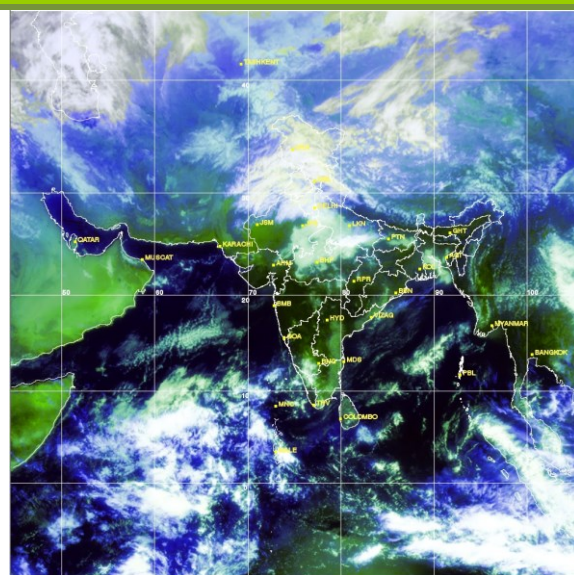
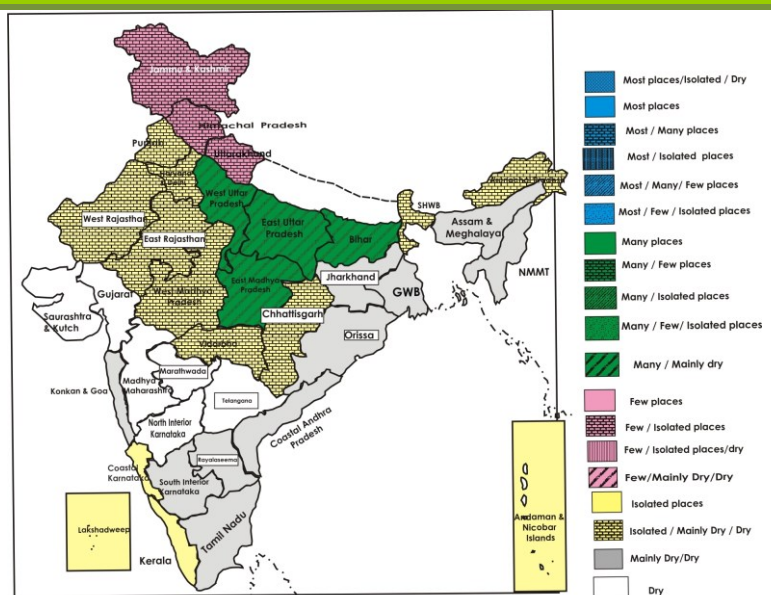
- Dense fog (visibility < 200m) would occur at isolated places over east Uttar Pradesh, Bihar and SubHimalayan West Bengal & Sikkim.

### Weather Outlook for subsequent 4 days from 19<sup>th</sup> January 2014 to 23<sup>rd</sup> January, 2014:

- A fresh western disturbance would affect northwest & central India from 21st January.

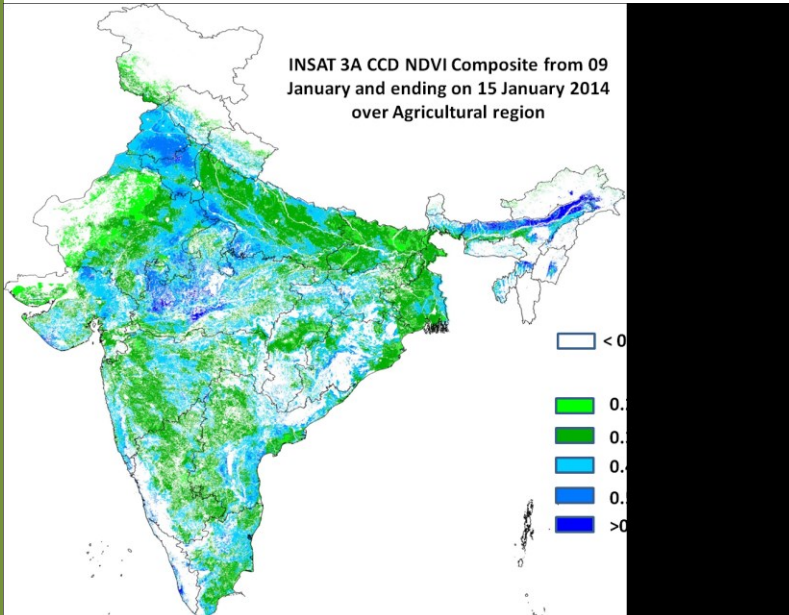
Weather Forecast Map (Valid upto 0830 hours of 20<sup>th</sup> January, 2014)

Satellite image dated 17.01.2014, 0600 UTC



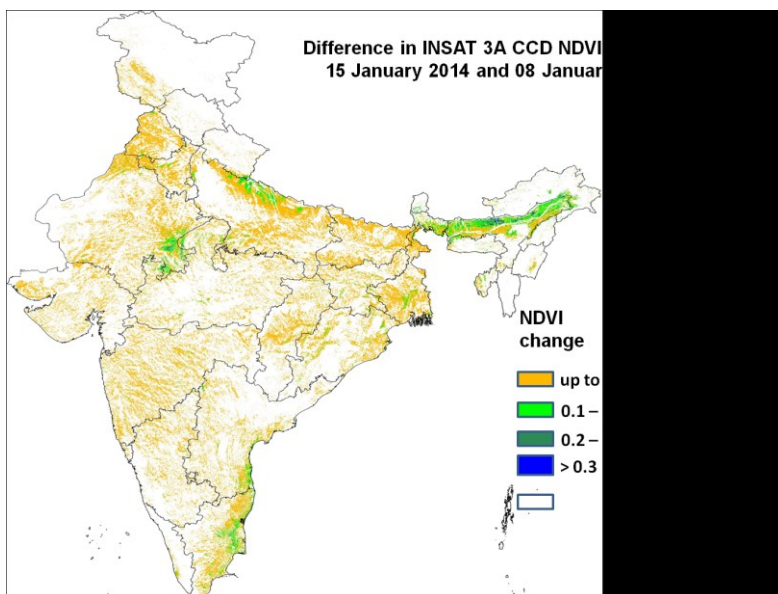
# INSAT 3A CCD NDVI COMPOSITE OVER AGRICULTURAL REGION

9<sup>th</sup> - 15<sup>th</sup> January 2014



Source: SAC, Ahmedabad

Agricultural vigour is in general very good over pockets of central and south-east Punjab and adjoining Haryana, eastern part of Rajasthan and adjoining MP and Gujarat, central and western MP, pockets of western and south-west UP and in Assam as NDVI exceeds 0.5. Agricultural vigour is moderate in central and south-west parts of UP, eastern MP, northern pocket of Rajasthan, central and south Gujarat, eastern Maharashtra, parts of Odisha, eastern part of West Bengal, central pocket of Bihar, parts of north-eastern India, northern part of Jharkhand, pockets of north and south Karnataka, southern peninsula covering AP and Tami Nadu where NDVI is in the range of 0.4 to 0.5 upto 15<sup>th</sup> January 2014. The NDVI remains low within range of 0.2 to 0.3 over central part of Rajasthan, part of Bihar and central part of Maharashtra.



Source: SAC, Ahmedabad

Agricultural progress was found to be good over eastern part of MP bordering MP, pockets of Haryana, northern part of UP, in Assam and part of southern peninsula where NDVI showed positive change from previous week of the order of 0.1 to 0.2. Rest of India shows moderate progress.

## Salient Advisories

### North Region

- Due to prevailing low temperature conditions in Punjab, Himachal Pradesh, Uttarakhand and Rajasthan, apply light and frequent irrigation in the standing crops to safeguard from cold injury. Young plants of fruit trees and tomato crops should be protected by covering with polythene sheets or straw thatches.
- As there are chances of rain / thundershowers at many places over Uttar Pradesh during next 48 hours, farmers are advised to postpone irrigation, intercultural operations and application of fertilizers and pesticides in the standing crops. As hail storm may occur at isolated places over Uttar Pradesh on 18<sup>th</sup> January, use hail net for orchard crops to protect from mechanical damage. Keep cattle/goats indoor during the period of hail storm. Due to prevailing low minimum temperature arrange for smoking around the field during night time to protect the crop from cold injury after current spells of rain.
- In Undulating Plain Zone of Punjab, due to foggy weather, white rust or other fungal diseases may appear in irrigated mustard crop, spray Blitox @ 250 g or Indofil-M45 @ 250 g in 100 liters of water per acre.
- In Flood Prone Eastern Plain Zone of Rajasthan, due to continuous cool and humid weather, alternaria blight (black spot) disease may occur in mustard crop, destroy the infested plants. Spray Iprodione or Mancozeb @ 2 kg/800 litre solution at 15 days interval. Also there are chances of thrips and aphid attack in brinjal, tomato and chilli crops; advised to spray 0.1% Malathion solution at 10 day interval to control the pests.

### Central Region

- As rain/thundershowers would occur at many places over east Madhya Pradesh during next 48 hours, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
- As hail storm may occur at isolated places over Madhya Pradesh on 17<sup>th</sup> and 18<sup>th</sup>, farmers are advised to use hail net for orchard crops to protect from mechanical damage. Keep cattle/goats indoor during hail storm.
- In Jhabua Hill Zone of Madhya Pradesh, due to low temperature during the last week, there is chance of attack of gram pod borer in gram, so monitor the crop regularly, spray Profenofos 50EC @ 1.5 lit/ha after current spells of rain.
- In Bundelkhand Zone of Madhya Pradesh, due to foggy weather, there is chance of increase in late blight in potato and tomato. Apply Mancozeb 2.5g/ lit of water after current spells of rain.
- At present the pigeon pea is at pod filling stage in Northern Hill Zone of Chhattisgarh and due to the partial cloudy weather during the last few days there is chance of infestation of pod borer. Farmers are advised to keep keen watch on the crop and spray Polytrin C@1L/ha or Endoxacarb @ 300 ml/ha.

### East Region

- As rain is expected at many places over Bihar during next 48 hours, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
- In Western Undulating Zone of Odisha, as dry weather is prevailing apply irrigation in sugarcane and continue picking of cotton. Continue nursery sowing of summer rice.
- In Laterite and Red Soil Zone of West Bengal, to protect the seedlings of *boro* rice from cold injury, cover the nursery bed with polythene or keep stagnant water in the nursery bed especially in the night time. Start preparation of the main field for transplanting of *boro* rice. In view of prevailing dry weather, apply irrigation in mustard crop and winter vegetables. Apply light and frequent irrigation to potato crop to protect from cold.
- In North East Alluvial Zone and North West Alluvial Plain Zone of Bihar, due to prevailing dense foggy conditions, there is chance of occurrence of white rust in mustard; spray 0.2% Redomil or Mancozeb after current spells of rain.
- In Western Plateau Zone of Jharkhand, foggy weather is favourable for the attack of late blight disease in potato crop; spray Redomyl (1.5 g per litre of water) to control the disease. Also there are chances of powdery mildew disease in green pea; spray Karathen @ 1 ml per litre of water or Sulfex @ 3 g per litre of water.
- In East and South Eastern Coastal Plain Zone of Odisha, present temperature conditions are congenial for occurrence of aphids in mustard crop from vegetative to pod maturing stage. To control the insect pest spray the crop with Dimethoate @ 1000 ml or Imidacloprid 125 ml/ha. Spraying must be done in the afternoon hours to save honeybees.

### Northeast Region:

- As night temperature is low, the young seedlings in rice nurseries in Assam, Meghalaya and Tripura should be applied with irrigation water during night to protect the seedlings from low temperature and drain out the water in the next morning.
- In Hill Zone of Assam, as dry weather is prevailing, undertake picking of cotton during morning hours.
- In Meghalaya, continue nursery raising of *boro* rice. Provide light irrigation in tomato as dry weather is prevailing.

- As dry weather is prevailing, in Sub Tropical Plain Zone of Manipur, apply irrigation in rapeseed, mustard and pulses and light irrigation in potato to maintain optimum soil moisture during vegetative stage. Undertake sowing of French bean and nursery raising of cucurbits. Continue sowing of *rabi* maize as inter crop with mustard or pulses.
- In Mild Tropical Hill Zone of Nagaland, taking the advantage of dry weather, continue harvesting of ginger, vegetables and matured cabbage.
- In Mild Tropical Plain Zone of Tripura, maintain moisture in the field of toria through irrigation at pod initiation stage.
- In Arunachal Pradesh, due to prevailing foggy weather conditions there are chances of occurrence of late blight in potato and tomato. Foliar spraying of Redomil MZ @ 2.5 g / litre water at 7 days interval is advised. Spray on both the sides of the leaf. There is also chance of occurrence of aphids in mustard; if damage is severe, spray Imidacloprid 17 SL @ 1.5 ml / litre of water during the afternoon hours.

#### **West Region:**

- As dry weather prevailed during last few weeks in Konkan, apply irrigation to groundnut at 10-12 days interval, orchards, vegetable crops and pulses. As mango is at pea size stage, apply 150-200 litres of water per tree considering the crop canopy at 15 days interval. To avoid fruit dropping and to enhance the fruit setting spray Amrashakti. To preserve the soil moisture in water melon, apply straw mulch or polythene mulch.
- As dry weather is prevailing in Madhya Maharashtra since last few weeks, apply irrigation to gram at pod development stage, wheat at early tillering / tillering stage, jowar at grain formation stage, sugarcane, vegetable crops and maize. Also apply mulch of plant waste material in jowar to preserve the soil moisture in water stress condition.
- As dry weather prevailed during last few weeks in Marathwada, apply irrigation to gram at pod development stage, wheat at early tillering / tillering stage, jowar at grain formation stage, sugarcane, vegetable crops and maize. Under prevailing weather continue planting of suru sugarcane, sowing of summer groundnut and watermelon.
- As rain is expected at isolated places in Vidarbha during next 48 hours, harvesting of already matured red gram may be undertaken on a bright sunny day. Harvested produce may be kept at a safer place. Undertake transplanting of 30-35 days old summer rice seedling.
- As cloudy weather is expected during next 3-5 days, there may be incidence of thrips on mustard / pea size mango fruit in south Konkan; spray Spinosad @ 2.5 ml per 10 litres of water on whole tree.
- Due to cloudy weather, there are chances of white rust and aphids in mustard in Middle Gujarat Zone. Spray Mancozeb 0.25% or Chlorothalonil 0.2% in 10 litres of water and 500 g (5% arc) neem seed powder or 20 ml (1 EC) or 40 ml (0.15 EC) neem based readymade solution in 10 liters of water in evening time for control of aphids and rust respectively.

#### **South Region:**

- In the prevailing low soil moisture conditions, apply mulching and spray anti-transpirants and 1% potassium chloride or 3% kaolin solution on rainfed sorghum, maize, pearl millet and cotton for reducing the transpiration loss of water in the South Zone of Tamil Nadu. Also spray NAA(Napthalene Acetic Acid) @ 40 ppm to prevent shedding of buds and squares and increase the yield in cotton and spray Cotton plus, a crop booster @ 7.5 kg/ ha in 500 litres of water at flowering and boll formation stages to withstand moisture stress.
- Farmers in Krishna Godavari Zone of Andhra Pradesh are advised to apply MgSO<sub>4</sub> @ 2 g per liter of water in cotton to prevent leaf reddening due to lack of Mg caused due to low temperatures.
- Due to low temperature in the morning hours, there is possibility of occurrence of powdery mildew and leaf hopper in mango orchards in the Eastern Dry Zone and Southern Dry Zone of Karnataka. Undertake control measures. Hoppers were noticed and likely to continue in mango orchards throughout the North East Transition Zone of Karnataka. For effective control, undertake spraying of 4 g Carbaryl 50WP or 2 ml Malathion 50EC or 1.5 ml Monocrotophos 36SL in one litre of water.
- In the prevailing temperature condition, coconut palms of all stages are likely to be attacked by bud rot disease, young palms are more susceptible to this disease in the Problem Area Zone of Kerala. In the early stages, cut and remove the affected tissues of the crown and burn them and spray Bordeaux mixture 1% on spindle leaves and crown of disease affected as well as neighbouring palms to control the attack.



## Detailed Zonewise Agromet Advisories

NORTH INDIA [Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh & Rajasthan]



Wheat



Sugarcane



Late blight on potato



Mustard

- **Realised Rainfall:** Significant rainfall occurred in Kinnaur, Kullu, Lahaul and Spiti in Himachal Pradesh, Anantnag, Baramula, Ganderwal, Kulgam in Jammu & Kashmir, Allahabad, Gazipur, Gonda, Kanpur Dehat, Mirzapur, Pratapgarh, Sant Ravidas Nagar, Varanasi in East Uttar Pradesh. Weather remained mainly dry / dry over rest of the region.
- **Weather Forecast:**
  - Rain/snow would occur at isolated places over Jammu & Kashmir and Himachal Pradesh during next 24 hours and at a few places subsequent 24 hours and isolated thereafter, at isolated places over Uttarakhand during next 24 hours and at a few places thereafter. Rain/thundershowers would occur at isolated places over Punjab, west Rajasthan during next 24 hours and mainly dry thereafter, at isolated places over Haryana and East Rajasthan, at many places over Uttar Pradesh during next 48 hours. Weather would be mainly dry over the remaining part of the region.
  - No significant change in minimum temperatures over northwest India.
  - Very dense to dense fog would occur at a few places over Punjab, Haryana & Delhi and Uttar Pradesh during next 48 hours.
- **Weather Warning during next three days:**
  - Dense to very dense fog (visibility < 50 M) would occur at isolated places over Haryana, Delhi, Uttar Pradesh on 17<sup>th</sup> and 18<sup>th</sup> January and dense fog (visibility < 200 M) would also occur at isolated places over Punjab on 17<sup>th</sup> January.
  - Cold day conditions would prevail at a few places over Haryana & Delhi on 17<sup>th</sup> January and over Uttar Pradesh on 17<sup>th</sup> and 18<sup>th</sup> January.
  - Hail storm may occur at isolated places over Uttar Pradesh on 18<sup>th</sup> January.
- **Weather Outlook:** A fresh western disturbance would affect northwest India from 21<sup>st</sup> January.
- **Advisories :**
  - Due to prevailing low temperature conditions in Punjab, Himachal Pradesh, Uttarakhand and Rajasthan, apply light and frequent irrigation in the standing crops to safeguard from cold injury. Young plants of fruit trees and tomato should be protected by covering with polythene sheets or straw thatches.
  - As there are chances of rain / thundershowers at many places over Uttar Pradesh during next 48 hours, farmers are advised to postpone irrigation, intercultural operations and application of fertilizers and pesticides in the standing crops. As hail storm may occur at isolated places over Uttar Pradesh on 18<sup>th</sup> January, use hail net for orchard crops to protect from mechanical damage. Keep cattle/goats indoor during hail storm. Due to prevailing low minimum temperature arrange for smoking around the field during night time to protect the crop from cold injury after current spells of rain.
  - In Eastern Zone of Haryana, apply irrigation in wheat crop at tillering stage. Harvest the sugarcane crop. Give frequent light irrigation and use of sprinkler if possible to protect vegetable and horticulture crops from low temperature.
  - In Valley Temperate Zone of Jammu & Kashmir (Quasigund, Srinagar, Banihal districts), suspend agricultural activities for next 3 days in view of sub-zero temperature.
  - In Sub-Tropical Zone of Jammu & Kashmir, it is advised to apply urea @ 2.5 kg /kanal as 1<sup>st</sup> top dress and also irrigate the wheat & barley crops. In Intermediate Zone of Jammu & Kashmir, it is advised to apply second dose of urea in normal sown wheat, also continue transplanting of onion.
  - In Bhabar and Tarai and Hill Zone of Uttarakhand, due to low temperature conditions, farmers are advised to burn straw during morning hours near the wheat field crops and give irrigation in vegetables in order to protect from cold injury or arrange for smoking during night hours.
  - In west Rajasthan, arrange for smoke around the field after midnight or light irrigation could be equally effective to protect the crop from cold injury.
  - In Flood Prone Eastern Plain Zone of Rajasthan, due to continuous cool and humid weather, alternaria blight (black spot) disease may occur mustard crop in some pockets, destroy the infested plants. Spray Iprodione or Mancozeb @ 2 kg/800 litre solution at 15 days interval. Also there are chances of thrips and aphid attack in brinjal, tomato and chilli crops; advised to spray 0.1% Melathion solution at 10 day interval to manage the pest.

- In Sub-Montane and Low Hills Tropical Zone of Himachal Pradesh, in the prevailing weather (cold and wet weather) attack of aphids is expected in wheat at CRI stage. For control, spray 30 ml Cypermethrin 10 EC per 30 litres of water per kanal area.
- In Undulating Plain Zone of Punjab, due to foggy weather white rust or other fungal diseases may appear in irrigated mustard crop, spray 250g Blitox or Indofil-M45 in 100 liters of water per acre.
- In Central Plain Zone of Punjab, weather is favourable for late blight on potato, spray the crop with Indofil M-45/ Antracol/Kavach @500g in 200 litres of water per acre. Repeat the spray at 7 days interval. Also there may be infestation of powdery mildew in peas, spray the crop with Karathane 40 EC @ 80 ml or Sulfex @ 600 g in 200 litres of water per acre. Three sprays may be given at 10 days interval.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- In Sub-Tropical Zone of Jammu & Kashmir, protect the pregnant and milch animal from cold and feed them with mineral mixture regularly. Keep the animals inside the sheds/ shelters during night hours and take them out during sunshine hours in the day time. Cover the poultry shed with gunny bags in order to protect the birds from cold weather.
- In Punjab and Haryana, suitable measures like doubling of curtains should be taken in poultry birds sheds. Poultry ration should have more energy. Therefore, increase cereals by 5-8% in the ration and adjust the rice bran content. Protect animals from low night temperature by providing protected shelters. Dry bedding to animals helps to save them from cold. Entry of very cold winds inside the shed should be minimized.

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



*Wheat*



*Sugarcane*



*Chilli*



*Mustard*

- **Realised Rainfall:** Significant rainfall occurred in Jabalpur, Rewa and Sidhi districts of east Madhya Pradesh. Mainly dry weather prevailed over rest part of the region.
- **Weather forecast:**
  - Rain/thundershowers would occur at many places over east Madhya Pradesh and at isolated places over west Madhya Pradesh during next 48 hours and at isolated places over Chhattisgarh on 18th.
  - Very Dense to dense fog would occur at isolated places over north Madhya Pradesh during next 48 hours.
- **Weather Warning:**
  - Dense to very dense fog (visibility less than 50 M) would occur at isolated places over north Madhya Pradesh on 17th.
  - Cold day conditions would prevail at a few places over north Madhya Pradesh on 17th and over east Madhya Pradesh on 18th .
  - Hail storm may occur at isolated places over west Madhya Pradesh on 18th.
- **Weather Outlook:** A fresh western disturbance would affect cenral India on 21st.
- **Advisories:**
  - As hail storm may occur at isolated places over Madhya Pradesh on 17th and 18th, farmers are advised to use hail net for orchard crops to protect from mechanical damage. Keep cattle/goats indoor during hail storm.
  - As rain/thundershowers would occur at many places over east Madhya Pradesh during next 48 hours postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
  - In Chattishgarh Plain Zone, due to partly cloudy weather conditions during the past few days infestation of insects in vegetable crops is likely to occur, it is advised to monitor the crops.
  - In Jhabua Hill Zone of Madhya Pradesh, due to low temperature during the last week, there is chance of attack of gram pod borer in gram, so monitor the crop regularly and spray Profenofos 50EC @ 1.5 lit/ha after current spells of rain.
  - In Jhabua Hill Zone of Madhya Pradesh, for control of stem & fruit borer in brinjal, tomato & okra, spray Trizofos @ 30 ml/pump (15 l. tank).Control of sucking pest in okra and chilli spray Thiomithaxim/ acetameprid @ 0.3 gm/l. For the attack of Gram pod borer (2-3 caterpillars per meter row), spray Proferofos 50EC @ 1.5 lit/ha after current spells of rain.
  - In Bundelkhand Zone of Madhya Pradesh, due to foggy weather, there is chance of increase in late blight in

potato and tomato. Apply Mancozeb 2.5g/ lit of water after current spells of rain.

- In Northern Hill Zone of Chhattisgarh, foggy weather is conducive for development of wilting conditions in chickpea crop, for its control, spray *Tricoderma viridi* (5g/k. seed).
- At present the pigeon pea is at pod filling stage in Northern Hill Zone of Chhattisgarh and due to the partial cloudy weather during the last few days there is chance of infestation of pod borer. Farmers are advised to keep keen watch on the crop and if the infestation is above ETL spray Polytrin C@1L/ha or Endoxacarb @ 300 ml/ha.
- In Bastar Plateau Zone of Chhattisgarh, there is attack of thrips, and aphids in gram, for its control spray Monocrotophos.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III
- **Animal Husbandry**
  - In Malwa Plateau of Madhya Pradesh, provide clean water, balanced and nutrients rich feed to the animals. De-worm the cattle. Protect the cattle from cold, keep them in warm environment.
  - In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, provide concentrated feed to cattle, mix with dry and green fodder and enrich diet with protein, carbohydrate, fat, vitamins etc. Due to cold condition the poultry birds should be protected from cold injury using electric bulb (300 watt for 10sq.ft.) to prevent coryza disease.

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



*Mustard*



*Sugarcane*



*Transplanting of rice*



*Cole crops*



*Onion*

- **Realised Rainfall:** Significant rainfall occurred in Aurangabad, Gaya, Nalanda, Rohtas and Siwan districts of Bihar and in Giridih and Hazaribagh districts of Jharkhand. Weather remained mainly dry / dry over rest of the region.
- **Weather Forecast:** Rain / thundershowers would occur at many places over Bihar during next 48 hours and at isolated places over Jharkhand and Sub-Himalayan West Bengal & Sikkim on 18<sup>th</sup> January and mainly dry weather thereafter. Weather would be mainly dry / dry over rest of the region. No significant change in minimum temperatures over east India. Very dense to dense fog would occur at a few places over Bihar, Sub-Himalayan West Bengal and moderate fog would occur at a few places over Gangetic West Bengal and at isolated places over Jharkhand and Odisha during next 48 hours.
- **Weather Warning:** Dense to very dense fog (visibility < 50m) would occur at isolated places over Bihar on 17<sup>th</sup> and 18<sup>th</sup> and dense fog (visibility < 200m) would also occur at isolated places over Sub-Himalayan West Bengal & Sikkim during next 3 days. Dense fog (visibility < 200m) would occur at isolated places over Bihar on 19<sup>th</sup> January. Cold day conditions would prevail at a few places over Bihar on 17<sup>th</sup> and isolated places on 18<sup>th</sup> January.
- **Weather Outlook:** Weather would be mainly dry / dry over the region.
- **Advisories:**
  - As rain is expected at many places over Bihar during next 48 hours, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crop.
  - In Western Undulating Zone of Odisha, as dry weather is prevailing, apply irrigation in sugarcane and continue picking of cotton. Continue nursery sowing of summer rice.
  - In Laterite and Red Soil Zone, New Alluvial Zone, Old Alluvial Zone and Terai Zone of West Bengal, to protect the seedlings of *boro* rice from cold injury, cover the nursery bed with polythene or keep stagnant water in the nursery bed especially in the night time.
  - In Coastal Saline Zone of West Bengal, undertake transplanting of *boro* rice in main field. Complete transplanting of chilli seedlings in main field.
  - In New Alluvial Zone of West Bengal, complete preparation of the main field for transplanting of *boro* rice. Undertake sowing of sunflower and apply 1<sup>st</sup> irrigation just after sowing and 2<sup>nd</sup> irrigation 3 days after sowing.
  - In Laterite and Red Soil Zone, start preparation of the main field for transplanting of *boro* rice. In view of prevailing dry weather, apply irrigation in mustard crop and winter vegetables. Apply light and frequent irrigation to potato crop to protect from cold.

- In Western Plateau Zone of Jharkhand, as dry weather is prevailing during last few weeks, apply irrigation to wheat and after irrigation go for intercultural operation and then apply urea @ 22 kg per acre. Also apply irrigation to potato crop regularly after an interval of 7-10 days. Undertake nursery raising of rice. Undertake sowing of summer vegetables like sponge gourd, bottle gourd, pumpkin, water melon, musk melon etc.
- In South Eastern Plateau Zone of Jharkhand, as dry weather is prevailing during last few weeks, apply irrigation to wheat and after irrigation go for intercultural operation and then apply urea @ 30 kg per acre. Apply urea @ 25-30 kg per acre to mustard crop after two days of irrigation. Undertake nursery raising of rice.
- As dry weather is prevailing in Central & North Eastern Plateau Zone of Jharkhand , apply light irrigation in the evening time in standing crops to protect from cold injury. Undertake sowing of green pea and nursery raising of onion. Undertake intercultural operations in potato and gram. Prepare field for vegetables like long gourd, round gourd, bitter guard, sponge gourd, cucumber, water melon and musk melon.
- In North West Alluvial Plain Zone of Bihar, due to prevailing dense foggy conditions, there is chance of occurrence of early blight in potato and tomato; spray Dithane M-45 @ 2 g / litre or Carbendazim (Bavistin) @ 2 g / litre of water. Also weather is favourable for incidence of aphids in mustard, spray Cartop Hydrochloride @1.5-2.0 ml/liter of water after current spells of rain. There are chances of pod borer in pigeon pea crop; spray Profenophos 50 EC@2.0 ml per litre of water after current spells of rain.
- In North East Alluvial Zone and North West Alluvial Plain Zone of Bihar, due to prevailing dense foggy conditions, there is chance of occurrence of white rust in mustard; spray 0.2% Redomil or Mancozeb after current spells of rain.
- In Western Plateau Zone of Jharkhand, foggy weather is favourable for the attack of late blight disease in potato crop; spray Redomyl (1.5 g per litre of water) to control the disease. Also there are chances of powdery mildew disease in green pea; spray Karathen @ 1 ml per litre of water or Sulfex @ 3 g per litre of water.
- In North Eastern Plateau Zone and East and South Eastern Coastal Plain Zone of Odisha, due to cool weather and formation of dew, powdery mildew may occur in pulses; hence spray Wettable Sulphur @ 1 kg per acre.
- In East and South Eastern Coastal Plain Zone of Odisha, maximum and minimum temperature conditions are congenial for occurrence of termites, thrips and aphids on groundnut during the vegetative stage. For termites, treat the soil with Sevidol granules @ 20 kg or Methyl parathion 2% D dust @ 25 kg/ha and maintain moisture in the field. For thrips, apply Imidacloprid 17.8 SL @ 125 ml in 500 litres of w424r per hectare. For aphids, spray Dimethoate @ 1 l/ha in 500 l of water.
- In East and South Eastern Coastal Plain Zone of Odisha, present temperature conditions are congenial for occurrence of aphids in mustard crop. To control the insects spray the crop with Dimethoate @ 1000 ml or Imidacloprid 125 ml/ha. Spraying must be done in the afternoon hours to save honeybees.
- In Coastal Saline Zone, Laterite and Red Soil Zone and New Alluvial Zone of West Bengal, due to prevailing foggy conditions, there is chance of occurrence of late blight in potato; spray a mixture of Cymoxnil 8% and Mancozeb 64% @ 2.5 g / litre of water in afternoon hours. Also due to increase in temperature there are chances of aphids in mustard; spray Dimethoate @ 1.5 ml / litre of water.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
  - Low temperature condition may adversely affect the milk production and performance of domestic animals. Farmers in North West Alluvial Plain Zone of Bihar are advised to give protein enriched diet to the animals. Do not keep the animals in the open air during night.

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



**Chilli**



**Transplanting of rice**



**cole crops**



**Late blight in Potato**

- **Realised Rainfall:** Significant rainfall occurred in Dibang Valley district of Arunachal Pradesh. Weather remained mainly dry / dry over rest of the region.
- **Weather Forecast:** Rain / thundershowers would occur at isolated places over Arunachal Pradesh during next 24 hours and mainly dry thereafter. Weather would be mainly dry / dry over the remaining parts of the region. Moderate fog would occur at a few places over Assam, Meghalaya, Manipur and Tripura during next 48 hours.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be mainly dry / dry over the region.
- **Advisories:**
  - As night temperature is low, the young seedlings in rice nurseries in Assam, Meghalaya and Tripura should be

applied with irrigation water during night to protect the seedlings from low temperature and drain out the water in the next morning.

- In Central Brahmaputra Valley Zone, Hill Zone and North Bank Plain Zone of Assam, continue transplanting of *boro* rice seedlings at 4 to 5-6 leaf stage (45 days old seedlings).
- In Hill Zone of Assam, as dry weather is prevailing, undertake picking of cotton during morning hours.
- In Lower Brahmaputra Valley Zone of Assam, continue transplanting *boro* rice seedlings of age about 45 days or with 5-6 leaf stage in the main field.
- In Meghalaya, continue nursery raising of *boro* rice. Provide light irrigation in tomato as dry weather is prevailing.
- As dry weather is prevailing, in Sub Tropical Plain Zone of Manipur, apply irrigation in rapeseed, mustard and pulses and light irrigation in potato to maintain optimum soil moisture during vegetative stage. Undertake sowing of French bean and nursery raising of cucurbits. Continue sowing of *rabi* maize as inter crop with mustard or pulses.
- In Mild Tropical Hill Zone of Nagaland, taking the advantage of dry weather, continue harvesting of ginger, vegetables and matured cabbage.
- In Mild Tropical Plain Zone of Tripura, maintain moisture in the field of toria through irrigation at pod initiation stage.
- In Arunachal Pradesh, due to prevailing foggy weather conditions there are chances of occurrence of late blight in potato and tomato. Foliar spraying of Redomil MZ @ 2.5 g / litre water at 7 days interval is advised. Spray on both the sides of the leaf. There is also chance of occurrence of aphids in mustard; if damage is severe, spray Imidacloprid 17 SL @ 1.5 ml / litre of water during the afternoon hours.
- In Hill Zone and Lower Brahmaputra Valley Zone of Assam, humid and cloudy weather is congenial for occurrence of late blight in tomato. Apply Ridomil MZ-72 (2 g / litre of water) and Dithane M-45 (2.5 g / litre of water) alternately at 15 days interval.
- In North Bank Plain Zone of Assam, humid and cloudy weather conditions are favourable for incidence of aphids and saw fly in rapeseed and mustard. Hence, monitor the crop and apply Dimethoate 30 EC or Chloropyrifos @ 2 ml / litre of water with a spray volume of 500-700 litres / ha for hand sprayer & 200-250 litres / ha for power sprayer. Also cloudy and foggy weather is favourable for appearance of late blight in potato; spray Mancozeb @ 2.5 g / litre of water as protective measure.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
  - In Nagaland, Mizoram and Tripura, cover or tie cattle with gunny bags during night to avoid cold. Also cover poultry house with gunny bags / polythene sheet and provide heating during night using electric bulb of 300 watt per 100 sq. ft. space.
  - In Manipur, protect poultry birds from cold by hanging polythene sheet / Hessian cloth all around the wire mesh / poultry shed. Use electric bulb or charcoal at night time to keep rooms warm in poultry shed. Increase energy feed upto 5% (like maize, rice bran etc.). Add antibiotic Hostacycline / Duaprin @ 2 g / litre of drinking water for 7 days along with vitamin B & vitamin A.
  - In North Bank Plain Zone of Assam, protect poultry birds from cold by using electric bulbs (300 Watt for 100 sq. ft.) to prevent *Coryza* disease.

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



*Transplanting of rice*



*Groundnut*



*Cotton*



*Grape vine*

- **Realised Rainfall:** Weather remained mainly dry / dry over the region.
- **Weather Forecast:** Rain/ thundershowers would occur at isolated places over Vidarbha during next 48 hours. Weather would be mainly dry / dry over rest part of the region.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be mainly dry / dry over the region.
- **Advisories:**
  - As dry weather prevailed during last few weeks in Konkan, apply irrigation to groundnut at 10-12 days interval, orchards, vegetable crops and pulses. As mango is at pea size stage, apply 150-200 litres of water per tree

considering the crop canopy at 15 days interval. To avoid fruit dropping and to enhance the fruit setting spray *Amrashakti*. Complete transplanting of rice and finger millet seedlings. Maintain 2-3 cm water level for first 8-10 days as mainly dry weather is expected during the period. To preserve the soil moisture in water melon, apply straw mulch or polythene mulch.

- As dry weather is prevailing in Madhya Maharashtra since last few weeks, apply irrigation to gram at pod development stage, wheat at early tillering / tillering stage, jowar at grain formation stage, sugarcane, vegetable crops and maize. Also apply mulch of plant waste material in jowar to preserve the soil moisture in water stress condition.
- As dry weather prevailed during last few weeks in Marathwada, apply irrigation to gram at pod development stage, wheat at early tillering / tillering stage, jowar at grain formation stage, sugarcane, vegetable crops and maize. Under prevailing weather continue planting of *suru* sugarcane, sowing of summer groundnut and watermelon.
- As rain is expected at isolated places in Vidarbha during next 48 hours, harvesting of already matured red gram may be undertaken on a bright sunny day. Harvested produce may be kept at a safer place. Undertake transplanting of 30-35 days old summer rice seedling.
- Taking advantage of dry weather, prepare the land for sowing of summer groundnut in Middle Gujarat Zone and North Saurashtra Zone.
- As dry and cold weather is prevailing in North Gujarat Zone, apply light irrigation in the evening in potato and castor crops. Taking advantage of dry weather condition, undertake harvesting of matured spikes of castor.
- As dry weather is prevailing in South Gujarat Zone, apply light irrigation in vegetable crops.
- In South Gujarat Heavy Rainfall Zone, apply light irrigation in mustard and vegetable crops as dry weather is prevailing. Also carryout hand weeding and intercultural operations in wheat, mustard and vegetables.
- Due to uneven weather (fluctuating temperature) in Western Maharashtra Scarcity Zone, there may be incidence of blight and thrips in onion; spray Chlorothalonil @ 25 g + Carbosulfan @ 10 ml per 10 litres of water with 10 ml sticker.
- As cloudy weather is expected during next 3-5 days, there may be incidence of thrips on mustard / pea size mango fruit in south Konkan; spray Spinosad @ 2.5 ml per 10 litres of water on whole tree.
- Due to partly cloudy weather in Marathwada region, there may be incidence of fruit borer, jassids and powdery mildew in mango; spray Fipronil @ 20 ml + Carbendazim @ 10 g per 10 litres of water.
- Due to cloudy weather, there are chances of white rust and aphids in mustard in Middle Gujarat Zone. Spray Mancozeb 0.25% or Chlorothalonil 0.2% in 10 litres of water and 500 g (5% arc) neem seed powder or 20 ml (1 EC) or 40 ml (0.15 EC) neem based readymade solution in 10 liters of water in evening time for control of aphids and rust respectively.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- In Gujarat, keep animals indoor during night to protect them from cold. Provide ad lib warm water to lactating animals and include dry fodder in feeding. Keep animal houses clean and dry to prevent diseases.

#### SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]



**Pulses (flowering/pod formation)**



**Sugarcane (cane maturity)**



**Onion (bulb development)**



**Sucking pest on Groundnut**

- **Realized Rainfall:** Significant rainfall occurred over Thiruvananthapuram district in Kerala; Kanyakumari and Thirunelveli districts in Tamil Nadu. Weather was mainly dry / dry over remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at isolated places over south coastal Karnataka and south Kerala. Weather would be mainly dry/dry over rest of the region.
- **Weather Warning during the next three days :** Nil
- **Advisories:**
  - In the prevailing low soil moisture conditions, apply mulching and spray anti-transpirants and 1% potassium chloride or 3% kaolin solution on rainfed sorghum, maize, pearl millet and cotton for reducing the transpiration loss of water. Spray NAA @ 40 ppm to prevent shedding of buds and squares and increase the yield in cotton and spray Cotton plus, a crop booster @ 7.5 kg/ ha in 500 litres of water at flowering and boll formation stages to withstand moisture stress in the South Zone of Tamil Nadu.

- Farmers in Krishna Godavari Zone of Andhra Pradesh are advised to apply  $MgSO_4$  @ 2 g per liter of water in cotton to prevent leaf reddening due to lack of Mg caused due to low temperatures.
- Continue planting of sugarcane after proper set treatment; apply irrigation to wheat crop which is at grain filling stage in the North East Transition Zone of Karnataka.
- Undertake foliar spraying of Urea 1% + DAP 2 % + MOP 1% during flowering stage in *thaladi* paddy to increase the seed setting. Also undertake harvesting of matured *samba* paddy and sowing of rice fallow pulses in the Cauvery Delta Zone of Tamil Nadu.
- Undertake sowing of rice fallow pulses (black gram and green gram) in Karaikal & Pondicherry.
- Undertake harvesting fodder sorghum and other pulses in the Western Zone of Tamil Nadu.
- Cover the tea bushes in low lying areas with dry ferns and dry leaves for frost protection and undertake mulching in new tea plantation to preserve soil moisture in the High Altitude Hilly Zone of Tamil Nadu.
- Due to low temperature in the morning hours, there is possibility of occurrence of powdery mildew and leaf hopper in mango orchard. Undertake control measures in the Eastern Dry Zone and Southern Dry Zone of Karnataka. Hoppers were noticed in mango orchard throughout the North East Transition Zone of Karnataka. For effective control, undertake spraying of 4 gm Carbaryl 50WP or 2 ml Malathion 50EC or 1.5 ml Monocrotophos 36SL or 0.5 ml Phosphamidon 40EC in one litre of water.
- Due to low temperature and high humidity in morning hours, there is possibility of occurrence of powdery mildew on the grapes in the Eastern Dry Zone of Karnataka. Undertake spraying of Carbendazim @ 1 g/L or Tridemarf @ 0.5 ml/L to control the disease.
- Due to continuous dry weather, thrips were noticed and likely to increase on vegetables like Onion/Brinjal/Bhendi, to control undertake spraying of oxydemeton methyl (1.5 ml) or dimethoate (1.7 ml) with one liter of water in the North East Dry Zone of Karnataka.
- Prevailing cool and dry weather condition is congenial for sigatoka leaf spot in banana and leaf spot disease in paddy crop in the Western Zone of Tamil Nadu. Undertake suitable plant protection measures, if needed.
- In the prevailing temperature condition, coconut palms of all stages are liable to be attacked by bud rot disease, but young palms are more susceptible to this disease in the Problem Area Zone of Kerala. In the early stages, cut and remove the affected tissues of the crown and burn them and spray Bordeaux mixture 1% on spindle leaves and crown of disease affected as well as neighbouring palms to control the attack.
- Prevailing conditions (increasing day temperatures) are congenial for incidence of leaf miner, tobacco cutworm, sucking pest and pea nut bud necrosis virus (PBND) in rabi groundnut, pink borer in maize crop and hoppers in mango crop in the Scarce Rainfall Zone of Andhra Pradesh. Monitor the crops and undertake plant protection measures.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
  - Ensure periodic vaccination of animals against FMD, Brucellosis, Haemorrhagic Septicaemia, Anthrax and small ruminants against PPR and Sheep and Goat Pox in the Scarce Rainfall Zone of Andhra Pradesh.
  - Clean wounds of the infected animals with neem oil and turmeric powder and use Sodium hydroxide as disinfectant (200 gm in 10 liter of water) for foot and mouth disease in cattle's shed in the Western Zone of Tamil Nadu.
  - Test moisture and mycotoxin in freshly arrived lot to sustain poultry production in the present weather in the North Western Zone of Tamil Nadu. Follow vaccination schedule at right time to prevent Ranikhet disease in back-yard country chicken.

**Annexure I**  
**Stages of Major Crops**

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

- Wheat (crown root initiation/vegetative), barley, oat, late peas (early vegetative/vegetative), early peas, gobhi sarson (vegetative/pod formation), cauliflower (transplanting/vegetative), cucurbits (maturity/harvesting), radish, carrot, turnip, beet leaf and fenugreek (direct sowing/germination), onion (planting), potato (planting) in Himachal Pradesh.
- Wheat, barley, oat (CRI/ vegetative), ginger (vegetative), sugarcane (active vegetative/grand growth), sesame in low land area (early vegetative / vegetative), vegetable pea (sowing / germination), tomato (vegetative/flowering), potato (late vegetative), Autumn sugarcane (planting), sarson, masoor (sowing/early vegetative), coriander, spinach, radish, fenugreek (vegetative/picking) in Uttarakhand.
- Wheat, barley (crown root initiation/vegetative), toria (pod maturity/harvesting), gobisarson, mustard (vegetative/flowering), brown sarson, oat, lentil, berseem, gram, field pea (flowering/pod formation), potato (vegetative/flowering), methipalak, radish, carrot, turnip, garlic (vegetative), pole type beans (vegetative), onion, cole crops (transplanting/early vegetative), fruit crops (planting) in Jammu & Kashmir.
- Wheat, barley (crown root initiation/vegetative), lentil (vegetative), toria (pod maturity/harvesting), gram and mustard (flowering/pod formation), tomato, brinjal, Shimla mirch (vegetative/flowering), new sugarcane (active vegetative/grand growth), castor (flowering/spike formation), cucurbits (sowing/germination), radish, Desi carrot (germination/vegetative), cabbage and cauliflower (early vegetative/flowering), onion (transplanting/vegetative), cumin, ajwain, methi, Isabgol (germination/early vegetative) in Rajasthan.
- wheat( germination / crown root initiation ), oats, barseem (sowing / germination), brinjal, tomato, early (cauliflower and cabbage) (vegetative / flowering), cauliflower, cabbage, broccoli and tomato (transplanting), early radish, spinach and coriander (vegetative), Sarson Saag, bathua, radish, spinach, fenugreek, coriander and turnip (sowing), guar, bajra (flowering / grain filling), rabi onion (transplanting), mustard, gram, pea, carrot, garlic (sowing ), oat, barseem (sowing) in Delhi.
- Wheat (crown root initiation/vegetative), Maize (knee height), barley (germination/tillering), mustard (flowering/siliquea formation ) pea/chickpea/lentil/Linseed (Flowering/pod formation), potato (tuberization), Jowar, bajra, (grain filling/maturity), tomato, brinjal, chilli (fruiting/harvesting), pigeon pea, black gram, green gram (flowering/pod formation/ ), spring sugarcane (grand growth/harvesting), toria (pod formation) in Uttar Pradesh.
- Sugarcane (grand growth), wheat (crown root initiation/vegetative), black gram, green gram, soybean, arhar (vegetative/pod formation), moong, mash (vegetative) onion (transplanting) sesamum (vegetative), cauliflower (transplanting), potato (planting), mustard (flowering/pod formation) in Punjab.
- Wheat (crown root initiation/vegetative), New sugarcane (vegetative) in Haryana.

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

- Sugarcane (grand growth), winter sugarcane (planting), vegetables (flowering/ fruiting ),wheat, (tillering), safflower, mustard, gram and linseed (branching/flowering) , potato (early vegetative) ,onion (early vegetative) in Madhya Pradesh.
- Sugarcane (elongation), pigeon pea (pod formation/pod filling ), ragi and kodo millet (vegetative), ginger, turmeric, papaya (vegetative), onion (vegetative), vegetable crops (flowering/ fruiting), wheat (CRI/tillering) , safflower and gram (vegetative), potato (planting/ early vegetative) in Chhattisgarh.

**EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL &SIKKIM]**

- Onion (vegetative), arhar (flowering/pod formation), maize (silking/tasseling), mustard, toria (Flowering), sunflower, pea, lentil, gram, rajmah (flowering), cauliflower, cabbage, chilli, tomato, brinjal (vegetative/flowering), wheat (crown root initiation), boro rice (sowing), potato (tuber formation) in Bihar.
- Arhar (flowering/pod formation), onion (vegetative), tomato, cauliflower, cabbage (vegetative/flowering), mustard (Flowering/capsule formation), sweet potato (tuber formation), potato (vegetative), green peas, bell pepper (vegetative), wheat (crown root initiation) in Jharkhand.
- Pigeon pea (pod formation / pod maturity), groundnut (flowering/ pegging), turmeric, ginger (rhizome formation), rabi vegetables (vegetative), sugarcane (grand growth), banana (vegetative), mustard (pod formation stage), onion, cluster bean, green pea (vegetative) in Odisha.
- Boro rice (seedling/ transplanting), ginger, turmeric (rhizome formation), tomato, brinjal (vegetative), cabbage and cauliflower (vegetative), wheat (crown root initiation), mustard (flowering/pod formation), potato (vegetative), winter vegetables (early vegetative/ vegetative) in West Bengal.
- Wheat (active tillering), rabi vegetables (fruiting / harvesting), mustard (flowering/capsule formation), potato (vegetative/tuber formation) in Sikkim.



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

- *Boro* rice (seedling / transplanting), sugarcane (Autumn) (maturity / harvesting), rapeseed and mustard (flowering / pod formation), *rabi* pulses like lentil, rajmah, pea, lathyrus etc. (vegetative / flowering), wheat (tillering / booting), winter vegetables (flowering / fruiting), potato (vegetative / tuber formation), cole crops (head formation / maturity), tomato (flowering / fruiting), cotton (boll maturity / picking) in Assam.
- Carrot (maturity / harvesting), mustard (flowering / pod formation), pea (vegetative), French bean (sowing) and potato (vegetative / tuber formation) in Arunachal Pradesh.
- Rapeseed and mustard (vegetative / flowering), pea, pulses (vegetative), *rabi* maize (sowing (inter crop) / vegetative), *rabi* vegetables (flowering / fruiting), cole crops (vegetative / head formation), potato (vegetative / tuber formation), onion (vegetative), cucurbits (sowing) in Manipur.
- Potato (tuber formation), *boro* rice (nursery raising), rapeseed and mustard (pod development / maturity), cauliflower and other winter vegetables (flowering/fruiting) in Meghalaya.
- Ginger and turmeric (vegetative / rhizome formation), mustard (flowering / pod formation), cole crops (vegetative / head formation) in Mizoram.
- Mustard (active vegetative / flowering), potato (vegetative / tuber formation), rajmah (vegetative), tomato (vegetative), ginger (maturity / harvesting) in Nagaland.
- *Rabi* maize (vegetative), *boro* rice (seedling / transplanting), potato (vegetative / tuber formation), banana (vegetative / fruiting / harvesting), toria (flowering / pod formation), cole crops (vegetative / head formation), tomato, brinjal and radish (flowering / fruiting / maturity / harvesting) in Tripura.

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

- Red gram (pod maturity / harvesting in Madhya Maharashtra, Vidarbha and Marathwada), *rabi* jowar (grain formation / maturity in Madhya Maharashtra and Marathwada), safflower (boll development in Madhya Maharashtra, Marathwada and Vidarbha), gram (pod development in Madhya Maharashtra, Marathwada and Vidarbha), wheat (tillering / flag leaf initiation / boot stage in Madhya Maharashtra, Marathwada and Vidarbha), maize (cob initiation in Madhya Maharashtra), *adsali* and pre seasonal sugarcane (maturity / harvesting), *suru* sugarcane (elongation / maturity), New *adsali* (early tillering / tillering in Marathwada and Madhya Maharashtra), pre-seasonal sugarcane (early tillering in Marathwada and Madhya Maharashtra), new *suru* sugarcane (planting in Madhya Maharashtra and Marathwada), rice (seedling / transplanting / early tillering in Konkan, seedling / transplanting in East Vidarbha), groundnut (sowing / germination in Konkan) in Maharashtra.
- Wheat (vegetative / flowering), gram (flowering / pod formation), mustard (flowering / pod formation), castor (spike development / maturity), cotton (picking), sugarcane (grand growth / cane maturity), cumin (flowering / grain formation), fenugreek (flowering), vegetables (fruiting / harvesting), potato (vegetative / tuber formation) in Gujarat.

**SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]**

- Cotton (picking) in North Telangana and Scarce rainfall Zone of Rayalaseema, sugarcane (Jan-March planted) (cane maturity/harvest), late sown kharif rice (grain filling/maturity), banana (fruit development/maturity), *rabi* crops: rice (nursery to transplanting/tillering), groundnut (vegetative/flowering), maize (vegetative), red gram (pod development/pod maturity), bengal gram (pod development/harvesting), jowar (grain filling/dough), chillies (vegetative/flowering), vegetables (vegetative), onion (bulb development /maturity), mango(flowering/fruit initiation) and wheat (crown root initiation) in High Altitude Zone in Andhra Pradesh.
- Sugarcane (grand growth), samba rice (panicle initiation/flowering and maturity ), thaladi rice (flowering), rice (sowing to vegetative/transplanting in the Western Zone), cotton and maize(vegetative to flowering in the Western Zone /harvesting in the Cauvery Delta Zone), onion (vegetative), sunflower (seedling), winter cotton (pod bursting), groundnut (sowing/ vegetative), rice fallow pulses (sowing), vegetables (vegetative), black gram (flowering), irrigated rice (panicle initiation), rainfed cotton(flowering/boll formation), rainfed maize , pearl millet and sorghum (grain-filling) and pulses (pod development) in Tamil Nadu.
- Mundakan rice (panicle initiation), *puncha* rice (seedling) in the Problem Area Zone, arecanut (harvesting), sugarcane (grand growth), rubber (tapping), *rabi* vegetables (vegetative), pepper (berry maturity), cardamom (harvesting), in Kerala.
- Sugarcane (cane maturity), *kharif* crops: cotton (picking), *Rabi* Crops: Bengal gram (pod formation), sorghum (flowering to grain filling), safflower (flowering) and wheat (jointing / flowering), sugarcane (planting), Mango (flowering) in Karnataka.

**Annexure II**  
**Week by week Rainfall Distribution**

State/Districts	18.12.13		25.12.13		01.01.14		08.01.14		15.01.14	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>										
Anjaw	**	**	**	**	**	**	**	**	**	**
Changlang	1.7	-94	0.0	-100	0.0	-100	0.0	-100	4.6	-59
Dibang Valley	6.0	-75	0.0	-100	0.0	-100	13.0	-26	24.0	189
East Kameng	16.0	142	0.0	-100	0.0	-100	0.0	-100	0.0	-100
East Siang	4.5	-50	0.0	-100	0.0	-100	17.3	246	1.4	-74
Kurung Kumey	**	**	**	**	**	**	**	**	**	**
Lohit	1.2	-83	0.0	-100	0.0	-100	6.7	42	0.3	-97
Lower Dibang Valley	4.8	-80	0.0	-100	0.0	-100	27.8	59	4.2	-49
Lower Subansari	12.0	532	3.0	-67	**	**	3.0	-71	6.0	-75
Papumpara	3.3	-18	0.1	-50	0.0	-100	4.6	-30	0.0	-100
Tawang	12.0	-7	0.0	-100	**	**	**	**	4.0	-51
Tirap	0.5	-89	0.0	-100	0.0	-100	1.7	-82	3.4	-62
Upper Siang	14.1	-58	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Upper Subansari	24.2	357	0.0	-100	0.0	-100	4.2	180	4.8	-32
West Kameng	34.6	168	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Siang	10.3	-9	0.0	-100	0.0	-100	10.3	78	11.7	276
<b>Assam</b>										
Baksa	6.9	116	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Barpeta	0.5	-85	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bongaigaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Cachar	0.0	-100	1.1	-30	0.0	-100	0.0	-100	0.0	-100
Chirang	0.1	-95	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Darrang	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhemaji	3.0	-53	0.0	-100	0.0	-100	11.0	244	0.0	-100
Dhubri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.1	-98
Dibrugarh	3.8	-8	0.0	-100	0.0	-100	6.2	130	0.2	-97
Goalpara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Golghat	8.2	91	0.2	-94	0.0	-100	1.2	-53	0.0	-100
Hailakandi	0.0	-100	1.6	-41	0.0	-100	0.0	-100	0.0	-100
Jorhat	1.2	-76	0.3	-81	0.0	-100	3.6	-5	0.0	-100
Kamrup(Rural)	2.9	16	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	0.7	-73	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Karbi Anglong	0.0	-100	0.8	-20	0.0	-100	0.0	-100	0.0	-100
Karimganj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kokrajhar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.5	-77
Lakhimpur	5.7	-11	0.3	-91	0.0	-100	6.1	89	0.2	-97
Morigaon	1.9	-34	0.0	-100	0.0	-100	0.0	-100	0.0	-100
N.C.Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nowgong	8.2	193	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nalbari	1.8	22	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sonitpur	1.6	-64	0.2	-85	0.0	-100	0.0	-100	0.0	-100
Sibsagar	2.7	-33	2.0	67	0.0	-100	6.0	445	0.0	-100

Tinsukia	2.2	-59	0.0	-100	0.0	-100	2.0	-17	0.1	-98
Udalgiri	1.2	-63	1.1	38	0.0	-100	0.0	-100	0.0	-100
<b>Meghalaya</b>										
East Garo Hills	**	**	2.0	200	0.0	-100	0.0	-100	0.0	-100
East Khasi Hills	0.0	-100	0.1	-95	0.0	-100	0.0	-100	0.0	-100
Jaintia Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ribhoi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
South Garo Hills	7.0	126	0.0	-100	**	**	0.0	-100	0.0	-100
West Garo Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Khasi Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Mizoram</b>										
Aizwal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Champhai	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kolasib	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lawngtlai	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lunglei	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mamit	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Saiha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Serchhip	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Manipur</b>										
Bishnupur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chandel	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Churachandpur	**	**	**	**	**	**	0.0	-100	0.0	-100
Imphal east	1.3	-41	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Imphal west	0.0	-100	0.1	-83	**	**	0.0	-100	0.0	-100
Senapati	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**	**	**	**	**
Thoubal	3.0	-57	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ukhrul	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Nagaland</b>										
Dimapur	0.0	-100	0.0	-100	**	**	0.0	-100	0.0	-100
Kephire	0.0	-100	1.0	-68	0.0	-100	0.0	-100	0.0	-100
Kohima	0.0	-100	0.9	-10	0.0	-100	0.0	-100	0.0	-100
Longleng	**	**	**	**	**	**	**	**	**	**
Mokokchung	2.0	-69	3.0	200	0.0	-100	0.0	-100	1.0	-87
Mon	**	**	**	**	**	**	**	**	**	**
Paren	**	**	**	**	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**	**	**	**	**
Wokha	0.0	-100	0.5	-74	0.0	-100	0.0	-100	0.0	-100
Zunheboto	**	**	**	**	**	**	**	**	**	**
<b>Tripura</b>										
Dhalai	0.0	-100	1.0	-64	0.0	-100	0.0	-100	0.0	-100
North tripura	0.0	-100	12.6	367	0.0	-100	0.0	-100	0.0	-100
South tripura	0.0	-100	1.0	-33	0.0	-100	0.0	-100	0.0	-100
West tripura	0.0	-100	3.6	90	0.0	-100	0.0	-100	0.0	-100
<b>Himachal Pradesh</b>										
Bilaspur	0.0	-100	22.9	160	6.1	-50	0.0	-100	1.7	-84
Chamba	0.0	-100	36.5	148	40.3	70	12.5	-50	6.9	-68

Hamirpur	0.0	-100	24.1	191	7.7	-54	2.9	-76	0.0	-100
Kangra	0.0	-100	40.7	338	12.7	-37	3.1	-78	1.4	-93
Kinnaur	0.0	-100	6.4	-50	5.8	-77	5.8	-70	37.5	72
Kullu	0.0	-100	22.6	82	6.4	-62	8.6	-44	31.4	81
Lahaul and Spiti	0.0	-100	8.6	-51	5.1	-77	10.3	-57	32.1	11
Mandi	0.0	-100	21.3	232	8.5	-43	2.6	-76	12.7	-5
Shimla	0.0	-100	11.7	54	2.4	-82	1.1	-90	6.5	-56
Sirmaur	0.0	-100	23.8	138	3.1	-79	0.0	-100	0.6	-96
Solan	0.0	-100	21.6	157	2.9	-79	0.0	-100	1.6	-89
Una	0.0	-100	24.9	236	7.3	-28	2.4	-74	0.0	-100
<b>Punjab</b>										
Amritsar	0.0	-100	2.1	-37	0.5	-92	0.0	-100	0.0	-100
Barnala	0.0	-100	1.0	-47	0.0	-100	0.0	-100	0.3	-83
Bhatinda	0.0	-100	0.5	-64	0.0	-100	0.0	-100	0.0	-100
Faridkot	0.0	-100	1.0	-41	0.0	-100	0.0	-100	0.5	-64
Fatehgarh Saheb	0.0	-100	0.0	-100	7.0	52	0.0	-100	0.0	-100
Ferozpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	0.0	-100	5.8	-4	27.8	178	0.0	-100	0.4	-96
Hoshiarpur	0.0	-100	11.5	77	12.3	78	0.0	-100	0.0	-100
Jalandhar	0.0	-100	1.0	-82	0.2	-96	0.0	-100	0.0	-100
Kapurthala	0.0	-100	17.2	560	2.1	-34	0.0	-100	0.0	-100
Ludhiana	0.0	-100	6.3	23	4.1	-13	0.0	-100	0.0	-100
Mansa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Moga	0.0	-100	3.5	106	0.0	-100	0.0	-100	0.4	-93
Muktesar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawashahar	0.0	-100	10.8	24	6.8	-18	0.8	-88	0.2	-97
Patiala	0.0	-100	0.9	-86	3.2	-16	0.0	-100	0.0	-100
Ropar	0.0	-100	12.7	90	3.5	-62	0.0	-100	0.1	-98
Sangrur	0.0	-100	9.1	94	1.7	-58	0.0	-100	0.0	-100
Mohali	0.0	-100	2.0	-74	2.0	-76	0.0	-100	0.0	-100
TarnTaran	0.0	-100	2.0	18	0.0	-100	0.0	-100	0.0	-100
<b>Haryana</b>										
Ambala	0.0	-100	7.1	60	2.0	-80	0.0	-100	0.0	-100
Bhiwani	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chandigarh	0.0	-100	7.7	5	**	**	0.0	-100	0.1	-98
Faridabad	0.0	-100	0.0	-100	3.0	76	0.0	-100	0.0	-100
Fatehabad	0.0	-100	1.2	-8	0.0	-100	0.0	-100	0.0	-100
Gurgaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hissar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhajar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jind	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Katihah	0.0	-100	0.0	-100	1.0	-44	0.0	-100	0.0	-100
Karnal	0.0	-100	0.0	-100	1.7	-60	0.0	-100	0.0	-100
Kurukshetra	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mahendragarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mewat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Palwal	0.0	-100	0.0	-100	6.0	650	0.0	-100	0.0	-100
Panchkkula	0.0	-100	3.7	2	1.2	-91	0.0	-100	0.2	-98
Panipat	0.0	-100	0.0	-100	2.8	-20	0.0	-100	0.0	-100

Rewari	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rohtak	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.0	-100	0.0	-100	2.5	-36	0.0	-100	0.0	-100
Yamunanagar	0.0	-100	20.9	397	3.0	-70	0.0	-100	0.0	-100
Delhi	0.0	-100	0.0	-100	2.0	-19	0.0	-100	0.0	-100
<b>Jammu &amp; Kashmir</b>										
Anantnag	0.0	-100	47.6	258	68.8	270	14.8	10	30.1	118
Badgam	0.0	-100	19.7	218	84.4	744	7.6	46	12.3	53
Bandipore	**	**	**	**	0.0	-100	0.0	-100	0.0	-100
Baramula	1.6	-97	13.0	-20	8.5	-93	4.7	-80	27.7	73
Doda	0.0	-100	54.4	88	30.8	-13	4.1	-86	5.8	-73
Ganderwal	0.0	-100	34.8	364	2.2	-87	4.5	-55	27.6	221
Jammu	0.0	-100	4.4	-41	6.6	-51	0.0	-100	0.9	-92
Kargil	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.0	-73
Kathua	0.0	-100	39.0	491	21.7	43	0.0	-100	0.0	-100
Kistwar	**	**			0.0	-100	0.0	-100	0.0	-100
Kulgam	0.0	-100	14.0	5	30.8	65	5.1	-62	34.1	147
Kupwara	0.0	-100	3.9	-73	8.0	-61	3.9	-77	11.3	-13
Ladakh(Leh)	0.0	-100	0.3	-76	0.0	-100	0.0	-100	2.9	45
Poonch	0.0	-100	0.2	-99	0.0	-100	0.2	-99	0.0	-100
Pulwama	0.0	-100	25.7	459	18.6	112	7.4	17	6.1	-3
Rajouri	0.0	-100	0.6	-82	0.0	-100	0.0	-100	2.7	-84
Ramban	0.0	-100	38.8	34	59.9	70	6.2	-80	15.1	-29
Reasi	0.0	-100	6.3	-69	14.7	-48	0.0	-100	2.3	-85
Samba	0.0	-100	4.7	-37	6.8	-50	0.0	-100	0.4	-96
Shopian	0.0	-100	3.0	-35	3.0	-66	0.5	-92	6.0	-5
Srinagar	0.0	-100	12.0	60	31.3	86	1.3	-87	12.2	42
Udhampur	0.0	-100	4.8	-76	28.3	1	7.3	-73	3.0	-80
<b>East Madhya Pradesh</b>										
Anuppur	0.0	-100	0.0	-100	0.0	-100	0.2	-94	3.2	-67
Balaghat	0.0	-100	0.0	-100	0.0	-100	4.0	-34	0.0	-100
Chhatarpur	0.0	-100	0.0	-100	9.7	549	7.8	288	8.1	161
Chindwara	0.0	-100	0.0	-100	0.0	-100	1.7	-58	0.0	-100
Damoh	0.0	-100	0.0	-100	0.0	-100	2.0	-29	3.7	6
Dindori	0.0	-100	0.0	-100	0.0	-100	0.0	-100	3.0	-48
Jabalpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	20.6	415
Katni	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mandla	0.0	-100	0.0	-100	0.0	-100	1.6	-51	0.0	-100
Narsingpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.8	-29
Panna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.1	-69
Rewa	0.0	-100	0.0	-100	0.0	-100	1.2	-20	31.8	1225
Sagar	0.0	-100	0.0	-100	0.0	-100	2.7	-14	0.0	-100
Satna	0.0	-100	0.0	-100	0.0	-100	1.7	-56	10.2	162
Seoni	0.0	-100	0.0	-100	0.0	-100	3.5	9	0.0	-100
Shahdol	0.0	-100	0.0	-100	0.0	-100	1.0	-60	10.8	112
Sidhi	0.0	-100	0.0	-100	0.0	-100	6.0	88	40.8	1175
Singrauli	0.0	-100	0.0	-100	0.0	-100	1.0	-41	1.0	-41

Tikamgarh	0.0	-100	0.0	-100	27.0	1700	1.0	-68	4.0	38
Umaria	0.0	-100	0.0	-100	0.0	-100	0.0	-100	5.4	0
<b>West Madhya Pradesh</b>										
Alirajpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Asoknagar	0.0	-100	0.0	-100	0.0	-100	5.6	331	2.0	43
Badwani	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Betul	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhind	0.0	-100	0.0	-100	0.0	-100	9.5	373	8.8	265
Bhopal	0.0	-100	0.0	-100	0.0	-100	11.7	736	0.1	-97
Burhanpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Datia	0.0	-100	0.0	-100	3.3	122	3.7	307	1.6	-47
Dewas	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.1	-18
Dhar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Guna	0.0	-100	0.0	-100	7.6	260	0.0	-100	0.0	-100
Gwalior	0.0	-100	0.0	-100	20.7	1280	2.5	-17	1.3	-67
Harda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hosangabad	0.0	-100	0.0	-100	0.0	-100	0.4	-81	1.6	-36
Indore	0.0	-100	0.0	-100	0.1	-73	0.0	-100	0.0	-100
Jhabua	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khandwa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khargone	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mandsaur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Morena	0.0	-100	0.0	-100	0.0	-100	0.0	-100	5.0	39
Neemuch	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	0.0	-100	0.0	-100	8.0	186	1.5	-41
Rajgarh	0.0	-100	0.0	-100	7.0	400	0.3	-82	0.4	-87
Ratlam	0.0	-100	0.0	-100	24.8	3443	0.0	-100	0.0	-100
Sehore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.3	-90
Shajapur	0.0	-100	0.0	-100	18.0	1100	0.0	-100	0.8	-79
Sheopur Kalani	0.0	-100	0.0	-100	7.0	678	3.5	6	0.0	-100
Shivpuri	0.0	-100	0.0	-100	8.5	347	3.3	117	2.0	-3
Ujjain	0.0	-100	0.0	-100	6.2	593	0.2	-89	0.0	-100
Vidisha	0.0	-100	0.0	-100	0.0	-100	0.6	-79	1.2	-78
<b>Chattisgarh</b>										
Bastar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.0	-100	0.0	-100	0.0	-100	1.0	-61	1.6	-67
Dantewara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Durg	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Koriya	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kawardha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Narayanpur	0.0	-100	1.0	900	0.0	-100	0.0	-100	0.0	-100

Raigarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raipur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajandgaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Surguja	0.0	-100	0.0	-100	0.0	-100	1.5	-58	0.6	-83
<b>East Uttar Pradesh</b>										
Allahabad	0.0	-100	0.0	-100	0.3	-81	1.1	-11	24.0	446
Ambedkar Nagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Azamgarh	0.0	-100	0.0	-100	0.5	-76	0.4	-76	10.0	270
Bahraich	0.0	-100	0.0	-100	1.0	-81	0.0	-100	3.5	-8
Ballia	0.0	-100	0.0	-100	0.0	-100	0.0	-100	19.6	1204
Balrampur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	4.0	54
Banda	0.0	-100	0.0	-100	23.8	1222	3.9	96	13.4	361
Barabanki	0.0	-100	0.0	-100	1.1	-74	0.0	-100	6.7	122
Basti	0.0	-100	0.0	-100	0.3	-91	0.0	-100	11.5	283
Chandauli	0.0	-100	0.0	-100	0.0	-100	0.8	-47	14.0	460
Deoria	0.0	-100	0.0	-100	0.0	-100	0.0	-100	6.0	88
Faizabad	0.0	-100	0.0	-100	1.3	-65	0.0	-100	3.6	0
Farrukhabad	0.0	-100	0.0	-100	6.2	226	0.0	-100	1.0	-77
Fatehpur	0.0	-100	0.0	-100	3.3	43	0.3	-84	12.9	267
Gazipur	0.0	-100	0.0	-100	0.0	-100	0.5	-79	24.5	1012
Gonda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	26.0	863
Gorakhpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	4.5	7
Hardoi	0.0	-100	0.0	-100	3.9	44	0.0	-100	2.7	-44
Jaunpur	0.0	-100	0.0	-100	0.0	-100	0.3	-84	15.0	370
Kannauj	0.0	-100	0.0	-100	15.0	582	0.0	-100	0.0	-100
Kanpur City	0.0	-100	0.0	-100	12.2	190	4.0	164	27.8	768
Kanpur Dehat	0.0	-100	0.0	-100	3.6	33	3.4	180	6.9	177
Kaushambi	0.0	-100	0.0	-100	0.0	-100	1.2	-20	14.7	635
Kheri	0.0	-100	0.0	-100	4.5	-13	0.0	-100	18.1	248
Kushi nagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lucknow	0.0	-100	0.0	-100	3.6	6	0.1	-98	9.7	170
Maharajganj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	5.6	124
Mau	0.0	-100	0.0	-100	0.0	-100	0.5	-77	10.5	150
Mirzapur	0.0	-100	0.0	-100	0.0	-100	0.3	-82	25.0	942
Pratapgarh	0.0	-100	0.0	-100	4.3	79	0.3	-84	25.0	681
RaiBareilly	0.0	-100	0.0	-100	2.4	-14	0.1	-92	5.9	155
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100	6.5	333	19.0	850
Sant Kabirnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.0	100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100	1.6	7	29.0	1060
Shrawasti	0.0	-100	0.0	-100	**	**	**	**	**	**
Sidharthnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.5	-35
Sitapur	0.0	-100	0.0	-100	3.1	-18	0.0	-100	11.0	175
Sonbhadra	0.0	-100	0.0	-100	0.0	-100	3.5	216	18.0	499
Sultanpur	0.0	-100	0.0	-100	4.1	37	0.0	-100	9.5	333
Unnao	0.0	-100	0.0	-100	3.5	-8	3.6	138	8.4	211
Varanasi	0.0	-100	0.0	-100	0.0	-100	0.2	-93	27.9	697
<b>West Uttar Pradesh</b>										
Agra	0.0	-100	0.0	-100	5.0	213	0.5	-80	0.5	-93

Aligarh	0.0	-100	0.0	-100	11.1	455	0.0	-100	0.0	-100
Auraiya	0.0	-100	0.0	-100	7.0	192	0.0	-100	6.0	150
Badaun	0.0	-100	0.6	-77	11.4	500	0.0	-100	0.0	-100
Baghpat	0.0	-100	0.0	-100	3.0	-29	0.0	-100	0.0	-100
Bareilly	0.0	-100	1.0	-58	9.5	217	0.0	-100	1.5	-66
Bijnor	0.0	-100	6.9	16	4.3	-17	0.0	-100	7.4	-9
Bulandsahar	0.0	-100	0.0	-100	4.2	75	0.0	-100	0.0	-100
Etah	0.0	-100	0.0	-100	6.7	294	0.0	-100	1.3	-65
Etawah	0.0	-100	0.0	-100	14.0	438	0.0	-100	5.0	43
Firozabad	0.0	-100	0.0	-100	13.2	529	0.0	-100	2.1	-40
GBNagar	0.0	-100	0.0	-100	3.0	25	0.0	-100	0.0	-100
Ghaziabad	0.0	-100	0.0	-100	8.3	196	0.0	-100	0.0	-100
Hamirpur	0.0	-100	0.0	-100	11.3	371	1.3	-3	4.3	-10
Jalaun	0.0	-100	0.0	-100	10.3	281	1.1	3	4.0	74
Jhansi	0.0	-100	0.0	-100	23.7	812	4.4	159	2.3	-10
Jotirba Phule Nagar	0.0	-100	1.0	-67	8.0	116	0.5	-84	0.0	-100
Kanshiramnagar	0.0	-100	0.0	-100	13.0	584	0.0	-100	0.0	-100
Lalitpur	0.0	-100	0.0	-100	7.0	233	5.0	163	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	11.0	686	0.0	-100	0.0	-100
Mahoba	0.0	-100	0.0	-100	6.0	216	2.0	-5	4.0	5
Mainpuri	0.0	-100	0.0	-100	17.0	448	0.0	-100	2.8	-22
Mathura	0.0	-100	0.0	-100	1.0	-9	0.0	-100	0.0	-100
Meerut	0.0	-100	0.9	-79	1.5	-65	0.0	-100	0.0	-100
Moradabad	0.0	-100	2.0	-46	7.4	118	0.0	-100	0.1	-99
Muzzaffarnagar	0.0	-100	2.7	-37	8.8	52	0.0	-100	0.0	-100
Pilibhit	0.0	-100	0.0	-100	8.5	130	0.0	-100	3.7	-23
Rampur	0.0	-100	0.0	-100	5.8	4	0.0	-100	0.0	-100
Saharanpur	0.0	-100	18.7	466	6.0	-29	0.0	-100	0.0	-100
Shahjahanpur	0.0	-100	0.7	-80	8.7	149	0.0	-100	1.5	-71
<b>Uttarakhand</b>										
Almora	0.0	-100	0.0	-100	9.8	-19	0.0	-100	10.8	22
Bageshwar	0.0	-100	0.0	-100	3.9	-68	0.0	-100	0.0	-100
Chamoli	0.0	-100	0.0	-100	0.2	-98	0.1	-99	0.0	-100
Champawat	0.0	-100	0.0	-100	7.0	-32	0.0	-100	7.0	-5
Dehradun	0.0	-100	4.2	31	0.9	-92	0.0	-100	9.0	-12
Garhwal Pauri	0.0	-100	0.0	-100	1.1	-89	0.0	-100	7.0	9
Garhwal Tehri	0.0	-100	0.2	-97	1.0	-91	0.8	-93	2.7	-68
Haridwar	0.0	-100	4.6	17	3.6	-53	0.0	-100	3.1	-38
Nainital	0.0	-100	0.0	-100	11.3	49	0.0	-100	18.1	105
Pithorgarh	0.0	-100	0.0	-100	7.5	-18	0.0	-100	4.5	-55
Rudraprayag	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.1	-99
Udham Sing Nagar	0.0	-100	0.0	-100	6.4	56	0.0	-100	2.0	-56
Uttarkashi	0.0	-100	0.4	-91	0.0	-100	0.8	-93	0.3	-98
<b>Bihar</b>										
Araria	0.0	-100	0.0	-100	0.0	-100	0.0	-100	4.0	-4
Arwal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	19.9	452
Aurangabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	33.7	763
Banka	0.0	-100	0.0	-100	0.0	-100	0.0	-100	3.2	68
Begusarai	0.0	-100	0.0	-100	0.0	-100	0.0	-100	16.0	1043



Bhabua	0.0	-100	0.0	-100	0.0	-100	0.0	-100	11.2	489
Bhagalpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	4.6	18
Bhojpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	6.5	210
Buxar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	35.0	846
Darbhanga	0.0	-100	0.0	-100	0.0	-100	0.0	-100	6.3	232
East Champaran	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.5	7
Gaya	0.0	-100	0.0	-100	0.0	-100	0.0	-100	27.7	793
Gopalganj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.8	-22
Jahanabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	10.2	227
Jamui	0.0	-100	0.0	-100	0.0	-100	0.0	-100	14.3	791
Kathihar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	4.1	94
Khagadia	0.0	-100	0.0	-100	0.0	-100	0.0	-100	6.8	224
Kishanganj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	3.0	20
Lakhisarai	0.0	-100	0.0	-100	0.0	-100	0.0	-100	15.0	525
Madhepura	0.0	-100	0.0	-100	0.0	-100	0.0	-100	6.1	125
Madhubani	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.6	23
Monghyar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	8.2	242
Muzaffarpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	3.4	63
Nalanda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	20.1	529
Nawada	0.0	-100	0.0	-100	0.0	-100	0.0	-100	13.8	306
Patna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	19.6	715
Purnea	0.0	-100	0.0	-100	0.0	-100	0.0	-100	6.2	158
Rohtas	0.0	-100	0.0	-100	0.0	-100	0.0	-100	27.7	1159
Saharsha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Samstipur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Saran	0.0	-100	0.0	-100	0.0	-100	0.0	-100	5.0	28
Sheikpura	0.0	-100	0.0	-100	0.0	-100	0.0	-100	15.3	325
Sheohar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	3.0	88
Sitamarhi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Siwan	0.0	-100	0.0	-100	0.0	-100	0.0	-100	49.6	1670
Supaul	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.0	-5
Vaishali	0.0	-100	0.0	-100	0.0	-100	0.0	-100	3.9	34
West Champaran	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Jharkhand</b>										
Bokaro	0.0	-100	0.0	-100	0.0	-100	5.4	200	11.6	205
Chatra	0.0	-100	0.0	-100	0.0	-100	0.0	-100	17.4	287
Deoghar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.1	-37
Dhanbad	0.0	-100	0.0	-100	0.0	-100	1.3	-21	7.0	218
Dumka	**	**	**	**	0.0	-100	0.0	-100	**	**
East Singbhum	0.0	-100	0.0	-100	0.0	-100	0.1	-97	1.2	-64
Garhwa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	18.0	283
Giridih	0.0	-100	0.0	-100	0.0	-100	0.2	-92	21.1	628
Godda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gumla	**	**	**	**	0.0	-100	**	**	**	**
Hazaribagh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	23.0	995
Jamtara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	9.1	195
Khunti	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.0	-57
Koderna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	**	**
Latehar	0.0	-100	0.0	-100	0.0	-100	4.1	215	5.4	26

Lohardagga	0.0	-100	0.0	-100	0.0	-100	4.9	113	3.4	17
Pakur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.0	-82
Palamau	0.0	-100	0.0	-100	0.0	-100	0.2	-88	13.3	209
Ramgarh	0.0	-100	0.0	-100	0.0	-100	10.2	1357	0.0	-100
Ranchi	0.0	-100	0.0	-100	0.0	-100	4.7	38	2.9	-25
Sahebganj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.0	-31
Saraikela	**	**	**	**	0.0	-100	**	**	0.0	-100
Simdega	**	**	**	**	0.0	-100	**	**	5.4	23
West Singbhum	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>East Rajasthan</b>										
Ajmer	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Alwar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Banswara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bharatpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhilwara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bundi	0.0	-100	0.0	-100	0.3	0	0.3	-80	0.0	-100
Chittorgarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dausa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dholpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dungarpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100	0.1	-95	0.0	-100
Jhunjhunu	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Karauli	0.0	-100	0.0	-100	1.8	800	0.0	-100	0.0	-100
Kota	0.0	-100	0.0	-100	3.2	256	2.2	27	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajsamand	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sawai Madhopur	0.0	-100	0.0	-100	0.1	0	0.6	-74	0.2	-91
Sikar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-100	0.0	-100	0.4	0	0.0	-100	0.0	-100
Udaipur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>West Rajasthan</b>										
Barmer	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Churu	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hanumangarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nagaur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Gujarat Region</b>										
Ahmedabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Broach	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
DNH	**	**	**	**	**	**	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Daman	**	**	**	**	**	**	**	**	**	**
Dangs	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Narmada	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Surat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tapi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>S K &amp; Diu region</b>										
Amreli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Maharashtra</b>										
<b>Konkan &amp; Goa</b>										
Goa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mumbai	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raigad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ratnagiri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sindhudurg	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Madhya Maharashtra</b>										
Ahmednagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhule	**	**	**	**	**	**	**	**	**	**
Jalgaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kolhapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nandurbar	**	**	**	-100	0.0	-100	**	**	**	**
Nasik	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pune	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sangli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Satara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Solapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Marathwada</b>										
Aurangabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Beed	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Hingoli	**	**	**	**	**	**	**	**	**	**
Jalna	**	**	0.0	-100	0.0	-100	**	**	**	**
Latur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nanded	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Usmanabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Parbhani	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Vidarbha</b>										
Akola	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Amraoti	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhandara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Buldhana	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chandrapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gadchiroli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gondia	0.0	-100	0.0	-100	0.0	-100	0.3	-89	0.0	-100
Nagpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Wardha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Washim	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Yeotmal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Odisha</b>										
Angul	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Balasore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bargarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhadrak	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bolangir	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Deogarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gajapati	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ganjam	0.0	-100	0.0	-100	**	**	0.0	-100	0.0	-100
Jagatsingpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jajpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jharsuguda	0.0	-100	0.0	-100	0.0	-100	0.1	-98	0.0	-100
Kalahandi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kandhamal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kendrapara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Keonjhar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khurda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Koraput	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Malkangiri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawapara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Puri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rayagada	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sambalpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sonepur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sundargarh	0.0	-100	0.0	-100	0.0	-100	0.2	-94	0.1	-99

<b>West Bengal</b>										
<b>GWB</b>										
Bankura	0.0	-100	0.0	-100	0.0	-100	1.1	-64	0.3	-81
Birbhum	0.0	-100	0.0	-100	0.0	-100	0.6	-73	3.5	-31
Burdwan	0.0	-100	0.0	-100	0.0	-100	0.7	-68	1.0	-23
East Midnapore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hooghly	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Howrah	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.1	-75
Kolkata	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.0	-64
Murshidabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.0	-87
Nadia	0.0	-100	0.3	-88	0.0	-100	0.0	-100	0.8	-56
24 Pargana (N)	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Purulia	0.0	-100	0.0	-100	0.0	-100	0.9	-55	1.1	-63
24 Pargana (S)	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Midnapore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>SHWB</b>										
Cooch Behar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.4	-87
Darjeeling	1.7	24	0.0	-100	0.0	-100	0.0	-100	0.1	-99
East Sikkim	7.0	48	0.9	-38	0.0	-100	0.0	-100	0.0	-100
Jalpaiguri	0.2	-60	0.0	-100	0.0	-100	0.0	-100	0.4	-76
Malda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.5	-85
North Dinajpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	3.0	-58
North Sikkim	3.3	-13	0.0	-100	0.0	-100	0.0	-100	0.0	-100
South Dinajpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
South Sikkim	13.5	187	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Sikkim	8.0	111	0.7	-88	0.0	-100	0.0	-100	0.0	-100
<b>Karnataka</b>										
<b>Coastal Karnataka</b>										
Dakshin Kannada	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Udupi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Uttar Kannada	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>N I Karnataka</b>										
Bagalkote	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Belgaum	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bidar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dharwad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gadag	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gulbarga	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Haveri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Koppal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raichur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Yadgir	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>S I Karnataka</b>										
Bangalore Rural	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bangalore Urban	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bellary	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chamarajnaragar	0.1	-98	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chichballapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Chickmagalur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chitradurga	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Davangere	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hassan	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kodagu	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kolar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mandya	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mysore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ramnagara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shimoga	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tumkur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Kerala</b>										
Alappuzha	3.7	-60	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kannur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ernakulam	0.8	-93	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Idukki	8.5	13	0.0	-100	0.0	-100	0.0	-100	1.0	-67
Kasaragod	1.1	-78	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kollam	21.9	94	0.0	-100	0.0	-100	0.0	-100	0.4	-91
Kottayam	3.5	-54	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kozhikode	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Malappuram	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Palakkad	2.1	-56	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pathanamthitta	10.4	-3	0.0	-100	0.0	-100	0.0	-100	2.5	-57
Thiruvananthapuram	20.6	94	0.3	-97	0.0	-100	5.9	136	20.1	310
Thrissur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Wyanad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Tamil Nadu</b>										
Ariyalur	18.3	-30	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chennai	7.5	-73	0.3	-99	0.0	-100	0.0	-100	0.0	-100
Coimbatore	12.5	20	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Cuddalore	26.3	-19	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dharmapuri	0.6	-93	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dindigul	30.2	50	0.0	-100	0.0	-100	0.7	-91	2.5	-67
Erode	6.1	-17	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kanchipuram	18.4	-26	0.2	-99	0.0	-100	0.5	-87	0.0	-100
Kanyakumari	54.9	332	0.7	-93	0.0	-100	10.4	235	38.8	632
Karikal	31.8	-50	0.0	-100	0.0	-100	4.9	-73	2.0	-86
Karur	19.5	119	0.0	-100	0.0	-100	0.0	-100	0.4	-93
Krishnagiri	0.1	-99	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Madurai	33.1	143	0.0	-100	0.0	-100	3.0	-52	3.1	-21
Nagapattinam	21.2	-52	0.0	-100	0.0	-100	12.5	-24	0.5	-98
Namakkal	23.3	258	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nilgiris	26.1	54	0.0	-100	0.0	-100	0.0	-100	0.4	-96
Perambalur	18.6	3	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Puducherry	102.3	145	0.0	-100	0.5	-98	0.0	-100	0.0	-100
Pudukottai	15.0	-17	0.0	-100	0.0	-100	1.3	-85	2.3	-78
Ramanathapuram	32.0	46	0.0	-100	0.0	-100	21.6	95	18.1	127
Salem	30.2	208	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sivaganga	29.5	71	0.0	-100	0.0	-100	9.5	50	3.0	-37

Thanjavur	20.8	-8	0.0	-100	0.0	-100	3.0	-64	0.9	-92
Theni	21.7	53	0.0	-100	0.0	-100	0.2	-96	1.7	-59
Tirunelveli	20.3	-22	0.3	-98	0.0	-100	13.1	62	47.7	294
Tirupur	17.4	107	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tiruvallur	7.1	-69	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tiruvannamalai	1.0	-94	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tiruvarur	23.6	-27	0.0	-100	0.0	-100	3.6	-73	2.7	-82
Toothukudi	21.9	4	0.0	-100	0.0	-100	7.7	31	16.7	74
Trichy	18.1	28	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Vellore	1.2	-90	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Villupuram	56.1	141	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Virudhunagar	50.9	198	0.0	-100	0.0	-100	1.1	-82	2.2	-65
<b>Andhra Pradesh</b>										
<b>Coastal Andhra Pradesh</b>										
East Godavari	0.0	-100	0.1	-50	0.0	-100	0.0	-100	0.3	-76
Guntur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Krishna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nellore	7.8	-69	0.1	-99	0.1	-99	0.8	-70	0.0	-100
Prakasam	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.4	-89
Sirkakulam	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Visakhapatnam	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.0	-4
Vizianagram	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Godavari	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Telangana</b>										
Adilabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hyderabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Karimnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khammam	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mehabubnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Medak	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nalgonda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nizamabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rangareddy	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Warangal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
<b>Rayalaseema</b>										
Anantapur	0.0	-100	0.1	-84	0.1	-91	0.0	-100	0.0	-100
Chittoor	4.2	-59	0.0	-100	0.7	-83	0.0	-100	0.0	-100
Cuddapah	1.1	-74	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kurnool	0.0	-99	0.0	-100	0.0	-100	0.0	-100	0.0	-100

	(27% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-27 to -59%) deficient rainfall	**	Data not available

**Annexure III**  
**List of Varieties**

**Odisha**

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

**Sesame:** Vinayek, Kanak, Kalika, Prachi and Nirmala.

**Wheat:** Sonalika, UP262

**Summer Rice:** Khandagiri, Lalat, MTU-1010, Sahabhagi, Konark

**West Bengal**

**Onion:** Rupsa, Sukhsagar.

**Sunflower:** Surya (90-95days), Pack(104days)KBSH(90-95 days).

**Jharkhand**

**Rice:** medium duration: IR 36, 64, lallat and Taichung native and short duration: (80-85 days) Parijat.

**Jammu & Kashmir**

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

**Garlic :** Large Segmented, Yamuna Safed-3 Agrifoundparvati, Methi :pusa early bunching and kasurimethi., Radish (var. P. Reshmi, Japanese White, Minowase), carrot (var. PusaKesar, P.Yamdagani), Peas var. Bonnevillea, AP-1, AP-3 & Punjab -89, Onion (Pusa Red ,N-53, Agrifound Dark Red &Agrifound Light Red), Knolkhol (King of Market and White Vienna), Spinach Beet (All Green).

**Rajasthan**

**Vegetables :**

**Onion:**Pusa Red, ArkaNiketan, Pusa White & Local Red, Deshi carrot: PusaKeshar,.

**Cumin:** RS-1,RZ-19, RZ-209, RZ-223, GC-4, Gujarat Jira-1, Gujarat Jeera-2, Gujarat jira-3

**Rijka:** Anand-2, LLC-3 (yearly), Type 9, RL-88, Igfree 244 (multiyearly)

**Uttarakhand**

**Garlic :** VL-Garlic or DARL-52.

**Onion :**Pusa Red, PusaRatnar, Nasik Red, PusaMadhavi, Punjab Round Red etc

**Uttar Pradesh**

**Potato:**KuphariChanramukhi, KuphariAshoka, KuphariBahar, Kuphari Surya, KuphariSutlaj, KuphariPukharaj

**Onion-** Pusa Red, Pusa White.

**Berseem :** VL- 01, 10, Maskavi

**Himachal Pradesh**

**Barley:** HBL-316 and Dolma

**Potato:** KufriJyoti, KufriGiriraj, KufriChandramukhi

**Punjab**

**Late Sown varieties of wheat:**PBW 590, PBW 373 and PBW 509

**Tomato:** (TH-1/TH-2312/TH 802/Punjab NR 7/Punjab Tropic/ PbChhuara/Punjab kesri)

**Chilli:** CH-1, CH-3, Punjab Surkh, Punjab Tej, Punjab Sindhuri or Punjab Guchhedar.

**Delhi**

**Wheat ( late sown):** H.D. 2733, H.D. 2851, P.B.W.373, WR-544, U.P.2338, U.P.2425.

**Assam**

**Boro rice:** Mahsuri, IR-50, Dinanath, Bishnuprasad, Jyotiprasad, Kanaklata, Dinanath, Kalinga 3, Swamabh, Joymati, etc.

**Bottle gourd:** Pusa Summer Prolific Long, Pusa Summer Prolific Round, Pusa Meghdoot and Pusa Manjiri.

**Chilli:** NP46A, Pusa Jwala & local varieties like Suryamukhi, Krishna & Balijuri.

**Capsicum:** California Wonder, Arka Mohini, Arka Gaurav & Selection-16, HYV like Bharat.

**Madhya Pradesh**

**Winter Sugarcane:** Co. J. N. 86-572, Co. J. N. 86-141

**Safflower:** J.S.F. -1, A-1 (Sweta), D.S.H.- 129, J.S.I.- 7, Nari- 6, M.K.H.-II, D.S.H.- 129.



**Chhattisgarh**

**Safflower:** J.S.F-1, A-1 (Sweta), D.S.H-129, J.S.I-7, Nari-6, M.K.H.-II.

**Pulse(lathyrus) :** Mahatiwada.

**Pea:** Ambika and Subra.

**Maharashtra**

**Watermelon:** Sugar Baby, Ark Jyoti and Ark Manik.

**Suru sugarcane:** CO – 86032, CO – 94012 and CO M – 0265).

**Tamil Nadu:**

**Groundnut:** TMV 7, Co 2, Co 3, Co 4, VRI 2, VRI 3, VRI 5 and ALR 3.

**Black gram and green gram:** ADT 3