

# National Agromet Advisory Service Bulletin

**Friday 9<sup>th</sup> January 2015**

**(For the period 9<sup>th</sup> to 13<sup>th</sup> January 2015)**



**Issued by**

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

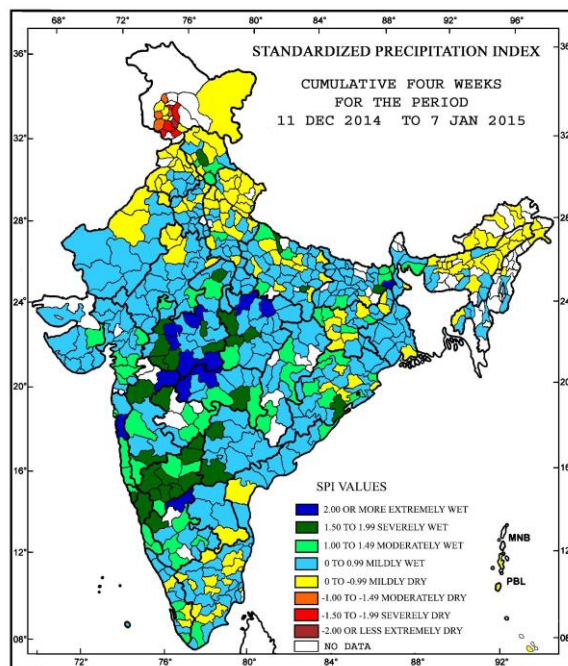


## Standardised Precipitation Index

### Four Weekly

for the Period 11<sup>th</sup> December 2014 to 7<sup>th</sup> January 2015

MINISTRY OF EARTH SCIENCES  
INDIA METEOROLOGICAL DEPARTMENT  
HYDROMET SECTION, PUNE

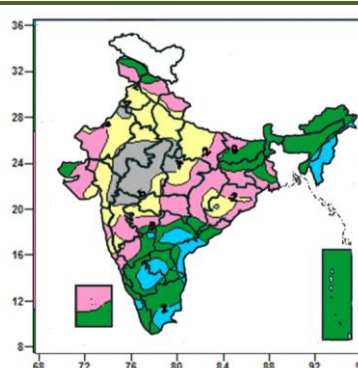
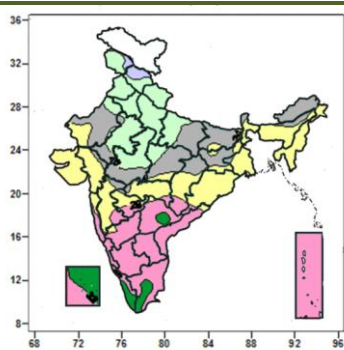


- Extremely/severely wet conditions in few districts of Madhya Pradesh and Karnataka; Raigad, South Goa districts of Konkan & Goa; Jalgaon, Nashik, Sangli, Aurangabad, Amraoti, Buldhana, Chandrapur districts of Maharashtra; Ganjam district of Orissa, Bhagalpur, Katihar districts of Bihar; Bahraich, Varanasi districts of Uttar Pradesh; Mandi district of Himachal Pradesh; Mahbubnagar, Nizamabad districts of Telengana.
- Extremely/ moderately/ severely dry conditions experienced in many places of Jammu & Kashmir.
- Rest of the country experienced moderately wet, mild wet/dry conditions.

### Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 07.01.2015

**Actual Mean Maximum Temperature (°C) in India for the week ending 07.01.2015**

**Mean Maximum Temperature (°C) Anomaly in India for the week ending 07.01.2015**



- 32 to 36°C over many parts of Lakshadweep, Kerala, some parts of Telangana, Tamil Nadu.
- 28 to 32°C over Coastal & South Interior Karnataka, Andhra Pradesh, Andaman & Nicobar Islands, many parts of Telangana, Tamil Nadu, North Interior Karnataka, Konkan & Goa, some parts of Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Kerala and

- 2 to 4°C over Manipur, Mizoram, Nagaland, many parts of Tripura, Coastal Andhra Pradesh, some parts of Arunachal Pradesh, Telangana, Rayalaseema, Interior Karnataka, Kerala and Tamil Nadu.
- 0 to 2°C over Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, many parts of Arunachal Pradesh, Assam & Meghalaya, Bihar, Gangetic West

Lakshadweep.

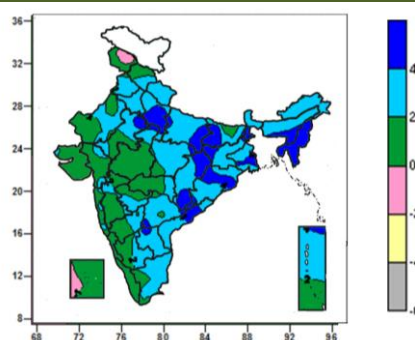
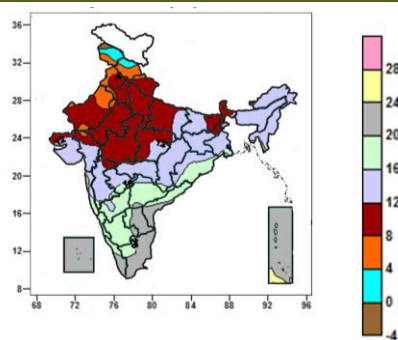
- 20 to 28°C over East & North East India, Gujarat, Madhya Maharashtra, many parts of East Uttar Pradesh, West Rajasthan, East Madhya Pradesh, Chhattisgarh, Odisha, Vidarbha, Marathwada, some parts of East Rajasthan, West Madhya Pradesh, Coastal Andhra Pradesh, Telangana and Konkan.
- 12 to 20°C over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, West Uttar Pradesh, many parts of East Uttar Pradesh, East Rajasthan, West Madhya Pradesh some parts of West Rajasthan, East Madhya Pradesh.

Bengal, Rayalaseema, Kerala, Tamil Nadu, some parts of Jammu & Kashmir, Himachal Pradesh, Kutch, Jharkhand, Tripura, Marathwada, Telangana, Andhra Pradesh, Karnataka and Lakshadweep.

- -4 to 0°C over Uttarakhand, Punjab, Haryana & Delhi, Vidarbha, many parts of Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh, West Rajasthan, East Madhya Pradesh, Odisha, Chhattisgarh, Jharkhand, Gujarat Region, Saurashtra, Konkan & Goa, Madhya Maharashtra, Marathwada, North Interior Karnataka and Lakshadweep, some parts of Bihar, Gangetic West Bengal.
- -6 to -4°C over many parts of East Rajasthan, West Madhya Pradesh, some parts of Uttar Pradesh, West Rajasthan, Odisha, Gujarat region, Madhya Maharashtra and East Madhya Pradesh.

**Actual Mean Minimum Temperature (°C) in India for the week ending 07.01.2015**

**Mean Minimum Temperature (°C) Anomaly in India for the week ending 07.01.2015**

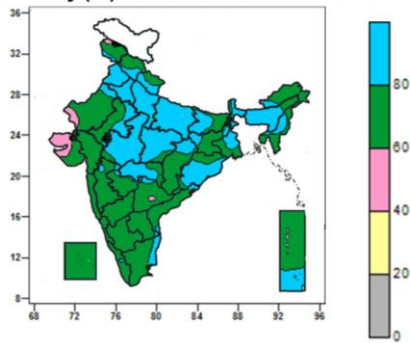


- -4 to 0°C over some parts of Jammu & Kashmir.
- 0 to 4°C over many parts of Jammu & Kashmir, some parts of Himachal Pradesh.
- 4 to 8°C over many parts of Himachal Pradesh, some parts of Jammu & Kashmir, Uttarakhand, Punjab, Rajasthan and Gujarat region.
- 8 to 12°C over West Uttar Pradesh, many parts of Uttarakhand, Punjab, Haryana, Delhi, East Uttar Pradesh, Rajasthan, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, some parts of Himachal Pradesh, Bihar, Jharkhand, Gujarat, Madhya Maharashtra and Vidarbha.
- 12 to 16°C over North East India, Gangetic West Bengal, many parts of Bihar, Jharkhand, Chhattisgarh, Vidarbha, Madhya Maharashtra, Marathwada, Gujarat, Konkan, some parts of East Uttar Pradesh, Sub-Himalayan West Bengal, Odisha, East Madhya Pradesh, Telangana and North Interior Karnataka.
- 16 to 20°C over Coastal Karnataka, many parts of Interior Karnataka, Telangana, Goa, some parts of Konkan, Madhya Maharashtra, Marathwada, Odisha, Chhattisgarh, Andhra Pradesh, Tamil Nadu and Kerala.
- 20 to 24°C over Lakshadweep, many parts of Andhra Pradesh, Tamil Nadu, Kerala, Andaman & Nicobar Islands, some parts of Telangana and South Interior Karnataka.
- 24 to 28°C over some parts of Andaman & Nicobar Islands.

- 4 to 6°C over Nagaland, Manipur, Mizoram, Tripura, many parts of West Uttar Pradesh, some parts of East Rajasthan, East Uttar Pradesh, Bihar, Jharkhand, West Bengal, Assam & Meghalaya, Chhattisgarh, Odisha, Andhra Pradesh, North Interior Karnataka and Telangana.
- 0 to 4°C over entire country except Nagaland, Manipur, Mizoram, Tripura, many parts of West Uttar Pradesh, some parts of East Rajasthan, East Uttar Pradesh, Bihar, Jharkhand, West Bengal, Assam & Meghalaya, Chhattisgarh, Odisha, Andhra Pradesh, Telangana, North Interior Karnataka, Jammu & Kashmir and Lakshadweep.
- -2 to 0°C over some parts of Jammu & Kashmir, Lakshadweep.

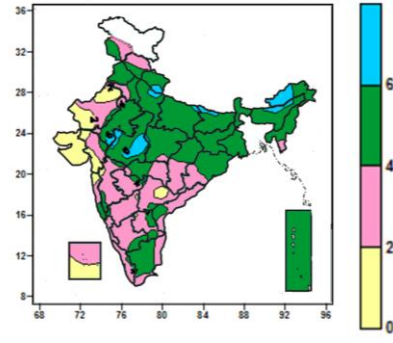
**Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 07.01.2015**

**Relative Humidity (%) over India for the week ending 07.01.2015**



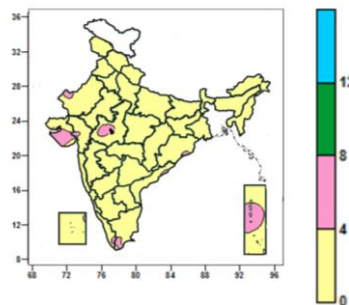
- 80 to 100% over entire parts of Punjab, Haryana, Delhi, Uttar Pradesh, many parts of Madhya Pradesh, Bihar, West Bengal & Sikkim, Assam & Meghalaya, Odisha, Vidarbha, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Rajasthan, Jharkhand, Arunachal Pradesh, Manipur, Mizoram, Chhattisgarh, Andhra Pradesh, Kerala, Tamil Nadu and Andaman & Nicobar Islands.
- 60 to 80% over entire country except Punjab, Haryana, Delhi, Uttar Pradesh, many parts of Madhya Pradesh, Bihar, West Bengal & Sikkim, Assam & Meghalaya, Odisha, Vidarbha, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Rajasthan, Jharkhand, Saurashtra & Kutch, Arunachal Pradesh, Manipur, Mizoram, Chhattisgarh, Andhra Pradesh, Kerala, Tamil Nadu and Andaman & Nicobar Islands
- 40 to 60% over many parts of Saurashtra & Kutch, some parts of Jammu & Kashmir, West Rajasthan and Telangana.

**Cloud amount (okta) over India for the week ending 07.01.2015**



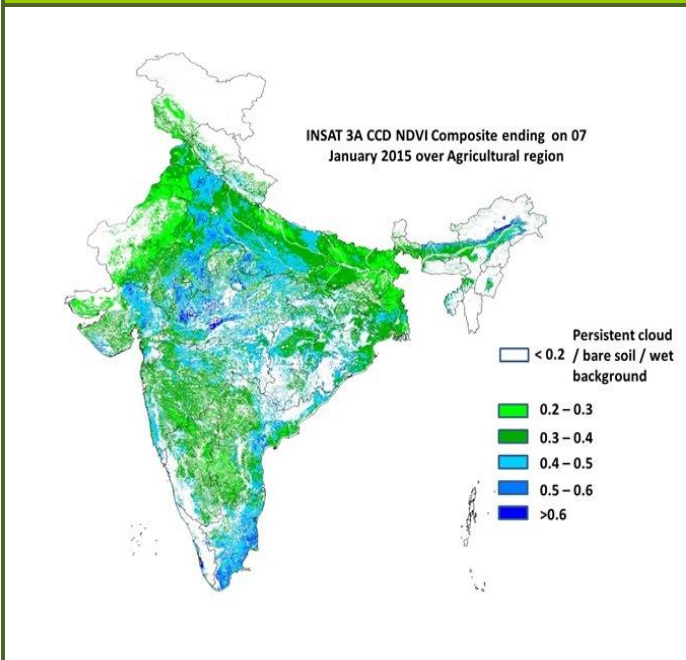
- 6 to 8 okta over some parts of Uttarakhand, Uttar Pradesh, Bihar, Arunachal Pradesh, Assam, East Rajasthan and West Madhya Pradesh.
- 4 to 6 okta over Punjab, Jharkhand, West Bengal & Sikkim, Nagaland, Manipur, Tripura, Andaman & Nicobar Islands, many parts of Uttarakhand, Haryana, Delhi, Uttar Pradesh, Bihar, Assam & Meghalaya, Mizoram, East Rajasthan, Madhya Pradesh, Odisha, Tamil Nadu, some parts of Jammu & Kashmir, Himachal Pradesh, West Rajasthan, Gujarat region, Chhattisgarh, Maharashtra, Andhra Pradesh, Telangana, Interior Karnataka and Kerala.
- 0 to 4 okta over entire country except Punjab, Jharkhand, West Bengal & Sikkim, Nagaland, Manipur, Tripura, Andaman & Nicobar Islands, many parts of Uttarakhand, Haryana, Delhi, Uttar Pradesh, Bihar, Assam & Meghalaya, Mizoram, East Rajasthan, Madhya Pradesh, Odisha, Tamil Nadu, some parts of Jammu & Kashmir, Himachal Pradesh, West Rajasthan, Gujarat region, Uttarakhand, Uttar Pradesh, Bihar, Arunachal Pradesh, Assam, East Rajasthan, West Madhya Pradesh, Chhattisgarh, Maharashtra, Andhra Pradesh, Telangana, Interior Karnataka and Kerala.

**Wind speed (knots) over India for the week ending 07.01.2015**



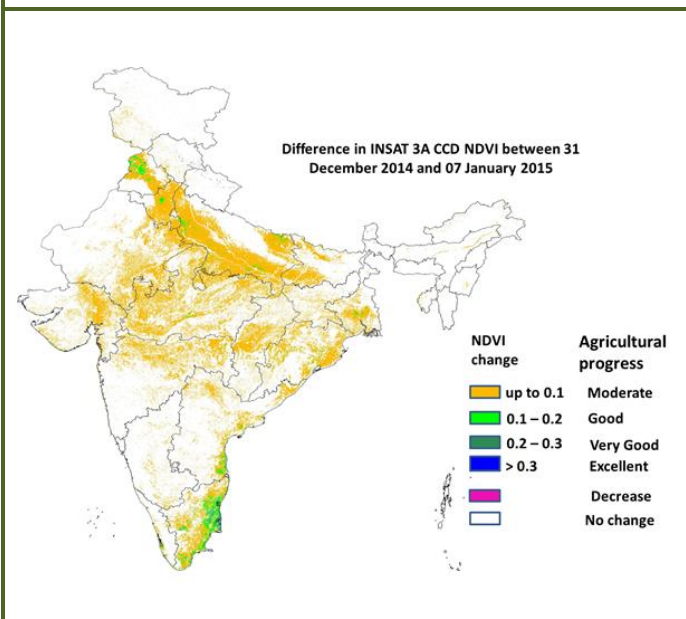
- 4 to 8 knots over many parts of Saurashtra, Andaman & Nicobar Islands, some parts of West Rajasthan, West Madhya Pradesh, Gujarat region, Odisha, Coastal Andhra Pradesh, Kerala and Tamil Nadu.
- 0 to 4 knots over entire country except many parts of Saurashtra, Andaman & Nicobar Islands, some parts of West Rajasthan, West Madhya Pradesh, Gujarat region, Odisha, Coastal Andhra Pradesh, Kerala and Tamil Nadu.

## INSAT 3A CCD NDVI COMPOSITE ENDING ON 7<sup>th</sup> JANUARY 2015 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is good (0.4 to 0.5) over most parts of central and southern India, few pockets in south east Punjab, Northern and southern parts of Haryana, western, southern and central Uttar Pradesh, eastern Rajasthan, central, southern and western Gujarat, southern parts of West Bengal, Coastal Andhra Pradesh, Tamil Nadu, eastern and coastal parts of Odisha. In few pockets in central and western Madhya Pradesh NDVI varied from 0.5 to 0.6. Some parts of southern Bihar, few pockets in western Rajasthan, central Madhya Pradesh, few pockets in Karnataka and Andhra Pradesh shows a significant increase in the NDVI value. The NDVI remained within the range of 0.3 to 0.4 over few parts of the Indo Gangetic plains and central Rajasthan upto 07<sup>th</sup> January 2015.

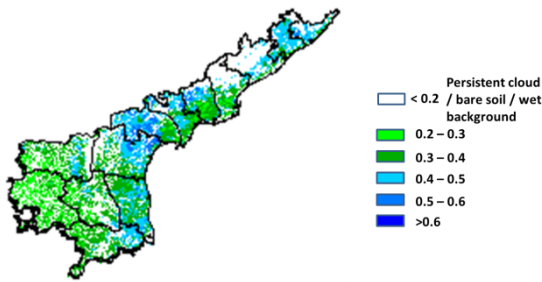
### Difference in INSAT 3A CCD NDVI between 31<sup>st</sup> December 2014 and 7<sup>th</sup> January 2015



- The positive change (0.1- 0.2) in NDVI was observed over few pockets in central Haryana and north western parts of Punjab, southern coastal parts of Andhra Pradesh and coastal parts of Tamil Nadu. Moderate change in NDVI was observed over southern parts of Uttar Pradesh, parts of Northern Gujarat, north Maharashtra and some parts of western, north eastern and north western Rajasthan and in eastern and central Madhya Pradesh, central parts of Chhattisgarh and coastal regions of Odisha. Not much change was observed in rest of India.

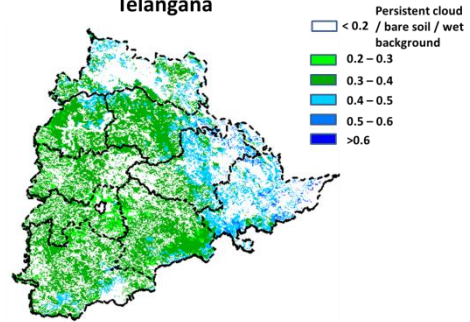
# INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 7<sup>th</sup> JANUARY 2015 FOR DIFFERENT STATES

## Andhra Pradesh



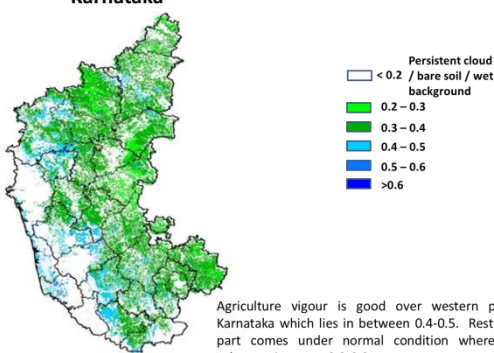
Agriculture vigour is good over middle part of Andhra Pradesh, as it also good over northern coast. NDVI values are normal over rest part of the state.

## Telangana



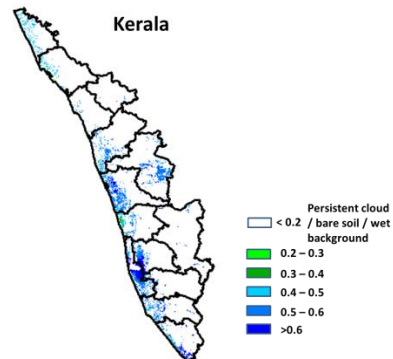
Agricultural vigour is good in pockets for the north and north east of the Telangana where NDVI values varies from 0.4 - 0.6. South of the Telangana is showing values of NDVI which varies from 0.2-0.4 till the 7 Jan 2015.

## Karnataka



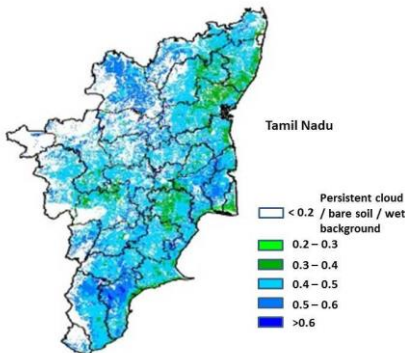
Agriculture vigour is good over western part of Karnataka which lies in between 0.4-0.5. Rest of the part comes under normal condition where NDVI values varies up to 0.2-0.3.

## Kerala



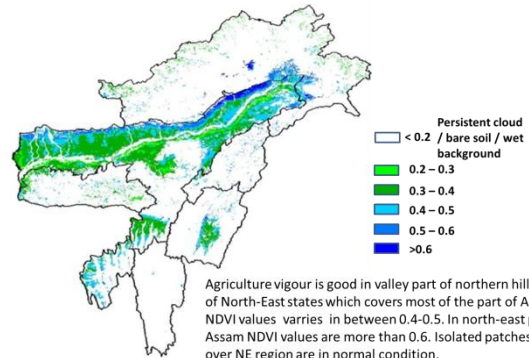
South coastal parts of Kerala showing pockets of NDVI values varies 0.5 - 0.6. Whereas rest of agricultural vigour of Kerala showing normal values of NDVI till the 7 Jan 2015.

## Tamil Nadu



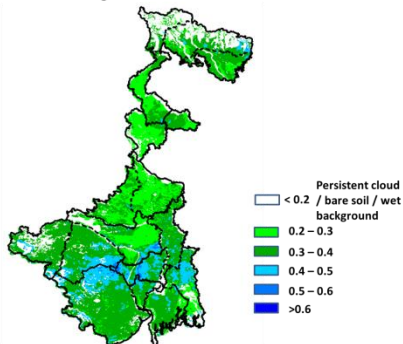
Agricultural vigour is good for the coastal region of east Tamilnadu with NDVI values varies from 0.4 - 0.6. Rest of the Tamilnadu is showing normal values of NDVI till the 7 Jan 2015.

## North East States



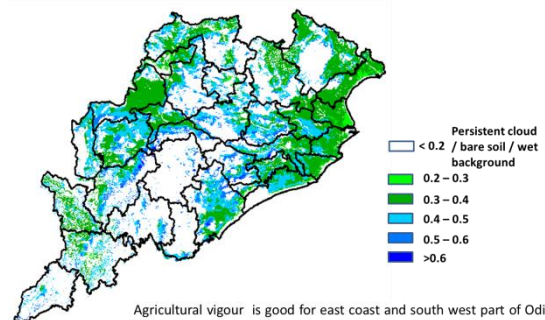
Agriculture vigour is good in valley part of northern hill range of North-East states which covers most of the part of Assam. NDVI values varies in between 0.4-0.5. In north-east part of Assam NDVI values are more than 0.6. Isolated patches all over NE region are in normal condition.

## West Bengal

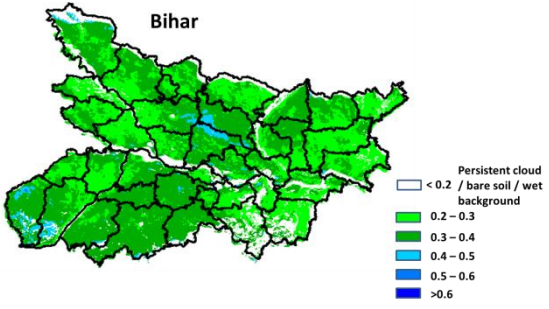


Agricultural vigour is good over most of the southern parts of West Bengal, where rest of the northern parts having normal values of NDVI.

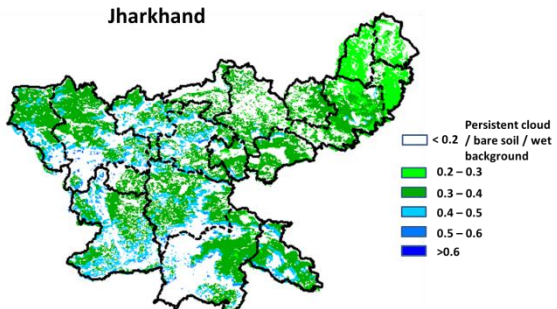
## Odisha



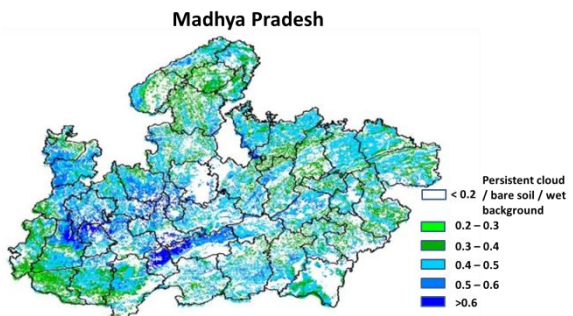
Agricultural vigour is good for east coast and south west part of Odisha with NDVI values of 0.3 - 0.5. Whereas central and south coast showing normal values of NDVI till the 7 Jan 2015.



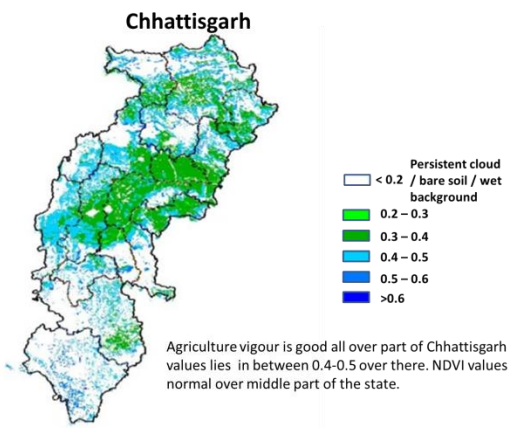
Agriculture vigour is good over central and south west part of Bihar. NDVI values are normal over rest part of the state.



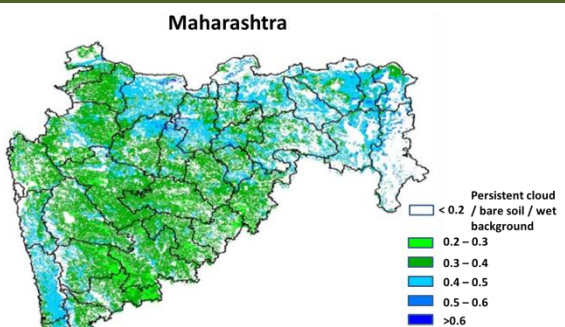
Agriculture vigour is good over central to western part of the Jharkhand which lies in between 0.4-0.5. Rest of the part comes under normal condition where NDVI values varies up to 0.2-0.3.



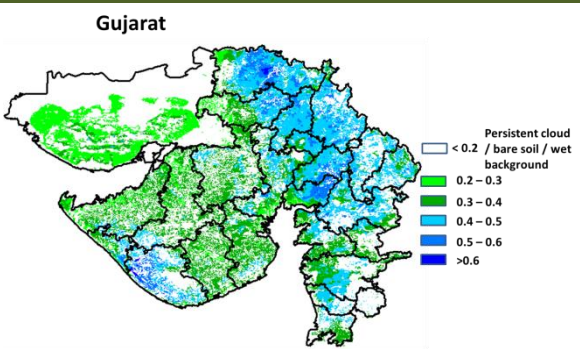
Agricultural vigour is good for central, Western region of Madhya Pradesh showing higher values of NDVI varies from 0.4 - 0.6. Whereas North and East parts showing comparatively low values varying from 0.3 - 0.4 till the 7 Jan 2015.



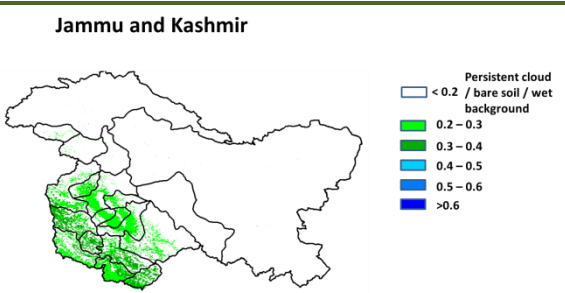
Agriculture vigour is good all over part of Chhattisgarh. NDVI values lies in between 0.4-0.5 over there. NDVI values are normal over middle part of the state.



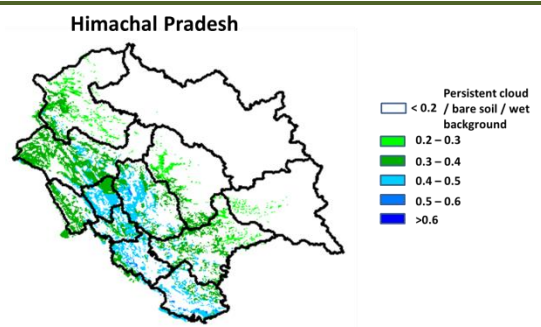
Agriculture vigour is good for central, West and Marathwada region of Maharashtra with NDVI values of 0.3 - 0.4. Whereas Vidarbha and Konkan region showing comparatively increasing values varying from 0.4 - 0.5 till the 7 Jan 2015.



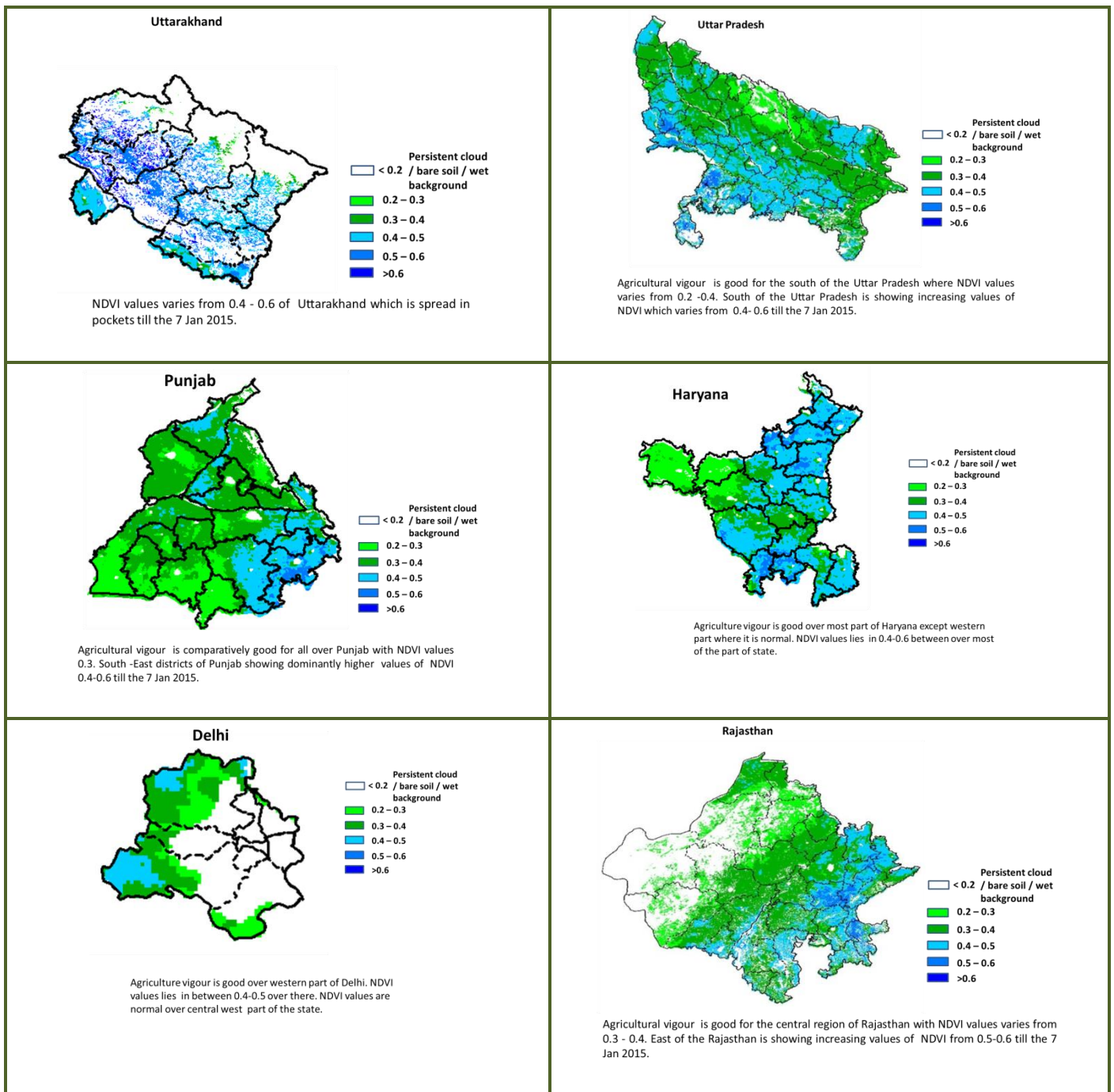
Agriculture vigour is good over part of Gujarat and saurashtra. NDVI values lies in between 0.4-0.5 over there. In southern part of Saurashtra NDVI values varies up to 0.5. NDVI values are normal over middle west part of the Saurashtra.



Agriculture vigour is normal all over Jammu. NDVI values varying in between 0.2-0.3.



Agriculture vigour is good over middle east part of Himachal Pradesh Where NDVI values lies between 0.4-0.5. rest of isolated patches are in normal condition.



## Weather Forecast

### Weather Forecast for next 3 days (upto 0830 hours IST of 12<sup>th</sup> January, 2015).

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

### Weather Warning during next 3 days

- **09 January (Day 1):** Dense to very dense fog would occur at many places over Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh & north Rajasthan and at isolated places over south Himachal Pradesh and south Uttarakhand. Dense fog would occur at isolated places over Bihar and north Madhya Pradesh. Cold day conditions would occur at many places over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh and at isolated places over East Uttar Pradesh. Cold wave conditions would occur at isolated places over south Madhya Pradesh and Vidarbha. Ground frost would occur at isolated places over Punjab, Haryana and north Rajasthan.
- **10 January (Day 2):** Dense to very dense fog would occur at many places over Punjab, Haryana,



Madhya Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim and at a few places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 3 days.

- No significant change in minimum temperatures over northwest India, central & adjoining east India during next 2-3 days.

Chandigarh & Delhi, Uttar Pradesh & north Rajasthan and at isolated places over south Himachal Pradesh and south Uttarakhand. Dense fog would occur at isolated places over Bihar and north Madhya Pradesh.

Cold day conditions would occur at many places over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh and at a few places over East Uttar Pradesh.

Cold wave conditions would occur at isolated places over south Madhya Pradesh and Vidarbha.

Ground frost would occur at isolated places over Punjab, Haryana and north Rajasthan.

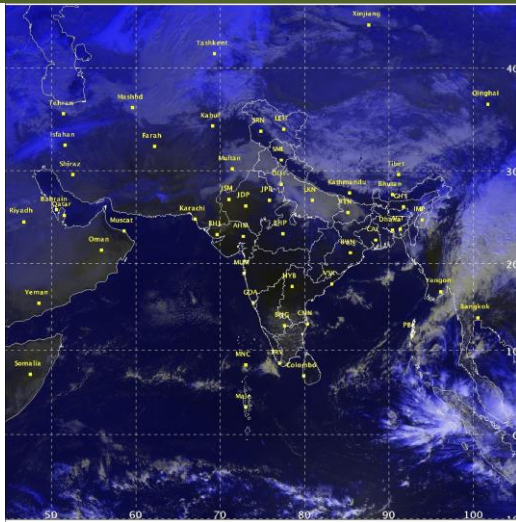
- **11 January (Day 3):** Dense to very dense fog would occur at a few places over Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh & north Rajasthan and at isolated places over south Himachal Pradesh and south Uttarakhand.

Cold day conditions would occur a few places over Punjab, Haryana, Chandigarh & Delhi and Uttar Pradesh.

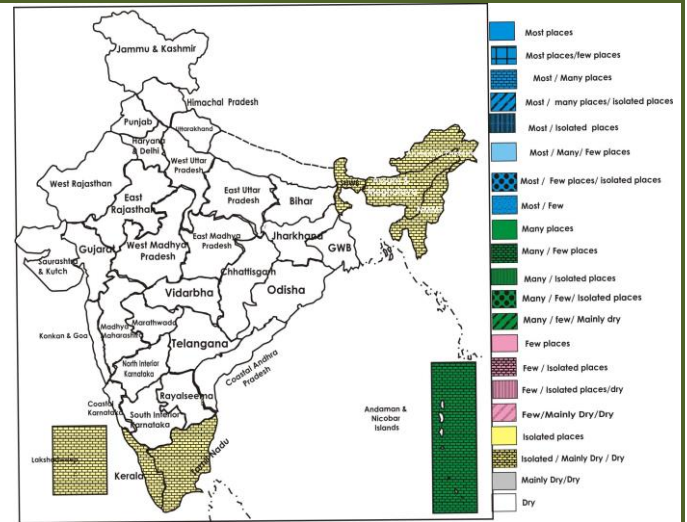
**Weather Outlook for subsequent 4 days from 12<sup>th</sup> to 16<sup>th</sup> January 2015.**

- Rain/thundershowers would occur at many places over Andaman & Nicobar Islands and at isolated places over northeastern states and extreme south peninsular India.
- The fresh feeble Western Disturbance as an upper air system would affect Western Himalayan region from 12<sup>th</sup> onwards.
- Weather would be dry over rest of the country.

Satellite image dated, 09.01.2015, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 12<sup>th</sup> January 2015)



## Salient Advisories In View of Cold Day, Cold Wave and Ground Frost

- As cold day conditions would occur at many places over **Punjab, Haryana, Chandigarh & Delhi, west Uttar Pradesh** and at a few places over east Uttar Pradesh, ground frost at isolated places over **Punjab, Haryana and north Rajasthan**, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during night times to protect the crops from cold/frost injury.
- As cold wave conditions would occur at isolated places over **south Madhya Pradesh** on 9<sup>th</sup> and 10<sup>th</sup> January, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during nights to protect the crops from cold injury.
- As cold wave conditions would occur at isolated places over **Vidarbha in Maharashtra** on 9<sup>th</sup> and 10<sup>th</sup> January, apply light and frequent irrigation in standing crops and apply mulch in orange and sweet lime orchards to protect the plants from cold injury. Arrange for smoking around the crop fields during night time to protect the crops from cold injury.

### *Detailed Zonewise Agromet Advisories*

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



*Sorghum*



*Sugarcane*



*Chilli*



*Rice Transplanting*

- **Realised Rainfall:** Rainfall occurred in Dharmapuri, Dindigul, Namakkal and Perambalur districts of Tamil Nadu and Adilabad and Karimnagar districts of Telangana. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Kerala, Tamil Nadu & Puducherry during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over extreme south peninsular India. Weather would be dry over rest of the region.
- **Advisories:**
  - **Andhra Pradesh:**
    - As dry weather is prevailing, provide light irrigation to groundnut at vegetative stage in the High Altitude Tribal Zone.
    - Due to prevailing cloudy weather, there is a chance of incidence of pod borer on red gram in North Coastal Zone. Spray Chlorophyriphos @ 2.5 ml or Quinolphos @ 2 ml per litre of water.
    - Present dry weather conditions are highly congenial for leaf curl in chilli and powdery mildew and *phyllody* in sesame in the Southern Zone. Spray Phasolon (Zolane) @ 3 ml or Diphenthiuron @ 1 g / litre of water for leaf curl, Wettable Sulphur @ 3g/litre of water to manage powdery mildew and Dimethoate @ 3 ml/litre of water to manage *phyllody*.
    - In the Scarce Rainfall Zone, powdery mildew incidence is observed on mango crop in Anantapur district which is likely to spread in the present humid weather and low temperature conditions. For control, spray Karathane @ 1.0 ml or wettable Sulphur @ 3.0 g per one litre of water.
  - **Telangana:**
    - Prevailing minimum temperature (16 -20°C) is congenial for flower and fruit drop in chilli in the Northern Telangana Zone. Spray NAA 10 mg/litre of water to manage the incidence.
    - Prevailing humid weather condition is congenial for incidence of leaf hopper, leaf webber and tikka leaf spot in groundnut in Southern Telangana Zone. To control leaf hopper, spray Dimethoate @ 2 ml per litre of water, Quinolphos @ 2 ml per litre of water to manage leaf webber and Mancozeb @ 2.0g + Carbendazim @ 1.0g or Hexaconazole @ 1.0 ml per litre of water to manage tikka leaf spot.
  - **Karnataka:**
    - Complete harvesting of ragi and continue sowing of sunflower, groundnut, maize and ragi under irrigated condition in the Eastern Dry Zone.
    - As dry weather is prevailing, protective irrigation may be given to wheat and sorghum in North East Transition Zone, North Transition Zone and North Dry Zone.

- Continue harvesting of chilli and cotton in the North Transition Zone and North Dry Zone.
- In the Hill Zone, continue sowing of pulses in areas where rice harvesting has been completed.
- Undertake nursery preparation for summer rice in the Southern Transition Zone.
- Low temperature and high humidity in the morning hours is congenial for incidence of powdery mildew disease and leaf hopper in mango orchard in the Eastern Dry Zone, North East Dry Zone, Hill Zone and Southern Dry Zone. Spray Carbaryl WP@ 4 g/ litre of water or Carbendazim @ 1 g / litre of water to manage the incidence.
- Present weather is congenial for the incidence of *Helicoverpa* in Bengal gram in the North East Transition Zone. Spray Profenophos or Chlorpyrifos @ 2 ml/litre or Spinosad @ 0.2 ml per litre of water for control.
- **Kerala:**
  - Undertake harvesting of *Mundakan* rice in clear weather in the Southern Zone.
  - Prevailing humid condition is congenial for increase in population of insect vectors which spread viral diseases in vegetables and leaf eating caterpillar in coconut in the Southern Zone. Apply Dimethoate @ 1.5 ml/ litre of water against insect vectors and Malathion @ 1ml/ litre of water to manage leaf eating caterpillar.
  - In the prevailing temperature, there is chance of increase of mite population in coconut in the Central Zone. Apply 2% neem oil-garlic-soap emulsion in the crown of young bunches to prevent mite attack.
- **Tamil Nadu:**
  - Continue sowing of rice fallow pulses under waxy condition in *samba* rice fields under rice fallow condition in the Cauvery Delta Zone.
  - Undertake cultivation of short duration and disease resistant varieties of green gram and black gram in the North Western Zone.
  - Prevailing cool weather condition is congenial for leaf spot disease in turmeric in the Western Zone. Monitor the crop and apply Mancozeb @ 1 kg/ha or Carbendazim @ 0.5 kg/ ha.
  - Prevailing low minimum temperature and high humidity are congenial for flower and fruit drop in chilli in South Zone Zone. Undertake spraying of Naphthalene Acetic Acid 10 ppm (10 mg in 1 litre of water).
  - Suitable varieties are given in Annexure II.
- **Animal Husbandry**
  - Prevailing low temperature condition is congenial for *kokkera* disease in poultry in the Northern Telangana Zone. Vaccinate the birds as per the recommended age, provide clean and fresh water daily and provide artificial heating through lighting of electric bulb during night time to protect the poultry birds (day old to 25 days old) from low temperature.

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



*Rice transplanting*



*Mustard*



*Potato*



*Cabbage*

- **Realised Rainfall:** Rainfall occurred in East Siang district of Arunachal Pradesh, Dhubri district in Assam, West Garo Hills district in Meghalaya, Dimapur district of Nagaland; Imphal East district of Manipur. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 24 hours and dry weather would prevail thereafter. Fog would occur at a few places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 3 days.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over northeastern states.
- **Advisories:**
  - **Assam & Meghalaya, Arunachal Pradesh:**
    - Continue transplanting of *boro* rice of about 45 days old (5- 6 leave stage) seedlings in Assam. Farmers are advised to maintain 6 cm of standing water in the main field of transplanted *boro* rice. Continue gap filling in *boro* rice after 10-15 days after transplanting.
    - In Hill Zone of Assam, continue picking of matured cotton balls in morning hours.
    - In Meghalaya, continue nursery raising of *boro* rice in low lying areas. Continue transplanting of *boro* rice. Apply irrigation to mustard/rapeseed at flowering stage and cole crops. Also prepare basin around plants of khasi mandarin followed by mulching with local grasses and apply irrigation at 15-20 days interval to avoid moisture stress.

- In North Bank Plain Zone, Barak Valley Zone and Upper Brahmaputra Valley Zone of Assam, due to foggy conditions, blight disease may become severe in potato and tomato. Spray Mancozeb 75 WP @ 2g/litre or Ridomil MZ-27 (64% Mancozeb + 8% Metalaxyl) @ 2g/litre followed by Dithane M-45 @ 2.5 g in 1 litre of water for control. Also spray Dithane Z-78 @ 25 g in 10 litre of water against late blight in tomato.
- Due to foggy weather there is chance of infestation of aphids / saw fly in rapeseed / mustard in Meghalaya, Upper Brahmaputra Valley Zone, North Bank Plain Zone, Central Brahmaputra Valley Zone, Lower Brahmaputra Valley Zone and Barak Valley Zone of Assam. Spray Malathion 50 EC @ 2 ml/ litre of water or Dimethoate 30 EC or Chloropyriphos @ 0.5 litre / ha for control.
- In Hill Zone and Lower Brahmaputra Valley Zone of Assam, due to foggy weather, there is chance of late blight in tomato. Apply Ridomil MZ-72 (2g/ litre) and Indofil M-45 2.5 g / litre or Dithane Z-78 @ 25 g in 10 litre of water to prevent the disease.
- Due to foggy weather condition, there is chance of late & early blight disease in potato in Meghalaya. Spray Mancozeb 75% WP @ 1.5- 2.0 kg/ha or Copper Oxy Chloride 50% WP @ 2.5 kg/ha or Chlorothalonil 75% WP @ 1.25 kg/ha.
- **Nagaland, Manipur, Mizoram and Tripura:**
  - In Manipur, apply light irrigation in rapeseed / mustard, pea, lentil, potato.
  - In Mizoram, apply irrigation to banana, brinjal, early cole crops, pea, tomato, mustard and toria.
  - In Nagaland, apply light irrigation in toria, pea, vegetables and cole crops.
  - In Mild Tropical Plain Zone of Tripura, apply light irrigation on every alternate day in cole crops, mustard and lentil. Mulching is essential after irrigation to conserve moisture. Undertake land preparation for transplanting of *boro* rice. Rice bed may be covered during the night to protect the seedlings from dew. Weeding, thinning, irrigation may be done in the nursery field.
  - In Tripura, due to the prevailing foggy condition there may be infestation of early blight in potato. Apply Cymoxanil+ Mancozeb or Metalaxyl+ Mancozeb @ 1.5 g per litre of water for control of early blight. Due to cloudy and humid weather there is chance of attack of leaf blight in maize. Spray Zineb @ 3g per litre of water to manage the attack.
  - In Mizoram, due to foggy weather condition, there is chance of infestation of aphids in pea. For control, apply Imidachloprid @ 1.5 ml/litre of water.
  - Suitable varieties are given in Annexure II.
- **Animal Husbandry**
  - In Northeastern States, provide artificial heating through lighting of electric bulb to protect poultry birds (upto 25 days old) from low temperature. Cover poultry and pig house with gunny bags/ polythene sheet to prevent the expose of animal to cool night.
- **Fishery**

During winter season, apply Potash @ 4-5 mg/litre of water /Sukrena WS @ 1 litre per bigha of water/ lime in required doses to protect the fish population against various bacterial diseases in Lower and Upper Brahmaputra Valley Zone and North Bank Plain Zone of Assam.

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



*Sugarcane*



*Wheat*



*Rice transplanting*



*Onion*

- **Realised Rainfall:** Rainfall occurred in Banka, Bhagalpur, Katihar and Madhubani districts of Bihar; Ranchi district of Jharkhand; Balasore, Bhadrak, Ganjam, Jagatsinghpur, Kandhamal, Kendrapara, Mayurbhanj, Nayagarh and Puri districts of Odisha; Purulia district of Gangetic West Bengal. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Andaman & Nicobar during next 48 hours and at many places thereafter. Rain/thundershowers would occur at isolated places over Sub-Himalayan West Bengal & Sikkim during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period.  
Fog would occur at many places over Bihar, Sub-Himalayan West Bengal & Sikkim during next 3 days.  
No significant change in minimum temperatures over east India adjoining to central India during next 2-3 days.
- **Weather Warning:** Dense fog would occur at isolated places over Bihar on 9<sup>th</sup> and 10<sup>th</sup> January.

- **Weather Outlook:** Rain/thundershowers would occur at many places over Andaman & Nicobar Islands. Weather would be dry over rest of the region.
- **Advisories:**
  - **West Bengal:**
    - In Old Alluvial and Terai Zone, continue nursery sowing of *boro* rice. Cover the nursery bed with polythene or apply water in the nursery bed at night and draining the water at morning to protect the seedlings from cold injury. Continue main field preparation for transplanting of *boro* rice.
    - In Laterite and Red Soil Zone, complete transplanting of *boro* rice.
    - Due to high humidity, there is chance of attack of aphids and diamond back moth in vegetables during its fruiting stage in Hill Zone. Apply Lamda Cyhalothrin @10 ml/15 litres of water for diamond back moth control and Imedaclorpid @1ml/4 litres of water for aphid control.
    - In Laterite and Red Soil Zone, early morning fog may cause attack of saw fly and aphids in mustard. For controlling of mustard saw fly dusting with 2% Methyl Parathion @20-25 kg /ha and for aphids, spraying Malathion 50 EC @ 0.005%.
    - In New Alluvial Zone, Old Alluvial Zone and Coastal Saline Zone, due to dense fog during morning hours, there is chance of late blight attack in potato. Spray Metalaxyl+Mancozeb or Thimoxyl + Mancozeb @ 2.5g/litre of water as preventive measure. There is also chance of blast and brown spot diseases in *boro* rice due to low temperature. Spray Tricyclazole@0.5g/litre of water.
    - In Old Alluvial Zone and Terai Zone, due to low temperature and foggy weather, there is chance of attack of late blight in potato. To prevent attack spray Mancozeb (2 g / litre of water) and Blitox (4 g / litre of water) or Carbaryl 0.2 % (Sevin) @ 50 ml per 1000 litres of water or Dimethomorph + Mancozeb @ 2g / litre of water or Cymoxanil(8%) + Mancozeb (64%) @ 2.5 g / litre of water.
    - In New Alluvial Zone, due to prevailing weather condition, there is chance of attack of white streak disease in pea, lentil and Bengal gram. Apply Sulphex or Dinocap 2.5 g per litre of water to control.
  - **Andaman and Nicobar:**
    - As rain/thundershowers would occur at many places in Andaman and Nicobar islands on 11<sup>th</sup> January, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
    - In North and Middle Andaman, continue nursery raising of vegetable crops.
  - **Odisha:**
    - In Western Undulating Zone, continue land preparation and sowing of green gram, black gram and sunflower in residual moisture immediately after harvesting of rice.
    - In East and South Eastern Coastal Plain Zone, continue nursery sowing of rice and *rabi* pulses. Continue transplanting of onion.
    - In East and South Eastern Coastal Plain Zone of Odisha, the current weather is favourable for sowing of sunflower and groundnut.
    - In North Eastern Coastal Plain Zone of Odisha, continue sowing of rapeseed and mustard.
    - In Western Undulating Zone of Odisha, present weather is congenial for occurrence of *Alternaria* blight in mustard at vegetative stage. For controlling the disease, spray Indofil M 45@3g/lit of water.
    - In Mid Central Table Land Zone of Odisha, cloudy weather during the past week is favourable for incidence of powdery mildew disease in black gram. To control it, spray Sulfex@5g / litre of water.
    - In East and South Eastern Coastal Plain Zone of Odisha, cloudy weather may favour infestation of aphids in potato and pulses. Spray 400 ml Dimethoate or 50 ml Imidachloprid in 200 litres of water per acre.
    - Due to cloudy weather and moderate temperature, thrips and aphids infestation has been found in groundnut in East and South Eastern Coastal Plain Zone of Odisha. Spray Dimethoate @400 ml or Imidachloprid @50 ml in 200 litre water per acre.
    - In North Eastern Coastal Plain Zone of Odisha, cloudy and humid weather during the week coupled with rain is favourable for attack of leaf webber in mustard and rapeseed. Spray Traizophos@ 2ml/ litre of water to control.
    - In Mid Central Table Land Zone of Odisha, cloudy weather is favourable for powdery mildew disease in black gram. To control it, spray Sulfex@5g / litre of water.
  - **Bihar:**
    - In North East Alluvial Zone of Bihar, as dry weather is prevailing, apply irrigation to wheat which is about 40-45 old and in 21-25 days old (late sown) except Madhubani district. Apply urea @ 30 kg/acre after 2 days of irrigation. To protect the nursery of *boro* rice from cold stress, apply irrigation during evening time.
    - In South Bihar Alluvial Zone, as dry weather is prevailing, apply irrigation in timely sown wheat crop is at tillering stage and late sown wheat crop is at CRI stage except Banka and Bhagalpur district. Continue harvesting of matured sugarcane.
    - In North West Alluvial Plain Zone of Bihar, undertake transplanting of *rabi* onion.
    - In North West Alluvial Plain Zone of Bihar, low temperature and foggy weather is favourable for the attack of blight in potato and lentil crops; spray Indofil M-45, for better result mix sticker 1ml/liter of water. Due to foggy weather there is a chance of white rust in mustard/rapeseed, spray Chlorothalonil 75 WP @ 1 g/ litre of

water.

▪ **Jharkhand:**

- In Western Plateau Zone, continue intercultural operations in pulses and oilseeds to conserve soil moisture and control weeds. As dry weather is prevailing undertake harvesting of matured toria.
- In South Eastern Plateau Zone of Jharkhand, apply irrigation in wheat, arhar, mustard, field pea and potato. Undertake nursery sowing of summer rice. Select medium duration improved rice varieties like MTU 1010, IR 36, 64 and Naveen.
- In Central & North Eastern Plateau Zone of Jharkhand, continue preparation of nursery bed for onion and land preparation for sowing of vegetables like long gourd, round gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon. Continue nursery sowing of summer rice.
- In Jharkhand, low temperature and foggy weather is favourable for the attack of early and late blight disease in early planted potato crop; spray Krilaksil or Ridomil MZ @ 1.5 g per litre of water to control the disease.
- In Central & North Eastern Plateau Zone and Western Plateau Zone of Jharkhand, cool and dry weather is favourable for incidence of powdery mildew disease in pea. To control it, spray Kairathen @ 1 ml or sulfex @ 3 ml per liter of water.
- In South Eastern Plateau Zone of Jharkhand, cool and humid weather in the morning and later on clear sunny weather is favourable for the attack of aphids in mustard/toria, spray Rogar (Dimethoate) @ 2ml or Monochrotophos @ 1 ml per litre of water.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- In Hill Zone and Terai of West Bengal, provide artificial heating through lighting of electric bulb to protect poultry birds (upto 25 days old) from low temperature. Cover poultry house with gunny bags/ polythene sheets to protect them from cold.
- To protect from cold, dairy animal should be covered with gunny sack/ sheet in the evening in Central & North Eastern Plateau Zone of Jharkhand and also provide calcium and jaggery in the feed. To prevent from Swine fever disease in pigs, farmers are advised to vaccinate against swine fever.

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



*Sugarcane*



*Wheat*



*Mustard*



*Onion*

- **Realised Rainfall:** Rainfall occurred in all districts of East Madhya Pradesh except Anupur, Balaghat, Dindori, Mandla, Panna, Seoni and Shahdol; all districts of West Madhya Pradesh except Alirajpur, Barwani, Bhind, Datia, Dhar, Gwalior, Jhabua, Mandasaur, Morena, Neemuch, Sheopur and Shivpuri; Bijapur, Bilaspur, Dhamtari, Durg, Jashpur, Koriya and Narayanpur districts of Chhattisgarh where weather was mainly dry.
- **Weather Forecast:** Dry weather would prevail over the region during the period.  
Fog would occur at many places over Madhya Pradesh during next 3 days.  
No significant change in minimum temperatures over central India during next 2-3 days.
- **Weather Warning:** Dense fog would occur at a few places over north Madhya Pradesh on 9<sup>th</sup> and 10<sup>th</sup> January. Cold wave conditions would occur at isolated places over south Madhya Pradesh on 9<sup>th</sup> and 10<sup>th</sup> January.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
  - **Madhya Pradesh:**
  - As cold wave conditions would occur at isolated places over south Madhya Pradesh on 9<sup>th</sup> and 10<sup>th</sup> January, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during nights to protect the crops from cold injury.
  - Continue transplanting of medium and late sown cauliflower, cabbage, carrot, radish and onion in main fields in Kymore Plateau and Satpura Hill Zone.
  - Continue transplanting of onion, tomato, brinjal, chilli, cabbage and cauliflower in Malwa Plateau Zone.
  - Due to partly cloudy and foggy weather, there are chances of attack of sucking pest in vegetables in Satpura Plateau Zone and Jhabua Hill Zone, spray Imidachloprid @ 0.5ml per litre of water and for control of shoot & fruit borer, spray Trizophos @ 800 ml per hectare.
  - Due to cloudy weather, there are chances of attack of caterpillars in gram in Madhya Pradesh. Spray Quinalphos

@ 25 EC per 500-600 litres of water.

- Due to foggy weather, there are chances of leaf curl disease in brinjal, chilli and papaya in Bundelkhand Zone, spray Methyl demeton 25 E.C. @ 2.0 ml per litre of water.
- **Chhattisgarh:**
- As dry weather would prevail, undertake digging of matured potato in Bastar Plateau Zone.
- Due to cloudy weather, there are chances of incidence of aphids in mustard and radish in North Hill Zone and Plain Zone of Chhattisgarh, for control, apply Carbaryl @ 2 kg/ha.
- Due to cloudy weather, there are chances of infestation of pod borer in pigeon pea in North Hill Zone of Chhattisgarh, spray Polytrin C @ 1litre/ha or Endoxacarb @ 300 ml/ha.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- As cold wave conditions would occur at isolated places over south Madhya Pradesh, protect animals from cold. Increase light duration in poultry farms.

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



*Wheat*

*Sugarcane*

*Mustard*

*Cabbage*

- **Realised Rainfall:** Rainfall occurred in Ropar district of Punjab; all districts of Uttarakhand except Dehradun, Haridwar and Uttarkashi; Kullu, Mandi and Solan districts of Himachal Pradesh. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. Fog would occur at many places over Punjab, Haryana & Delhi, Uttar Pradesh, north Rajasthan during next 3 days. No significant change in minimum temperatures over northwest India during next 2-3 days.
- **Weather Warning:** Dense to very dense fog would occur at many places on 9<sup>th</sup> and 10<sup>th</sup> January and at a few places on 11<sup>th</sup> January over Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh & north Rajasthan. Dense to very dense fog would occur at isolated places over south Himachal Pradesh and south Uttarakhand during the period. Cold day conditions would occur at many places over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh and on 9<sup>th</sup> and 10<sup>th</sup> January. Cold day conditions would occur at isolated places over East Uttar Pradesh on 9<sup>th</sup> and at a few places on 10<sup>th</sup> January. Cold day conditions would occur a few places over Punjab, Haryana, Chandigarh & Delhi and Uttar Pradesh on 11<sup>th</sup> January. Ground frost would occur at isolated places over Punjab, Haryana and north Rajasthan on 9<sup>th</sup> and 10<sup>th</sup> January.
- **Weather Outlook:** A feeble western disturbance as an upper air system would affect western Himalayan region from 12<sup>th</sup> onwards. Weather would be dry over rest of the region.
- **Advisories:**
  - As cold day conditions would occur at many places over Punjab, Haryana, Chandigarh & Delhi, west Uttar Pradesh and at a few places over east Uttar Pradesh, ground frost at isolated places over Punjab, Haryana and north Rajasthan, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during night times to protect the crops from cold/frost injury.
  - **Jammu & Kashmir:**
  - Undertake second hoeing and weeding followed by irrigation in 40 days old pulses like chick pea and lentil in Sub Tropical and Intermediate Zone of Jammu & Kashmir.
  - Undertake mulching in Knol Khol, cabbage and root crops to protect the crops from frost injury in Valley Temperate Zone of Jammu & Kashmir.
  - In Intermediate Zone and Sub-tropical Zone of Jammu & Kashmir, due to cold and humid weather, there are chances of aphid attack in cole crops viz. cabbage and cauliflower. To control spray Rogor (Dimethoate) @ 1 ml/litre of water at fifteen days interval.
  - **Himachal Pradesh:**
  - In Sub-Montane and Low Hills Sub-Humid Tropical Zone, continue intercultural operation in already sown wheat. Also undertake earthing up and top dressing of nitrogen @ 40-50 kg Urea per hectare in vegetables like cauliflower, cabbage, broccoli, knol-khol, palak, methi, peas and garlic. In low and mid-hill areas, undertake planting of onion at a spacing of 15-20 x 5-7 cm apart.

- In Mid Hills Sub-Humid Zone, continue transplanting of late season cauliflower (Pusa-snowball) and cabbage and planting of onion at a distance of 15x10cm. Complete sowing of pea, radish, turnip, methi and spinach.
- Continue sowing of Chinese cabbage, cabbage and coriander in High Hill Dry Temperate Zone utilising the realised rainfall.
- Under prevailing low temperature and cloudy weather condition, there are chances of occurrence of yellow rust in wheat in Sub-Montane and Low Hills Sub-Humid Tropical Zone. For control, spray Tebuconazole 25 EC or Bayletan 25 WP @ 30ml or 30 g per 30 litres of water per kanal and repeat the spray after 15 days interval. Downy mildew is also expected in cruciferous vegetables. For control, spray Redomil M-Z @ 25 g per litres of water at 15 days interval.
- Under prevailing low temperature and cloudy weather condition, there are chances of attack of aphids in sarson, gobhi-sarson and cole crops viz. cabbage and cauliflower in Sub-Montane and Low Hills Sub-Humid Tropical Zone. Spray Malathion 50 EC @ 1 ml per litre of water at 15 days interval.
- Under low temperature condition, there are chances of incidence of collar rot in apple in Mild Hills Sub Humid Zone. For control, spray Ridomil @ 75g per 20 litres of water.
- Under prevailing low temperature condition, there are chances of attack of woolly apple aphids in apple orchards in Mid Hills Sub-Humid Zone. To control, apply Thiamethoxam (Ektara) 100 g or Carbosulfan (Marshal) 100 ml or Chlorpyrifos (Durmet) @ 200 ml in 100 litres of water.
- **Uttarakhand:**
- As the weather condition is favourable, undertake nursery sowing of chilli varieties like Pusa Sadabahar, Jwala, Pant C-1 etc. in Bhabar and Tarai Zone of Uttarakhand.
- In Humid Sub Tropical Zone of Uttarakhand, apply first dose of Urea equivalent to 30 kg Nitrogen/ha utilising the realised rainfall.
- Foggy weather is conducive for incidence of blight disease in potato in Hill Zone of Uttarakhand. For control, spray Diethane M-45/Radomil @ 20-25 g per 10 litre of water.
- **Punjab, Haryana and Delhi:**
- In Western Zone and Central Plain Zone of Punjab, provide polythene sheet/Sarkanda/Kahi/ rice straw to protect the plants from cold/ frost injury. Dwarf vegetable varieties can be protected from frost injury by covering with 100 gauge thick white plastic bags of 35 x 25 cm size.
- In Undulating Plain Zone of Punjab, apply light irrigation and cover the newly planted plants with thatches for protection from cold and apply light irrigation in mustard in the evening to protect from cold/frost injury. Complete sowing of late sown wheat.
- In Western Semi-arid Zone of Delhi, continue sowing of late varieties of wheat with seed rate of 125 kg seed /ha. Also undertake transplanting of mature seedlings of tomato, cauliflower, cabbage, knolchhol and broccoli crop in the raised bed. Under prevailing dry weather condition, continue harvesting of rice in Western Zone of Haryana. Undertake transplanting of onion, mature seedlings of tomato, cauliflower and cabbage.
- In Western Zone of Haryana, apply light and frequent irrigation to vegetables and young fruit plants to protect from cold and cover the young fruit plants with Bhusa /thatch to protect from cold weather.
- Due to foggy weather, there is chance of incidence of late blight disease on potato and tomato in Western Zone of Punjab. To control spray Indofil-M-45/Kavach/Antracol @500-700g/acre or Blitox@750-1000g/acre using 250-350L of water/acre at weekly interval.
- Incidence of pink stem borer is observed in wheat in South-Western region of Punjab, if the attack reached above ETL then spray Quinalphos 25EC 800ml/acre.
- In Punjab, due to foggy weather, there is chance of incidence of yellow rust in wheat in the form of yellow powder/stripes on the leaves. The susceptible varieties are PBW-343, PBW-502, PBW-550, HPW-184, HPW-42, HS-240, HS-295, HS-420, UP-2328 and WL-711. Farmers are advised to monitor the crop and spray the fungicides Tilt (Propiconazole) 25 EC/folicure (Tebuconazole) 25 EC/Bayletan 25 WP @ 0.1% i.e. 30ml or 30 g per 30 litres of water per kanal with the appearance of the symptoms and repeat the spray after 15 days interval.
- Present weather is favourable for attack of top borer in sugarcane in Eastern Zone of Haryana, apply Carbofuran 3G @13 kg or Phorate 10G @ 8 kg in furrows.
- Due to foggy weather, there is chance of aphids in mustard/rapeseed in Western plain Zone of Punjab, spray 40 g Actara 25 WG or 400 ml of Metasystox 25 EC or Rogor 30 EC or Ekalux 25 EC/Malathion 50 EC or 600 ml Dursban/Coroban 20 EC in 80-125 litres of water/acre.
- **Uttar Pradesh:**
- Undertake nursery sowing of tomato and chilli in Central plain Zone utilising the realised rainfall.
- Undertake top dressing of remaining half dose of nitrogen and urea in wheat utilising the realised rainfall in Bundelkhand Zone. For control of weeds in wheat, apply Sulphuron Methyl 5% WG @ 40 g in 800 litres of water per hectare. Also undertake intercultural operations like weeding and hoeing in gram, pea, rajma, masoor crops. Undertake harvesting of cauliflower, cabbage, tomato, carrot, chilli and brinjal.
- Continue nursery sowing of tomato and chilli in Central Plain Zone. Undertake harvesting of matured toria in Central Plain Zone. For control of weeds in linseed, spray Sulfofuran 75WG @ 33g dissolved in 500-600 litres water, 20-25 days after sowing.
- Continue sowing of sunflower in Western Plain Zone.



- Under prevailing dry weather condition, undertake top dressing of urea in wheat after application light irrigation in wheat in Eastern Plain Zone. Also undertake irrigation in sugarcane, gram, pea, mustard, linseed lentil and rajma. Undertake planting of onion (Pusa red) at a distance of 15x10 cm.
- Foggy weather is conducive for the incidence of blight disease in potato in Central Plain Zone and Eastern Plain Zone. For control, spray Diethane M-45 @ 2.5 g or Macozeb or Blitox 2.2 % @ 2 g per litre of water.
- Under foggy weather condition, there are chances of blight in gram in Central Plain Zone. Spray Zinc Manganese Carbamate @ 2kg per 800 litres of water per hectare.
- Under low temperature condition, there are chances of occurrence of stem rot and leaf blight in tomato in North Eastern Plain Zone. Undertake drenching of Carbendazim 50 WP @ 1 kg per hectare.
- Under foggy weather condition, there are chances of incidence of *Alternaria* blight in mustard in North Eastern Plain Zone. Spray Blitox @ 2.5 kg per hectare. For control of late blight in potato, spray Metatoxyl @ 2 kg per hectare.
- **Rajasthan:**
  - In Semi Arid Eastern Plain Zone of Rajasthan, to protect mustard, rajmash, potato, gram from frost attack, spray dilute Sulphuric acid @ 0.1% (1 litre H<sub>2</sub>SO<sub>4</sub> in 1000 litre water) or Thiourea @ 500 ppm (500 gm Thiourea in 1000 litre water) or give light irrigation to these crops.
  - Undertake weeding and hoeing, irrigation in wheat, barley, mustard and vegetables in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan.
  - Due to cool and humid weather there are chances of thrips and aphids attack in brinjal, tomato and chilli crops, in Flood Prone Eastern Plain Zone of Rajasthan. To control spray Malathion @ 0.1% at 10 days interval.
  - Suitable varieties are given in Annexure II.
- **Animal Husbandry:**
  - As cold day conditions would occur at many places over Punjab, Haryana, Chandigarh & Delhi, west Uttar Pradesh and at a few places over east Uttar Pradesh, keep cattle in cowsheds to protect them from cold. Also give 40-50g mineral mixture with the daily feed. Also make arrangements in poultry houses for protection of birds from cold.

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



*Banana*

*Sugarcane*

*Sorghum*

*Mango*

- **Realised Rainfall:** Rainfall occurred in Akola, Amraoti, Buldhana, Chandrapur, Gadchiroli and Yeotmal districts of Vidarbha and Hingoli district in Marathwada. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period.
- **Weather Warning:** Cold wave conditions would occur at isolated places over Vidarbha on 9<sup>th</sup> and 10<sup>th</sup> January.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
  - **Maharashtra:**
    - As cold wave conditions would occur at isolated places over Vidarbha on 9<sup>th</sup> and 10<sup>th</sup> January, apply light and frequent irrigation in standing crops and apply mulch in orange and sweet lime orchards to protect the plants from cold. Arrange for smoking around the crop fields during night time to protect the crops from cold injury.
    - In Konkan, as dry weather is likely to prevail, apply irrigation, fertilizers and undertake intercultural operations in vegetable crops and mango and cashew orchards. Also apply irrigation in already sown groundnut. Continue transplanting of *rabi* rice and finger millet. Maintain water level 2-3 cm in already transplanted rice and finger millet fields.
    - In north Madhya Maharashtra, as minimum temperature is below 10°C and likely to remain the same, protect grapes from cold injury by applying drip irrigation for half an hour during morning hours. Apply mulch with crop residue. For protection of banana, apply mulch of organic material at base of trunk, apply light and frequent irrigation during evening and cover the trunk with dried leaves. Make arrangement for artificial wind breaks using gunny bags or any other cloth around orchards. No significant rain occurred and dry weather is likely to prevail. Apply light irrigation to vegetables, sugarcane, safflower, *rabi* jowar, gram and pomegranate orchards. Undertake field preparation for planting of *suru* sugarcane. Continue intercultural operations like weeding and apply fertilizers in sugarcane, vegetables and late sown wheat. Continue harvesting already matured red gram.
    - In Marathwada, continue field preparation for planting of *suru* sugarcane. Continue harvesting already matured

red gram.

- In Vidarbha, clean the orchards to avoid further spread of pest and disease due to untimely rain. Continue harvest already matured red gram.
- Rains occurred last week in Marathwada were congenial for infestation of oily spots on pomegranate; spray 1 % Bordeaux mixture.
- Due to partly cloudy weather in South Konkan, there may be attack of thrips on mango inflorescence and peanut sized fruits; spray Spinosad @ 2.5 ml per 10 litres of water on whole tree.

▪ **Gujarat:**

- Under prevailing low temperature conditions, apply light irrigation in wheat, cumin, castor, cotton, vegetable and fruit crops and arrange for smoking around the field in North West Zone.
- As low temperature conditions are likely to continue in North Gujarat Zone, apply light irrigation during evening hours in wheat, cumin, potato, fennel, castor, cotton, vegetable crops and fruit crops mango, citrus, pomegranate and sapota to protect the crop from cold and arrange for smoking around the field. Undertake picking of matured bolls of cotton and harvesting of matured spikes of castor in North Gujarat Zone and North West Zone.
- As mainly dry weather prevailed in South Gujarat Zone, apply irrigation in wheat (flowering stage).
- Low temperatures (9-10 degree C) are likely to prevail in South Saurashtra Zone, apply light irrigation in cotton and carry out weeding in garlic. Apply irrigation in wheat (booting stage) in North Saurashtra Zone.
- As low temperature conditions are likely to continue in South Gujarat Heavy Rainfall Zone apply light irrigation in vegetables during evening hours and arrange for smoking around the field to minimize adverse effect of cold. Carry out weeding and intercultural operations in standing crops. Apply irrigation in wheat (milking stage).
- There is chance of incidence of blast disease in *summer* rice due to low temperatures in South Gujarat Heavy Rainfall Zone; spray the rice nursery with Triazophos 6 gm or Carbendazim 10 gm / 10 litres of water.
- Due to low temperature conditions (10-11 degree C) there are chances of blight incidence in potato in Middle Gujarat Zone; spray Mencozeb 30 gm in 10 litres of water with 20 ml sticker for control of blight.
- Due to humid weather in North Saurashtra Zone infestation of alternaria blight and purple blotch observed which is likely to increase in garlic and onion; increase periods between irrigations, spray 27 gm Mencozeb / 10 litres of water at 10 days interval for control.
- Due to cold and humid weather condition there are chances of outbreak of blight disease in potato, cumin and fennel in North Gujarat Zone and in tomato and cumin in North West Zone; spray Mancozeb 0.2% @ 30 gram plus 20 ml of concentrated desi soap solution in 10 litres of water for control.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- In Gujarat, provide ad lib warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress. Provide balanced diet to the animals and also keep animal sheds clean to prevent the diseases.
- **Poultry**
- As low temperature prevails over North Madhya Maharashtra and Vidarbha, protect poultry birds from cold winds by hanging curtain/clothing from outside the poultry shed. Provide proper heat to small chicks of poultry with the help of electric bulbs.

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

**Annexure I**  
**Week by week Rainfall Distribution**

Sub-Divisions	24.12.14		31.12.14		07.01.15	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>						
Anjaw	**	**	**	**	**	**
Changlang	0.0	-100	0.0	-100	18.5	61
Dibang Valley	**	**	**	**	**	**
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	0.7	-82	0.0	-100	23.3	483
Kurung Kumey	**	**	**	**	**	**
Lohit	0.0	-100	0.0	-100	13.3	194
Lower Dibang Valley	0.0	-100	0.0	-100	0.3	-98
Lower Subansari	**	**	**	**	**	**
Papumpara	0.8	300	0.0	-100	6.0	18

Tawang	1.0	-73	0.0	-100	15.0	206
Tirap	0.0	-100	0.0	-100	0.8	-85
Upper Siang	0.3	-98	0.0	-100	17.8	51
Upper Subansari	2.2	57	0.0	-100	0.1	-94
West Kameng	0.0	-100	0.0	-100	0.4	-92
West Siang	1.0	-84	0.0	-100	0.0	-100
<b>Assam&amp;Meghalaya</b>						
<b>Assam</b>						
Baksa	0.0	-100	0.0	-100	0.0	-100
Barpeta	0.0	-100	0.0	-100	9.5	375
Bongaigaon	0.0	-100	0.0	-100	14.1	370
Cachar	0.0	-100	0.0	-100	3.0	200
Chirang	0.0	-100	0.0	-100	6.8	127
Darrang	0.0	-100	0.0	-100	0.0	-100
Dhemaji	0.0	-100	0.0	-100	0.0	-100
Dhubri	0.1	33	0.0	-100	29.7	2597
Dibrugarh	0.0	-100	0.0	-100	7.0	191
Goalpara	0.0	-100	0.0	-100	0.0	-100
Golghat	0.0	-100	0.0	-100	13.2	527
Hailakandi	0.0	-100	0.0	-100	1.0	-23
Jorhat	0.0	-100	0.0	-100	5.5	60
Kamrup(Rural)	0.0	-100	0.0	-100	13.5	744
Kamrup(Metro)	0.0	-100	0.0	-100	2.0	25
Karbi Anglong	0.0	-100	0.0	-100	19.0	805
Karimganj	0.0	-100	0.0	-100	4.0	67
Kokrajhar	0.6	200	0.0	-100	10.6	524
Lakhimpur	0.0	-100	0.0	-100	4.0	32
Morigaon	0.6	100	0.0	-100	0.6	-54
N.C.Hills	0.0	-100	0.0	-100	13.6	1136
Nowgong	0.3	-52	0.0	-100	2.7	57
Nalbari	0.0	-100	0.0	-100	11.5	64
Sonitpur	0.0	-100	0.0	-100	7.7	140
Sibsagar	0.0	-100	0.0	-100	15.3	993
Tinsukia	0.0	-100	0.0	-100	11.6	382
Udalgiri	0.0	-100	0.0	-100	5.2	247
<b>Meghalaya</b>						
East Garo Hills	0.0	-100	0.0	-100	1.2	-8
East Khasi Hills	0.8	-11	0.0	-100	14.5	1106
Jaintia Hills	0.0	-100	0.0	-100	0.0	-100
Ribhoi	7.0	1650	0.0	-100	16.4	200
South Garo Hills	0.0	-100	0.0	-100	0.0	-100
West Garo Hills	0.0	-100	0.0	-100	29.2	4071
West Khasi Hills	0.0	-100	0.0	-100	0.0	-100
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	0.0	-100	0.0	-100	14.4	3500
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**

Lunglei	0.0	-100	0.0	-100	0.0	-100
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	0.0	-100	6.0	2900
Serchhip	0.0	-100	0.0	-100	0.0	-100
<b>Manipur</b>						
Bishnupur	**	**	**	**	**	**
Chandel	0.0	-100	0.0	-100	0.0	-100
Churachandpur	**	**	**	**	**	**
Imphal east	0.0	-100	0.0	-100	26.0	1030
Imphal west	0.0	-100	0.0	-100	2.1	-34
Senapati	0.0	-100	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**
Thoubal	0.0	-100	0.0	-100	0.0	-100
Ukhrul	**	**	**	**	**	**
<b>Nagaland</b>						
Dimapur	2.4	100	0.0	-100	24.2	200
Kephrere	**	**	0.0	-100	**	**
Kohima	0.6	20	0.0	-100	20.0	900
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paran	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
<b>Tripura</b>						
Dhalai	0.0	-100	0.0	-100	0.0	-100
North Tripura	0.0	-100	0.0	-100	0.0	-100
South Tripura	0.0	-100	0.1	-95	0.1	-83
West Tripura	0.0	-100	0.0	-100	0.0	-100
<b>Himachal Pradesh</b>						
Bilaspur	0.0	-100	0.0	-100	19.2	140
Chamba	0.0	-100	0.0	-100	1.3	-94
Hamirpur	0.0	-100	0.0	-100	17.5	36
Kangra	0.0	-100	0.0	-100	5.3	-62
Kinnaur	0.0	-100	0.0	-100	17.4	-13
Kullu	0.0	-100	0.0	-100	25.0	74
Lahaul and Spiti	2.5	-85	0.0	-100	5.6	-75
Mandi	0.0	-100	0.0	-100	26.1	135
Shimla	0.0	-100	0.0	-100	18.3	68
Sirmaur	0.0	-100	0.0	-100	12.8	67
Solan	0.0	-100	0.0	-100	21.7	114
Una	0.0	-100	0.0	-100	7.0	-10
<b>Punjab</b>						
Amritsar	0.0	-100	0.0	-100	0.3	-94
Barnala	0.0	-100	0.0	-100	0.0	-100
Bhatinda	0.0	-100	0.0	-100	0.0	-100
Faridkot	0.0	-100	0.0	-100	0.0	-100

Fatehgarh Saheb	0.0	-100	0.0	-100	4.3	27
Ferozpur	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	0.0	-100	0.0	-100	0.0	-100
Hoshiarpur	0.0	-100	0.0	-100	0.1	-98
Jalandhar	0.0	-100	0.0	-100	0.0	-100
Kapurthala	0.0	-100	0.0	-100	0.4	-88
Ludhiana	0.0	-100	0.0	-100	2.5	-19
Mansa	0.0	-100	0.0	-100	0.0	-100
Moga	0.0	-100	0.0	-100	0.0	-100
Muktesar	0.0	-100	0.0	-100	0.0	-100
Nawashahar	0.0	-100	0.0	-100	4.5	-9
Patiala	0.0	-100	0.0	-100	2.8	-40
Ropar	0.0	-100	0.0	-100	21.4	167
Sangrur	0.0	-100	0.0	-100	0.0	-100
Mohali	0.0	-100	0.0	-100	13.0	136
TarnTaran	0.0	-100	0.0	-100	0.0	-100
<b>Haryana,Chd,Delhi</b>						
<b>Haryana</b>						
Ambala	0.0	-100	0.0	-100	9.8	48
Bhiwani	0.0	-100	0.0	-100	0.2	-89
Chandigarh	0.0	-100	0.0	-100	16.7	188
Faridabad	0.0	-100	0.0	-100	6.8	134
Fatehabad	0.0	-100	0.0	-100	0.0	-100
Gurgaon	0.0	-100	0.0	-100	4.3	86
Hissar	0.0	-100	0.0	-100	0.3	-82
Jhajar	0.0	-100	0.0	-100	2.9	95
Jind	0.0	-100	0.0	-100	0.9	-85
Katihah	0.0	-100	0.0	-100	2.3	67
Karnal	0.0	-100	0.0	-100	5.7	32
Kurukshetra	0.0	-100	0.0	-100	3.6	-8
Mahendragarh	0.0	-100	0.0	-100	0.8	-48
Mewat	0.0	-100	0.0	-100	7.6	322
Palwal	0.0	-100	0.0	-100	5.4	238
Panchkkula	0.0	-100	0.0	-100	10.1	19
Panipat	0.0	-100	0.0	-100	4.2	4
Rewari	0.0	-100	0.0	-100	0.3	-78
Rohtak	0.0	-100	0.0	-100	3.2	39
Sirsa	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.0	-100	0.0	-100	7.4	237
Yamunanagar	0.0	-100	0.0	-100	9.6	56
<b>Delhi</b>						
Central Delhi	0.0	-100	0.0	-100	11.0	197
East Delhi	0.0	-100	0.0	-100	12.0	224
New Delhi	0.0	-100	0.0	-100	13.1	253
North Delhi	0.0	-100	0.0	-100	12.5	236
North East Delhi	0.0	-100	0.0	-100	3.0	-19
North West Delhi	0.0	-100	0.0	-100	6.3	71
South Delhi	0.0	-100	0.0	-100	10.6	185
South West Delhi	0.0	-100	0.0	-100	10.0	169

West Delhi	0.0	-100	0.0	-100	8.0	116
<b>Jammu &amp; Kashmir</b>						
Anantnag	0.0	-100	0.0	-100	0.0	-100
Badgam	0.0	-100	0.0	-100	0.0	-100
Bandipore	**	**	**	**	**	**
Baramula	0.8	-94	0.0	-100	3.0	-87
Doda	0.0	-100	0.0	-100	0.0	-100
Ganderbal	0.0	-100	0.0	-100	0.0	-100
Jammu	0.0	-100	0.0	-100	0.0	-100
Kargil	**	**	**	**	**	**
Kathua	0.0	-100	0.0	-100	0.0	-100
Kistwar	**	**	**	**	**	**
Kulgam	0.0	-100	0.0	-100	0.0	-100
Kupwara	1.6	-87	0.0	-100	1.5	-91
Ladakh(Leh)	0.0	-100	0.0	-100	0.0	-100
Poonch	0.0	-100	0.0	-100	0.0	-100
Pulwama	0.0	-100	0.0	-100	0.0	-100
Rajouri	0.0	-100	0.0	-100	0.0	-100
Ramban	0.0	-100	0.0	-100	0.0	-100
Reasi	0.0	-100	0.0	-100	0.0	-100
Samba	0.0	-100	0.0	-100	0.0	-100
Shopian	0.0	-100	0.0	-100	0.0	-100
Srinagar	0.0	-100	0.0	-100	0.0	-100
Udhampur	0.0	-100	0.0	-100	0.0	-100
<b>East Madhya Pradesh</b>						
Anuppur	0.0	-100	0.0	-100	15.3	195
Balaghat	0.0	-100	0.0	-100	6.0	-1
Chhatarpur	0.0	-100	0.0	-100	21.3	824
Chindwara	0.0	-100	0.0	-100	26.5	530
Damoh	0.0	-100	0.0	-100	38.7	1234
Dindori	0.0	-100	0.0	-100	13.2	207
Jabalpur	0.0	-100	0.0	-100	36.3	1033
Katni	0.0	-100	0.0	-100	48.1	1452
Mandla	0.0	-100	0.0	-100	5.5	41
Narsingpur	0.0	-100	0.0	-100	39.0	2067
Panna	0.0	-100	0.0	-100	10.1	247
Rewa	0.0	-100	0.0	-100	39.6	2229
Sagar	0.0	-100	0.0	-100	34.2	1165
Satna	0.0	-100	0.0	-100	69.4	1775
Seoni	0.0	-100	0.0	-100	1.5	-56
Shahdol	0.0	-100	0.0	-100	8.0	158
Sidhi	0.0	-100	0.0	-100	38.0	1052
Singrauli	0.0	-100	0.0	-100	25.0	1686
Tikamgarh	0.0	-100	0.0	-100	22.5	582
Umaria	0.0	-100	0.0	-100	34.6	636
<b>West Madhya Pradesh</b>						
Alirajpur	0.0	-100	0.0	-100	0.0	-100
Asoknagar	0.0	-100	0.0	-100	20.6	1044
Badwani	0.0	-100	0.0	-100	5.9	1867

Betul	0.0	-100	0.0	-100	123.7	7634
Bhind	0.0	-100	0.0	-100	4.8	239
Bhopal	0.0	-100	1.0	-17	25.7	2470
Burhanpur	0.0	-100	1.3	-11	41.5	8193
Datia	0.0	-100	0.0	-100	17.2	1623
Dewas	0.0	-100	0.0	-100	70.6	4311
Dhar	0.0	-100	0.0	-100	10.4	1633
Guna	0.0	-100	0.0	-100	35.2	1574
Gwalior	0.0	-100	0.0	-100	2.9	19
Harda	0.0	-100	0.0	-100	29.1	1432
Hosangabad	0.0	-100	0.0	-100	30.5	1425
Indore	0.0	-100	0.0	-100	36.3	2923
Jhabua	0.0	-100	0.0	-100	1.6	33
Khandwa	0.0	-100	0.0	-100	42.1	3411
Khargone	0.0	-100	0.0	-100	20.7	1380
Mandsaur	0.0	-100	0.0	-100	15.3	1430
Morena	0.0	-100	0.0	-100	0.3	-88
Neemuch	0.0	-100	0.0	-100	8.3	421
Raisen	0.0	-100	0.0	-100	39.4	1308
Rajgarh	0.0	-100	0.0	-100	49.9	2672
Ratlam	0.0	-100	0.0	-100	29.1	1519
Sehore	0.0	-100	1.2	33	42.2	4589
Shajapur	0.0	-100	0.0	-100	44.3	1670
Sheopur Kalani	0.0	-100	0.0	-100	0.8	-70
Shivpuri	0.0	-100	0.0	-100	2.5	92
Ujjain	0.0	-100	0.0	-100	33.6	2140
Vidisha	0.0	-100	0.0	-100	23.6	974
<b>Chhattisgarh</b>						
Bastar	0.0	-100	0.0	-100	4.7	213
Bijapur	0.0	-100	0.0	-100	37.0	18400
Bilaspur	0.0	-100	3.8	73	20.6	610
Dantewara	0.0	-100	0.0	-100	**	**
Dhamtari	0.0	-100	0.0	-100	31.8	5200
Durg	0.0	-100	0.0	-100	20.8	1056
Janjgir	0.0	-100	0.0	-100	**	**
Jashpurnagar	0.0	-100	0.0	-100	28.0	775
Kanker	0.0	-100	0.0	-100	**	**
Korba	0.0	-100	0.0	-100	6.0	216
Koriya	0.0	-100	0.0	-100	23.2	829
Kawardha	0.0	-100	0.0	-100	**	**
Mahasumund	0.0	-100	0.0	-100	2.0	186
Narayanpur	0.0	-100	0.0	-100	40.6	200
Raigarh	0.0	-100	0.0	-100	**	**
Raipur	0.0	-100	0.0	-100	14.5	1218
Rajandgaon	0.0	-100	0.0	-100	12.1	998
Surguja	0.0	-100	0.0	-100	4.1	17
<b>East Uttar Pradesh</b>						
Allahabad	0.0	-100	0.0	-100	37.2	3000
Ambedkar Nagar	0.0	-100	0.0	-100	16.0	662

Azamgarh	0.0	-100	0.0	-100	0.0	-100
Bahraich	0.0	-100	0.0	-100	46.2	1026
Ballia	0.0	-100	0.0	-100	2.7	91
Balrampur	0.0	-100	0.0	-100	48.5	2105
Banda	0.0	-100	0.0	-100	4.9	185
Barabanki	0.0	-100	0.0	-100	17.6	633
Basti	0.0	-100	0.0	-100	12.6	425
Chandauli	0.0	-100	0.0	-100	7.5	317
Deoria	0.0	-100	0.0	-100	8.5	325
Faizabad	0.0	-100	0.0	-100	17.0	530
Farrukhabad	0.0	-100	0.0	-100	5.0	175
Fatehpur	0.0	-100	0.0	-100	3.0	57
Gazipur	0.0	-100	0.0	-100	12.9	396
Gonda	0.0	-100	0.0	-100	20.6	1044
Gorakhpur	0.0	-100	0.0	-100	17.2	514
Hardoi	0.0	-100	0.0	-100	10.5	451
Jaunpur	0.0	-100	0.0	-100	9.7	306
Kannauj	0.0	-100	0.0	-100	3.5	75
Kanpur City	0.0	-100	0.0	-100	13.7	496
Kanpur Dehat	0.0	-100	0.0	-100	8.7	410
Kaushambi	0.0	-100	0.0	-100	13.8	822
Kheri	0.0	-100	0.0	-100	17.6	310
Kushi nagar	0.0	-100	0.0	-100	10.2	467
Lucknow	0.0	-100	0.0	-100	9.1	203
Maharajganj	0.0	-100	0.0	-100	14.5	458
Mau	0.0	-100	0.0	-100	6.0	131
Mirzapur	0.0	-100	0.0	-100	34.5	1817
Pratapgarh	0.0	-100	0.0	-100	28.3	1317
RaiBareilly	0.0	-100	0.0	-100	6.2	289
Sahuji Maharajnagar	0.0	-100	0.0	-100	14.7	1028
Sant Kabirnagar	0.0	-100	0.0	-100	13.0	550
Sant Ravidas Nagar	0.0	-100	0.0	-100	16.0	789
Shrawasti	**	**	**	**	**	**
Sidharthnagar	0.0	-100	0.0	-100	9.3	387
Sitapur	0.0	-100	0.0	-100	10.9	337
Sonbhadra	0.0	-100	0.0	-100	27.4	2183
Sultanpur	0.0	-100	0.0	-100	14.7	674
Unnao	0.0	-100	0.0	-100	10.3	503
Varanasi	0.0	-100	0.0	-100	18.3	769
<b>West Uttar Pradesh</b>						
Agra	0.0	-100	0.0	-100	3.4	34
Aligarh	0.0	-100	0.0	-100	14.0	637
Auraiya	0.0	-100	0.0	-100	1.5	15
Badaun	0.0	-100	0.0	-100	15.6	643
Baghpat	0.0	-100	0.0	-100	7.9	204
Bareilly	0.0	-100	0.0	-100	18.3	453
Bijnor	0.0	-100	0.0	-100	17.8	305
Bulandsahar	0.0	-100	0.0	-100	3.5	30
Etah	0.0	-100	0.0	-100	10.1	533



Etawah	0.0	-100	0.0	-100	0.3	-76
Firozabad	0.0	-100	0.0	-100	3.2	32
GBNagar	0.0	-100	0.0	-100	13.0	348
Ghaziabad	0.0	-100	0.0	-100	11.3	277
Hamirpur	0.0	-100	0.0	-100	8.3	658
Jalaun	0.0	-100	0.0	-100	17.4	990
Jhansi	0.0	-100	0.0	-100	21.5	1244
Jotiba Phule Nagar	0.0	-100	0.0	-100	0.7	-83
Kanshiramnagar	0.0	-100	0.0	-100	12.0	362
Lalitpur	0.0	-100	0.0	-100	19.7	883
Mahamaya Nagar	0.0	-100	0.0	-100	8.2	356
Mahoba	0.0	-100	0.0	-100	3.9	129
Mainpuri	0.0	-100	0.0	-100	2.0	-5
Mathura	0.0	-100	0.0	-100	1.0	-29
Meerut	0.0	-100	0.0	-100	13.6	386
Moradabad	0.0	-100	0.0	-100	18.9	601
Muzzaffarnagar	0.0	-100	0.0	-100	11.6	241
Pilibhit	0.0	-100	0.0	-100	13.9	223
Rampur	0.0	-100	0.0	-100	17.8	324
Saharanpur	0.0	-100	0.0	-100	11.0	134
Shahjahanpur	0.0	-100	0.0	-100	15.4	451
<b>Uttarakhand</b>						
Almora	0.0	-100	0.0	-100	29.8	173
Bageshwar	0.0	-100	0.0	-100	42.0	285
Chamoli	0.0	-100	0.0	-100	63.6	584
Champawat	0.0	-100	0.0	-100	67.5	777
Dehradun	0.0	-100	0.0	-100	15.8	123
Garhwal Pauri	0.0	-100	0.0	-100	22.0	168
Garhwal Tehri	0.0	-100	0.0	-100	37.6	323
Haridwar	0.0	-100	0.0	-100	17.8	279
Nainital	0.0	-100	0.0	-100	72.9	701
Pithorgarh	0.0	-100	0.0	-100	64.9	613
Rudraprayag	0.0	-100	0.0	-100	49.4	134
Udham Sing Nagar	0.0	-100	0.0	-100	24.5	390
Uttarkashi	0.0	-100	0.0	-100	16.3	38
<b>Bihar</b>						
Araria	0.0	-100	0.0	-100	13.0	1344
Arwal	0.0	-100	0.0	-100	4.4	18
Aurangabad	0.0	-100	0.0	-100	3.8	-6
Banka	**	**	**	**	27.8	2427
Begusarai	0.0	-100	0.0	-100	8.7	524
Bhabua	0.0	-100	0.0	-100	12.4	417
Bhagalpur	0.0	-100	0.0	-100	23.6	1869
Bhojpur	0.0	-100	0.0	-100	2.1	62
Buxar	**	**	**	**	**	**
Darbhanga	0.0	-100	0.0	-100	9.1	214
East Champaran	0.0	-100	0.0	-100	4.7	122
Gaya	0.0	-100	0.0	-100	12.7	694
Gopalganj	0.0	-100	0.0	-100	5.5	150

Jahanabad	0.0	-100	0.0	-100	4.9	73
Jamui	0.0	-100	0.0	-100	0.0	-100
Kathihar	0.0	-100	0.0	-100	44.0	1900
Khagadia	0.0	-100	0.0	-100	11.1	1747
Kishanganj	0.0	-100	0.0	-100	10.6	5200
Lakhisarai	0.0	-100	0.0	-100	2.7	48
Madhepura	0.0	-100	0.0	-100	12.1	709
Madhubani	**	**	0.0	-100	25.6	967
Monghyar	0.0	-100	**	**	8.4	367
Muzaffarpur	0.0	-100	0.0	-100	7.0	233
Nalanda	0.0	-100	0.0	-100	7.9	367
Nawada	0.0	-100	0.0	-100	0.0	-100
Patna	0.0	-100	0.0	-100	4.9	206
Purnea	0.0	-100	0.0	-100	8.4	1580
Rohtas	0.0	-100	0.0	-100	4.9	133
Saharsha	0.0	-100	0.0	-100	12.0	200
Samstipur	0.0	-100	0.0	-100	8.4	301
Saran	0.0	-100	0.0	-100	5.2	102
Sheikpura	0.0	-100	0.0	-100	2.6	100
Sheohar	0.0	-100	0.0	-100	14.8	771
Sitamarhi	0.0	-100	0.0	-100	4.7	176
Siwan	0.0	-100	0.0	-100	6.2	285
Supaul	0.0	-100	0.0	-100	12.2	483
Vaishali	0.0	-100	0.0	-100	5.7	146
West Champaran	0.0	-100	0.0	-100	6.4	119
<b>Jharkhand</b>						
Bokaro	0.0	-100	0.0	-100	8.7	384
Chatra	0.0	-100	0.0	-100	0.0	-100
Deoghar	0.0	-100	0.0	-100	6.6	555
Dhanbad	0.0	-100	0.0	-100	11.7	737
Dumka	0.0	-100	0.0	-100	0.0	-100
East Singbhum	0.0	-100	0.0	-100	6.4	276
Garhwa	0.0	-100	0.0	-100	0.0	-100
Giridih	0.0	-100	0.0	-100	7.4	291
Godda	0.0	-100	0.0	-100	0.0	-100
Gumla	0.0	-100	0.0	-100	0.0	-100
Hazaribagh	0.0	-100	0.0	-100	4.9	224
Jamtara	0.0	-100	0.0	-100	16.4	811
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderna	0.0	-100	0.0	-100	2.3	35
Latehar	0.0	-100	0.0	-100	0.0	-100
Lohardagga	0.0	-100	0.0	-100	18.8	717
Pakur	0.0	-100	0.0	-100	13.0	900
Palamau	0.0	-100	0.0	-100	10.5	954
Ramgarh	0.0	-100	0.0	-100	9.8	1300
Ranchi	0.0	-100	0.0	-100	22.8	713
Sahebganj	0.0	-100	0.0	-100	2.0	100
Saraikela	0.0	-100	0.0	-100	6.4	256
Simdega	0.0	-100	0.0	-100	0.0	-100

West Singbhum	0.0	-100	0.0	-100	10.6	563
<b>East Rajasthan</b>						
Ajmer	0.0	-100	0.0	-100	0.0	-98
Alwar	0.0	-100	0.0	-100	0.1	-91
Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	0.0	-100	0.0	-100
Bharatpur	0.0	-100	0.0	-100	2.5	127
Bhilwara	0.0	-100	0.0	-100	0.0	-100
Bundi	0.0	-100	0.0	-100	0.3	-70
Chittorgarh	0.0	-100	0.0	-100	0.0	-100
Dausa	0.0	-100	0.0	-100	0.0	-100
Dholpur	0.0	-100	0.0	-100	0.0	-100
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.0	-100	0.0	-100	0.1	-89
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	0.0	-100	0.0	-100
Karauli	0.0	-100	0.0	-100	0.0	-100
Kota	0.0	-100	0.0	-100	0.8	-15
Pratapgarh	0.0	-100	0.0	-100	0.0	-100
Rajsamand	0.0	-100	0.0	-100	0.0	-100
Sawai Madhopur	0.0	-100	0.0	-100	0.0	-100
Sikar	0.0	-100	0.0	-100	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-100	0.0	-100	0.1	-95
Udaipur	0.0	-100	0.0	-100	0.3	-64
<b>West Rajasthan</b>						
Barmer	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100
Churu	0.0	-100	0.0	-100	0.2	-80
Hanumangarh	0.0	-100	0.0	-100	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.0	-100
Nagaur	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-100	0.0	-100
<b>Gujarat Region</b>						
Ahmedabad	0.0	-100	0.0	-100	0.4	46
Anand	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	1.2	491
DNH	**	**	**	**	0.0	-100
Dahod	0.0	-100	0.0	-100	1.4	175
Daman	**	**	**	**	0.0	-100
Dangs	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	12.8	6300
Kheda	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100

Narmada	0.0	-100	0.0	-100	3.5	3400
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	0.0	-100	0.0	-100	0.0	-100
Surat	0.0	-100	0.0	-100	0.0	-100
Tapi	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100
<b>S K &amp; Diu region</b>						
Amreli	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-100	0.0	-100	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.1	-17
<b>Maharashtra</b>						
<b>Konkan &amp; Goa</b>						
Mumbai City	0.0	-100	0.0	-100	0.0	-100
Mumbai Suburban	0.0	-100	0.0	-100	0.0	-100
North Goa	0.0	-100	0.0	-100	0.0	-100
Raigad	0.0	-100	0.0	-100	0.0	-100
Ratnagiri	0.0	-100	0.0	-100	7.5	200
Sindhudurg	0.0	-100	0.0	-100	0.0	-100
South Goa	0.0	-100	0.0	-100	6.9	2183
Thane	0.0	-100	0.0	-100	0.0	-100
<b>Madhya Maharashtra</b>						
Ahmednagar	0.0	-100	0.0	-100	0.5	433
Dhule	**	**	0.0	-100	**	**
Jalgaon	0.0	-100	**	**	0.0	-100
Kolhapur	0.0	-100	0.0	-100	0.2	-33
Nandurbar	**	**	0.0	-100	**	**
Nasik	0.0	-100	0.0	-100	0.9	200
Pune	0.0	-100	0.0	-100	0.0	-100
Sangli	0.0	-100	0.1	-56	8.6	8500
Satara	0.0	-100	0.0	-100	0.0	-100
Solapur	0.0	-100	0.0	-100	0.0	-100
<b>Marathwada</b>						
Aurangabad	0.0	-100	1.0	9	7.7	200
Beed	**	**	0.0	-100	5.2	200
Hingoli	**	**	0.0	-100	20.0	2403
Jalna	**	**	0.0	-100	16.0	3893
Latur	0.0	-100	0.0	-100	4.7	492
Nanded	0.0	-100	0.0	-100	11.1	1489
Usmanabad	0.0	-100	0.0	-100	8.2	2638
Parbhani	0.0	-100	0.0	-100	8.3	1963
<b>Vidarbha</b>						

Akola	0.0	-100	0.0	-100	43.3	2995
Amraoti	0.0	-100	0.4	-76	50.0	2076
Bhandara	0.0	-100	0.0	-100	10.9	180
Buldhana	0.0	-100	0.1	-90	25.0	4891
Chandrapur	0.0	-100	0.0	-100	35.5	1874
Gadchiroli	0.0	-100	0.0	-100	28.3	2471
Gondia	0.0	-100	0.0	-100	15.3	428
Nagpur	0.0	-100	0.0	-100	7.8	144
Wardha	0.0	-100	0.0	-100	13.8	667
Washim	0.0	-100	0.0	-100	14.2	916
Yeotmal	0.0	-100	0.0	-100	22.3	3622
<b>Odisha</b>						
Angul	0.0	-100	0.1	-95	8.4	367
Balasore	0.0	-100	0.0	-99	32.3	1015
Bargarh	0.0	-100	0.1	-91	0.3	-74
Bhadrak	0.0	-100	0.4	-47	22.8	685
Bolangir	0.0	-100	0.0	-100	16.5	684
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.0	-100	0.0	-100	18.9	330
Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.1	-97	11.4	568
Gajapati	0.0	-100	3.9	556	13.1	338
Ganjam	0.0	-100	3.8	248	42.8	944
Jagatsingpur	0.0	-100	1.3	229	37.6	916
Jajpur	0.0	-100	0.0	-100	16.3	225
Jharsuguda	0.0	-100	1.1	-56	13.2	371
Kalahandi	0.0	-100	0.0	-100	16.5	1963
Kandhamal	0.0	-100	4.0	233	21.4	724
Kendrapara	0.0	-100	1.4	75	44.2	1423
Keonjhar	0.0	-100	0.3	-71	11.7	351
Khurda	0.0	-100	0.1	-94	16.8	498
Koraput	0.0	-100	5.8	1817	3.7	115
Malkangiri	0.0	-100	0.0	-100	3.0	900
Mayurbhanj	0.0	-100	0.3	-78	21.6	1445
Nawapara	0.0	-100	0.0	-100	0.2	-89
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	0.0	-100	38.6	1187
Puri	0.0	-100	3.9	330	66.3	860
Rayagada	0.0	-100	1.2	7	6.0	142
Sambalpur	0.0	-100	1.5	17	5.8	109
Sonepur	0.0	-100	0.0	-100	1.2	-35
Sundargarh	0.0	-100	0.2	-86	10.7	295
<b>West Bengal &amp; Andaman Nicobar Islands</b>						
<b>A &amp; N ISLAND</b>						
Nicobar	72.5	43	100.5	149	8.3	-72
North & Middle Andaman	3.1	-69	16.3	-15	0.0	-100
South Andaman	15.5	20	6.8	-70	3.6	-73
<b>GWB</b>						
Bankura	0.0	-100	0.0	-100	15.7	461

Birbhum	0.0	-100	0.0	-100	8.4	322
Burdwan	0.0	-100	0.0	-100	12.5	637
East Midnapore	0.0	-100	0.0	-100	10.5	208
Hooghly	0.0	-100	0.0	-100	8.7	181
Howrah	0.0	-100	1.9	-29	4.9	444
Kolkata	0.0	-100	0.1	-98	1.6	14
Murshidabad	0.0	-100	0.0	-100	1.0	11
Nadia	0.0	-100	0.0	-100	5.5	82
24 Pargana (N)	0.0	-100	1.9	-23	18.6	388
Purulia	0.0	-100	0.0	-100	24.4	1527
24 Pargana (S)	0.0	-100	0.8	-79	5.7	128
West Midnapore	0.0	-100	0.0	-98	10.3	346
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	0.0	-100	0.0	-100	17.0	1314
Darjeeling	0.0	-100	0.0	-100	3.6	-38
East Sikkim	0.0	-100	0.7	-88	3.0	-8
Jalpaiguri	0.0	-100	0.0	-100	10.7	569
Malda	0.0	-100	0.0	-100	4.3	153
North Dinajpur	0.0	-100	0.0	-100	7.0	483
North Sikkim	0.0	-100	0.0	-100	6.9	-42
South Dinajpur	0.0	-100	0.0	-100	0.7	-58
South Sikkim	0.0	-100	0.0	-100	1.1	-68
West Sikkim	0.0	-100	0.0	-100	0.7	-94
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshin Kannada	0.0	-100	0.0	-100	1.6	215
Udupi	0.0	-100	0.0	-100	0.6	500
Uttar Kannada	0.0	-100	0.0	-100	1.8	820
<b>NI Karnataka</b>						
Bagalkote	0.0	-100	0.0	-100	0.3	186
Belgaum	0.0	-100	0.1	-56	0.5	389
Bidar	0.0	-100	0.0	-100	8.4	832
Bijapur	0.0	-100	0.0	-100	1.6	423
Dharwad	0.0	-100	0.0	-100	0.1	-95
Gadag	0.0	-100	0.0	-100	0.2	20
Gulbarga	0.0	-100	0.0	-100	5.6	5484
Haveri	0.0	-100	0.0	-100	0.0	-100
Koppal	0.0	-100	0.0	-100	0.5	409
Raichur	0.0	-100	0.0	-100	2.8	2717
Yadgir	0.0	-100	0.0	-100	8.0	200
<b>SI Karnataka</b>						
Bangalore Rural	2.7	196	0.0	-100	19.0	3707
Bangalore Urban	0.5	-74	0.0	-100	7.7	1191
Bellary	0.0	-100	0.0	-100	0.7	568
Chamarajnagar	0.0	-100	0.0	-100	0.3	-18
Chichballapur	0.7	-42	0.0	-100	6.2	935
Chickmagalur	0.0	-100	1.0	-46	0.0	-90
Chitradurga	0.0*	-89	0.0	-100	0.5	138
Davangere	0.0	-100	0.0	-100	0.8	650

Hassan	0.0	-100	0.0	-100	0.0	-100
Kodagu	0.0	-100	0.9	-49	0.2	-78
Kolar	0.0*	-98	0.0	-100	7.2	694
Mandya	0.1	-85	0.0*	-98	0.0	-100
Mysore	0.0	-100	0.6	-58	0.0	-100
Ramnagara	0.0	-100	0.0	-100	1.5	200
Shimoga	0.0	-100	0.0	-100	0.2	-7
Tumkur	0.0	-100	0.0	-100	0.6	56
<b>Kerala</b>						
Alappuzha	3.1	-45	2.6	-62	1.2	-74
Kannur	0.0	-100	0.0	-100	0.0	-100
Ernakulam	0.1	-99	2.7	-24	2.4	-25
Idukki	7.4	16	7.7	40	0.2	-93
Kasaragod	0.0	-100	0.0	-100	0.9	200
Kollam	3.8	-51	9.9	3	6.3	44
Kottayam	13.1	104	6.1	-4	3.0	-16
Kozhikode	0.0	-100	0.0	-100	0.0	-100
Malappuram	0.0	-100	0.0	-100	0.0	-100
Palakkad	0.0	-100	0.6	-77	0.0	-100
Pathanamthitta	0.0	-100	3.5	-59	0.0	-100
Thiruvananthapuram	6.1	-48	10.1	17	9.0	120
Thrissur	0.0	-100	2.7	-20	0.9	-43
Wayanad	0.0	-100	0.0	-100	0.0	-100
<b>Tamil Nadu</b>						
Ariyalur	29.7	0	7.0	-49	0.5	-93
Chennai	0.1	-99	105.2	354	10.8	151
Coimbatore	1.1	-76	9.8	103	0.0	-100
Cuddalore	41.7	45	23.1	23	6.9	-19
Dharmapuri	1.6	-69	1.0	-73	25.5	722
Dindigul	17.0	11	1.9	-85	32.6	493
Erode	0.0	-100	0.1	-97	1.2	-9
Kanchipuram	1.0	-93	59.0	334	0.7	-79
Kanyakumari	13.3	7	12.9	63	3.4	-9
Karikal	61.9	-8	46.7	-4	0.7	-96
Karur	8.9	1	3.1	-48	18.2	691
Krishnagiri	0.0	-100	0.0	-100	6.5	180
Madurai	8.8	-21	5.4	-43	11.9	133
Nagapattinam	63.6	16	59.6	48	10.2	-38
Namakkal	0.5	-90	0.6	-79	24.5	1065
Nilgiris	4.2	-48	5.7	-52	0.0	-100
Perambalur	22.7	42	3.0	-66	20.3	516
Puducherry	24.7	-37	4.5	-80	19.0	84
Pudukottai	46.4	167	4.1	-70	2.9	-53
Ramanathapuram	51.9	116	7.9	-58	1.0	-91
Salem	1.3	-81	0.8	-80	17.5	662
Sivaganga	40.6	147	0.9	-94	17.1	216
Thanjavur	63.9	149	16.8	-9	0.8	-88
Theni	7.0	-7	3.2	-49	4.3	2
Tirunelveli	25.9	33	12.7	-27	4.2	-53

Tirupur	1.7	-76	8.1	64	9.2	254
Tiruvallur	2.1	-86	45.3	421	0.7	-80
Tiruvannamalai	0.2	-98	2.4	-70	0.0	-100
Tiruvarur	89.2	141	33.3	9	0.0	-100
Toothukudi	13.5	-20	14.1	0	2.4	-48
Trichy	17.9	30	4.8	-47	9.1	121
Vellore	0.2	-97	1.7	-65	1.3	-31
Villupuram	2.9	-82	7.1	-45	2.0	-62
Virudhunagar	6.0	-39	5.8	-44	2.5	-36
<b>Andhra Pradesh</b>						
<b>Coastal Andhra Pradesh</b>						
East Godavari	0.0	-100	4.6	365	0.1	-97
Guntur	0.0	-100	0.8	-22	1.3	-34
Krishna	0.2	113	9.4	1077	5.9	324
Nellore	5.0	-61	2.3	-74	0.3	-89
Prakasam	0.5	7	0.0	-100	0.6	-75
Sirkakulam	0.0	-100	7.9	881	6.5	102
Visakhapatnam	0.0	-100	13.2	1544	1.4	-59
Vizianagram	0.0	-100	1.0	25	2.4	-29
West Godavari	0.0	-100	1.4	-22	0.6	-68
<b>Rayalaseema</b>						
Anantapur	0.0	-100	0.0	-100	0.0	-100
Chittoor	3.9	-45	2.9	-44	0.8	-59
Cuddapah	0.0	-100	0.0	-100	3.6	507
Kurnool	0.0	-100	0.0	-100	1.3	1221
<b>Telangana</b>						
Adilabad	0.0	-100	0.0	-100	36.4	5974
Hyderabad	0.0	-100	0.0	-100	0.1	-75
Karimnagar	0.0	-100	0.0	-100	31.9	2027
Khammam	0.0	-100	0.0	-100	1.9	55
Mehabubnagar	0.0	-100	0.0	-100	3.9	3803
Medak	0.0	-100	0.0	-100	8.5	1595
Nalgonda	0.0	-100	0.0	-100	0.0	-100
Nizamabad	0.0	-100	0.0	-100	15.1	3664
Rangareddy	0.0	-100	0.0	-100	7.1	1664
Warangal	0.0	-100	0.0	-100	6.2	340

### Legends

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



## **Annexure II**

### **List of varieties**

#### **Karnataka**

**Sunflower:** Mordern, K.B.S.H-1, 41,42 and 44  
**Maize:** Ganga-11, Deccan -103, N.A.C-6002 & 6004, Nityashree  
**Groundnut:** ICGS-11, K-134, Chintamani-2 (KCH-2)  
**Ragi:** Indaf-5, GPU-26 and 48

#### **Tamil Nadu**

**Pulses:** ADT 3 black gram and ADT 3 green gram

#### **Assam**

**Boro rice:** Mahsuri, IR-50, Dinanath, Bishnuprasad, Jyotiprasad, Kanaklata and Dinanath, Boro-1, -2, -3, Kalinga-3, Joymati, Dinanath, Swarnav.

#### **Meghalaya**

**Pigeon pea:** short duration: UPAS-120, ICPL 87. long duration WB 20, Pusa 9 & Sarita.  
**Cabbage:** H-139, Pride of India  
**Cauliflower:** Meghalaya Local  
**Carrot:** New Karoda, Nantesh  
**Radish:** Local genotype  
**Broccoli:** Puspa, Aiswarya  
**French bean:** Naga Local  
**Pea:** Arkel (for vegetables), TRC P8, TRC P9, Prakash, Rachna.  
**Potato:** Kufri Joyti, Kufri Megha, Kufri Giriraj, Kufri Girdhari, Kufri Himsona, Kufri Himalini.  
**Pea:** Arkel (for vegetables), TRC P8, TRC P9, Prakash, Rachna.

#### **Tripura**

**Tomato:** Trishul, Allrounder, T- 1408, T- 1458, Anup.  
**Cauliflower:** CFL- 4048, Pusa early synthetic, Kamaya, Suhasi.  
**Cabbage:** BC- 76, Pusa Drum Head, Pusa Synthetic.  
**Broccoli:** Everest, Ayeshwaria.

#### **Odisha**

**Sesame:** Kanak, Kalika, Uma, Usha, Tilotama, Nilima, Prachi  
**Greengram:** K-851, PDM-11, PDM-54, OUM-11-5  
**Blackgram:** T-9, Pant U-11, Pant U-19, Pant U-30  
**Cowpea:** SEB-2, Pusa Barsati Niger: Deomali, Niger-1 and for Okra: Utkal Gourav.  
**Sunflower:** Morden, Sunrise, Surya and Hybrid varieties like KBSH-1, KBSH-3 and MSFH.  
**Groundnut:** Smruti, TAG-27, TAG – 24 and JL-24  
**Rainfed Mustard:** Parbhathi, Anuradha, TS-29 & M-27.  
**Onion:** Nasik Red, Patna Red, Pune Red, Bellary Red, Pusa Ratnar, Pusa Madhavi, Arka Niketan ,Arka Pragati  
**Sesame:** Vinayak, Kanak, Kalika, Prachi, Nirmala, Usha and Uma

#### **West Bengal**

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

#### **Bihar**

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

#### **Jharkhand:**

**Summer Rice:** IR-36, IR-64, Naveen, lalat, Parijat (80-85 days).

#### **Madhya Pradesh**

**Gram:** JG-130, JG-11, JG-315, JG-16  
**Wheat:** Sujata, HW-2004, HI-1500  
**Winter Sugarcane:** KJN 86-572, KJN 86-141  
**Green Pea:** Arkel, PSM-3, Jawahar Pea 1, Jawahar Pea 2  
**Chickpea:** J.G-11, J.G-74

#### **Chhattisgarh**

**Gram:** JG-16, JG-11, JG-74, Vaibhav  
**Linseed:** RLC-92, Indira-32  
**Wheat:** GW-273, Lok-1  
**Mustard:** Pusa Bold

### **Jammu & Kashmir**

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

Ghobi sarson : GSL-1,GSL-2,DGS-1

Toria: RSPT-1 and local toria

Wheat: VL-738 and PBW-175 ,VL-738, VL-804, HS-240, HD-1553, HS-277, HS-240, VL- 616 & SKW-196, VL-829, PBW-175 , VL- 892, VL-738, VL-804, HS-507, VL-829 & VL-892, VL – 907, HS-240 & PBW-154.

Onion: Agrifound Parvati, Pusa red, N-53.

### **Uttarakhand**

**Wheat:** UP-2572, UP-2584, UP-1109, VL-802, VL-804, VL-738, VL-421, HS-240.VL-616, HS-277, VL-829, VL-738(mandri), HS-277 etc.

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

**Potato:** Kufri- Jyoti, Ashok, Anand

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

**Onion:** VL-3.

**Lentil:** T 36, BL 406, Sihore 74-7 and K 75.

**Barley:** RD 2035, RD 2052, RD 2503, RD 2668,

### **Himachal Pradesh**

**Wheat:** HPW-155, HPW-89, HPW-147, HPW-236, HPW-211 in low and mid hill and HPW-155, HPW-236, HPW-42 in high hill

**Peas:** Linchon, bonvilay, Azad pea-1 & P-89

**Late variety of Cauliflower:** broccoli

**Cauliflower:** Pusa-snowwall

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

**Turnip:** PTWG-1

**Carrot:** Pusa kesar

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

### **East Uttar Pradesh**

**Wheat:** Narendra-1012, HD-2824, 2733, HP-1731, UP-2382, PWD-343, CVW-38, DBW-39, UO-2382, HUW-510

**Wheat (Late varieties):** Malaveey-234, HP-1633, H-1744, Narendra-1014, UP-2425

**Onion:** Pusa red, Kalynpur red, light red

**Gram:** T-3, Radhe, K-850, Pant, Kabuli

**Gram(late varieties):** Pusa-372, Pant G-108

**Cabbage:** Imprabad Japani, Pusa chipali and Pusa kartiki

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

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

**Potato:** Kuferi - Chandramukhi, Bahar

**Mustard:** Basati, Maya, Kanti, Urvashi, Narendra, Swarna-8, Narendra Ageti-4, Varuna, Rohini, Kranti, Krishna, Varadan, Vaibhav, Narendra-8501

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

**Matar:** T-163, Rachana, Malaveey Matar-2

**Lentil:** T-8, Pant L-406, 234

### **West Uttar Pradesh:**

**Wheat(non-irrigated):** K-9644, Maghar(K-8027), Mandakini(K-9351), Indra(K-8962), Gomati(K-9465), HDR-77, HD-2888

**Wheat(Irrigated):** K-307, DBW-17, PBW-343,502,550, GW-366, K-1006, 607,402, DVW-39

KRL-210, 213, 19, K-8434(Prasad), NW-1067

**Toria:** Sangam, TL-17, 67

**Peas:** Azad P-3, Arkel

**Linseed:** Sharada, Mau Azad, Shweta, Padmini, Ruchi, Parvati, Rashmi

**Gram:** Avarodhi, Pusa-256, KWR-108, DCP-92-3, KDG-1168, Radhe, JG-16,

**Bengal gram:** HK-94-134, JGK-1, Ujjwal, Shubhra

**Matar:** Rachana, Malveey -15, Sapana-KPMR-144, Jay-KPMR-522, Indra-KPMR-400, Vikas-IPFD 99-13, Prakash

**Lentil:** Narendra-1, DPL-62, Pant-5, L-4076, K-75, HUL-57, Shekhar-3,2, IPL-81

**Rajma:** PDR-14, Malveey-137, BL-63, Utkarsh, Ambar

**Sunflower:** No.1, PAC- 302, SH-322

### **Rajasthan**

**Mustard:** Pusa Jai Kisan (115-120 days), P.R-15 (125-130 days), Pusa bold (130-135 days), R.H. 30 and R.H. 9304 (130-135 day)

**Wheat:** HI-8381, 8498, 1544 GW-273, Raj-3077, 4037, DL-803-3, GW-322, 190, 366

**Linseed:** RL-6, RDB-1, RD-31,387, 2552, 2035, 103, BL-2

**Gram:** BG-256, Phuleji-5, RSG-44, Samrat, Pratap-1, GNG-469,149,663, Kabuli-2

**Maharashtra**

**Madhya Maharashtra**

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

**Safflower:** Bhima or Phule Kusuma

**Marathwada**

**Jowar:** Parbhani Moti or Parbhani Jyoti.

**Gujarat**

**Watermelon:** Sugar bebi, Ashahi pameto, Madhu, Jyoti, Pusa Bedana (Seedless).