

National Agromet Advisory Service Bulletin

Friday 2nd January 2015
(For the period 2nd to 6th January 2015)



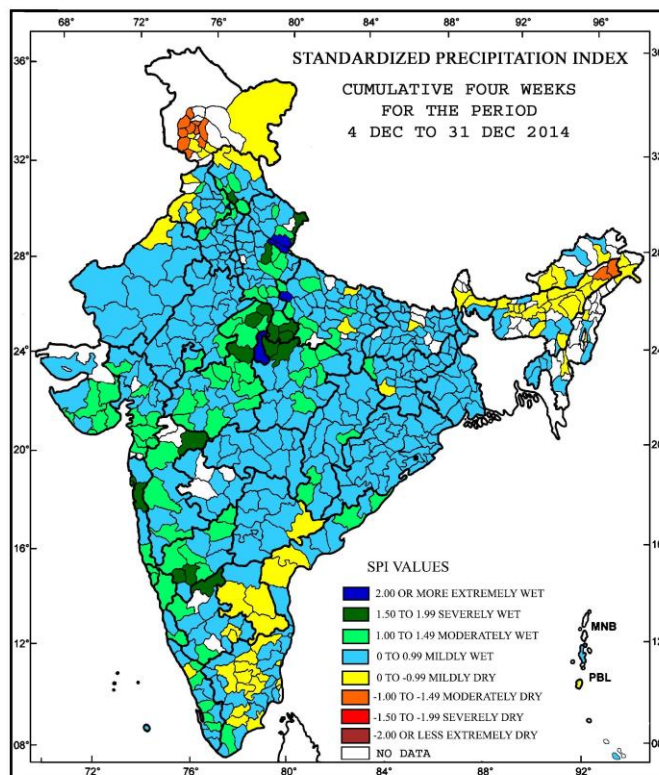
Issued by

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



Standardised Precipitation Index
Four Weekly
for the Period 4th to 31st December 2014

MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE

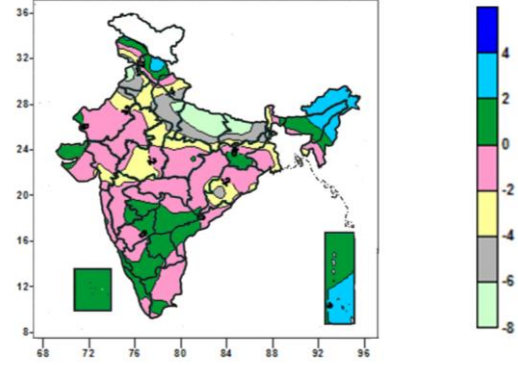
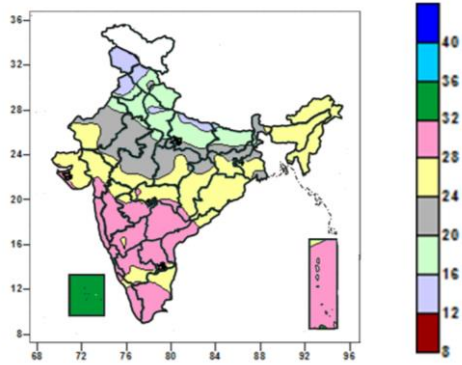


- Extremely/severely wet conditions in few districts of Uttarakhand; Kannauj, Hamirpur, Jhansi, Lalitpur, Moradabad, Mahoba districts of Uttar Pradesh; Chandigarh district of Haryana; Solan district of Himachal Pradesh; Bhind, Ashoknagar, Gwalior, Chhatarpur, Tikamgarh districts of Madhya Pradesh; Raigad, Mumbai City, Mumbai Suburban and Jalgaon districts of Maharashtra; Dharwad, Gadag, Bellary district of Karnataka.
- Extremely/ moderately/ severely dry conditions experienced in many places of Jammu & Kashmir; Dibrugarh and Tinsukia districts of Assam.
- 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 31.12.2014

Actual Mean Maximum Temperature (°C) in India for the week ending 31.12.2014

Mean Maximum Temperature (°C) Anomaly in India for the week ending 31.12.2014

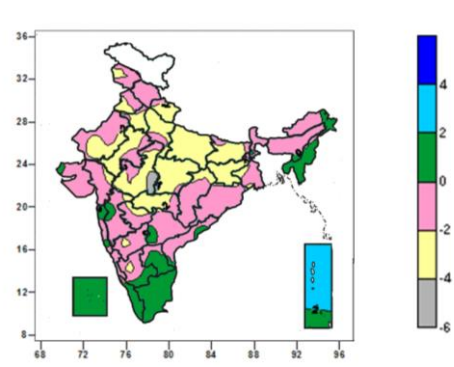
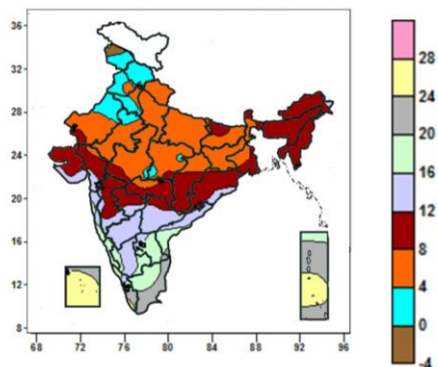


- 32 to 36⁰C over Lakshadweep Islands.
- 28 to 32⁰C over Konkan & Goa, many parts of South India, Madhya Maharashtra, Marathwada, Andaman & Nicobar Islands, some parts of Gujarat, Vidarbha and Chhattisgarh.
- 20 to 28⁰C over North India and Odisha, many parts of Central India, Rajasthan, Gujarat, Vidarbha, Jharkhand, West Bengal & Sikkim, some parts of Uttar Pradesh, Bihar, Madhya Maharashtra, Marathwada, Coastal Andhra Pradesh, Rayalaseema, Interior Karnataka, Kerala and Tamil Nadu.
- 12 to 20⁰C over Haryana & Delhi, many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Uttar Pradesh, Bihar, some parts of Rajasthan, West Madhya Pradesh.

- 2 to 4⁰C over Arunachal Pradesh, many parts of Andaman & Nicobar Islands, Nagaland, some parts of Himachal Pradesh, Assam and Manipur.
- 0 to 2⁰C over Lakshadweep, many parts of Mizoram, Rayalaseema, Kerala, Andhra Pradesh, Telangana, Marathwada, and Andaman & Nicobar Islands, some parts of Assam & Meghalaya, Jharkhand, Madhya Maharashtra and Tamil Nadu.
- -4 to 0⁰C over entire country except many parts of Uttar Pradesh, Punjab, Bihar, Arunachal Pradesh, Nagaland, Mizoram, Kerala, Andhra Pradesh, Telangana, Marathwada, Lakshadweep and Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Uttarakhand, Haryana, West Rajasthan, Odisha Himachal Pradesh, Manipur, Assam & Meghalaya, Jharkhand, Madhya Maharashtra and Tamil Nadu.
- -8 to -4⁰C over many parts of Uttar Pradesh, Punjab, Bihar, some parts of Jammu & Kashmir, Uttarakhand, Haryana, West Rajasthan, Odisha.

Actual Mean Minimum Temperature (°C) in India for the week ending 31.12.2014

Mean Minimum Temperature (°C) Anomaly in India for the week ending 31.12.2014



- -4 to 0⁰C over some parts of Jammu & Kashmir.
- 0 to 4⁰C over many parts of Haryana, Jammu & Kashmir, Himachal Pradesh, Punjab, some parts of Rajasthan, Delhi and Madhya Pradesh.
- 4 to 8⁰C over Uttarakhand, Uttar Pradesh and Jharkhand, many parts of Rajasthan, Bihar, some parts of Haryana, Delhi, Punjab, West Bengal, Gujarat region, Vidarbha and Chhattisgarh.
- 8 to 12⁰C over North East India (except some parts of

- 2 to 4⁰C over many parts of Andaman & Nicobar Islands.
- 0 to 2⁰C over Manipur, Mizoram, Tripura, Tamil Nadu and Lakshadweep, many parts of Nagaland, Rayalaseema, Kerala Islands, some parts of Arunachal Pradesh, Kutch, Konkan & Goa, Madhya Maharashtra, Coastal Andhra Pradesh, Telangana, and Andaman & Nicobar Islands.
- -4 to 0⁰C over entire country except many parts of Nagaland, Manipur, Mizoram, Tripura, Rayalaseema, Tamil Nadu, Kerala Lakshadweep, Andaman & Nicobar

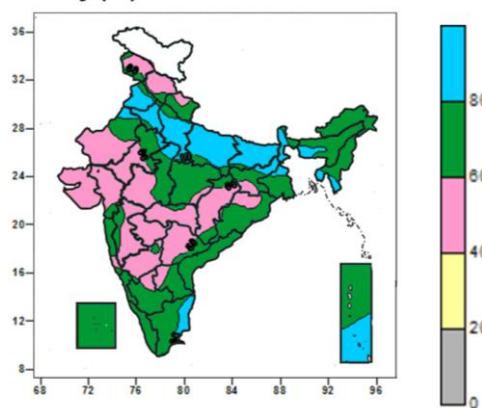
Arunachal Pradesh), many parts of West Bengal & Sikkim, Odisha, Chhattisgarh, Vidarbha, Madhya Maharashtra, Marathwada, Gujarat. Some parts of Bihar, Madhya Pradesh and Telangana.

- 12 to 16^oC over North Interior Karnataka, many parts of Konkan & Goa, South Interior Karnataka, Coastal Andhra Pradesh and Telangana, some parts of Gujarat, Madhya Maharashtra, Marathwada and Rayalaseema, some parts of Arunachal Pradesh.
- 16 to 20^oC over Coastal Karnataka, many parts of Rayalaseema, some parts of South Interior Karnataka, Coastal Andhra Pradesh, Tamil Nadu, Andaman & Nicobar Islands and Kerala.
- 20 to 24^oC over many parts of Tamil Nadu, Kerala, Andaman & Nicobar Islands, some parts of Andhra Pradesh, Rayalaseema and Lakshadweep.

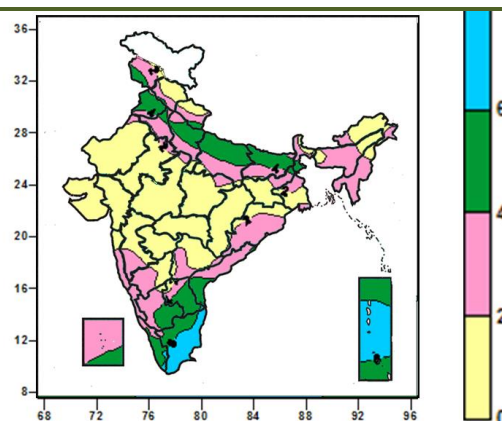
Islands, some parts of Arunachal Pradesh, Kutch, Konkan & Goa, Madhya Maharashtra, Coastal Andhra Pradesh and Telangana.

Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 31.12.2014

Relative Humidity (%) over India for the week ending 31.12.2014



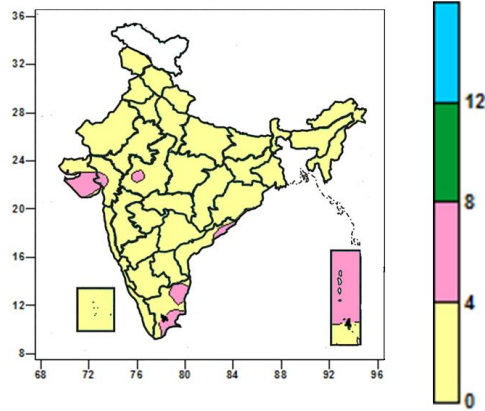
Cloud amount (okta) over India for the week ending 31.12.2014



- 80 to 100% over many parts of Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, some parts of Jharkhand, Assam & Meghalaya, Tripura, Gangetic West Bengal, Rajasthan, West Madhya Pradesh and Tamil Nadu
- 60 to 80% over Coastal Andhra Pradesh, Coastal Karnataka, Kerala, Lakshadweep, many parts of Uttarakhand, North East India, Jharkhand, Odisha, East Madhya Pradesh, Rayalaseema, South Interior Karnataka, Konkan & Goa, Tamil Nadu, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, West Uttar Pradesh, Sub-Himalayan West Bengal, West Madhya Pradesh, Chhattisgarh, Gujarat region, Madhya Maharashtra, Vidarbha, Telangana.
- 40 to 60% over Saurashtra & Kutch and Marathwada, many parts of Jammu & Kashmir, Himachal Pradesh, West Madhya Pradesh, Chhattisgarh, Rajasthan, Gujarat region, Madhya Maharashtra, Vidarbha, North Interior Karnataka, Telangana, some parts of Uttarakhand, East Madhya Pradesh, Jharkhand, Goa, South Interior Karnataka and Rayalaseema.

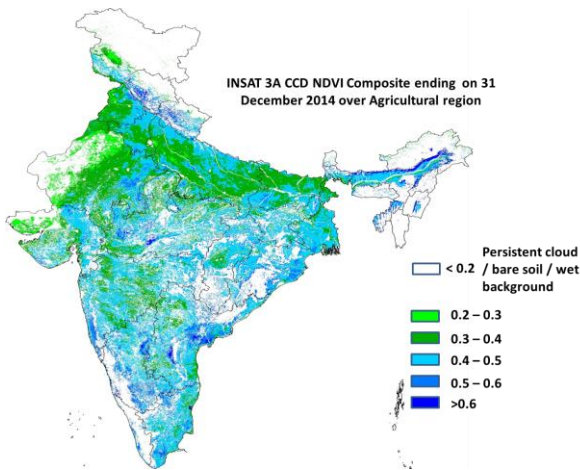
- 6 to 8 okta over many parts of Tamil Nadu and Andaman & Nicobar Islands.
- 4 to 6 okta over many parts of Punjab, Uttar Pradesh, Bihar, South Interior Karnataka, Rayalaseema, Kerala, some parts of Jammu & Kashmir, Uttarakhand, Haryana, Sub-Himalayan West Bengal, Coastal Andhra Pradesh, Tamil Nadu,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

Wind speed (knots) over India for the week ending 31.12.2014



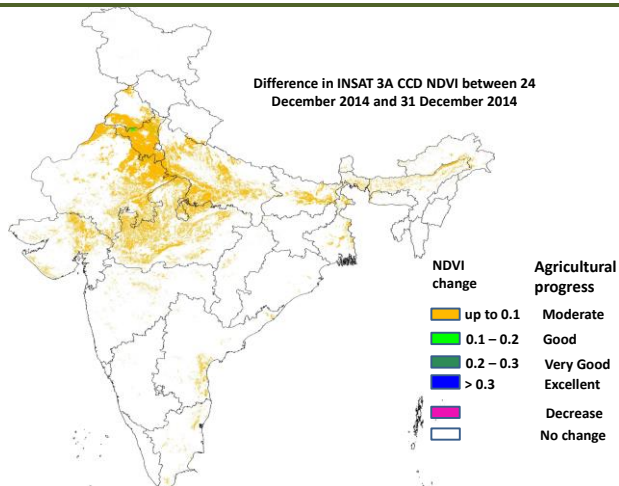
- 4 to 8 knots over many parts of Saurashtra, Andaman & Nicobar Islands, some parts of West Madhya Pradesh, Gujarat region, Coastal Andhra Pradesh and Tamil Nadu.
- 0 to 4 knots over entire country except many parts of Saurashtra, Andaman & Nicobar Islands, some parts of West Madhya Pradesh, Gujarat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

INSAT 3A CCD NDVI COMPOSITE ENDING ON 31ST DECEMBER 2014 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is good over most parts of the western and southern India, Coastal Odisha, Gangetic West Bengal, parts of Assam, isolated pockets in south east Punjab, northern and southern parts of Haryana, western, northern and central UP, eastern Rajasthan, central, southern and western Gujarat and MP as NDVI varied between 0.4 to 0.5 upto 31st December 2014. In some parts of southern Bihar, isolated pockets in western Rajasthan, central MP, few pockets in Karnataka and Andhra Pradesh shows a significant increase in the NDVI value varying between 0.4-0.5. The NDVI remains within the range of 0.3 to 0.4 over few parts of the Indo Gangetic plains and central Rajasthan.

Difference in INSAT 3A CCD NDVI between 24th December 2014 and 31st December 2014

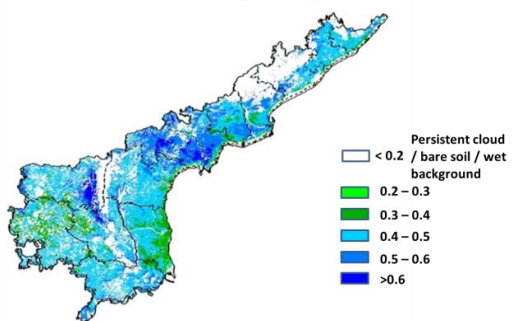


- The positive change in NDVI was observed over Haryana, southern parts of Punjab, central and southern parts of UP, parts of Northern Gujarat and some parts of north eastern and north western Rajasthan and in western and central Madhya Pradesh. Not much change was observed in rest of India.

INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 31ST DECEMBER 2014 FOR DIFFERENT STATES

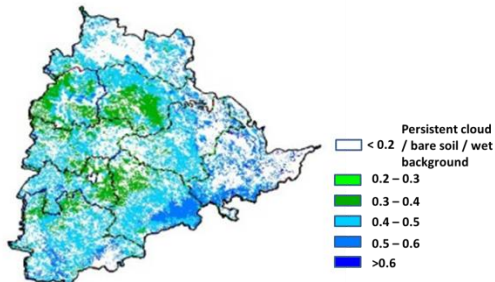
Andhra Pradesh

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



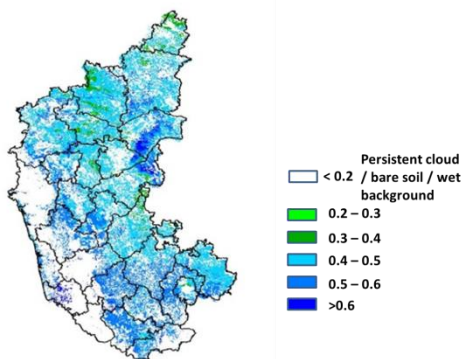
Telangana

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



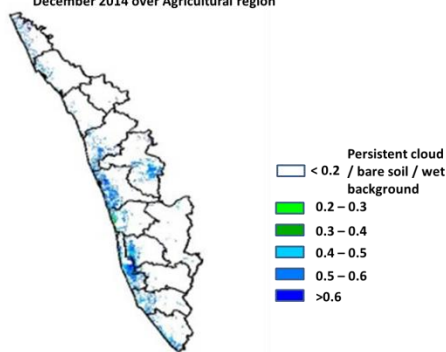
Karnataka

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



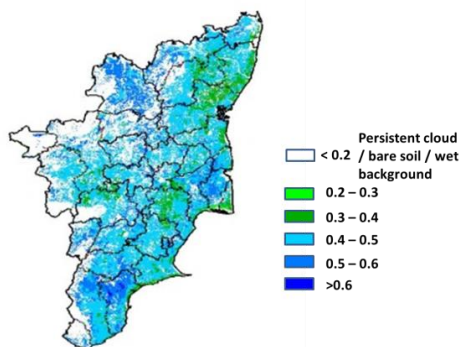
Kerala

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



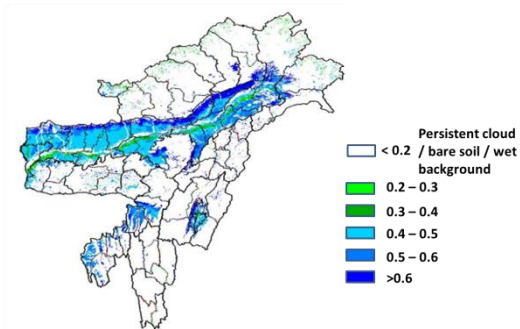
Tamil Nadu

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



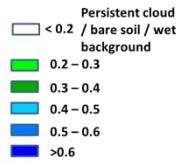
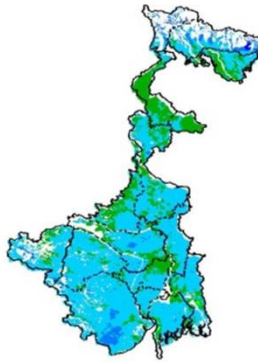
North East

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



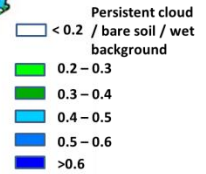
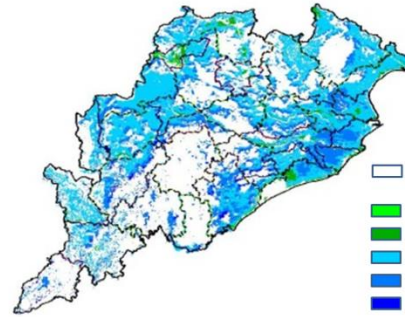
West Bengal

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



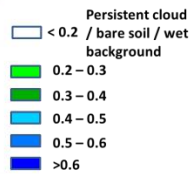
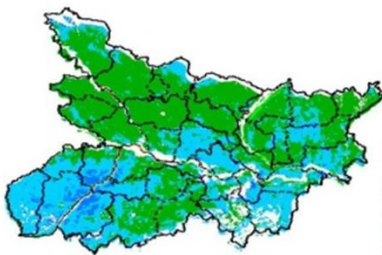
Orissa

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



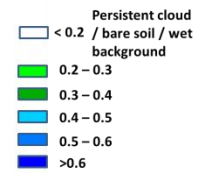
Bihar

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



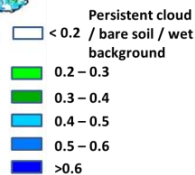
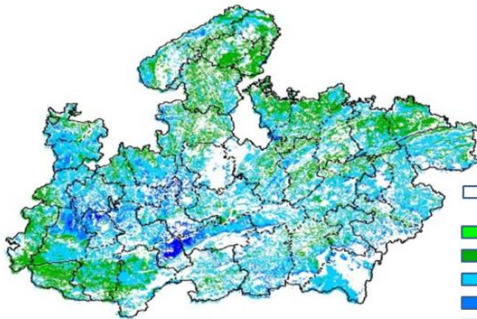
Jharkhand

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



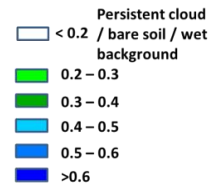
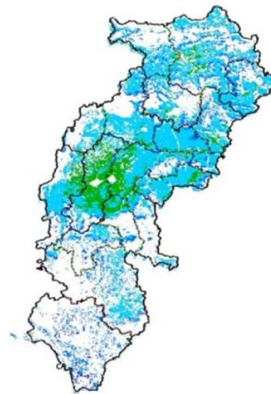
Madhya Pradesh

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



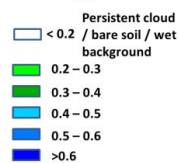
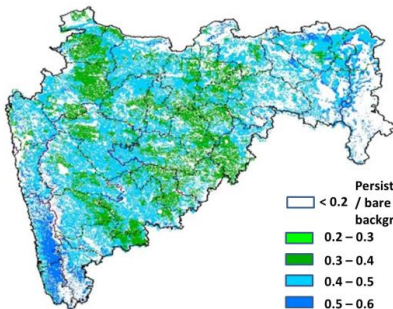
Chhattisgarh

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



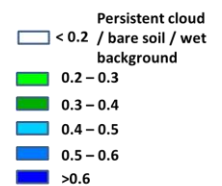
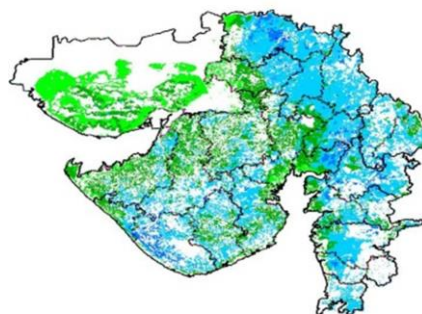
Maharashtra

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



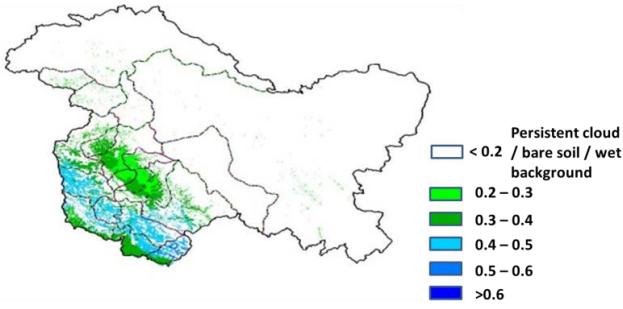
Gujarat

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



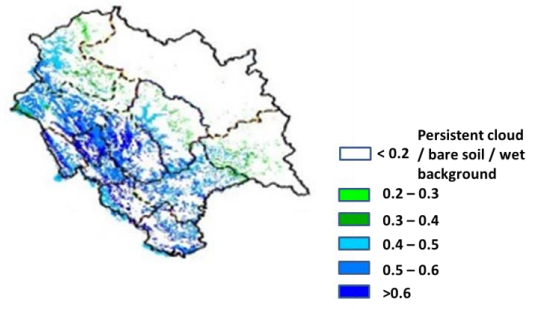
Jammu & Kashmir

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



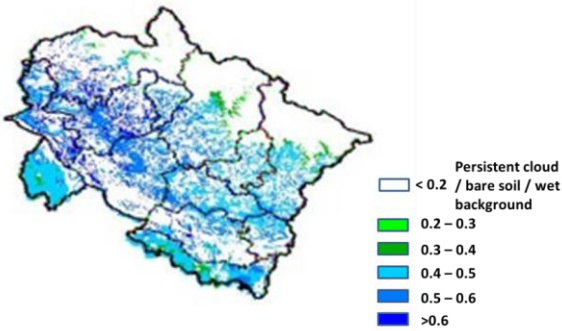
Himachal Pradesh

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



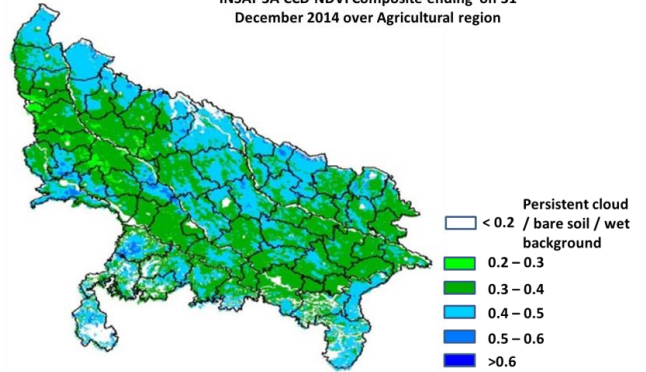
Uttarakhand

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



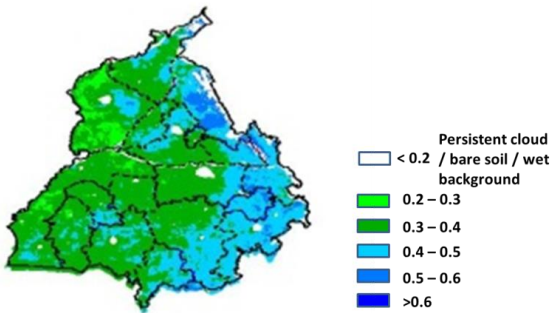
Uttar Pradesh

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



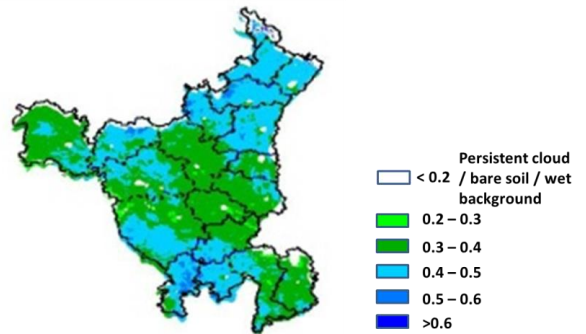
Punjab

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



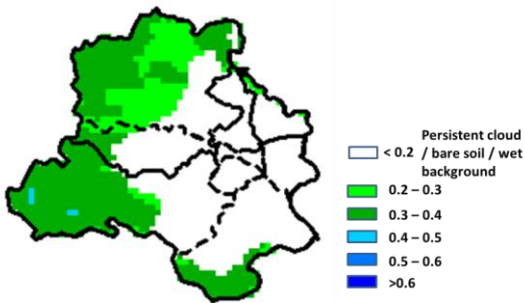
Haryana

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



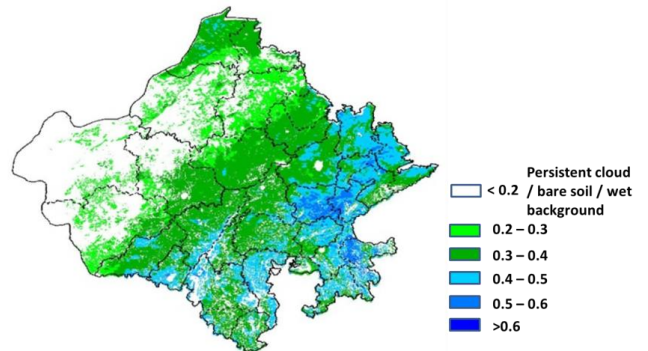
Delhi

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



Rajasthan

INSAT 3A CCD NDVI Composite ending on 31 December 2014 over Agricultural region



Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 5th January, 2015).

- Rain/thundershowers would occur at many places over Gangetic West Bengal and Madhya Pradesh during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at a few places over Marathwada, Tamil Nadu & Puducherry during next 24 hours; over Odisha, Jharkhand and East Uttar Pradesh during next 48 hours and at isolated places thereafter.
- Rain/thundershowers would occur at isolated places over Bihar, Sub-Himalayan West Bengal & Sikkim during next 24 hours and at a few places thereafter.
- Rain/snow would occur at isolated places over Uttarakhand during the period.
- Rain/thundershowers would occur at isolated places over Chhattisgarh, Vidarbha, Coastal Andhra Pradesh, Telangana, Kerala, Andaman & Nicobar Islands during the period.
- Rain/thundershowers would occur at isolated places over Nagaland, Manipur, Mizoram, Tripura, Haryana & Delhi, Gujarat Region, Konkan & Goa and Coastal Karnataka during next 24; over West Uttar Pradesh, East Rajasthan, Madhya Maharashtra, Rayalaseema and Interior Karnataka during next 48 hours and dry weather would prevail thereafter.
- Dry weather would prevail over Arunachal Pradesh, Assam & Meghalaya during next 24 hours and rain/thundershowers would occur at isolated places thereafter.
- Dry weather would prevail over Jammu & Kashmir during next 24 hours; over Himachal Pradesh during next 48 hours and rain/snow would occur at isolated places thereafter.
- Dry weather would prevail over rest parts of the country during the period.
- Fog would occur at many places over Punjab, Haryana & Delhi, north Rajasthan, Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- No significant change in minimum temperatures over northwest and adjoining central India and east India during next 2-3 days.

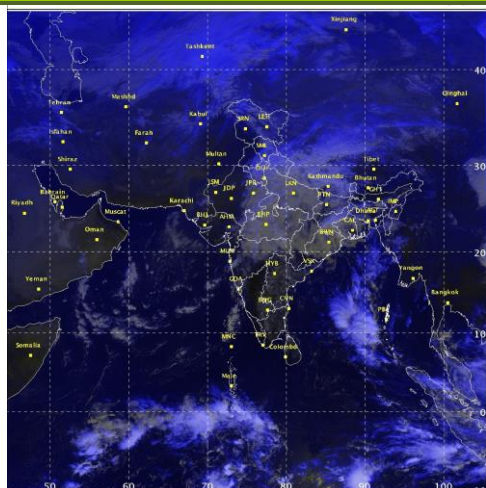
Weather Warning during next 3 days

- **02 January (Day 1):** Hailstorm may occur at isolated places over Madhya Pradesh, northern parts of Telangana and Vidarbha.
- **03 January (Day 2):** No weather warning.
- **04 January (Day 3):** No weather warning.

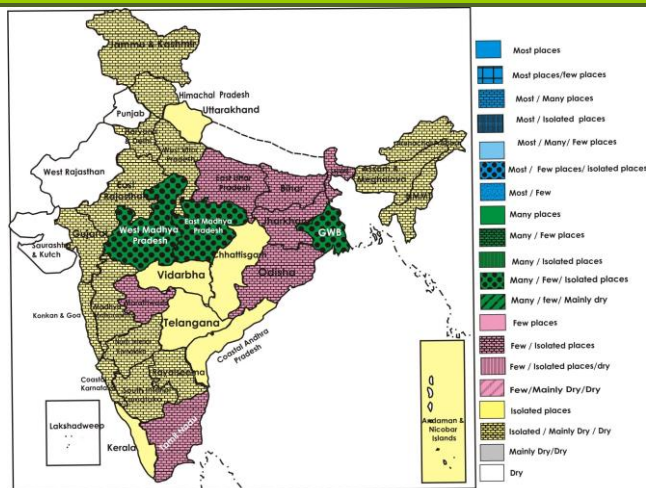
Weather Outlook for subsequent 4 days from 5th to 9th January 2015.

- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands and at isolated places over northeast, east and peninsular India.
- Rain/snow would occur at isolated places over western Himalayan region.
- Weather would be dry over rest of the country.

Satellite image dated, 02.01.2015, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 05th January 2015)



Salient Advisories

- As rain/thundershowers would occur at many places over **Madhya Pradesh**, along with hailstorm at isolated places on 2nd January, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers in the standing crops. Farmers are also advised to keep vigil and use hail nets in orchards to avoid fruit damage from hail and also provide mechanical support to the fruit vegetables and orchard plants. Keep harvested produce at safe places.
- As rain /thundershowers would occur at isolated places accompanied with isolated hailstorms over **Vidarbha** in Maharashtra on 2nd January 2015, use hail nets for orchard orange, sweet lime orchards and provide mechanical support to the fruit vegetables and orchard plants.
- In **Marathwada** in Maharashtra, cover new banana bunch with skating bag. Make arrangement for artificial wind breaks around orchards. Apply mulch with organic material or plastic (black) sheet in mango orchard.
- In Old Alluvial and Terai Zone of **West Bengal**, 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.
- In view of the prevailing low minimum temperatures over **Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh, Punjab, Haryana & Delhi** and parts of **Rajasthan**, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during nights to protect the crops from cold/frost injury.

Detailed Zonewise Agromet Advisories

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



Land preparation



Sugarcane



Cotton



Rice Transplanting

- **Realised Weather:** Rainfall occurred in Chennai, Cuddalore, Kancheepuram, Karaikal, Nagapattinam, Tiruvallur and Thiruvarur districts of Tamil Nadu. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Tamil Nadu & Puducherry during next 24 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Coastal Andhra Pradesh, Telangana and Kerala during the period. Rain/thundershowers would occur at isolated places over Coastal Karnataka during next 24 hours; over Rayalaseema and Interior Karnataka during next 48 hours and dry weather would prevail thereafter.

- **Weather Warning:** Hailstorm may occur at isolated places over northern parts of Telangana on 2nd January.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over peninsular India. Weather would be dry over rest of the region.
- **Advisories:**
 - **Andhra Pradesh:**
 - In view of prevailing dry weather condition, provide one supplemental irrigation to red gram in order to get higher yields in Anantapuram district in the Scarce Rainfall Zone.
 - As mainly dry weather is prevailing, moisture stress is noticed in Bengal gram in Kadapa district in the Southern Zone. Spray Potassium Nitrate @ 10 g/litre of water to mitigate the stress.
 - 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 partly cloudy conditions in the Southern Zone are highly congenial for incidences of *Spodoptera* in groundnut and *Maruca* and *Helicoverpa* in red gram. Spray Chloripinophir (interprid or lapedo) @ 300-400 ml per acre to manage *Spodoptera* and Thiodicorb @ 1g or Novaluran @ 1 ml/litre of water to manage *Maruca* and *Helicoverpa*.
 - **Telangana:**
 - As hail storm may occur at isolated places over northern parts of Telangana on 2nd January, use hail net for orchard crops and store the harvested products at safer places.
 - Low night temperatures in the Southern Telangana Zone may cause cold injury in rice nurseries. To overcome cold injury and for better nursery growth, cover the nursery beds with polythene sheet during night and remove in the morning, irrigate the nursery bed every day in the evening and let out the water in the morning and apply 2 kg urea for 200 m² nursery area at 10-12 days after sowing.
 - Continue sowing of *rabi* rice and maize in the Northern Telangana Zone.
 - **Karnataka:**
 - Complete harvesting of ragi and undertake sowing of sunflower and groundnut 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.
 - Undertake harvesting of chilli and cotton in the North Transition Zone.
 - Continue harvesting of rice and ragi crops; in the area where rice harvesting is completed, undertake sowing of pulses like black gram, green gram and also the green manure crop sun hemp to utilize residual soil moisture in rice field in Southern Dry Zone.
 - Continue sowing of short duration pulses immediately after harvest of rice and maize in the Southern Transition Zone.
 - In the Hill Zone, continue sowing of pulses in areas where rice harvesting has been completed.
 - Present weather is congenial for the incidence of *Helicoverpa* insect in Bengal gram in the North East Transition Zone. Spray insecticides like Profenophos or Chlorpyriphos @ 2 ml/litre or Indoxacarb @ 0.3 ml/litre or Spinosad @ 0.2 ml per litre of water to manage the insects.
 - **Kerala:**
 - Prevailing humid and cloudy conditions are congenial for incidences of bud rot in coconut, leaf spot disease in amaranthus and mosaic disease in bitter gourd and bottle gourd in the Southern Zone. Chisel out completely the affected tissues and paint the wound with Calixin (50g/l) and apply coal tar after one or two days to manage bud rot, spray 8g Baking soda, 32g Turmeric powder in 10 litres of water to manage leaf spot disease and spray Rogor (Dimethoate) 2 ml / litres of water to manage mosaic disease.
 - **Tamil Nadu:**
 - *Cercospora* leaf spot in irrigated tapioca and nematode infestation in turmeric is seen due to high relative humidity and optimum temperature in Western Zone. Spray Mancozeb 2g/litre twice at 15 days interval to manage *Cercospora* leaf spot and apply Carbofuran 4 kg / ha to manage nematode infestation on a non rainy day.
 - Prevailing weather with high cloud cover and humidity is congenial for incidences of blast disease in rice crop at all growth stages in the South Zone. For managing this disease, spray Tricyclozole 75 WP @ 500g/ ha on a non rainy day.
 - Brown leaf spot incidence is being noticed in the *samba / thaladi* paddy fields in the Cauvery Delta Zone. To control this, spray Carbendazim 200 g/acre (or) Mancozeb 400g/acre in 200 litre of water on a non rainy day.
 - Due to cloudy weather in the High Altitude Hilly Zone there is possibility of infestation of late blight disease in potato, spray Mancozeb @ 2.5 g / litre of water on a non rainy day at an interval of 15 days.
 - Suitable varieties are given in Annexure II.
- **Animal Husbandry**
 - In North Western Zone of Tamil Nadu, due to reduced day light, increase Vitamin D3 in chicken feed. Maintain adequate brooding temperature for chicks. Keep the curtains fully raised in the poultry shed.
 - Allow cattle, sheep and goats to graze after dew dries off to avoid fluke infection and deworm sheep and goats by using broad spectrum antihelmintics in the Cauvery Delta Zone of Tamil Nadu.

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



Rice



Okra



Cole Crops (Nursery)



Green Gram

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Nagaland, Manipur, Mizoram & Tripura during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over Arunachal Pradesh, Assam & Meghalaya during next 48 hours and rain/thundershowers would occur at isolated places thereafter.
Fog would occur at many places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - In Assam, continue nursery raising and sowing of *boro* rice.
 - In Arunachal Pradesh apply irrigation to cauliflower, cabbage, broccoli, knolkhol etc.
 - In North Bank Plain Zone of Assam, continue transplanting of early sown varieties of *boro* rice like Boro1, Boro 2, Dinanath and Swarnabh seedlings in low lying areas.
 - Continue transplanting of *boro* rice of about 45 days old (5- 6 leave stage) seedlings in Lower Bramhaputra Valley Zone, North Bank Plain Zone and Barak Valley Zone of Assam). Undertake gap filling in *boro* rice after 10-15 days after transplanting. Apply 1st irrigation in early sown wheat varieties at crown root initiation stage (20-25 days after sowing).
 - In Meghalaya, continue nursery raising of *boro* rice in low lying areas and sowing of Zero tillage pea, lentil and toria. Apply irrigation to mustard/rapeseed at flowering stage and cole crops. Continue main field preparation for transplanting of *boro* rice.
 - In Lower Bramhaputra Valley Zone, North Bank Plain Zone, Barak Valley Zone and Upper Bramhaputra Valley Zone of Assam, due to foggy and cloudy conditions, blight disease may become severe in potato 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 litres 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 Bramhaputra Valley Zone, North Bank Plain Zone, Central Bramhaputra Valley Zone, Lower Bramhaputra Valley Zone and Barak Valley Zone of Assam. Spray Malathion 50 EC @ 2 ml/ litre of water or Dimethoate 30 EC or Chloropyrifos @ 0.5 litre / ha for control.
 - In Hill Zone of Assam, due to foggy weather, there is chance of late blight in tomato. Apply Ridomil MZ-72 (2g/ litre) and Indofil M-45 2.5 g / litre to prevent the disease.
 - Due to foggy weather condition, there is chance of late & early blight disease in potato in Meghalaya. Spray Mancozeb 75% WP @ 1.5- 2.0 kg/ha or Copper Oxy Chloride 50% WP @ 2.5 kg/ha or Chlorothalonil 75% WP @ 1.25 kg/ha.
 - **Nagaland, Manipur, Mizoram and Tripura:**
 - In Manipur, continue sowing of *rabi* maize. Apply light irrigation in rapeseed / mustard, pea, lentil, potato.
 - In Mizoram, continue harvesting of rice. Apply irrigation to banana, brinjal, early cole crops, pea, tomato, mustard and toria.
 - In Nagaland, apply light irrigation in toria, pea, vegetables 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.
 - In Tripura, due to the prevailing foggy condition there may be infestation of early blight in potato. Apply Cymoxanil+ Mancozeb or Metalaxyl+ Mancozeb @ 1.5g per litre of water for control of early blight. Also due to decrease in night temperature, there is chance of infestation of Pseudo stem weevils on banana. Apply Dimethoate (Rogor) or Imidacloprid @ 0.8ml per litre of water.
 - In Mizoram, 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**

- Continue vaccination in poultry to control *ranikhet* disease in Lower Brahmaputra Valley Zone of Assam.
- 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, North Bank Plain Zone of Assam.

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



Sugarcane

Groundnut

Onion

Rice

- **Realised Rainfall:** Rainfall occurred in Nicobar district of Andaman & Nicobar Islands. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Gangetic West Bengal during next 24 hours and decrease thereafter. Rain/thundershowers would occur at a few places over Odisha and Jharkhand during next 48 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Bihar, Sub-Himalayan West Bengal & Sikkim during next 24 hours and at a few places thereafter. Rain/thundershowers would occur at isolated places over Andaman & Nicobar Islands during the period. Fog would occur at many places over Bihar, Sub-Himalayan West Bengal & Sikkim. No significant change in minimum temperatures over east India during next 2-3 days.
- **Weather Warning:** Nil
- **Weather Outlook:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands and at isolated places over east India.
- **Advisories:**
 - **West Bengal:**
 - As rain/thundershowers would occur at many places over Gangetic West Bengal, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers in the standing crops. Keep harvested produce at safe places.
 - In New Alluvial Zone, to protect the rice seedlings from cold, cover the nursery bed with polythene or keep stagnant water in the nursery bed especially during the night-time. Keep 2 to 3 cm stagnant water. Continue land preparation for sowing of sunflower.
 - In Coastal Saline Zone, remove morning dew from the seedlings of *boro* rice stirring by rope.
 - In Laterite and Red Soil Zone, continue transplanting of *boro* rice.
 - 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.
 - 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% after current spells of rain are advised.
 - In 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 yellowing of seedlings, seedling death and root rot in *boro* rice due to low temperature. Apply SAF @ 2 g/litre of water after current spells of rain.
 - In Laterite and Red Soil Zone, 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 gm /litre of water) and Blitox (4 gm/litre of water) or Carbaryl 0.2 % (Sevin) 50 ml @1000 litre of water after current spells of rain.
 - In Old Alluvial Zone, due to foggy condition aphid attack may be seen in mustard. Apply Imidacloprid @ 3 ml. /15 litre of water. Also due to prevailing weather conditions, aphid infestation and leaf curling may occur in tomato. To control, spray Imidachlorpid @ 1ml/7.5 litre of water followed by Trichoderma viridae @4g/litre of

water or Blitox @ 4g/litre of water. Apply plant protection measures on a non-rainy day.

▪ **Andaman and Nicobar:**

- In North and Middle Andaman, undertake nursery raising of vegetable crops.
- In North and Middle Andaman, in the prevailing weather, severe incidence of defoliating pests and borer pests are observed in pulse and fruit crops. Spray Malathion @ 2 ml/litre water.

▪ **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, complete nursery sowing of rice, sowing of wheat and *rabi* pulses. Continue transplanting of onion.
- In North Eastern Plateau Zone, continue sowing of wheat, groundnut, gram, peas and onion. Continue transplanting of chilli.
- 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 on a non rainy day.
- 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 on a non rainy day.

▪ **Bihar:**

- In North East Alluvial Zone of Bihar, as dry weather is prevailing, apply light irrigation in wheat crop which is about 20-25 days old and also apply urea @ 30 kg/acre after two days of irrigation. Continue nursery sowing of *boro* rice. As low temperature is prevailing, apply light irrigation at evening time in tomato, chilli and other vegetable crops.
- In South Bihar Alluvial Zone, complete sowing of late varieties of wheat, apply irrigation in timely sown wheat crop at CRI stage.
- In North West Alluvial Plain Zone of Bihar, apply light irrigation in wheat crop at (CRI) stage, maize, potato and vegetables.
- In North West Alluvial Plain Zone of Bihar, low temperature and foggy weather is favourable for the attack of early and late blight in potato crops; spray Indofil M-45, for better result mix sticker 1ml/liter of water on a non rainy day.

▪ **Jharkhand:**

- In South Eastern Plateau Zone of Jharkhand, apply irrigation in wheat at CRI stage and potato.
- In Central & North Eastern Plateau Zone of Jharkhand, as dry weather is prevailing apply irrigation to already sown wheat crop at CRI stage, mustard and gram. Prepare nursery bed for onion and land preparation for sowing of vegetables like long gourd, round gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon.
- In 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 on a non rainy day.
- Suitable varieties are given in Annexure II.

● **Animal Husbandry**

- In Hill Zone and Terai Zone of West Bengal, provide artificial heating through lighting of electric bulb to protect poultry birds (day old to 25 days old) from low temperature. Cover poultry house with gunny bags/ polythene sheets to protect them from cold.
- 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



Land preparation



Okra



Onion

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Chhattisgarh during the period.

Rain/thundershowers would occur at many places over Madhya Pradesh during next 24 hours and decrease thereafter.

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

- **Weather Warning:** Hailstorm would occur at isolated places over Madhya Pradesh on 2nd January.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - As rain/thundershowers would occur at many places over Madhya Pradesh, along with hailstorm at isolated places on 2nd January, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers in the standing crops. Farmers are also advised to keep vigil and use hail nets in orchards to avoid fruit damage from hail and also provide mechanical support to the fruit vegetables and orchard plants. Keep harvested produce at safe places.
 - Undertake 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 weather, there are chances of attack of stem borer and fruit borer in tomato, brinjal and okra in Vindhya Plateau Zone and Grid Zone; for control spray Trizophos @ 800ml per ha after current spells of rain.
 - Due to foggy and partly cloudy sky, potato crop may be affected by early blight in Bundelkhand Zone, spray Mancozeb @ 2.5 ml per litre of water after current spells of rain.
 - Due to cloudy weather, there are chances of attack of caterpillars in gram in Madhya Pradesh. Spray Quinalphos @ 25 EC per 500-600 litre of water after current spells of rain.
 - **Chhattisgarh:**
 - Apply irrigation to wheat (at CRI stage) and vegetables in Chhattisgarh Plain Zone of Chhattisgarh,. Complete planting of onion.
 - Complete sowing of late varieties of wheat and sugarcane in Bastar Plateau Zone. As mainly dry weather is prevailing, apply irrigation in wheat (after 20-25 days of sowing), gram and potato.
 - Suitable varieties are given in Annexure II.
- **Animal Husbandry**
 - As low temperature is prevailing, protect animals from cold in Madhya Pradesh and Chhattisgarh. Increase light duration in poultry farms.

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



Land preparation

Sugarcane

Bottle Gourd

Onion

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over East Uttar Pradesh during next 48 hours and at isolated places thereafter. Rain/snow would occur at isolated places over Uttarakhand during the period. Rain/thundershowers would occur at isolated places over Haryana & Delhi during next 24; over West Uttar Pradesh and East Rajasthan during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over Jammu & Kashmir during next 24 hours; over Himachal Pradesh during next 48 hours and rain/snow would occur at isolated places thereafter. Dry weather would prevail over rest parts of the region during the period. Fog would occur at many places over Punjab, Haryana & Delhi, north Rajasthan, Uttar Pradesh. No significant change in minimum temperatures over northwest India during next 2-3 days.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/snow would occur at isolated places over western Himalayan region. Weather would be dry over rest of the region.
- **Advisories:**
 - In view of the prevailing low minimum temperatures over Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh, Punjab, Haryana & Delhi and parts of Rajasthan, apply light and frequent irrigation in standing crops and arrange smoking around the crop fields during nights to protect the crops from cold/frost injury.
 - **Jammu & Kashmir:**

- Undertake hoeing cum intercultural operations in cole crops, mustard, *rabi* pulses like lentil, pea and gram to control weeds and conserve moisture in Intermediate Zone and Sub-tropical Zone of Jammu & Kashmir.
- Continue planting of garlic and transplanting of onion in Valley Temperate Zone of Jammu & Kashmir. Apply urea @ 3.6 kg/kanal through topdressing. Continue hand weeding /hoeing in saffron to reduce infestation by weeds. Open drainage channels to avoid water stagnation in saffron fields.
- In Sub-tropical Zone of Jammu & Kashmir, as there is chance of attack of sawfly in mustard crops, spray of Carbaryl @ 50% WP to control sawfly.
- **Himachal Pradesh:**
 - In Sub-Montane and Low Hills Sub-Humid Tropical Zone, undertake intercultural operation in already sown wheat. 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 with available soil moisture.
 - Under prevailing low temperature and cloudy weather condition, there are chances of occurrence of yellow rust in wheat. 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. Also there is chance of powdery mildew in peas, spray Celfex@25 g per 10 litres of water or Karathane@5 ml per 10 litres of water.
 - Under prevailing low temperature condition, there are chances of attack of woolly apple aphid in apple orchards in Mid Hills Sub-Humid Zone. To control, apply Thiamethoxam (Ektara) 100 g or Carbosulfan (Marshal) 100 ml or Chlorpyrifos (Durmet) @ 200 ml in 100 litres of water.
- **Uttarakhand:**
 - In Hill Zone and Sub Humid Sub Tropical Zone of Uttarakhand, apply irrigation in wheat at crown root initiation stage and then apply first dose of Urea equivalent to 30 kg Nitrogen/ha.
 - Due to foggy weather conditions, there is chance of incidence of late blight disease on mustard crop in Hill zone of Uttarakhand. To control apply Malathion or Metasystox @ 2ml per litre of water, repeat after 12 – 15 days.
- **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, knolkhol and broccoli crop in the raised bed.
 - Under prevailing dry weather condition, continue harvesting of rice in Western Zone of Haryana. Apply irrigation in already sown wheat at CRI stage. Undertake transplanting of onion, mature seedlings of tomato, cauliflower and cabbage. Due to foggy weather, white rust may be noticed in mustard.
 - Due to foggy weather conditions, there is chance of incidence of late blight disease on potato in Western Zone of Punjab. To control, spray Indofil-M-45/Kavach/Antracol @ 500-700g/acre at weekly interval.
 - 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, white rust may be noticed in mustard in Western Semi-arid Zone of Delhi, spray Dithane-M-45 @ 2 gram/ litre of water or Chlorothalonil 75 WP @1 gram/ litre of water. Keeping in view of high relative humidity, monitor for late blight in potato (kufri bahar), spray of Dithane-M-45 @ 2 g/ litre of water or Carbandazim @1 gram/ litre of water along with teepol (sticky material).
- **Uttar Pradesh:**
 - Undertake intercultural operations like weeding and hoeing in mustard, sarson, wheat, gram, pea, rajma, masoor crops after irrigation in Bundelkhand Zone. Undertake harvesting of matured leafy vegetables, cauliflower, cabbage, tomato, carrot, chilli, brinjal.
 - Undertake harvesting of matured toria in Central Plain Zone. For control of weeds in linseed, spray Sulfofuran 75WG @ 33g dissolved in 500-600 litre water 20-25 days after sowing.
 - Under prevailing foggy weather condition, apply light and frequent irrigation in barley, mustard, pea, chickpea, lentil, linseed in Central Plain Zone.
 - Continue sowing of sunflower in Western Plain Zone. Apply irrigation to early sown wheat after 21 days after sowing and in sugarcane at 20 days interval. Apply nitrogen @ 30 kg per hectare and a mixture of 0.5% Zinc

Sulphate and 2% urea in wheat.

- Complete sowing of wheat and short duration varieties of linseed as early as possible in Eastern Plain Zone. 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 occurrence of damping off disease in onion in Central Plain Zone of Uttar Pradesh. For control, spray Thiram @ 2.5 g or Carbendazim @ 1 g or Mencozeb @ 2.5 g per per litre per hectare.
- Under cold weather condition, there are chances of attack of saw fly in mustard in Eastern Plain Zone. For control. Spray Quinolphos 1.55 @ 20-25 kg per ha.
- **Rajasthan:**
- In Semi Arid Eastern Plain Zone of Rajasthan, to protect the standing crops from frost attack, apply dilute Sulphuric acid @ 0.1% (1 litre H₂SO₄ in 1000 litre water) or thiourea @ 500 ppm (500 gm Thiourea in 1000 litre water) or light irrigation.
- Undertake weeding and hoeing, irrigation in wheat, barley, mustard and vegetables.in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan.
- Due to low temperatures, there are chances of aphid infestation in mustard crop. To control spray Malathion 50 EC @ 1200 ml/ha or Dimithoate 30 EC @1200 ml/ha along with water in Arid Western Plain Zone of Rajasthan.
- Due to low temperature, there are chances of aphid attack in mustard, barley, cauliflower and radish in Semi Arid Eastern Plain Zone of Rajasthan. To control spray of insecticide Dimethoate 30 EC or Methyl Demeton 25 EC @ 1.0 ml per litre water.
- Suitable varieties are given in Annexure II.
- **Floriculture**
- Current temperature is favourable for nursery raising of winter flowers in poly houses in Sub Montane and Low Hills Sub-Tropical Zone of Himachal Pradesh. Present weather is conducive for attack of mites in carnation. For control, spray Cypermythrin @ 0.05% at 15 days interval.
- Complete transplanting of winter season annuals in Valley Temperate Zone of Jammu & Kashmir.
- **Animal Husbandry:**
- Due to low night temperature, keep cattle in cowsheds to protect them from cold in Jammu & Kashmir, Himachal Pradesh and Central Plain Zone of Uttar Pradesh. Also give 40-50g mineral mixture with the daily feed. Also make arrangements in poultry houses for protection of birds from cold in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. Undertake vaccination for IBD and Ranikhet disease as there are chances of spread of these diseases.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Onion



Sugarcane



Cotton



Mango

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Rain / thundershowers would occur at few places over Marathwada during next 24 hours and at isolated places thereafter. Rain / thundershowers would occur at isolated places over Vidarbha during the period. Rain / thundershowers would occur at isolated places over Gujarat region, Konkan & Goa during next 24 hours; over Madhya Maharashtra during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over Saurashtra and Kutch region during the period.
- **Weather Warning:** Hailstorm may occur at isolated places over Vidarbha on 2nd January.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Maharashtra:**
 - As rain /thundershowers would occur at isolated places accompanied with isolated hailstorms over Vidarbha on 2nd January 2015, use hail nets for orchard orange, sweet lime orchards and provide mechanical support to the fruit vegetables and orchard plants.
 - In Konkan, as no significant rain is expected during the period, apply irrigation, fertilizers and undertake intercultural operations in vegetable crops and mango and cashew orchards. Also apply irrigation in already

sown groundnut. Undertake transplanting of *rabi* rice and finger millet. Maintain water level 2-3 cm in already transplanted rice and finger millet fields. Complete sowing of watermelon variety 'Sugar Baby' on one side of ridges with a spacing of 4 x 1 m.

- In Madhya Maharashtra, prevailing low temperature along with untimely rain may cause fruit cracking especially in black grapes. 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. Cover rice nursery with polythene sheet to protect rice seedlings from cold in Western Ghat Region. Continue intercultural operations like weeding and apply fertilizer in sugarcane, vegetables, gram and wheat. Complete picking of fully opened cotton bolls during morning hours. Harvest already matured red gram on a non rainy day and keep harvested produce in safer place. Apply light irrigation to vegetables, sugarcane, safflower, *rabi* jowar, gram and pomegranate orchards to protect from cold.
- In Marathwada, cover new banana bunch with skating bag. Make arrangement for artificial wind breaks around orchards. Apply mulch with organic material or plastic (black) sheet in mango orchard. Complete picking of fully opened cotton bolls on a non rainy day. Harvesting of already matured red gram may be done on a non rainy day and keep harvested produce in safer place.
- Due to partly cloudy weather condition in South Konkan, there may be attack of tea mosquito bug on cashew inflorescence; spray 35 % Propenofos @ 10 ml per 10 litres of water.
- Due to prevailing low temperature along with expected rain in Pune region there may be incidence of powdery mildew in grapes; for effective control spray Hexaconazol 5 EC @ 1 ml + Potassium bicarbonate @ 5 g per 1 litre of water.
- **Gujarat:**
 - Undertake sowing of watermelon in South Gujarat Heavy Rainfall Zone. In view of prevailing low temperatures, apply light and frequent irrigation in sugarcane and vegetables. Carry out hand weeding and intercultural operations in standing crops.
 - Under prevailing dry weather and low temperatures in North Gujarat Zone, apply irrigation in mustard, cotton and fennel at regular intervals. Undertake harvesting of matured vegetables. Carry out weeding in isabgol, amaranth and fennel.
 - Apply irrigation in cotton crop and carryout weeding in garlic crop in South Saurashtra Zone.
 - Under cold and mainly dry weather condition, apply light irrigation in fennel, cotton and fruit crops at regular intervals in Bhal and Coastal Zone of Gujarat. Carry out intercultural operations in standing crops. Spray 20 ml 2-4-D Ethyle Easter or Metasulfuron 0.8 gm/10 liters of water to control broad leafy weeds in wheat crop.
 - Under prevailing dry weather and low temperatures, apply irrigation in cotton and mustard in North West Zone.
 - Due to prevailing partly cloudy weather and humid condition, there is a chance of anthracnose in mango in Valsad district of South Gujarat Heavy Rainfall Zone; spray Hexaconazole 5% EC 10 ml. in 10 liters of water for the effective control of anthracnose. Due to partly cloudy weather condition there is a chance of *Heliothis* infestation in gram in Dangs district; spray Quinalphos 25 EC 20 ml or D.D.V.P 85 EC 5 ml in 10 litre of water for control of *Heliothis*.
 - There is chance of early blight disease in potato crop due to low temperature in North Gujarat Zone; spray Mancozeb 0.2% @ 30 gram plus 25 ml of concentrated desi soap solution in 10 litres of water for control. Spray next three doses at the interval of 10 days.
 - Suitable varieties are given in Annexure II.
- **Animal Husbandry**
 - In Gujarat, provide warm water to lactating animals. Keep the animals inside the sheds and provide dry bedding and use heaters inside cattle sheds to protect them from low temperatures.

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

Annexure I
Week by week Rainfall Distribution

Sub-Divisions	17.12.14		24.12.14		31.12.14	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Karnataka						
Coastal Karnataka						
Dakshin Kannada	34.4	574	0.0	-100	0.0	-100
Udupi	21.5	357	0.0	-100	0.0	-100
Uttar Kannada	25.8	658	0.0	-100	0.0	-100
N I Karnataka						
Bagalkote	19.3	566	0.0	-100	0.0	-100
Belgaum	19.8	761	0.0	-100	0.1	-56
Bidar	11.5	857	0.0	-100	0.0	-100
Bijapur	7.6	301	0.0	-100	0.0	-100
Dharwad	21.4	970	0.0	-100	0.0	-100
Gadag	30.8	1522	0.0	-100	0.0	-100
Gulbarga	9.0	460	0.0	-100	0.0	-100
Haveri	12.0	447	0.0	-100	0.0	-100
Koppal	16.4	447	0.0	-100	0.0	-100
Raichur	7.8	331	0.0	-100	0.0	-100
Yadgir	4.3	257	0.0	-100	0.0	-100
S I Karnataka						
Bangalore Rural	1.3	-68	2.7	196	0.0	-100
Bangalore Urban	1.6	-64	0.5	-74	0.0	-100
Bellary	49.9	1747	0.0	-100	0.0	-100
Chamarajnagar	8.3	84	0.0	-100	0.0	-100
Chichballapur	10.1	189	0.7	-42	0.0	-100
Chickmagalur	10.6	141	0.0	-100	1.0	-46
Chitradurga	12.6	405	0.0*	-89	0.0	-100
Davangere	24.6	1790	0.0	-100	0.0	-100
Hassan	14.7	320	0.0	-100	0.0	-100
Kodagu	17.7	176	0.0	-100	0.9	-49
Kolar	9.0	76	0.0*	-98	0.0	-100
Mandya	21.6	535	0.1	-85	0.0*	-98
Mysore	25.7	787	0.0	-100	0.6	-58
Ramnagara	5.1	15	0.0	-100	0.0	-100
Shimoga	21.2	608	0.0	-100	0.0	-100
Tumkur	9.0	191	0.0	-100	0.0	-100
Kerala						
Alappuzha	28.0	189	3.1	-45	2.6	-62
Kannur	29.8	338	0.0	-100	0.0	-100
Ernakulam	75.8	589	0.1	-99	2.7	-24
Idukki	35.4	272	7.4	16	7.7	40
Kasaragod	24.0	379	0.0	-100	0.0	-100
Kollam	21.2	120	3.8	-51	9.9	3
Kottayam	50.7	534	13.1	104	6.1	-4
Kozhikode	8.8	31	0.0	-100	0.0	-100

Malappuram	37.4	467	0.0	-100	0.0	-100
Palakkad	7.6	39	0.0	-100	0.6	-77
Pathanamthitta	69.2	454	0.0	-100	3.5	-59
Thiruvananthapuram	53.4	445	6.1	-48	10.1	17
Thrissur	18.4	261	0.0	-100	2.7	-20
Wynad	53.8	703	0.0	-100	0.0	-100
Tamil Nadu						
Ariyalur	43.0	66	29.7	0	7.0	-49
Chennai	35.8	9	0.1	-99	105.2	354
Coimbatore	19.4	57	1.1	-76	9.8	103
Cuddalore	74.1	101	41.7	45	23.1	23
Dharmapuri	14.3	37	1.6	-69	1.0	-73
Dindigul	38.6	91	17.0	11	1.9	-85
Erode	16.2	100	0.0	-100	0.1	-97
Kanchipuram	41.6	35	1.0	-93	59.0	334
Kanyakumari	12.4	0	13.3	7	12.9	63
Karikal	2.6	-96	61.9	-8	46.7	-4
Karur	3.1	-67	8.9	1	3.1	-48
Krishnagiri	32.9	399	0.0	-100	0.0	-100
Madurai	4.5	-69	8.8	-21	5.4	-43
Nagapattinam	50.1	6	63.6	16	59.6	48
Namakkal	10.2	42	0.5	-90	0.6	-79
Nilgiris	58.3	208	4.2	-48	5.7	-52
Perambalur	15.7	-12	22.7	42	3.0	-66
Puducherry	32.4	-30	24.7	-37	4.5	-80
Pudukottai	28.9	68	46.4	167	4.1	-70
Ramanathapuram	7.8	-63	51.9	116	7.9	-58
Salem	22.7	97	1.3	-81	0.8	-80
Sivaganga	19.1	6	40.6	147	0.9	-94
Thanjavur	42.4	84	63.9	149	16.8	-9
Theni	27.3	82	7.0	-7	3.2	-49
Tirunelveli	99.7	310	25.9	33	12.7	-27
Tirupur	22.2	131	1.7	-76	8.1	64
Tiruvallur	57.6	107	2.1	-86	45.3	421
Tiruvannamalai	56.6	172	0.2	-98	2.4	-70
Tiruvarur	23.1	-30	89.2	141	33.3	9
Toothukudi	32.5	60	13.5	-20	14.1	0
Trichy	12.1	-15	17.9	30	4.8	-47
Vellore	21.7	56	0.2	-97	1.7	-65
Villupuram	59.9	116	2.9	-82	7.1	-45
Virudhunagar	14.2	-14	6.0	-39	5.8	-44
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	1.3	-60	0.0	-100	4.6	365
Guntur	0.3	-96	0.0	-100	0.8	-22
Krishna	0.1	-99	0.2	113	9.4	1077
Nellore	49.9	93	5.0	-61	2.3	-74
Prakasam	8.4	-40	0.5	7	0.0	-100
Sirkakulam	0.0	-100	0.0	-100	7.9	881

Visakhapatnam	0.0	-100	0.0	-100	13.2	1544
Vizianagram	0.0	-97	0.0	-100	1.0	25
West Godavari	2.1	-61	0.0	-100	1.4	-22
Rayalaseema						
Anantapur	3.3	5	0.0	-100	0.0	-100
Chittoor	20.6	63	3.9	-45	2.9	-44
Cuddapah	6.5	42	0.0	-100	0.0	-100
Kurnool	1.7	0	0.0	-100	0.0	-100
Telangana						
Adilabad	0.1	-95	0.0	-100	0.0	-100
Hyderabad	0.2	-75	0.0	-100	0.0	-100
Karimnagar	0.8	-4	0.0	-100	0.0	-100
Khammam	0.0	-100	0.0	-100	0.0	-100
Mehabubnagar	5.2	1628	0.0	-100	0.0	-100
Medak	0.3	-45	0.0	-100	0.0	-100
Nalgonda	0.6	-81	0.0	-100	0.0	-100
Nizamabad	3.9	335	0.0	-100	0.0	-100
Rangareddy	1.2	50	0.0	-100	0.0	-100
Warangal	0.0	-99	0.0	-100	0.0	-100
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	0.0	-100	0.0	-100	0.0	-100
Dibang Valley	**	**	**	**	**	**
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	4.2	-58	0.7	-82	0.0	-100
Kurung Kumey	**	**	**	**	**	**
Lohit	0.0	-100	0.0	-100	0.0	-100
Lower Dibang Valley	2.6	-90	0.0	-100	0.0	-100
Lower Subansari	**	**	**	**	**	**
Papumpara	0.0	-100	0.8	300	0.0	-100
Tawang	8.0	-49	1.0	-73	0.0	-100
Tirap	0.0	-100	0.0	-100	0.0	-100
Upper Siang	8.0	-71	0.3	-98	0.0	-100
Upper Subansari	20.0	285	2.2	57	0.0	-100
West Kameng	0.0	-100	0.0	-100	0.0	-100
West Siang	8.5	-30	1.0	-84	0.0	-100
Assam&Meghalaya						
Assam						
Baksa	0.0	-100	0.0	-100	0.0	-100
Barpeta	0.0	-99	0.0	-100	0.0	-100
Bongaigaon	0.2	-94	0.0	-100	0.0	-100
Cachar	0.0	-100	0.0	-100	0.0	-100
Chirang	0.0	-100	0.0	-100	0.0	-100
Darrang	0.0	-100	0.0	-100	0.0	-100
Dhemaji	0.0	-100	0.0	-100	0.0	-100
Dhubri	2.8	295	0.1	33	0.0	-100
Dibrugarh	0.0	-100	0.0	-100	0.0	-100
Goalpara	0.0	-100	0.0	-100	0.0	-100
Golghat	0.0	-100	0.0	-100	0.0	-100

Hailakandi	0.0	-100	0.0	-100	0.0	-100
Jorhat	0.0	-100	0.0	-100	0.0	-100
Kamrup(Rural)	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	0.0	-100	0.0	-100	0.0	-100
Karbi Anglong	0.0	-100	0.0	-100	0.0	-100
Karimganj	0.0	-100	0.0	-100	0.0	-100
Kokrajhar	0.1	-96	0.6	200	0.0	-100
Lakhimpur	0.2	-97	0.0	-100	0.0	-100
Morigaon	0.0	-100	0.6	100	0.0	-100
N.C.Hills	0.0	-100	0.0	-100	0.0	-100
Nowgong	0.0	-100	0.3	-52	0.0	-100
Nalbari	0.0	-100	0.0	-100	0.0	-100
Sonitpur	0.1	-99	0.0	-100	0.0	-100
Sibsagar	0.0	-100	0.0	-100	0.0	-100
Tinsukia	0.0	-100	0.0	-100	0.0	-100
Udalgiri	0.0	-100	0.0	-100	0.0	-100
Meghalaya						
East Garo Hills	0.0	-100	0.0	-100	0.0	-100
East Khasi Hills	0.0	-100	0.8	-11	0.0	-100
Jaintia Hills	0.0	-100	0.0	-100	0.0	-100
Ribhoi	0.0	-100	7.0	1650	0.0	-100
South Garo Hills	0.0	-100	0.0	-100	0.0	-100
West Garo Hills	0.0	-100	0.0	-100	0.0	-100
West Khasi Hills	0.0	-100	0.0	-100	0.0	-100
NMMT						
Mizoram						
Aizwal	0.0	-100	0.0	-100	0.0	-100
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	0.0	-100	0.0	-100	0.0	-100
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	0.0	-100	0.0	-100
Serchhip	0.0	-100	0.0	-100	0.0	-100
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	0.0	-100	0.0	-100	0.0	-100
Churachandpur	**	**	**	**	**	**
Imphal east	0.0	-100	0.0	-100	0.0	-100
Imphal west	0.0	-100	0.0	-100	0.0	-100
Senapati	0.0	-100	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**
Thoubal	0.0	-100	0.0	-100	0.0	-100
Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	0.0	-100	2.4	100	0.0	-100
Kephire	**	**	**	**	0.0	-100
Kohima	0.0	-100	0.6	20	0.0	-100
Longleng	**	**	**	**	**	**

Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	0.0	-100	0.0	-100	0.0	-100
North Tripura	0.0	-100	0.0	-100	0.0	-100
South Tripura	0.0	-100	0.0	-100	0.1	-95
West Tripura	0.0	-100	0.0	-100	0.0	-100
Himachal Pradesh						
Bilaspur	63.9	1154	0.0	-100	0.0	-100
Chamba	33.4	137	0.0	-100	0.0	-100
Hamirpur	55.5	650	0.0	-100	0.0	-100
Kangra	43.8	347	0.0	-100	0.0	-100
Kinnaur	39.3	469	0.0	-100	0.0	-100
Kullu	72.9	898	0.0	-100	0.0	-100
Lahaul and Spiti	14.1	1	2.5	-85	0.0	-100
Mandi	94.4	1248	0.0	-100	0.0	-100
Shimla	63.0	1025	0.0	-100	0.0	-100
Sirmaur	88.2	1060	0.0	-100	0.0	-100
Solan	122.5	1490	0.0	-100	0.0	-100
Una	55.1	1622	0.0	-100	0.0	-100
Punjab						
Amritsar	0.2	-96	0.0	-100	0.0	-100
Barnala	11.3	436	0.0	-100	0.0	-100
Bhatinda	0.3	-82	0.0	-100	0.0	-100
Faridkot	0.0	-100	0.0	-100	0.0	-100
Fatehgarh Saheb	27.0	831	0.0	-100	0.0	-100
Ferozpur	0.3	-90	0.0	-100	0.0	-100
Gurdaspur	18.5	118	0.0	-100	0.0	-100
Hoshiarpur	23.3	482	0.0	-100	0.0	-100
Jalandhar	18.7	379	0.0	-100	0.0	-100
Kapurthala	21.0	400	0.0	-100	0.0	-100
Ludhiana	14.1	441	0.0	-100	0.0	-100
Mansa	4.4	214	0.0	-100	0.0	-100
Moga	14.3	741	0.0	-100	0.0	-100
Muktesar	0.0	-100	0.0	-100	0.0	-100
Nawashahar	42.6	890	0.0	-100	0.0	-100
Patiala	28.2	841	0.0	-100	0.0	-100
Ropar	40.4	911	0.0	-100	0.0	-100
Sangrur	26.1	801	0.0	-100	0.0	-100
Mohali	42.3	2390	0.0	-100	0.0	-100
TarnTaran	0.0	-100	0.0	-100	0.0	-100
Haryana,Chd,Delhi						
Haryana						
Ambala	60.4	1019	0.0	-100	0.0	-100

Bhiwani	5.9	1074	0.0	-100	0.0	-100
Chandigarh	90.0	1244	0.0	-100	0.0	-100
Faridabad	7.0	1067	0.0	-100	0.0	-100
Fatehabad	14.3	1333	0.0	-100	0.0	-100
Gurgaon	2.7	142	0.0	-100	0.0	-100
Hissar	2.4	144	0.0	-100	0.0	-100
Jhajar	0.0	-100	0.0	-100	0.0	-100
Jind	3.1	110	0.0	-100	0.0	-100
Katihah	8.0	896	0.0	-100	0.0	-100
Karnal	14.4	658	0.0	-100	0.0	-100
Kurukshetra	12.6	424	0.0	-100	0.0	-100
Mahendragarh	1.8	41	0.0	-100	0.0	-100
Mewat	3.0	131	0.0	-100	0.0	-100
Palwal	4.6	667	0.0	-100	0.0	-100
Panchkkula	60.0	2122	0.0	-100	0.0	-100
Panipat	1.8	67	0.0	-100	0.0	-100
Rewari	9.3	833	0.0	-100	0.0	-100
Rohtak	10.2	629	0.0	-100	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.4	-14	0.0	-100	0.0	-100
Yamunanagar	41.1	648	0.0	-100	0.0	-100
Delhi						
Central Delhi	17.0	844	0.0	-100	0.0	-100
East Delhi	18.0	900	0.0	-100	0.0	-100
New Delhi	12.3	581	0.0	-100	0.0	-100
North Delhi	21.4	1089	0.0	-100	0.0	-100
North East Delhi	16.0	789	0.0	-100	0.0	-100
North West Delhi	0.0	-100	0.0	-100	0.0	-100
South Delhi	26.4	1364	0.0	-100	0.0	-100
South West Delhi	10.2	464	0.0	-100	0.0	-100
West Delhi	12.0	567	0.0	-100	0.0	-100
Jammu & Kashmir						
Anantnag	0.0	-100	0.0	-100	0.0	-100
Badgam	0.0	-100	0.0	-100	0.0	-100
Bandipore	**	**	**	**	**	**
Baramula	0.0	-100	0.8	-94	0.0	-100
Doda	17.2	-31	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	10.2	42	0.0	-100	0.0	-100
Kistwar	**	**	**	**	**	**
Kulgam	0.0	-100	0.0	-100	0.0	-100
Kupwara	0.0	-100	1.6	-87	0.0	-100
Ladakh(Leh)	0.1	-89	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
East Madhya Pradesh						
Anuppur	2.3	153	0.0	-100	0.0	-100
Balaghat	14.6	257	0.0	-100	0.0	-100
Chhatarpur	33.6	2300	0.0	-100	0.0	-100
Chindwara	3.7	107	0.0	-100	0.0	-100
Damoh	7.9	394	0.0	-100	0.0	-100
Dindori	14.8	377	0.0	-100	0.0	-100
Jabalpur	6.1	221	0.0	-100	0.0	-100
Katni	19.4	1840	0.0	-100	0.0	-100
Mandla	20.2	494	0.0	-100	0.0	-100
Narsingpur	1.0	-44	0.0	-100	0.0	-100
Panna	11.8	973	0.0	-100	0.0	-100
Rewa	14.9	726	0.0	-100	0.0	-100
Sagar	5.3	277	0.0	-100	0.0	-100
Satna	14.7	1125	0.0	-100	0.0	-100
Seoni	6.0	122	0.0	-100	0.0	-100
Shahdol	21.0	1650	0.0	-100	0.0	-100
Sidhi	5.6	195	0.0	-100	0.0	-100
Singrauli	0.0	-100	0.0	-100	0.0	-100
Tikamgarh	47.5	6686	0.0	-100	0.0	-100
Umaria	6.2	210	0.0	-100	0.0	-100
West Madhya Pradesh						
Alirajpur	0.0	-100	0.0	-100	0.0	-100
Asoknagar	46.1	5662	0.0	-100	0.0	-100
Badwani	11.5	621	0.0	-100	0.0	-100
Betul	3.9	87	0.0	-100	0.0	-100
Bhind	29.1	7169	0.0	-100	0.0	-100
Bhopal	21.3	509	0.0	-100	1.0	-17
Burhanpur	34.4	1047	0.0	-100	1.3	-11
Datia	31.7	2785	0.0	-100	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	7.5	843	0.0	-100	0.0	-100
Guna	29.4	3167	0.0	-100	0.0	-100
Gwalior	38.2	3368	0.0	-100	0.0	-100
Harda	9.6	298	0.0	-100	0.0	-100
Hosangabad	22.9	1172	0.0	-100	0.0	-100
Indore	18.9	949	0.0	-100	0.0	-100
Jhabua	0.0	-100	0.0	-100	0.0	-100
Khandwa	18.0	429	0.0	-100	0.0	-100
Khargone	1.4	-43	0.0	-100	0.0	-100
Mandsaur	6.4	967	0.0	-100	0.0	-100
Morena	15.2	2429	0.0	-100	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	27.2	1193	0.0	-100	0.0	-100

Rajgarh	20.2	1249	0.0	-100	0.0	-100
Ratlam	0.7	-61	0.0	-100	0.0	-100
Sehore	2.3	10	0.0	-100	1.2	33
Shajapur	20.0	1900	0.0	-100	0.0	-100
Sheopur Kalani	12.0	1614	0.0	-100	0.0	-100
Shivpuri	19.0	3700	0.0	-100	0.0	-100
Ujjain	10.0	2400	0.0	-100	0.0	-100
Vidisha	36.6	2718	0.0	-100	0.0	-100
Chhattisgarh						
Bastar	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	6.0	101	0.0	-100	3.8	73
Dantewara	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100
Durg	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	0.0	-100	0.0	-100
Koriya	1.8	77	0.0	-100	0.0	-100
Kawardha	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100
Narayanpur	0.0	-100	0.0	-100	0.0	-100
Raigarh	0.0	-100	0.0	-100	0.0	-100
Raipur	0.0	-100	0.0	-100	0.0	-100
Rajandgaon	0.0	-100	0.0	-100	0.0	-100
Surguja	3.7	425	0.0	-100	0.0	-100
East Uttar Pradesh						
Allahabad	9.7	2335	0.0	-100	0.0	-100
Ambedkar Nagar	18.0	3500	0.0	-100	0.0	-100
Azamgarh	1.5	1400	0.0	-100	0.0	-100
Bahraich	9.0	372	0.0	-100	0.0	-100
Ballia	0.1	-67	0.0	-100	0.0	-100
Balrampur	5.5	293	0.0	-100	0.0	-100
Banda	14.2	1670	0.0	-100	0.0	-100
Barabanki	7.1	492	0.0	-100	0.0	-100
Basti	12.0	823	0.0	-100	0.0	-100
Chandauli	1.5	150	0.0	-100	0.0	-100
Deoria	1.0	25	0.0	-100	0.0	-100
Faizabad	6.8	426	0.0	-100	0.0	-100
Farrukhabad	10.5	1993	0.0	-100	0.0	-100
Fatehpur	21.4	4173	0.0	-100	0.0	-100
Gazipur	0.7	625	0.0	-100	0.0	-100
Gonda	7.1	545	0.0	-100	0.0	-100
Gorakhpur	6.2	786	0.0	-100	0.0	-100
Hardoi	13.2	1367	0.0	-100	0.0	-100
Jaunpur	0.0	-100	0.0	-100	0.0	-100
Kannauj	67.4	11133	0.0	-100	0.0	-100
Kanpur City	11.4	1325	0.0	-100	0.0	-100

Kanpur Dehat	10.6	5200	0.0	-100	0.0	-100
Kaushambi	1.4	250	0.0	-100	0.0	-100
Kheri	18.6	1446	0.0	-100	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100
Lucknow	5.1	325	0.0	-100	0.0	-100
Maharajganj	5.0	355	0.0	-100	0.0	-100
Mau	0.0	-100	0.0	-100	0.0	-100
Mirzapur	1.5	150	0.0	-100	0.0	-100
Pratapgarh	1.0	233	0.0	-100	0.0	-100
RaiBareilly	7.8	2492	0.0	-100	0.0	-100
Sahuji Maharajnagar	6.5	983	0.0	-100	0.0	-100
Sant Kabirnnagar	0.5	-72	0.0	-100	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100
Shrawasti	**	**	**	**	**	**
Sidharthnagar	0.0	-100	0.0	-100	0.0	-100
Sitapur	16.5	1733	0.0	-100	0.0	-100
Sonbhadra	3.4	162	0.0	-100	0.0	-100
Sultanpur	1.9	383	0.0	-100	0.0	-100
Unnao	6.0	900	0.0	-100	0.0	-100
Varanasi	1.9	287	0.0	-100	0.0	-100
West Uttar Pradesh						
Agra	9.8	1533	0.0	-100	0.0	-100
Aligarh	6.6	247	0.0	-100	0.0	-100
Auraiya	7.0	900	0.0	-100	0.0	-100
Badaun	13.7	1273	0.0	-100	0.0	-100
Baghpat	2.7	350	0.0	-100	0.0	-100
Bareilly	22.5	3119	0.0	-100	0.0	-100
Bijnor	15.5	605	0.0	-100	0.0	-100
Bulandsahar	8.7	567	0.0	-100	0.0	-100
Etah	8.0	1233	0.0	-100	0.0	-100
Etawah	12.0	2300	0.0	-100	0.0	-100
Firozabad	9.1	1713	0.0	-100	0.0	-100
GBNagar	9.0	1025	0.0	-100	0.0	-100
Ghaziabad	3.7	273	0.0	-100	0.0	-100
Hamirpur	20.3	10025	0.0	-100	0.0	-100
Jalaun	18.7	6122	0.0	-100	0.0	-100
Jhansi	34.5	8525	0.0	-100	0.0	-100
Jotiba Phule Nagar	15.0	1775	0.0	-100	0.0	-100
Kanshiramnagar	5.0	355	0.0	-100	0.0	-100
Lalitpur	43.3	4233	0.0	-100	0.0	-100
Mahamaya Nagar	2.3	289	0.0	-100	0.0	-100
Mahoba	24.8	3443	0.0	-100	0.0	-100
Mainpuri	9.4	2250	0.0	-100	0.0	-100
Mathura	0.0	-100	0.0	-100	0.0	-100
Meerut	1.9	36	0.0	-100	0.0	-100
Moradabad	33.8	4731	0.0	-100	0.0	-100
Muzzaffarnagar	10.8	882	0.0	-100	0.0	-100
Pilibhit	8.3	314	0.0	-100	0.0	-100
Rampur	29.8	2192	0.0	-100	0.0	-100

Saharanpur	16.5	535	0.0	-100	0.0	-100
Shahjahanpur	6.5	439	0.0	-100	0.0	-100
Uttarakhand						
Almora	63.8	1151	0.0	-100	0.0	-100
Bageshwar	41.5	714	0.0	-100	0.0	-100
Chamoli	55.0	696	0.0	-100	0.0	-100
Champawat	72.0	929	0.0	-100	0.0	-100
Dehradun	32.0	581	0.0	-100	0.0	-100
Garhwal Pauri	16.6	538	0.0	-100	0.0	-100
Garhwal Tehri	15.8	116	0.0	-100	0.0	-100
Haridwar	17.3	541	0.0	-100	0.0	-100
Nainital	83.5	1842	0.0	-100	0.0	-100
Pithorgarh	78.0	1179	0.0	-100	0.0	-100
Rudraprayag	58.7	1074	0.0	-100	0.0	-100
Udham Sing Nagar	46.4	2475	0.0	-100	0.0	-100
Uttarkashi	24.9	211	0.0	-100	0.0	-100
Bihar						
Araria	0.5	-55	0.0	-100	0.0	-100
Arwal	0.0	-100	0.0	-100	0.0	-100
Aurangabad	0.5	-44	0.0	-100	0.0	-100
Banka	0.0	-100	**	**	**	**
Begusarai	0.0	-100	0.0	-100	0.0	-100
Bhabua	0.0	-100	0.0	-100	0.0	-100
Bhagalpur	0.2	-86	0.0	-100	0.0	-100
Bhojpur	0.0	-100	0.0	-100	0.0	-100
Buxar	**	**	**	**	**	**
Darbhanga	**	**	0.0	-100	0.0	-100
East Champaran	4.2	423	0.0	-100	0.0	-100
Gaya	2.7	289	0.0	-100	0.0	-100
Gopalganj	5.3	379	0.0	-100	0.0	-100
Jahanabad	1.2	15	0.0	-100	0.0	-100
Jamui	0.0	-100	0.0	-100	0.0	-100
Kathihar	0.0	-100	0.0	-100	0.0	-100
Khagadia	0.0	-100	0.0	-100	0.0	-100
Kishanganj	0.0	-100	0.0	-100	0.0	-100
Lakhisarai	1.0	43	0.0	-100	0.0	-100
Madhepura	0.0	-100	0.0	-100	0.0	-100
Madhubani	**	**	**	**	0.0	-100
Monghyar	**	**	0.0	-100	**	**
Muzaffarpur	1.7	325	0.0	-100	0.0	-100
Nalanda	2.3	278	0.0	-100	0.0	-100
Nawada	3.6	3500	0.0	-100	0.0	-100
Patna	0.1	-67	0.0	-100	0.0	-100
Purnea	0.0	-100	0.0	-100	0.0	-100
Rohtas	0.1	-83	0.0	-100	0.0	-100
Saharsha	0.0	-100	0.0	-100	0.0	-100
Samstipur	0.0	-100	0.0	-100	0.0	-100
Saran	0.0	-100	0.0	-100	0.0	-100
Sheikpura	2.2	617	0.0	-100	0.0	-100

Sheohar	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	4.0	186	0.0	-100	0.0	-100
Siwan	0.0	-100	0.0	-100	0.0	-100
Supaul	0.2	-80	0.0	-100	0.0	-100
Vaishali	3.9	1850	0.0	-100	0.0	-100
West Champaran	3.1	63	0.0	-100	0.0	-100
Jharkhand						
Bokaro	0.0	-100	0.0	-100	0.0	-100
Chatra	0.0	-100	0.0	-100	0.0	-100
Deoghar	0.0	-100	0.0	-100	0.0	-100
Dhanbad	0.0	-100	0.0	-100	0.0	-100
Dumka	0.0	-100	0.0	-100	0.0	-100
East Singhbhum	0.1	-87	0.0	-100	0.0	-100
Garhwa	12.5	1983	0.0	-100	0.0	-100
Giridih	0.0	-100	0.0	-100	0.0	-100
Godda	0.0	-100	0.0	-100	0.0	-100
Gumla	0.0	-100	0.0	-100	0.0	-100
Hazaribagh	0.3	-85	0.0	-100	0.0	-100
Jamtara	0.0	-100	0.0	-100	0.0	-100
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderrna	0.0	-100	0.0	-100	0.0	-100
Latehar	0.0	-100	0.0	-100	0.0	-100
Lohardagga	0.0	-100	0.0	-100	0.0	-100
Pakur	0.0	-100	0.0	-100	0.0	-100
Palamau	9.2	1431	0.0	-100	0.0	-100
Ramgarh	0.0	-100	0.0	-100	0.0	-100
Ranchi	0.0	-100	0.0	-100	0.0	-100
Sahebganj	0.0	-100	0.0	-100	0.0	-100
Saraikela	0.0	-100	0.0	-100	0.0	-100
Simdega	0.0	-100	0.0	-100	0.0	-100
West Singhbhum	0.0	-100	0.0	-100	0.0	-100
East Rajasthan						
Ajmer	0.0	-100	0.0	-100	0.0	-100
Alwar	2.1	51	0.0	-100	0.0	-100
Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	0.0	-100	0.0	-100
Bharatpur	0.0	-100	0.0	-100	0.0	-100
Bhilwara	0.0	-100	0.0	-100	0.0	-100
Bundi	0.0	-100	0.0	-100	0.0	-100
Chittorgarh	0.0	-100	0.0	-100	0.0	-100
Dausa	0.0	-100	0.0	-100	0.0	-100
Dholpur	0.0	-100	0.0	-100	0.0	-100
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.0	-100	0.0	-100	0.0	-100
Jhalawar	0.6	-36	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	0.0	-100	0.0	-100
Karauli	0.0	-100	0.0	-100	0.0	-100
Kota	0.0	-100	0.0	-100	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100

Rajsamand	0.0	-100	0.0	-100	0.0	-100
Sawai Madhopur	0.0	-100	0.0	-100	0.0	-100
Sikar	0.0	-100	0.0	-100	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-100	0.0	-100	0.0	-100
Udaipur	0.0	-100	0.0	-100	0.0	-100
West Rajasthan						
Barmer	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100
Churu	0.0	-100	0.0	-100	0.0	-100
Hanumangarh	0.0	-100	0.0	-100	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.0	-100
Nagaur	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-100	0.0	-100
Gujarat Region						
Ahmedabad	0.0	-100	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
DNH	**	**	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100
Daman	**	**	**	**	**	**
Dangs	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100
Narmada	0.0	-100	0.0	-100	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	0.0	-100	0.0	-100	0.0	-100
Surat	0.0	-100	0.0	-100	0.0	-100
Tapi	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100
S K & Diu region						
Amreli	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-100	0.0	-100	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.0	-100
Maharashtra & Goa						

Konkan & Goa						
Mumbai City	30.0	1665	0.0	-100	0.0	-100
Mumbai Suburban	1.5	-12	0.0	-100	0.0	-100
North Goa	24.3	492	0.0	-100	0.0	-100
Raigad	24.1	1753	0.0	-100	0.0	-100
Ratnagiri	4.8	167	0.0	-100	0.0	-100
Sindhudurg	18.9	720	0.0	-100	0.0	-100
South Goa	23.9	470	0.0	-100	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100
Madhya Maharashtra						
Ahmednagar	3.4	56	0.0	-100	0.0	-100
Dhule	0.3	-81	**	**	0.0	-100
Jalgaon	52.6	3660	0.0	-100	**	**
Kolhapur	8.6	219	0.0	-100	0.0	-100
Nandurbar	1.6	172	**	**	0.0	-100
Nasik	16.4	811	0.0	-100	0.0	-100
Pune	12.2	511	0.0	-100	0.0	-100
Sangli	18.3	664	0.0	-100	0.1	-56
Satara	2.8	-14	0.0	-100	0.0	-100
Solapur	5.4	81	0.0	-100	0.0	-100
Marathwada						
Aurangabad	15.2	333	0.0	-100	1.0	9
Beed	0.0	-100	**	**	0.0	-100
Hingoli	**	**	**	**	0.0	-100
Jalna	0.0	-100	**	**	0.0	-100
Latur	4.5	463	0.0	-100	0.0	-100
Nanded	0.0	-100	0.0	-100	0.0	-100
Usmanabad	0.2	-91	0.0	-100	0.0	-100
Parbhani	0.0	-100	0.0	-100	0.0	-100
Vidarbha						
Akola	5.1	199	0.0	-100	0.0	-100
Amraoti	5.2	247	0.0	-100	0.4	-76
Bhandara	0.0	-100	0.0	-100	0.0	-100
Buldhana	12.7	604	0.0	-100	0.1	-90
Chandrapur	0.0	-100	0.0	-100	0.0	-100
Gadchiroli	0.0	-100	0.0	-100	0.0	-100
Gondia	0.0	-100	0.0	-100	0.0	-100
Nagpur	0.4	-83	0.0	-100	0.0	-100
Wardha	0.0	-100	0.0	-100	0.0	-100
Washim	0.0	-100	0.0	-100	0.0	-100
Yeotmal	0.0	-100	0.0	-100	0.0	-100
Odisha						
Angul	0.0	-100	0.0	-100	0.1	-95
Balasore	0.1	-97	0.0	-100	0.0	-99
Bargarh	0.0	-100	0.0	-100	0.1	-91
Bhadrak	0.0	-100	0.0	-100	0.4	-47
Bolangir	0.0	-100	0.0	-100	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.0	-100	0.0	-100	0.0	-100

Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.1	-97
Gajapati	0.0	-100	0.0	-100	3.9	556
Ganjam	0.0	-100	0.0	-100	3.8	248
Jagatsingpur	0.0	-100	0.0	-100	1.3	229
Jajpur	0.0	-100	0.0	-100	0.0	-100
Jharsuguda	0.0	-100	0.0	-100	1.1	-56
Kalahandi	0.0	-100	0.0	-100	0.0	-100
Kandhamal	0.0	-100	0.0	-100	4.0	233
Kendrapara	0.0	-100	0.0	-100	1.4	75
Keonjhar	0.2	-84	0.0	-100	0.3	-71
Khurda	0.0	-100	0.0	-100	0.1	-94
Koraput	0.0	-100	0.0	-100	5.8	1817
Malkangiri	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	0.0	-100	0.0	-100	0.3	-78
Nawapara	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	0.0	-100	0.0	-100
Puri	0.0	-100	0.0	-100	3.9	330
Rayagada	0.1	-89	0.0	-100	1.2	7
Sambalpur	0.0	-100	0.0	-100	1.5	17
Sonepur	0.0	-100	0.0	-100	0.0	-100
Sundargarh	0.0	-100	0.0	-100	0.2	-86
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	21.4	-66	72.5	43	100.5	149
North & Middle Andaman	0.1	-99	3.1	-69	16.3	-15
South Andaman	3.0	-91	15.5	20	6.8	-70
GWB						
Bankura	0.6	-48	0.0	-100	0.0	-100
Birbhum	0.8	-17	0.0	-100	0.0	-100
Burdwan	0.5	-47	0.0	-100	0.0	-100
East Midnapore	0.1	-98	0.0	-100	0.0	-100
Hooghly	0.0	-100	0.0	-100	0.0	-100
Howrah	0.0	-100	0.0	-100	1.9	-29
Kolkata	0.0	-100	0.0	-100	0.1	-98
Murshidabad	0.0	-100	0.0	-100	0.0	-100
Nadia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (N)	0.0	-100	0.0	-100	1.9	-23
Purulia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (S)	0.1	-96	0.0	-100	0.8	-79
West Midnapore	0.0	-100	0.0	-100	0.0	-98
SHWB & Sikkim						
Cooch Behar	0.1	-95	0.0	-100	0.0	-100
Darjeeling	1.4	29	0.0	-100	0.0	-100
East Sikkim	3.8	-20	0.0	-100	0.7	-88
Jalpaiguri	0.1	-93	0.0	-100	0.0	-100
Malda	0.0	-100	0.0	-100	0.0	-100
North Dinajpur	0.0	-100	0.0	-100	0.0	-100

North Sikkim	13.6	240	0.0	-100	0.0	-100
South Dinajpur	0.0	-100	0.0	-100	0.0	-100
South Sikkim	1.9	-60	0.0	-100	0.0	-100
West Sikkim	2.0	-50	0.0	-100	0.0	-100

Legends

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

Annexure II List of varieties

Tamil Nadu

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

Direct seeded rice: (White Ponni or ADT 39)

Assam

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

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

Radish : Pusa Deshi, Pusa Chetki, Pusa Himani

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

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

Early maturity Knol Khol : White Vienna.

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

Meghalaya

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

Cabbage: H-139, Pride of India

Cauliflower: Meghalaya Local

Carrot: New Karoda, Nantesh

Radish: Local genotype

Broccoli: Puspa, Aiswarya

French bean: Naga Local

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

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

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

Tripura

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

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

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

Broccoli: Everest, Ayeshwaria.

Odisha

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

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

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

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

West Bengal

Banana: Mortoman, Chapa, Kathali, Singapuri.

Tomato: Avinash-2, 448.

Cabbage: Pride of India, Pusa early, Kranti.

Cauliflower: Jawhar moti, Bharat Jyoti, Early banaras

Bihar

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

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

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

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

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

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

Jharkhand:

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

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

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

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

Madhya Pradesh

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

Wheat: Sujata, HW-2004, HI-1500

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

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

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

Chhattisgarh

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

Linseed: RLC-92, Indira-32

Wheat: GW-273, Lok-1

Mustard: Pusa Bold

Jammu & Kashmir

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

Uttarakhand

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

Potato: Kufri- Jyoti, Ashok, Anand

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

Himachal Pradesh

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

Late variety of Cauliflower: broccoli

East Uttar Pradesh

Cabbage: Imprabad Japani, Pusa chipali and Pusa kartiki

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

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

Potato: Kuferi - Chandramukhi, Bahar

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

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

West Uttar Pradesh:

Toria: Sangam, TL-17, 67

Ageti matar: Azad P-3, Arkel

Maharashtra

Madhya Maharashtra

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

Safflower: Bhima or Phule Kusuma

Marathwada

Jowar: Parbhani Moti or Parbhani Jyoti.