

# National Agromet Advisory Service Bulletin

**Friday 20<sup>th</sup> February 2015**

**(For the period 20<sup>th</sup> to 24<sup>th</sup> February 2015)**



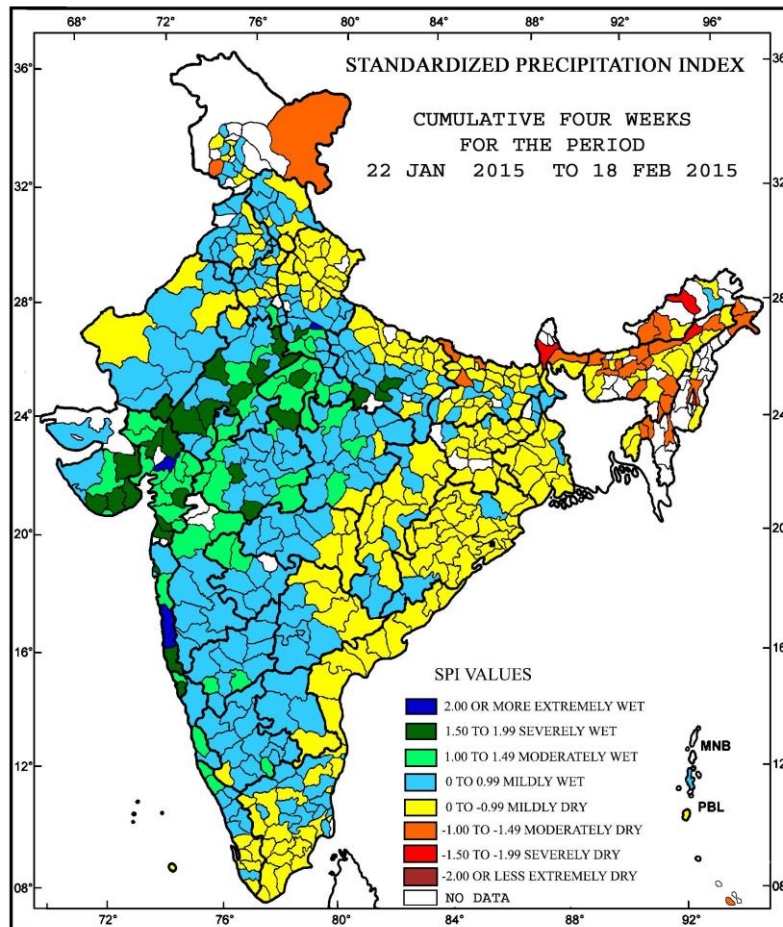
**Issued by**

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



**Standardised Precipitation Index**  
**Four Weekly**  
**for the Period 22<sup>nd</sup> January 2015 to 18<sup>th</sup> February 2015**

MINISTRY OF EARTH SCIENCES  
INDIA METEOROLOGICAL DEPARTMENT  
HYDROMET SECTION, PUNE

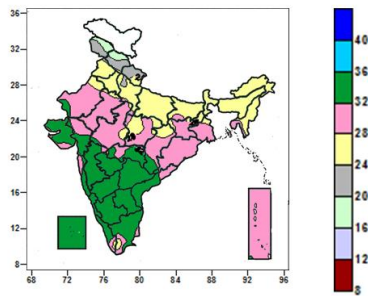


- Extremely/severely wet conditions experienced in few districts of Rajasthan and Gujarat State; Banda, Kaushambi, Pratapgarh, Kanshiram Nagar, Mahamaya Nagar districts of Uttar Pradesh; Gwalior, Indore, Burhanpur, Ashok Nagar districts of Madhya Pradesh; Ratnagiri, Sindhudurg, Mumbai Suburban, South Goa districts of Konkan & Goa.
- Extremely /severely dry conditions experienced in Upper Subansiri district of Arunachal Pradesh; Lakhimpur districts of Assam; Imphal East district of Manipur; Darjeeling district of West Bengal.
- Moderately dry conditions experienced in many districts of Arunachal Pradesh and Assam; Senapati district of Manipur, Aizwal district of Mizoram; North Tripura, Dhalai districts of Tripura; Jalpaiguri district of West Bengal; West Champaran, Saran, Sitamarhi districts of Bihar; Ladakh, Rajouri districts of Jammu & Kashmir; East Khasi Hills district of Meghalaya.
- Rest of the country experienced moderately wet/ mild wet/dry conditions.



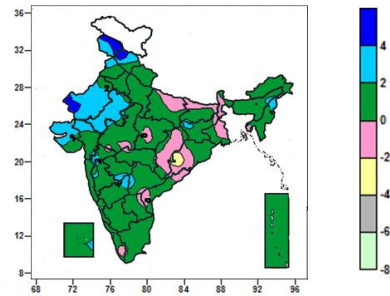
**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 18.02.2015**

**Actual Mean Maximum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 18.02.2015**



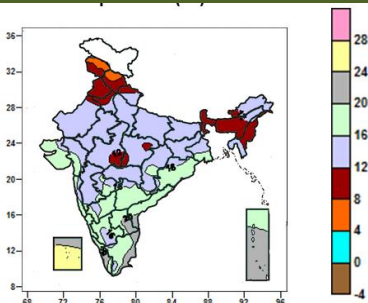
- 28 to 36 $^{\circ}\text{C}$  over Gujarat State, Odisha, Tripura, Karnataka, Telangana, Maharashtra, Andhra Pradesh, Lakshadweep, Andaman & Nicobar Islands, many parts of Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, Gangetic West Bengal, Kerala and Tamil Nadu, isolated parts of Bihar.
- 24 to 28 $^{\circ}\text{C}$  over Sub-Himalayan West Bengal & Sikkim, East Uttar Pradesh, Haryana & Delhi, many parts of North East India, Punjab, Bihar, few parts of Chhattisgarh, East Madhya Pradesh, isolated parts of Uttarakhand, Jharkhand, Rajasthan, West Madhya Pradesh, Gangetic West Bengal, Kerala and Tamil Nadu.
- 20 to 24 $^{\circ}\text{C}$  over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, isolated parts of West Uttar Pradesh and Punjab.
- 16 to 20 $^{\circ}\text{C}$  over few parts of Himachal Pradesh, Jammu & Kashmir.

**Mean Maximum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 18.02.2015**



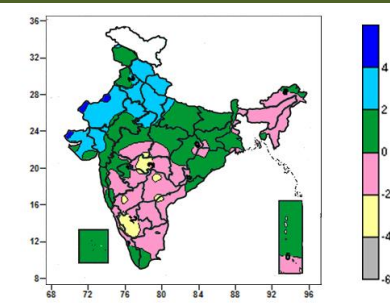
- -4 to -2 $^{\circ}\text{C}$  over isolated parts of Odisha.
- -2 to 2 $^{\circ}\text{C}$  over entire country except Jammu & Kashmir, many parts of Rajasthan, Saurashtra & Kutch, few parts of Himachal Pradesh, Gujarat region and isolated parts of Punjab, Jharkhand, Assam, Nagaland, Madhya Pradesh, West Rajasthan, Madhya Maharashtra, Marathwada, North Interior Karnataka, Telangana, Odisha and Lakshadweep.
- 2 to 4 $^{\circ}\text{C}$  over many parts of Rajasthan, Saurashtra & Kutch, few parts of Jammu & Kashmir, Himachal Pradesh, Gujarat region and isolated parts of Punjab, Jharkhand, Assam, Nagaland, Madhya Pradesh, Marathwada, North Interior Karnataka, Telangana and Lakshadweep.
- 4 to 6 $^{\circ}\text{C}$  over few parts of Jammu & Kashmir and Himachal Pradesh and isolated parts of West Rajasthan.

**Actual Mean Minimum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 18.02.2015**



- 4 to 8 $^{\circ}\text{C}$  over many parts of Jammu & Kashmir, few parts of Himachal Pradesh.
- 8 to 12 $^{\circ}\text{C}$  over Punjab, Sub-Himalayan West Bengal & Sikkim, Manipur, many parts of Assam & Meghalaya, Mizoram, Himachal Pradesh, Nagaland, few parts of Uttarakhand, Haryana & Delhi and isolated parts of West Rajasthan, Madhya Pradesh, Arunachal Pradesh, Tripura and Vidarbha.
- 12 to 20 $^{\circ}\text{C}$  over entire country except Jammu & Kashmir, Punjab, Sub-Himalayan West Bengal & Sikkim, Manipur, Lakshadweep, many parts of Assam & Meghalaya, Mizoram, Himachal Pradesh, Nagaland, Kerala, Andaman & Nicobar Islands, few parts of Uttarakhand, Haryana & Delhi, Rayalaseema, Tamil Nadu and isolated parts of West Rajasthan, Madhya Pradesh, Arunachal Pradesh, Tripura, Coastal Andhra Pradesh and Vidarbha.
- 20 to 28 $^{\circ}\text{C}$  over many parts of Kerala, Lakshadweep, Andaman & Nicobar Islands, few parts of Rayalaseema, Tamil Nadu and isolated parts of Coastal Andhra Pradesh.

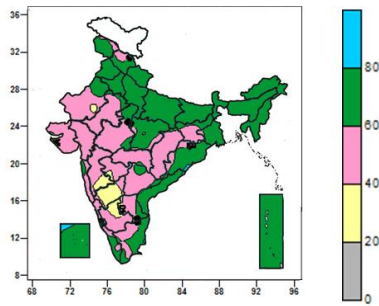
**Mean Minimum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 18.02.2015**



- -4 to -2 $^{\circ}\text{C}$  over many parts of South Interior Karnataka, few parts of Vidarbha and isolated parts of Coastal Andhra Pradesh, Telangana and North Interior Karnataka.
- -2 to 2 $^{\circ}\text{C}$  over entire country except Himachal Pradesh, Uttarakhand, Haryana & Delhi, West Uttar Pradesh, many parts of West Rajasthan, South Interior Karnataka, Gujarat, few parts of Telangana, Vidarbha, East Rajasthan, West Madhya Pradesh and isolated parts of Kutch, Coastal Andhra Pradesh, North Interior Karnataka and East Uttar Pradesh.
- 2 to 4 $^{\circ}\text{C}$  over Himachal Pradesh, Uttarakhand, Haryana, Delhi, West Uttar Pradesh, many parts of Gujarat State, West Rajasthan, few parts of East Rajasthan, West Madhya Pradesh and isolated parts of East Uttar Pradesh.
- 4 to 6 $^{\circ}\text{C}$  over isolated parts of West Rajasthan and Kutch.

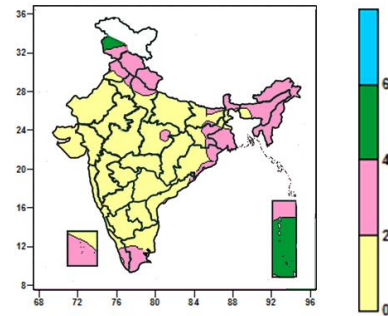
**Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 18.02.2015**

**Relative Humidity (%) over India for the week ending 18.02.2015**



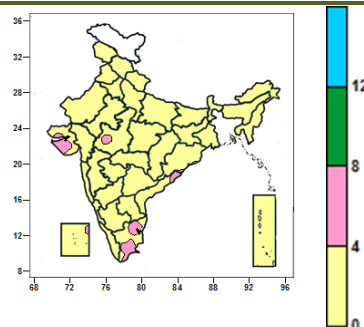
- 80 to 100% over isolated parts of Lakshadweep.
- 60 to 80% over Uttarakhand, Punjab, Haryana & Delhi, Uttar Pradesh, Bihar, Sub- Himalayan West Bengal & Sikkim, North East India, Coastal Andhra Pradesh, Andaman & Nicobar Islands, many parts of Jammu & Kashmir, Himachal Pradesh, Kerala, Tamil Nadu,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

**Cloud amount (okta) over India for the week ending 18.02.2015**



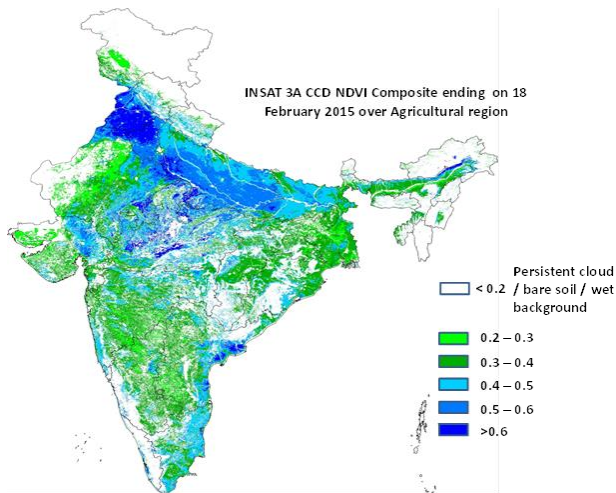
- 4 to 6 okta over many parts of Jammu & Kashmir and Andaman & Nicobar Islands.
- 2 to 4 over Himachal Pradesh, Uttarakhand, Sikkim, many parts of North East India, West Bengal, Punjab, Haryana & Delhi, Kerala, Lakshadweep, few parts of Jammu & Kashmir, West Uttar Pradesh, Jharkhand, Odisha, Tamil Nadu, Andaman & Nicobar Islands and isolated parts of Bihar, East Madhya Pradesh and Coastal Andhra Pradesh.
- 0 to 2 okta over entire country except Himachal Pradesh, Uttarakhand, Sikkim, many parts of Jammu & Kashmir, Andaman & Nicobar Islands, North East India, West Bengal, Punjab, Haryana & Delhi, Kerala, Lakshadweep few parts of West Uttar Pradesh, Jharkhand, Odisha, Tamil Nadu and isolated parts of Bihar, East Madhya Pradesh and Coastal Andhra Pradesh.

**Wind speed (knots) over India for the week ending 18.02.2015**



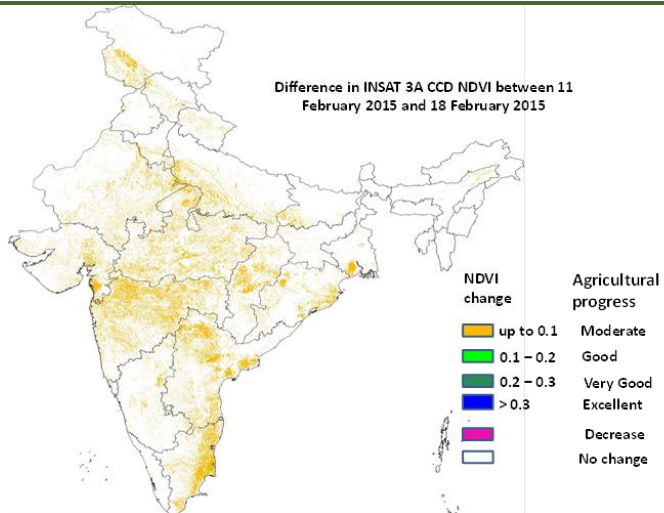
- 4 to 8 knots over many parts of Saurashtra, few parts of Tamil Nadu and isolated parts of Kutch, West Madhya Pradesh, Coastal Andhra Pradesh and Lakshadweep.
- 0 to 4 knots over entire country except many parts of Saurashtra, few parts of Tamil Nadu and isolated parts of Kutch, West Madhya Pradesh, Coastal Andhra Pradesh and Lakshadweep.

## INSAT 3A CCD NDVI COMPOSITE ENDING ON 18<sup>th</sup> FEBRUARY 2015 OVER AGRICULTURAL REGION OF INDIA



- Very good (NDVI > 0.6) agricultural vigour is observed over Punjab, some parts of Haryana, a few patches in central, eastern and northern Madhya Pradesh, Eastern Rajasthan, West Uttar Pradesh and coastal region of Andhra Pradesh. Vegetation is good (NDVI : 0.4 - 0.6) over Uttar Pradesh, many parts of Bihar, some parts of East Rajasthan, north Gujarat, coastal Andhra Pradesh and Tamil Nadu and a few parts of coastal Odisha. Some parts of central Bihar, few pockets in northwest Rajasthan, central Madhya Pradesh showed a considerable increase in the NDVI value. The NDVI remained within the range of 0.3 to 0.4 over few parts in Maharashtra, parts of Karnataka, Telangana and central Rajasthan.

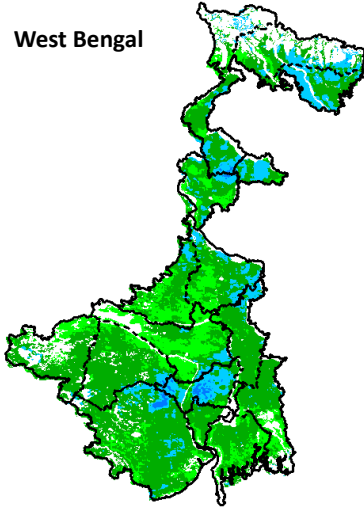
### Difference in INSAT 3A CCD NDVI between 11<sup>th</sup> February 2015 and 18<sup>th</sup> February 2015



- Moderate progress (up to 0.1) in NDVI was observed over some parts of Indo-Gangetic plains in Uttar Pradesh, Madhya Pradesh, eastern Rajasthan, central Chhattisgarh, Maharashtra, Telangana, coastal Tamil Nadu and a few parts of coastal Odisha, Gangetic West Bengal and coastal Andhra Pradesh. Not much change was observed in NDVI over remaining parts of the country.

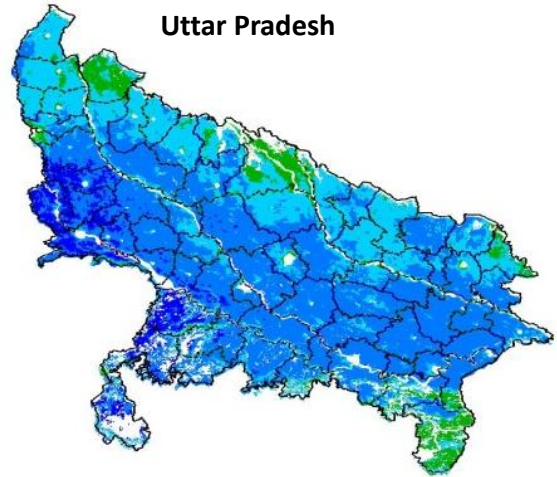
**INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 18<sup>th</sup>  
FEBRUARY 2015 FOR DIFFERENT STATES**

**West Bengal**



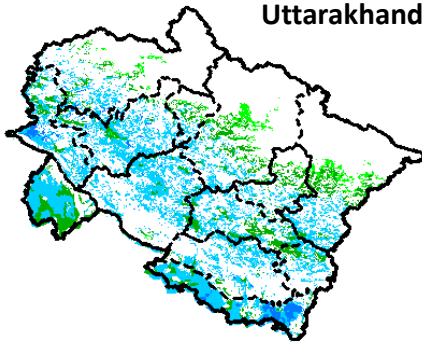
Agricultural vigour is moderate over most of the southern parts of West Bengal, whereas patches in the northern and central parts show higher values of NDVI varying from 0.4-0.6.

**Uttar Pradesh**



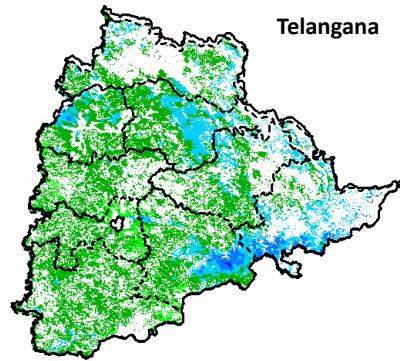
Agricultural vigour is good over the entire state of Uttar Pradesh where NDVI values varies from 0.4 -0.6. The NDVI high in the south western part of Uttar Pradesh.

**Uttarakhand**



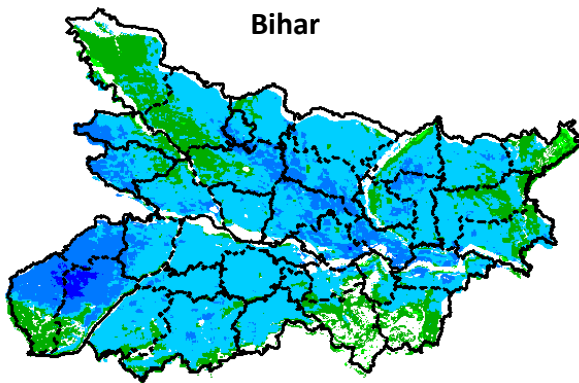
NDVI values vary from 0.2 - 0.5 over Uttarakhand. Higher values are seen in the southern and central part of Uttarakhand.

**Telangana**



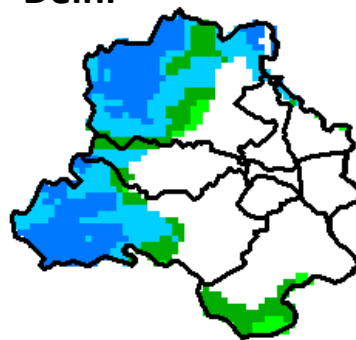
Agricultural vigour is good in pockets of eastern Telangana where NDVI values vary from 0.4 - 0.5. In the southern and western parts of the Telangana values of NDVI varies from 0.2- 0.3.

**Bihar**



The entire state of Bihar shows comparatively a high value (0.4-0.6) of NDVI, except for few pockets in south eastern and north western Bihar region.

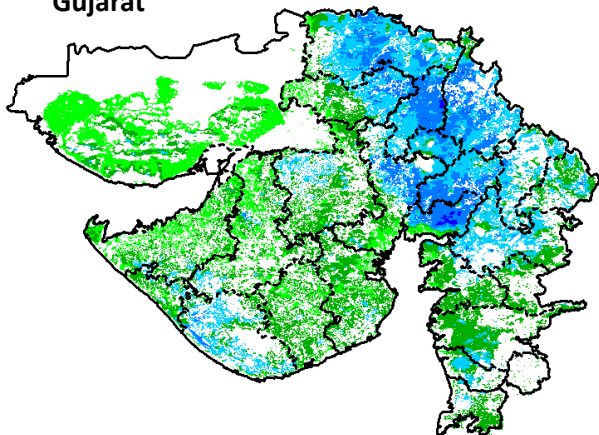
**Delhi**



Agriculture vigour is good over western part of Delhi. NDVI values lies between 0.4-0.5. NDVI values are normal over central and western part of the state.

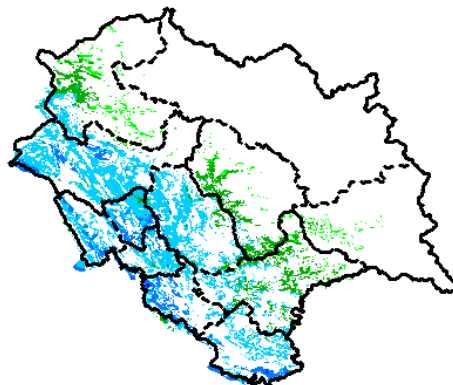


### Gujarat



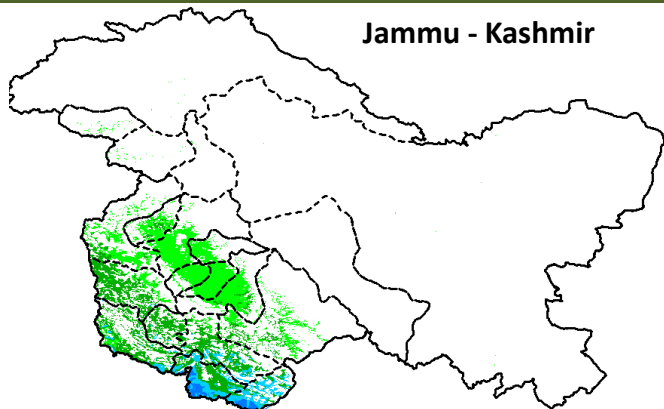
Agriculture vigour is good over parts of Eastern, northern Gujarat and southern Saurashtra where NDVI values lies between 0.4-0.5. Whereas normal NDVI is observed in Kutch and central Saurashtra.

### Himachal Pradesh



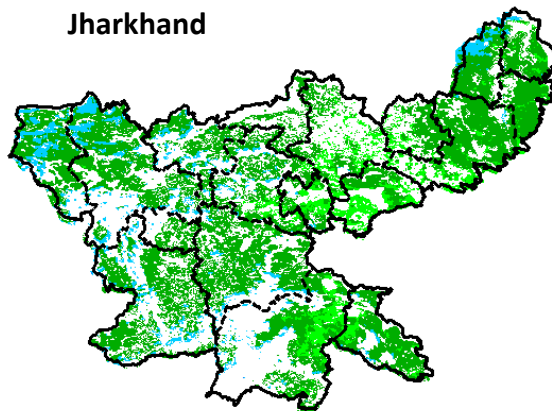
Agriculture vigour is good over southern and south western parts of Himachal Pradesh with NDVI values varying between 0.4-0.5. Whereas, isolated patches of normal NDVI are observed in the state.

### Jammu - Kashmir



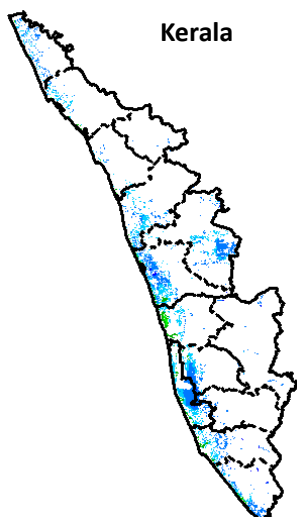
Agriculture vigour is normal all over Jammu and Kashmir. NDVI values vary in between 0.2-0.3 in south western parts.

### Jharkhand



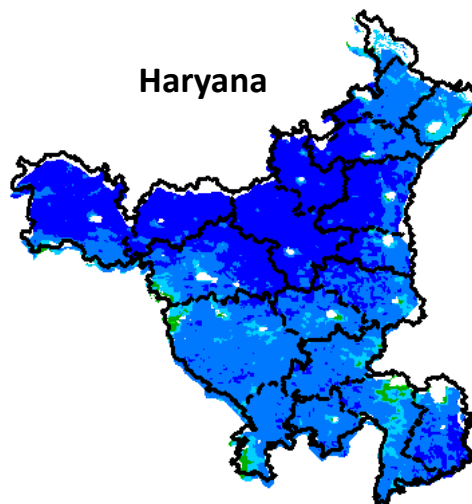
Agriculture vigour is moderate 0.2-0.3 over entire state of Jharkhand.

### Kerala

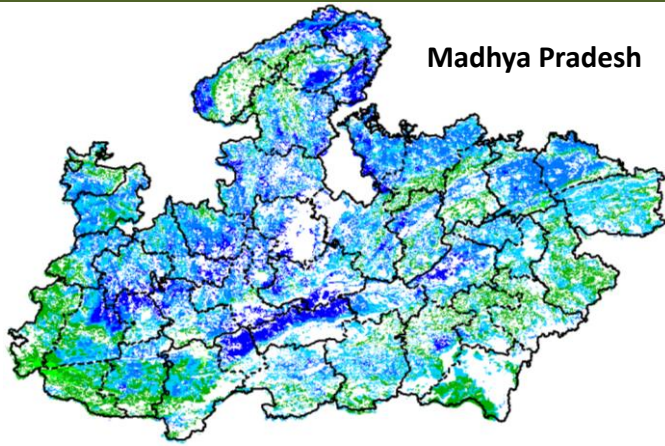


Some pockets in central and south coastal parts of Kerala show NDVI values varying from 0.4 - 0.5, whereas rest of agricultural vigour of Kerala shows normal values of NDVI.

### Haryana

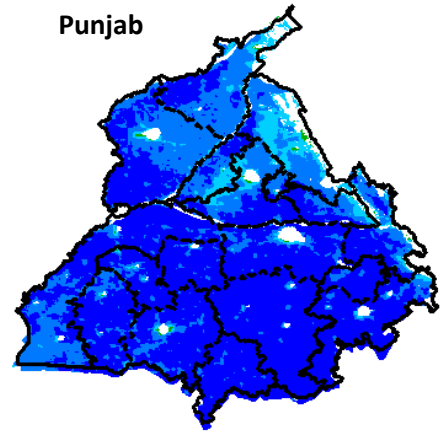


Agriculture vigour is good; NDVI values were 0.5-0.6 over most of the parts of Haryana. The north western parts show higher NDVI values (> 0.6).



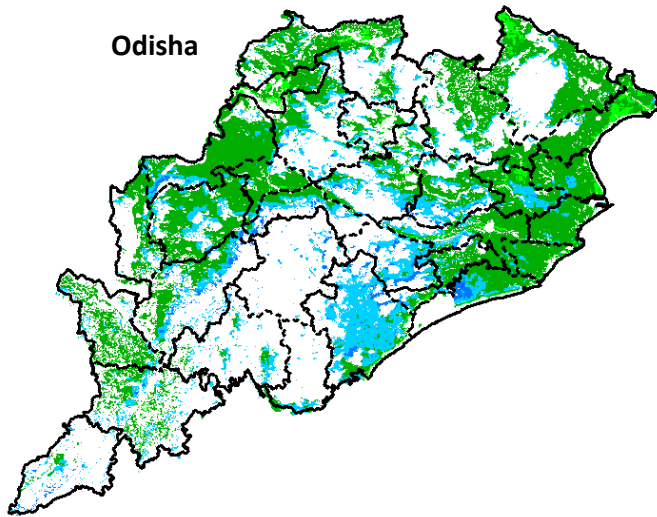
**Madhya Pradesh**

Agricultural vigour is good over central and western and northern region of Madhya Pradesh showing higher values of NDVI varies from 0.5 - 0.6. The overall Vegetation vigour is good over the entire state of Madhya Pradesh.



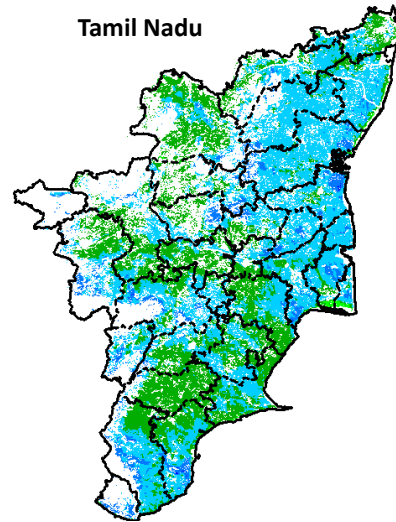
**Punjab**

Agricultural vigour is comparatively good over entire state of Punjab with NDVI values varying from 0.5-0.6. Southern districts of Punjab showing dominantly higher NDVI values more than 0.6.



**Odisha**

Agricultural vigour is good for south eastern coast of Odisha with NDVI values of 0.3 - 0.5 whereas, eastern, central and south regions show normal values of NDVI.



**Tamil Nadu**

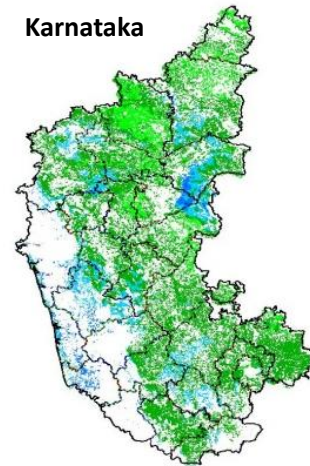
Agricultural vigour is good over Tamil Nadu with NDVI values varying from 0.4 - 0.6 in the coastal and Southern regions.

**Chhattisgarh**



Agriculture vigour is good all over western and southern part of Chhattisgarh where NDVI values lies in between 0.3-0.5. NDVI values are normal over eastern, central and northern part of the state.

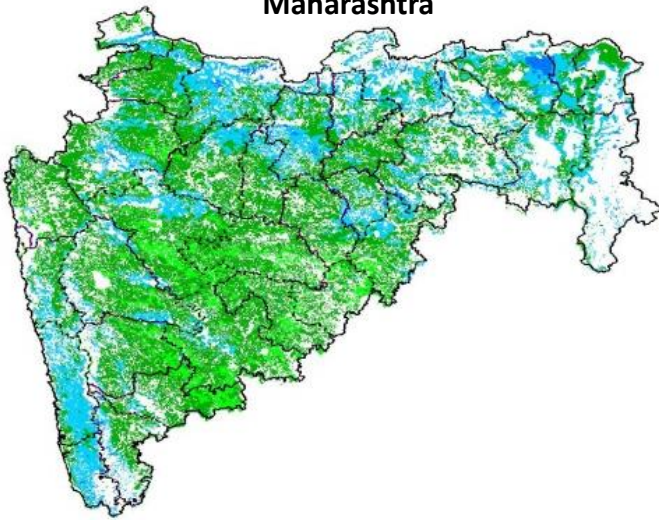
**Karnataka**



Agriculture vigour is good over some pockets in eastern and western coastal parts of Karnataka which lies in between 0.3-0.5. Rest of the part show normal condition where NDVI values vary up to 0.2-0.3

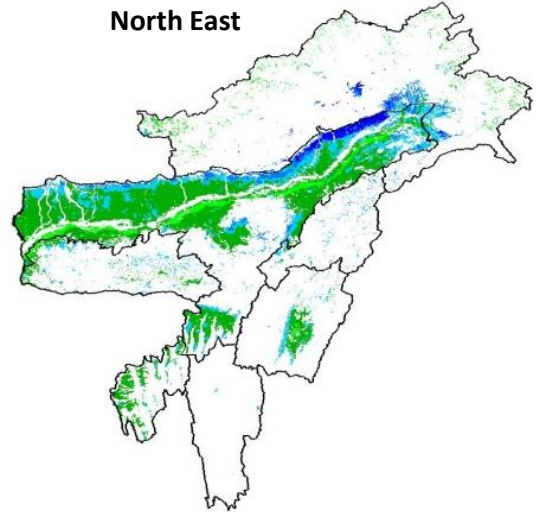


### Maharashtra



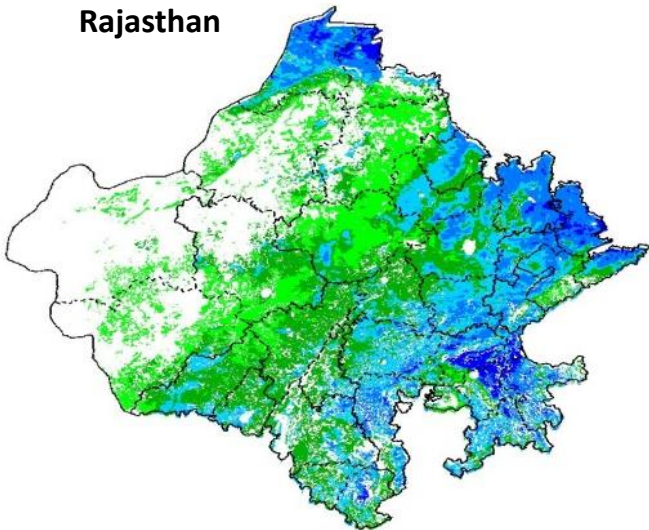
Agricultural vigour is good over Western coastal, Vidarbha and northern Marathwada region of Maharashtra with NDVI values of 0.3 - 0.5. Whereas, NDVI is moderate over central and southern parts of Marathwada region.

### North East



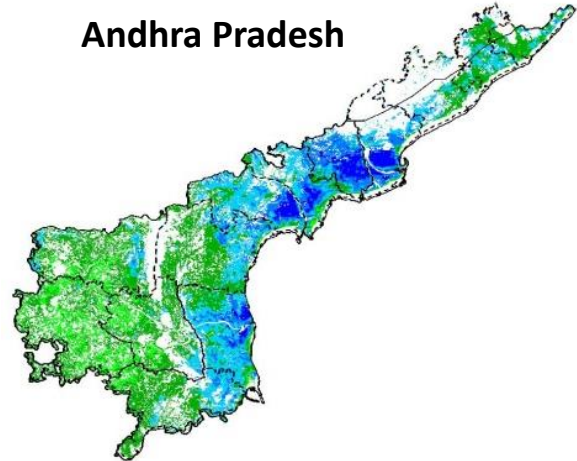
Agriculture vigour is good in valleys of northern hilly range of North-East states which covers part of Assam. NDVI values vary from 0.2-0.4 in this region. In north-east part of Assam, NDVI values are more than 0.6. Isolated patches of normal NDVI conditions are observed all over NE region.

### Rajasthan



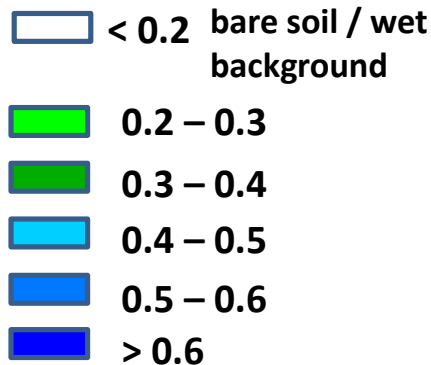
In the eastern, north eastern and northern part of Rajasthan NDVI shows higher values from 0.5-0.6. Whereas, Agricultural vigour is moderate over the central Rajasthan with NDVI values varying from 0.2 - 0.3.

### Andhra Pradesh



Agriculture vigour is good (0.5 - 0.6) over central and coastal parts of Andhra Pradesh. The NDVI is normal over rest of the part of the state.

### Persistent cloud /



## Weather Forecast

### Weather Forecast for next 3 days (upto 0830 hours IST of 23<sup>rd</sup> February, 2015).

- Rain/snow would occur at many places over Jammu & Kashmir during next 24 hours and decrease thereafter.
- Rain/snow would occur at many places over Himachal Pradesh during next 24 hours; at few places on 21<sup>st</sup> and dry weather would prevail thereafter.
- Rain/snow would occur at a few places over Uttarakhand during next 24 hours; at isolated places on 21<sup>st</sup> and dry weather would prevail thereafter.
- Rain/thundershowers would occur at a few places over Arunachal Pradesh, Assam & Meghalaya during next 24 hours and at isolated places thereafter.
- Rain/thundershowers would occur at isolated places over Nagaland, Manipur, Mizoram, Tripura, Sub-Himalayan West Bengal & Sikkim and Andaman & Nicobar Islands during the period.
- Rain/thundershowers would occur at a few places over Punjab during next 24 hours and dry weather would prevail thereafter.
- Rain/thundershowers would occur at isolated places over Haryana & Delhi, Odisha and Jharkhand during next 24 hours; over Gangetic West Bengal during next 48 hours and dry weather would prevail thereafter.
- Dry weather would prevail over rest parts of the country during the period.
- No large change in day & night temperatures over plains of northwest and adjoining central India.
- Rise in temperatures by 1-2°C over Maharashtra during next 24 hours and no significant change thereafter.

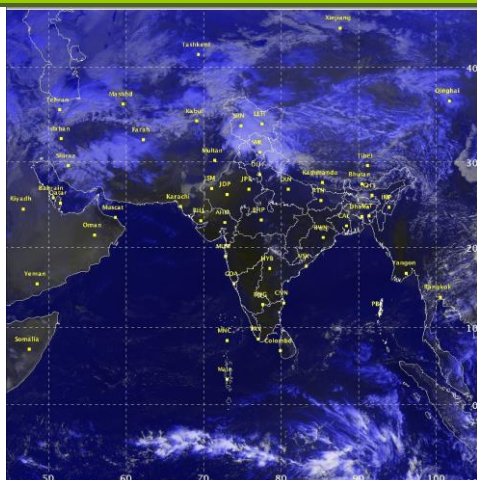
### Weather Warning during next 3 days

- **20 February (Day 1):** Thunderstorm accompanied with squall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **21 February (Day 2):** No Weather Warning.
- **22 February (Day 3):** No Weather Warning.

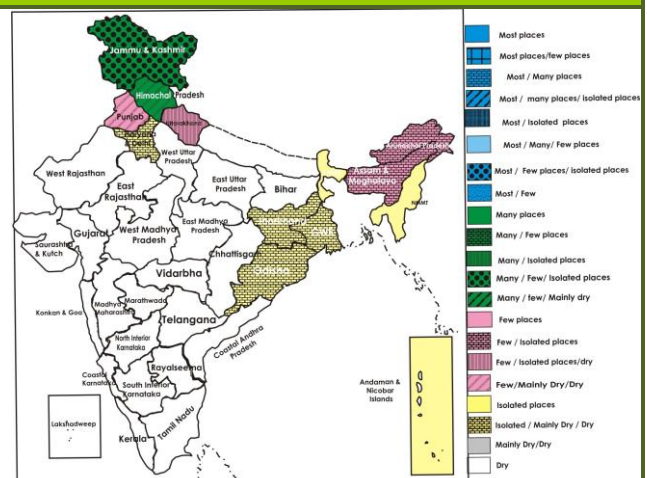
### Weather Outlook for subsequent 4 days from 23<sup>rd</sup> to 27<sup>th</sup> February, 2015

- A fresh western disturbance would affect Western Himalayan region and adjoining plains of northwest India from 23<sup>rd</sup> onwards.
- Precipitation would occur at a few places over Western Himalayan region on 22<sup>nd</sup> and significant increase thereafter. Rain/thundershower would also occur at isolated places over adjoining plains of northwest India from 23<sup>rd</sup>.
- Isolated rain/thundershowers would occur over northeastern states.

### Satellite image dated, 20.02.2015, 0600 UTC



### Weather Forecast Map (Valid upto 0830 hours of 23<sup>rd</sup> February, 2015)



## Detailed Zonewise Agromet Advisories

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



*Sorghum*



*Sugarcane*



*Chilli*



*Rice Transplanting*

- **Realised Rainfall:** Mainly dry/dry weather prevailed over the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period.
- **Weather Warning:** Nil
- **Advisories:**
  - **Andhra Pradesh:**
    - Due to prevailing dry weather conditions, there are chances of incidence of Maruca adult moths in red gram at flower bud initiation stage in the High Altitude Hilly Zone. Apply 5% NSKE or Neem oil @ 5 ml/litre of water before flower bud initiation to avoid egg laying by Maruca adults and spray Acephate @ 1.0 g or Chlorpyrifos 2 ml/litre of water or Thiodicarb @ 1.5 g at the time of flower initiation.
    - High temperature during day time is congenial for incidence of sucking pests in cotton in the Krishna Godavari Zone. Undertake stem application of Monochrotophos based on the intensity of pest attack.
    - Prevailing dry weather is congenial for incidence of early fruit drop in mango in the Southern Zone. To control, spray Planofix @ 1 ml/litre of water.
  - **Telangana:**
    - High incidence of shoot and fruit borer is observed in brinjal in the Northern Telangana Zone due to rise in temperature. Spray Malathion @ 2 ml or Rynaxpir @ 0.3 ml per litre of water to manage shoot and fruit borer. Prevailing high temperature conditions are congenial for incidence of mango hoppers. Undertake spraying of Dichlorovas @ 0.5 ml/litre of water or Carbaryl @ 3 g/litre of water in the early stages of flowering.
  - **Karnataka:**
    - Continue planting of sugarcane and harvesting of safflower and wheat in the North East Transition Zone.
    - Continue harvesting of chilli, cotton, chickpea and wheat and planting of sugar-cane in the North Transition Zone.
    - Undertake transplanting of rice in the Southern Transition Zone and land preparation for the planting of sugarcane in the Southern Dry Zone.
    - Irrigate areca nut, coconut and black pepper gardens either by furrow or drip irrigation in the Hill Zone and undertake harvesting of black pepper.
  - **Kerala:**
    - Complete land preparation for wet sowing of *puncha* rice and sowing of summer cucurbitaceous vegetables and bhindi in the Southern Zone.
    - In the Problem Area Zone, continue harvesting of pepper, continue mulching with crop residue and dried leaves in coconut, banana and nutmeg fields to reduce evapotranspiration and provide irrigation to nutmeg according to increase in temperature.
    - Prevailing dry weather is congenial for incidence of wilt and yellowing in black pepper in the Northern Zone. Harvest as much spikes as possible immediately and protect the vines from drought by thoroughly mulching the basins and giving life-saving basin irrigations fortnightly.
    - Leaf eating caterpillar attack in coconut and sigatoka leaf spot infestation in banana may become severe due to high humidity in the Southern Zone. In case of severe infestation, spray the under surface of the fronds with Quinalphos @ 0.05 % or Malathion @ 0.1 % to manage leaf eating caterpillar and spray Carbendazim @ 0.05 % to manage Sigatoka Leaf Spot, soon after the appearance of initial symptoms of disease.
  - **Tamil Nadu:**
    - Undertake nursery preparation of *navarai* rice and complete harvesting of matured *samba* and *thaladi* rice in the Cauvery Delta Zone.
    - Continue sowing of summer irrigated sesame and planting of midseason sugarcane in the Western Zone.
    - As dry weather would prevail, irrigate the sugarcane and banana crop using drip irrigation system in the South Zone.
    - Undertake sowing of sesame in the North Western Zone.



- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- Undertake preventive measures to protect animals from Anthrax disease and vaccinate sheep and goat against pneumonia & blue tongue disease in the Scarce Rainfall Zone of Andhra Pradesh.
- Undertake de-worming of sheep and goats to control endo-parasites in the Cauvery Delta Zone of Tamil Nadu.

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



*Rice transplanting*



*Mustard*



*Potato*



*Cabbage*

- **Realised Rainfall:** Rainfall occurred in East Siang district of Arunachal Pradesh and Jorhat district of Assam. Mainly dry weather prevailed over rest part of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Arunachal Pradesh, Assam & Meghalaya during next 24 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Nagaland, Manipur, Mizoram and Tripura during the period.
- **Weather Warning:** Thunderstorm accompanied with squall would occur at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 20<sup>th</sup> February.
- **Weather Outlook:** Isolated rain/thundershowers would occur over the region.
- **Advisories:**
  - As thunderstorm accompanied with squall would occur at isolated places over the States of northeastern region on 20<sup>th</sup> February, arrange mechanical support to banana and staking of vegetables to prevent the crops from lodging due to strong winds.
  - **Assam & Meghalaya, Arunachal Pradesh:**
    - In Assam, maintain 5cm of standing water in the field of *boro* rice.
    - In North Bank Plain Zone of Assam, continue land preparation for direct seeded *ahu* rice, summer green gram & black gram and sowing of *okra*.
    - In Hill Zone of Assam, continue nursery bed preparation and sowing of early *ahu* rice and sowing of cucurbits and *okra*.
    - In Lower Brahmaputra Valley Zone of Assam, continue land preparation for planting of sugarcane in upland area.
    - In Meghalaya, undertake hoeing and earthing up in 60 day old potato on a non rainy day without disturbing the stolons.
    - In Hill Zone of Assam, due to humid weather, late blight and leaf eating caterpillars may be found in tomato and cole crops. Apply Ridomil MZ-72 @ 2 g/ litre of water and Indofil M-45 @ 2.5 g / litre at 15 days interval to protect against late blight and spray Malathion 50 EC @ 1.5 ml/litre against caterpillars. Apply plant protection measures on a non rainy day
    - In Meghalaya, due to humid weather, there is chance of attack of blast /brown spot disease in *boro* rice and powdery mildew and rust in pea. Spray Carbendazim @ 1g/litre of water on a non rainy day against blast/brown spot. Spray Wettable Sulphur @ 2 g/litre or Dinocap @ 1 ml/litre of water or Dust Sulphur @ 25 kg/ha against powdery mildew and spray Dithane M-45 (0.2 %) against rust in pea on a non rainy day.
    - In North Bank Plain Zone of Assam, due to cloudy weather, there is chance of blast in *boro* rice. Spray Mancozeb 0.2% @ 2 g/litre or Carbendazim 0.1% @ 1 g/litre of water on a non rainy day to control the attack.
  - **Manipur, Mizoram, Nagaland and Tripura:**
    - In Manipur, continue nursery bed preparation of *pre-kharif* rice.
    - In Nagaland, apply light irrigation in pea. Apply mulching in vegetables and cole crops. Continue land preparation and sowing for summer moong /urad.
    - In Mild Tropical Plain Zone of Tripura, apply light irrigation in cole crops, banana and maize. Undertake mulching after irrigation to conserve moisture. Continue transplanting of summer brinjal and tomato. Maintain 2 to 3cm standing water in the field of *boro* rice at tillering stage.
    - Suitable varieties are given in Annexure II.

- **Animal Husbandry**

- In Tripura, to overcome the shortage of green grass, provide urea molasses treated paddy straw for balanced diet and nutrition to the cattle.

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



*Sugarcane*

*Wheat*

*Rice transplanting*

*Onion*

- **Realised Rainfall:** Mainly dry/dry weather prevailed over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Sub-Himalayan West Bengal & Sikkim and Andaman & Nicobar Islands during the period. Rain/thundershowers would occur at isolated places over Odisha and Jharkhand during next 24 hours; over Gangetic West Bengal during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over Bihar during the period.
- **Weather Warning:** Thunderstorm accompanied with squall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim on 20<sup>th</sup> February.
- **Advisories:**
  - **West Bengal:**
    - As thunderstorm accompanied with squall would occur at isolated places over Sub-Himalayan West Bengal on 20<sup>th</sup> February, arrange for staking of vegetables to prevent the crops from lodging due to strong winds.
    - Continue transplanting of *boro* rice in Coastal Saline Zone, Old Alluvial and Terai Zone. Undertake sowing of okra.
    - In New Alluvial Zone of West Bengal, keep 3-5 cm stagnant water in the transplanted *boro* rice fields. Undertake land preparation for sowing of sesame and green gram.
    - In Laterite and Red Soil Zone of West Bengal, continue harvesting of matured mustard in clear weather.
    - Due to cloudy weather condition, there are chances of attack of aphids and semi-looper in vegetables and mustard during its fruiting stage in Hill Zone. To control semi looper, apply Indoxacarb @ 1.5 ml/litre of water with sticker, and Imidacloprid 17.8 SL @ 3 ml /10 litre of water or Quinalphos 25 EC @ 2 ml/ litre of water to control aphid infestation.
    - In Old Alluvial Zone and Terai Zone, due to humid weather, there is chance of attack of late blight in potato. For control, spray Mancozeb @ 2 g /litre of water and Blitox @ 4 g/litre of water alternately at 7-10 days interval by completely wetting the leaves.
    - In New Alluvial Zone, Laterite and Red soil Zone of West Bengal, due to cloudy and humid weather, there are chances of late blight in potato. To control late blight, spray Blitox or Mancozeb @ 2.5 g / litre of water thrice at an interval of 5-7 days.
  - **Andaman and Nicobar Islands:**
    - In North, Middle and South Andaman, as mainly dry weather is prevailing, apply irrigation to vegetables and undertake transplanting of the seedlings of 30 days old brinjal and chilli.
    - In South, North and Middle Andaman districts, due to cloudy weather, there may be possibility of attack of thrips, leaf hopper and other sucking pests in vegetables. Spray Imidacloprid @ 2 ml /litre and Acephate @ 2 g/litre alternately once in two weeks.
  - **Odisha:**
    - In Western Undulating Zone of Odisha, as dry weather is prevailing, apply irrigation to vegetables and onion. Continue harvesting of matured cotton, sugarcane, arhar and niger. Complete nursery sowing for summer rice. Continue field preparation for planting of sugarcane.
    - In East and South Eastern Coastal Plain Zone, continue nursery sowing of rice and ragi, sowing of sunflower and groundnut and planting of sugarcane.
    - In North Eastern Plateau Zone of Odisha, as dry weather is prevailing, apply irrigation in rice nursery. Continue land preparation for transplanting of rice.
    - In North Eastern Coastal Plain Zone of Odisha, rise in temperature along with prevailing humid condition will favour the incidences of stem borer population in rice nurseries. To control it, spray Traizophos or Chloropyriphos @ 2 ml/litre of water.
    - In North Eastern Coastal Plain Zone of Odisha, due to variation in temperature during last week and



forecasted weather, there is possibility of attack of Tobacco caterpillar (*Spodoptera litura*) in mustard. The forecasted weather is also favourable for its proliferation. For control i) use Pheromone trap using Spodo lure to monitor adult population of the insect, ii) bird perching should be encouraged and night fire should be widely popularized iii) In case of appearance of the caterpillar, prepare poison bait with 1 kg rice bran+ 200g jaggery/gur+10g Methomyl 40%SP+Water. Keep the bait at 20-25 different places in the affected field. iv) in case of severe infestation, spray Emamectin Benzoate @ 3 g/10 litres of water.

▪ **Bihar:**

- In South Bihar Alluvial Zone, as dry weather is prevailing, apply irrigation to onion. Undertake harvesting of matured tobacco. Continue harvesting of early sown potato, stop irrigation 15 days before harvesting. Undertake planting of sweet potato and arvi crop.
- In North West Alluvial Plain Zone of Bihar, as dry weather is prevailing, apply irrigation to garlic and onion. Undertake sowing of summer vegetables. Continue harvesting of early sown matured mustard and potato, stop irrigation 15 days before harvesting. Continue sowing of okra and planting of sweet potato. Undertake planting of spring sugarcane. Undertake land preparation for sowing of green gram/ black gram and maize.
- In North East Alluvial Zone of Bihar, continue planting of spring sugarcane. Continue harvesting of early sown potato. Continue sowing of cucumber, bottle gourd, muskmelon, watermelon, bitter gourd, ridge gourd and ladies finger. Continue transplanting of onion.
- In South Bihar Alluvial Zone, cool and humid weather is favourable for the attack of aphids in mustard/toria, spray Cartap Hydrochloride or Metasystox or rogor @ 1.5 ml/litre of water.

▪ **Jharkhand:**

- In Western Plateau Zone, continue sowing of cucurbitaceous vegetables like sponge gourd, bottle gourd, pumpkin, watermelon, muskmelon etc. Farmers, who have already raised the seedlings in polythene bag, may transplant the seedlings in the main field @ 2-3 seedlings per pit. Apply light irrigation after transplanting of seedlings. Continue transplanting of summer rice. Continue harvesting of mustard. As dry weather is prevailing, apply irrigation to wheat at heading stage. Undertake sowing of mung after harvesting of potato.
- In South Eastern Plateau Zone of Jharkhand, apply irrigation in wheat and mustard. Continue transplanting of summer rice. Continue nursery sowing of vegetables like bottle gourd, khira, kakri, sponge gourd, ridge gourd, bitter gourd, okra, brinjal and Shimla mirch and continue transplanting of matured seedlings. Continue sowing of mung after harvesting of potato.
- In Central & North Eastern Plateau Zone of Jharkhand, continue nursery sowing of summer rice and transplanting of 12-15 days old rice seedlings. Continue transplanting of onion and harvesting of potato and pigeon pea. Undertake cultivation of high yielding variety of summer maize with assured irrigation.
- Suitable varieties are given in Annexure II.

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



*Sugarcane*



*Wheat*



*Mustard*



*Onion*

- **Realised Rainfall:** Rainfall occurred in Seoni district of East Madhya Pradesh. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Dry weather prevailed over the region during the period. No large change in day & night temperatures over plains of central India adjoining to northwest India.
- **Weather Warning:** Nil.
- **Advisories:**
  - **Madhya Pradesh:**
    - Apply irrigation in wheat at flowering/milk stage in Madhya Pradesh.
    - Undertake sowing of cucurbitaceous crops, okra and moong in Grid Zone.
    - Continue transplanting of summer vegetables like tomato, brinjal, chilli, okra, cabbage and cauliflower on the prepared beds and sowing of cucurbitaceous crops in Malwa Plateau Zone and Bundelkhand Zone.
    - Continue picking up of matured vegetables like pea, tomato, brinjal, chilli etc. in Vindya Plateau Zone.
    - Continue harvesting of matured potato and sowing of summer okra and cowpea in Kymore Plateau and Satpura Hill Zone.
    - Due to rise in temperature, there are chances of attack of sucking pests in papaya in Malwa Plateau Zone and Grid Zone, spray Dimethoate 25 EC @ 1/1.5 ml per litre of water.



- Due to partly cloudy weather, there are chances of incidence of aphids in coriander, cabbage and beans in Bundelkhand Zone, spray of Methyl Dematon 25 E.C. @ 2.0 ml per litre of water.
- **Chhattisgarh:**
- Continue nursery sowing of cucurbitaceous crops and sowing of groundnut and sesame in Bastar Plateau Zone. Undertake harvesting of matured toria.
- Continue transplanting of summer rice. Continue sowing of cucurbitaceous crops, leafy vegetable, cowpea and okra in North Hill Zone. Continue harvesting of matured mustard and potato.
- Undertake intercultural operations in groundnut crop in Chhattisgarh Plain Zone. Complete sowing of vegetables like pumpkin, bitter gourd, bottle gourd, okra etc.
- Due to humid weather, there are chances of stem borer in maize in Bastar Plateau Zone, apply Carbofuran 3 G @ 20 kg per hectare.
- **Animal Husbandry**
- Provide green fodder along with mineral mixture and fresh water for milch animals in Madhya Pradesh.

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



**Wheat**

**Sugarcane**

**Mustard**

**Cabbage**

- **Realised Rainfall:** Significant rainfall occurred in Kullu, Lahul & Spiti districts of Himachal Pradesh and in Badgam, Baramula, Ganderbal, Kupwara and Srinagar districts of Jammu & Kashmir. Dry weather prevailed over rest of the region.
- **Weather Forecast:** Rain/snow would occur at many places over Jammu & Kashmir during next 24 hours and decrease thereafter. Rain/snow would occur at many places over Himachal Pradesh during next 24 hours; at few places on 21<sup>st</sup> and dry weather would prevail thereafter. Rain/snow would occur at a few places over Uttarakhand during next 24 hours; at isolated places on 21<sup>st</sup> and dry weather would prevail thereafter. Rain/thundershowers would occur at a few places over Punjab during next 24 hours and dry weather would prevail thereafter. Rain/thundershowers would occur at isolated places over Haryana & Delhi during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period. No large change in day & night temperatures over plains of northwest India.
- **Weather Warning:** Nil
- **Weather Outlook:** A fresh western disturbance would affect Western Himalayan region and adjoining plains of northwest India from 23<sup>rd</sup> onwards. Precipitation would occur at a few places over Western Himalayan region on 22<sup>nd</sup> d and significant increase thereafter. Rain/thundershower would also occur at isolated places over adjoining plains of northwest India from 23<sup>rd</sup>.
- **Advisories:**
  - As rain/snow would occur at many places over Jammu & Kashmir and Himachal Pradesh on 20<sup>th</sup> February, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Keep harvested crops at safe places.
  - **Jammu & Kashmir:**
  - Undertake seed bed preparation for sowing of vegetables in Valley Temperate Zone of Jammu & Kashmir.
  - In Sub Tropical and Intermediate Zone of Jammu & Kashmir, continue nursery sowing of tomato, brinjal and chilli, sowing of beans and cucumber.
  - In Sub Tropical and Intermediate Zone of Jammu & Kashmir, due to fluctuation in temperature, there may be attack of aphids in wheat. For control, spray Rogor (Dimethoate) 30 EC @ 1ml/litre of water after current spells of rain.
  - **Uttarakhand:**
  - Undertake sowing of okra, continue planting of sugarcane in Bhabar and Tarai Zone of Uttarakhand, after harvesting of potato, toria etc. and also undertake transplanting of onion seedlings.
  - In Hill Zone of Uttarakhand, continue nursery sowing of tomato, brinjal and *capsicum*.
  - **Rajasthan:**
  - Continue field preparation for sowing of summer groundnut in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan.

- Undertake harvesting of early mustard crop when 80% pods turn yellow in Flood Prone Eastern Plain Zone, during morning hours to avoid shattering losses.
- In Arid Western Plain Zone of Rajasthan, due to variation in temperature, there is chance of *Heliothis* infestation in gram, to control, spray Quinalphos 25 EC @ 1200 ml/ha or Indoxcarb @ 200 ml/ha along with water at the time of flowering and if required repeat it after 15 days interval.
- Due to increase in day temperature aphids may become hyper active in mustard crop in Flood Prone Eastern Plain Zone of Rajasthan. Regularly monitor the field boundaries for aphids and destroy the infested branches/twigs.
- Due to change in temperature in Semi Arid Eastern Plain Zone of Rajasthan, mustard crop may be affected with white rust & stem rot. To control white rust spray Blitox 50 @ 3 g or Mancozeb @ 2 g per litre of water and to control stem rot spray fungicide Bavistin @ 1.0 g per litre water. Also *Heliothis* infestation in gram, spray Quinalphos 25 EC @ 1200 ml/ha or Indoxcarb @ 200 ml/ha along with water at the time of flowering.
- **Himachal Pradesh:**
- Undertake sowing of Chinese cabbage, cabbage and coriander in polyhouse in High Hill Temperate Dry Zone utilizing realized rainfall.
- Under prevailing low temperature and cloudy weather condition, yellow rust is appearing in the wheat crop in the form of yellow powder/stripes on the leaves in Sub-Montane and Low Hills Sub-Humid Tropical Zone. To control, spray the tilt (Propiconazole) 25 EC/Folicure (Tebuconazole) 25 EC/Bayletan 25 WP @ 0.1% i.e. 30 ml or 30 g per 30 litres of water per kanal after current spells of rain and repeat the spray after 15 days interval.
- Due to cloudy weather, there are chances of incidence of collar rot in apple in Mild Hills Sub Humid Zone. For control, spray Ridomil @ 75 g per 20 litres of water or Bavistin @ 15-20 g/20 litres of water or Dithane-M-45 @ 90-100 g/15 litres of water after current spells of rain.
- **Punjab, Haryana and Delhi:**
- Continue planting of sugarcane in Western Plain Zone of Punjab.
- In Western Semi-Arid Zone of Delhi, continue sowing of ladies finger, cucurbitaceous crops and nursery sowing of vegetables like chilli, tomato and brinjal and transplanting of young seedlings of tomato, chilli and cole crops.
- In Western Zone of Punjab, prepare the field for transplanting of summer vegetables viz. chilli, tomato and bell pepper, undertake sowing of cucumber, bottle gourd, pumpkin, muskmelon, watermelon, bitter gourd in plastic trays or polythene bags.
- Prevailing humid weather is conducive for severe attack of aphids in mustard in Western Plain Zone of Punjab, monitor the crop regularly, if pest population reaches to ETL, spray Actara 25 WG @40g /acre on a non rainy day.
- Cloudy weather condition is favourable for yellow rust in wheat crop in Central Plain Zone of Punjab. To control spray the crop with tilt 25 EC/Shine 25 EC/Bumper 25 EC or Folicur 25 EC @ 200 ml or Bayletan 25 WP @ 200 g in 200 litres of water/acre on a non rainy day.
- Under prevailing cloudy weather condition, there is chance of incidence of yellow rust in wheat in Undulating Plain Zone of Punjab and Western Semi-Arid Zone of Delhi. To control, spray Tilt (Propiconazole) 25 EC/folicure (Tebuconazole) 25 EC/Bayletan 25 WP @ 0.1% i.e. 30 ml or 30 g per 30 litres of water per kanal on a non rainy day and repeat the spray after 15 days interval.
- **Uttar Pradesh:**
- Continue sowing of ladies finger, lobia, nursery sowing of tomato and chilli and undertake sowing of urad and summer maize in Central plain Zone.
- As mainly dry weather would prevail, undertake top dressing of urea @ 72 kg and 1/3<sup>rd</sup> of dose of Nitrogen/ha in onion 30 days after sowing followed by irrigation in Central Plain Zone.
- Undertake planting of summer sugarcane, sowing of urad and moong in Eastern Plain Zone. Complete sowing of ladies finger and cucurbits and transplanting of tomato.
- Complete nursery sowing tomato, chilli and brinjal in Bundelkhand Zone. Continue planting of onion and undertake transplanting of cruciferous crops. Undertake land preparation for sowing of ladies finger.
- Under humid weather condition, there is chance of attack of fruit borer and semi-looper in gram. For control, spray Quinalphos 25EC or Malathion 50 EC @ 2 litre/ha in 500-600 litres of water.
- Under humid weather and favourable temperature (24<sup>o</sup>C) condition, there is also chance of attack of aphids in mustard in Central Plain Zone. For control of aphids, spray Malathion 50 EC @ 2 ml or Dimethoate 30 EC or Chloropyriphos @ 0.5ml or Imidachloprid @ 1.5 ml per litre of water/ha.
- Under prevailing humid weather condition, there is chance of occurrence of leaf blight in wheat in Bundelkhand Zone. Spray Ziram 80 WP @ 2 kg or Mancozeb 75 WP @ 2 kg/ha in 500 litres of water.
- Due to rise in temperature, there is chance of attack of fruit fly and fruit borer in arhar in Eastern Plain Zone. For control, spray Imidacloprid @ 1 litre in 800-1000 litres of water/ha. Also there is chance of attack of mango hopper and incidence of powdery mildew in mango. For control, spray soluble Sulphur @ 2 g + Monocrotophos @ 1 ml per litre of water.
- Under humid weather condition, there are chances of incidence of *Alternaria* blight in mustard, pea, lentil and gram and late blight in potato in North Eastern Plain Zone. Spray Quinalphos @ 1g or Ridomil MZ @ 2 g/litre of water for control of *Alternaria* blight and spray Ridomil MZ @ 2 g + Coper Oxichloride @ 1g per litre of

water for control of late blight in potato.

- Suitable varieties are given in Annexure II.

- **Floriculture**

- Under prevailing low temperature, red scales are observed in roses in Sub-Montane and Low Hills Sub-Humid Zone of Himachal Pradesh. For control, spray Carbofuran @ 1 teaspoon per plant.

- **Animal Husbandry**

- Due to light rain in Punjab, Haryana & Delhi and Himachal Pradesh there are chances of spread of H.S. (Haemorrhagic Septicemia or Gall Ghotu) in cattle. Vaccinate the animals.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



*Banana*

*Sugarcane*

*Sorghum*

*Mango*

- **Realised Rainfall:** Weather remained dry/mainly dry over the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period.  
Rise in temperatures by 1-2°C over Maharashtra during next 24 hours and no significant change thereafter.
- **Weather Warning:** Nil.
- **Advisories:**
  - **Maharashtra:**
    - In Konkan, as dry weather would prevail, apply irrigation to groundnut (at 10–12 days interval) and vegetables. Apply fertilizers and continue intercultural operations in summer rice, finger millet, vegetable crops and mango and cashew orchards. As mango is at pea/marble size, considering the rise in day temperature, apply 150 to 200 litres of water per mango tree at 15 days interval. Apply grass mulch in lateritic soil to avoid water loss in mango orchards. As day temperature is rising, to avoid fruit dropping, spray *Amrashakti* @ 1 litre per four trees in 25 litres of water on inflorescence. Maintain 5 cm water level in transplanted rice and finger millet field.
    - In Madhya Maharashtra, as dry weather prevailed, apply irrigation to vegetables, sugarcane, wheat, gram and pomegranate, banana orchards and summer groundnut. Continue intercultural operations like weeding and apply fertilizers in sugarcane, vegetables and in early sown groundnut. Continue harvesting of already matured jowar.
    - In Marathwada, as dry weather prevailed during last week and dry weather is likely to prevail, apply irrigation in wheat (dough stage), vegetables and summer groundnut. Apply drip irrigation to safflower. Continue harvesting of jowar and gram.
    - In Vidarbha, as dry weather is prevailing, apply irrigation to vegetables, gram (pod development stage) and wheat (milk stage) and orchards (sweet lime and orange). Maintain upto 5 cm water level in summer rice field (early tillering) in east Vidarbha. Continue sowing of summer sesame and planting of summer okra.
    - Due to rise in temperature in Marathwada region, to control aphids in safflower, spray Quinalphos 25 E.C. @ 20 ml or Thyamethoxam 25 W. G. @ 2 g per 10 litres of water.
  - **Gujarat:**
    - Continue sowing of groundnut and sowing of green gram, vegetables like okra, cluster bean and cowpea (under assured irrigation) in South Gujarat Heavy Rainfall Zone. Continue transplanting of brinjal and harvesting of matured spikes of castor.
    - As dry weather is prevailing and there is increase in temperatures, apply irrigation to vegetables at an interval of 3 to 4 days in South Gujarat Zone. Spray 2% Potassium Nitrate in mango orchard for effective control of fruit dropping and higher flower setting.
    - Undertake sowing of sesame, continue sowing of summer groundnut, vegetable crops (lady's finger, cluster bean, bottle gourd, sponge gourd, ridge gourd and bitter gourd), watermelon and transplanting of tomato and brinjal in North Saurashtra Zone. Apply irrigation in wheat (grain development stage), garlic and onion (bulb development stage).
    - Continue land preparation for sowing of groundnut, sesame and keep inputs ready for sowing in North Gujarat Zone. As dry weather would prevail, apply irrigation in wheat (milk/dough stage). Continue picking of matured bolls of cotton during early morning hours.
    - Due to increase in temperature, outbreak of powdery mildew disease is observed in mustard in South Gujarat Heavy Rainfall Zone which is likely to increase; for control, apply soluble Sulphur (50%) @ 40 kg/ha or Dinocap (48%) @ 5 ml per 10 litres of water.
    - Suitable varieties are given in Annexure II.



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

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

Sub-Divisions	04.02.15		11.02.15		18.02.15	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>						
Anjaw	**	**	**	**	**	**
Changlang	7.0	-78	0.0	-100	7.2	-73
Dibang Valley	59.0	87	0.0	-100	15.0	-14
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	25.9	16	1.7	-92	45.3	226
Kurung Kumey	**	**	**	**	**	**
Lohit	12.0	-35	0.8	-94	8.1	-62
Lower Dibang Valley	16.4	-48	0.3	-99	0.0	-100
Lower Subansari	**	**	**	**	**	**
Papumpara	0.0	-100	6.6	-19	3.7	-86
Tawang	0.0	-100	0.0	-100	0.0	-100
Tirap	2.4	-86	0.0	-100	2.6	-89
Upper Siang	43.0	16	0.0	-100	12.8	-52
Upper Subansari	6.6	-60	1.0	-76	0.0	-100
West Kameng	0.0	-100	0.0	-100	0.0	-74
West Siang	17.5	-4	1.5	-91	2.0	-60
<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	0.6	-93
Bongaigaon	0.0	-100	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	0.5	-84	0.0	-100	0.0	-39
Dibrugarh	2.3	-85	0.0	-100	8.2	-39
Goalpara	0.0	-100	0.0	-100	0.0	-100
Golghat	1.0	-82	0.0	-100	10.1	-16
Hailakandi	0.0	-100	0.0	-100	0.0	-100
Jorhat	0.2	-98	0.0	-100	22.7	106
Kamrup(Rural)	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	0.8	-83	0.0	-100	0.3	-94
Karbi Anglong	0.0	-100	0.0	-100	3.2	-54
Karimganj	0.0	-100	0.0	-100	0.0	-100
Kokrajhar	0.0	-100	0.0	-100	0.0	-100
Lakhimpur	0.8	-94	0.1	-99	7.1	-41
Morigaon	0.2	-96	0.0	-100	0.0	-100
N.C.Hills	0.0	-100	0.0	-100	0.0	-100
Nowgong	0.0	-100	0.0	-100	1.1	-75
Nalbari	0.3	-94	0.0	-100	0.0	-100

Sonitpur	0.3	-94	0.0	-100	0.1	-99
Sibsagar	1.4	-85	0.0	-100	5.1	-30
Tinsukia	4.3	-74	0.0	-100	11.5	-22
Udalgiri	0.0	-100	0.8	-90	0.0	-100
<b>Meghalaya</b>						
East Garo Hills	4.2	367	0.0	-100	0.0	-100
East Khasi Hills	1.8	-59	0.0	-100	0.3	-94
Jaintia Hills	5.0	-50	0.0	-100	2.0	-79
Ribhoi	0.0	-100	0.0	-100	7.4	236
South Garo Hills	1.0	100	0.0	-100	0.0	-100
West Garo Hills	0.2	-60	0.0	-100	0.0	-100
West Khasi Hills	7.0	17	0.0	-100	2.0	-67
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	0.0	-100	0.0	-100	0.0	-100
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	0.0	-100	0.0	-100
Serchhip	**	**	**	**	**	**
<b>Manipur</b>						
Bishnupur	**	**	**	**		
Chandel	0.0	-100	0.0	-100	3.0	-61
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	**	**	**	**	**	**
<b>Nagaland</b>						
Dimapur	0.5	-84	0.0	-100	9.6	638
Kephire	**	**	**	**	**	**
Kohima	0.0	-100	0.0	-100	9.6	63
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	15.0	154
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	6.0	-5
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	0.0	-100	0.0	-100
West Tripura	0.0	-100	0.0	-100	0.6	-90
<b>Himachal Pradesh</b>						
Bilaspur	12.5	-47	0.0	-100	6.6	-67

Chamba	67.6	96	0.0	-100	12.7	-53
Hamirpur	26.8	14	0.0	-100	4.9	-77
Kangra	40.3	88	0.0	-100	8.8	-60
Kinnaur	48.7	49	0.2	-99	10.3	-66
Kullu	52.4	148	0.3	-99	27.1	2
Lahaul and Spiti	36.4	5	0.0	-100	30.0	-13
Mandi	25.2	23	0.0	-100	11.8	-47
Shimla	21.9	16	0.0	-100	12.0	-38
Sirmaur	17.9	-2	0.0	-100	0.6	-96
Solan	28.9	26	0.0	-100	4.6	-75
Una	13.9	-12	0.0	-100	3.9	-73
<b>Punjab</b>						
Amritsar	16.6	105	0.0	-100	8.1	-5
Barnala	0.7	-92	0.0	-100	0.0	-100
Bhatinda	10.3	130	0.0	-100	0.0	-100
Faridkot	14.0	289	0.0	-100	0.0	-100
Fatehgarh Saheb	8.0	-2	0.0	-100	0.8	-89
Ferozpur	3.9	-21	0.0	-100	3.6	-41
Gurdaspur	21.3	16	0.0	-100	4.6	-65
Hoshiarpur	9.2	-18	0.0	-100	2.4	-80
Jalandhar	5.7	-33	0.0	-100	8.7	-11
Kapurthala	15.0	72	0.0	-100	5.3	-42
Ludhiana	5.5	-34	0.0	-100	1.3	-84
Mansa	8.2	64	0.0	-100	0.0	-100
Moga	14.7	126	0.0	-100	5.2	18
Muktesar	10.8	163	0.0	-100	0.0	-100
Nawashahar	6.0	-59	0.0	-100	0.6	-96
Patiala	20.5	120	0.0	-100	0.2	-96
Ropar	11.2	24	0.0	-100	2.1	-86
Sangrur	13.0	92	0.0	-100	0.5	-89
Mohali	17.3	88	0.0	-100	0.3	-95
TarnTaran	8.4	62	0.0	-100	4.1	-30
<b>Haryana,Chd,Delhi</b>						
<b>Haryana</b>						
Ambala	10.7	-21	0.0	-100	0.0	-100
Bhiwani	0.0	-100	0.0	-100	0.0	-100
Chandigarh	23.7	48	0.0	-100	0.0	-100
Faridabad	0.0	-100	0.0	-100	0.0	-100
Fatehabad	11.0	279	0.0	-100	0.0	-100
Gurgaon	0.0	-100	0.0	-100	0.0	-100
Hissar	5.0	47	0.0	-100	0.0	-100
Jhajar	0.0	-100	0.0	-100	0.0	-100
Jind	7.0	30	0.0	-100	0.0	-100
Katihah	9.6	104	0.0	-100	0.0	-100
Karnal	14.9	102	0.0	-100	0.0	-100
Kurukshetra	5.6	-27	0.0	-100	0.0	-100
Mahendragarh	0.0	-100	0.0	-100	0.0	-100
Mewat	0.0	-100	0.0	-100	0.0	-100
Palwal	0.0	-100	0.0	-100	0.0	-100
Panchkkula	11.3	-25	0.0	-100	0.0	-100
Panipat	3.1	-48	0.0	-100	0.0	-100



Rewari	0.0	-100	0.0	-100	0.0	-100
Rohtak	0.0	-100	0.0	-100	0.0	-100
Sirsa	4.4	2	0.0	-100	0.0	-100
Sonepat	0.6	-90	0.0	-100	0.0	-100
Yamunanagar	7.1	-32	0.0	-100	0.0	-100
<b>Delhi</b>						
Central Delhi	0.0	-100	0.0	-100	0.0	-100
East Delhi	0.0	-100	0.0	-100	0.0	-100
New Delhi	0.0	-100	0.0	-100	0.0	-100
North Delhi	0.0	-100	0.0	-100	0.0	-100
North East Delhi	0.0	-100	0.0	-100	0.0	-100
North West Delhi	0.0	-100	0.0	-100	0.0	-100
South Delhi	0.0	-100	0.0	-100	0.0	-100
South West Delhi	0.1	-99	0.0	-100	0.0	-100
West Delhi	0.0	-100	0.0	-100	0.0	-100
<b>Jammu &amp; Kashmir</b>						
Anantnag	45.7	93	28.0	84	18.6	-28
Badgam	37.9	181	4.0	-74	25.8	34
Bandipore	**	**	**	**	**	**
Baramula	43.3	24	19.5	-66	25.4	-30
Doda	89.2	139	0.2	-99	17.6	-63
Ganderbal	50.8	187	13.0	2	31.2	64
Jammu	60.6	279	0.4	-94	11.6	-37
Kargil	**	**	**	**	**	**
Kathua	30.8	47	0.0	-100	4.4	-55
Kistwar	**	**	**	**		
Kulgam	40.7	72	9.8	-36	12.8	-50
Kupwara	44.6	74	24.4	9	29.2	-14
Ladakh(Leh)	0.5	-70	0.0	-100	0.0	-100
Poonch	**	**	**	**	**	**
Pulwama	17.0	40	6.8	-9	6.7	-63
Rajouri	18.5	-11	10.2	28	2.3	-81
Ramban	87.2	134	3.9	-86	19.1	-60
Reasi	86.6	192	4.0	-79	16.9	-33
Samba	41.5	159	0.3	-96	5.1	-72
Shopian	23.0	90	6.0	-20	0.0	-100
Srinagar	29.7	68	6.5	-49	24.8	30
Udhampur	34.9	18	1.5	-92	5.1	-80
<b>East Madhya Pradesh</b>						
Anuppur	0.4	-93	7.2	-12	12.5	62
Balaghat	0.0	-100	0.9	-86	6.3	85
Chhatarpur	0.0	-100	9.9	129	1.3	-64
Chindwara	0.0	-100	5.9	10	1.2	-61
Damoh	1.5	-25	2.0	-71	8.5	60
Dindori	1.0	-82	3.2	-45	7.4	32
Jabalpur	13.5	364	8.8	91	3.8	50
Katni	1.8	6	15.8	193	13.2	200
Mandla	0.0	-100	19.1	218	4.9	-34
Narsingpur	1.2	-52	10.4	136	0.0	-100
Panna	0.0	-100	12.7	127	0.0	-100
Rewa	21.5	496	0.7	-82	0.0	-100

Sagar	0.0	-99	3.4	-19	0.0	-100
Satna	10.0	170	5.6	-2	1.4	-70
Seoni	0.0	-100	18.2	152	21.8	540
Shahdol	4.0	8	1.0	-79	1.0	-87
Sidhi	7.4	95	0.0	-100	0.0	-100
Singrauli	10.7	296	0.0	-100	0.0	-100
Tikamgarh	0.0	-100	10.0	614	0.0	-100
Umaria	12.3	200	2.4	-65	0.6	-92
<b>West Madhya Pradesh</b>						
Agar	0.0	-100	3.3	200	0.0	-100
Alirajpur	0.0	-100	2.4	243	0.0	-100
Asoknagar	0.0	-100	21.0	813	0.0	-100
Badwani	0.0	-100	0.0	-100	0.0	-100
Betul	0.0	-100	17.7	419	6.5	489
Bhind	0.0	-100	1.3	-22	0.0	-100
Bhopal	0.0	-100	0.0	-100	0.0	-100
Burhanpur	0.0	-100	13.1	1094	0.0	-100
Datia	0.0	-100	8.7	212	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	0.0	-100	5.0	738	0.0	-100
Guna	0.0	-100	26.5	755	0.0	-100
Gwalior	0.0	-100	5.7	126	0.0	-100
Harda	0.0	-100	11.5	219	0.0	-100
Hosangabad	1.9	-3	11.1	184	0.8	-53
Indore	0.0	-100	1.8	80	0.0	-100
Jhabua	0.0	-100	0.0	-100	0.0	-100
Khandwa	0.0	-100	6.3	273	0.0	-100
Khargone	0.0	-100	0.7	-39	0.0	-100
Mandsaur	0.0	-100	4.8	494	0.0	-100
Morena	0.0	-100	4.5	277	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	2.4	41	0.0	-100	0.0	-100
Rajgarh	0.0	-100	5.6	197	0.0	-100
Ratlam	0.0	-100	6.4	814	0.0	-100
Sehore	0.0	-100	2.0	-31	0.0	-100
Shajapur	0.0	-100	0.0	-100	0.0	-100
Sheopur Kalani	0.0	-100	0.5	-38	0.0	-100
Shivpuri	0.0	-100	6.5	242	0.0	-100
Ujjain	0.0	-100	2.2	44	0.0	-100
Vidisha	0.0	-100	0.0	-100	0.0	-100
<b>Chhattisgarh</b>						
Bastar	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.1	-98	0.9	-84	3.2	-21
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	1.0	-74	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	0.0	-100	0.3	-93

Koriya	2.5	-28	2.8	13	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	0.2	-92
Rajandgaon	0.0	-100	0.4	-88	0.4	-83
Surguja	1.5	-68	0.3	-93	2.7	-22
<b>East Uttar Pradesh</b>						
Allahabad	0.6	-87	0.5	-85	0.0	-100
Ambedkar Nagar	0.0	-100	0.0	-100	0.0	-100
Azamgarh	1.0	-74	0.0	-100	0.0	-100
Bahraich	4.0	0	0.0	-100	0.0	-100
Ballia	0.0	-100	0.0	-100	0.0	-100
Balrampur	12.0	186	0.0	-100	0.0	-100
Banda	0.0	-100	15.0	398	0.0	-100
Barabanki	3.1	-24	0.0	-100	0.0	-100
Basti	2.5	-24	0.0	-100	0.0	-100
Chandauli	3.3	-46	0.0	-100	0.0	-100
Deoria	0.0	-100	0.0	-100	0.0	-100
Faizabad	1.1	-69	0.0	-100	0.0	-100
Farrukhabad	0.0	-100	0.0	-100	0.0	-100
Fatehpur	0.0	-100	3.6	18	0.0	-100
Gazipur	0.1	-97	0.0	-100	0.0	-100
Gonda	2.0	-55	0.0	-100	0.0	-100
Gorakhpur	0.2	-96	0.5	-88	0.0	-100
Hardoi	0.0	-100	0.2	-95	0.0	-100
Jaunpur	0.4	-87	0.0	-100	0.0	-100
Kannauj	0.0	-100	1.6	-58	0.0	-100
Kanpur City	0.0	-100	0.1	-97	0.0	-100
Kanpur Dehat	0.0	-100	0.0	-100	0.0	-100
Kaushambi	0.0	-100	0.0	-100	0.0	-100
Kheri	2.4	-58	0.0	-100	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100
Lucknow	1.0	-76	0.3	-89	0.0	-100
Maharajganj	2.0	-64	0.0	-100	0.0	-100
Mau	0.0	-100	0.0	-100	0.0	-100
Mirzapur	0.0	-100	0.0	-100	0.0	-100
Pratapgarh	0.0	-100	4.3	47	0.0	-100
RaiBareilly	0.4	-91	1.4	-42	0.0	-100
Sahuji Maharajnagar	0.0	-100	1.2	-72	0.0	-100
Sant Kabirnagar	1.0	-74	0.0	-100	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100
Shrawasti	0.0	-100	**	**	0.0	-100
Sidharthnagar	0.0	-100	0.0	-100	0.0	-100
Sitapur	0.8	-78	0.0	-100	0.0	-100
Sonbhadra	11.6	157	0.0	-100	0.0	-100
Sultanpur	1.5	-60	1.2	-56	0.0	-100
Unnao	1.0	-79	0.0	-100	0.0	-100
Varanasi	1.5	-72	0.9	-79	0.0	-100
<b>West Uttar Pradesh</b>						

Agra	0.0	-100	0.5	-78	0.0	-100
Aligarh	0.0	-100	0.0	-100	0.0	-100
Auraiya	0.0	-100	0.0	-100	0.0	-100
Badaun	0.0	-100	0.0	-100	0.0	-100
Baghpat	1.0	-80	0.0	-100	0.0	-100
Bareilly	0.3	-94	0.0	-100	0.0	-100
Bijnor	1.8	-70	0.0	-100	0.0	-100
Bulandsahar	0.0	-100	0.0	-100	0.0	-100
Etah	0.0	-100	0.0	-100	0.0	-100
Etawah	0.0	-100	0.0	-100	0.0	-100
Firozabad	0.0	-100	0.0	-100	0.0	-100
GBNagar	0.0	-100	0.0	-100	0.0	-100
Ghaziabad	0.3	-93	0.0	-100	0.0	-100
Hamirpur	0.0	-100	15.3	365	0.0	-100
Jalaun	0.0	-100	0.0	-100	0.0	-100
Jhansi	0.0	-100	14.7	373	0.0	-100
Jotiba Phule Nagar	0.0	-100	0.0	-100	0.0	-100
Kanshiramnagar	0.0	-100	0.0	-100	0.0	-100
Lalitpur	0.0	-100	17.4	729	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	0.0	-100
Mahoba	0.0	-100	13.2	560	0.0	-100
Mainpuri	0.0	-100	0.0	-100	0.0	-100
Mathura	0.0	-100	0.0	-100	0.0	-100
Meerut	0.0	-100	0.0	-100	0.0	-100
Moradabad	1.2	-73	0.0	-100	0.0	-100
Muzzaffarnagar	0.4	-92	0.0	-100	0.0	-100
Pilibhit	0.0	-100	0.0	-100	0.0	-100
Rampur	0.0	-100	0.0	-100	0.0	-100
Saharanpur	6.3	-14	0.0	-100	0.0	-100
Shahjahanpur	0.0	-100	0.0	-100	0.0	-100
<b>Uttarakhand</b>						
Almora	5.4	-64	0.0	-100	0.0	-100
Bageshwar	6.5	-57	0.0	-100	0.0	-100
Chamoli	39.3	112	0.0	-100	0.0	-100
Champawat	0.8	-93	0.0	-100	0.0	-100
Dehradun	7.0	-51	0.0	-100	0.0	-100
Garhwal Pauri	6.7	-47	0.0	-100	0.0	-100
Garhwal Tehri	13.4	-11	0.0	-100	0.0	-100
Haridwar	7.9	-17	0.0	-100	0.0	-100
Nainital	3.5	-74	0.0	-100	0.0	-100
Pithoragarh	15.6	5	0.0	-100	4.0	-76
Rudraprayag	27.7	21	0.0	-100	0.2	-99
Udham Sing Nagar	0.1	-98	0.0	-100	0.0	-100
Uttarkashi	34.6	131	0.0	-100	5.0	-82
<b>Bihar</b>						
Araria	0.0	-100	0.0	-100	0.0	-100
Arwal	3.4	17	0.0	-100	0.0	-100
Aurangabad	10.0	155	0.0	-100	0.0	-100
Banka	0.0	-100	0.0	-100	0.0	-100
Begusarai	0.0	-100	0.0	-100	0.0	-100
Bhabua	7.9	83	0.0	-100	0.9	-63



Bhagalpur	4.0	-5	0.0	-100	0.0	-100
Bhojpur	2.1	-36	0.0	-100	0.0	-100
Buxar	1.2	-57	0.0	-100	0.0	-100
Darbhanga	1.6	-58	0.0	-100	0.0	-100
East Champaran	0.0	-100	0.0	-100	0.0	-100
Gaya	5.4	32	0.0	-100	0.1	-97
Gopalganj	0.0	-100	0.0	-100	0.0	-100
Jahanabad	1.2	-52	0.0	-100	0.0	-100
Jamui	4.3	54	0.0	-100	0.0	-100
Kathihar	0.0	-100	0.0	-100	5.9	633
Khagadia	5.1	36	0.0	-100	0.0	-100
Kishanganj	0.0	-100	0.0	-100	0.0	-100
Lakhisarai	**	**	0.0	-100	0.0	-100
Madhepura	2.1	-25	0.0	-100	0.0	-100
Madhubani	0.0	-100	0.0	-100	0.0	-100
Monghyar	4.6	109	0.0	-100	0.0	-100
Muzaffarpur	0.3	-90	0.0	-100	0.0	-100
Nalanda	2.7	14	0.0	-100	0.0	-100
Nawada	2.0	-50	0.0	-100	0.0	-100
Patna	5.3	66	0.0	-100	0.0	-100
Purnea	0.8	-69	0.0	-100	0.0	-100
Rohtas	3.3	-19	0.0	-100	0.0	-100
Saharsha	0.0	-100	0.0	-100	0.0	-100
Samstipur	0.0	-100	0.0	-100	0.0	-100
Saran	0.0	-100	0.0	-100	0.0	-100
Sheikpura	0.0	-100	0.0	-100	0.0	-100
Sheohar	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	0.0	-100	0.0	-100	0.0	-100
Siwan	0.0	-100	0.0	-100	0.0	-100
Supaul	0.9	-69	0.0	-100	0.0	-100
Vaishali	2.3	-52	0.0	-100	0.0	-100
West Champaran	0.0	-100	0.0	-100	0.0	-100
<b>Jharkhand</b>						-100
Bokaro	2.6	-32	0.0	-100	0.1	-96
Chatra	0.0	-100	0.0	-100	0.0	-100
Deoghar	2.8	-34	0.0	-100	0.0	-100
Dhanbad	0.4	-90	0.0	-100	0.0	-100
Dumka	1.0	-80	0.0	-100	0.5	-67
East Singbhum	0.1	-99	0.0	-100	0.0	-100
Garhwa	**	**	0.0	-100	0.0	-100
Giridih	1.4	-39	0.0	-100	0.0	-100
Godda	13.5	399	0.0	-100	0.0	-100
Gumla	0.0	-100	0.0	-100	0.0	-100
Hazaribagh	2.0	-63	0.0	-100	0.0	-100
Jamtara	1.1	-85	0.0	-100	0.0	-100
Khunti	**	**	0.0	-100	0.0	-100
Kodernna	10.2	82	0.0	-100	0.0	-100
Latehar	1.1	-86	0.0	-100	0.0	-100
Lohardagga	3.8	-59	0.0	-100	0.0	-100
Pakur	8.2	95	0.0	-100	0.0	-100
Palamau	19.6	244	0.1	-99	0.5	-85

Ramgarh	2.6	-61	0.0	-100	0.0	-100
Ranchi	2.0	-71	0.0	-100	0.0	-100
Sahebganj	10.4	148	0.0	-100	0.0	-100
Saraikela	0.0	-100	0.0	-100	0.0	-100
Simdega	0.0	-100	0.0	-100	5.4	42
West Singhum	1.2	-77	0.0	-100	0.0	-100
<b>East Rajasthan</b>						
Ajmer	0.0	-100	0.0	-100	0.0	-100
Alwar	0.0	-100	0.0	-100	0.0	-100
Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	0.2	-80	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	0.5	52	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	0.1	-84	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	0.0	-100	0.0	-100
Karauli	0.0	-100	0.0	-100	0.0	-100
Kota	0.0	-100	0.6	-59	0.0	-100
Pratapgarh	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
<b>West Rajasthan</b>						
Barmer	0.0	-100	0.0	-100	0.0	-100
Bikaner	2.5	79	0.0	-100	0.0	-100
Churu	0.0	-100	0.0	-100	0.0	-100
Hanumangarh	5.3	140	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	0.1	-93	0.0	-100	0.0	-100
<b>Gujarat Region</b>						
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	0.0	-100	0.0	-100	0.0	-100
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
<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	0.0	-100
<b>Maharashtra &amp; Goa</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	0.0	-100
Sindhudurg	0.0	-100	0.0	-100	0.0	-100
South Goa	0.0	-100	0.0	-100	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100
<b>Madhya Maharashtra</b>						
Ahmednagar	0.0	-100	0.0	-100	0.0	-100
Dhule	0.0	-100	0.0	-100	0.0	-100
Jalgaon	0.0	-100	5.8	544	0.0	-100
Kolhapur	0.0	-100	0.0	-100	0.0	-100
Nandurbar	**	**	**	**	**	**
Nasik	0.0	-100	0.0	-100	0.0	-100
Pune	0.0	-100	0.0	-100	0.0	-100
Sangli	0.0	-100	0.0	-100	0.0	-100
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	2.5	1139	0.0	-100
Beed	0.0	-100	0.0	-100	0.0	-100
Hingoli	**	**	7.5	276	0.0	-100
Jalna	0.0	-100	5.1	533	0.0	-100
Latur	0.0	-100	0.0	-100	0.0	-100
Nanded	0.0	-100	0.0	-100	0.0	-100
Usmanabad	0.0	-100	0.0	-100	0.0	-100
Parbhani	0.0	-100	0.3	-69	0.0	-100



<b>Vidarbha</b>						
Akola	0.0	-100	0.9	-54	0.0	-100
Amraoti	0.0	-100	7.6	215	0.0	-100
Bhandara	0.0	-100	2.4	-53	0.0	-100
Buldhana	0.0	-100	2.8	112	0.2	7
Chandrapur	0.0	-100	2.0	-14	0.0	-100
Gadchiroli	0.0	-100	0.0	-100	0.0	-100
Gondia	0.0	-100	0.0	-99	1.2	-60
Nagpur	0.0	-100	9.4	168	0.9	-63
Wardha	0.0	-100	9.6	267	0.0	-100
Washim	0.0	-100	3.8	70	0.0	-100
Yeotmal	0.0	-100	3.9	179	0.0	-100
<b>Odisha</b>						
Angul	0.0	-100	0.0	-100	3.5	-25
Balasore	0.0	-100	0.0	-100	1.1	-91
Bargarh	0.0	-100	0.0	-100	4.8	19
Bhadrak	0.0	-100	0.0	-100	3.1	-72
Bolangir	0.0	-100	0.0	-100	0.8	-83
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	6.2	20
Dhenkanal	0.0	-100	0.0	-100	0.0	-100
Gajapati	0.0	-100	0.0	-100	8.2	-58
Ganjam	0.0	-100	0.0	-100	1.3	-83
Jagatsingpur	0.0	-100	0.0	-100	4.2	-55
Jajpur	0.0	-100	0.0	-100	8.4	-19
Jharsuguda	0.0	-100	0.0	-100	3.5	14
Kalahandi	0.0	-100	0.0	-100	0.0	-100
Kandhamal	0.0	-100	0.0	-100	7.2	-18
Kendrapara	0.0	-100	0.0	-100	1.2	-92
Keonjhar	0.3	-95	0.0	-100	15.2	60
Khurda	0.0	-100	0.0	-100	4.2	-46
Koraput	0.0	-100	0.0	-100	0.8	-77
Malkangiri	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	0.2	-96	0.0	-100	2.3	-57
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	2.0	-63
Puri	0.0	-100	0.0	-100	3.1	-64
Rayagada	0.0	-100	0.0	-100	0.8	-92
Sambalpur	0.0	-100	0.0	-100	3.3	-37
Sonepur	0.0	-100	0.0	-100	0.3	-92
Sundargarh	0.1	-99	0.0	-100	0.4	-88
<b>West Bengal &amp; Andaman Nicobar Islands</b>						
<b>A &amp; N ISLAND</b>						
Nicobar	3.1	-86	3.5	-81	0.0	-100
North & Middle Andaman	3.9	34	0.0	-100	0.0	-100
South Andaman	3.2	-59	0.0	-100	0.0	-100
<b>GWB</b>						
Bankura	0.8	-90	0.0	-100	0.0	-87

Birbhum	0.2	-94	0.0	-100	3.9	-100
Burdwan	0.0	-100	0.0	-100	1.2	97
East Midnapore	0.0	-100	0.0	-100	0.3	-68
Hooghly	0.5	-91	0.0	-100	1.1	-92
Howrah	0.0	-100	0.0	-100	3.1	-82
Kolkata	0.0	-100	0.0	-100	0.0	-45
Murshidabad	0.0	-100	0.0	-100	8.3	-100
Nadia	0.0	-100	0.0	-100	1.0	360
24 Pargana (N)	0.1	-98	0.0	-100	0.0	-70
Purulia	1.0	-94	0.0	-100	4.3	-99
24 Pargana (S)	0.0	-100	0.0	-100	0.3	-46
West Midnapore	0.4	-93	0.0	-100	1.8	-94
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	0.1	-96	0.0	-100	0.0	-100
Darjeeling	0.0	-100	0.0	-100	0.4	-97
East Sikkim	0.0	-100	0.0	-100	8.4	-42
Jalpaiguri	0.0	-100	0.0	-100	0.0	-100
Malda	13.4	332	0.0	-100	0.0	-100
North Dinajpur	0.0	-100	0.0	-100	0.0	-100
North Sikkim	0.0	-100	0.0	-100	13.7	-33
South Dinajpur	7.6	204	0.0	-100	0.0	-100
South Sikkim	0.0	-100	0.0	-100	5.1	-65
West Sikkim	0.0	-100	0.0	-100	10.2	-50
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshin Kannada	0.0	-100	0.0	-100	0.0	-100
Udupi	0.0	-100	0.0	-100	0.0	-100
Uttar Kannada	0.0	-100	0.0	-100	0.0	-100
<b>N I Karnataka</b>						
Bagalkote	0.0	-100	0.0	-100	0.0	-100
Belgaum	0.0	-100	0.0	-100	0.0	-100
Bidar	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Dharwad	0.0	-100	0.0	-100	0.0	-100
Gadag	0.0	-100	0.0	-100	0.0	-100
Gulbarga	0.0	-100	0.0	-100	0.0	-100
Haveri	0.0	-100	0.0	-100	0.0	-100
Koppal	0.0	-100	0.0	-100	0.0	-100
Raichur	0.0	-100	0.0	-100	0.0	-100
Yadgir	0.0	-100	0.0	-100	0.0	-100
<b>S I Karnataka</b>						
Bangalore Rural	0.0	-100	0.0	-100	0.0	-100
Bangalore Urban	0.0	-100	0.0	-100	0.0	-100
Bellary	0.0	-100	0.0	-100	0.0	-100
Chamarajnaragar	0.0	-100	0.0	-100	0.0	-100
Chichballapur	0.0	-100	0.0	-100	0.0	-100
Chickmagalur	0.0	-100	0.0	-100	0.0	-100
Chitradurga	0.0	-100	0.0	-100	0.0	-100
Davangere	0.0	-100	0.0	-100	0.0	-100
Hassan	0.0	-100	0.0	-100	0.0	-100

Kodagu	0.0	-100	0.0	-100	0.0	-100
Kolar	0.0	-100	0.0	-100	0.0	-100
Mandya	0.0	-100	0.0	-100	0.0	-100
Mysore	0.0	-100	0.0	-100	0.0	-100
Ramnagara	0.0	-100	0.0	-100	0.0	-100
Shimoga	0.0	-100	0.0	-100	0.0	-100
Tumkur	0.0	-100	0.0	-100	0.0	-100
<b>Kerala</b>						
Alappuzha	0.0	-100	3.6	-59	0.9	-84
Kannur	0.0	-100	0.0	-100	0.0	-100
Ernakulam	0.0	-100	0.0	-100	0.5	-86
Idukki	0.0	-100	0.0	-100	5.8	106
Kasaragod	0.0	-100	0.0	-100	0.0	-100
Kollam	3.1	-37	0.0	-100	18.2	164
Kottayam	0.9	-56	0.2	-96	4.1	-46
Kozhikode	0.0	-100	0.0	-100	0.0	-100
Malappuram	0.0	-100	0.0	-100	0.0	-100
Palakkad	0.0	-100	0.0	-100	0.0	-100
Pathanamthitta	2.5	-17	0.0	-100	3.9	-57
Thiruvananthapuram	0.0	-100	0.0	-99	0.0	-100
Thrissur	0.0	-100	0.0	-100	0.0	-100
Wynad	0.0	-100	0.0	-100	0.0	-100
<b>Tamil Nadu</b>						
Ariyalur	0.0	-100	0.0	-100	0.0	-100
Chennai	0.0	-100	0.0	-100	0.0	-100
Coimbatore	0.0	-100	0.0	-100	0.0	-100
Cuddalore	0.0	-100	0.0	-100	0.0	-100
Dharmapuri	0.0	-100	0.0	-100	0.0	-100
Dindigul	0.0	-100	0.0	-100	0.0	-100
Erode	0.0	-100	0.0	-100	0.0	-100
Kanchipuram	0.0	-100	0.0	-100	0.0	-100
Kanyakumari	1.0	-74	0.0	-100	0.0	-100
Karikal	0.0	-100	0.0	-100	0.0	-100
Karur	0.0	-100	0.0	-100	0.0	-100
Krishnagiri	0.0	-100	0.0	-100	0.0	-100
Madurai	0.0	-100	0.0	-100	0.0	-100
Nagapattinam	0.0	-100	0.0	-100	0.0	-100
Namakkal	0.0	-100	0.0	-100	0.0	-100
Nilgiris	0.0	-100	0.0	-100	0.0	-100
Perambalur	0.0	-100	0.0	-100	0.0	-100
Puducherry	0.0	-100	0.0	-100	0.0	-100
Pudukottai	0.0	-100	0.0	-100	0.0	-100
Ramanathapuram	0.0	-100	1.9	-63	0.0	-100
Salem	0.0	-100	0.0	-100	0.0	-100
Sivaganga	0.0	-100	0.0	-100	0.0	-100
Thanjavur	0.0	-100	0.0	-100	0.0	-100
Theni	0.0	-100	0.0	-100	0.0	-100
Tirunelveli	0.3	-96	0.2	-98	1.3	-100
Tirupur	0.0	-100	0.0	-100	0.0	-100



Tiruvallur	0.0	-100	0.0	-100	0.0	-100
Tiruvannamalai	0.0	-100	0.0	-100	0.0	-100
Tiruvarur	0.0	-100	0.0	-100	0.0	-100
Toothukudi	0.0	-100	2.7	-37	0.0	-84
Trichy	0.0	-100	0.0	-100	0.0	-100
Vellore	0.0	-100	0.0	-100	0.0	-100
Villupuram	0.0	-100	0.0	-100	0.0	-100
Virudhunagar	0.0	-100	0.0	-100	0.0	-100
<b>Andhra Pradesh</b>						
<b>Coastal Andhra Pradesh</b>						
East Godavari	0.0	-100	0.0	-100	0.0	-100
Guntur	0.0	-100	0.0	-100	0.0	-100
Krishna	0.0	-100	0.0	-100	0.0	-100
Nellore	0.0	-100	0.0	-100	0.0	-100
Prakasam	0.0	-100	0.0	-100	0.0	-100
Sirkakulam	0.0	-100	0.0	-100	4.0	-23
Visakhapatnam	1.3	-3	0.0	-100	0.0	-100
Vizianagram	0.0	-100	0.0	-100	0.6	-85
West Godavari	0.0	-100	0.0	-100	0.1	-96
<b>Rayalaseema</b>					0.3	
Anantapur	0.0	-100	0.0	-100	0.0	-100
Chittoor	0.0	-100	0.0	-100	0.0	-100
Cuddapah	0.0	-100	0.0	-100	0.0	-100
Kurnool	0.0	-100	0.0	-100	0.0	-100
<b>Telangana</b>						
Adilabad	0.0	-100	0.0	-100	0.0	-100
Hyderabad	0.0	-100	0.0	-100	0.0	-100
Karimnagar	0.0	-100	0.0	-100	0.0	-100
Khammam	0.0	-100	0.0	-100	0.0	-100
Mehabubnagar	0.0	-100	0.0	-100	0.0	-100
Medak	0.0	-100	0.0	-100	0.0	-100
Nalgonda	0.0	-100	0.0	-100	0.0	-100
Nizamabad	0.0	-100	0.0	-100	0.0	-100
Rangareddy	0.0	-100	0.0	-100	0.0	-100
Warangal	0.0	-100	0.0	-100	0.0	-100

### Legends

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

## **Annexure II**

### **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

**Sugar-cane:** Co-86032, Co-94012

#### **Tamil Nadu:**

**Lady's finger:** Arka Anamika, Arka Abhay and Arka Kranthi and hybrids like CoBh H 1 and Co3

**Irrigated sesame:** TMV 4, TMV 6 and SVPR 1

#### **Assam**

**Sunflower:** Jwalamukhi.

**Green gram:** Pratap, T-44, Kopergaon, AAU-39, K-851 and ML-55.

**Black gram:** T-9, Pant-U-19, UG-157.

**Direct seeded ahu rice:** Banglami, Rangadoria, Ahu joha, Rasi, Banglami, Rangadoria, Ahu joha, Rasi.

**Okra:** Pusa Sawani, Arka Anamika, Parbhdani Kranti

#### **Odisha**

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

**Groundnut:** Smruti, TAG-27, TAG – 24 and JL-24

**Onion:** Nasik Red, Patna Red, Pune Red, Bellary Red, Pusa Ratnar, Pusa Madhavi, Arka Niketan ,Arka Pragati

**Ragi:** HYVs. like Subhra, Vairabi, Dibyasingh, Nilachala, Subhra, Godavari and Chilka.

#### **Bihar**

**Boro rice:** Gutum, Prabhat, Richaria, Dhanlaxmi, SarojRajendraBhagvati, and R.A.U

**Sweet Potato:** Cross 4 and Rajendra shakarkand 35

**Okra:** Parvani kranti, Arka abhay, Arka anamika, Barsha Uphar, KS 312, Okra 4, Punjab 7, Pant Bhindi 1

#### **Jharkhand:**

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

**Summer maize:** Birsa Makka-1, Birsa Makka-2, Suwan-1(Hybrid), HQPM (Hybrid)

**Green gram:** mung S.M.L.- 668

#### **Jammu & Kashmir**

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

#### **Uttarakhand**

**Tomato:** VL Tomato-3, Pant T-3, Him Sona, Him Shikhar.

**Capsicum:** California Vander, Pus Dipti, Anupam. Heera, Indira, Supriya & Bharat.

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

#### **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

**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

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

**Chilli:** Patasi-1, Jwala, Sadabahar

**Lobia:** lobia 263, Pusa Phaguni

**Tomato:** Pant T-2, Azad T-2, Narendra-1,2,4,5,6

**Maize:** Navjyoti, Kanchan, Gaurav, Surya, Navin, Shweta, Azad Uttam,Prakash, Deccan-115, MMH-135, Ganga-11, Pusa, Maize-2, JH-3459

**Urd:** T-9, Narendra-1, Azad-1, Uttar Azad-2, Shekhar-2

### **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

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

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

### **Punjab**

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

### **Rajasthan**

**Groundnut:** T.A.G.24, T.G.37A, G.G.2, D.H.86.

### **Maharashtra**

#### **Madhya Maharashtra**

**Groundnut:** SB-11, JL-286, Phule Unati, TPG-41, TG-26 or JL-501.

**Sunflower:** SS-56, Modern, EC-68414 or bhanu and hybrid varieties like KBSH-1 or phule Raviraj or MSFH-17.

#### **Marathwada**

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

**suru Sugarcane:** CO-86032, COM- 7125, CO-8014 or CO-740

**Okra:** Parbhani Kranti

#### **Vidarbha**

**Groundnut:** TAG-24, TG-26 or SB-11.

**Water Melon:** Sugar baby, Arka Jyoti or Arka Manik.

**Okra:** Arka Anamika, Parbhani Kranti, Akola Bahar or Phule Utkarsha.

**Sesamum:** AKT-101 or NT-11-99.

### **Gujarat**

**Groundnut:** GG-2, 4 and GG-20, TAG-24, TG-37-A, TPG-41,GG-2, GJG-3.

**Sesamum:** G.Til-2, G.Til-3.

**Cowpea:** Guj. Cowpea-4, 5 and Pusa Falguni.

**Green gram:** Guj. Mung-3, 4.

**Brinjal:** Junagadh oblong, Junagadh long, Guj. Bringle-2.

**Lady' finger:** Guj. Hy.-1 & 2.

**Ridge gourd:** Pusa nasdar, Jaipuri.

**Bottle gourd:** Junagadh tender long, Pusa summer prolific long.

**Sponge Gourd:** Pusa chikni.

**Bitter Gourd:** Priya, Pusa domosmi.

**Cluster bean:** Pusa sadabahar, Pusa navbahar, IC-11388.

**Watermelon:** Sugar baby, Arka jyoti.