



# *National Agromet Advisory Service Bulletin*



*Friday 20<sup>th</sup> January 2017*

*(For the period 20<sup>th</sup> to 24<sup>th</sup> January 2017)*



*Issued by*

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

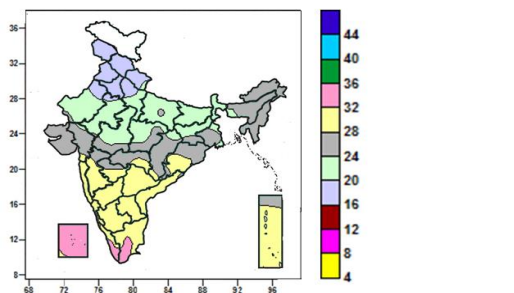
**Weblink For**

**District AAS Bulletin:** <http://www.imdagrimet.gov.in/node/3545>

**State Composite AAS Bulletin:** <http://www.imdagrimet.gov.in/node/3544>

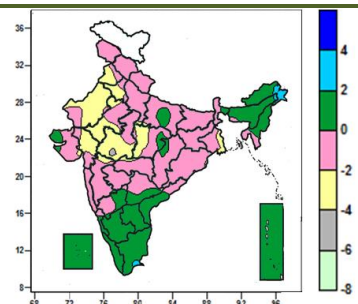
**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 18.01.2017**

**Actual Mean Maximum Temperature (°C) in India for the week ending 18.01.2017**



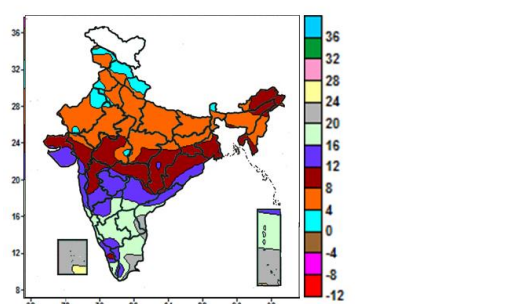
- Mean maximum temperature was between 32 to 36°C over many parts of Lakshadweep, Kerala, some parts of Tamil Nadu.
- Mean maximum temperature was between 28 to 32°C over Konkan & Goa, Karnataka, Telangana, Coastal Andhra Pradesh, Rayalaseema, many parts of Madhya Maharashtra, Marathwada, Tamil Nadu, Andaman & Nicobar Islands, some parts of Vidarbha, Odisha, Kerala and isolated pockets of Gujarat region, Chhattisgarh and Lakshadweep.
- Mean maximum temperature was between 20 to 28°C over rest of the Country except Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana & Delhi, many parts of Uttarakhand, some parts of West Uttar Pradesh and Rajasthan, where it was between 16 to 20°C.

**Mean Maximum Temperature (°C) Anomaly in India for the week ending 18.01.2017**



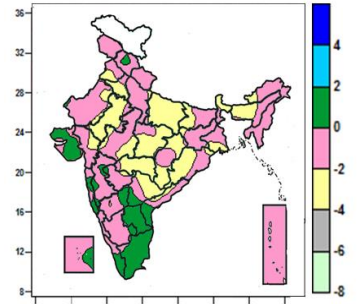
- Mean maximum temperature was above normal by 2 to 4°C over isolated pockets of Arunachal Pradesh, Assam and Tamil Nadu.
- It was normal to near normal over rest of the country except many parts of Punjab, Haryana & Delhi, West Rajasthan, West Madhya Pradesh, Gujarat region, some parts of East Rajasthan, East Madhya Pradesh, Gangetic West Bengal and isolated pockets of Uttar Pradesh, Saurashtra, Madhya Maharashtra, Vidarbha, where it was below normal by 2 to 4°C.

**Actual Mean Minimum Temperature (°C) in India for the week ending 18.01.2017**



- Mean minimum temperature was between 0 to 4°C over Sikkim, many parts of Himachal Pradesh, Uttarakhand, some parts of Jammu & Kashmir, Punjab, West Rajasthan and isolated pockets of Haryana, East Rajasthan, Madhya Pradesh, Gujarat region.
- Mean minimum temperature was between 4 to 8°C over Uttar Pradesh, Bihar, Sub-Himalayan West Bengal Manipur, many parts of Jammu & Kashmir, Punjab, Haryana & Delhi, Rajasthan, East Madhya Pradesh, Assam & Meghalaya, Nagaland, Jharkhand, some parts of Himachal Pradesh, Uttarakhand, Mizoram, West Madhya Pradesh, Chhattisgarh, Gujarat region and isolated pockets of Arunachal Pradesh, Gangetic West Bengal.
- Mean minimum temperature was between 8 to 12°C over Tripura, many parts of Arunachal Pradesh, Mizoram, West Madhya Pradesh, Chhattisgarh, Gangetic West Bengal, Odisha, Gujarat, Vidarbha, Madhya Maharashtra, some parts of Assam, Nagaland

**Mean Minimum Temperature (°C) Anomaly in India for the week ending 18.01.2017**



- Mean minimum temperature was normal to near normal over the country except Sikkim, many parts of East Uttar Pradesh, Haryana & Delhi, East Rajasthan, East Madhya Pradesh, Chhattisgarh, Vidarbha, Odisha, Assam & Meghalaya, some parts of Punjab, Bihar, West Bengal, Gujarat region, West Madhya Pradesh, Coastal Andhra Pradesh and isolated pockets of West Rajasthan, West Uttar Pradesh, Jharkhand, Arunachal Pradesh and Marathwada, where it was below normal by 2 to 4°C.

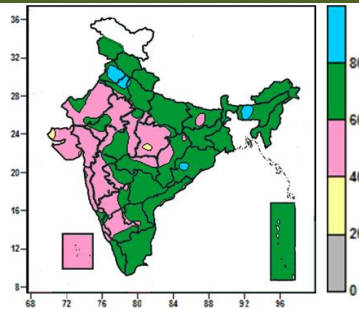


and isolated pockets of East Rajasthan, Meghalaya, Telangana and Kerala.

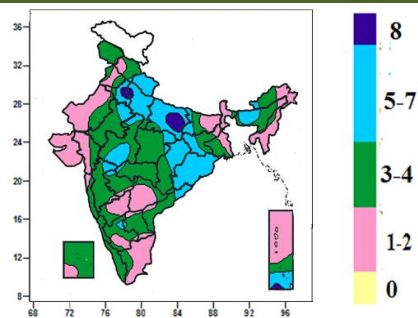
- Mean minimum temperature was between 12 to 20<sup>0</sup>C over rest of the Country except many parts of Lakshadweep, some parts of Tamil Nadu, Coastal Andhra Pradesh, Andaman & Nicobar Islands and isolated pockets of Rayalaseema, where it was between 20 to 24<sup>0</sup>C and was between 24 to 28<sup>0</sup>C at isolated pocket of Lakshadweep.

**Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 18.01.2017**

**Relative Humidity (%) over India for the week ending 18.01.2017**



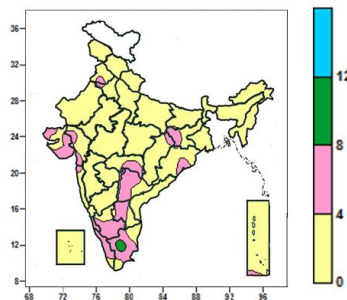
**Cloud amount (okta) over India for the week ending 18.01.2017**



- Mean Relative Humidity was above 80% over many parts of Punjab, some parts of Haryana and isolated pockets of Assam & Meghalaya, Sub-Himalayan West Bengal, West Uttar Pradesh and Odisha.
- Mean Relative Humidity was between 60 to 80% Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Sikkim, Gangetic West Bengal, Jharkhand, Telangana, Tamil Nadu, Andaman & Nicobar Islands, many parts of Uttar Pradesh, Bihar, Sub-Himalayan West Bengal, Assam & Meghalaya, Odisha, Chhattisgarh, West Madhya Pradesh, Vidarbha, Marathwada, Coastal Andhra Pradesh, Rayalaseema, Kerala, some parts of Punjab, Haryana & Delhi, Rajasthan, Karnataka and isolated pockets of East Madhya Pradesh, Madhya Maharashtra.
- Mean Relative Humidity was between 40 to 60% over rest of the Country except isolated pockets of Kutch and East Madhya Pradesh, where it was between 20 to 40%.

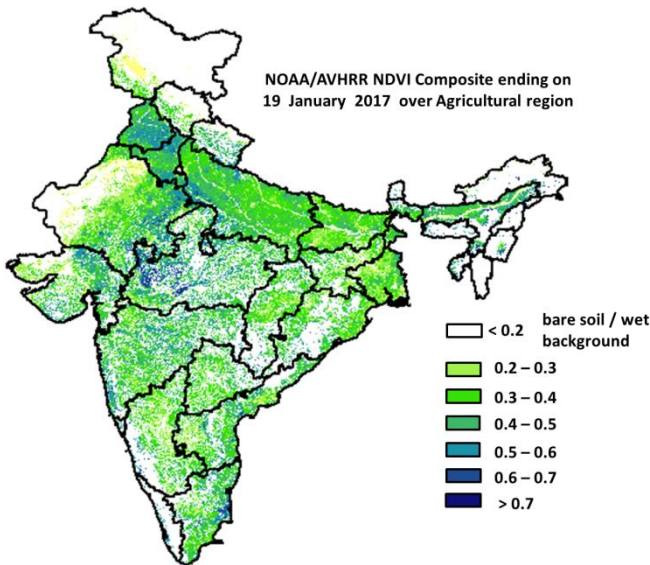
- Sky remained overcast (8 okta) over some parts of Haryana & Delhi, East Uttar Pradesh and isolated pockets of West Uttar Pradesh and Andaman & Nicobar Islands.
- Sky remained generally cloudy (5-7okta) over Uttarakhand, many parts of Uttar Pradesh, Haryana & Delhi, Odisha, some parts of East Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, Bihar, Assam & Meghalaya, Coastal Andhra Pradesh, Andaman & Nicobar Islands and isolated pockets of Himachal Pradesh, Arunachal Pradesh, Madhya Maharashtra, Vidarbha, Marathwada, South Interior Karnataka, Rayalaseema.
- Sky remained partly cloudy/mainly clear (3-4 okta/1-2 okta) over rest of the country.

**Wind speed (knots) over India for the week ending 18.01.2017**



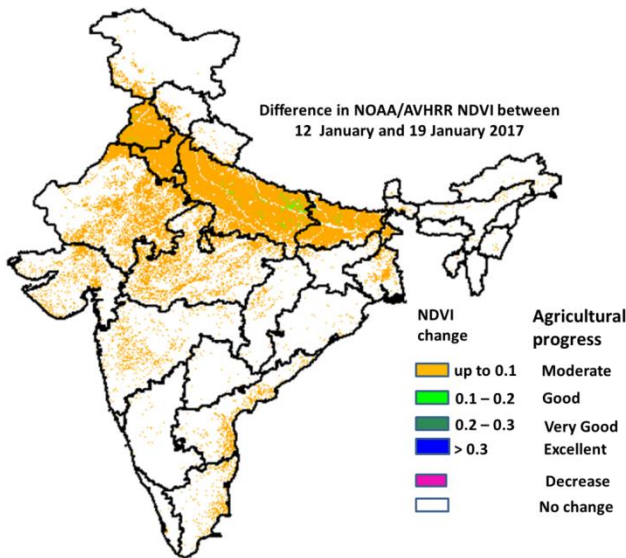
- Mean wind speed was between 0 to 4 knots over the country except many parts of Kerala, Tamil Nadu, Coastal and South Interior Karnataka, Rayalaseema, Telangana, Saurashtra & Kutch, some parts of Gujarat region, Jharkhand, Vidarbha, Odisha and isolated pockets of Punjab, Haryana, Chhattisgarh, Konkan, Marathwada and Andaman & Nicobar Islands, where it was between 4 to 8 knots and isolated pockets of Tamil Nadu, where it was between 8 to 12 knots.

**NOAA/AVHRR NDVI composite ending on 19<sup>th</sup> January 2017 over Agricultural region of India**



- Agricultural vigour is good in West Madhya Pradesh, North Maharashtra, patches in central Tamil Nadu, Kerala, North Andhra Pradesh, Gujarat, East Rajasthan, Haryana, Punjab, Uttarakhand, West Uttar Pradesh and North-east, where NDVI value varies from 0.5 to 0.7. NDVI is moderate in rest Rajasthan, Punjab, Haryana, East Madhya Pradesh, rest Uttar Pradesh, Madhya Maharashtra, southern region of Andhra Pradesh and Tamil Nadu (NDVI 0.2 to 0.5).

**Difference in NOAA/AVHRR NDVI between 12<sup>th</sup> January and 19<sup>th</sup> January 2017**

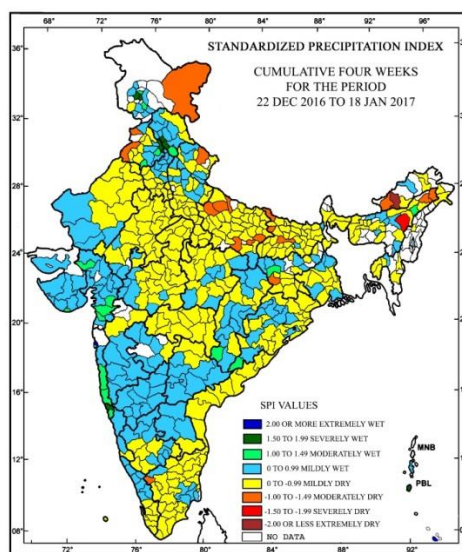


- Moderate progress in NDVI was observed in Punjab, Haryana, Madhya Pradesh, Rajasthan, Uttar Pradesh, Bihar, and patches in Maharashtra, Gujarat, Karnataka, Kerala, Tamil Nadu, Telangana, Andhra Pradesh, North-East Region, West Bengal and Chhattisgarh. Good progress was observed in few patches of Punjab, Uttar Pradesh and Bihar.

- NOAA/AVHRR NDVI composite maps for the week ending on 19<sup>th</sup> January 2017 for different States are given in Annexure II.

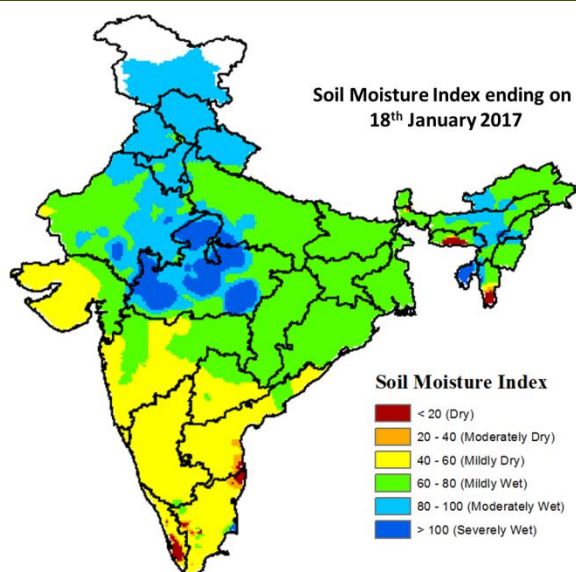
## Standardised Precipitation Index Four Weekly for the period 22<sup>nd</sup> December 2016 to 18<sup>th</sup> January 2017

MINISTRY OF EARTH SCIENCES  
INDIA METEOROLOGICAL DEPARTMENT  
HYDROMET SECTION, PUNE



- Extremely/severely wet conditions experienced in few districts of Konkan & Goa; South Andaman district of Andaman & Nicobar Islands; Chandigarh district of Haryana; Sas Nagar (Mohali) district of Punjab; Bilaspur, Solan districts of Himachal Pradesh; Badgam, Pulwama districts of Jammu & Kashmir.
- Extremely/Severely dry conditions experienced in East Kameng district of Arunachal Pradesh; Karbi Anglong district of Assam.
- Moderately dry conditions experienced in West Kameng district of Arunachal Pradesh; Dibrugarh, Tinsukia districts of Assam; Gumla district of Jharkhand; West Champaran, Patna, Siwan districts of Bihar; Allahabad, Bahraich, Ghazipur, Hardoi, Sitapur, Varanasi districts of Uttar Pradesh; Chamoli district of Uttarakhand; Amritsar, Ferozepur districts of Punjab; Ladakh (Leh) district of Jammu & Kashmir; Nilgiri district of Tamil Nadu & Puducherry.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

## Soil Moisture Index for the week ending on 18<sup>th</sup> January 2017



- Soil moisture index indicates severely and moderately wet condition in many parts of Madhya Pradesh, Haryana, Punjab, Jammu & Kashmir, east Rajasthan, some parts of North-East Region. Mild wet condition in Jharkhand, Bihar, West Bengal, Odisha, Chhattisgarh, many parts of North-East Region, Uttar Pradesh and some parts of Rajasthan, Telangana, Gujarat region, Maharashtra. Rest of the country shows Mild dry condition.

## Weather Forecast for next 5 days valid upto 0830 hours of 25<sup>th</sup> January 2017

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- No significant change in minimum temperature over plains of northwest India during next 24 hours and likely to rise by 2-3°C over the same region for subsequent next 48 hours.
- Maximum and minimum temperatures likely to rise by 1-2°C over west India during next 2-3 days.
- No significant change in minimum temperature over rest parts of the country.
- Shallow to moderate fog very likely at isolated places over Punjab, Haryana, Chandigarh & Delhi, north Rajasthan, Uttar Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 2-3 days.

### 5 Day Rainfall Forecast (MID DAY) 20<sup>th</sup> January 2017

Met Sub-divisions	20 Jan	21 Jan	22 Jan	23 Jan	24 Jan
1. Andaman & Nicobar Islands	FWS	FWS	FWS	SCT	SCT
2. Arunachal Pradesh	DRY	DRY	DRY	DRY	DRY
3. Assam & Meghalaya	DRY	DRY	DRY	DRY	DRY
4. N.M.M. & T.	DRY	DRY	DRY	DRY	DRY
5. S.H. West Bengal & Sikkim	DRY	DRY	DRY	DRY	DRY
6. Gangetic West Bengal	DRY	DRY	DRY	DRY	DRY
7. Odisha	DRY	DRY	DRY	DRY	DRY
8. Jharkhand	DRY	DRY	DRY	DRY	DRY
9. Bihar	DRY	DRY	DRY	DRY	DRY
10. East Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
11. West Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
12. Uttarakhand	DRY	ISOL	ISOL	ISOL	ISOL
13. Haryana, Chd & Delhi	DRY	DRY	DRY	DRY	ISOL
14. Punjab	DRY	DRY	DRY	DRY	ISOL
15. Himachal Pradesh	DRY	SCT	SCT	ISOL	FWS
16. Jammu & Kashmir	DRY	FWS	FWS	SCT	WS
17. West Rajasthan	DRY	DRY	DRY	DRY	DRY
18. East Rajasthan	DRY	DRY	DRY	DRY	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
21. Gujarat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	DRY	DRY	DRY
24. Madhya Maharashtra	DRY	DRY	DRY	DRY	DRY
25. Marathwada	DRY	DRY	DRY	DRY	DRY
26. Vidarbha	DRY	DRY	DRY	DRY	DRY
27. Chhattisgarh	DRY	DRY	DRY	DRY	DRY
28. Coastal Andhra Pradesh	DRY	ISOL	DRY	DRY	DRY
29. Telangana	DRY	DRY	DRY	DRY	DRY
30. Rayalaseema	DRY	DRY	DRY	DRY	DRY
31. Tamil Nadu & Puducherry	ISOL	FWS	SCT	ISOL	ISOL
32. Coastal Karnataka	DRY	DRY	DRY	ISOL	DRY
33. North Interior Karnataka	DRY	DRY	DRY	DRY	DRY
34. South Interior Karnataka	DRY	ISOL	ISOL	ISOL	DRY
35. Kerala	DRY	ISOL	SCT	SCT	ISOL
36. Lakshadweep	DRY	DRY	ISOL	FWS	SCT

#### % Station Reporting Rainfall

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

### Weather Warning during next 5 days

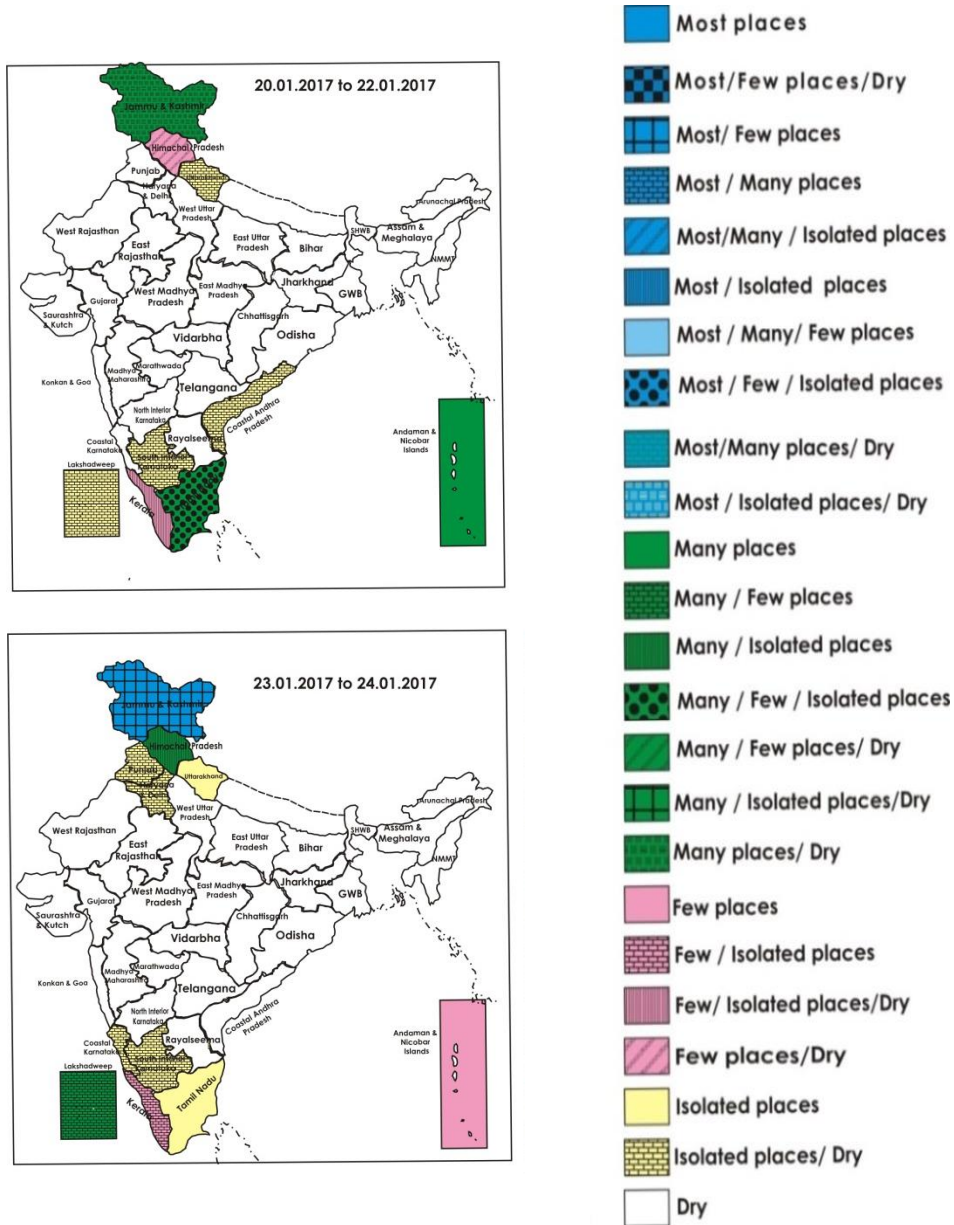
- **20 January (Day 1):** Heavy rain very likely at isolated places over Nicobar Islands.
- **21 January (Day 2):** Heavy rain very likely at isolated places over Nicobar Islands.
- **22 January (Day 3):** No weather warning.
- **23 January (Day 4):** No weather warning.
- **24 January (Day 5):** Heavy rain/snow very likely at isolated places over Jammu & Kashmir and Himachal Pradesh.



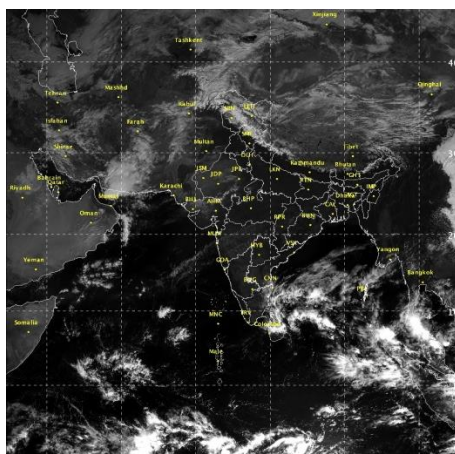
### Weather Outlook for subsequent 2 days from 25<sup>th</sup> to 27<sup>th</sup> January 2017

- Rainfall at isolated places likely over Punjab, West Rajasthan, north Gujarat, Assam & Meghalaya, Arunachal Pradesh, Andaman & Nicobar Islands, Lakshadweep, Tamilnadu & Pudducherry and Kerala.
- Rain/snow at a few places likely over Jammu & Kashmir and at isolated places over Himachal Pradesh.

### Weather Forecast Map (valid upto 0830 hours of 25<sup>th</sup> January 2017)



### Satellite image dated, 20.01.2017, 0600 UTC



### Salient Advisories

- As rain/snow very likely at many/most places over **Jammu & Kashmir** on 21<sup>st</sup> & 22<sup>nd</sup> and 24<sup>th</sup> Jan. and at many places over **Himachal Pradesh** on 24<sup>th</sup> Jan along with heavy rain/snow very likely at isolated places on 24<sup>th</sup> Jan., postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- As shallow to moderate fog very likely at isolated places over **Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura** during next 2-3 days, monitor potato, tomato and onion crops for early /late blight disease and wheat crop for incidence of rust. If symptoms are noticed undertake plant protection measures.
- As rain/thundershowers very likely at many places over **Andaman & Nicobar** Islands from 20<sup>th</sup> to 22<sup>nd</sup> Jan along with heavy rain very likely at isolated places over **Nicobar** Islands on 20<sup>th</sup> & 21<sup>st</sup> Jan , rain/thundershowers very likely at many places over **Tamil Nadu & Puducherry** on 21<sup>st</sup> Jan., postpone irrigation, application of fertilizers and plant protection methods in standing crops. Provide adequate drainage in vegetable fields in **Nicobar** Islands. In Tamil Nadu, undertake harvesting of matured rice, sorghum and maize cobs immediately and keep already harvested rice and sorghum at safer places.
- In Arid Western Plain Zone of **Rajasthan**, low minimum temperature can affect the mustard, cumin, gram and vegetables crops, protect the crops by applying light irrigation in the evening hours, smoking or by burning the farm waste /crop residue around the fields.
- In Central Plain Zone of **Punjab**, vegetable crops like chilli, capsicum and cucumber should be protected from cold by providing light irrigation. In addition to this, the farmers who have transplanted the capsicum, cucumber and chilli in field should cover the crop under low plastic tunnels.
- In **Haryana**, apply light irrigation to protect vegetables from low temperature and cover the young plants to protect them from low temperature.
- In Western Zone of **Punjab**, due to prevailing favourable weather conditions, there may be incidence of late and early blight of potato, spray Indofil M 45 @500 g/acre to control the disease.



## Detailed Zonewise Agromet Advisories

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



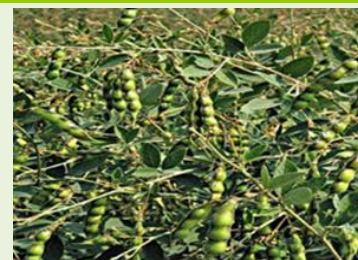
*Banana*



*Rice*



*Sugarcane*



*Red gram*

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Minimum Temperature:** Minimum temperatures are below normal (1.6°C to 3.0°C) at many places over Telangana, at a few places over Coastal Andhra Pradesh. They are appreciably above normal (3.1°C to 5.0°C) at many places over Tamilnadu, at a few places over Coastal Karnataka and near normal over rest of the region.
- **Advisories:**
  - **Andhra Pradesh:**
    - In the North Coastal Zone, continue planting of sugarcane after sett treatment with Propiconazol @ 1.0 ml/litre of water for 15 minutes before planting and sowing of sesame after seed treatment with Mancozeb @ 3 g/kg seed. Apply gypsum @ 200 kg/ac followed by hoeing on groundnut crop (vegetative stage) to improve pod yield
    - In Krishna Godavari Zone, continue harvesting of matured rice and black gram and picking of cotton.
    - In the High Altitude Tribal Zone, continue planting of sugarcane, before planting undertake hot water treatment of setts @ 52°C for 30 minutes to avoid diseases like whip smut and red rot and complete nursery sowing of rice and picking of cotton.
    - In the Scarce Rainfall Zone of Rayalaseema, undertake transplanting of rice under irrigated conditions in Anantapur district and continue picking of cotton and providing light irrigation in banana followed by spraying of 13-0-45 @ 10g/litre or SOP @ 5gm/litre of water for improvement of fruit size of bananas (fruit development stage).
    - In Chittoor and Kadapa districts of the Southern Zone, undertake planting of sugarcane.
    - In the Scarce Rainfall Zone of Rayalaseema, form alley ways for every 2 meters to avoid BPH incidence in rice (transplanting stage) in Anantapur district.
    - In Chittoor district of the Southern Zone, due to dry weather and low temperatures along with dew fall, there is possibility of occurrence of thrips and spread of bud necrosis in rabi groundnut. To control, spray Monocrotophos @ 1.6 ml./litre of water at 20 DAS followed by spraying Imidachloprid @ 0.3 ml./litre at 30 DAS.
  - **Telangana:**
    - In South Telangana Zone, low temperatures during the *rabi* season may cause cold injury in rice nurseries. To overcome cold injury and for better nursery growth, continue covering 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 sqmetre nursery area 10-15 days after sowing. Apply Carbofuran 3G @ 1 kg/200 sq.m (5 cents) to rice nurseries one week before pulling nursery.
    - In North Telangana Zone, undertake nursery sowing of tomato and sowing of bhendi and continue sowing of sesamum and transplanting of early sown rice.
    - In South Telangana Zone, incidence of sterility mosaic virus is noticed in *rabi* red gram. To control, spray Wettable Sulphur @ 3g or Karathane @ 3 ml/litre of water twice at weekly interval.
    - In North Telangana Zone, spray Chloropyriphos @ 2 ml/litre of water to control Spodoptera litura in chillies.
  - **Tamil Nadu:**
    - As rain/thundershowers very likely at many places over Tamil Nadu & Puducherry on 21<sup>st</sup> Jan., postpone irrigation, application of fertilizers and plant protection methods in standing crops. Undertake harvesting of matured rice, sorghum and maize cobs immediately and keep already harvested rice and sorghum at safe places.
    - In the Cauvery Delta Zone, continue sowing of rice fallow pulses under waxy condition (ADT 3 blackgram variety and ADT 3 green gram variety) under rice fallow condition in *Samba* rice fields.
    - In the Western Zone, undertake Navarai season rice planting with wet and dry method of irrigation.
    - In the South Zone, undertake harvesting of matured sorghum and maize cobs immediately. Unfavourable soil and environmental factors, hormonal deficiency and pest and disease incidence are responsible for flower dropping in chilli. For improving flower retention and pod formation, spray NAA 10 ppm @ 10 mg/ litre of water 90 days after planting.
    - In the South Zone (Kovilpatti), stem weevil incidence is noticed in cotton. For controlling stem weevil, apply Carbofuran 3G @ 33.3 kg/ha.
    - In the North Western Zone, apply 1 kg Trichoderma viride along with 100 kg farm yard manure to control bulb rot

in small onion.

- In the High Altitude Zone, continue necessary measures like mulching to prevent frost damage in crops due to low temperature.
- In the High Rainfall Zone, as heavy winds are expected, staking should be given to banana trees. Continue harvesting of pepper only when the spike attains the right maturity by watching for colour change in one or two berries in a spike from green to orange or red.
- In the Cauvery Delta Zone, brown leaf spot incidence is noticed in thaladi rice fields. To control, spray Carbendazim 200g/acre (or) Mancozeb 400g/acre in 200 litres of water.
- In the Southern Zone (Kannivadi), for the management of powdery mildew in bhendi, undertake dusting Sulphur @ 10 kg /acre or applying wettable Sulphur @ 2 g/litre of water immediately after noticing the incidence and repeat every 15 days.
- In the High Altitude Zone, spray Neem oil or Quinosphos 25% EC @ 2.5ml/litre of water to control scale insects and mealy bug in coffee plantation.

▪ **Kerala:**

- In Idukki and Wynad districts of High Altitude Zone, continue harvesting of coffee, sowing crops like amaranthus, bitter gourd, cucumber, water melon, snake gourd, bottle gourd etc., provide drip irrigation in coconut fields, daily irrigation in cardamom and arecanut fields and harvesting of cardamom, pepper, arecanut and ginger.
- In the Problem Area Zone, provide life saving irrigation to coconut ensuring a minimum of 50-60 litres per palm. Late planted cool season vegetables should be provided with shade and light irrigation. Spray 2% Neem oil garlic emulsion fortnightly, if top shoot borer found. Seedlings of other vegetables may be treated with Pseudomonas @10 g/litre of water for 20 min before planting. Protect nutmeg trees from drought and scorching sunlight.
- In the Central Zone, based on moisture availability, based on moisture availability, vegetables can be cultivated on harvested rice fields. Bhindi, and gourds can be directly sown whereas chilly, tomato and brinjal seedlings can be planted. Continue harvesting of rice (Jyothi, Kanjana, Uma, Ponmani varieties) and mulching in banana fields.
- In Thiruvananthapuram district of the Southern Zone, since bright cloudless days have been predicted, in the case of young coconut palms, it is advisable to give shade from the south west direction. Relatively high winds and low RH can aggravate soil dryness Hence irrigation should be given prime importance. In irrigated gardens, for drip irrigation, irrigate @ 50 litres/palm and 300litres of water once in 5 days in the case of flood irrigation.
- In the Northern Zone, chisel out the grubs and swab cashew tree trunk with Acephate @ 2g/litre of water and swab (adult trees only) with coal tar kerosene mixture at 1:2 proportion to control root and stem borer attack.
- In Thiruvananthapuram district of the Southern Zone, since dry conditions favour the incidence of fungal diseases in rubber, spray Copper oxy chloride or Bordeaux mixture, to control.
- In the Problem Area Zone, prevailing dry weather conditions are congenial for attack of pseudostem weevil in bananas. If infestation is noticed, drench the leaf axils and bore holes on pseudo stem with Chlorpyrifos 2 ml/litre or Quinalphos 2 ml/litre of water.

▪ **Karnataka:**

- In Bidar district of North East Transition Zone, undertake land preparation for planting of sugarcane. Provide irrigation to wheat and *rabi* sorghum. Complete harvesting of pigeon pea crop.
- Continue harvesting of Bengal gram, safflower, picking of red chilli, continue third picking of late sown seed cotton in North East Dry Zone.
- In Southern Transition Zone, continue picking of matured pods of red gram.
- Apply irrigation in arecanut plantation in Hill Zone.
- In North Transition Zone, avoid picking of cotton during early morning hours. Continue harvesting of matured Bengal gram and chilli.
- Green chilli is affected by infestation of midge due to which pods are malformed in North East Dry Zone; to control, spray Cartap Hydrochloride @ 1.0 g / litre of water.
- Infestation of fruit borer is noticed in ladies finger crop in North East Transition Zone; to control, spray Quinlophos 25 EC @ 2 ml or Malathion 50 EC @ 2 ml / litre of water.
- Infestation of mites in coconut is observed in Southern Dry Zone; spray water soluble Sulphur @ 5 g/liter of water or spray a mixture of neem oil @ 20 ml + garlic solution 20 g + soap powder solution @ 5 g / litre of water to the coconut flower and fruit bunch.
- Low temperature and high humidity (RH) observed in the morning hours is congenial for the occurrence of powdery mildew in grapes in Eastern Dry Zone; spray Carbendazim @ 1 g/litre or Tridemarf @ 0.5 ml/litre.
- Due to low temperature and fog during morning hours, incidence of powdery mildew is noticed in mango orchard in Southern Dry Zone and North East Dry Zone; spray 4% wettable Sulphur in one liter of water. Also Hopper & Thrips attack is also noticed in some of the mango orchards; to manage, spray Imidacloprid @ 3.3 ml/10 litres of water.
- Suitable varieties for sowing are given in Annexure III.

▪ **Animal Husbandry**

- In Scarce Rainfall Zone of Andhra Pradesh and Telangana, provide artificial light to chicks to maintain adequate temperature in poultry sheds. Sides should be covered with curtains during cool hours of the day. Wet litter material should be removed regularly. Ensure proper cross ventilation to avoid ammonia accumulation in the poultry sheds.
- In the North Western Zone of Tamil Nadu, undertake farm biosecurity measures to prevent death of birds due to E. coli infection. Cloudy sky and reduced day light warrant additional requirement of vitamin D3 which should be supplemented with 25% extra in the diet to overcome the egg shell quality problems. Feed must contain slightly higher energy content along with mycotoxin binders.
- In the High Altitude Zone of Tamil Nadu, sheep and goats should be dewormed and allowed to graze in the morning after the dew dries off to prevent the endoparasitic infestation in animals.
- In the Southern Zone of Tamil Nadu, due to the prevailing drought conditions, feed 75-80 litres of good water to adult cows. For the milking cow, in addition to 75 litres of water, an excess of 2.5 litres of water per the litre of milk it gives should be provided.
- Maintain optimum room temperature in poultry by providing electric bulb in North East Transition Zone and Southern Dry Zone of Karnataka. Maintain optimum room temperature in sericulture, poultry and dairy unit; de-worming of animal be done; provide mineral mixture along with concentrated feeds to milch animals in Eastern Dry Zone.

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



*Banana*



*Rice*



*Cauliflower*



*Wheat*

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Minimum Temperature:** Minimum temperatures are appreciably below normal (3.1°C to 5.0°C) at isolated places over Assam & Meghalaya. They are appreciably above normal (3.1°C to 5.0°C) at isolated places over northeastern states and near normal over rest of the region.
- **Advisories:**
  - As shallow to moderate fog very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 2-3 days, monitor potato, tomato and onion crops for early/late blight disease and wheat crop for incidence of rust. If symptoms are noticed undertake plant protection measures.
  - **Assam, Meghalaya & Arunachal Pradesh:**
    - In Karimganj, Hailakandi and Cachar districts of Barak Valley Zone of Assam, farmers are advised to maintain 5 cm standing water in the transplanted *boro* rice fields.
    - In Dhemaji, Lakhimpur, Sonitpur, Dibrugarh, Golghat, Jorhat and Sibsagar districts of Upper Brahmaputra Valley Zone of Assam, complete harvesting of sugarcane and transplanting of late cole crops like cabbage and cauliflower. Undertake land preparation for sowing of okra, ridge gourd and sponge gourd.
    - In Karbi Anglong and NC Hills districts of Hill Zone of Assam continue transplanting of *boro* paddy if the seedlings attained 5-6 leaf stage.
    - In Marigaon and Nagaon districts of Central Brahmaputra Valley Zone of Assam, continue transplanting of *boro* paddy seedlings at proper age i.e 4 to 5 leaf stage (45 days old seedling).
    - In Barpeta, Bongaigaoin, Dhubri and Goalpara districts of Lower Brahmaputra Valley Zone of Assam, continue land preparation for *rabi* maize.
    - In North Bank Plain Zone of Assam, continue transplanting the seedling of *boro* rice.
    - In Arunachal Pradesh, continue mulching with straw/crop residue at root zone to avoid frost injury in banana.
    - In Meghalaya, apply light irrigation in rapeseed/mustard as per requirement.
    - In Hill Zone, humid weather is pre-disposing factor of the late blight disease in tomato. Alternate application of Ridomil MZ-72 (2g/litre) and Indofil M-45 2.5g /litre at 15 days interval can prevent the disease. Spray Malathion 50 EC @ 1.5 ml/litre against leaf eating caterpillars in cole crops.
    - In North Bank Plain Zone, Barak Valley Zone and Upper Brahmaputra Valley Zone of Assam, humidity condition is favourable for appearance of late blight in potato and tomato crop, farmers are advised to spray Mancozeb @ 2.5g/litre as prophylactic measures against late blight.
    - In Hill Zone, Barak Valley Zone, North Bank Plain Zone and Upper Brahmaputra Valley Zone of Assam, there is



chance of attack of aphid in rapeseed & mustard crop due to favourable weather conditions. To control this pest, spray Dimethoate 30 EC or Chloropyriphos 20 EC @ 0.5 litre per ha area.

- In Arunachal Pradesh, spray Azadirachtin 0.15% EC 2@ 6ml/litre against leaf eating insects in cabbage/cauliflower, pea & other vegetables. Spray Indofil-45 @ 2.5ml/litre of water against aphid/alternaria blight in mustard.
- In Meghalaya, spray Wettable Sulphur @ 2 g/litre or Dinocap @ 1 ml/litre or Tridemorph @ 0.5 ml/litre or Dust Sulphur @ 25 kg/ha against powdery mildew and Dithane M-45 (0.2 %) against rust in pea.

▪ **Nagaland, Manipur, Mizoram and Tripura:**

- In Nagaland, soil moisture conservation techniques like mulching with crop residue is recommended in toria, rabi maize, pea and vegetables.
- In Manipur, continue sowing of *rabi* maize.
- In Mizoram, continue harvesting of *khasi* mandarin/acid lime and colocasia. Continue transplanting of onion, capsicum and sowing of French bean, carrot and radish and sowing of Zero tillage pea, toria and lentil cultivation in rice fellow. Continue sowing of rabi maize and planting of potato.
- In Tripura, continue transplanting of *boro* rice in the main fields. As dry weather prevails, provide light irrigation with mulching in mustard, lentil, cole crops, *rabi* maize.
- In Manipur, spray Propiconazole @ 15ml/15 litre water against rust/powdery mildew in pulses and Mancozeb 2 g/litre of water against early blight in potato.
- In Tripura, humid weather is conducive for blight disease in potato, spray Mancozeb(Indofil M-45) @ 2.5g per litre of water against blight in potato.
- Suitable varieties for sowing are given in Annexure III.

• **Animal Husbandry**

- In Assam and Arunachal Pradesh, put gunny bags or plastic sheath curtains on the side walls and bedding material should be increased to protect poultry from cold. Care should be taken not to restrict ventilation.
- In Tripura, pigs need housing to keep them warm during cold nights. Sanitation is important to keep the pigs disease free.
- In Nagaland, ensure periodic vaccination of cattles against FMD, Brucellosis, Haemorrhagic Septicaemia, Anthrax. Cattles should be given mineral mixture along with salt regularly and wheat grains, jaggery etc. may be provided @ 10% - 20% in the daily ration during winter season to meet the energy requirement of the animals. Avoid feeding of damp and foul smelling feed to all livestock and poultry.

• **Fishery**

- In Hill Zone of Assam, due to insufficient rains for long period of time drying of fish ponds are observed in the districts. So, there is the chance of suffering of fish due to shallow water in ponds. Therefore farmers are advised to digging of ponds to increase depth and apply Potash @ 4-5 mg/lit of water and Sukrena WS @ 1 lit per bigha of water to protect the fish population against various bacterial diseases prevalent in winter season.
- In Barak Valley Zone of Assam, treat the fishes with Potassium Permanganent (2 mg/100ml of water) or common salt (3 gm/ 100 ml of water) to control all fungal and bacterial diseases.

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



*Maize*



*Mustard*



*Groundnut*



*Wheat*

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Minimum Temperature:** Minimum temperatures are appreciably above normal (3.1°C to 5.0°C) at a few places over Gujarat, at isolated places over Konkan & Goa and Madhya Maharashtra and near normal over rest of the region.
- **Advisories:**
  - **Maharashtra:**
    - In Konkan, in transplanted *rabi* rice, maintain water level up to 5 cm. Continue harvesting of leafy vegetables. For early sown groundnut if the crop is one month old and flowering has been started, then earthing up should be done with the help of “Swastik” hoe. Undertake transplanting of brinjal and chill crops if seedlings are ready. At the time of transplanting, the seedlings may be dipped in Dimethoate @ 10 ml/10 liters of water and transplant it on ridges

of main field with spacing of 60 x 60 cm. Undertake sowing of binneal forage crops like Paragrass, Napier, Gajraj etc. and continue sowing of seasonal fodder crops viz. maize, sorghum and cowpea.

- In Madhya Maharashtra, continue harvesting of pigeon pea. Continue preparatory tillage for planting of suru sugarcane. Undertake transplanting of chilli crops (Phule Jyoti, Phule Mukta). Continue land preparation for summer groundnut. Continue land preparation and sowing of bhendi, bitter gourd, cucumber, ridge gourd, bottle gourd. Apply light irrigation to jowar at grain filling stage.
- In Marathwada, as dry weather is prevailing, apply light irrigation to suru sugarcane, wheat, gram, maize, vegetable crops and orchards. Continue harvesting of pigeon pea. Continue planting of suru sugarcane. Turmeric crop is at rhizome development stage, stop irrigation to the crop 15 days before harvesting. Complete nursery sowing of tomato, brinjal and chilli. Continue transplanting and apply nitrogen after transplanting. Apply light irrigation to jowar at grain filling stage.
- In Vidarbha, as dry weather condition is prevailing, apply irrigation in vegetables, sugarcane & orchards. Continue harvesting of pigeon pea. Continue land preparation for summer groundnut. Undertake transplanting of summer rice. For transplanting of rice use 12 to 15 cm tall seedling with age of 22 to 25 days age. Undertake sowing of fenugreek, spinach, radish, capsicum and carrot and nursery sowing of onion/tomato with assured irrigation.
- In Madhya Maharashtra, due to prevailing temperature there are chances of attack of aphid and jassids in sunflower, spray Dimethoate 30 EC @ 10 ml per 10 liters of water.

▪ **Gujarat:**

- In Middle Gujarat Zone, apply irrigation in Indian rapeseed and mustard, gram and pigeon pea in the evening hours.
  - As dry weather is prevailing, provide water by drip irrigation for 1/2 to 3/4 hrs to fruit crops in South Gujarat Zone; if drip irrigation facility is not available, provide 12 to 13 litres of water for every graft.
  - In South Gujarat Heavy Rainfall Zone, continue land preparation for transplanting of rice. Continue nursery raising of tomato. Apply irrigation in rabi pulses.
  - In North Gujarat Zone and North West Zone, undertake intercultural operations in wheat and castor.
  - In South Saurashtra Zone, apply irrigation in wheat, chickpea crop and in wheat in North Saurashtra Zone.
  - Due to cold and cloudy weather condition there is chance of incidence of leaf rust in wheat in South Saurashtra Zone; if noticed, two to three sprays of Mencozeb 30 g in 10 litres of water at 12 to 15 days interval period are advised.
  - Due to favorable weather conditions, there are chances of infestation of sucking pests in vegetables in coming days in North Gujarat Zone; if noticed, spray Dimethoate 30 EC 0.1% to manage sucking pests.
  - Due to rise in temperature, there is chance of occurrence of aphids in Indian rapeseed and mustard in Middle Gujarat Zone; spray 0.1% Dimethoate 30 EC @ 10 ml in 10 litres of water.
  - Due to present weather condition there are chances of blight disease in potato crop in North Gujarat Zone; for control of early blight in potato spray Mencozeb 0.25% @ 30 g/10 litres of water and for late blight spray Metalaxil MZ (Redomel gold) @ 20 g/10 litres of water.
  - Attack of thrips and aphids in cumin has been reported in North Saurashtra Zone; spray Imidacloprid @ 5 ml/10 litres of water. In brinjal and tomato constant monitoring of borers by using pheromone traps 4-6 per acre is advised; if insect population is above ETL, spray Spinosad @ 3.0 ml/10 litres of water against fruit borer.
  - Suitable varieties for sowing are given in Annexure III.
- **Animal Husbandry**
- In Gujarat, provide luke warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress. Spread the crops residues in animal house. Provide artificial light in the poultry sheds.

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



*Red gram*



*Okra*



*Maize*



*Wheat*

- **Realised Rainfall:** Rainfall occurred in Nicobar district of Andaman & Nicobar Islands. Weather remained dry over rest of the region.
- **Realised Minimum Temperature:** Minimum temperatures are appreciably below normal (3.1°C to 5.0°C) at isolated places over Odisha. They are appreciably above normal (3.1°C to 5.0°C) at a few places over Bihar, Jharkhand and

Andaman & Nicobar islands, at isolated places over Sub-Himalayan West Bengal & Sikkim and near normal over rest of the region.

• **Advisories:**

▪ **Odisha:**

- In East and South Eastern Coastal Plain Zone, complete nursery sowing of rice and undertake land preparation for transplanting.
- In Deogarh and Sundargarh districts of North Eastern Plateau Zone, complete sowing of, mung, Biri and Peas. Complete nursery sowing of rice.
- In Kalahandi and Nuapara districts of Western Undulating Zone, cover the vegetable nurseries to protect from low temperatures. Irrigate the vegetable seedling nursery during evening hours. Continue sowing of groundnut and nursery sowing of onion. Continue harvesting of rice. If noticed spray Carbendazim or Matalaxyl + Mancozeb 2g/litre of water.
- In Western Undulating Zone, there is chance of Pod borer attack in gram crops at pod formation stage. Monitor the crops and spray Triazophos or profenophos 2ml/litre of water if attack is noticed.
- In Western Undulating Zone, Aphid and powdery mildew may infest the Greengram and Blackgram crop during vegetative growth stage. Keep watch on these diseases. Spray Acephate 75% SP 400g or imidacloprid 17.8% SL 50ml to control aphids. Spray sulphur 80% WP 600g mixing with 200lit water per acre crop area to control powdery mildew.
- In Mayurbhanj and Keonjhar districts, continue sowing of green pea in fallow uplands and nursery raising of tomato, cauliflower and cabbage.
- In Western Undulating Zone, aphids and powdery mildew may infest the Green gram and Black gram crop during vegetative stage. Monitor the crops. Spray Acephate 75% SP 400g or imidacloprid 17.8% SL 50ml to control aphids and spray Sulphur 80% WP 600g mixing with 200litres of water per acre to control powdery mildew.
- In East and South Eastern Coastal Plain Zone, cloudy weather may aggravate aphid infestation in pulses and mustard. Apply 4 ml Neem based pesticide or 2 ml Metasystox per each litre of water to control aphids. If pod borer has occurred in gram and pea, spray Imidacloprid @ 50 ml or 400 ml Dimethoate or Metasystox in 200 litre water per acre.
- In Mid Central Table Land Zone, due to large difference between day and night temperature, there is possibility of Aphid attack in mustard and groundnut. Spray Thiomethoxam @ 1g/3l of water if the infestation crosses ETL.

▪ **West Bengal:**

- In Burdwan, Murshidabad, Nadia, North 24 Parganas districts of New Alluvial Zone and Bankura, Bibhum, and purulia of Laterite and Red soil Zone, complete the transplanting of *boro* rice within the end of this month. Keep 2-3 cm stagnant water for next seven days to complete the root establishment.
- In Purba Midnapore and South 24-parganas districts of Coastal Saline Zone, undertake transplanting the seedling of *boro* rice in the main field within 2-3 days, follow a spacing of 20cm X 20cm and transplant the seedlings at 2cm depth four to five seedlings transplant per hill.
- In Bankura, Birbhum and Purulia districts of Laterite & Red Soil Zone, to protect the seedlings of *boro* rice from cold, cover the nursery bed with polythene. Provide proper drainage channels in the nursery bed. Main field preparations should be completed as early as possible..
- In Hill Zone, continue harvesting of ginger, turmeric and complete the harvesting of mandarin orange.
- In Malda & Dakshin Dinajpur districts of Old Alluvial Zone, cover the nursery bed of *boro* rice with Polythene or apply irrigation at night and drain the water in the morning to protect the seedlings from cold. Spray Carbendazim @ 2 g/litre of water as precaution measure.
- In Old Alluvial Zone, to control Mustard aphid, spray Imidachloropid @ 2 ml/5 litre water at evening hour. To Control the Diamond Black Moth of Mustard, spray, Spinosad @ 1ml per litre of water at evening hour. For controlling late blight in Potato, spray (Metalaxyl + Mancozeb) @ 2 g/litre of water.
- In New Alluvial Zone, due to cloudy weather situation, blight may become serious disease in potato. If early blight is found apply 2.5g Mancozeb per litre. of water. If required, apply the same again after 7 to 10 days.
- In Coastal Saline Zone, there may be attack of blight and thrips in onion at vegetative stage due to low temperature and morning fog. Spray mixture of Mancozeb and Metalaxyl @2.5g/litre of water for control of blight and for thrips attack, spray Imidachlorpit @3ml/10liters of water.
- In Laterite and Red soil Zone, low temperature favours yellow rust disease in wheat. Spray Mancozeb 75 Wettable Powder @ 2ml/litre of water.

▪ **Andaman and Nicobar Islands:**

- As As rain/thundershowers very likely at many places over **Andaman & Nicobar** Islands from 20<sup>th</sup> to 22<sup>nd</sup> Jan along with heavy rain very likely at isolated places over **Nicobar** Islands on 20<sup>th</sup> & 21<sup>st</sup> Jan., postpone irrigation, application of fertilizers and plant protection methods to standing crops.
- In Nicobar islands , provide proper drainage channels in the vegetable fields to avoid stagnation of water as heavy rainfall expected in coming days.



▪ **Bihar:**

- In Araria, Katihar, Kishanganj, Madhepura, Purnea, Saharsa and Supaul districts in North East Alluvial Zone, irrigate the maize crop which is about 50-60 days old. Application of 50kg nitrogen per hectare is also advised after irrigation. Irrigate late sown wheat crop which is about 21-25 old. Broadcasting of urea @ 30kg/acre after 2 days of irrigation. Weeding must be done before application of urea. Protect the *Boro* rice nursery from cold stress by irrigation through fresh water at the evening time. Young plants of mango, litchi and papaya are very susceptible to frost damage and these should be protected by covering with polythene sheets or straw thatches. Provide light irrigation in vegetables such as cauliflower, cabbage, tomato, pea, chilli, brinjal, onion nursery, garlic etc as per soil moisture status.
- In Darbhanga, East Champaran, Gopalganj, Samastipur, West Champaran districts of North West Alluvial Plain Zone, farmers are advised to give irrigation in late sown wheat and maize crop, which is in 60-65 days (tillering/vegetative) stage. Intercultural operation is advised in onion and vegetables crop. Provide light irrigation in vegetables such as cauliflower, cabbage, tomato, pea, chilli, brinjal, onion nursery, garlic etc as per soil moisture status.
- In North East Alluvial Zone, in present weather condition, constant monitoring of aphid is advised in mustard crop. If insect population above ETL than spraying of Rogar or Quinalphos @ 2.0 ml/litre water is recommended. Farmers are also advised to do spray of Mancozeb @ 2 g/ litre of water along with tepol (sticky material) in the seed potato crop for controlling the late blight. Timely sown crop is at pod formation stage and at this stage, if attack of pod borer are found spray Chloropyriphos @ 3-5 ml/litre of water should be sprayed two times at an interval of 10-12 days if infestation is severe.
- In South Bihar Alluvial Zone, there may be attack of termite in wheat crop. Application of mixture of 20 kg sand with Chloropyriphos 20 EC @ 2 litre/acre should be done in evening hours and subsequent irrigation should be done.

▪ **Jharkhand:**

- In Central and North Eastern Plateau Zone, prepare nursery bed for onion with well rotted FYM .
- In Western Plateau Zone of Jharkhand , undertake harvesting of timely sown toria crop.
- In Western Plateau Zone, at prevailing weather condition, there is a chance of the attack of powdery mildew disease on green pea in which white powder appears on leaves and stem. To control this disease, spray Kairathen @ 1 ml per litre of water or Sulfex @ 3 g per litre of water.
- In Central and North Eastern Plateau Zone, due to high humidity and cold weather, there is chance of attack of late blight disease in potato, to control it - spraying of Metalaxyl MZ + Mancozeb @ 1.5g /litre of water is advised.
- In South Eastern Plateau Zone, timely sown arhar crop is at flowering to pod formation stage and at this stage if attack of leaf eating insect and pod borer are found, spray Monochrotophos @ 2 ml/litre of water two times at an interval of 10-12 days to control leaf eating insects. To prevent pod borer, spray Indoxacarb 14.5 % SC @ 120 ml/acre or Emamectin benzoate 5 % SG @ 5 g/acre or Spinosad 14.5 % SC @ 23-30 g/acre or Neem 1500 ppm @ 800 ml/acre or Profenophos 50 EC @ 800 ml/acre is recommended.
- In Central and North Eastern Plateau Zone, there may be attack of pod borer and powdery mildew disease on Green Pea. Hence, spraying of Kairathen @ 1 ml or sulfex @ 3 ml per liter of water to prevent from further spreading. To control pod borer, spray Monochrotophos @ 1 ml per liter of water.
- In Western Plateau Zone, the existing weather condition is favourable for attack of late blight disease in potato and aphids on mustard and other crops/vegetables. Hence, as a preventive measure, farmers may spray fungicide and insecticide in the respective crops.
- In Central and North Eastern Plateau Zone, in humid weather, there may be flower drop in gram crop due to fungal attack , to control, apply Metalaxyl MZ + Mancozeb @ 1.5g /lt water and planofix @ 1ml / 10 litres of water .
- Suitable varieties for sowing are given in Annexure III.

▪ **Animal Husbandry**

- In Odisha, it is advised to keep the animals inside the sheds and provide dry bedding and use heaters inside cattle sheds to protect them from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy to cope up with the situation. Keep the chicks warm by providing artificial light in the poultry sheds.
- In Nicobar, during rainfall period, the poultry birds especially the chicks upto 4 weeks of old should be kept under confinement, providing light, water and chick feed.
- In Bihar, newly born calves need special care during cold weather as they are susceptible to attack of pneumonia. Keep the animals under roof at night time and in the sun during the day. The energy content of the concentrate mixture should be increased by 5-10 % where the protein in the concentrate can be reduced by 2-3 per cent during cold season. Provide heat by lighting 100W filament bulb @ 1 bulb per 20 newly born chicks in poultry house.
- In Terai Zone of West Bengal, Vaccination is the principal way to protect animals from Black Quarter (BQ) and Foot and Mouth Disease (FMD).

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



*Maize*



*Cabbage*



*Mustard*



*Wheat*

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Minimum Temperature:** Minimum temperatures are appreciably above normal (3.1°C to 5.0°C) at a few places over Madhya Pradesh and near normal over rest of the region.
- **Advisories:**
  - **Madhya Pradesh:**
    - In Gwalior, Bhind, Morena, Guna, Ashoknagar and Shivpuri districts, as dry weather would prevail, apply irrigation in wheat at tillering stage and in mustard, gram and vegetables. Apply irrigation in late sown wheat after 25-30 days of sowing and continue intercultural operations.
    - In Chhindwara and Betul districts, apply irrigation in wheat at tillering stage and in gram at flowering stage.
    - In Vindhya Plateau Zone, apply irrigation in gram, wheat and vegetables. Continue harvesting of matured pods of red gram.
    - In Nimar Valley Zone, undertake top dressing of urea @ 30kg/acre after irrigation in wheat crop.
    - In Tikamgarh, Chhatarpur and Datia districts, apply irrigation in vegetables, mustard and wheat. After irrigation apply nitrogen fertilizer in wheat. Continue intercultural operations in vegetables.
    - In Jhabua, Alirajpur and Dhar districts, apply 2<sup>nd</sup> irrigation in gram and mustard at pod filling stage. Continue picking up of matured vegetables and digging of matured rhizomes of turmeric and ginger.
    - In Jabalpur, Rewa, Satna districts, apply irrigation in gram and mustard as per requirement. Continue harvesting of matured pea. Continue intercultural operations in vegetables.
    - In Jhabua Hill Zone, there are chances of attack of aphids in mustard, apply Acetamiprid @ 0.35-0.45 ml/litre of water.
    - In Bundelkhand Zone, there are chances of attack of semi lopper and leaf borer in cauliflower crop, spray Malathion 50 E.C. @ 1ml/litre of water for control.
  - **Chhattisgarh:**
    - In North Hill Zone, apply irrigation in wheat at tillering stage. Continue sowing of cucurbitaceous crop in the polythene bags, sowing of leafy vegetables and land preparation for sowing of summer vegetables like cowpea, okra. Undertake intercultural operations in sugarcane and where the crop is at knee high stage, undertake top dressing of nitrogen followed by earthing and irrigation.
    - In Chhattisgarh Plain Zone, continue seedling preparation of cucurbitaceous crops in polythene bags. Apply nitrogenous fertilizers in vegetables after intercultural operations.
    - In Bastar Plateau Zone, apply irrigation in standing crops to prevent from cold injury. Spray 2% urea after nipping in gram crop for better branching and yield.
    - In Bastar Plateau Zone, for control of powdery mildew in pea, spray soluble Sulphur (Sulphex 3g) or Carbendazem (1g) dissolved in one litre of water.
    - In Chhattisgarh Plain Zone, prevailing weather is congenial for attack of pod borer in pigeon pea, for control, spray Indoxacarb @ 300 g/hectare dissolved in 500 litres of water.
    - Suitable varieties for sowing are given in Annexure III.
- **Animal Husbandry**
  - In Madhya Pradesh, keep animals in sheds during night hours and cover the floor with paddy straw litter to protect from cold. Provide artificial light during night time in poultry house. Provide mineral mixture and fresh and clean water to birds.
  - In Chhattisgarh, protein enriched diet should be given to the animals and keep them in shed during night hours.

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



**Mustard**

**Maize**

**Cauliflower**

**Wheat**

- **Realised Rainfall:** Rainfall occurred in Bilaspur, Chamba, Kinnaur, Kullu, Lahaul & Spiti districts of Himachal Pradesh, Gurdaspur district of Punjab, Anantnag, Badgam, Doda, Jammu, Kathua, Kulgam, Pulwama, Ramban, Reasi, Srinagar and Udhampur districts of Jammu & Kashmir. Weather remained dry over rest of the region.
- **Realised Minimum Temperature:** Minimum temperatures are appreciably below normal (3.1°C to 5.0°C) at isolated places over Jammu & Kashmir; below normal (1.6°C to 3.0°C) at isolated places over Himachal Pradesh, West Rajasthan, Haryana, Chandigarh & Delhi and West Uttar Pradesh. They are appreciably above normal (3.1°C to 5.0°C) at many places over East Rajasthan and near normal over rest of the region. The lowest minimum temperature of 0.7°C recorded at Bhatinda (Punjab) in the plains of the country.
- **Advisories:**
  - As rain/snow very likely at many/most places over Jammu & Kashmir on 21<sup>st</sup> & 22<sup>nd</sup> and 24<sup>th</sup> Jan. and at many places over Himachal Pradesh on 24<sup>th</sup> Jan. along with heavy rain/snow very likely at isolated places on 24<sup>th</sup> Jan., postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
  - As shallow to moderate fog very likely at isolated places over Punjab, Haryana, Chandigarh & Delhi and Uttar Pradesh during next 2-3 days,, monitor potato, tomato and onion crops for early /late blight disease and wheat crop for incidence of rust. If symptoms are noticed undertake plant protection measures.
  - **Rajasthan:**
    - In East Rajasthan, In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, apply irrigation to late sown wheat crop is at CRI stage and top dress of urea 65 kg / ha. and in timely sown wheat crop apply top dressing of 2nd half of the remaining Nitrogen after 2nd irrigation. Spray zinc sulphate solution @ 0.5 % in wheat where zinc deficiency symptoms noticed. Apply second irrigation in gram crop at pod formation stage.Continue nursery sowing of tomato, apply 10 kg FYM, 1 kg Neem cake, 100 g superphosphate and 10 g Furadon to soil before sowing of tomato nursery and seed treated with Carbendizm 2g/kg seed and treated with sowing time Azosporium 40 g /400 g seed.
    - In Arid Western Plain Zone, in Barmer, Churu, Jalore, Jodhpur, Pali districts, give 2<sup>nd</sup> and 3<sup>rd</sup> irrigation to timely sown wheat as per the present crop stage after 40 and 55 days of sowing respectively and 2<sup>nd</sup> irrigation to barley crop after 65-70 days of sowing.Apply irrigation in mustard crop at 70 to 80 days of sowing at grain formation stage. In Jaisalmer and Bikaner districts, irrigate the gram and mustard crop at 65-70 days after sowing and take care about an interval of 5-7 days between irrigation and hoeing-weeding. Lower temperatures can harm the crops like mustard cumin , gram and vegetables, give light irrigation and make smoke around the fields. Irrigate the fodder crops as oat, lucerne, berseem etc. at an interval of 15 to 20 days. Top dress the urea @ 65-85 kg per ha in fodder oat after every cut.
    - In Arid Western Plain Zone, in Barmer, Churu, Jalore, Jodhpur, Pali districts, apply irrigation in mustard crop at 70 to 80 days of sowing at siliquea formation stage. In Jaisalmer and Bikaner districts, irrigate the gram and mustard crop at 65-70 days after sowing and take care about an interval of 5-7 days between irrigation and hoeing-weeding. Irrigate the fodder crops as oat, lucerne, berseem etc. at an interval of 15 to 20 days. Top dress the urea @ 65-85 kg per ha in fodder oat after every cut.
    - In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, continue nursery sowing of tomato, use 60 kg Nitrogen, 80 kg Phosphorus and 60 kg Potash per hectare. In hybrid tomato, use 180 kg Nitrogen, 120 kg Phosphorus and 80 kg Potash per hectare along with 300 quintal FYM.To protect sensitive crops like mustard, Rajmash, potato, gram from frost attack, spray dilute sulphuric acid @ 0.1% (1 litre H<sub>2</sub>SO<sub>4</sub> in 1000 litre water) or thiourea @ 500 ppm (500 gmthiourea in 1000 litre water) at flowering stage.
    - In Arid Western Plain Zone, in Jaisalmer and Bikaner districts, prevailing cloudy and high humidity weather condition is congenial for attack of termite infestation in wheat and barley and other *rabi* crops, for control apply Chloropyrifos 20 EC @ 2400 ml per hectare along with irrigation water.
    - In Arid Western Plain Zone, in Barmer, Churu, Jalore, Jodhpur, Pali districts, prevailing cloudy and high humidity weather condition is congenial for attack of alternaria blight in cumin and white rust in mustard crops for control spray Ridomil MZ @ 2 g per litre of water or Trichdarma diffused @ 5ml per litre of water to control white rust in



mustard and apply Mencozeb @ 2-3g per litre of water to control blight in cumin. Repeat the spray after 15 days if required.

- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, prevailing cool and humid weather condition is congenial for attack of black spot disease in mustard crop for control spray Mancozeb @ 2 kg per 800 litres of water.
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, prevailing weather condition is congenial for attack of white rust (yellowish on upper side while white circular or irregular blisters on lower side of the leaves) in mustard crop, for control spray Mancozeb or Ridomil MZ 72 WP @ 2.0 Kg in 800 litres of water per hectare.
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, prevailing weather condition is congenial for attack of gram pod borer in gram and late pea crop, for control under rainfed condition, dust Malathion 2% or Carbaryl 5% @ 20-25 kg per hectare after pod initiation. Under irrigated condition, spray Malathion 50 EC @ 1.25ml per litre water or Quinalphos 25 EC @ 1.00 ml per litre water.
- In East Rajasthan, In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, prevailing weather condition is congenial for attack of moyala in mustard and fenugreek crop for control apply Dimethoate 30 EC @ 1litre per hectare.

▪ **Jammu & Kashmir:**

- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, provide staking to garden pea. Undertake top dressing of Urea to normal sown wheat and mustard crop after assuring of adequate moisture in the field. Undertake weeding and hoeing in onion and garlic. Drain out excess water in vegetable fields.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, due to availability of sufficient moisture in the fields, apply urea @ 2.5kg/kanal as 1<sup>st</sup> top dressing to late sown wheat crop. Monitor Zinc deficiency in normal sown wheat, if appears spray 0.2% Zinc Sulphate Hepta hydrate( ZNSO<sub>4</sub>.7H<sub>2</sub>O) in clear weather. Complete transplanting of onion at optimum soil moisture.
- In Valley Temperate Zone of Jammu and Kashmir, in high frost condition mulching of seed crops of KnolKhol, cabbage and other root crops may be done. Undertake seed sowing of leafy vegetables in poly house. Provide drainage channels in the fields as there is possibility of accumulation of water in the field. Avoid stagnation of water in saffron field. Do hand weeding/hoeing to reduce infestation by weeds to saffron crop after current spell of rain.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone and Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, weather is favourable for infestation of yellow rust on wheat, if observed, apply prophylactic spray on the crop with Propiconazole (Tilt) 25 EC @ 0.1 % (1ml/litre of water) in clear weather.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, weather is congenial for infestation of Alternia Blight on mustard crop. If spots of Alternia Blight is observed, spray Mancozeb @ 2.5g /litre of water and Ridomil MZ @ 2.5g/litre alternatively after the current spell of rain.

▪ **Uttarakhand:**

- In Udham Singh Nagar district of Bhabar and Tarai Zone, to protect the newly transplanted seedlings of papaya, mango and litchi from frost, these plants should be covered by straw. Top dressing of Urea should be done in Cabbage and Cauliflower crop. Early sowing of Mentha should be started. Mentha varieties like- Koshi, Saksham, Kushal, Himalaya, Saryu, Sim kranti should be selected for early sowing.
- In Nainital district of Bhabar and Tarai Zone, continue harvesting of mustard in clear weather. In valley, to save the potato from frost timely irrigation should be applied at required interval. Undertake field preparation for summer Squash (Chappankaddu).
- In Udham Singh Nagar district of Bhabar and Tarai Zone, there may be occurrence of Mahu in mustard crop, spray Thiamethoxam 25 WSG @ 50-100g/ha.
- In Tehri Garhwal, Chamoli, Champawat, Pithoragarh, Rudraprayag and Uttarkashi districts of Hill Zone, undertake the weeding and hoeing in vegetable crops. Undertake top dressing of Urea to wheat crop which is 25-30 days old.
- In Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone, give first top dressing to timely sown wheat at tillering stage and irrigate mid sown wheat at CRI stage in clear weather. Apply light and frequent irrigation to wheat, potato, pea and mustard crop for frost protection,
- In Bhabar and Tarai Zone, weather is favourable for late blight disease in potato and tomato crop, it is advised that Mancozeb @ 2.5g/litre should be sprayed in clear weather.
- In Tehri Garhwal, Chamoli, Champawat, Pithoragarh, Rudraprayag and Uttarkashi districts of Hill Zone, there may be incidence of attack of thrips on onion crop. Spray Carbaryl @ 2g/litre in water mixed with sticking material like Teepol @ 1g/litre ghol.
- In Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone, there is possibility of incidence of aphid and saw fly on rapeseed and mustard crop and late blight on potato crop, Take proper plant protection measures against these pest and disease.

▪ **Himachal Pradesh:**

- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, in rabi crops,

immediately apply 2nd dose of Nitrogen fertilizers. Spray 2 % Urea or Potassium Sulphate for proper growth of pods and also to protect pea crop from frost injury. Undertake thinning and weeding operation in timely sown mustard crop on non rainy days. Add mulch material in space between two rows of vegetable crops for conservation of soil moisture and maintaining the soil temperature. Undertake intercultural operations in radish, carrot, turnip, palak and methi carrot, broccoli, lettuce on non rainy days. The cole crops having age of 20-25 days may be given nitrogen fertilizers. Apply 2-3 Kg urea per kanal in cauliflower. Undertake weeding, earthing up and top dressing of nitrogen (40-50 kg Urea per hectare) in standing vegetable crop like cauliflower, cabbage, broccoli, knol-khol, palak, methi, peas and garlic. In Ginger, Turmeric, calcocasia and elephant foot and leafy vegetables Apply mulch and well rotten FYM. Undertake earthing-up in potato if crop has attained a height of 15-22 cm.

- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts, continue preparation of tree basins in stone fruit, apple and pomegranate orchards. Postpone pruning in stone fruits and pomegranate orchards. Apply Chaubatia paint (copper carbonate 800 gm + Red lead 800 gm + Alsi oil 1 litre) on cut ends. Complete transplanting of onion nursery in field. Continue hoeing and weeding operation in garlic crop.
- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul & Spiti, close the polyhouse properly as temperature will decrease and maintain temperature around 20°C. Avoid pruning of apple trees when snow is falling and until the weather is warm.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of thrips in onion crop, for control, spray Carbaryl @ 2 gm per litre of water with sticky material (Tipol 1.0 gm per litre).
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of yellow rust in wheat crop, for control, spray fungicides 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 and repeat the spray after 15 days interval. Undertake plant protection methods on a non rainy day.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts, present weather is conducive for attack of various fungal diseases in stone fruit, apple and pear and pomegranate orchards, for control whitewash apple tree stem with lime and Copper Sulphate (lime 15 Kg. +5 Kg. Copper Sulphate+ 50 litre water +2 litre Alsi oil) on a non rainy day.
- **Punjab, Haryana and Delhi:**
  - In Western Zone of Punjab, to protect vegetable crops from frost damage, provide polythene sheet/sarkanda/kahi rice straw to save the young seedlings from frost.
  - In Western Plain zone, keep the wheat fields free from weeds by undertaking intercultural operations. Sulphur deficiency may appear in wheat grown on sandy soils during winter rains. In this deficiency, the younger leaves turn yellow leaving the tip slightly green. If such symptoms are noticed, broadcast gypsum @ 100 kg per acre.
  - In Central Plain Zone of Punjab, continue sowing of sunflower (PSH 1962, DK 3849, PSH 996, PSH 569, PSFH 118 and SH 3322). The vegetable crops like chilli, capsicum and cucumber should be protected from cold by providing light irrigation. In addition to this, the farmers who have transplanted the capsicum, cucumber and chilli in field should cover the crop under low plastic tunnels.
  - In Haryana, apply light irrigation to protect vegetables from low temperature/ground frost, Cover the young plants to protect them from low temperature. Continue harvesting of early varieties of sugarcane.
  - In New Delhi, seedlings of cucurbitaceous crops may be prepared in small polythene bags in poly houses. Continue transplanting of onion seedlings and late varieties of cabbage, cauliflower, knolkhol etc. on ridges. Undertake sowing of spinach, coriander, fenugreek and carrot. Apply second irrigation in timely sown wheat crop if crop is at tillering stage.
  - In Western Zone of Punjab, due to prevailing favourable weather conditions, there may be incidence of late and early blight of potato, spray Indofil M 45 @ 500 g/acre to control the disease.
  - In Western Semi-Arid Zone of Delhi, in present weather condition constant monitoring of aphid is advised in mustard crop. If insect population is above ETL then spray Rogar or Quinalphos @ 2.0 ml/litre water. Due to high relative humidity, infection of blight may occur in potato and tomato. Constant monitoring is advised. If symptoms appear then spray Carbandazim @ 1.0 gm/litre of water or Dithane-M-45 @ 2.0 g /litre of water.
- **Uttar Pradesh:**
  - In Central Plain Zone of Uttar Pradesh, in wheat crop give remaining dose of Nitrogen i.e 40 kg N<sub>2</sub>/ha or 88kg Urea/ha. Apply top dressing of Nitrogen @ 40kg/ha (88kg/haurea) in Maizecrop & sufficient moisture should be available in field during application of fertilizer. In Tomato crop sown in last month, apply 40kg Nitrogen per hectare (88kg urea/ha) and in hybrid varieties first top dressing of Nitrogen i.e 55-60 kg / ha (120-130kg/ha Urea) should be applied after 20-25 days of sowing. In garlic apply second & last dose of urea of 74 kg/ha after 60 days of sowing. Apply first irrigation in late sown wheat crop at 18 to 20 days of sowing and second irrigation at 40 to 45 days of sowing at tillering stage. Continue nursery sowing of chilli and tomato. Complete transplanting of onion nursery. Undertake weeding and light irrigation to standing crop of mustard. Apply light irrigation in vegetable and in standing crops of gram, pea, lentil, mustard, wheat crops as per requirement.

- In Western Plain Zone of Uttar Pradesh, apply second irrigation in timely sown wheat crop at tillering stage. In present weather conditions transplantation of healthy seedlings of late varieties of cabbage, cauliflower, knolkhol etc. may be done on ridges. Continue transplanting of onion seedling. Seedling should not be older than six weeks. Transplanting should be done in small beds. Deep transplanting should be avoided. Present weather is suitable for growing of carrot seed crop.
- In Bundelkhand Zone of Uttar Pradesh, apply light irrigation to timely sown mustard, linseed, lentil, pea, gram as per requirement. Apply 2% urea to gram crop at flowering stage. In Eastern part of Bundelkhand Zone Apply second irrigation in wheat, jou cop after 40 to 45 days of sowing and third irrigation at 60 to 65 days after sowing. Continue transplanting of cauliflower, cabbage, tomato, chilli, brinjal. Apply light irrigation in brinjal, chilli, tomato, cabbage, cauliflower, spinach, fenugreek, radish, carrot, coriander as per requirement. Undertake sowing of bhindi, Cucurbitaceous vegetables.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of early blight in gram crop, for control spray Zinc Maganese Carbonate @ 2 kg in 800 litres of water at flowering stage and repeat dose at 10 days of intervals.
- In Bundelkhand Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of termite in wheat, for control, apply Chlorpyrifos @ 4 litre per hectare with irrigation.
- In Bundelkhand Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of aphid in mustard, lentil, linseed and other rabi crops, for control spray Monocrotophos @ 1.25 litres in 600 litres of water per hectare.
- In North Eastern plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of alternaria blight and aphid in mustard crop, for control apply Ridomil MZ @ 0.2% and Monocrotophos @ 0.2 %.
- In Western Plain Zone of Uttar Pradesh, due to foggy weather condition, there may be chances of attack of aphid in mustard crop, for control in early stage cut and destroy the infested part of the plant, if insect population is above ETL than spray Rogar or Quinalphos @ 2.0 ml per litre of water is recommended, when sky remains clear.
- Suitable varieties for sowing are given in Annexure III.
- **Horticulture**
- In Central Plain Zone of East Uttar Pradesh, due to foggy weather condition, there may be chances of attack of leaf folder in papaya crop, for control, spray Mancozeb @ 2.5 mg per litre of water.
- In Himachal Pradesh, in view of the snowy conditions, do not undertake training and pruning of horticultural crops. Remove snow from young/small plants.
- In Himachal Pradesh present weather is conducive for the Citrus canker in citrus, for control spray Streptocycline Sulphate 500 ppm solution.
- In Punjab, pruning of deciduous fruit trees like peach, plum and pear should be carried out during January. For grapes, the pruning is normally initiated in the second fortnight of January and completed by first week of February. Cover the newly planted and young fruit plants with thatches /rice straw etc. to protect them from frost injury.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, create smoke in orchard and provide thatches prepared from Sarkanda or any other locally available material to plants of young orchards to protect from extreme cold.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, undertake plantation of peach, plum, apricot, almond walnut and peacan nut. Protect young plants of mango, litchi, papaya, guava, citrus etc. from frost by covering it with suitable thatching material prepared with sarkanda or any other material. Burn dry leaves /grasses in the young orchards during evening time to create smoke & regular irrigation to minimize the frost effect specially in plain areas.
- In Nainital district of Bhabar and Tarai Zone, sowing of fruit crops like-apple, pear, plum, wall nut etc should be started. In high hills, pruning of temperate fruit trees like apple, pear, peach, plum etc should be done in clear weather. To control the Canker disease in the apple, 0.3% Copper-oxichloride should be used after cutting and pruning.
- **Floriculture**
- In Himachal Pradesh, present weather is conducive for the attack of inflorescence rotting disease in marigold crop for control spray Bavistin @ 1 gm per litre of water or Indofil-M 45 @ 2 ml per litre of water.
- In Valley Temperate Zone of Jammu and Kashmir, complete planting of spring flowering bulbs of tulip, iris, daffodils etc. Complete transplanting of winter flowering annuals. Complete pruning of trees.
- **Apiculture**
- In Himachal Pradesh, give the winter packing immediately to bee colonies. Check the colonies for nector and give artificial food to honey bees as there is scarcity of flowers during these days. And keep colonies in sun on clear day.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, protect bee colonies from extreme climatic conditions through reduced entrance and proper packing. Keep colonies at a place where sunlight is properly received. Maintain adequate reserves of honey and pollen in the bee colony. Maintain bee strength by giving sealed brood to weak colonies, or unite them. Continue sulphur dusting at fortnight interval.



- **Animal Husbandry**

- In Rajasthan, as temperature may be low in north Rajasthan, take care of domestic animals. Keep them in shelter during night and in early morning and increase the quantity of concentrates in their diet. Add mineral mixture in balance diet of the animals. Avoid excess feeding of berseem, lucerne etc to protect from bloat. Feed these green fodders along with dry roughages to prevent from bloat.
- In High Hills Temperate Dry Zone of Himachal Pradesh, protect the newly born calves and animals from cold. Feed pregnant and lactating cows and buffalos with balance feed including mineral mixture. For milch animals follow schedule of 1 kg feed+50g mineral mixtures per 2 litres of milk. Ensure to give 50 g mineral mixture to animals daily. Ensure cleanliness in cows having advanced pregnancy to avoid mastitis.
- In Punjab, keep the animals in dry place and change the bedding material as and when required. Cover the animals with Jhull (Jute cloth) in extreme cold. The energy content of the concentrate mixture should be increased by 5-10 % where the protein in the concentrate can be reduced by 2-3 per cent during cold season. New born calves need special care in cold weather and they are susceptible to Pneumonia. Give them vitamin 'A' concentrate 1 ml daily in milk for three days to be repeated after a month.
- In Punjab, the temperature should not go below 15.5°C inside the poultry sheds and suitable measures like doubling of curtains should be taken. Keep the chicks warm by giving them artificial heat according to age. For the first week internal temperature of the shed should be 32-35° C.
- In Rajouri, Ramban, Poonch and Udhampur districts of Jammu & Kashmir, Nomads and Bakarwals are advised to deworm their flocks using Panacur @ 7.5g/kg body weight to avoid the economic loss.
- In Bhabar and Tarai Zone of Uttarakhand, to save the animals from cold, proper arrangement of animal shed should be done. Vaccination should be given to the animals to save them from Rinderpest disease (Sheetla rog). To save the animal from cold, increase the amount of oil and Jaggery (Gur) in the food of animals. Caraway (Ajwain) and gur also be given to the animals. To save the animal from cold, dry grasses, paddy residue (Puwal) etc which are not used as fodder for animals should be used as a bedding material for animals in sheds. Door and window should be covered properly so that cold wind could not be entered in the animal shed.

- **Fishery**

- In Himachal Pradesh, disinfect the fish tank by draining out the water and exposing the bottom floor of the tank to direct sunlight.
- In Jammu & Kashmir, farmers should not further add any manure/fertilizer/feed for some days in case of appearance of algal bloom in the fish pond. Remove algal bloom by the addition of fresh water in to the fish pond.

- **Poultry**

- In Himachal Pradesh, replace the poultry houses with fresh litter to avoid wetting and keep the houses clean and ensure clean drinking water to the birds. Protect the birds from cold and increase the feed by 10%. For the attack of coccidiosis disease consult the nearby veterinarian. Temperature is falling so farmers are advised to make the arrangements for protection of cold in the poultry houses.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, keep temperature 37 deg. Celcius for day old chicks in brooding house with the bukhar.

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

### Annexure I

Sub-Divisions	04.01.17		11.01.17		18.01.17	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>						
Anjaw	**	**	**	**	**	**
Changlang	0.4	-98	0.4	-97	0.0	-100
Dibang Valley	0.0	-100	19.0	27	1.0	-94
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	0.0	-100	2.3	-59	0.0	-100
Kurung Kumey	**	**	**	**	**	**
Lohit	0.0	-100	0.0	-100	0.0	-100
Lower Dibang Valley	4.2	-63	10.3	-31	2.1	-87
Lower Subansari	**	**	**	**	**	**
Papumpare	0.0	-100	1.7	-80	0.0	-100

Tawang	0.0	-100	0.0	-100	0.0	-100
Tirap	0.0	-100	0.8	-89	0.0	-100
Upper Siang	0.0	-100	5.2	-45	0.8	-94
Upper Subansari	0.0	-100	1.0	-71	0.0	-100
West Kameng	0.0	-100	0.0	-100	0.0	-100
West Siang	0.0	-100	1.5	-63	5.5	-10
<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	0.0	-100
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	**	**	**	**	**	**
Dhemaji	0.0	-100	0.0	-100	0.0	-100
Dhubri	0.0	-100	0.0	-100	0.0	-100
Dibrugarh	0.4	-88	1.3	-69	0.0	-100
Goalpara	0.0	-100	0.0	-100	0.0	-100
Golaghat	0.0	-100	0.0	-100	0.0	-100
Hailakandi	0.0	-100	0.0	-100	0.0	-100
Jorhat	0.1	-98	0.2	-96	0.0	-100
Kamrup(Rural)	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	0.0	-100	0.0	-100	0.0	-100
Karbi Anglong	0.0	-100	0.0	-100	0.0	-100
Karimganj	0.0	-100	0.0	-100	0.0	-100
Kokrajhar	0.0	-100	0.0	-100	0.0	-100
Lakhimpur	0.0	-100	5.6	31	0.0	-100
Morigaon	0.0	-100	0.0	-100	0.0	-100
N.C.Hills	0.0	-100	0.0	-100	0.0	-100
Nagaon	0.0	-100	0.0	-100	0.0	-100
Nalbari	0.0	-100	0.0	-100	0.0	-100
Sonitpur	0.0	-100	0.0	-100	0.0	-100
Sibsagar	0.0	-100	0.0	-100	0.0	-100
Tinsukia	0.0	-100	0.7	-78	0.0	-100
Udalgiri	0.0	-100	0.0	-100	0.0	-100
<b>Meghalaya</b>						
East Garo Hills	0.0	-100	0.0	0	0.0	-100
East Khasi Hills	0.0	-100	0.5	-90	0.0	-100
Jaintia Hills	**	**	0.0	-100	0.0	-100
Ribhoi	2.1	320	10.9	60	0.3	-89
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
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	0.0	-100	1.0	0	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
<b>Manipur</b>						
Bishnupur	**	**	**	**	**	**
Chandel	**	**	**	**	**	**
Churachandpur	**	**	**	**	**	**
Imphal east	7.2	324	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	**	**	**	**	**	**
Ukhrul	**	**	**	**	**	**
<b>Nagaland</b>						
Dimapur	0.0	-100	0.4	-89	0.0	-100
Kephire	**	**	**	**	**	**
Kohima	0.0	-100	1.2	-50	0.0	-100
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	0.0	-100	5.0	108	0.0	-100
Tuensang	**	**	**	**	**	**
Wokha	0.0	-100	0.0	-100	0.0	-100
Zunheboto	**	**	**	**	**	**
<b>Tripura</b>						
Dhalai	0.0	-100	0.0	-100	0.0	-100
NorthTripura	0.0	-100	0.0	-100	0.0	-100
SouthTripura	0.0	-100	0.0	-100	0.0	-100
West Tripura	0.0	-100	0.0	-100	0.0	-100
<b>Himachal Pradesh</b>						
Bilaspur	0.0	-100	88.9	817	27.5	212
Chamba	1.9	-89	47.4	86	39.3	94
Hamirpur	0.0	-100	62.4	387	13.0	15
Kangra	0.3	-98	43.7	160	15.2	-20
Kinnaur	1.0	-94	27.8	29	25.1	15
Kullu	0.6	-95	74.9	357	26.3	38
Lahaul and Spiti	4.0	-80	17.5	-37	21.8	-19
Mandi	0.0	-100	65.5	408	19.2	52
Shimla	4.1	-64	64.7	386	17.2	16
Sirmaur	0.0	-100	79.1	570	8.7	-35
Solan	0.0	-100	129.5	866	10.0	-25
Una	0.0	-100	42.9	338	7.2	-29
<b>Punjab</b>						
Amritsar	0.0	-100	0.0	-100	7.0	-3
Barnala	0.0	-100	8.0	220	0.0	-100
Bhatinda	0.0	-100	0.0	-100	1.0	-17
Faridkot	0.0	-100	0.0	-100	0.0	-100



Fatehgarh Saheb	0.0	-100	23.0	448	1.3	-49
Ferozpur	0.0	-100	0.0	-100	0.3	-94
Gurdaspur	0.0	-100	29.3	139	21.5	87
Hoshiarpur	0.0	-100	13.9	64	4.2	-47
Jalandhar	0.0	-100	1.0	-86	5.5	0
Kapurthala	0.0	-100	1.0	-81	4.8	53
Ludhiana	0.0	-100	8.6	82	1.8	-57
Mansa	0.0	-100	18.0	620	0.0	-100
Moga	0.0	-100	0.0	-100	4.0	25
Muktesar	0.0	-100	0.0	-100	0.0	-100
Nawashahar	0.0	-100	36.1	265	4.7	-15
Patiala	0.0	-100	15.9	160	1.8	-20
Ropar	0.0	-100	56.6	460	10.0	33
Sangrur	0.0	-100	6.2	51	1.5	-36
Mohali	0.0	-100	62.0	685	2.0	-65
TarnTaran	0.0	-100	0.0	-100	11.0	378
<b>Haryana,Chd,Delhi</b>						
<b>Haryana</b>						
Ambala	0.0	-100	44.3	523	0.4	-96
Bhiwani	0.0	-100	0.0	-100	0.0	-100
Chandigarh	0.0	-100	78.2	929	1.9	-65
Faridabad	0.0	-100	2.3	-53	0.0	-100
Fatehabad	0.0	-100	2.0	-39	0.0	-100
Gurgaon	0.0	-100	0.4	-84	0.0	-100
Hissar	0.0	-100	3.2	39	0.0	-100
Jhajar	0.0	-100	1.6	-52	0.0	-100
Jind	0.0	-100	18.0	161	1.0	-62
Katihah	0.0	-100	14.5	326	0.3	-94
Karnal	0.0	-100	33.1	514	2.8	-58
Kurukshetra	0.0	-100	17.3	189	0.0	-100
Mahendragarh	0.0	-100	0.2	-96	0.0	-100
Mewat	0.0	-100	0.0	-100	0.0	-100
Palwal	0.0	-100	2.0	-20	0.0	-100
Panchkkula	0.0	-100	41.6	571	3.0	-70
Panipat	0.0	-100	9.0	109	0.0	-100
Rewari	0.0	-100	0.0	-100	0.0	-100
Rohtak	0.0	-100	3.4	-8	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.0	-100	12.6	223	0.0	-100
Yamunanagar	0.0	-100	48.3	503	0.3	-97
<b>Delhi</b>						
Central Delhi	**	**	2.0	-53	0.0	-100
East Delhi	0.0	-100	2.0	-53	1.0	-69
New Delhi	0.0	-100	3.3	-23	0.0	-100
North Delhi	0.0	-100	2.9	-33	0.5	-84
North East Delhi	0.0	-100	0.0	-100	0.0	-100
North West Delhi	0.0	-100	4.5	5	0.0	-100
South Delhi	0.0	-100	1.8	-58	1.5	-53
South West Delhi	0.0	-100	3.2	-27	0.0	-100

West Delhi	**	**	**	**	**	**
<b>Jammu &amp; Kashmir</b>						
Anantnag	6.4	-40	49.1	256	32.8	73
Badgam	0.2	-96	108.0	1465	21.2	74
Bandipore	**	**	**	**	**	**
Baramula	28.8	33	85.8	359	11.9	-55
Doda	7.2	-71	67.0	276	74.2	92
Ganderbal	11.6	41	48.6	452	17.2	74
Jammu	0.0	-100	41.0	257	24.0	97
Kargil	**	**	0.2	-96	0.1	-97
Kathua	0.0	-100	40.0	148	20.0	-6
Kistwar	**	**	**	**	**	**
Kulgam	3.2	-71	41.6	187	74.6	882
Kupwara	30.4	149	60.4	358	26.5	22
Ladakh(Leh)	0.0	-100	0.0	-100	0.1	-98
Poonch	**	**	**	**	**	**
Pulwama	6.3	3	81.8	799	60.2	871
Rajouri	0.0	-100	50.0	395	8.6	-56
Ramban	8.2	-63	89.5	262	76.7	122
Reasi	0.5	-97	56.5	409	39.7	127
Samba	0.0	-100	18.6	62	16.7	37
Shopian	**	**	**	**	**	**
Srinagar	10.6	29	68.1	676	31.9	222
Udhampur	0.0	-100	55.4	180	70.5	184
<b>East Madhya Pradesh</b>						
Anuppur	0.0	-100	1.2	-81	0.0	-100
Balaghat	0.0	-100	7.7	40	0.0	-100
Chhatarpur	0.0	-100	0.0	-100	0.0	-100
Chindwara	0.0	-100	9.0	58	0.0	-100
Damoh	0.0	-100	1.5	-46	0.0	-100
Dindori	0.0	-100	7.0	52	0.0	-100
Jabalpur	0.0	-100	7.2	89	0.0	-100
Katni	0.0	-100	3.0	-35	0.0	-100
Mandla	0.0	-100	3.0	-40	0.0	-100
Narsingpur	0.0	-100	0.0	-100	0.0	-100
Panna	0.0	-100	0.0	-100	0.0	-100
Rewa	0.0	-100	3.2	45	0.0	-100
Sagar	0.0	-100	0.0	-100	0.0	-100
Satna	0.0	-100	0.0	-100	0.0	-100
Seoni	0.0	-100	6.5	37	0.0	-100
Shahdol	0.0	-100	6.0	62	0.0	-100
Sidhi	6.8	172	0.0	-100	0.0	-100
Singrauli	4.5	350	1.5	-6	0.0	-100
Tikamgarh	0.0	-100	1.0	-60	0.0	-100
Umaria	0.0	-100	10.2	104	0.0	-100
<b>West Madhya Pradesh</b>						
Agar	0.0	-100	0.0	-100	0.0	-100
Alirajpur	0.0	-100	0.0	-100	0.0	-100

Asoknagar	0.0	-100	0.0	-100	0.0	-100
Badwani	0.0	-100	0.0	-100	0.0	-100
Betul	0.0	-100	0.0	-100	0.0	-100
Bhind	0.0	-100	0.0	-100	0.0	-100
Bhopal	0.0	-100	0.0	-100	0.0	-100
Burhanpur	0.0	-100	0.0	-100	0.0	-100
Datia	0.0	-100	0.0	-100	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	0.0	-100	0.0	-100	0.0	-100
Guna	0.0	-100	0.0	-100	0.0	-100
Gwalior	0.0	-100	0.0	-100	0.0	-100
Harda	0.0	-100	0.0	-100	0.0	-100
Hoshangabad	0.0	-100	0.0	-100	0.0	-100
Indore	0.0	-100	0.0	-100	0.0	-100
Jhabua	0.0	-100	0.0	-100	0.0	-100
Khandwa	0.0	-100	0.0	-100	0.0	-100
Khargone	0.0	-100	0.0	-100	0.0	-100
Mandsaur	0.0	-100	0.0	-100	0.0	-100
Morena	0.0	-100	0.0	-100	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	0.0	-100	0.0	-100
Rajgarh	0.0	-100	0.0	-100	0.0	-100
Ratlam	0.0	-100	0.0	-100	0.0	-100
Sehore	0.0	-100	0.0	-100	0.0	-100
Shajapur	0.0	-100	0.0	-100	0.0	-100
Sheopur Kalani	0.0	-100	0.0	-100	0.0	-100
Shivpuri	0.0	-100	3.5	52	0.0	-100
Ujjain	0.0	-100	0.0	-100	0.0	-100
Vidisha	0.0	-100	0.0	-100	0.0	-100
<b>Chhattisgarh</b>						
Balod	0.0	-100	0.0	-100	0.0	-100
Baloda Bazar	0.0	-100	0.0	-100	0.0	-100
Balrampur	1.0	-29	0.0	-100	0.0	-100
Bastar	0.0	-100	0.0	-100	0.0	-100
Bemetara	0.0	-100	1.0	-23	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.1	-96	3.0	-27	0.0	-100
Dantewara	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100
Durg	0.0	-100	1.8	-5	0.0	-100
Gariaband	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
Kabirdham	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100
Kondagaon	0.0	-100	0.0	-100	0.0	-100
Korba	5.3	256	0.0	-100	0.0	-100
Koriya	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100



Mungeli	0.0	-100	5.6	37	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	5.9	157	0.0	-100
Rajnandgaon	0.0	-100	0.0	-100	0.0	-100
Sukma	0.0	-100	0.0	-100	0.0	-100
Surajpur	0.0	-100	0.0	-100	0.0	-100
Surguja	3.3	32	2.6	-49	0.0	-100
<b>East Uttar Pradesh</b>						
Allahabad	0.0	-100	0.0	-100	0.0	-100
Ambedkar Nagar	0.0	-100	0.0	-100	0.0	-100
Azamgarh	0.0	-100	0.0	-100	0.0	-100
Bahraich	0.0	-100	0.0	-100	0.0	-100
Ballia	0.0	-100	2.8	20	0.0	-100
Balrampur	0.0	-100	0.0	-100	0.0	-100
Banda	0.0	-100	0.0	-100	0.0	-100
Barabanki	0.0	-100	0.3	-89	0.0	-100
Basti	0.0	-100	0.0	-100	0.0	-100
Chandauli	0.0	-100	0.0	-100	0.0	-100
Deoria	0.0	-100	0.0	-100	0.0	-100
Faizabad	0.0	-100	0.0	-100	0.0	-100
Farrukhabad	0.0	-100	0.0	-100	0.0	-100
Fatehpur	0.0	-100	2.5	56	0.0	-100
Gazipur	0.0	-100	0.0	-100	0.0	-100
Gonda	0.0	-100	0.0	-100	0.0	-100
Gorakhpur	0.0	-100	0.0	-100	0.0	-100
Hardoi	0.0	-100	0.0	-100	0.0	-100
Jaunpur	0.0	-100	0.0	-100	0.0	-100
Kannauj	0.0	-100	0.0	-100	0.0	-100
Kanpur City	0.1	-97	0.6	-81	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	0.0	-100	0.0	-100	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100
Lucknow	0.0	-100	0.9	-74	0.0	-100
Maharajganj	0.0	-100	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	0.0	-100	0.0	-100
RaiBareilly	0.0	-100	0.3	-80	0.0	-100
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnagar	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Sonbhadra	5.6	250	0.4	-78	0.0	-100
Sultanpur	0.0	-100	0.6	-67	0.0	-100

Unnao	0.0	-100	2.3	-17	0.0	-100
Varanasi	0.0	-100	0.0	-100	0.0	-100
<b>West Uttar Pradesh</b>						
Agra	0.0	-100	0.0	-100	0.0	-100
Aligarh	0.0	-100	3.2	-63	0.0	-100
Auraiya	0.0	-100	0.0	-100	0.0	-100
Badaun	0.0	-100	11.4	200	0.0	-100
Baghpat	0.0	-100	14.5	353	0.0	-100
Bareilly	0.0	-100	16.7	221	0.0	-100
Bijnor	0.0	-100	37.9	303	0.1	-99
Bulandsahar	0.0	-100	4.8	28	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	2.0	-57	0.0	-100
Ghaziabad	0.0	-100	2.0	-51	0.0	-100
Hamirpur	0.0	-100	3.0	0	0.0	-100
Jalaun	0.0	-100	2.7	71	0.0	-100
Jhansi	0.0	-100	0.0	-100	0.0	-100
Jotiba Phule Nagar	0.0	-100	7.5	44	0.0	-100
Kanshiramnagar	0.0	-100	0.0	-100	0.0	-100
Lalitpur	0.0	-100	0.0	-100	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	0.0	-100
Mahoba	0.0	-100	0.0	-100	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	28.2	452	0.0	-100
Moradabad	0.0	-100	3.9	-29	0.0	-100
Muzzaffarnagar	0.0	-100	9.9	90	0.0	-100
Pilibhit	0.0	-100	1.7	-67	0.0	-100
Rampur	0.0	-100	3.4	-31	0.0	-100
Saharanpur	0.0	-100	23.7	404	0.0	-100
Shahjahanpur	0.0	-100	5.8	14	0.0	-100
<b>Uttarakhand</b>						
Almora	0.0	-100	18.1	83	0.0	-100
Bageshwar	0.8	-94	8.3	-16	0.0	-100
Chamoli	0.1	-99	11.6	38	3.3	-69
Champawat	0.0	-100	18.5	73	0.0	-100
Dehradun	6.6	-36	20.4	115	6.3	-31
Garhwal Pauri	0.3	-98	23.4	260	0.8	-88
Garhwal Tehri	5.2	-49	35.0	264	4.0	-40
Haridwar	0.0	-100	24.8	282	0.6	-89
Nainital	5.1	-58	19.2	106	0.0	-100
Pithorgarh	1.4	-84	18.3	129	0.2	-98
Rudraprayag	0.0	-100	15.6	-3	6.9	-31
Udham Sing Nagar	0.0	-100	13.1	96	0.0	-100
Uttarkashi	1.3	-89	21.5	68	10.5	-21
<b>Bihar</b>						
Araria	0.0	-100	0.0	-100	0.0	-100

Arwal	0.0	-100	0.0	-100	0.0	-100
Aurangabad	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Bhagalpur	0.0	-100	0.0	-100	0.0	-100
Bhojpur	0.0	-100	0.0	-100	0.0	-100
Buxar	0.0	-100	0.0	-100	0.0	-100
Darbhangha	0.0	-100	0.0	-100	0.0	-100
East Champaran	0.0	-100	0.0	-100	0.0	-100
Gaya	0.0	-100	0.6	-68	0.0	-100
Gopalganj	0.0	-100	0.0	-100	0.0	-100
Jahanabad	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Madhepura	0.0	-100	0.0	-100	0.0	-100
Madhubani	0.0	-100	0.0	-100	0.0	-100
Monghyar	0.0	-100	0.0	-100	0.0	-100
Muzaffarpur	0.0	-100	0.1	-95	0.0	-100
Nalanda	0.0	-100	0.0	-100	0.0	-100
Nawada	0.0	-100	0.0	-100	0.0	-100
Patna	0.0	-100	0.0	-100	0.0	-100
Purnea	0.0	-100	0.0	-100	0.0	-100
Rohtas	0.0	-100	0.5	-80	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	0.0	-100	0.0	-100	0.0	-100
Vaishali	0.0	-100	0.0	-100	0.0	-100
West Champaran	0.0	-100	0.0	-100	0.0	-100
<b>Jharkhand</b>						
Bokaro	0.0	-100	2.9	15	0.0	-100
Chatra	0.0	-100	12.0	422	0.0	-100
Deoghar	0.0	-100	4.7	292	0.0	-100
Dhanbad	0.0	-100	6.3	320	0.0	-100
Dumka	0.0	-100	12.0	193	0.0	-100
East Singbhum	0.0	-100	0.0	-100	0.0	-100
Garhwa	2.5	178	4.8	55	0.0	-100
Giridih	0.0	-100	12.2	1009	0.0	-100
Godda	0.0	-100	0.0	-100	0.0	-100
Gumla	0.0	-100	0.0	-100	0.0	-100
Hazaribagh	3.2	60	**	**	0.0	-100



Jamtara	**	**	**	**	**	**
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderrna	0.0	-100	1.8	-53	0.0	-100
Latehar	33.0	2438	8.8	283	0.0	-100
Lohardagga	0.0	-100	7.2	279	0.0	-100
Pakur	0.0	-100	**	**	0.0	-100
Palamau	6.5	226	6.4	93	0.0	-100
Ramgarh	**	**	**	**	**	**
Ranchi	0.1	-98	0.4	-86	0.0	-100
Sahebganj	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
<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	0.0	-100	0.0	-100
Bharatpur	0.0	-100	0.0	-100	0.0	-100
Bhilwara	0.0	-100	0.0	-100	0.0	-100
Bundi	0.0	-100	0.0	-100	0.0	-100
Chittorgarh	0.0	-100	0.0	-100	0.0	-100
Dausa	0.0	-100	0.0	-100	0.0	-100
Dholpur	0.0	-100	0.0	-100	0.0	-100
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.0	-100	0.0	-100	0.0	-100
Jhalawar	0.0	-100	0.0	-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
<b>West Rajasthan</b>						
Barmer	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100
Churu	0.0	-100	0.0	-100	0.0	-100
Hanumangarh	0.0	-100	0.0	-100	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.6	11
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.0	-100
Nagaur	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-100	0.0	-100
<b>Gujarat Region</b>						

Ahmedabad	0.0	-100	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100
Aravalli	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
Chhota Udepur	0.0	-100	0.0	-100	0.0	-100
DNH	**	**	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100
Daman	**	**	**	**	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
Mahisagar	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
Vadodara	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
Botad	0.0	-100	0.0	-100	0.0	-100
Devbhoomi Dwarka	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Gir Somnath	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	0.1	31	0.0	-100
Morbi	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</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
<b>Madhya Maharashtra</b>						

Ahmednagar	0.0	-100	0.0	-100	0.0	-100
Dhule	**	**	**	**	0.0	-100
Jalgaon	0.0	-100	0.0	-100	0.0	-100
Kolhapur	0.0	-100	0.0	-100	0.0	-100
Nandurbar	**	**	**	**	0.0	-100
Nasik	0.0	-100	0.0	-100	0.0	-100
Pune	0.0	-100	0.0	-100	0.0	-100
Sangli	1.0	-100	1.0	-100	1.0	-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	0.0	-100	0.0	-100
Beed	**	**	**	**	0.0	-100
Hingoli	0.0	-100	0.0	-100	0.0	-100
Jalna	0.0	-100	0.0	-100	0.0	-100
Latur	0.0	-100	0.0	-100	0.0	-100
Nanded	0.0	-100	0.0	-100	0.0	-100
Osmanabad	0.0	-100	0.0	-100	0.0	-100
Parbhani	0.0	-100	0.0	-100	0.0	-100
<b>Vidarbha</b>						
Akola	0.0	-100	0.0	-100	0.0	-100
Amraoti	0.0	-100	0.0	-100	0.0	-100
Bhandara	0.0	-100	0.6	-88	0.0	-100
Buldhana	0.0	-100	0.0	-100	0.0	-100
Chandrapur	0.0	-100	0.0	-100	0.0	-100
Gadchiroli	0.0	-100	0.0	-100	0.0	-100
Gondia	0.0	-100	2.1	-61	0.0	-100
Nagpur	0.0	-100	0.6	-88	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
<b>Odisha</b>						
Angul	6.7	170	0.0	-100	0.0	-100
Balasore	0.6	-62	0.0	-100	0.0	-100
Bargarh	4.9	224	0.0	-100	0.0	-100
Bhadrak	0.0	-100	0.0	-100	0.0	-100
Bolangir	0.0	-100	0.0	-100	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.0	-100	0.0	-100	0.0	-100
Deogarh	0.3	-84	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.0	-100
Gajapati	0.0	-100	0.0	-100	0.0	-100
Ganjam	0.0	-100	0.0	-100	0.0	-100
Jagatsingpur	0.0	-100	0.0	-100	0.0	-100
Jajpur	0.0	-100	0.0	-100	0.0	-100
Jharsuguda	10.7	330	0.0	-100	0.0	-100
Kalahandi	0.0	-100	0.0	-100	0.0	-100
Kandhamal	0.0	-100	0.0	-100	0.0	-100
Kendrapara	0.0	-100	0.0	-100	0.0	-100








Keonjhar	1.8	-36	0.0	-100	0.0	-100
Khurda	3.4	9	0.0	-100	0.0	-100
Koraput	0.0	-100	0.0	-100	0.0	-100
Malkangiri	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	1.3	-33	0.0	-100	0.0	-100
Nawapara	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	0.0	-100	0.0	-100
Puri	0.0	-100	0.0	-100	0.0	-100
Rayagada	0.0	-100	0.0	-100	0.0	-100
Sambalpur	15.5	638	0.0	-100	0.0	-100
Sonepur	0.0	-100	0.0	-100	0.0	-100
Sundargarh	0.0	-100	0.0	-100	0.0	-100
<b>West Bengal &amp; Andaman Nicobar Islands</b>						
<b>A &amp; N ISLAND</b>						
Nicobar	181.1	484	199.1	466	58.3	243
North & Middle Andaman	10.6	-42	56.9	262	1.0	-29
South Andaman	35.7	64	54.3	231	3.0	-44
<b>GWB</b>						
Bankura	0.0	-100	0.0	-100	0.0	-100
Birbhum	0.0	-100	5.9	56	0.0	-100
Burdwan	0.0	-100	2.0	32	0.0	-100
East Midnapore	0.0	-100	0.0	-100	0.0	-100
Hooghly	0.0	-100	0.0	-100	0.0	-100
Howrah	0.0	-100	0.0	-100	0.0	-100
Kolkata	0.0	-100	0.0	-100	0.0	-100
Murshidabad	0.0	-100	3.0	-40	0.0	-100
Nadia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (N)	0.0	-100	0.0	-100	0.0	-100
Purulia	0.2	-90	0.0	-100	0.0	-100
24 Pargana (S)	0.0	-100	0.0	-100	0.0	-100
West Midnapore	7.8	116	0.0	-100	0.0	-100
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	0.0	-100	0.0	-100	0.0	-100
Darjeeling	0.0	-100	0.4	-95	0.7	-92
East Sikkim	1.7	-49	4.3	85	0.0	-100
Jalpaiguri	1.0	-29	0.0	-100	1.0	-73
Malda	0.0	-100	0.2	-96	0.0	-100
North Dinajpur	0.0	-100	0.0	-100	0.0	-100
North Sikkim	1.6	-85	5.3	-36	2.2	-85
South Dinajpur	0.0	-100	0.0	-100	0.0	-100
South Sikkim	0.0	-100	5.6	143	0.0	-100
West Sikkim	**	**	**	**	**	**
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshina Kannada	0.0	-100	0.0	-100	0.0	-100
Udupi	0.0	-100	0.0	-100	0.0	-100
Uttara Kannada	0.0	-100	0.0	-100	0.0	-100

<b>NI Karnataka</b>						
Bagalkote	0.0	-100	0.0	-100	0.0	-100
Belagavi	0.0	-100	0.0	-100	0.0	-100
Bidar	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
Haveri	0.0	-100	0.0	-100	0.0	-100
Kalaburgi	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
Vijayapura	0.0	-100	0.0	-100	0.0	-100
Yadgir	0.0	-100	0.0	-100	0.0	-100
<b>SI Karnataka</b>						
Ballari	0.0	-100	0.0	-100	0.0	-100
Bangalore Rural	0.0	-100	0.0	-100	0.0	-100
Bangalore Urban	0.0	-100	0.0	-100	0.0	-100
Chamarajanagar	0.0	-100	0.0	-100	0.0	-100
Chikaballapur	0.0	-100	0.0	-100	0.0	-100
Chikkamagaluru	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
Mysuru	0.0	-100	0.0	-100	0.0	-100
Ramanagara	0.0	-100	0.0	-100	0.0	-100
Shivamogga	0.0	-100	0.0	-100	0.0	-100
Tumakuru	0.0	-100	0.0	-100	0.0	-100
<b>Kerala</b>						
Alappuzha	0.0	-100	0.0	-100	0.0	-100
Kannur	0.0	-100	0.0	-100	0.0	-100
Ernakulam	0.0	-100	0.0	-100	0.0	-100
Idukki	1.8	-51	0.0	-100	0.0	-100
Kasaragod	0.0	-100	0.0	-100	0.0	-100
Kollam	0.0	-100	0.0	-100	0.0	-100
Kottayam	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	0.0	-100	0.0	-100
Thiruvananthapuram	6.0	1	0.1	-98	0.0	-100
Thrissur	0.0	-100	0.0	-100	0.0	-100
Wyand	0.0	-100	0.0	-100	0.0	-100
<b>Tamil Nadu</b>						
Ariyalur	6.5	-17	0.0	-100	0.0	-100
Chennai	0.5	-95	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	4.5	-12	0.0	-100	0.0	-100
Erode	0.0	-100	0.0	-100	0.0	-100
Kanchipuram	0.6	-91	0.0	-100	0.0	-100
Kanyakumari	0.6	-91	0.2	-96	0.0	-100
Karaikal	0.8	-96	0.0	-100	0.0	-100
Karur	1.3	-52	0.0	-100	0.0	-100
Krishnagiri	0.0	-100	0.0	-100	0.0	-100
Madurai	1.5	-65	0.0	-100	0.0	-100
Nagapattinam	5.8	-71	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	2.1	-28
Pudukottai	7.7	38	0.0	-100	0.0	-100
Ramanathapuram	0.8	-92	0.0	-100	0.5	-94
Salem	0.0	-100	0.0	-100	0.0	-100
Sivaganga	1.8	-67	0.0	-100	0.0	-100
Thanjavur	14.6	100	0.0	-100	0.0	-100
Theni	1.6	-57	0.0	-100	0.0	-100
Tirunelveli	10.0	-23	0.0	-100	0.0	-100
Tirupur	0.0	-100	0.0	-100	0.0	-100
Tiruvallur	0.1	-99	0.0	-100	0.0	-100
Tiruvannamalai	0.0	-100	0.0	-100	0.0	-100
Tiruvarur	18.4	47	0.0	-100	0.0	-100
Toothukudi	1.0	-87	0.0	-100	0.0	-100
Trichy	2.5	-39	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	0.0	-100
Visakhapatnam	0.0	-100	0.0	-100	0.0	-100
Vizianagram	0.0	-100	0.0	-100	0.1	-96
West Godavari	0.0	-100	0.0	-100	0.0	-100
<b>Rayalaseema</b>						
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

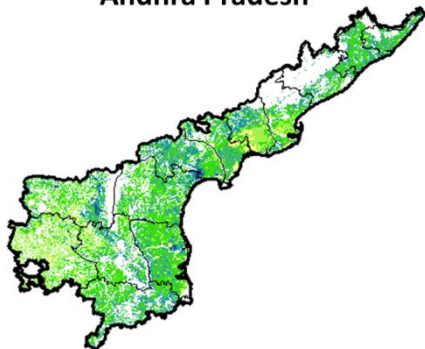
Legends

	(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

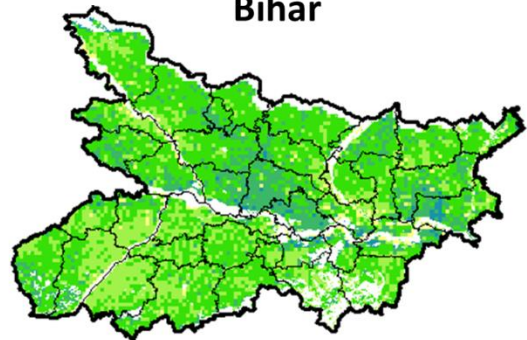
**NOAA/AVHRR NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON  
19<sup>th</sup> January 2017 FOR DIFFERENT STATES**

**Andhra Pradesh**



Agriculture vigour is moderate over southern and patches in costal part whereas, patches in central region and Rayalseema show good to very good NDVI in the state of Andhra Pradesh.

**Bihar**



Agriculture vigour is moderate over entire state of Bihar, few patches in central and east shows good NDVI.

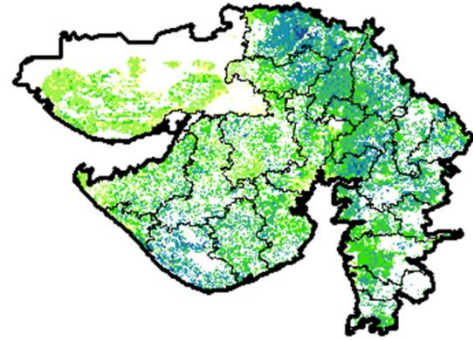


### Chhattisgarh



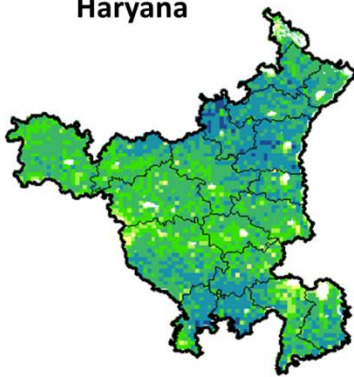
Agriculture vigour is good in southern region whereas, moderate vigour is seen in central and northern region of Chhattisgarh.

### Gujarat



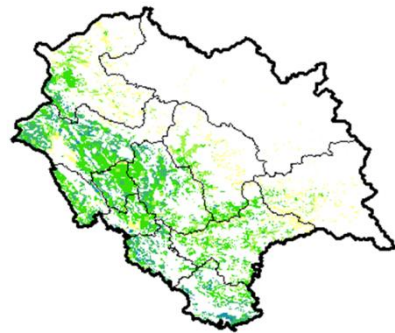
Moderate NDVI values are observed in patches in Kutch whereas, good to very good NDVI is observed in patches in Saurashtra and Gujarat.

### Haryana



Good agriculture vigour is observed over entire state of Haryana, moderate vigour is seen in patches in central and west part of Haryana.

### Himachal Pradesh



Agriculture vigour is moderate to good in few patches of Himachal Pradesh.

### Jammu & Kashmir



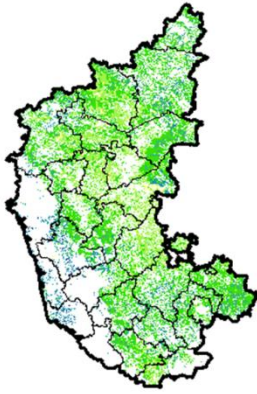
Agriculture vigour is moderate over entire state of Jammu & Kashmir.

### Jharkhand



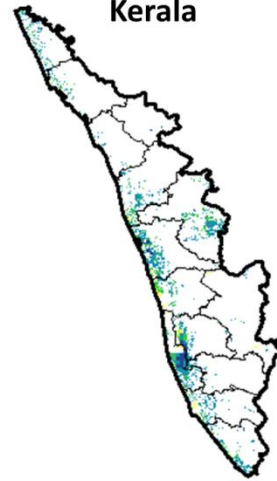
Agriculture vigour is good over patches in western region of Jharkhand whereas, remaining states shows moderate NDVI values.

### Karnataka



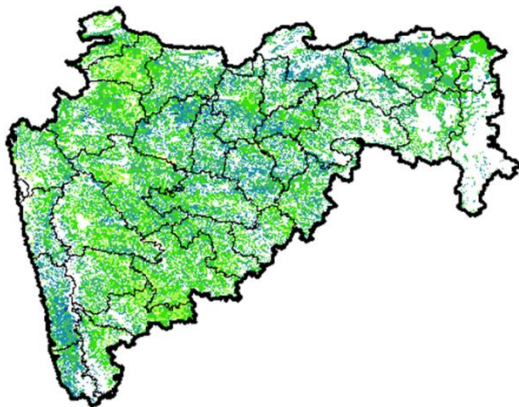
Agriculture vigour good in patches over southern and northern region of the state whereas rest of the state shows moderate vigour.

### Kerala



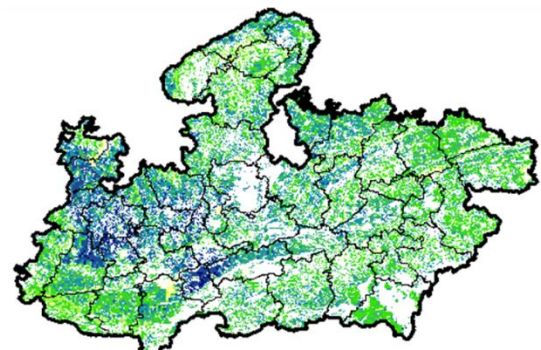
Agriculture vigour is good over entire state of Kerala except central part which shows moderate NDVI values.

### Maharashtra



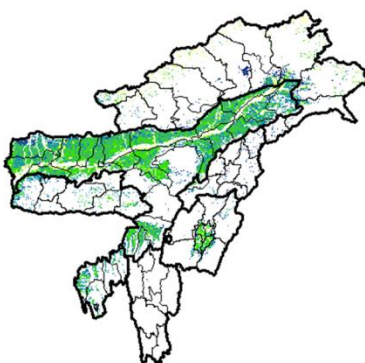
Agricultural vigour is moderate over central Maharashtra and eastern part of Vidharbha whereas, good to very good vigour is observed in the north, Konkan and eastern regions.

### Madhya Pradesh



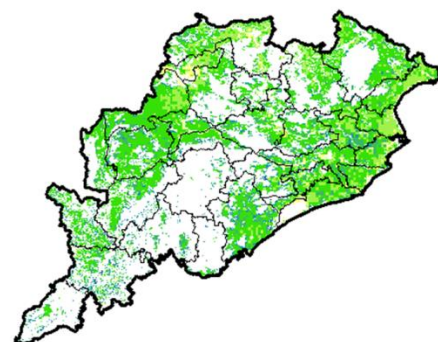
Agriculture vigour is good to very good over patches in western and central region of the state of Madhya Pradesh whereas, rest of the state shows moderate vigour.

### North East Region



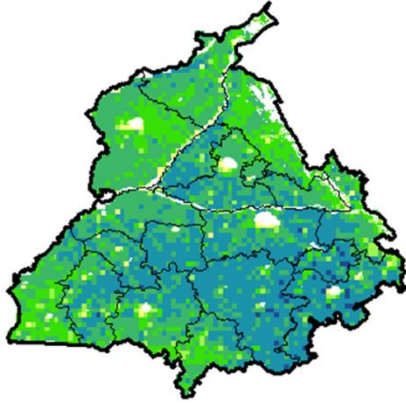
Agriculture vigour is good & very good over north-east states of country, whereas few patches in Assam, Manipur shows moderate vigour.

### Odisha



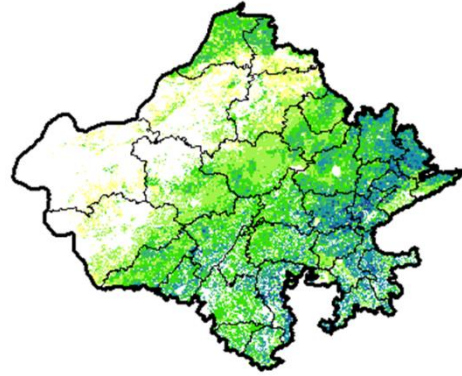
Agricultural vigour is good over many patches over of Odisha whereas, moderate vigour is observed over the entire state.

### Punjab



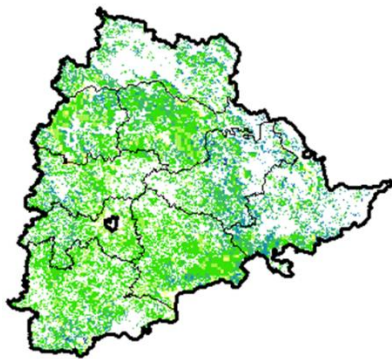
Agricultural vigour is good in patches over entire state of Punjab, whereas few patches in north and west show moderate vigour.

### Rajasthan



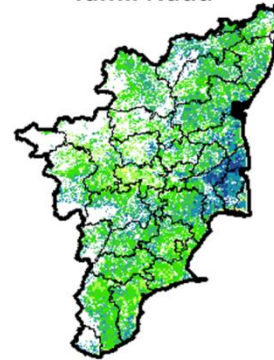
Agriculture vigour is good to very good over eastern and southern Rajasthan whereas, moderate vigour is observed over rest of the region.

### Telangana



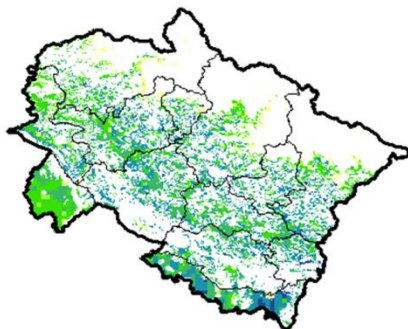
Agriculture vigour is good over northern and eastern region of Telangana whereas, moderate vigour is observed in southern and central region.

### Tamil Nadu



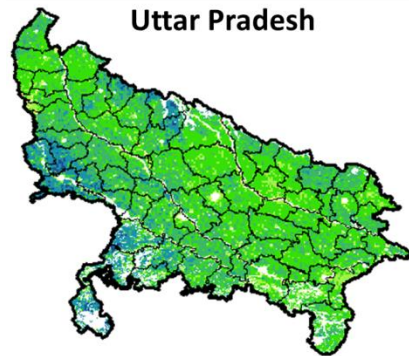
Agricultural vigour is moderate over most region of Tamil Nadu, whereas central region and patches in north shows good to very good NDVI.

### Uttarakhand



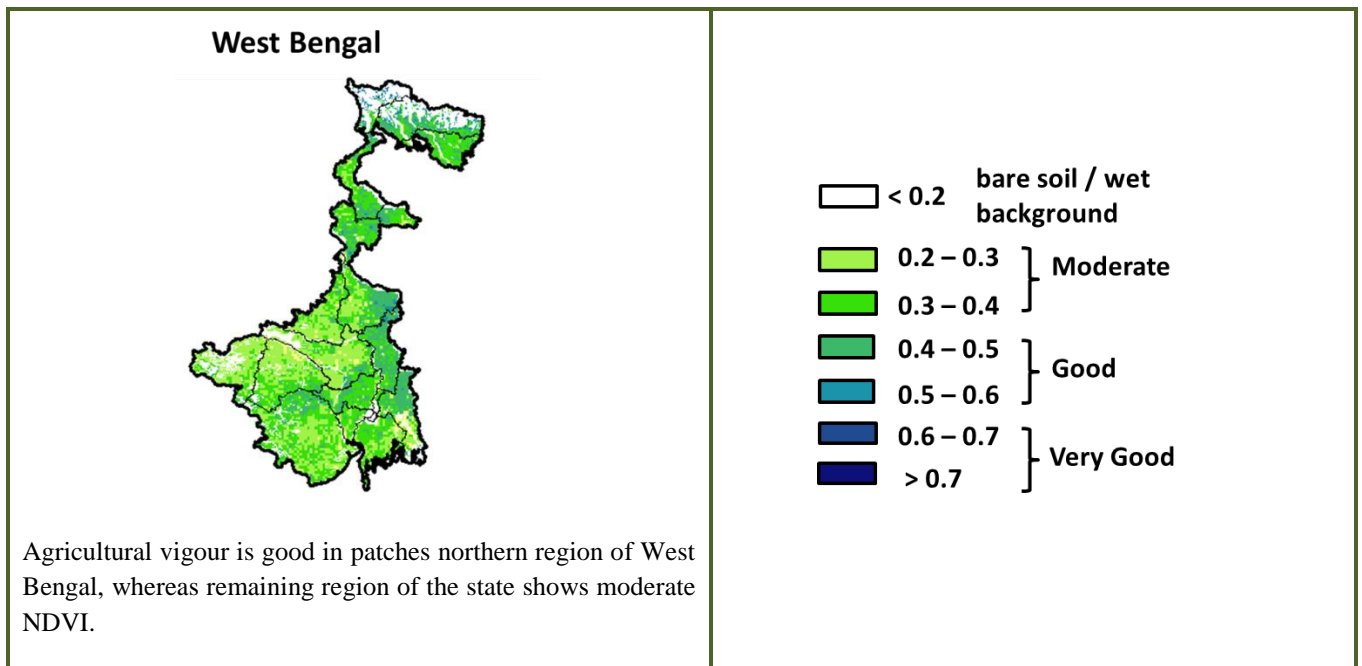
Agricultural vigour is good to very good over entire state of Uttarakhand whereas, moderate in south-western region of Uttarakhand.

### Uttar Pradesh



Agricultural vigour moderate over entire state of Uttar Pradesh, whereas patches over west and south shows good to very good vigour.





\* For New Delhi NOAA/AVHRR NDVI COMPOSITE Map is not available due to some problem in data set.

### Annexure III

#### Assam

**Winter brinjal:** Pusa Kranti, Pusa Purple Long, Pusa Purple Round, Pusa Vairab, Pant Samra.

**Tomato :** Punjab Chhuhara, S-12, Punjab Kesri, Pusa Early Dwarf, Sioux, Pusa Ruby, VC- 48-1, Arka Abha (BWR-1), Arka Alok (BWR-5), BT-1, Bilahi-1, Bilahi-2).

**Potato :** Kufri Chandramukhi, Kufri Jyoti, Kufri Megha, Kufri Badshah, Kufri Sindhuri.

**Onion :** Pusa Red, Pusa Ratnar, Pusa white (Round), Pusa white (Flat), N-53, Agrifound Light Red, Punjab Red Round, Pusa Madhuri, Arka Niketan.

**Cauliflower :** Early Kunwari, Pusa Katki and Pusa Deepali (for early maturity).  
Improved Japanese, Pusa Synthetic, Pusa Snowhall (for mid maturity).  
Snowball-16, Pusa Snowball, K-1 and Hissar 1 (for late maturity) etc.

**Cabbage :** Golden Acre, Pride of India, Pusa Mukta (Sel – 8) (for early maturity).  
Drum Head and Eclipse Drum Head (for late maturity).

**Knol-Khol :** White Vienna (for early maturity).  
Purple Viena (for late maturity).

#### Odisha:

**Green pea:** Rachana, Arkel. and T -163.

**Mustard:** Parbhathi, Anuradha, TS-29 & M-27.

**Garlic:** Phawari, Rajalbadi, Jamnagar and G-282

**Potato:** Kufri Chandramukhi, Kufri Chamatkar, Kufri Jyoti, Kufri Sinduri and Kufri Alankar, etc

**Greengram-** TARM1, OUM11-5, Hum-1

**Blackgram-** PU-19, LBG-17

**Gram-** Radhey, Annegiri, Sweta, Bharati, JG 11

**Groundnut:** are Smruti, AK 12-24, JL-24.

#### Bihar

**Pigeon pea:** Bahar, Pusa-9, Narendra Arher-1, Rajendra Arher-1 and Maalvia-13.

**Sesame:** Kanak, kalika, Uma, Usha, Tilottama, Neelima and Prachi

**Green gram:** K -851, PDM -54, PDM -11, OUM 11-5

**Balck gram:** T-9, Pant-U-19. Pant –U-30, Pant –U-11

**Niger:** Deomali

**Horsegram :** Urmi, DS 1-2-2, DS 1-2

**Barseem:** Pusa Vikash, Bundel and of Jai- Kent.

**Garlic:** Jamuna Safed-2(G-50), Jamuna Safed-3(G-282), and Jamuna Safed-4 (G-323), G-1 and G-41(Agri found safed).

**Rai:** Baruna, Pusa bold, Kranti, Pusa mahak and Rajendra suflam.

**Coriander:** Rajendra swati, Pant haritima, Kumarganj selection and Hisar anand.

**Lentil:** Mallika (K-75), Arun (PL77-12), KLS-218, HUL-57, PL-5.



### Jharkhand

**Potato:** Kufri Ashoka, Kufri Pukhraj, Kufri Lalima, Kufri Pushkar and Kufri Kanchan.

**Toria:** BR-23, T.-9, P.T. 303, Panchali and Bhavani.

**Green pea:** Arkel or Azad pea.

### West Bengal

**Coconut:** Eastcoastal, Hazari

**Banana:** Mortoman, Chapa, Kathali, Singapuri,

**Mustard:** Varuna, Sita and Bhagirathi.

**Jute :** Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali etc.

**Cabbage :** Pride of India, Pusa early, Kranti.

**Cauliflower :** Jawhar moti, Bharat Jyoti, Early banaras.

**Potato :** Ashoka, Chipsona 1,2, Kufri Jyoti, Kufri Alankar

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

### Uttarakhand

**Wheat:** HS-562, VL-616, VL-829, VL-802, VL-802

**Onion:** VL-Pyaj-3, Nasik Red, Pusa Red

**Pea:** Vivek 10, Vivek 11, Pant 3,

**Radish:** Meenu early, Japanese white, Pusa Himani.

**Carrot:** Pusa Vrishi,

**Rai:** Varuna, Rohini, Krishna, Kanti, Vardan, Vaibhav, Basanti, Narendra, Early rai-4, Urvashi and varieties

**Yellow Mustard:** Ragini, Binoy (B-9), Pant peeli Sarso-1.

**Mentha:** Koshi, Saksham, Kushal, Himalaya, Saryu, Sim kranti .

### Jammu and Kashmir

**Wheat:** PBW-175, PBW-396, RSP-81 (Jitto).

**Pea:** AP-1, Bonnevillea, Rachna and Arkel

**Chickpea:** K-468, Gourav

**Lentil:** L-4147, L-9/12, PL-406.

**Berseem:** Vardan, mascavi, pusa giant, BL-1

**Potato:** Kufri Badshah, K. Sinduri, K. Chipsona & K. Sona

**Gram:** C-235, Gaurav, K-468, SCS-3, PBG-1

**Toria:** RSPT-1 and RSPT-2

### Himachal Pradesh

**Cauliflower:** snowball and Giant snowball.

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

**Turnip:** PTWG-1

**Carrot:** Pusakesar

**Peas :** Mater ageta-6 (early variety).

**Cabbage:** Pride of India, golden achor and hybrid

### East Uttar Pradesh

**Radish:** kalyanpur No.1, Pusa Rashmi, Hisar selection-1, Japani Safed, pusa Chetaki, Pusa Himani, Pusa deshi, Arka Nishant and Jaunpuri.

**Cabbage:** Pusa snowball, Pusa snowball II, Snowball 16 and Pusa snowball K1

### West Uttar Pradesh

**Vegetable pea:** Azad-3, Aakril

**Pea:** KPRM-522, KPRM-400, Vikas, Prakash

### Punjab

**Sugarcane:** CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89, CO118, COJ85, COJ64.

**Radish:** Punjab Pasand and Japanese white.

**Turnip:** L-1.

**Carrot:** Punjab Black Beauty, Punjab Carrot Red and PC-34.

**Tomato:** TH-1, Punjab Ratta, Punjab NR 7, Punjab Chuhara, Punjab Upma, Castle Rock.

**Okra:** Punjab-8 and Punjab-7

**Cauliflower:** Pusa Snow Ball-1, Pusa Snow Ball K-1

### East Rajasthan:

**Cauliflower:** Pusa snow ball K-1, Hisar-1, Dania and Selection-7 are improved varieties.

**Carrot:** Pusa Keshar is improved variety.

**Radish:** Japanese white & hill queen.

### West Rajasthan

**Cumin:** RZ-19, RZ-209, GG-4, RZ-223.

**Fenugreek** :RMt 1 & RMt305.

**Bhindi**: Ark Anamika, varshauphar, Parbhanikranti, pusamakhmali.

**Radish**: Japanese white & hill queen.

**Chhattisgarh**

**Sugarcane**:CO 86032, CO 419, CO 1305, CO J 86-141, CO 6304, CO 8338, CO 6217, CO 775, CO J 2087.

**Karnataka**

**Sugarcane**: CO-86032, 740, 671.

**Telangana**

**Sesamum**: SwethaThil, Chandana, Hima, Gouri, Madhavi.

**Tomato**: Pusa rubi, Pusa early dwarf, Marutham, Arkha, meghali, Arkha sourab, Arkha vikas

**Bhendi**: Parbhani kranti, Arkha anamika, Arkha abhaya

**Tamil Nadu**

**Rice**: Navarai season rice