

# National Agromet Advisory Service Bulletin

**Friday 23<sup>rd</sup> January 2015**

**(For the period 23<sup>rd</sup> to 27<sup>th</sup> January 2015)**



**Issued by**

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

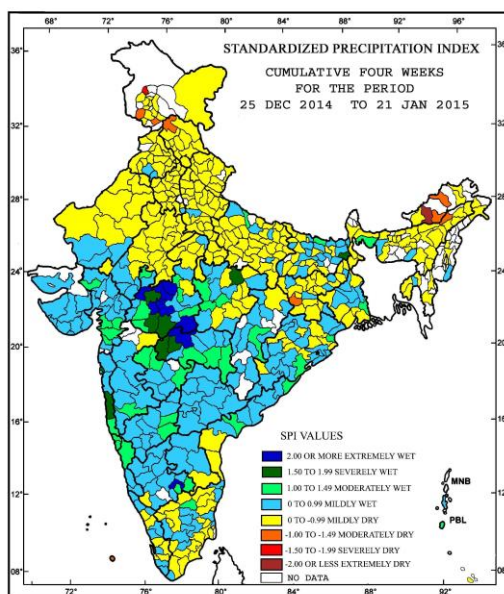


## Standardised Precipitation Index

### Four Weekly

for the Period 25<sup>th</sup> December 2014 to 21<sup>st</sup> January 2015

MINISTRY OF EARTH SCIENCES  
INDIA METEOROLOGICAL DEPARTMENT  
HYDROMET SECTION, PUNE

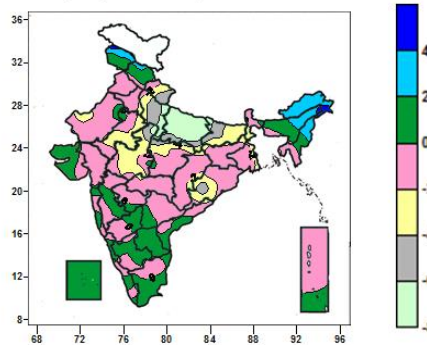
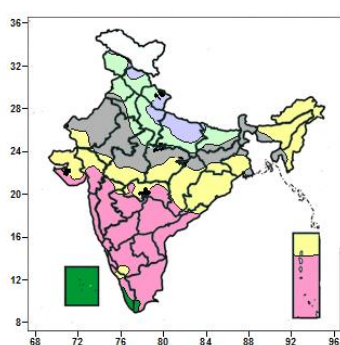


- Extremely/severely wet conditions in few districts of Madhya Pradesh; Satna district of Bihar; Ratnagiri, Mumbai Suburban, Akola, Amravati and Buldhana districts of Maharashtra and Bangalore rural district of Karnataka.
- Extremely/ moderately/ severely dry conditions experienced in Udhampur, Kupwara and Rajouri districts of Jammu & Kashmir; Champa district of Himachal Pradesh; Gumla district of Jharkhand; Lakhimpur district of Assam; Papumpara, Upper Subansiri and East Kameng districts of Arunachal Pradesh and Lakshadweep.
- Rest of the country experienced moderately wet/ mild wet/dry conditions.

### Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 21.01.2015

**Actual Mean Maximum Temperature (°C) in India for the week ending 21.01.2015**

**Mean Maximum Temperature (°C) Anomaly in India for the week ending 21.01.2015**



- 32 to 36<sup>o</sup>C over Lakshadweep Islands and many places over Kerala and isolated places over Tamil Nadu.
- 28 to 32<sup>o</sup>C over Konkan & Goa, Coastal & North Interior Karnataka, many parts of Madhya Maharashtra, Marathwada, Andhra Pradesh, South Interior Karnataka, Tamil Nadu, few parts of Gujarat,
- 4 to 6<sup>o</sup>C over isolated parts of Arunachal Pradesh, Assam and Jammu & Kashmir.
- 2 to 4<sup>o</sup>C over many parts of Arunachal Pradesh, Nagaland, few parts of Jammu & Kashmir, Himachal Pradesh, Assam and isolated parts of Manipur.
- 0 to 2<sup>o</sup>C over Telangana, Mizoram, Lakshadweep

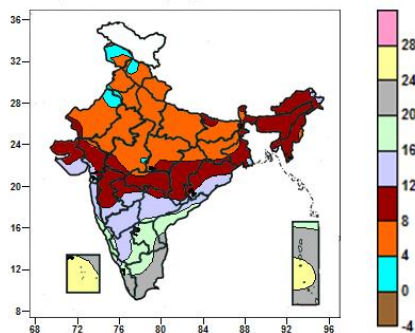
Vidarbha, Chhattisgarh and Kerala.

- 20 to 28<sup>0</sup>C over North East India, West Bengal & Sikkim, Jharkhand, Odisha, many parts of Rajasthan, Madhya Pradesh, Gujarat, Chhattisgarh, few parts of Punjab, Haryana, Bihar, Kerala and Andaman & Nicobar Islands.
- 12 to 20<sup>0</sup>C over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Uttar Pradesh, many parts of Punjab, Haryana & Delhi, Bihar, few parts of East Rajasthan and West Madhya Pradesh.

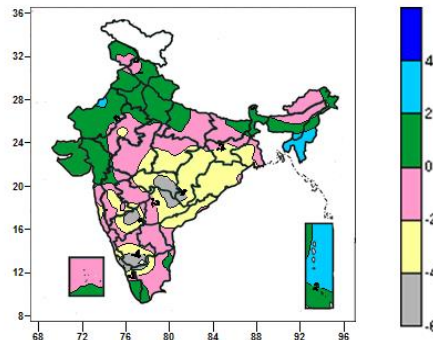
Islands, many parts of Jammu & Kashmir, Himachal Pradesh, Assam & Meghalaya, Saurashtra & Kutch, Coastal Andhra Pradesh, Madhya Maharashtra, Coastal & South Interior Karnataka, Tamil Nadu, Kerala, few parts of Rajasthan, Konkan, Marathwada, Telangana, Madhya Pradesh, Sub-Himalayan West Bengal.

- -4 to 0<sup>0</sup>C over Punjab, Haryana & Delhi, Jharkhand, West Bengal & Sikkim, Mizoram, Tripura, Goa, Chhattisgarh and Vidarbha, many parts of Uttarakhand, Rajasthan, Madhya Pradesh, Gujarat Region, Marathwada, Odisha, Telangana, North Interior Karnataka, Andaman & Nicobar Islands, few parts of Himachal Pradesh, West Uttar Pradesh, Bihar, Meghalaya, Coastal Andhra Pradesh, Saurashtra, Konkan, Madhya Maharashtra, South Interior Karnataka, Coastal Karnataka, Kerala and Tamil Nadu.
- -8 to -4<sup>0</sup>C over many parts of Uttar Pradesh, Uttarakhand, few parts of Bihar, Madhya Pradesh and Odisha.

**Actual Mean Minimum Temperature (°C) in India for the week ending 21.01.2015**



**Mean Minimum Temperature (°C) Anomaly in India for the week ending 21.01.2015**



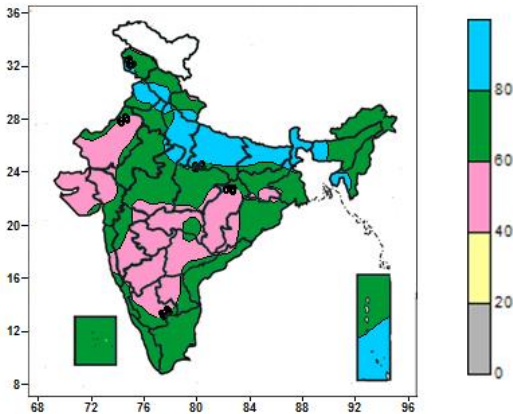
- -4 to 0<sup>0</sup>C over isolated parts of Jammu & Kashmir.
- 0 to 4<sup>0</sup>C over many parts of Jammu & Kashmir, few parts of Himachal Pradesh, Punjab, West Rajasthan, isolated parts of West Madhya Pradesh.
- 4 to 8<sup>0</sup>C over Uttarakhand, Uttar Pradesh, many parts of Himachal Pradesh, Punjab, Haryana & Delhi, Rajasthan, Bihar, Jharkhand, Sikkim, Madhya Pradesh, few parts of Jammu & Kashmir, West Bengal, Chhattisgarh, Vidarbha and Gujrat region.
- 8 to 12<sup>0</sup>C over many parts of North East India, West Bengal & Sikkim, Gujarat, Chhattisgarh, Odisha, Madhya Maharashtra, Marathwada, Vidarbha, few parts of Madhya Pradesh, isolated parts of Bihar, Jharkhand, Telangana and West Rajasthan.
- 12 to 16<sup>0</sup>C over North Interior Karnataka, many parts of Saurashtra, Konkan, South Interior Karnataka, Telangana, few parts of Odisha, Coastal Andhra Pradesh and Kerala; over isolated parts of North East India.
- 16 to 20<sup>0</sup>C over Goa and Coastal Karnataka, many parts of Coastal Andhra Pradesh, Rayalaseema, few parts of Telangana, Tamil Nadu, South Interior Karnataka, Kerala and Andaman & Nicobar Islands.

- 2 to 4<sup>0</sup>C over Manipur, Mizoram, Tripura, many parts of Andaman & Nicobar Islands, isolated parts of Assam and West Rajasthan.
- -2 to 2<sup>0</sup>C over entire country except Manipur, Mizoram, Tripura, many parts of Andaman & Nicobar Islands, Chhattisgarh, Odisha, Karnataka Jharkhand, East Madhya Pradesh, Gangetic West Bengal, Vidarbha, Telangana, Coastal Andhra Pradesh, few parts of West Madhya Pradesh, Konkan, Madhya Maharashtra, Marathwada and isolated parts of Assam and Rajasthan.
- -6 to -2<sup>0</sup>C over many parts of Chhattisgarh, Odisha, Karnataka Jharkhand, East Madhya Pradesh, Gangetic West Bengal, Vidarbha, Telangana, Coastal Andhra Pradesh, few parts of West Madhya Pradesh, Konkan, Madhya Maharashtra, Marathwada and isolated parts of East Rajasthan.

- 20 to 24<sup>0</sup>C over many parts of Kerala, Tamil Nadu, Andaman & Nicobar Islands, few parts of Coastal Andhra Pradesh, Telangana and Lakshadweep.
- 24 to 28<sup>0</sup>C over many parts of Lakshadweep, few parts of Andaman & Nicobar Islands.

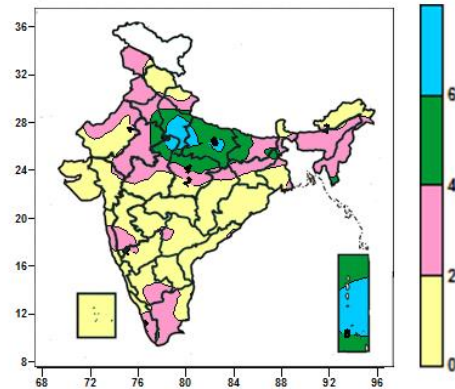
**Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 21.01.2015**

**Relative Humidity (%) over India for the week ending 21.01.2015**



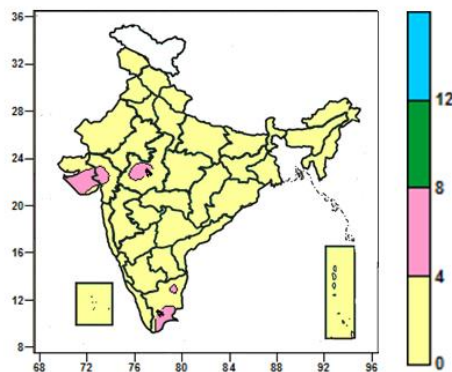
- 80 to 100% over Sub-Himalayan West Bengal & Sikkim, many parts of Punjab, Uttar Pradesh, Bihar, Tripura, few parts of Jammu & Kashmir, Himachal Pradesh, Haryana & Delhi, Assam & Meghalaya, Mizoram, Madhya Pradesh and Andaman & Nicobar Islands.
- 40 to 80% over entire country except Sub-Himalayan West Bengal & Sikkim, many parts of Punjab, Uttar Pradesh, Bihar, Tripura, few parts of Jammu & Kashmir, Himachal Pradesh, Haryana & Delhi, Assam & Meghalaya, Madhya Pradesh and Andaman & Nicobar Islands.

**Cloud amount (okta) over India for the week ending 21.01.2015**



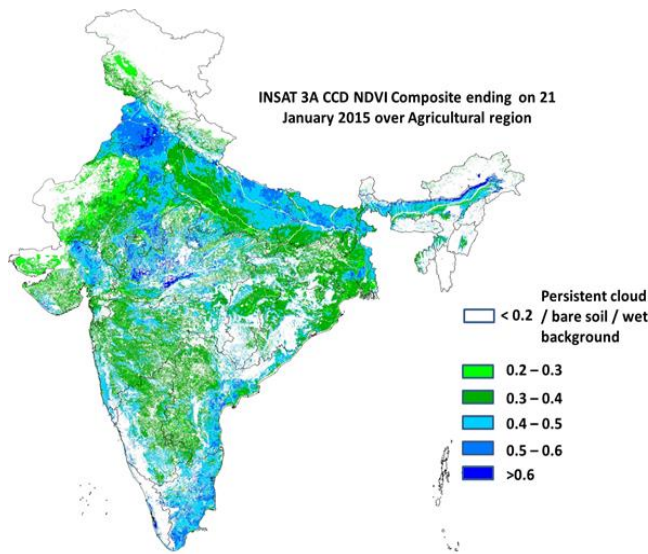
- 6 to 8 okta over many parts of West Uttar Pradesh, Andaman & Nicobar Islands, few parts of East Uttar Pradesh, West Madhya Pradesh.
- 4 to 6 okta over many parts of East Uttar Pradesh, few parts of Haryana & Delhi, West Uttar Pradesh, East Rajasthan, Bihar, Madhya Pradesh and Andaman & Nicobar Islands, over isolated parts of Uttarakhand.
- 0 to 4 okta over entire country except Uttar Pradesh, Andaman & Nicobar Islands, few parts of West Madhya Pradesh, Haryana & Delhi, East Rajasthan, Bihar, Madhya Pradesh and Andaman & Nicobar Islands, over isolated parts of Uttarakhand.

**Wind speed (knots) over India for the week ending 21.01.2015**



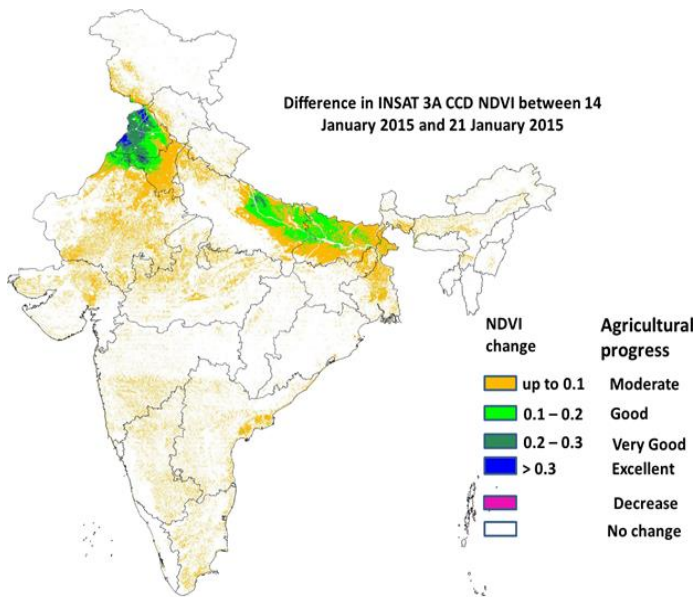
- 4 to 8 knots over many parts of Saurashtra & Kutch, some parts of Gujarat region, West Madhya Pradesh and Tamil Nadu.
- 0 to 4 knots over entire country except many parts of Saurashtra & Kutch, some parts of Gujarat region, West Madhya Pradesh and Tamil Nadu.

## INSAT 3A CCD NDVI COMPOSITE ENDING ON 21<sup>st</sup> JANUARY 2015 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is good (0.4 to 0.5) over many parts of East Uttar Pradesh, few pockets of West Uttar Pradesh, East Rajasthan, central and western Gujarat, Gangetic West Bengal, Coastal Andhra Pradesh, Tamil Nadu, eastern and coastal parts of Odisha and north Bihar. NDVI varied from 0.5 to 0.6 in many parts of Punjab and north western parts of Haryana and few pockets of central and western Madhya Pradesh. Some parts of southern Bihar, few pockets in west Rajasthan, south eastern parts of Punjab, central Madhya Pradesh, few pockets in Karnataka and coastal Andhra Pradesh shows a significant increase in the NDVI value. The NDVI remained within the range of 0.3 to 0.4 over few parts of the Indo Gangetic plains, central Maharashtra, parts of Karnataka, Telangana and central Rajasthan upto 21<sup>st</sup> January 2015.

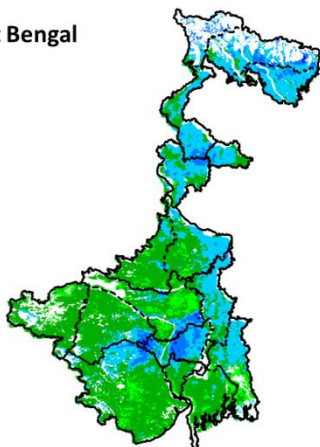
### Difference in INSAT 3A CCD NDVI between 14<sup>th</sup> January 2015 and 21<sup>st</sup> January 2015



- Excellent progress in respect of increase in NDVI (> 0.3) was observed in few pockets of western Punjab. Considerable positive change (0.2- 0.3) in NDVI was also observed over western and central parts of Punjab and few pockets in north western Haryana, southern and eastern Punjab. Change in NDVI of 0.1-0.2 was observed in some parts of East Uttar Pradesh and North Bihar. Moderate change (upto 0.1) in NDVI was observed over northern parts of East Uttar Pradesh, parts of Northern Gujarat, some parts of Maharashtra, Rajasthan and Gangetic West Bengal and in eastern and central Madhya Pradesh, central parts of Chhattisgarh and northern and central part of West Bengal and coastal parts of Andhra Pradesh and few pockets in Telangana, Rayalaseema, Karnataka and Tamil Nadu. Not much change was observed in rest of India.

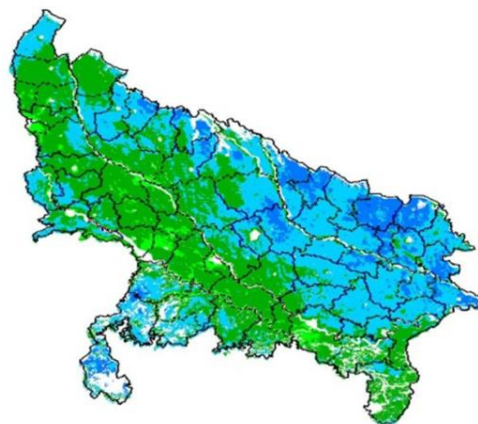
**INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 21<sup>st</sup>  
JANUARY 2015 FOR DIFFERENT STATES**

**West Bengal**



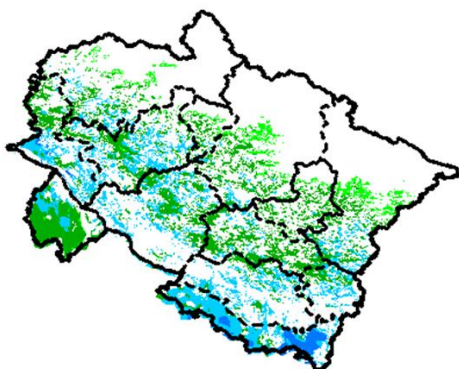
Agricultural vigour is good over most of the southern parts of West Bengal, whereas rest of the northern parts having higher values of NDVI in patches varied from 0.4- 0.6 till the 21<sup>st</sup> Jan 2015.

**Uttar Pradesh**



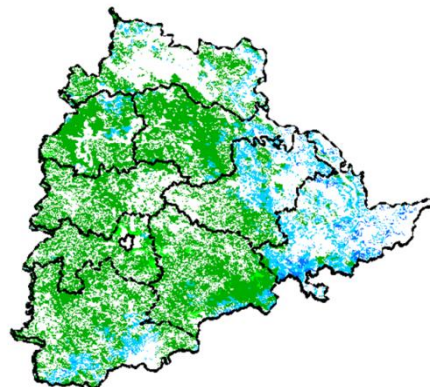
Agricultural vigour is good for the North of the Uttar Pradesh where NDVI values varied from 0.4-0.6. South of the Uttar Pradesh is showing NDVI values which varied from 0.2- 0.4 till the 21<sup>st</sup> Jan 2015.

**Uttarakhand**



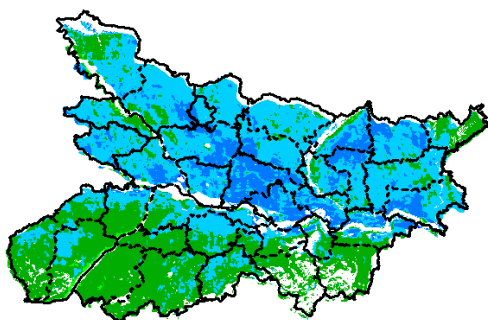
NDVI values vary from 0.2 - 0.4 of Uttarakhand which is spreads in pockets till the 21<sup>st</sup> Jan 2015.

**Telangana**



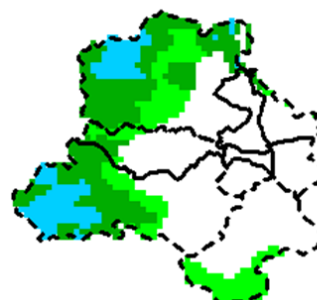
Agricultural vigour is good in pockets for the north and north east of the Telangana where NDVI values varied from 0.4 - 0.6. South of the Telangana is showing values of NDVI which varied from 0.2- 0.4 till the 21<sup>st</sup> Jan 2015.

**Bihar**



North districts of Bihar showing comparatively high values of NDVI with 0.4 index. Values are

**Delhi**

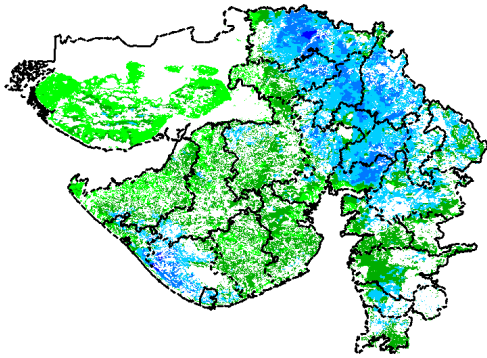


Agriculture vigour is good over western part of Delhi. NDVI values lies in between 0.4-0.5 over

normal over rest part of the state which varied form 0.3- 0.4 till the 21<sup>st</sup> Jan 2015.

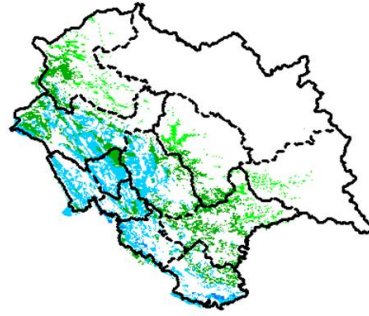
there. NDVI values are normal over central west part of the state.

### Gujarat



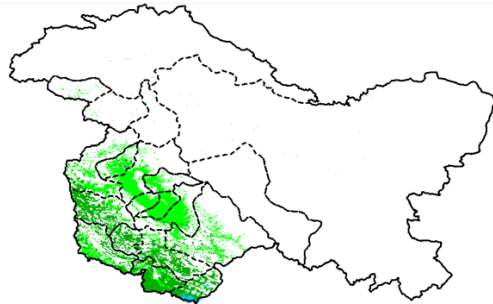
Agriculture vigour is good over part of Gujarat region and Saurashtra where NDVI values lie in between 0.4-0.5 till 21<sup>st</sup> Jan 2015. NDVI over Kutch is normal.

### Himachal Pradesh



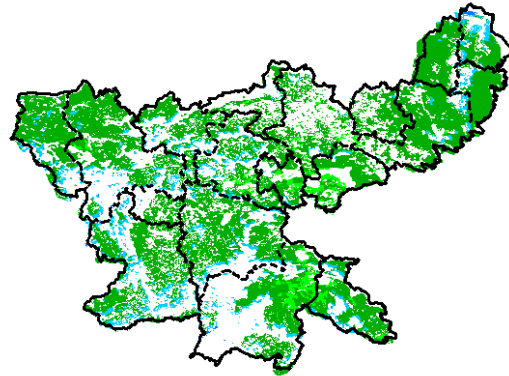
Agriculture vigour is good over south west part of Himachal Pradesh with NDVI values lie between 0.4-0.5. Whereas, rest of isolated patches are of normal NDVI values.

### Jammu - Kashmir



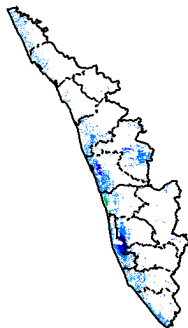
Agriculture vigour is normal all over Jammu. NDVI values vary in between 0.2-0.3 in South West parts till 21<sup>st</sup> Jan 2015.

### Jharkhand



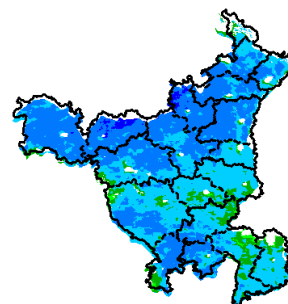
Agriculture vigour is good in patches over central to western part of the Jharkhand which lie in between 0.3-0.4. Rest of the parts shows normal NDVI values till 21<sup>st</sup> Jan 2015.

### Kerala



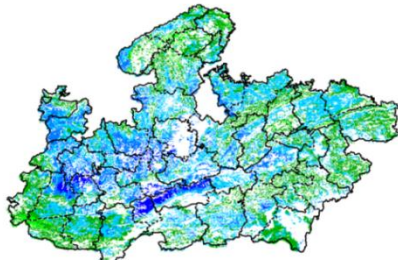
South coastal parts of Kerala showing pockets of NDVI values varied 0.5 - 0.6, whereas rest of agricultural vigour of Kerala showing normal values of NDVI till the 21<sup>st</sup> Jan 2015.

### Haryana



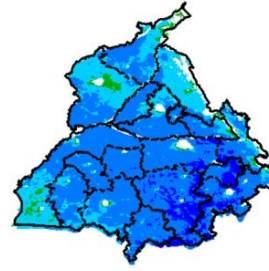
Agriculture vigour is good over most part of Haryana except western part where it is normal. NDVI values lies in 0.4-0.6 over most of the part of state till the 21<sup>st</sup> Jan 2015.

**Madhya Pradesh**



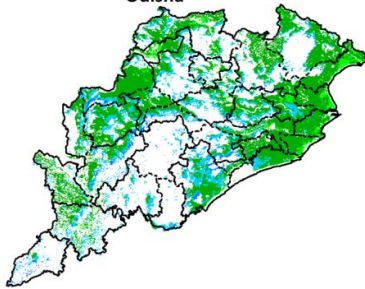
Agricultural vigour is good for central, Western region of Madhya Pradesh showing higher values of NDVI varied from 0.5 - 0.6. Whereas North and East parts showing comparatively low values varied from 0.3 – 0.4 till the 21<sup>st</sup> Jan 2015.

**Punjab**



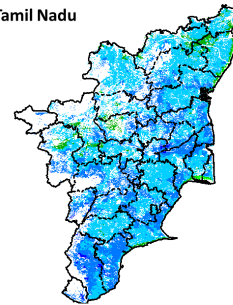
Agricultural vigour is comparatively good for all over Punjab with NDVI values 0.4-0.6. South -East districts of Punjab showing dominantly higher NDVI values more than 0.6 till the 21<sup>st</sup> Jan 2015.

**Odisha**



Agricultural vigour is good for east coast and south west part of Odisha with NDVI values of 0.3 - 0.5 whereas central and south coast showing normal values of NDVI till the 21<sup>st</sup> Jan 2015 in patches.

**Tamil Nadu**



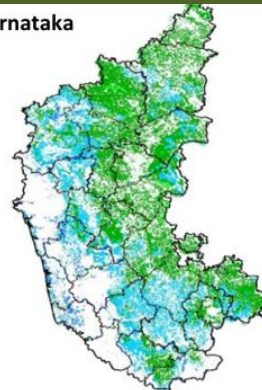
Agricultural vigour is good for the coastal region of east Tamil Nadu with NDVI values varied from 0.4 - 0.6. Rest of the Tamil Nadu is showing normal values of NDVI till the 21<sup>st</sup> Jan 2015.

**Chhattisgarh**



Agriculture vigour is good all over part of Chhattisgarh NDVI values lies in between 0.4-0.5. NDVI values are normal over south part of the state till 21<sup>st</sup> Jan 2015.

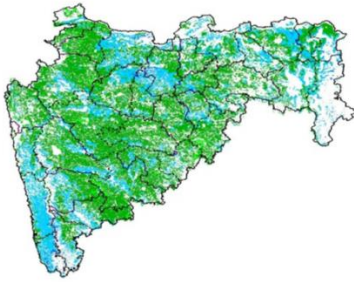
**Karnataka**



Agriculture vigour is good over South-Central parts of Karnataka which lies in between 0.3-0.5. Rest of the part comes under normal condition where NDVI values varied up to 0.2-0.3 till 21<sup>st</sup> Jan 2015.

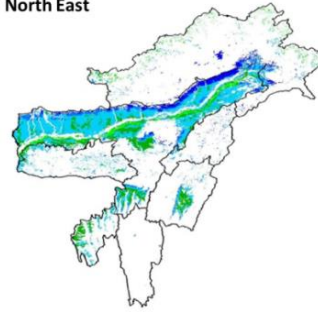


**Maharashtra**



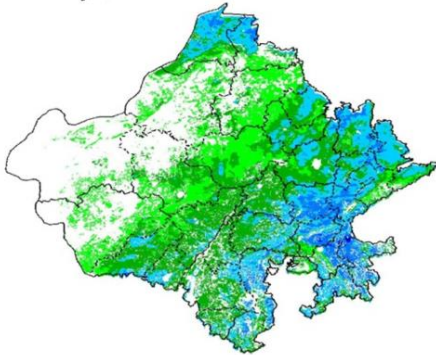
Agricultural vigour is good for central, West and Marathwada region of Maharashtra with NDVI values of 0.3 - 0.5. Whereas Vidarbha and Konkan regions showing comparatively high value of 0.5 till the 21<sup>st</sup> Jan 2015.

**North East**



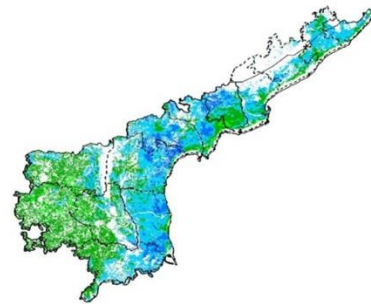
Agriculture vigour is good in valleys of northern hill range of North-East states which covers most of the part of Assam. NDVI values vary in between 0.4-0.5. In north-east part of Assam, NDVI values are more than 0.6. Isolated patches all over NE region are in normal condition till 21<sup>st</sup> Jan 2015.

**Rajasthan**



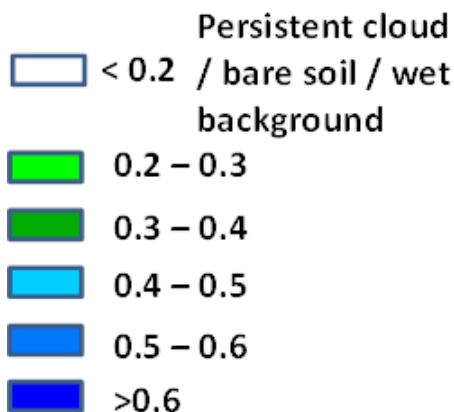
Agricultural vigour is good for the central Rajasthan with NDVI values varied from 0.3 - 0.4. East of the Rajasthan is showing increasing values of NDVI from 0.5-0.6 till the 21<sup>st</sup> Jan 2015.

**Andhra Pradesh**



Agriculture vigour is good over middle part of Andhra Pradesh, as it also good over northern coast. NDVI values are normal over rest part of the state till 21<sup>st</sup> Jan 2015.

## LEGENDS



## Weather Forecast

### Weather Forecast for next 3 days (upto 0830 hours IST of 26<sup>th</sup> January, 2015).

- Rain/snow would occur at a few places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours and at isolated places thereafter.
- Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry during the period.
- Rain/thundershowers would occur at isolated places over Haryana & Delhi, East Rajasthan, Bihar, Uttar Pradesh, East Madhya Pradesh, Konkan & Goa, Madhya Maharashtra during next 24 hours; over West Madhya Pradesh, Andaman & Nicobar Islands during next 48 hours and dry weather would prevail thereafter.
- Dry weather would prevail over Kerala and Lakshadweep during next 24 hours and rain/thundershowers would occur at isolated places thereafter.
- Dry weather would prevail over Arunachal Pradesh, Sub-Himalayan West Bengal & Sikkim and South Interior Karnataka during next 24 hours and rain/thundershowers would occur at isolated places on 24<sup>th</sup> and dry weather would prevail thereafter.
- Dry weather would prevail over rest parts of the country during the period.
- Fog would occur at a few places over Punjab, Haryana & Delhi, Uttar Pradesh, north Rajasthan, north Madhya Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- Fall in night temperatures by 2-4°C over plains of northwest India from tomorrow onwards.

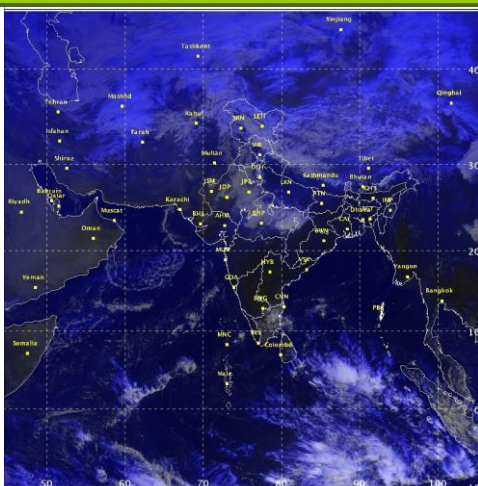
### Weather Warning during next 3 days

- **23 January (Day 1):** Cold day conditions would occur at a few places over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh. Cold wave conditions would occur at isolated places over Odisha.
- **24 January (Day 2):** Cold day conditions would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh.
- **25 January (Day 3):** No weather warning.

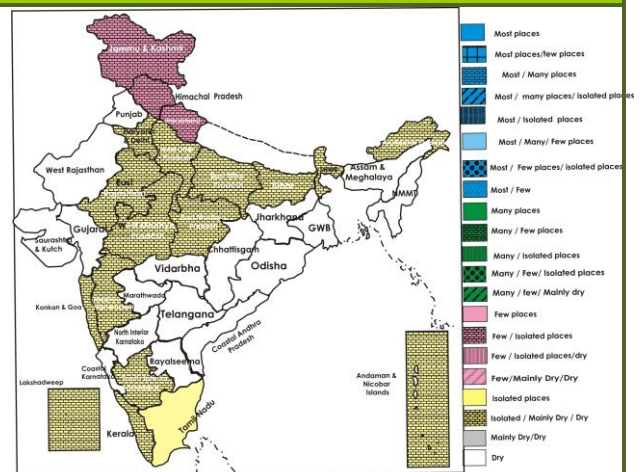
### Weather Outlook for subsequent 4 days from 26<sup>th</sup> to 30<sup>th</sup> January 2015.

- Rain/snowfall would occur at isolated places over western Himalayan region.
- Rain/ thundershowers would occur at a few places over central India and at isolated places over plains of northwest and east India.
- Weather would be dry over rest of the country.

Satellite image dated, 23.01.2015, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 26<sup>th</sup> January 2015)



## Salient Advisories

- As cold day conditions would occur at a few/ isolated places over **Punjab, Haryana, Chandigarh, Delhi** and **West Uttar Pradesh** on 23<sup>rd</sup> and 24<sup>th</sup> January, apply light and frequent irrigation in standing crops and arrange for smoking around the crop fields during night hours to protect the crops from cold injury.
- As cold wave conditions would occur at isolated places over **Odisha** on 23<sup>rd</sup> January, apply light and frequent irrigation in standing crops to protect the crops from cold injury.
- Due to foggy weather, there is chance of incidence of late blight disease on potato and tomato in Western Zone and Undulating Plain Zone of **Punjab**. To control, spray Indofil-M-45 / Kavach / Antracol @ 500-700 g / acre or Blitox @ 750-1000 g/acre using 250-350 litres of water/acre at weekly interval.
- Under prevailing low temperature and cloudy weather condition, there are chances of occurrence of yellow rust in wheat in Sub-Montane and Low Hills Sub-Humid Tropical Zone of **Himachal Pradesh**. For control, spray Tebuconazole 25 EC or Bayletan 25 WP @ 30ml or 30 g per 30 litres of water per kanal on a non rainy day and repeat the spray at 15 days interval.

## Detailed Zonewise Agromet Advisories

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



*Sorghum*



*Sugarcane*



*Chilli*



*Rice Transplanting*

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry during the period. Dry weather would prevail over Kerala and Lakshadweep during next 24 hours and rain/thundershowers would occur at isolated places thereafter. Dry weather would prevail over South Interior Karnataka during next 24 hours and rain/thundershowers would occur at isolated places on 24<sup>th</sup> and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
  - **Andhra Pradesh:**
    - Complete harvesting of chilli in Kurnool district in the Scarce Rainfall Zone and dry the produce on a polythene sheet to avoid aflatoxin damage.
    - In the Scarce Rainfall Zone, powdery mildew incidence is observed on mango crop in Anantapur district which is likely to spread in the present dry weather conditions. For control, spray Karathane @ 1.0 ml or wettable Sulphur @ 3.0 g per one litre of water.
    - Due to dry weather and low temperature prevailing in the Southern Zone, there is possibility of *spodoptera* incidence on groundnut crop. To control, spray Chloripyriphos @ 2 ml or Quinolphos @ 2 ml per litre of water.
  - **Telangana:**
    - In Telangana, as dry weather is prevailing, apply irrigation in rice nurseries. Apply 2 kg urea for 200 m<sup>2</sup> nursery area at 10-15 days after sowing.
    - Prevailing low temperature is congenial for increase in *maruca* pod borer in red gram at flowering to pod formulation stage in Northern Telangana Zone. To control pod borer, spray Chlorpyriphos @ 2.5 ml + Dichlorvos @ 1ml/ litre of water or Spinosad @ 0.4 ml/ litre of water.
    - Prevailing cool and dry weather conditions are congenial for incidence leaf blight and tobacco mosaic virus in tomato in Southern Telangana Zone. Spray Carbendazim 12 % + Mancozeb 63% WP @ 2 g or Mancozeb + Metalaxyl @ 2 g per litre of water to manage leaf blight and Fipronil @ 2 ml or Dimethoate @ 2 ml per litre of water to manage tobacco mosaic virus.
  - **Karnataka:**
    - As dry weather is prevailing, protective irrigation may be given to wheat and sorghum in North East Transition Zone, North Transition Zone and North Dry Zone.
    - Continue planting of sugarcane in North Transition and North East Transition Zone after proper set treatment

and harvest early sown Bengal gram in the North East Transition Zone.

- Continue harvesting of chilli and picking of cotton in the North Transition Zone and North Dry Zone.
- In the Hill Zone, continue picking of cotton and continue sowing of pulses in areas where rice harvesting has been completed.
- Continue sowing of sunflower, maize, groundnut and ragi in the Eastern Dry Zone.
- Undertake nursery preparation for sowing of rice and sowing of summer maize in the North East Transition Zone.
- As dry weather is prevailing, apply irrigation to wheat and summer groundnut. Undertake planting of sugarcane and harvesting of red gram, Bengal gram and safflower in the North East Dry Zone.
- Dry weather and high humidity in the morning hours is congenial for incidence of powdery mildew disease and leaf hopper in mango orchard in the North East Dry Zone, Eastern Dry Zone and Hill Zone. Spray Carbaryl WP@ 4 g/ litre of water or Carbendazim @ 1 g / litre of water to manage the incidence.
- Present weather is congenial for the incidence of *Helicoverpa* in Bengal gram in the North East Transition Zone, Spray Profenophos or Chlorpyrifos @ 2 ml/litre or Spinosad @ 0.2 ml per litre of water for control.

▪ **Kerala:**

- Prevailing dry and humid conditions are congenial for the attack of bud rot in coconut in the Southern Zone. Clean the affected part and apply Bordeaux paste
- Due to increase in temperature, powdery mildew is noticed on vegetables and likely to spread in the Central Zone. Apply wettable Sulphur @ 3 g in one litre of water.

▪ **Tamil Nadu:**

- Continue sowing of rice fallow pulses under waxy condition in *samba* rice fields under rice fallow condition in the Cauvery Delta Zone.
- Undertake sowing of groundnut in Erode district in the Western Zone.
- Undertake sowing of black gram (ADT 3) as rice fallow crop under waxy condition in Karaikal.
- In the High Altitude Hilly Zone, undertake mulching in standing crops to prevent frost damage and spray Dasakavya@3% once in 10 days to control blister blight in tea garden due to low temperatures.
- Due to prevailing cloud cover and moderate humidity, incidence of boll worm is noticed in cotton in the South Zone. Spray Phosalone 35% EC@ 2.5 litre/ ha or Carbaryl 50% WP @ 2.5 kg/ ha if the infestation crosses economic threshold level.
- Prevailing low temperature condition is congenial for incidence of sigatoka leaf spot in banana in the Western Zone. Monitor the crop carefully and spray Chlorothalanyl @ 2g/ litre of water or Propiconazole @ 1 ml/litre of water.

• **Animal Husbandry**

- Prevailing low temperature condition is congenial for *kokkera* disease in poultry in the Northern Telangana Zone. Vaccinate the birds as per the recommended age, provide clean and fresh water daily and provide artificial heating through lighting of electric bulb during night time to protect the poultry birds (day old to 25 days old) from low temperature.
- Provide green succulent forage together with leguminous hay or straw, extra concentrate of salt and mineral supplements to milch animals to maintain the lactation in the High Altitude Hilly Zone of Tamil Nadu.

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



*Rice transplanting*



*Mustard*



*Potato*



*Cabbage*

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Dry weather would prevail over Arunachal Pradesh during next 24 hours and rain/thundershowers would occur at isolated places on 24<sup>th</sup> and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period. Fog would occur at a few places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
  - **Assam & Meghalaya, Arunachal Pradesh:**
    - In Assam, continue transplanting of *boro* rice of about 45 days old (5- 6 leave stage) seedlings. Maintain 6 cm

of standing water in the main fields of transplanted *boro* rice. Continue gap filling in *boro* rice after 10-15 days after transplanting.

- In Lower Brahmaputra Valley Zone of Assam, apply irrigation in wheat at CRI stage. Undertake sowing of sunflower.
- In Meghalaya, continue transplanting of *boro* rice. Gap filling with seedlings of similar age should be done within 7-10 days of transplanting. Apply irrigation to mustard / rapeseed at flowering stage and cole crops. Also prepare basin around plants of khasi mandarin followed by mulching with local grasses and apply irrigation at 15-20 days interval to avoid moisture stress.
- In North Bank Plain Zone, Barak Valley Zone and Upper Brahmaputra Valley Zone of Assam, due to foggy conditions, blight disease may become severe in potato and tomato. Spray Mancozeb 75 WP @ 2g/litre or Ridomil MZ-27 (64% Mancozeb + 8% Metalaxyl) @ 2g/litre followed by Dithane M-45 @ 2.5 g in 1 litre of water for control. Also spray Dithane Z-78 @ 25 g in 10 litre of water against late blight in tomato.
- Due to foggy weather there is chance of infestation of saw fly in rapeseed / mustard in Assam. Spray Malathion 50 EC @ 2 ml/ litre of water or Dimethoate 30 EC or Chloropyriphos @ 0.5 litre / ha for control.
- In Hill Zone and Lower Brahmaputra Valley Zone of Assam, due to foggy weather, there is chance of late blight in tomato. Apply Ridomil MZ-72 @ 2 g/ litre and Indofil M-45 @ 2.5 g / litre or Dithane Z-78 @ 25 g in 10 litres of water to prevent the disease.
- Due to foggy weather condition, there is chance of late & early blight disease in potato in Meghalaya. Spray Mancozeb 75% WP @ 1.5- 2.0 kg/ha or Copper Oxy Chloride 50% WP @ 2.5 kg/ha or Chlorothalonil 75% WP @ 1.25 kg/ha.
- **Nagaland, Manipur, Mizoram and Tripura:**
  - In Mizoram, apply irrigation to mustard, toria, banana, brinjal, early cole crops, pea and tomato.
  - In Manipur, continue sowing of winter rice under irrigation.
  - In Nagaland, apply light irrigation in toria and pea. Apply mulching to vegetables and cole crops.
  - In Mild Tropical Plain Zone of Tripura, apply light irrigation on every alternate day in cole crops, mustard and lentil. Mulching is essential after irrigation to conserve moisture. Continue land preparation for transplanting of *boro* rice.
  - In Tripura, due to the prevailing foggy condition there may be infestation of early blight in potato. Apply Cymoxanil+ Mancozeb or Metalaxyl+ Mancozeb @ 1.5 g per litre of water for control of early blight. Due to cloudy and humid weather there is chance of attack of leaf blight in maize. Spray Zineb @ 3g per litre of water to manage the attack.
  - In Nagaland, humid and foggy weather is favourable for occurrence of Pseudostem Weevil in banana. Remove the dried and diseased leaves and kill the weevil.
  - In Mizoram, due to foggy weather condition, there is chance of infestation of aphids in pea. For control, apply Imidachloprid @ 1.5 ml/litre of water.
  - Suitable varieties are given in Annexure II.
- **Animal Husbandry**
  - In Northeastern States, provide artificial heating through lighting of electric bulb to protect poultry birds (upto 25 days old) from low temperature. Cover poultry and pig house with gunny bags/ polythene sheet to prevent the animal from cool night. During this period vaccinate poultry birds against *Ranikhet* disease.
  - In Barak Valley Zone of Assam, prevailing cold weather is favourable for attack of pneumonia in newly born chicks. Special care must be taken against pneumonia.
- **Fishery**

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

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



*Sugarcane*



*Wheat*



*Rice transplanting*



*Onion*

- **Realised Rainfall:** Rainfall occurred in North, Middle and South Andaman districts of Andaman & Nicobar Islands. Weather remained dry over rest of the region.

- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Bihar during next 24 hours; over Andaman & Nicobar Islands during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over Sub-Himalayan West Bengal & Sikkim during next 24 hours and rain/thundershowers would occur at isolated places on 24<sup>th</sup> and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period.  
Fog would occur at a few places over Bihar, Sub-Himalayan West Bengal & Sikkim.
- **Weather Warning:** Cold day conditions would occur at isolated places over Odisha 23<sup>rd</sup> January.
- **Weather Outlook:** Rain/ thundershowers would occur at isolated places over East India.
- **Advisories:**
  - **West Bengal:**
    - In Old Alluvial and Terai Zone, complete transplanting of *boro* rice by end of this month. Cover the nursery bed with polythene or apply water in the nursery bed at night and drain water at morning to protect the seedlings from cold.
    - Due to high humidity and foggy weather, there are chances of attack of aphids and diamond back moth in vegetables during its fruiting stage in Hill Zone. To control aphids, apply Imidacloprid @ 1ml/4 litres of water and for control of diamond back moth, apply Lamda Cyhalothrin @ 10 ml/15 litres of water.
    - In Coastal Saline Zone of West Bengal, continue transplanting of *boro* rice and sowing of sunflower. Remove morning dew by stirring the seedlings of *boro* rice with bamboo stick or rope.
    - Due to low temperature and foggy weather condition, rust disease may become a major problem in wheat at vegetative stage in Laterite and Red Soil Zone. To control the disease, spray Zineb @ 0.2%.
    - In Old Alluvial Zone and Terai Zone, due to low temperature and foggy weather, there is chance of attack of late blight in potato. For control, spray Mancozeb @ 2 g /litre of water and Blitox @ 4 g/litre of water alternately at 7-10 days interval by completely wetting the leaves.
    - In New Alluvial Zone, Laterite and Red Soil Zone due to prevailing foggy weather condition, attack of aphids in mustard and early blight in potato may be found. For control of aphids, apply Imidacloprid 17.8 SL @ 3 ml /10 litres of water or Quinalphos 25 EC @ 2 ml/ litres of water and for early blight, apply Mancozeb @ 2.5g/ litre of water.
  - **Andaman and Nicobar Islands:**
    - In North and Middle Andaman, South Andaman, undertake intercultural operations like weeding and earthing up in vegetable crops.
  - **Odisha:**
    - As cold wave conditions would occur at isolated places over Odisha on 23<sup>rd</sup> January, apply light and frequent irrigation in standing crops to protect the crops from cold injury.
    - In Western Undulating Zone, undertake field preparation for planting of sugarcane. Continue nursery sowing of summer rice.
    - In East and South Eastern Coastal Plain Zone, continue nursery sowing of rice and continue transplanting of onion. Continue sowing of sunflower and groundnut.
    - In East and South Eastern Coastal Plain Zone of Odisha, cloudy weather may favour infestation of aphids in potato and pulses. Spray Dimethoate @ 400 ml or Imidachloprid @ 50 ml in 200 litres of water per acre.
    - In East and South Eastern Coastal Plain Zone of Odisha, cold weather may aggravate the infestation of downey mildew in mustard. To control, spray Redomil-MZ @ 2 g in 1 litre of water. Also cold and cloudy weather favours the infestation of powdery mildew and aphids in green gram, black gram and pea. To control powdery mildew, spray Sulfex WP @ 1 kg in 200 litres of water per acre and to control aphids, spray Imidacloprid @ 50 ml in 200 litre water per acre.
    - In North Eastern Coastal Plain Zone of Odisha, rise in temperature will favour the growth of stem borer population in rice nurseries. To control it, spray Traizophos or Chloropyriphos @2ml/litre of water.
  - **Bihar:**
    - In South Bihar Alluvial Zone, as dry weather is prevailing, continue plucking of matured pods of pea and irrigate the crop.
    - In North West Alluvial Plain Zone of Bihar, continue transplanting of *rabi* onion. In view of low minimum temperature, prepare seedlings of early cucurbitaceous crops in small polythene bags in poly houses.
    - In North East Alluvial Zone of Bihar, to protect the nursery of *boro* rice from cold stress, apply irrigation during evening time. Continue field preparation for planting of spring sugarcane. Undertake field preparation for sowing of early cucurbits, melons, bitter gourd, ridge gourd and lady's finger. To protect from cold injury, apply light and frequent irrigation to mango/banana /papaya/guava orchards and cover tender nursery plants by polythene sheet or keep under thatches.
    - In North West Alluvial Plain Zone of Bihar and in North East Alluvial Zone of Bihar, low temperature and foggy weather is favourable for the attack of blight in potato and tomato crops; spray Indofil M-45; for better result mix sticker 1ml/liter of water. Due to foggy weather there is a chance of white rust in mustard/rapeseed, spray Chlorothalonil 75 WP @ 1 g/ litre of water.
    - In South Bihar Alluvial Zone, low temperature and foggy weather is favourable for the attack of blight in

potato; spray Mancozeb or Zineb or Copper Oxichloride @ 3 kg/ha in 1000 litres of water.

▪ **Jharkhand:**

- In Western Plateau Zone, continue nursery sowing of summer rice.
- In South Eastern Plateau Zone of Jharkhand, apply irrigation in wheat, arhar, mustard, field pea and potato. Continue nursery sowing of summer rice.
- In Central & North Eastern Plateau Zone of Jharkhand, continue land preparation for sowing of vegetables like long gourd, round gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon. Continue nursery sowing of summer rice. Continue transplanting of onion.
- In Jharkhand, low temperature and foggy weather is favourable for the attack of early and late blight disease in early planted potato crop; spray Krilaksil or Ridomil MZ @ 1.5 g per litre of water to control the disease.
- In Central & North Eastern Plateau Zone of Jharkhand, cool and dry weather is favourable for incidence of powdery mildew disease in pea. To control it, spray Kairathen @ 1 ml or Sulfex @ 3 ml per litre of water.
- In South Eastern Plateau Zone of Jharkhand, cool and humid weather in the morning and later on clear sunny weather is favourable for the attack of aphids in mustard/toria, spray Thiamexoxam 25 % WG @ 3-4 g or Rogar (Dimethoate) @ 2 ml or Monochrotophos @ 1 ml per litre of water. Also decreased sunshine hours with high humidity is congenial for the attack of diamond back moth, aphids and thrips in cole crops and tomato, spray Dimethoate (30%) @ 1 ml per litres of water to control the attack.
- Suitable varieties are given in Annexure II.

• **Animal Husbandry**

- In Bihar and Jharkhand 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 cattle.
- In North West Alluvial Plain Zone of Bihar, low temperature condition may adversely affect the milk production and performance of domestic animals. Farmers are advised to give protein enriched diet to the animals. Do not keep the animal in the open during night hours.

• **Poultry**

- In North East Alluvial Zone of Bihar, provide warmth through lighting of electric bulbs and cover poultry house with gunny bags/ polythene sheets to protect the birds from cold.

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



*Sugarcane*



*Wheat*



*Mustard*



*Onion*

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over East Madhya Pradesh during next 24 hours; over West Madhya Pradesh during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period.  
Fog would occur at a few places over north Madhya Pradesh.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/ thundershowers would occur at a few places over Central India.
- **Advisories:**
  - **Madhya Pradesh:**
    - Continue transplanting of medium and late sown cauliflower, cabbage, carrot, radish and onion in main fields in Kymore Plateau and Satpura Hill Zone.
    - Continue transplanting of onion, tomato, brinjal, chilli, cabbage and cauliflower in Malwa Plateau Zone.
    - Undertake picking up of matured vegetables like pea, tomato, brinjal, chilli etc. in Vindya Plateau Zone in clear weather.
    - Undertake nursery preparation for summer tomato and transplanting of onion in Grid Zone.
    - Due to foggy weather, there are chances of leaf curl disease in brinjal, chilli and papaya in Bundelkhand Zone, spray Methyl demeton 25 E.C. @ 2.0 ml per litre of water.
    - Due to cloudy and foggy weather there are chances of leaf blight disease in mustard in Satpura Plateau Zone and Bundelkhand Zone, spray Dimethoate 30 E.C. @ 2.0 ml. per litre of water

▪ **Chhattisgarh:**

- As dry weather would prevail, continue digging of matured potato in Bastar Plateau Zone.
- Continue land preparation for transplanting of summer rice and sowing of cowpea and okra in Chhattisgarh Plain Zone and North Hill Zone. Also undertake intercultural operations in sugarcane and sowing of cucurbitaceous crops in polythene.
- Due to cloudy weather, there are chances of incidence of aphids in mustard in North Hill Zone of Chhattisgarh, for control, apply Carbaryl @ 2 kg/ha.
- Due to dry and partly cloudy weather, there are chances of attack of powdery mildew in pea in North Hill Zone and Plain Zone of Chhattisgarh, spray Sulfex @ 3 g /litre of water.
- **Animal Husbandry**
- Keep animals indoors in Madhya Pradesh to protect from cold. Increase light duration in poultry farms.

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



*Wheat*

*Sugarcane*

*Mustard*

*Cabbage*

- **Realised Rainfall:** Weather remained mainly dry over the region.
- **Weather Forecast:** Rain/snow would occur at a few places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Haryana & Delhi, East Rajasthan and Uttar Pradesh during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period. Fog would occur at a few places over Punjab, Haryana & Delhi, Uttar Pradesh and north Rajasthan. Fall in night temperatures by 2-4°C over plains of northwest India from tomorrow onwards.
- **Weather Warning:** Cold day conditions would occur at a few places on 23<sup>rd</sup> and at isolated places on 24<sup>th</sup> January over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh.
- **Weather Outlook:** Rain/snowfall would occur at isolated places over western Himalayan region. Rain/thundershowers would occur at isolated places over plains of Northwest India.
- **Advisories:**
  - As cold day conditions would occur at a few/ isolated places over Punjab, Haryana, Chandigarh, Delhi and West Uttar Pradesh on 23<sup>rd</sup> and 24<sup>th</sup> January, apply light and frequent irrigation in standing crops and arrange for smoking around the crop fields during night hours to protect the crops from cold injury.
  - **Jammu & Kashmir:**
    - In Sub Tropical and Intermediate Zone of Jammu & Kashmir, due to cold and humid weather there may be attack of termite in wheat crop, to control apply Chlorpyrifos 20 EC @ 4 litre/ha.
    - Continue mulching in knol Khol, cabbage and root crops in Valley Temperate Zone of Jammu & Kashmir to protect the crops from frost injury.
    - In Intermediate Zone and Sub-tropical Zone of Jammu & Kashmir, due to cold and humid weather, there are chances of incidence of loose smut in wheat. To control, rogue out the affected plants.
  - **Himachal Pradesh:**
    - In Low and mid-hill areas of Sub-Montane and Low Hills Sub-Humid Tropical Zone, continue transplanting of onion.
    - In Mid Hills Sub-Humid Zone, continue transplanting of late season cauliflower (Pusa-snowball) and cabbage and planting of onion at a distance of 15x10cm. Complete sowing of pea, radish, turnip, methi and spinach.
    - Under prevailing low temperature and cloudy weather condition, there are chances of attack of aphids in vegetables in Sub-Montane and Low Hills Sub-Humid Tropical Zone. Spray Methyl Demeton (Metasystox) @10 ml/10 litres of water on a non rainy day.
    - Under prevailing low temperature and cloudy weather condition, there are chances of occurrence of yellow rust in wheat in Sub-Montane and Low Hills Sub-Humid Tropical Zone. For control, spray Tebuconazole 25 EC or Bayletan 25 WP @ 30ml or 30 g per 30 litres of water per kanal on a non rainy day and repeat the spray at 15 days interval. Downy mildew is also expected in cruciferous vegetables. For control, spray Redomil M-Z @ 25 g per litres of water on a non rainy day and repeat at 15 days interval.
    - Under prevailing low temperature and cloudy weather condition, there are chances of attack of aphids in sarson,



gobhi-sarson and cole crops viz. cabbage and cauliflower in Sub-Montane and Low Hills Sub-Humid Tropical Zone. Spray Malathion 50 EC @ 1 ml per litre of water on a non rainy day and repeat at 15 days interval.

- Under low temperature condition, there are chances of incidence of collar rot in apple in Mild Hills Sub Humid Zone. For control, spray Ridomil @ 75 g per 20 litres of water or Bavistin @ 15-20g per 20 litres on a non rainy day.

- **Uttarakhand:**

- Continue sowing of sunflower after the harvesting of ratoon sugarcane in Bhabar and Tarai Zone of Uttarakhand.
- In Hill Zone, due to prevailing foggy weather condition, there are chances of attack of Mau in toria. For control, spray Neem oil @ 5 ml per litre of water on a non rainy day and repeat at 10 days interval.
- Foggy weather is conducive for incidence of blight disease in potato in Sub humid Sub Tropic Zone of Uttarakhand. For control, spray Diethane M-45/Radomil @ 20-25 g per 10 litre of water on a non rainy day.

- **Punjab, Haryana and Delhi:**

- In Eastern Zone of Haryana, provide polythene sheet/Sarkanda/Kahi/ rice straw to protect the plants from cold/frost injury. Dwarf vegetable varieties can be protected from frost injury by covering with 100 gauge thick white plastic bags of 35 x 25 cm size.
- In Undulating Plain Zone of Punjab, apply light irrigation and cover the newly planted plants with thatches for protection from cold and apply light irrigation in mustard in the evening to protect from cold/frost injury. Complete sowing of late sown wheat and transplanting of onion.
- In Western Semi-arid Zone of Delhi, undertake transplanting of mature seedlings of tomato, cauliflower, cabbage, knolkhol and broccoli crop in the raised bed.
- In Western Zone of Haryana, continue transplanting of onion, mature seedlings of tomato, cauliflower and cabbage. Apply light and frequent irrigation to vegetables and young fruit plants to protect from cold and cover the young fruit plants with Bhusa /thatch to protect from cold weather.
- Due to foggy weather, constant monitoring of aphids in mustard is advised in Western Semi-Arid Zone of Delhi, if the attack reaches above ETL, spray Dimethoate 30 EC or Quinalphos 25 EC @ 2.0 ml\ litre of water.
- Due to foggy weather, there is chance of incidence of late blight disease on potato and tomato in Western Zone and Undulating Plain Zone of Punjab. To control spray Indofil-M-45/Kavach/Antracol @ 500-700 g/acre or Blitox @ 750-1000 g/acre using 250-350 litres of water/acre at weekly interval.
- In Punjab, due to foggy weather, there is chance of incidence of yellow rust in wheat in the form of yellow powder/stripes on the leaves. The susceptible varieties are PBW-343, PBW-502, PBW-550, HPW-184, HPW-42, HS-240, HS-295, HS-420, UP-2328 and WL-711. Farmers are advised to monitor the crop and spray the fungicides Tilt (Propiconazole) 25 EC/folicure (Tebuconazole) 25 EC/Bayletan 25 WP @ 0.1% i.e. 30 ml or 30 g per 30 litres of water per kanal with the appearance of the symptoms and repeat the spray after 15 days interval.
- Due to foggy weather, there is chance of aphids in mustard/rapeseed in Western plain Zone of Punjab; spray 40 g Actara 25 WG or 400 ml of Metasystox 25 EC or Rogor 30 EC or Ekalux 25 EC/Malathion 50 EC or 600 ml Dursban/Coroban 20 EC in 80-125 litres of water/acre.

- **Uttar Pradesh:**

- Continue nursery sowing of tomato and chilli and transplanting of onion in Central plain Zone and continue sowing of sunflower in Western Plain Zone.
- Undertake land preparation for planting summer sugarcane and transplanting of onion (Pusa red) in Eastern Plain Zone. Undertake second top dressing of urea in wheat after application of light irrigation. Also apply irrigation in potato and vegetables. Undertake harvesting of mid-duration varieties of cabbage.
- Undertake top dressing of remaining half dose of nitrogen and urea in wheat in Bundelkhand Zone. For control of weeds in wheat, apply Sulphuron Methyl 5% WG @ 40 g in 800 litres of water per hectare. Also undertake intercultural operations like weeding and hoeing in gram, pea, rajma, masoor crops.
- Continue harvesting of matured toria in Central Plain Zone and of potato in Eastern Plain Zone.
- Foggy weather is conducive for the incidence of blight disease in potato in Central Plain Zone and Eastern Plain Zone. For control, spray Diethane M-45 @ 2.5 g or Mancozeb or Blitox 2.2 % @ 2 g per litre of water.
- Under low temperature and foggy condition, there are chances of incidence blight disease in gram in Central Plain Zone. For control, spray Zinc Manganese Carbamate @ 2 kg per 800 litres of water at 10 days interval. Due to foggy weather condition, there is chance of blight disease in tomato, aphids in pea, for control of blight, spray Mancozeb 75 WP @ 2g per litre or Ridomil MZ-27 @ 2 g per litre of water followed by Dithane M-45 @ 2.5 g in 1 litre of water; for control of aphid, apply Imidacloprid @ 1.5 ml/litre of water. Due to cloudy and foggy weather condition, there is chance of infestation of aphids in mustard. For control, spray Dimethoate 30 EC or Methyl-O-Demeton 25 EC or Chloropyrifos 20 EC @ 1 litre in 700-800 litres of water/ha.
- Under foggy weather condition, there are chances of incidence of *Alternaria* blight in mustard and late blight in potato in North Eastern Plain Zone. Spray Quinalphos @ 1g or Ridomil MZ @ 2 g/litre of water for control of *Alternaria* blight in mustard and for late blight in potato, spray Ridomil MZ @ 2g+ Coper Oxichloride @ 1g per litre of water.

▪ **Rajasthan:**

- Clear night sky and low night temperature may cause frost damage in standing crops. Arrange for smoke around the field after midnight or apply light and frequent irrigation to protect the crop from frost injury. Alternatively, spray a solution of Thiourea 0.1 % or Sulphuric acid 0.1%.
- In Arid Western Plain Zone of Rajasthan (Bikaner), provide the 3<sup>rd</sup> irrigation to wheat crops of 55 days after sowing on late jointing stages and also top dressing of remaining dose of urea along with 2<sup>nd</sup> irrigation in barley 65-70 days after sowing.
- In Semi Arid Eastern Plain Zone of Rajasthan, undertake land preparation for sowing of early cucurbits like muskmelon, watermelon, ridge gourds, bitter gourds, round gourd etc.
- In Southern Humid Plain Zone of Rajasthan, apply second irrigation in wheat at tillering stage with remaining 1/3<sup>rd</sup> dose of nitrogen through urea and 30% of N dose as top dressing in maize.
- In Semi Arid Eastern Plain Zone of Rajasthan, due to low temperature and humidity, there are chances of attack of termite in standing wheat, gram and barley. To control, apply Chlorpyrifos 20 EC @ 4 litres per hectare with irrigation water.
- Due to low temperature, there may be attack of pod borer in gram in Southern Humid Plain Zone of Rajasthan. Monitor the crops and if pest population reaches above ETL level, apply Acephate 75 SP @ 500 g /ha.
- In Flood Prone Eastern Plain Zone, under prevailing low temperature condition, there may be attack of pod borer in gram. To control, apply Malathion 5% or Methyl Parathion 2% @ 20-25 kg/ha.
- Suitable varieties are given in Annexure II.

• **Floriculture**

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

• **Apiculture**

- In view of prevailing low temperature, give winter packing immediately to bee colonies in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. Check the colonies for nectar and give artificial food to honey bees as there is scarcity of flowers during these days. Keep colonies in sun on clear day.

• **Animal Husbandry:**

- Due to prevailing low temperature in Punjab, Haryana & Delhi, Rajasthan and Uttar Pradesh, keep cattle in cowsheds to protect them from cold. Also give 40-50g mineral mixture with the daily feed. Also make arrangements in poultry houses for protection of birds from cold.

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



*Banana*

*Sugarcane*

*Sorghum*

*Mango*

- **Realised Rainfall:** Weather remained dry over Maharashtra and Gujarat region and mainly dry over Saurashtra and Kutch region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Konkan & Goa and Madhya Maharashtra during next 24 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
  - **Maharashtra:**
    - In Konkan, as mainly dry weather is likely to prevail, apply irrigation, fertilizers and undertake intercultural operations in vegetable crops and mango and cashew orchards. Undertake intercultural operation and apply irrigation to summer groundnut at 10-12 days interval. Complete transplanting of seedlings of *rabi* rice and finger millet. Maintain water level upto 5 cm in already transplanted rice and finger millet fields.
    - In Madhya Maharashtra, apply light irrigation to vegetables, sugarcane, safflower, *rabi* jowar, wheat, gram and pomegranate orchards. Complete preparatory tillage and undertake planting of *suru* sugarcane. Continue intercultural operations like weeding and apply fertilizers in sugarcane and vegetables.
    - In Marathwada, as dry weather prevailed during last week and dry weather is likely to prevail during next 5 days, apply light irrigation in gram (pod development stage), wheat (tillering stage), jowar and vegetables. Apply irrigation to sugarcane by drip irrigation or by alternate furrow method due to water stress condition.

Continue intercultural operations in vegetables and sugarcane. Complete preparatory tillage and continue planting of *suru* sugarcane. Continue harvesting of already matured red gram.

- In Vidarbha, apply light irrigation to vegetables, gram and wheat. Continue transplanting of 30 -35 days old summer rice seedlings. Maintain 2-3 cm water level in transplanted rice field. Complete harvesting of already matured red gram. As day temperature is rising, undertake preparatory tillage for the sowing of summer groundnut in Central Vidarbha zone.
- Due to cloudy weather in south Konkan there may be attack of leaf eating beetles and leaf miners in watermelon, spray 50 % Malathion @ 20 ml for control of leaf eating beetles and Dimethoate @ 10 ml per 10 litres of water against leaf miners.
- Prevailing cloudy weather in Marathwada region is congenial for sap sucking pest in vegetables, spray Imidacloprid @ 3 g per 10 litres water.
- Due to cold and humid weather in Nasik region there may be incidence of powdery mildew in grapes, spray Hexaconazol 5 EC @ 1 ml plus potassium bicarbonate at @ 5 g per litre of water.

▪ **Gujarat:**

- Undertake land preparation for sowing of *summer* crops (groundnut, moong and pearl millet) in South Gujarat Heavy Rainfall Zone. Apply irrigation in Indian bean, castor, gram and onion (bulb formation/development stage). Provide irrigation to banana orchards at 10 to 12 days interval. Harvest matured spikes of castor.
- In North Gujarat Zone and North West Zone, carry out hand weeding and intercultural operations in wheat.
- Carry out weeding and intercultural operations in vegetable crops (brinjal, chilli, tomato and cabbage) in North West Zone. Apply irrigation in vegetable crops.
- Apply light irrigation in mustard (flowering/ pod formation stage), castor (spike development stage) and fruit crops in Bhal and Coastal Zone of Gujarat.
- In North Saurashtra Zone, apply irrigation in wheat (flowering/milk stage). Keep inputs ready for summer sowing (sesame, groundnut and green gram).
- Due to partly cloudy weather, there are chances of incidence of *alternaria* blight in cumin in North West Zone; spray Hexaconazole @ 15 ml or Mancozeb @ 25 g/10 litres of water.
- Due to high humidity and low temperature condition, there are chances of outbreak of blight disease in potato in North Gujarat Zone, spray Mancozeb 0.25% @ 30 g in 10 litres of water for early blight and spray Metalaxil MZ (Ridomil gold) @ 20 g in 10 litres of water for late blight control.
- Suitable varieties are given in Annexure II.

• **Animal Husbandry**

- Provide ad lib warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress in Gujarat.

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

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

Sub-Divisions	07.01.15		14.01.15		21.01.15	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshin Kannada	1.6	215	0.0	-100	0.0	-100
Udupi	0.6	500	0.0	-100	0.0	-100
Uttar Kannada	1.8	820	0.0	-100	0.0	-100
<b>N I Karnataka</b>						
Bagalkote	0.3	186	0.0	-100	0.0	-100
Belgaum	0.5	389	0.0	-100	0.0	-100
Bidar	8.4	832	0.0	-100	0.0	-100
Bijapur	1.6	423	0.0	-100	0.0	-100
Dharwad	0.1	-95	0.0	-100	0.0	-100
Gadag	0.2	20	0.0	-100	0.0	-100
Gulbarga	5.6	5484	0.0	-100	0.0	-100
Haveri	0.0	-100	0.0	-100	0.0	-100

Koppal	0.5	409	0.0	-100	0.0	-100
Raichur	2.8	2717	0.0	-100	0.0	-100
Yadgir	8.0	200	0.0	-100	0.0	-100
<b>S I Karnataka</b>						
Bangalore Rural	19.0	3707	0.0	-100	0.0	-100
Bangalore Urban	7.7	1191	0.0	-100	0.0	-100
Bellary	0.7	568	0.0	-100	0.0	-100
Chamarajnar	0.3	-18	0.0	-100	0.0	-100
Chichballapur	6.2	935	0.0	-100	0.0	-100
Chickmagalur	0.0	-90	0.0	-100	0.0	-100
Chitradurga	0.5	138	0.0	-100	0.0	-100
Davangere	0.8	650	0.0	-100	0.0	-100
Hassan	0.0	-100	0.0	-100	1.1	118
Kodagu	0.2	-78	0.0	-100	0.0	-100
Kolar	7.2	694	0.0	-100	0.0	-100
Mandya	0.0	-100	0.0	-100	0.0	-100
Mysore	0.0	-100	0.0	-100	2.4	120
Ramnagara	1.5	200	0.0	-100	0.0	-100
Shimoga	0.2	-7	0.0	-100	0.0	-100
Tumkur	0.6	56	0.0	-100	0.0	-100
<b>Kerala</b>						
Alappuzha	1.2	-74	0.9	-81	0.1	-96
Kannur	0.0	-100	0.0	-100	5.0	736
Ernakulam	2.4	-25	0.0	-100	0.0	-100
Idukki	0.2	-93	1.2	-63	0.0	-100
Kasaragod	0.9	200	0.0	-100	0.0	-100
Kollam	6.3	44	0.0	-100	0.3	-90
Kottayam	3.0	-16	5.2	106	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	5.3	-5	0.0	-100
Thiruvananthapuram	9.0	120	0.0	-100	0.0	-100
Thrissur	0.9	-43	0.0	-100	0.0	-100
Wynad	0.0	-100	0.0	-100	0.1	-93
<b>Tamil Nadu</b>						
Ariyalur	0.5	-93	0.0	-100	0.0	-100
Chennai	10.8	151	0.0	-100	0.0	-100
Coimbatore	0.0	-100	0.0	-100	0.0	-100
Cuddalore	6.9	-19	0.0	-100	0.0	-100
Dharmapuri	25.5	722	0.0	-100	0.0	-100
Dindigul	32.6	493	0.0	-100	0.0	-100
Erode	1.2	-9	0.0	-100	0.0	-100
Kanchipuram	0.7	-79	0.0	-100	0.0	-100
Kanyakumari	3.4	-9	5.0	0	0.0	-100
Karikal	0.7	-96	0.0	-100	9.7	-19
Karur	18.2	691	0.0	-100	0.0	-100
Krishnagiri	6.5	180	0.0	-100	0.0	-100
Madurai	11.9	133	0.0	-100	0.0	-100

Nagapattinam	10.2	-38	0.0	-100	0.0	-100
Namakkal	24.5	1065	0.0	-100	0.0	-100
Nilgiris	0.0	-100	0.0	-100	0.0	-100
Perambalur	20.3	516	0.0	-100	0.0	-100
Puducherry	19.0	84	0.0	-100	0.0	-100
Pudukottai	2.9	-53	0.0	-100	0.0	-100
Ramanathapuram	1.0	-91	0.0	-100	0.0	-99
Salem	17.5	662	0.0	-100	0.0	-100
Sivaganga	17.1	216	0.0	-100	0.0	-100
Thanjavur	0.8	-88	0.0	-100	0.0	-100
Theni	4.3	2	0.0	-100	0.0	-100
Tirunelveli	4.2	-53	0.0	-100	0.0	-100
Tirupur	9.2	254	0.0	-100	0.0	-100
Tiruvallur	0.7	-80	0.0	-100	0.0	-100
Tiruvannamalai	0.0	-100	0.0	-100	0.0	-100
Tiruvarur	0.0	-100	0.0	-100	0.0	-100
Toothukudi	2.4	-48	0.0	-100	0.0	-100
Trichy	9.1	121	0.0	-100	0.0	-100
Vellore	1.3	-31	0.0	-100	0.0	-100
Villupuram	2.0	-62	0.0	-100	0.0	-100
Virudhunagar	2.5	-36	0.0	-100	0.0	-100
<b>Andhra Pradesh</b>						
<b>Coastal Andhra Pradesh</b>						
East Godavari	0.1	-97	0.0	-100	0.0	-100
Guntur	1.3	-34	0.0	-100	0.0	-100
Krishna	5.9	324	0.0	-100	0.0	-100
Nellore	0.3	-89	0.0	-100	0.3	-93
Prakasam	0.6	-75	0.0	-100	0.0	-100
Sirkakulam	6.5	102	0.0	-100	0.0	-100
Visakhapatnam	1.4	-59	0.0	-100	0.0	-100
Vizianagram	2.4	-29	0.0	-100	0.0	-100
West Godavari	0.6	-68	0.0	-100	0.0	-100
<b>Rayalaseema</b>						
Anantapur	0.0	-100	0.0	-100	0.0	-100
Chittoor	0.8	-59	0.0	-100	0.0	-98
Cuddapah	3.6	507	0.0	-100	0.0	-100
Kurnool	1.3	1221	0.0	-100	0.0	-100
<b>Telangana</b>						
Adilabad	36.4	5974	0.0	-100	0.0	-100
Hyderabad	0.1	-75	0.0	-100	0.0	-100
Karimnagar	31.9	2027	0.0	-100	0.0	-100
Khammam	1.9	55	0.0	-100	0.0	-100
Mehabubnagar	3.9	3803	0.0	-100	0.0	-96
Medak	8.5	1595	0.0	-100	0.0	-100
Nalgonda	0.0	-100	0.0	-100	0.0	-100
Nizamabad	15.1	3664	0.0	-100	0.0	-100
Rangareddy	7.1	1664	0.0	-100	0.0	-100
Warangal	6.2	340	0.0	-100	0.0	-100
<b>Arunachal Pradesh</b>						

Anjaw	**	**	**	**	**	**
Changlang	18.5	61	0.0	-100	0.0	-100
Dibang Valley	**	**	**	**	**	**
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	23.3	483	0.0	-100	0.0	-100
Kurung Kumey	**	**	**	**	**	**
Lohit	13.3	194	0.0	-100	0.0	-100
Lower Dibang Valley	0.3	-98	0.0	-100	0.0	-100
Lower Subansari	**	**	**	**	**	**
Papumpara	6.0	18	0.0	-100	0.0	-100
Tawang	15.0	206	0.0	-100	0.0	-100
Tirap	0.8	-85	0.0	-100	0.0	-100
Upper Siang	17.8	51	0.0	-100	0.0	-100
Upper Subansari	0.1	-94	0.0	-100	0.0	-100
West Kameng	0.4	-92	0.0	-100	0.0	-100
West Siang	0.0	-100	0.0	-100	0.0	-100
<b>Assam&amp;Meghalaya</b>						
<b>Assam</b>						
Baksa	0.0	-100	0.0	-100	0.0	-100
Barpeta	9.5	375	0.0	-100	0.0	-100
Bongaigaon	14.1	370	0.0	-100	0.0	-100
Cachar	3.0	200	0.0	-100	0.0	-100
Chirang	6.8	127	0.0	-100	0.0	-100
Darrang	0.0	-100	0.0	-100	0.0	-100
Dhemaji	0.0	-100	0.0	-100	0.0	-100
Dhubri	29.7	2597	0.0	-100	0.0	-100
Dibrugarh	7.0	191	0.0	-100	0.0	-100
Goalpara	0.0	-100	0.0	-100	0.0	-100
Golghat	13.2	527	0.0	-100	0.0	-100
Hailakandi	1.0	-23	0.0	-100	0.0	-100
Jorhat	5.5	60	0.0	-100	0.0	-100
Kamrup(Rural)	13.5	744	0.0	-100	0.0	-100
Kamrup(Metro)	2.0	25	0.0	-100	0.0	-100
Karbi Anglong	19.0	805	0.0	-100	0.0	-100
Karimganj	4.0	67	0.0	-100	0.0	-100
Kokrajhar	10.6	524	0.0	-100	0.0	-100
Lakhimpur	4.0	32	0.0	-100	0.0	-100
Morigaon	0.6	-54	0.0	-100	0.0	-100
N.C.Hills	13.6	1136	0.0	-100	0.0	-100
Nowgong	2.7	57	0.0	-100	0.0	-100
Nalbari	11.5	64	0.0	-100	0.0	-100
Sonitpur	7.7	140	0.0	-100	0.0	-100
Sibsagar	15.3	993	0.0	-100	0.0	-100
Tinsukia	11.6	382	0.0	-100	0.0	-100
Udalgiri	5.2	247	0.0	-100	0.0	-100
<b>Meghalaya</b>						
East Garo Hills	1.2	-8	0.0	-100	0.0	-100
East Khasi Hills	14.5	1106	0.0	-100	0.0	-100
Jaintia Hills	0.0	-100	0.0	-100	0.0	-100

Ribhoi	16.4	200	0.0	-100	0.0	-100
South Garo Hills	0.0	-100	0.0	-100	0.0	-100
West Garo Hills	29.2	4071	0.0	-100	0.0	-100
West Khasi Hills	0.0	-100	0.0	-100	0.0	-100
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	14.4	3500	0.0	-100	0.0	-100
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	0.0	-100	0.0	-100	0.0	-100
Mamit	**	**	**	**	**	**
Saiha	6.0	2900	0.0	-100	0.0	-100
Serchhip	0.0	-100	0.0	-100	0.0	-100
<b>Manipur</b>						
Bishnupur	**	**	**	**	**	**
Chandel	0.0	-100	0.0	-100	0.0	-100
Churachandpur	**	**	**	**	**	**
Imphal east	26.0	1030	0.0	-100	0.0	-100
Imphal west	2.1	-34	0.0	-100	0.0	-100
Senapati	0.0	-100	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**
Thoubal	0.0	-100	0.0	-100	0.0	-100
Ukhrul	**	**	**	**	**	**
<b>Nagaland</b>						
Dimapur	24.2	200	0.0	-100	0.0	-100
Kephire	**	**	**	**	**	**
Kohima	20.0	900	0.0	-100	0.0	-100
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
<b>Tripura</b>						
Dhalai	0.0	-100	0.0	-100	0.0	-100
North Tripura	0.0	-100	0.0	-100	0.0	-100
South Tripura	0.1	-83	0.1	-95	0.1	-95
West Tripura	0.0	-100	0.0	-100	0.0	-100
<b>Himachal Pradesh</b>						
Bilaspur	19.2	140	2.4	-78	11.1	13
Chamba	1.3	-94	6.8	-70	9.0	-68
Hamirpur	17.5	36	4.0	-74	12.9	25
Kangra	5.3	-62	8.6	-58	12.9	-28
Kinnaur	17.4	-13	9.5	-56	4.0	-79
Kullu	25.0	74	6.8	-63	8.3	-51
Lahaul and Spiti	5.6	-75	4.3	-86	1.6	-94

Mandi	26.1	135	2.5	-80	13.7	-5
Shimla	18.3	68	2.4	-83	8.1	-48
Sirmaur	12.8	67	1.9	-86	7.8	-43
Solan	21.7	114	1.6	-89	7.5	-45
Una	7.0	-10	4.9	-57	9.3	4
<b>Punjab</b>						
Amritsar	0.3	-94	7.0	6	0.5	-92
Barnala	0.0	-100	0.0	-100	0.0	-100
Bhatinda	0.0	-100	10.0	285	0.0	-100
Faridkot	0.0	-100	2.0	-17	1.5	-48
Fatehgarh Saheb	4.3	27	0.5	-84	4.3	6
Ferozpur	0.0	-100	1.3	-63	0.6	-84
Gurdaspur	0.0	-100	6.1	-54	4.9	-56
Hoshiarpur	0.1	-98	2.4	-73	1.4	-80
Jalandhar	0.0	-100	5.3	7	0.0	-100
Kapurthala	0.4	-88	2.3	-54	0.8	-75
Ludhiana	2.5	-19	2.2	-54	2.5	-44
Mansa	0.0	-100	3.2	60	1.2	-45
Moga	0.0	-100	9.0	70	0.0	-100
Muktesar	0.0	-100	4.5	88	12.0	344
Nawashahar	4.5	-9	3.1	-61	5.3	-18
Patiala	2.8	-40	1.1	-68	4.3	3
Ropar	21.4	167	1.3	-83	4.3	-52
Sangrur	0.0	-100	3.1	-20	1.9	-41
Mohali	13.0	136	5.3	-11	8.3	52
TarnTaran	0.0	-100	3.2	68	0.3	-90
<b>Haryana,Chd,Delhi</b>						
<b>Haryana</b>						
Ambala	9.8	48	1.0	-88	1.9	-80
Bhiwani	0.2	-89	0.6	-78	0.0	-98
Chandigarh	16.7	188	1.1	-84	4.5	-53
Faridabad	6.8	134	0.0	-100	0.0	-100
Fatehabad	0.0	-100	1.3	-67	0.0	-100
Gurgaon	4.3	86	1.4	-18	0.0	-100
Hissar	0.3	-82	1.9	-25	0.5	-83
Jhajar	2.9	95	0.0	-100	1.4	-43
Jind	0.9	-85	0.3	-90	0.1	-95
Katihah	2.3	67	0.6	-85	1.3	-68
Karnal	5.7	32	0.2	-97	1.1	-84
Kurukshetra	3.6	-8	0.2	-97	0.4	-93
Mahendragarh	0.8	-48	0.5	-88	0.0	-100
Mewat	7.6	322	0.0	-100	0.0	-100
Palwal	5.4	238	0.0	-100	0.0	-100
Panchkkula	10.1	19	1.0	-81	2.5	-74
Panipat	4.2	4	0.0	-100	1.3	-71
Rewari	0.3	-78	0.0	-100	0.0	-100
Rohtak	3.2	39	0.0	-100	0.8	-82
Sirsa	0.0	-100	5.3	102	1.5	-21
Sonepat	7.4	237	1.3	-73	1.7	-65



Yamunanagar	9.6	56	0.3	-96	0.6	-95
<b>Delhi</b>						
Central Delhi	11.0	197	1.0	-69	0.0	-100
East Delhi	12.0	224	1.0	-69	0.0	-100
New Delhi	13.1	253	0.8	-77	0.0	-100
North Delhi	12.5	236	0.5	-84	1.3	-67
North East Delhi	3.0	-19	0.0	-100	0.0	-100
North West Delhi	6.3	71	0.0	-100	1.0	-74
South Delhi	10.6	185	0.9	-72	0.8	-79
South West Delhi	10.0	169	0.7	-80	1.2	-69
West Delhi	8.0	116	1.0	-69	1.0	-74
<b>Jammu &amp; Kashmir</b>						
Anantnag	0.0	-100	5.2	-64	2.0	-86
Badgam	0.0	-100	1.0	-87	0.0	-100
Bandipore	**	**	**	**	**	**
Baramula	3.0	-87	6.4	-63	0.0	-100
Doda	0.0	-100	6.0	-76	4.4	-82
Ganderbal	0.0	-100	11.6	25	0.0	-100
Jammu	0.0	-100	2.5	-81	0.8	-94
Kargil	**	**	**	**	**	**
Kathua	0.0	-100	6.2	-66	0.0	-100
Kistwar	**	**	**	**	**	**
Kulgam	0.0	-100	7.2	-50	0.9	-94
Kupwara	1.5	-91	8.2	-38	0.0	-100
Ladakh(Leh)	0.0	-100	1.4	-33	0.0	-100
Poonch	0.0	-100	**	**	**	**
Pulwama	0.0	-100	1.4	-81	0.0	-100
Rajouri	0.0	-100	1.0	-95	0.0	-100
Ramban	0.0	-100	3.5	-86	1.2	-95
Reasi	0.0	-100	4.2	-76	0.8	-96
Samba	0.0	-100	3.4	-74	1.8	-86
Shopian	0.0	-100	0.0	-100	0.0	-100
Srinagar	0.0	-100	1.8	-81	0.0	-100
Udhampur	0.0	-100	2.3	-87	1.4	-92
<b>East Madhya Pradesh</b>						
Anuppur	15.3	195	0.0	-100	0.0	-100
Balaghat	6.0	-1	0.0	-100	0.0	-100
Chhatarpur	21.3	824	0.0	-100	0.0	-100
Chindwara	26.5	530	0.0	-100	0.0	-100
Damoh	38.7	1234	0.0	-100	0.0	-100
Dindori	13.2	207	0.0	-100	0.0	-100
Jabalpur	36.3	1033	0.0	-100	0.0	-100
Katni	48.1	1452	0.0	-100	0.0	-100
Mandla	5.5	41	0.0	-100	0.0	-100
Narsingpur	39.0	2067	0.0	-100	0.0	-100
Panna	10.1	247	0.0	-100	0.0	-100
Rewa	39.6	2229	0.0	-100	0.0	-100
Sagar	34.2	1165	0.0	-100	0.0	-100
Satna	69.4	1775	0.0	-100	0.0	-100

Seoni	1.5	-56	0.0	-100	0.0	-100
Shahdol	8.0	158	0.0	-100	0.0	-100
Sidhi	38.0	1052	0.0	-100	0.0	-100
Singrauli	25.0	1686	0.0	-100	0.0	-100
Tikamgarh	22.5	582	0.0	-100	0.0	-100
Umaria	34.6	636	0.0	-100	0.0	-100
<b>West Madhya Pradesh</b>						
Agar	**	**	0.0	-100	0.0	-100
Alirajpur	0.0	-100	0.0	-100	0.0	-100
Asoknagar	20.6	1044	0.0	-100	0.0	-100
Badwani	5.9	1867	0.0	-100	0.0	-100
Betul	123.7	7634	0.0	-100	0.0	-100
Bhind	4.8	239	0.0	-100	1.5	-57
Bhopal	25.7	2470	0.0	-100	0.0	-100
Burhanpur	41.5	8193	0.0	-100	0.0	-100
Datia	17.2	1623	0.0	-100	0.0	-100
Dewas	70.6	4311	0.0	-100	0.0	-100
Dhar	10.4	1633	0.0	-100	0.0	-100
Guna	35.2	1574	0.0	-100	0.0	-100
Gwalior	2.9	19	0.0	-100	0.7	-86
Harda	29.1	1432	0.0	-100	0.0	-100
Hosangabad	30.5	1425	0.0	-100	0.0	-100
Indore	36.3	2923	0.0	-100	0.0	-100
Jhabua	1.6	33	0.0	-100	0.0	-100
Khandwa	42.1	3411	0.0	-100	0.0	-100
Khargone	20.7	1380	0.0	-100	0.0	-100
Mandsaur	15.3	1430	0.0	-100	0.0	-100
Morena	0.3	-88	0.0	-100	0.0	-100
Neemuch	8.3	421	0.0	-100	0.0	-100
Raisen	39.4	1308	0.0	-100	0.0	-100
Rajgarh	49.9	2672	0.0	-100	0.0	-100
Ratlam	29.1	1519	0.0	-100	0.0	-100
Sehore	42.2	4589	0.0	-100	0.0	-100
Shajapur	44.3	1670	0.0	-100	0.0	-100
Sheopur Kalani	0.8	-70	0.0	-100	0.0	-100
Shivpuri	2.5	92	0.0	-100	0.0	-100
Ujjain	33.6	2140	0.0	-100	0.0	-100
Vidisha	23.6	974	0.0	-100	0.0	-100
<b>Chhattisgarh</b>						
Bastar	4.7	213	0.0	-100	0.0	-100
Bijapur	37.0	18400	0.0	-100	0.0	-100
Bilaspur	20.6	610	0.0	-100	0.0	-100
Dantewara	**	**	0.0	-100	0.0	-100
Dhamtari	31.8	5200	0.0	-100	0.0	-100
Durg	20.8	1056	0.0	-100	0.0	-100
Janjgir	**	**	**	**	0.0	-100
Jashpurnagar	28.0	775	0.0	-100	0.0	-100
Kanker	**	**	**	**	**	**
Korba	6.0	216	0.0	-100	0.0	-100

Koriya	23.2	829	0.0	-100	0.0	-100
Kawardha	**	**	**	**	**	**
Mahasumund	2.0	186	0.0	-100	0.0	-100
Narayanpur	40.6	200	0.0	-100	0.0	-100
Raigarh	**	**	**	**	**	**
Raipur	14.5	1218	0.0	-100	0.0	-100
Rajandgaon	12.1	998	0.0	-100	0.0	-100
Surguja	4.1	17	0.0	-100	0.0	-100
<b>East Uttar Pradesh</b>						
Allahabad	37.2	3000	0.0	-100	0.0	-100
Ambedkar Nagar	16.0	662	0.0	-100	0.0	-100
Azamgarh	0.0	-100	0.0	-100	0.0	-100
Bahraich	46.2	1026	0.0	-100	0.0	-100
Ballia	2.7	91	0.0	-100	0.0	-100
Balrampur	48.5	2105	0.0	-100	0.0	-100
Banda	4.9	185	0.0	-100	0.0	-100
Barabanki	17.6	633	0.0	-100	0.0	-100
Basti	12.6	425	0.0	-100	0.0	-100
Chandauli	7.5	317	0.0	-100	0.0	-100
Deoria	8.5	325	0.0	-100	0.0	-100
Faizabad	17.0	530	0.0	-100	0.0	-100
Farrukhabad	5.0	175	0.0	-100	0.0	-100
Fatehpur	3.0	57	0.0	-100	0.0	-100
Gazipur	12.9	396	0.0	-100	0.0	-100
Gonda	20.6	1044	0.0	-100	0.0	-100
Gorakhpur	17.2	514	0.0	-100	0.0	-100
Hardoi	10.5	451	0.0	-100	0.0	-100
Jaunpur	9.7	306	0.0	-100	0.0	-100
Kannauj	3.5	75	0.0	-100	0.0	-100
Kanpur City	13.7	496	0.0	-100	0.0	-100
Kanpur Dehat	8.7	410	0.0	-100	0.0	-100
Kaushambi	13.8	822	0.0	-100	0.0	-100
Kheri	17.6	310	0.0	-100	0.0	-100
Kushi nagar	10.2	467	0.0	-100	0.0	-100
Lucknow	9.1	203	0.0	-100	0.0	-100
Maharajganj	14.5	458	0.0	-100	0.0	-100
Mau	6.0	131	0.0	-100	0.0	-100
Mirzapur	34.5	1817	0.0	-100	0.0	-100
Pratapgarh	28.3	1317	0.0	-100	0.0	-100
RaiBareilly	6.2	289	0.0	-100	0.0	-100
Sahuji Maharajnagar	14.7	1028	0.0	-100	0.0	-100
Sant Kabirnnagar	13.0	550	0.0	-100	0.0	-100
Sant Ravidas Nagar	16.0	789	0.0	-100	0.0	-100
Shrawasti	**	**	**	**	0.0	-100
Sidharthnagar	9.3	387	0.0	-100	0.0	-100
Sitapur	10.9	337	0.0	-100	0.0	-100
Sonbhadra	27.4	2183	0.0	-100	0.0	-100
Sultanpur	14.7	674	0.0	-100	0.0	-100
Unnao	10.3	503	0.0	-100	0.0	-100

Varanasi	18.3	769	0.0	-100	0.0	-100
<b>West Uttar Pradesh</b>						
Agra	3.4	34	0.0	-100	0.4	-89
Aligarh	14.0	637	0.0	-100	2.5	-35
Auraiya	1.5	15	0.0	-100	0.0	-100
Badaun	15.6	643	0.0	-100	1.2	-67
Baghpat	7.9	204	1.0	-68	0.5	-91
Bareilly	18.3	453	0.0	-100	2.3	-38
Bijnor	17.8	305	0.2	-98	2.5	-62
Bulandsahar	3.5	30	0.0	-100	1.0	-74
Etah	10.1	533	0.0	-100	1.0	-69
Etawah	0.3	-76	0.0	-100	0.0	-100
Firozabad	3.2	32	0.0	-100	2.7	-34
GBNagar	13.0	348	1.5	-64	1.5	-70
Ghaziabad	11.3	277	0.1	-98	1.7	-60
Hamirpur	8.3	658	0.0	-100	0.0	-100
Jalaun	17.4	990	0.0	-100	0.0	-100
Jhansi	21.5	1244	0.0	-100	0.0	-100
Jotiba Phule Nagar	0.7	-83	0.0	-100	4.0	-35
Kanshiramnagar	12.0	362	0.0	-100	2.5	-53
Lalitpur	19.7	883	0.0	-100	0.0	-100
Mahamaya Nagar	8.2	356	0.0	-100	0.7	-78
Mahoba	3.9	129	0.0	-100	0.0	-100
Mainpuri	2.0	-5	0.0	-100	0.0	-100
Mathura	1.0	-29	0.0	-100	0.0	-100
Meerut	13.6	386	0.4	-93	2.7	-56
Moradabad	18.9	601	0.0	-100	2.7	-51
Muzzaffarnagar	11.6	241	0.7	-87	3.1	-44
Pilibhit	13.9	223	0.0	-100	0.9	-81
Rampur	17.8	324	0.0	-100	2.7	-32
Saharanpur	11.0	134	0.0	-100	1.7	-73
Shahjahanpur	15.4	451	0.0	-100	0.0	-100
<b>Uttarakhand</b>						
Almora	29.8	173	0.0	-100	0.0	-100
Bageshwar	42.0	285	0.0	-100	0.0	-100
Chamoli	63.6	584	4.5	-56	3.1	-76
Champawat	67.5	777	0.0	-100	1.0	-85
Dehradun	15.8	123	0.2	-99	3.4	-68
Garhwal Pauri	22.0	168	0.0	-100	1.7	-83
Garhwal Tehri	37.6	323	0.6	-94	1.5	-84
Haridwar	17.8	279	0.0	-100	6.3	-9
Nainital	72.9	701	0.0	-100	0.9	-89
Pithorgarh	64.9	613	0.0	-100	0.7	-92
Rudraprayag	49.4	134	2.2	-86	2.6	-72
Udham Sing Nagar	24.5	390	0.0	-100	0.4	-92
Uttarkashi	16.3	38	4.2	-75	7.8	-55
<b>Bihar</b>						
Araria	13.0	1344	0.0	-100	0.0	-100
Arwal	4.4	18	0.0	-100	0.0	-100

Aurangabad	3.8	-6	0.0	-100	0.0	-100
Banka	27.8	2427	0.0	-100	0.0	-100
Begusarai	8.7	524	0.0	-100	0.0	-100
Bhabua	12.4	417	0.0	-100	0.0	-100
Bhagalpur	23.6	1869	0.0	-100	0.0	-100
Bhojpur	2.1	62	0.0	-100	0.0	-100
Buxar	**	**	**	**	**	**
Darbhanga	9.1	214	0.0	-100	0.0	-100
East Champaran	4.7	122	0.0	-100	0.0	-100
Gaya	12.7	694	0.0	-100	0.1	-99
Gopalganj	5.5	150	0.0	-100	0.0	-100
Jahanabad	4.9	73	0.0	-100	0.0	-100
Jamui	0.0	-100	0.0	-100	0.0	-100
Kathihar	44.0	1900	0.0	-100	0.0	-100
Khagadia	11.1	1747	0.0	-100	0.0	-100
Kishanganj	10.6	5200	0.0	-100	0.0	-100
Lakhisarai	2.7	48	0.0	-100	0.0	-100
Madhepura	12.1	709	0.0	-100	0.0	-100
Madhubani	25.6	967	0.0	-100	0.0	-100
Monghyar	8.4	367	0.0	-100	0.0	-100
Muzaffarpur	7.0	233	0.0	-100	0.0	-100
Nalanda	7.9	367	0.0	-100	0.0	-100
Nawada	0.0	-100	0.0	-100	0.0	-100
Patna	4.9	206	0.0	-100	0.0	-100
Purnea	8.4	1580	0.0	-100	0.0	-100
Rohtas	4.9	133	0.0	-100	0.0	-100
Saharsha	12.0	200	0.0	-100	0.0	-100
Samstipur	8.4	301	0.0	-100	0.0	-100
Saran	5.2	102	0.0	-100	0.0	-100
Sheikpura	2.6	100	0.0	-100	0.0	-100
Sheohar	14.8	771	0.0	-100	0.0	-100
Sitamarhi	4.7	176	0.0	-100	0.0	-100
Siwan	6.2	285	0.0	-100	0.0	-100
Supaul	12.2	483	0.0	-100	0.0	-100
Vaishali	5.7	146	0.0	-100	0.0	-100
West Champaran	6.4	119	0.0	-100	0.0	-100
<b>Jharkhand</b>						
Bokaro	8.7	384	0.0	-100	0.0	-100
Chatra	0.0	-100	0.0	-100	0.0	-100
Deoghar	6.6	555	0.0	-100	0.0	-100
Dhanbad	11.7	737	0.0	-100	0.0	-100
Dumka	0.0	-100	0.0	-100	0.0	-100
East Singbhum	6.4	276	0.0	-100	0.0	-100
Garhwa	0.0	-100	0.0	-100	0.0	-100
Giridih	7.4	291	0.0	-100	0.0	-100
Godda	0.0	-100	0.0	-100	0.0	-100
Gumla	0.0	-100	0.0	-100	0.0	-100
Hazaribagh	4.9	224	0.0	-100	0.0	-100
Jamtara	16.4	811	0.0	-100	0.0	-100

Khunti	0.0	-100	0.0	-100	0.0	-100
Koderna	2.3	35	0.0	-100	0.0	-100
Latehar	0.0	-100	0.0	-100	0.0	-100
Lohardagga	18.8	717	0.0	-100	0.0	-100
Pakur	13.0	900	0.0	-100	0.0	-100
Palamau	10.5	954	0.0	-100	0.0	-100
Ramgarh	9.8	1300	0.0	-100	0.0	-100
Ranchi	22.8	713	0.0	-100	0.0	-100
Sahebganj	2.0	100	0.0	-100	0.0	-100
Saraikela	6.4	256	0.0	-100	0.0	-100
Simdega	0.0	-100	0.0	-100	0.0	-100
West Singbhum	10.6	563	0.0	-100	0.0	-100
<b>East Rajasthan</b>						
Ajmer	0.0	-98	0.0	-100	0.0	-100
Alwar	0.1	-91	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	2.5	127	0.0	-100	0.0	-100
Bhilwara	0.0	-100	0.0	-100	0.0	-100
Bundi	0.3	-70	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	0.1	-89	0.0	-100	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	0.4	-84	0.0	-100
Karauli	0.0	-100	0.0	-100	0.0	-100
Kota	0.8	-15	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	0.1	-95	0.0	-100	0.0	-100
Udaipur	0.3	-64	0.0	-100	0.0	-100
<b>West Rajasthan</b>						
Barmer	0.0	-100	0.0	-100	0.3	233
Bikaner	0.0	-100	0.0	-100	0.0	-100
Churu	0.2	-80	0.5	-74	0.8	-47
Hanumangarh	0.0	-100	0.0	-100	2.1	4
Jaisalmer	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.1	-67
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	0.6	-57	0.9	15
<b>Gujarat Region</b>						
Ahmedabad	0.4	46	0.0	-100	0.0	-100

Anand	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100
Broach	1.2	491	0.0	-100	0.0	-100
DNH	0.0	-100	**	**	**	**
Dahod	1.4	175	0.0	-100	0.0	-100
Daman	0.0	-100	**	**	0.0	-100
Dangs	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	12.8	6300	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100
Narmada	3.5	3400	0.0	-100	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	0.0	-100	0.0	-100	0.0	-100
Surat	0.0	-100	0.0	-100	0.0	-100
Tapi	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100
<b>S K &amp; Diu region</b>						
Amreli	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.6	200
Jamnagar	0.0	-100	0.0	-100	0.4	200
Junagarh	0.0	-100	0.0	-100	0.1	-100
Kutch	0.0	-100	0.0	-100	0.8	746
Porbandar	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.1	-17	0.0	-100	0.0	-100
<b>Maharashtra &amp; Goa</b>						
<b>Konkan &amp; Goa</b>						
Mumbai City	0.0	-100	0.0	-100	0.0	-100
Mumbai Suburban	0.0	-100	0.0	-100	0.0	-100
North Goa	0.0	-100	0.0	-100	0.0	-100
Raigad	0.0	-100	0.0	-100	0.0	-100
Ratnagiri	7.5	200	0.0	-100	0.0	-100
Sindhudurg	0.0	-100	0.0	-100	0.0	-100
South Goa	6.9	2183	0.0	-100	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100
<b>Madhya Maharashtra</b>						
Ahmednagar	0.5	433	0.0	-100	0.0	-100
Dhule	**	**	**	**	**	**
Jalgaon	0.0	-100	0.0	-100	0.0	-100
Kolhapur	0.2	-33	0.0	-100	0.0	-100
Nandurbar	**	**	**	**	**	**
Nasik	0.9	200	0.0	-100	0.0	-100
Pune	0.0	-100	0.0	-100	0.0	-100
Sangli	8.6	8500	0.0	-100	0.0	-100
Satara	0.0	-100	0.0	-100	0.0	-100

Solapur	0.0	-100	0.0	-100	0.0	-100
<b>Marathwada</b>						
Aurangabad	7.7	200	0.0	-100	0.0	-100
Beed	5.2	200	0.0	-100	0.0	-100
Hingoli	20.0	2403	**	**	0.0	-100
Jalna	16.0	3893	0.0	-100	0.0	-100
Latur	4.7	492	0.0	-100	0.0	-100
Nanded	11.1	1489	0.0	-100	0.0	-100
Usmanabad	8.2	2638	0.0	-100	0.0	-100
Parbhani	8.3	1963	0.0	-100	0.0	-100
<b>Vidarbha</b>						
Akola	43.3	2995	0.0	-100	0.0	-100
Amraoti	50.0	2076	0.0	-100	0.0	-100
Bhandara	10.9	180	0.0	-100	0.0	-100
Buldhana	25.0	4891	0.0	-100	0.0	-100
Chandrapur	35.5	1874	0.0	-100	0.0	-100
Gadchiroli	28.3	2471	0.0	-100	0.0	-100
Gondia	15.3	428	0.0	-100	0.0	-100
Nagpur	7.8	144	0.0	-100	0.0	-100
Wardha	13.8	667	0.0	-100	0.0	-100
Washim	14.2	916	0.0	-100	0.0	-100
Yeotmal	22.3	3622	0.0	-100	0.0	-100
<b>Odisha</b>						
Angul	8.4	367	0.0	-100	0.0	-100
Balasore	32.3	1015	0.5	-74	0.0	-100
Bargarh	0.3	-74	0.0	-100	0.0	-100
Bhadrak	22.8	685	0.0	-100	0.0	-100
Bolangir	16.5	684	0.0	-100	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	18.9	330	0.0	-100	0.0	-100
Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	11.4	568	0.0	-100	0.0	-100
Gajapati	13.1	338	0.0	-100	0.0	-100
Ganjam	42.8	944	0.0	-100	0.0	-100
Jagatsingpur	37.6	916	0.0	-100	0.0	-100
Jajpur	16.3	225	0.0	-100	0.0	-100
Jharsuguda	13.2	371	0.0	-100	0.0	-100
Kalahandi	16.5	1963	0.0	-100	0.0	-100
Kandhamal	21.4	724	0.0	-100	0.0	-100
Kendrapara	44.2	1423	0.0	-100	0.0	-100
Keonjhar	11.7	351	0.0	-100	0.0	-100
Khurda	16.8	498	0.0	-100	0.0	-100
Koraput	3.7	115	0.0	-100	0.0	-100
Malkangiri	3.0	900	0.0	-100	0.0	-100
Mayurbhanj	21.6	1445	0.0	-100	0.0	-100
Nawapara	0.2	-89	0.0	-100	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	38.6	1187	0.0	-100	0.0	-100
Puri	66.3	860	0.0	-100	0.0	-100



Rayagada	6.0	142	0.0	-100	0.0	-100
Sambalpur	5.8	109	0.0	-100	0.0	-100
Sonepur	1.2	-35	0.0	-100	0.0	-100
Sundargarh	10.7	295	0.0	-100	0.0	-100
<b>West Bengal &amp; Andaman Nicobar Islands</b>						
<b>A &amp; N ISLAND</b>						
Nicobar	8.3	-72	84.3	197	16.1	15
North & Middle Andaman	0.0	-100	4.3	-69	83.6	2222
South Andaman	3.6	-73	33.9	145	59.4	1551
<b>GWB</b>						
Bankura	15.7	461	0.0	-100	0.0	-100
Birbhum	8.4	322	0.0	-100	0.0	-100
Burdwan	12.5	637	0.0	-100	0.0	-100
East Midnapore	10.5	208	0.0	-100	0.0	-100
Hooghly	8.7	181	0.0	-100	0.0	-100
Howrah	4.9	444	0.0	-100	0.0	-100
Kolkata	1.6	14	0.0	-100	0.0	-100
Murshidabad	1.0	11	0.0	-100	0.0	-100
Nadia	5.5	82	0.0	-100	0.0	-100
24 Pargana (N)	18.6	388	0.0	-100	0.0	-100
Purulia	24.4	1527	1.9	-36	0.0	-100
24 Pargana (S)	5.7	128	0.0	-100	0.0	-100
West Midnapore	10.3	346	0.0	-100	0.0	-100
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	17.0	1314	0.1	-97	0.0	-100
Darjeeling	3.6	-38	0.8	-91	0.0	-100
East Sikkim	3.0	-8	3.6	6	0.0	-100
Jalpaiguri	10.7	569	0.8	-54	0.0	-100
Malda	4.3	153	0.0	-100	0.0	-100
North Dinajpur	7.0	483	0.0	-100	0.0	-100
North Sikkim	6.9	-42	4.2	-57	0.0	-100
South Dinajpur	0.7	-58	0.0	-100	0.0	-100
South Sikkim	1.1	-68	0.3	-90	0.0	-100
West Sikkim	0.7	-94	4.0	-59	0.0	-100

### Legends

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

## **Annexure II**

### **List of varieties**

#### **Assam**

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

#### **Odisha**

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

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

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

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

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

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

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

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

**Sesame:** Vinayak, Kanak, Kalika, Prachi, Nirmala, Usha and Uma

#### **Bihar**

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

#### **Jharkhand:**

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

#### **Jammu & Kashmir**

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

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

#### **Uttarakhand**

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

**Onion:** VL-3.

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

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

#### **Himachal Pradesh**

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

**Late variety of Cauliflower:** broccoli

**Cauliflower:** Pusa-snowwall

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

**Turnip:** PTWG-1

**Carrot:** Pusa kesar

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

#### **East Uttar Pradesh**

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

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

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

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

#### **West Uttar Pradesh:**

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

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

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

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

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

#### **Rajasthan**

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

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

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

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

**Maharashtra**

**Madhya Maharashtra**

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

**Safflower:** Bhima or Phule Kusuma

**Marathwada**

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

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

**Vidarbha**

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