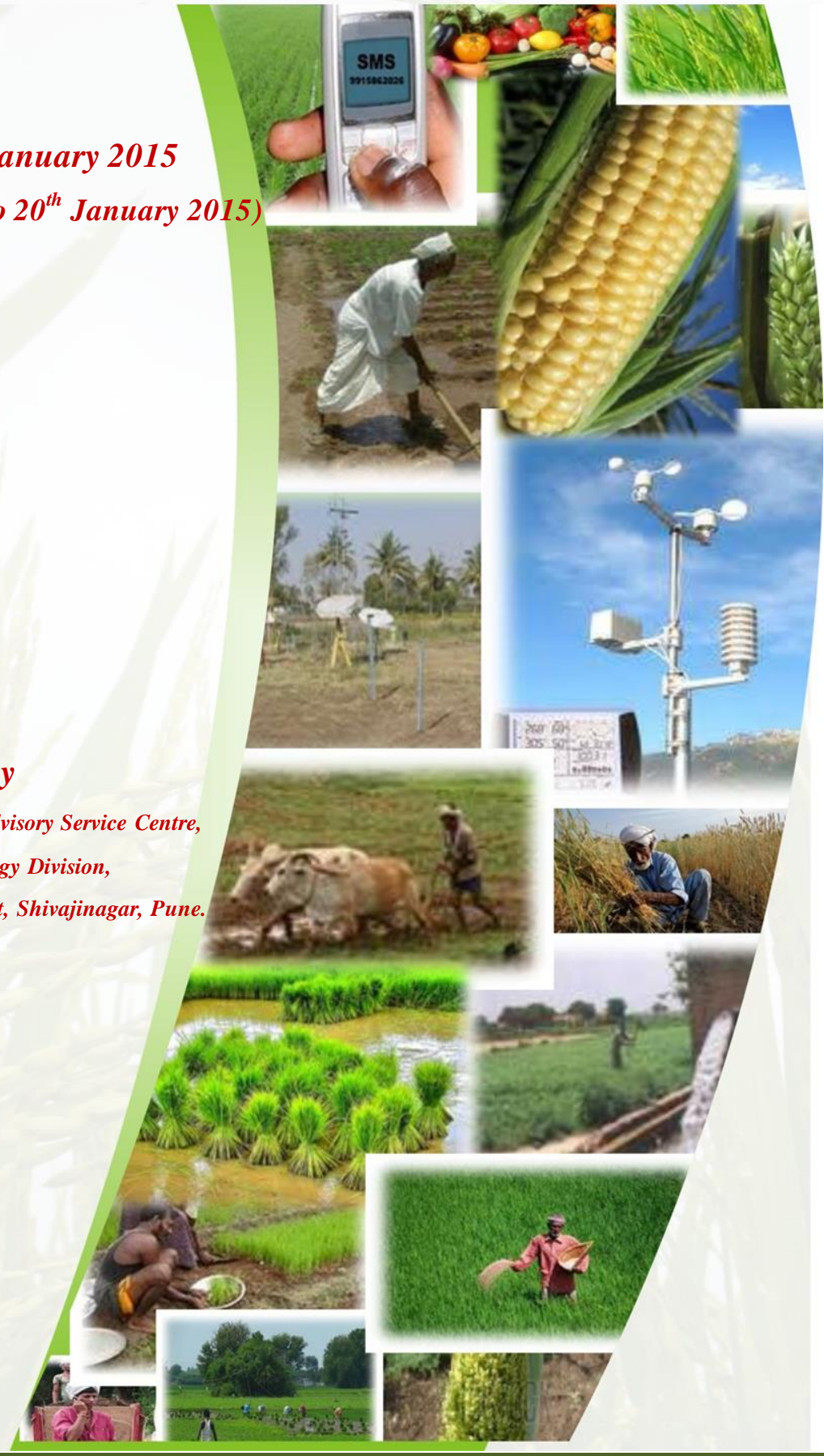


National Agromet Advisory Service Bulletin

Friday 16th January 2015
(For the period 16th to 20th January 2015)

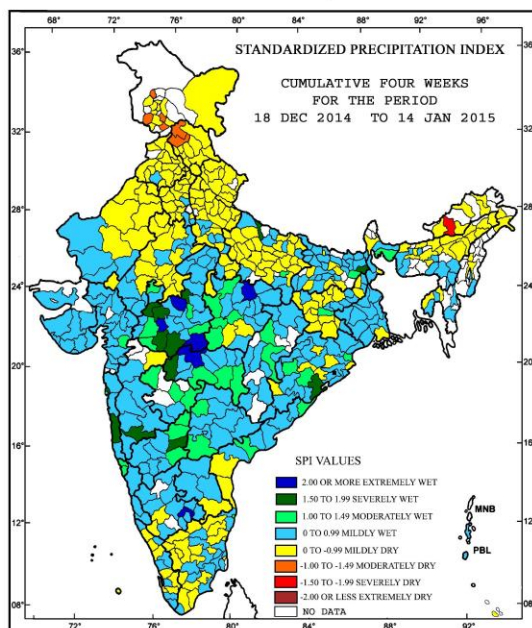


Issued by
National Agrometeorological Advisory Service Centre,
Agricultural Meteorology Division,
India Meteorological Department, Shivajinagar, Pune.



Standardised Precipitation Index
Four Weekly
for the Period 18th December 2014 to 14th January 2015

MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE

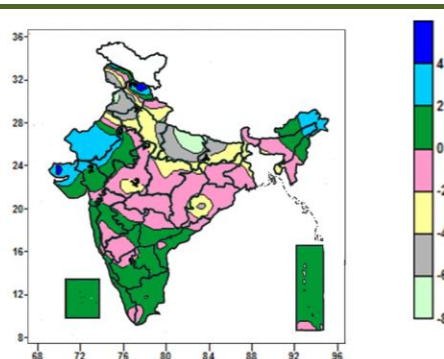
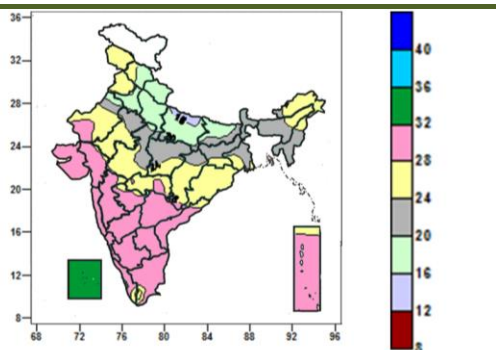


- Extremely/severely wet conditions in few districts of Madhya Pradesh; Ratnagiri, Mumbai Suburban, Sangli, Amravati and Buldhana districts of Maharashtra; Ganjam district of Orissa, Katihar district of Bihar; Bahraich district of Uttar Pradesh; Yadgir and Bangalore rural districts of Karnataka.
- Extremely/ moderately/ severely dry conditions experienced in Udhampur, Kupwara, Ramban and Rajouri districts of Jammu & Kashmir; Champa and Kangra districts of Himachal Pradesh; East Kameng district of Arunachal Pradesh.
- 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 14.01.2015

Actual Mean Maximum Temperature ($^{\circ}$ C) in India for the week ending 14.01.2015

Mean Maximum Temperature ($^{\circ}$ C) Anomaly in India for the week ending 14.01.2015



- 32 to 36 $^{\circ}$ C over Lakshadweep Islands.
- 28 to 32 $^{\circ}$ C over Saurashtra & Kutch, Konkan & Goa, Telangana, Karnataka, many parts of Gujarat region, Madhya Maharashtra, Marathwada, Andhra Pradesh, Kerala, Tamil Nadu, Andaman & Nicobar Islands, some parts of West Rajasthan, Vidarbha and Chhattisgarh.
- 20 to 28 $^{\circ}$ C over Punjab, West Bengal & Sikkim,

- 4 to 6 $^{\circ}$ C over some parts of Himachal Pradesh and Kutch.
- 2 to 4 $^{\circ}$ C over many parts of West Rajasthan, some parts of Himachal Pradesh, Arunachal Pradesh, Assam & Meghalaya, Saurashtra & Kutch and East Rajasthan.
- 0 to 2 $^{\circ}$ C over Nagaland, many parts of Gujarat, East Rajasthan, Konkan & Goa, Madhya Maharashtra, Coastal & South Interior Karnataka, Andhra Pradesh, Telangana,

Jharkhand, North East India, Odisha, Madhya Pradesh, many parts of Rajasthan, Chhattisgarh, Vidarbha, some parts of Himachal Pradesh, Bihar, Gujarat region, Madhya Maharashtra, Marathwada, Coastal Andhra Pradesh, Tamil Nadu, Kerala and Andaman & Nicobar Islands.

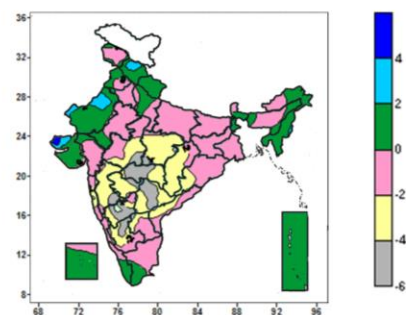
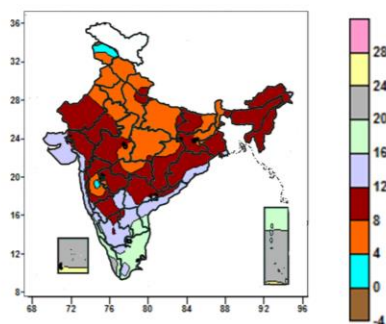
- 12 to 20°C over Uttarakhand, Haryana & Delhi, West Uttar Pradesh, many parts of Himachal Pradesh, East Uttar Pradesh and Bihar, some parts of East Rajasthan and West Madhya Pradesh.

Kerala, Tamil Nadu, Lakshadweep and Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Arunachal Pradesh, Assam & Meghalaya, Manipur and Marathwada.

- -4 to 0°C over Uttarakhand, Vidarbha, Sikkim, many parts of Mizoram, Tripura, Central India, Jharkhand, West Bengal, Odisha, North Interior Karnataka, some parts of Jammu & Kashmir, Himachal Pradesh, Haryana, Delhi, Rajasthan, Madhya Maharashtra, Marathwada, Telangana, Andhra Pradesh, Goa, Coastal & South Interior Karnataka, Kerala, Tamil Nadu and Andaman & Nicobar Islands.
- -8 to -4°C over many parts of Punjab, East Uttar Pradesh, some parts of Jammu & Kashmir, Himachal Pradesh, Haryana, West Uttar Pradesh, Bihar and Odisha.

Actual Mean Minimum Temperature (°C) in India for the week ending 14.01.2015

Mean Minimum Temperature (°C) Anomaly in India for the week ending 14.01.2015

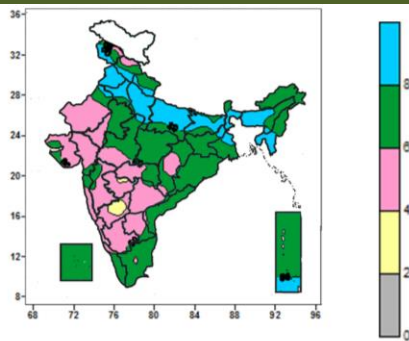


- -4 to 0°C over some parts of Jammu & Kashmir.
- 0 to 4°C over many parts of Jammu & Kashmir
- 4 to 8°C over Himachal Pradesh, Punjab, Haryana, Sikkim, many parts of Uttarakhand, Uttar Pradesh, Sub-Himalayan West Bengal, East Madhya Pradesh, some parts of Jammu & Kashmir, Rajasthan, Bihar, Jharkhand,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

- 2 to 4°C over some parts of Kutch.
- -2 to 2°C over entire country except many parts of Madhya Pradesh, Chhattisgarh, Madhya Maharashtra, Marathwada, Telangana, North Interior Karnataka, some parts of, Odisha, Konkan, Vidarbha, Andhra Pradesh, South Interior Karnataka, Madhya Pradesh, Madhya Maharashtra, Marathwada, Kutch and Rayalaseema
- -4 to -2°C over many parts of East Madhya Pradesh, Chhattisgarh, Madhya Maharashtra, Marathwada, some parts of West Madhya Pradesh, Odisha, Konkan, Vidarbha, Andhra Pradesh, Telangana and Interior Karnataka.
- -6 to -4°C over many parts of Vidarbha, Telangana, North Interior Karnataka, some parts of Madhya Pradesh, Madhya Maharashtra, Marathwada, South Interior Karnataka and Rayalaseema.

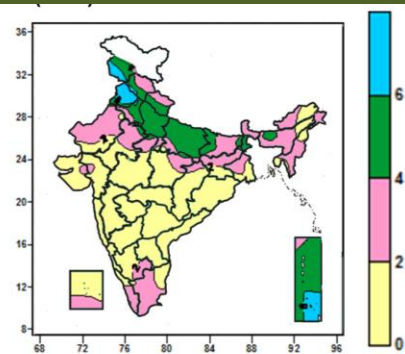
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 14.01.2015

Relative Humidity (%) over India for the week ending 14.01.2015



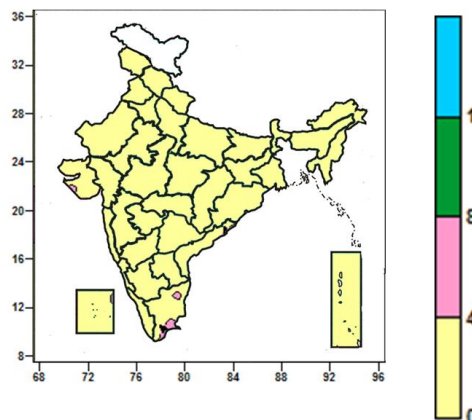
- 80 to 100% over Punjab, West Uttar Pradesh, Tripura, many parts of Haryana & Delhi, East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal, Assam & Meghalaya and Mizoram, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West Rajasthan, Jharkhand, and Andaman & Nicobar Islands.
- 40 to 80% over entire country except Punjab, West Uttar Pradesh, Tripura, many parts of Haryana, Delhi, East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal, Assam & Meghalaya and Mizoram, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West Rajasthan, Jharkhand, South Interior Karnataka and Andaman & Nicobar Islands
- 20 to 40% over some parts of South Interior Karnataka.

Cloud amount (okta) over India for the week ending 14.01.2015



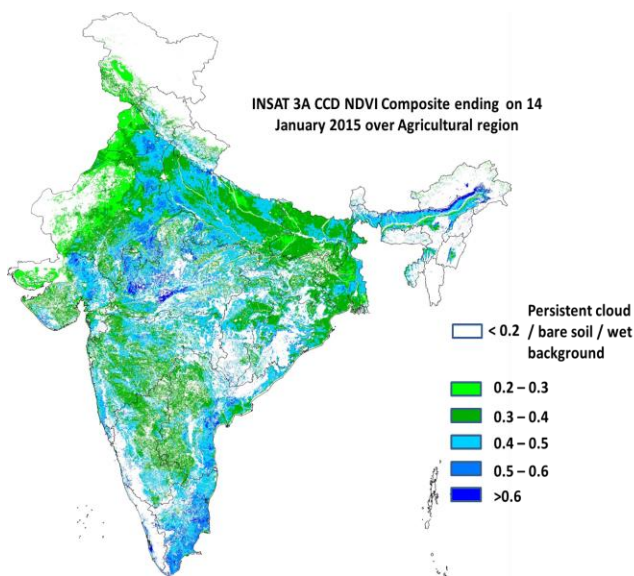
- 6 to 8 okta over many parts of Punjab, some parts of Jammu & Kashmir and Andaman & Nicobar Islands.
- 4 to 6 okta over West Uttar Pradesh, many parts of Jammu & Kashmir, Haryana & Delhi, East Uttar Pradesh, Andaman & Nicobar Islands, some parts of Uttarakhand, Himachal Pradesh, Punjab, Bihar, Sub-Himalayan West Bengal, Assam, Rajasthan and West Madhya Pradesh.
- 0 to 4 okta over entire country except, West Uttar Pradesh, many parts of Jammu & Kashmir, Punjab, Haryana & Delhi, East Uttar Pradesh, Andaman & Nicobar Islands, some parts of Uttarakhand, Himachal Pradesh, Punjab, Bihar, Sub-Himalayan West Bengal, Assam, Rajasthan and West Madhya Pradesh.

Wind speed (knots) over India for the week ending 14.01.2015



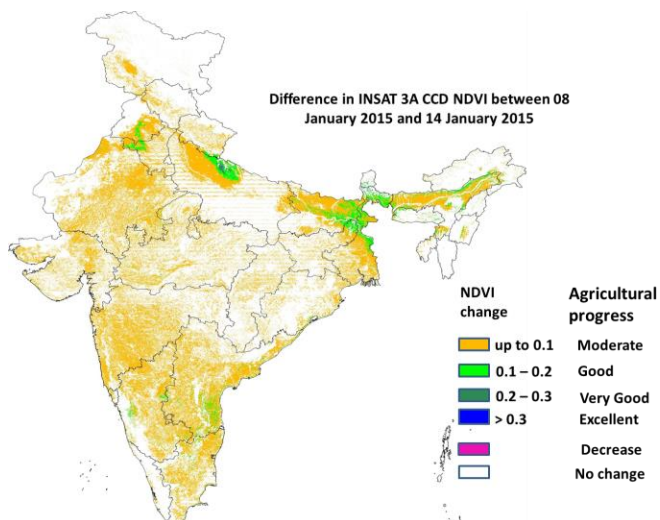
- 4 to 8 knots over some parts of Tamil Nadu and Saurashtra.
- 0 to 4 knots over entire country except some parts of Tamil Nadu and Saurashtra.

INSAT 3A CCD NDVI COMPOSITE ENDING ON 14th JANUARY 2015 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is good (0.4 to 0.5) over many parts of central, northern and southern India, few pockets in south east Punjab, Northern and southern parts of Haryana, western, southern and central Uttar Pradesh, eastern Rajasthan, central and western Gujarat, southern parts of West Bengal, Coastal Andhra Pradesh, Tamil Nadu, eastern and coastal parts of Odisha. In few pockets in central and western Madhya Pradesh NDVI varied from 0.5 to 0.6. Some parts of southern Bihar, few pockets in western Rajasthan, central Madhya Pradesh, few pockets in Karnataka and 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 14th January 2015.

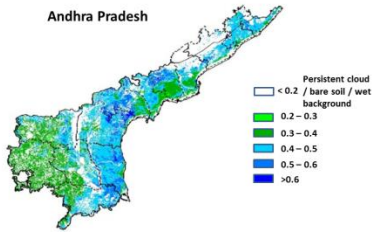
Difference in INSAT 3A CCD NDVI between 8th January 2015 and 14th January 2015



- The positive change (0.1- 0.2) in NDVI was observed over few pockets in north western Haryana, southern Punjab, Northern part of West Uttar Pradesh, eastern part of Bihar, northern and central part of West Bengal and southern coastal parts of Andhra Pradesh. Moderate change (upto 0.1) in NDVI was observed over northern parts of Uttar Pradesh, parts of Northern Gujarat, many parts of Maharashtra, Rajasthan and Gangetic West Bengal and in eastern and central Madhya Pradesh, central parts of Chhattisgarh and coastal regions of Odisha and few pockets in Telangana, Rayalaseema, Karnataka and Tamil Nadu. Not much change was observed in rest of India.

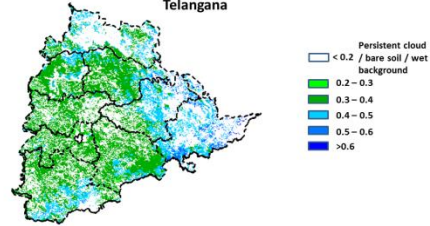
INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 14th JANUARY 2015 FOR DIFFERENT STATES

Andhra Pradesh



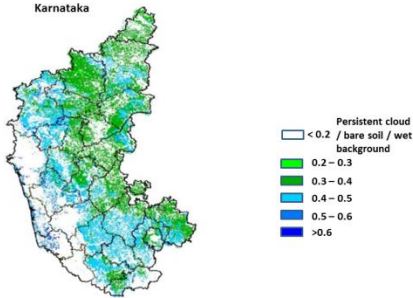
Agriculture vigour is good over middle part of Andhra Pradesh, as it also good over northern coast. NDVI values are normal over rest part of the state till 14 Jan 2015

Telangana



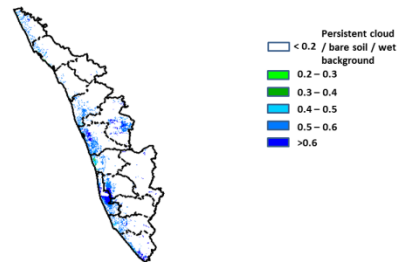
Agricultural vigour is good in pockets for the north and north east of the Telangana where NDVI values varies from 0.4 - 0.6. South of the Telangana is showing values of NDVI which varies from 0.2- 0.4 till the 14 Jan 2015.

Karnataka



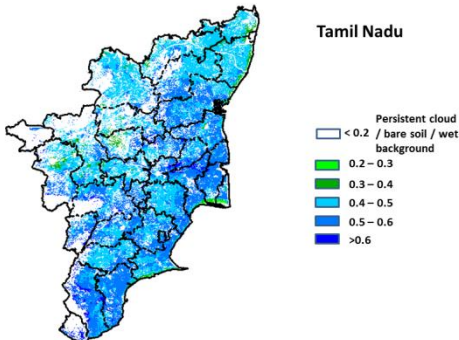
Agriculture vigour is good over Central parts of Karnataka which lies in between 0.4-0.5. Rest of the part comes under normal condition where NDVI values varies up to 0.2-0.3 till 14 Jan 2015.

Kerala



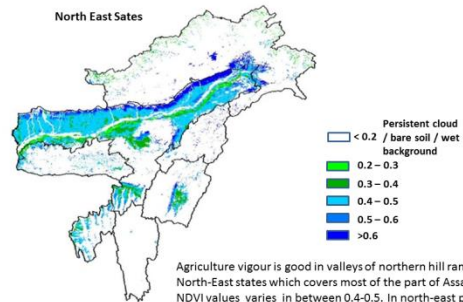
South coastal parts of Kerala showing pockets of NDVI values varies 0.5 - 0.6 Whereas rest of agricultural vigour of Kerala showing normal values of NDVI till the 14 Jan 2015.

Tamil Nadu



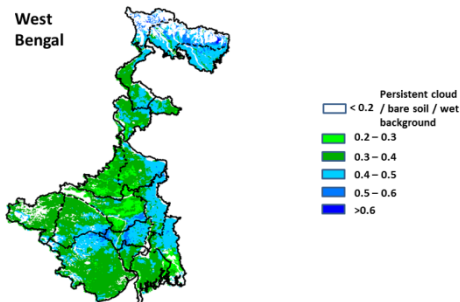
Agricultural vigour is good for the coastal region of east Tamilnadu with NDVI values varies from 0.4 - 0.6. Rest of the Tamilnadu is showing normal values of NDVI till the 14 Jan 2015.

North East States



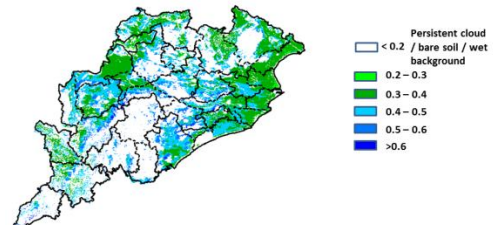
Agriculture vigour is good in valleys of northern hill range of North-East states which covers most of the part of Assam. NDVI values varies in between 0.4-0.5. In north-east part of Assam NDVI values are more than 0.6. Isolated patches all over NE region are in normal condition till 14 Jan 2015.

West Bengal



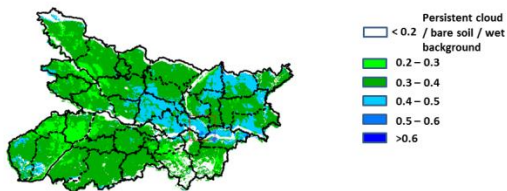
Agricultural vigour is good over most of the southern parts of West Bengal, where rest of the northern parts having higher values of NDVI in patches varies from 0.4-0.6.

Odisha



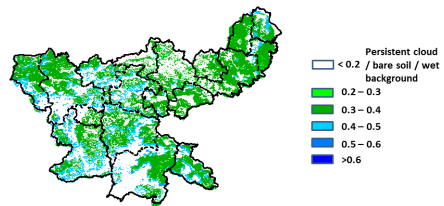
Agricultural vigour is good for east coast and south west part of Odisha with NDVI values of 0.3 - 0.5 Whereas central and south coast showing normal values of NDVI till the 14 Jan 2015 in patches.

Bihar



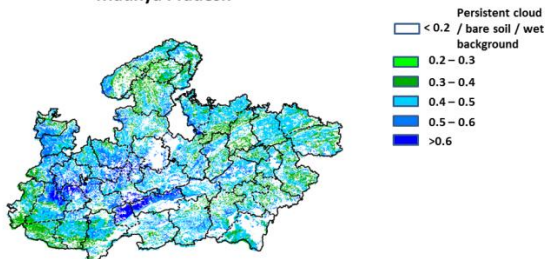
South East districts of Bihar showing comparatively high values of NDVI with 0.4 index. Values are normal over rest part of the state varies form 0.3- 0.4 till the 14 Jan 2015.

Jharkhand



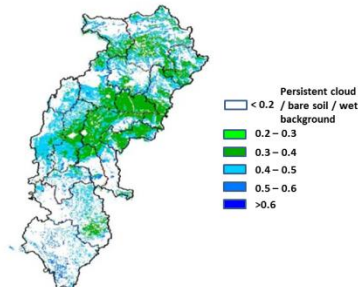
Agriculture vigour is good in patches over central to western part of the Jharkhand which lies in between 0.4-0.5. Rest of the part shows normal condition where NDVI values varies up to 0.2-0.3 till 14 Jan 2015.

Madhya Pradesh



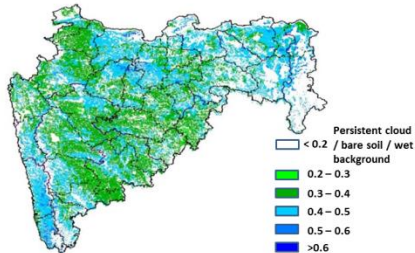
Agricultural vigour is good for central, Western region of Madhya Pradesh showing higher values of NDVI varies from 0.4 - 0.6. Whereas North and East parts showing comparatively low values varying from 0.3 - 0.4 till the 14 Jan 2015.

Chhattisgarh



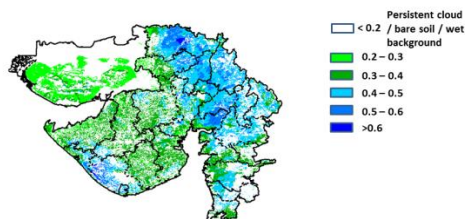
Agriculture vigour is good all over part of Chhattisgarh. NDVI values lies in between 0.4-0.5 over there. NDVI values are normal over middle part of the state till 14 Jan 2015.

Maharashtra



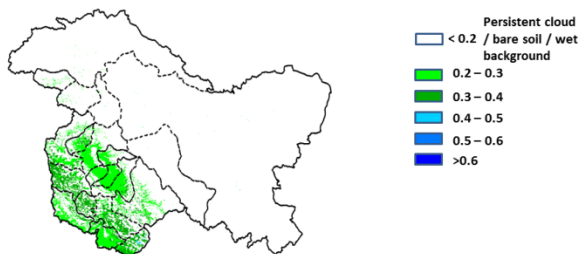
Agricultural vigour is good for central, West and Marathwada region of Maharashtra with NDVI values of 0.3 - 0.4. Whereas Vidarbha and Konkan region showing comparatively high values varying from 0.4 - 0.5 till the 14 Jan 2015.

Gujarat



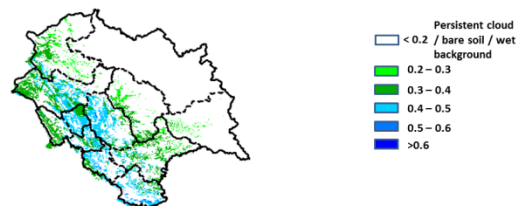
Agriculture vigour is good over part of Gujarat and Saurashtra. NDVI values lies in between 0.4-0.5 . In southern part of Saurashtra NDVI values varies up to 0.5 till 14 Jan 2015

Jammu and Kashmir

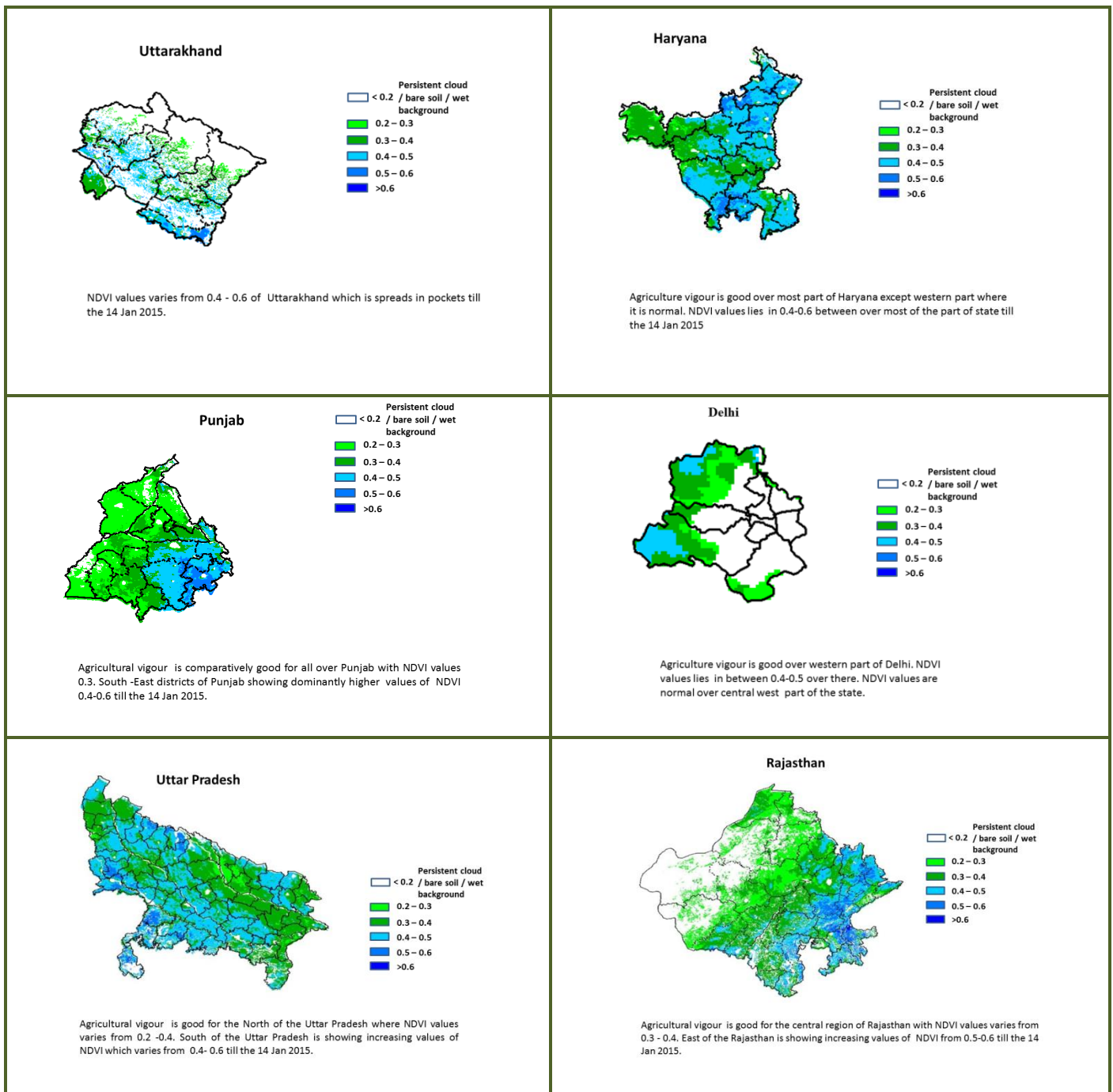


Agriculture vigour is normal all over Jammu. NDVI values varying in between 0.2-0.3 in South West parts till 14 Jan 2015.

Himachal Pradesh



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



Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 19th January, 2015).

- Rain/thundershowers would occur at many places over Andaman & Nicobar during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry during the period.
- Rain/thundershowers would occur at isolated places over Arunachal Pradesh, Sub-Himalayan West Bengal & Sikkim and Coastal Andhra Pradesh during next 48 hours and dry weather would prevail thereafter.
- Dry weather would prevail over Nagaland, Manipur, Mizoram and Tripura during next 24 hours and rain/thundershowers would occur at

Weather Warning during next 3 days

- **16 January (Day 1):** Dense to very dense fog would occur at a few places over Punjab, Haryana & Delhi, Uttar Pradesh and Bihar; at isolated places over north Rajasthan. Dense fog would occur at isolated places over north Madhya Pradesh. Cold wave conditions would occur at isolated places over Vidarbha. Cold day conditions would occur at isolated places over Uttar Pradesh.
- **17 January (Day 2):** Dense to very dense fog would occur at a few places over Punjab, Haryana & Delhi and Uttar Pradesh; at isolated places over north Rajasthan. Dense fog would occur at isolated places over north Madhya Pradesh and Bihar. Cold wave conditions would occur at isolated places

isolated places on 17th and at a few places thereafter.

- Dry weather would prevail over Assam & Meghalaya during next 24 hours and rain/thundershowers would occur at isolated places thereafter.
- Dry weather would prevail over rest parts of the country during the period.
- Fog would continue to occur at a few places over Punjab, Haryana & Delhi, north Rajasthan, Uttar Pradesh, north Madhya Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 2-3days.

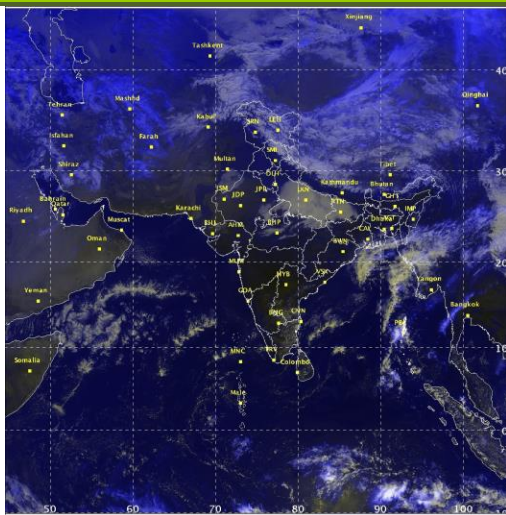
over Vidarbha.

- **18 January (Day 3):** Dense to very dense fog would occur at a few places over Punjab, Haryana & Delhi and Uttar Pradesh; at isolated places over north Rajasthan. Dense fog would occur at isolated places over north Madhya Pradesh and Bihar.

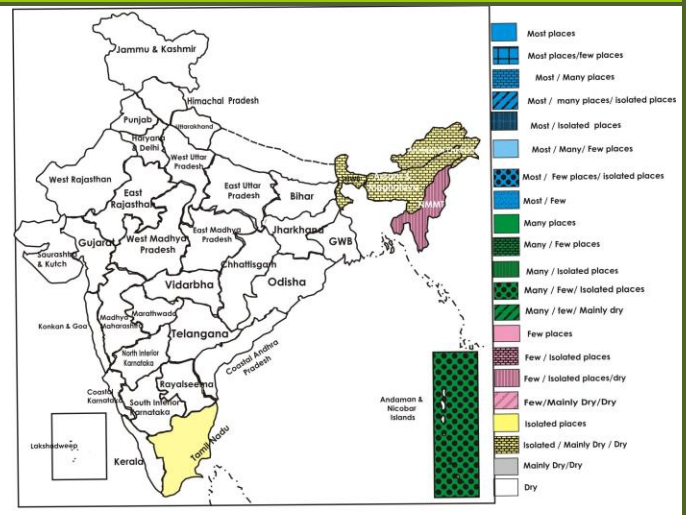
Weather Outlook for subsequent 4 days from 19th to 23rd January 2015.

- The fresh western disturbance would interact with easterly wave causing light to moderate rainfall over central and plains of northwest India and snowfall over western Himalayan region.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands and at isolated places over northeastern states & extreme south peninsular India.
- Weather would be dry over rest of the country.

Satellite image dated, 16.01.2015, 0600 UTC



Weather Forecast Map (Valid upto 0830 hours of 19th January 2015)



Salient Advisories in view of Cold Wave and Cold Day

- As cold wave conditions would occur at isolated places over **Vidarbha** in Maharashtra on 16th and 17th January, apply light and frequent irrigation in standing crops to protect the crops from cold injury. Also apply light and frequent irrigation to orange and sweet lime, apply mulch with crop residue to protect the plants from cold.
- Prevailing low temperature in **North Madhya Maharashtra** may cause fruit cracking especially in black grapes. Protect grapes from cold injury by applying drip irrigation for half an hour during morning hours. Apply mulch with crop residue. For protection of banana, apply mulch of organic material at base of trunk, apply light and frequent irrigation during evening and cover fruit bunch with 2 to 6 % porous plastic bag. Use gunny bags or any other cloth around orchards to protect them from cold winds.
- As cold day conditions would occur at isolated places over **Uttar Pradesh** on 16th January, apply light and frequent irrigation in standing crops to protect the crops from cold/frost injury.

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. Rain/thundershowers would occur at isolated places over Coastal Andhra Pradesh during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over rest parts of the region during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over extreme south peninsular India. Weather would be dry over rest of the region.
- **Advisories:**
 - **Andhra Pradesh:**
 - Continue harvesting of chilli in Kurnool district in the Scarce Rainfall Zone and dry the produce on a polythene sheet to avoid aflatoxin damage.
 - Present dry weather conditions are highly congenial for attack of pod borer in red gram in the Southern Zone. Spray Tiodicarb@ 1g or Noveluron @ 1mm/litre of water.
 - In the Scarce Rainfall Zone, powdery mildew incidence is observed on mango crop in Anantapur district which is likely to spread in the present humid weather and low temperature conditions. For control, spray Karathane @ 1.0 ml or wettable Sulphur @ 3.0 g per one litre of water.
 - **Telangana:**
 - In Telangana, to protect rice nurseries from cold injury and for better nursery growth, adopt the following measures;
 - Cover the nursery beds with polythene sheet during night and remove in the morning.
 - Irrigate the nursery bed every day in the evening and let out the water in the morning.
 - Apply 2 kg urea for 200 m² nursery area at 10-15 days after sowing.
 - To prevent the incidence of rice stem borer in Southern Telangana Zone, apply Carbofuran 3G @ 160 g in one cent of nursery at 10-12 days after sowing.
 - Prevailing low minimum temperature is congenial for flower and fruit drop in chilli in the Northern Telangana Zone. Spray NAA 10 mg/litre of water to manage the incidence.
 - Prevailing humid weather condition is congenial for incidence of stem borer in maize in Southern Telangana Zone. To manage stem borer, spray Monocrotophos @ 1.6 ml/litre of water or apply Carbofuran 3G @ 3 kg per acre in the whorls.
 - **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.
 - Undertake planting of sugarcane in North Transition Zone and North East Transition Zone after proper set treatment.
 - Continue harvesting of chilli and cotton in the North Transition Zone and North Dry Zone.
 - In the Hill Zone, continue cotton picking and continue sowing of pulses in areas where rice harvesting has been completed.
 - Low temperature and high humidity in the morning hours is congenial for incidence of powdery mildew disease and leaf hopper in mango orchard in the Eastern Dry Zone, North East Dry Zone, Hill Zone and Southern Dry Zone. Spray Carbaryl WP@ 4 g/ litre of water or Carbendazim @ 1 g / litre of water to manage the incidence.
 - Present weather is congenial for the incidence of *Helicoverpa* in Bengal gram in the North East Transition Zone and North East Dry Zone. Spray Profenophos or Chlorpyriphos @ 2 ml/litre or Spinosad @ 0.2 ml per litre of water for control.
 - **Kerala:**
 - Undertake land preparation for sowing of *puncha* rice in the Central and Southern Zone.
 - Prevailing weather conditions are congenial for incidences of foot rot in banana and fungal diseases on rubber plants in the Southern Zone. Spray 5- 10 litre of Streptocycline 500 mg/ 1 litre of water and 10 litre of 1% Bordeaux mixture to manage the spread of foot rot disease and chisel out the affected portion and apply

- Bordeaux paste to manage fungal diseases.
- Due to increase in temperature, incidence of sucking insects in vegetables is likely to increase in the Central Zone. Apply 2% neem oil-garlic-soap emulsion for control.
- **Tamil Nadu:**
 - Continue sowing of rice fallow pulses under waxy condition in *samba* rice fields under rice fallow condition in the Cauvery Delta Zone.
 - Continue land preparation for sowing of sorghum and maize in the Western Zone.
 - As dry weather is expected in the coming days, continue harvesting of sorghum and maize in the South Zone.
 - Incidence of BPH is noticed in *samba* / *thaladi* rice fields in the Cauvery Delta Zone due to prevailing dry weather. To manage, spray Thiamethoxam @40 g/acre or Buprofezin 25 SC @320 ml/acre. Avoid excess N application, drain excess water and also give aeration to crop.
 - Prevailing low temperature conditions are congenial for blast incidence in rice. Monitor the crop and spray Tricyclozone @ 1g / litre of water initially followed by second spray with Carbendazim @ 1g / 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.
 - Protect birds from cold by placing curtains over the sides of the poultry sheds, increase energy content (up to 2550 kcal/kg) of feed and adjust the energy density of feed based on the feed intake of birds in the North Western Zone.

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



Rice transplanting



Mustard



Potato



Cabbage

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Arunachal Pradesh during next 48 hours and dry weather would prevail thereafter. Dry weather would prevail over Nagaland, Manipur, Mizoram and Tripura during next 24 hours and rain/thundershowers would occur at isolated places on 17th and at a few places thereafter. Dry weather would prevail over Assam & Meghalaya during next 24 hours and rain/thundershowers would occur at isolated places thereafter. Fog would continue to occur at a few places over Assam & Meghalaya and Nagaland, Manipur, Mizoram and Tripura during next 2-3 days.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over northeastern states.
- **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 Bramhaputra Valley Zone of Assam, apply irrigation in wheat at CRI stage.
 - In Meghalaya, continue transplanting of *boro* rice. Apply irrigation to mustard/rapeseed at flowering stage and cole crops. Also prepare basin around plants of khasi mandarin followed by mulching with local grasses and apply irrigation at 15-20 days interval to avoid moisture stress.
 - In North Bank Plain Zone, Barak Valley Zone and Upper Bramhaputra 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 Upper Bramhaputra Valley Zone, North Bank Plain Zone, Central Bramhaputra Valley Zone, Lower Bramhaputra Valley Zone and Barak Valley Zone of Assam. Spray Malathion 50 EC @ 2 ml/ litre of water or Dimethoate 30 EC or Chloropyrifos @ 0.5 litre / ha for control.
 - In Hill Zone and Lower Bramhaputra Valley Zone of Assam, due to foggy weather, there is chance of late blight

in tomato. Apply Ridomil MZ-72 (2g/ litre) and Indofil M-45 2.5 g / litre or Dithane Z-78 @ 25 g in 10 litre of water to prevent the disease.

- Due to foggy weather condition, there is chance of late & early blight disease in potato in Meghalaya. Spray Mancozeb 75% WP @ 1.5- 2.0 kg/ha or Copper Oxy Chloride 50% WP @ 2.5 kg/ha or Chlorothalonil 75% WP @ 1.25 kg/ha.

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

- In Mizoram, apply irrigation to mustard, toria, banana, brinjal, early cole crops, pea and tomato.
- 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. Rice bed may be covered during the night to protect the seedlings from dew. Weeding, thinning, irrigation may be done in the rice nursery fields.
- 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 on a non rainy day. Due to cloudy and humid weather there is chance of attack of leaf blight in maize. Spray Zineb @ 3g per litre of water on a non rainy day 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 on a non rainy day.
- Suitable varieties are given in Annexure II.

• **Animal Husbandry**

- In Northeastern States, provide artificial heating through lighting of electric bulb to protect poultry birds (upto 25 days old) from low temperature. Cover poultry and pig house with gunny bags/ polythene sheet to prevent the expose of animal to cool night.

• **Fishery**

During winter season, apply Potash @ 4-5 mg/litre of water /Sukrena WS @ 1 litre per bigha of water/ lime in required doses to protect the fish population against various bacterial diseases in Lower, 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 South Andaman and Nicobar districts of Andaman & Nicobar Islands. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Andaman & Nicobar during next 24 hours and decrease thereafter. Rain/thundershowers would occur at isolated places over Sub-Himalayan West Bengal & Sikkim 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 continue to occur at a few places over Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim during next 2-3days.
- **Weather Warning:** Dense to very dense fog would occur at a few places over Bihar on 16th January and dense fog would occur at isolated places over Bihar on 17th and 18th January.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands. Weather would be dry over rest of the region.
- **Advisories:**
 - **West Bengal:**
 - In New Alluvial, Old Alluvial and Terai Zone, continue nursery sowing of *boro* rice. Cover the nursery bed with polythene or apply water in the nursery bed at night and drain out water at morning to protect the seedlings from cold injury. Continue main field preparation for transplanting of *boro* rice.
 - Due to high humidity, there is chance of attack aphids and diamond back moth in vegetables during its fruiting

stage in Hill Zone. To control aphid, apply Imidacloprid 1ml/4 litre of water, Lamda Cyhalothrin @ 10 ml/15 litres of water for control of diamond back moth.

- In Coastal Saline Zone of West Bengal, continue transplanting of *boro* rice and chilli. Remove morning dew by stirring the seedlings of *boro* rice with bamboo stick or rope.
- Due to high humidity, stem rot may occur in potato in Laterite and Red Soil Zone. To control the disease, spray Carbendazim @ 2g/litre of water.
- In Old Alluvial Zone and Terai Zone, due to low temperature and foggy weather, there is chance of attack of late blight in potato. 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, due to prevailing foggy weather condition, attack of aphids in mustard and early blight in potato may be found. For prevention of aphids attack, 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:**

- As rain/thundershowers would occur at many places in Andaman and Nicobar islands on 16th, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- In North and Middle Andaman, continue transplanting of vegetables.

▪ **Odisha:**

- In Western Undulating Zone, continue land preparation for sowing of sunflower in residual moisture immediately after harvesting of rice. Undertake nursery sowing of summer rice.
- In East and South Eastern Coastal Plain Zone, continue nursery sowing of rice and continue transplanting of onion. Undertake sowing of sunflower and groundnut.
- In Mid Central Table Land Zone of Odisha, cloudy weather during the past week is favourable for incidence of powdery mildew disease in black gram. To control it, spray Sulfex @ 5 g / litre of water.
- In East and South Eastern Coastal Plain Zone of Odisha, cloudy weather may favour infestation of aphids in potato and pulses. Spray 400 ml Dimethoate or 50 ml Imidachloprid in 200 litres of water per acre.
- Due to cloudy weather and moderate temperature, thrips and aphids infestation has been found in groundnut in East and South Eastern Coastal Plain Zone of Odisha. Spray Dimethoate @ 400 ml or Imidachloprid @ 50 ml in 200 litre water per acre.
- In Mid Central Table Land Zone of Odisha, cloudy weather is favourable for powdery mildew disease in black gram. To control it, spray Sulfex @ 5 g / litre of water.
- In Western Undulating Zone of Odisha, partly cloudy weather may aggravate aphids infestation in mustard. Spray Imidacloprid @ 1ml/4 litres of water or Thiomethaxome @ 0.2 g/litre of water.

▪ **Bihar:**

- In South Bihar Alluvial Zone, as dry weather is prevailing, apply irrigation in timely sown wheat crop which is at tillering stage and late sown wheat crop is at CRI stage.
- In North West Alluvial Plain Zone of Bihar, continue transplanting of *rabi* onion. In view of low minimum temperature, prepare seedling of early cucurbitaceous crops in small polythene bags in poly houses.
- In North East Alluvial Zone of Bihar, as dry weather is prevailing, apply irrigation to wheat which is about 40-45 old and in 21-25 days old (late sown). Apply urea @ 30 kg/acre after 2 days of irrigation. To protect the nursery of *boro* rice from cold stress, apply irrigation during evening time. Undertake field preparation for planting of spring sugarcane.
- In North West Alluvial Plain Zone of Bihar, low temperature and foggy weather is favourable for the attack of blight in potato and lentil crops; spray Indofil M-45, for better result mix sticker 1ml/liter of water. Due to foggy weather there is a chance of white rust in mustard/rapeseed, spray Chlorothalonil 75 WP @ 1 g/ litre of water.

▪ **Jharkhand:**

- In Western Plateau Zone, as dry weather is prevailing continue harvesting of matured toria. For cultivation of early summer vegetables, sow the seeds of cucurbitaceous vegetables in polythene filled with soil and FYM and keep it at warmer place. Undertake 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. Select medium duration improved rice varieties like MTU 1010, IR 36, 64 and Naveen.
- 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 and Western Plateau Zone of Jharkhand, cool and dry weather is favourable for incidence of powdery mildew disease in pea. To control it, spray Kairathen @ 1 ml or Sulfex @ 3 ml per 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 Thiamethoxam 25 % WG @ 3-4 g or Rogar (Dimethoate) @ 2 ml or Monochrotophos @ 1 ml per litre of water.
- Suitable varieties are given in Annexure II.
- **Animal Husbandry**
- To protect from cold, dairy animal should be covered with gunny sack/ sheet in the evening in Central & North Eastern Plateau Zone of Jharkhand and also provide calcium and jaggery in the feed. To prevent from Swine fever disease in pigs, farmers are advised to vaccinate against swine fever.
- **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 dry over the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. Fog would occur at many places over north Madhya Pradesh during next 2-3 days.
- **Weather Warning:** Dense fog would occur at isolated places over north Madhya Pradesh during the period.
- **Weather Outlook:** The fresh western disturbance would interact with easterly wave causing light to moderate rainfall 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.
 - Due to cloudy and foggy weather, there are chances of attack of pod borer in gram in Madhya Pradesh. Spray Quinalphos @ 25 EC per 500-600 litres of water.
 - Due to foggy weather, there are chances of leaf curl disease in brinjal, chilli and papaya in Bundelkhand Zone, spray Methyl demeton 25 E.C. @ 2.0 ml per litre of water.
 - **Chhattisgarh:**
 - As dry weather would prevail, undertake digging of matured potato and apply irrigation in wheat at tillering stage in Bastar Plateau Zone.
 - Undertake land preparation for transplanting of summer rice in Chhattisgarh Plain Zone.
 - Due to cloudy weather, there are chances of incidence of aphids in mustard and radish in North Hill Zone and Plain Zone of Chhattisgarh, for control, apply Carbaryl @ 2 kg/ha.
 - Due to cloudy weather, there are chances of infestation of pod borer in pigeon pea in North Hill Zone of Chhattisgarh, spray Polytrin C @ 1litre/ha or Endoxacarb @ 300 ml/ha.
- **Animal Husbandry**
- Protect animals from cold in Madhya Pradesh and Chhattisgarh. Increase light duration in poultry farms.

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



Wheat



Sugarcane



Mustard



Cabbage

- **Realised Rainfall:** Weather remained dry over the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period. Fog would continue to occur at a few places over Punjab, Haryana & Delhi, north Rajasthan, Uttar Pradesh during next 2-3days.
- **Weather Warning:** Dense to very dense fog would occur at a few places over Punjab, Haryana & Delhi, Uttar Pradesh; at isolated places over north Rajasthan during the period. Cold day conditions would occur at isolated places over Uttar Pradesh on 16th January.
- **Weather Outlook:** The fresh western disturbance would interact with easterly wave causing light to moderate rainfall over plains of northwest India and snowfall over western Himalayan region.
- **Advisories:**
 - **Jammu & Kashmir:**
 - In Sub Tropical and Intermediate Zone of Jammu & Kashmir, apply urea @ 2.5 kg /kanal as 1st top dressing in wheat utilising the realised rainfall. Also continue second hoeing and weeding followed by irrigation in 40 days old pulses like chick pea and lentil.
 - Undertake 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 attack of aphids in cole crops viz. cabbage and cauliflower. To control, spray Rogor (Dimethoate) @ 1 ml/litre of water and repeat at fifteen days interval.
 - **Himachal Pradesh:**
 - In Low and mid-hill areas, continue planting of onion at a spacing of 15-20 x 5-7 cm apart utilizing realized rainfall.
 - 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 utilizing realized rainfall.
 - Under prevailing low temperature and cloudy weather condition, there are chances of occurrence of yellow rust in wheat in Sub-Montane and Low Hills Sub-Humid Tropical Zone. For control, spray Tebuconazole 25 EC or Bayletan 25 WP @ 30ml or 30 g per 30 litres of water per kanal and repeat the spray at 15 days interval. Downy mildew is also expected in cruciferous vegetables. For control, spray Redomil M-Z @ 25 g per litres of water 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 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.
 - **Uttarakhand:**
 - Undertake sowing of sunflower after the harvesting of ratoon sugarcane in Bhabar and Tarai Zone of Uttarakhand utilizing available moisture.
 - Foggy weather is conducive for incidence of blight disease in potato in Hill Zone & Sub humid Sub Tropic Zone of Uttarakhand. For control, spray Diethane M-45/Radomil @ 20-25 g per 10 litre of water.
 - **Punjab, Haryana and Delhi:**
 - In Eastern Zone of Haryana and Western Zone of Punjab, provide polythene sheet/Sarkanda/Kahi/ rice straw to protect the plants from cold/ frost injury. Dwarf vegetable varieties can be protected from frost injury by covering with 100 gauge thick white plastic bags of 35 x 25 cm size.
 - In Undulating Plain Zone of Punjab, apply light irrigation and cover the newly planted plants with thatches for protection from cold and apply light irrigation in mustard in the evening to protect from cold/frost injury. Complete sowing of late sown wheat.
 - In Western Semi-arid Zone of Delhi, continue sowing of late varieties of wheat with seed rate of 125 kg seed

/ha. Also undertake transplanting of mature seedlings of tomato, cauliflower, cabbage, knolkhol and broccoli crop in the raised bed.

- In Western Zone of Haryana, undertake transplanting of onion, mature seedlings of tomato, cauliflower and cabbage. Apply the 2nd irrigation (completed 40 to 45 days) to wheat. In Western Zone of Haryana, apply light and frequent irrigation to vegetables and young fruit plants to protect from cold and cover the young fruit plants with Bhusa /thatch to protect from cold weather.
- In Western Plain Zone of Punjab, undertake harvesting of mid and late season maturing variety of sugarcane.
- Due to foggy weather, there is chance of incidence of late blight disease on potato and tomato in Western Zone of Punjab and Haryana. 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.
- Incidence of pink stem borer is observed in wheat in South-Western region of Punjab, if the attack reaches above ETL then spray Quinalphos 25EC 800 ml/acre.
- In Punjab, due to foggy weather, there is chance of incidence of yellow rust in wheat in the form of yellow powder/stripes on the leaves. The susceptible varieties are PBW-343, PBW-502, PBW-550, HPW-184, HPW-42, HS-240, HS-295, HS-420, UP-2328 and WL-711. Farmers are advised to monitor the crop and spray the fungicides Tilt (Propiconazole) 25 EC/folicure (Tebuconazole) 25 EC/Bayletan 25 WP @ 0.1% i.e. 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.
- Present weather is favourable for attack of top borer in sugarcane in Eastern Zone of Haryana, apply Carbofuran 3G @ 13 kg or Phorate 10G @ 8 kg in furrows.
- Due to foggy weather, there is chance of aphids in mustard/rapeseed in Western plain Zone of Punjab, spray 40 g Actara 25 WG or 400 ml of Metasystox 25 EC or Rogor 30 EC or Ekalux 25 EC/Malathion 50 EC or 600 ml Dursban/Coroban 20 EC in 80-125 litres of water/acre.
- **Uttar Pradesh:**
 - As cold day conditions would occur at isolated places over Uttar Pradesh on 16th January, apply light and frequent irrigation in standing crops to protect the crops from cold injury.
 - Continue nursery sowing of tomato and chilli and transplanting of onion in Central plain Zone and continue sowing of sunflower in Western Plain Zone. For control of weeds in onion, spray Pendimethalin @ 3.5 litres in 800 litres of water per hectare.
 - Undertake application of Nitrogen @ 40 kg /ha as top dressing in wheat after light irrigation in Central Plain Zone. Also apply irrigation in sugarcane.
 - 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.
 - Undertake harvesting of matured toria in Central Plain Zone.
 - Under prevailing dry weather condition, undertake second top dressing of urea in wheat after application light irrigation in Eastern Plain Zone. Continue planting of onion (Pusa red) at a distance of 15x10 cm.
 - Foggy weather is conducive for the incidence of blight disease in potato in Central Plain Zone and Eastern Plain Zone. For control, spray Diethane M-45 @ 2.5 g or Macozeb or Blitox 2.2 % @ 2 g per litre of water.
 - Foggy weather is conducive for the incidence of mealy bug in mango in Eastern Plain Zone. For control, spray Monocrotophos 0.4% @ 1ml/litre of water at 15 days interval. Also there is chance of downy mildew in peas, for control, spray 75% Maconzeb @ 2kg per 800 litres of water per ha.
 - Due to foggy weather condition, there is chance of blight disease in tomato in Central Plain Zone. For control, spray Mancozeb 75 WP @ 2g per litre or Ridomil MZ-27 @ 2g per litre of water followed by Dithane M-45 @ 2.5 g in 1 litre of water.
 - Under foggy weather condition, there are chances of incidence of *Alternaria* blight in mustard in North Eastern Plain Zone and Central Plain Zone. Spray Blitox @ 2.5 kg per hectare. For control of late blight in potato, spray Metatoxyl @ 2 kg per hectare.
- **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 Southern Humid Plain Zone of Rajasthan, apply second irrigation in wheat at tillering stage with remaining 1/3rd dose of nitrogen through urea and 30% of N dose as top dressing in maize.
 - Continue transplanting of *rabi* onion in the main field in Semi Arid Eastern Plain Zone of Rajasthan.
 - Due to low temperature, there may be attack of pod borer in gram crop 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.
 - Suitable varieties are given in Annexure II.
- **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 nector 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 the region.
- **Weather Forecast:** Dry weather would prevail over the region during the period.
- **Weather Warning:** Cold wave conditions would occur at isolated places over Vidarbha on 16th and 17th January.
- **Weather Outlook:** Weather would be dry over the region.
- **Advisories:**
 - **Maharashtra:**
 - As cold wave conditions would occur at isolated places over Vidarbha on 16th and 17th January, apply light and frequent irrigation in standing crops to protect the crops from cold injury.
 - In Konkan, as dry weather is likely to prevail, apply irrigation, fertilizers and undertake intercultural operations in vegetable crops and mango and cashew orchards. Also apply irrigation to 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.
 - Prevailing low temperature (around 7-8°C) in North Madhya Maharashtra may cause fruit cracking especially in black grapes. Protect grapes from cold injury by applying drip irrigation for half an hour during morning hours. Apply mulch with crop residue. For protection of banana, apply mulch of organic material at base of trunk, apply light and frequent irrigation during evening and cover fruit bunch with 2 to 6 % porous plastic bag. Use gunny bags or any other cloth around orchards to protect them from cold winds. Complete field preparation and undertake planting of *suru* sugarcane. As dry weather is prevailing, apply light irrigation to vegetables, sugarcane, safflower, *rabi* jowar, wheat, gram and pomegranate orchards. Continue intercultural operations like weeding and apply fertilizers in sugarcane, vegetables and late sown wheat. Complete harvesting already matured red gram. Dry weather prevailed during last week and dry weather is likely to prevail, apply light irrigation to vegetables, sugarcane, safflower, *rabi* jowar, wheat, gram and pomegranate orchards.
 - In Marathwada, as dry weather prevailed and is likely to continue 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. As minimum temperature prevails below normal (-6 to -4°C) in some parts of region, protect banana from cold by applying irrigation during night or early in the morning. Cover new banana bunch with skating bag. As dry weather is prevailing apply light irrigation to orange and sweet lime orchards for keeping *ambehahar* also undertake intercultural operations in the orchards. Complete preparatory tillage and undertake planting of *suru* sugarcane. Continue harvesting of already matured red gram.
 - In Vidarbha, as cold wave conditions would occur during next 48 hours, apply light and frequent irrigation to orange and sweet lime, apply mulch with crop residue to protect the plants from cold. Continue transplanting of 30 -35 days old rice seedlings. Maintain 2-3 cm water level in transplanted rice field. As dry weather is prevailing apply light irrigation to vegetables, gram and wheat. Continue harvesting of already matured red gram.
 - Prevailing cold weather during morning hours followed by rise in temperature in Konkan is favourable for attack of aphids and leaf miner in cow pea, *wal* and *kulthi*; spray Dimethoate @ 15 ml per 10 litres water.
 - Prevailing cold and high humidity during morning hours in Pune region is congenial for infestation of powdery mildew in pea; spray Sulphur WS @ 25 g per 10 litres water.
 - **Gujarat:**
 - As dry weather is prevailing in Bhal and Coastal Zone of Gujarat, apply irrigation in mustard (flowering/ pod formation stage), castor (spike development stage) and vegetable crops. Carry out weeding and intercultural operations in wheat and vegetable crops (brinjal, chilli, tomato and cabbage). Carry out picking of matured bolls of cotton during early morning hours.
 - In North Gujarat Zone, apply irrigation in mustard (flowering/pod formation stage), vegetable and castor crops.

- Continue picking of matured bolls of cotton and harvesting of matured spikes of castor.
- Apply irrigation in cumin, castor, vegetable and fruit crops in North West Zone. Procure good quality seeds of sesame, groundnut and green gram for *summer* sowing in North Saurashtra Zone. Apply irrigation in wheat (flowering/milking stage). Complete picking of cotton in South Saurashtra Zone.
 - As dry weather is prevailing, apply irrigation in wheat (milking stage), garlic (bulb formation), vegetables and castor crops in South Gujarat Heavy Rainfall Zone. Carry out weeding and intercultural operations in garlic and castor crops. Apply supplement dose of fertilizer in castor.
 - Cold and dry weather is favorable for incidence of thrips and mites in chilli in Middle Gujarat Zone; spray Spinosad 48% SC @ 3 ml and Abamectin 0.15% EC @ 10 ml in 10 litre of water alternately for control.
 - As partly cloudy weather is expected in South Gujarat Heavy Rainfall Zone, there are chances of *heliethis* in chickpea; if observed, spray Quinalphos 25 EC @ 20 ml or D.D.V.P 85 EC @ 5 ml in 10 litres of water.
 - Due to cold and humid weather condition there are chances of outbreak of blight disease in cumin in North West Zone; spray Mancozeb 0.2% @ 30 g plus 20 ml of concentrated desi soap solution in 10 litres of water for control.
 - Suitable varieties are given in Annexure II.
 - **Animal Husbandry**
 - In Gujarat, provide ad lib warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress. Provide balanced diet to the animals and also keep animal sheds clean to prevent the diseases.
 - **Poultry**
 - As cold wave conditions prevails over Vidarbha and cold wave conditions would also occur during next 48 hours; protect poultry birds from cold winds by hanging curtain/clothing from outside the poultry shed. Provide proper heat to small chicks of poultry with the help of electric bulbs.

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

Annexure I
Week by week Rainfall Distribution

Sub-Divisions	31.12.14		07.01.15		14.01.15	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	0.0	-100	18.5	61	0.0	-100
Dibang Valley	**	**	**	**	**	**
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	0.0	-100	23.3	483	0.0	-100
Kurung Kumey	**	**	**	**	**	**
Lohit	0.0	-100	13.3	194	0.0	-100
Lower Dibang Valley	0.0	-100	0.3	-98	0.0	-100
Lower Subansari	**	**	**	**	**	**
Papumpara	0.0	-100	6.0	18	0.0	-100
Tawang	0.0	-100	15.0	206	0.0	-100
Tirap	0.0	-100	0.8	-85	0.0	-100
Upper Siang	0.0	-100	17.8	51	0.0	-100
Upper Subansari	0.0	-100	0.1	-94	0.0	-100
West Kameng	0.0	-100	0.4	-92	0.0	-100
West Siang	0.0	-100	0.0	-100	0.0	-100
Assam & Meghalaya						
Assam						
Baksa	0.0	-100	0.0	-100	0.0	-100
Barpeta	0.0	-100	9.5	375	0.0	-100
Bongaigaon	0.0	-100	14.1	370	0.0	-100
Cachar	0.0	-100	3.0	200	0.0	-100

Chirang	0.0	-100	6.8	127	0.0	-100
Darrang	0.0	-100	0.0	-100	0.0	-100
Dhemaji	0.0	-100	0.0	-100	0.0	-100
Dhubri	0.0	-100	29.7	2597	0.0	-100
Dibrugarh	0.0	-100	7.0	191	0.0	-100
Goalpara	0.0	-100	0.0	-100	0.0	-100
Golghat	0.0	-100	13.2	527	0.0	-100
Hailakandi	0.0	-100	1.0	-23	0.0	-100
Jorhat	0.0	-100	5.5	60	0.0	-100
Kamrup(Rural)	0.0	-100	13.5	744	0.0	-100
Kamrup(Metro)	0.0	-100	2.0	25	0.0	-100
Karbi Anglong	0.0	-100	19.0	805	0.0	-100
Karimganj	0.0	-100	4.0	67	0.0	-100
Kokrajhar	0.0	-100	10.6	524	0.0	-100
Lakhimpur	0.0	-100	4.0	32	0.0	-100
Morigaon	0.0	-100	0.6	-54	0.0	-100
N.C.Hills	0.0	-100	13.6	1136	0.0	-100
Nowgong	0.0	-100	2.7	57	0.0	-100
Nalbari	0.0	-100	11.5	64	0.0	-100
Sonitpur	0.0	-100	7.7	140	0.0	-100
Sibsagar	0.0	-100	15.3	993	0.0	-100
Tinsukia	0.0	-100	11.6	382	0.0	-100
Udalgiri	0.0	-100	5.2	247	0.0	-100
Meghalaya						
East Garo Hills	0.0	-100	1.2	-8	0.0	-100
East Khasi Hills	0.0	-100	14.5	1106	0.0	-100
Jaintia Hills	0.0	-100	0.0	-100	0.0	-100
Ribhoi	0.0	-100	16.4	200	0.0	-100
South Garo Hills	0.0	-100	0.0	-100	0.0	-100
West Garo Hills	0.0	-100	29.2	4071	0.0	-100
West Khasi Hills	0.0	-100	0.0	-100	0.0	-100
NMMT						
Mizoram						
Aizwal	0.0	-100	14.4	3500	0.0	-100
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	0.0	-100	0.0	-100	0.0	-100
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	6.0	2900	0.0	-100
Serchhip	0.0	-100	0.0	-100	0.0	-100
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	0.0	-100	0.0	-100	0.0	-100
Churachandpur	**	**	**	**	**	**
Imphal east	0.0	-100	26.0	1030	0.0	-100
Imphal west	0.0	-100	2.1	-34	0.0	-100
Senapati	0.0	-100	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**

Thoubal	0.0	-100	0.0	-100	0.0	-100
Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	0.0	-100	24.2	200	0.0	-100
Kephire	0.0	-100	**	**	**	**
Kohima	0.0	-100	20.0	900	0.0	-100
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	0.0	-100	0.0	-100	0.0	-100
North Tripura	0.0	-100	0.0	-100	0.0	-100
South Tripura	0.1	-95	0.1	-83	0.1	-95
West Tripura	0.0	-100	0.0	-100	0.0	-100
Himachal Pradesh						
Bilaspur	0.0	-100	19.2	140	2.4	-78
Chamba	0.0	-100	1.3	-94	6.8	-70
Hamirpur	0.0	-100	17.5	36	4.0	-74
Kangra	0.0	-100	5.3	-62	8.6	-58
Kinnaur	0.0	-100	17.4	-13	9.5	-56
Kullu	0.0	-100	25.0	74	6.8	-63
Lahaul and Spiti	0.0	-100	5.6	-75	4.3	-86
Mandi	0.0	-100	26.1	135	2.5	-80
Shimla	0.0	-100	18.3	68	2.4	-83
Sirmaur	0.0	-100	12.8	67	1.9	-86
Solan	0.0	-100	21.7	114	1.6	-89
Una	0.0	-100	7.0	-10	4.9	-57
Punjab						
Amritsar	0.0	-100	0.3	-94	7.0	6
Barnala	0.0	-100	0.0	-100	0.0	-100
Bhatinda	0.0	-100	0.0	-100	10.0	285
Faridkot	0.0	-100	0.0	-100	2.0	-17
Fatehgarh Saheb	0.0	-100	4.3	27	0.5	-84
Ferozpur	0.0	-100	0.0	-100	1.3	-63
Gurdaspur	0.0	-100	0.0	-100	6.1	-54
Hoshiarpur	0.0	-100	0.1	-98	2.4	-73
Jalandhar	0.0	-100	0.0	-100	5.3	7
Kapurthala	0.0	-100	0.4	-88	2.3	-54
Ludhiana	0.0	-100	2.5	-19	2.2	-54
Mansa	0.0	-100	0.0	-100	3.2	60
Moga	0.0	-100	0.0	-100	9.0	70
Muktesar	0.0	-100	0.0	-100	4.5	88
Nawashahar	0.0	-100	4.5	-9	3.1	-61
Patiala	0.0	-100	2.8	-40	1.1	-68

Ropar	0.0	-100	21.4	167	1.3	-83
Sangrur	0.0	-100	0.0	-100	3.1	-20
Mohali	0.0	-100	13.0	136	5.3	-11
TarnTaran	0.0	-100	0.0	-100	3.2	68
Haryana, Chd,Delhi						
Haryana						
Ambala	0.0	-100	9.8	48	1.0	-88
Bhiwani	0.0	-100	0.2	-89	0.6	-78
Chandigarh	0.0	-100	16.7	188	1.1	-84
Faridabad	0.0	-100	6.8	134	0.0	-100
Fatehabad	0.0	-100	0.0	-100	1.3	-67
Gurgaon	0.0	-100	4.3	86	1.4	-18
Hissar	0.0	-100	0.3	-82	1.9	-25
Jhajar	0.0	-100	2.9	95	0.0	-100
Jind	0.0	-100	0.9	-85	0.3	-90
Katihah	0.0	-100	2.3	67	0.6	-85
Karnal	0.0	-100	5.7	32	0.2	-97
Kurukshehra	0.0	-100	3.6	-8	0.2	-97
Mahendragarh	0.0	-100	0.8	-48	0.5	-88
Mewat	0.0	-100	7.6	322	0.0	-100
Palwal	0.0	-100	5.4	238	0.0	-100
Panchkkula	0.0	-100	10.1	19	1.0	-81
Panipat	0.0	-100	4.2	4	0.0	-100
Rewari	0.0	-100	0.3	-78	0.0	-100
Rohtak	0.0	-100	3.2	39	0.0	-100
Sirsa	0.0	-100	0.0	-100	5.3	102
Sonepat	0.0	-100	7.4	237	1.3	-73
Yamunanagar	0.0	-100	9.6	56	0.3	-96
Delhi						
Central Delhi	0.0	-100	11.0	197	1.0	-69
East Delhi	0.0	-100	12.0	224	1.0	-69
New Delhi	0.0	-100	13.1	253	0.8	-77
North Delhi	0.0	-100	12.5	236	0.5	-84
North East Delhi	0.0	-100	3.0	-19	0.0	-100
North West Delhi	0.0	-100	6.3	71	0.0	-100
South Delhi	0.0	-100	10.6	185	0.9	-72
South West Delhi	0.0	-100	10.0	169	0.7	-80
West Delhi	0.0	-100	8.0	116	1.0	-69
Jammu & Kashmir						
Anantnag	0.0	-100	0.0	-100	5.2	-64
Badgam	0.0	-100	0.0	-100	1.0	-87
Bandipore	**	**	**	**	**	**
Baramula	0.0	-100	3.0	-87	6.4	-63
Doda	0.0	-100	0.0	-100	6.0	-76
Ganderbal	0.0	-100	0.0	-100	11.6	25
Jammu	0.0	-100	0.0	-100	2.5	-81
Kargil	**	**	**	**	**	**
Kathua	0.0	-100	0.0	-100	6.2	-66
Kistwar	**	**	**	**	**	**

Kulgam	0.0	-100	0.0	-100	7.2	-50
Kupwara	0.0	-100	1.5	-91	8.2	-38
Ladakh(Leh)	0.0	-100	0.0	-100	1.4	-33
Poonch	0.0	-100	0.0	-100	**	**
Pulwama	0.0	-100	0.0	-100	1.4	-81
Rajouri	0.0	-100	0.0	-100	1.0	-95
Ramban	0.0	-100	0.0	-100	3.5	-86
Reasi	0.0	-100	0.0	-100	4.2	-76
Samba	0.0	-100	0.0	-100	3.4	-74
Shopian	0.0	-100	0.0	-100	0.0	-100
Srinagar	0.0	-100	0.0	-100	1.8	-81
Udhampur	0.0	-100	0.0	-100	2.3	-87
East Madhya Pradesh						
Anuppur	0.0	-100	15.3	195	0.0	-100
Balaghat	0.0	-100	6.0	-1	0.0	-100
Chhatarpur	0.0	-100	21.3	824	0.0	-100
Chindwara	0.0	-100	26.5	530	0.0	-100
Damoh	0.0	-100	38.7	1234	0.0	-100
Dindori	0.0	-100	13.2	207	0.0	-100
Jabalpur	0.0	-100	36.3	1033	0.0	-100
Katni	0.0	-100	48.1	1452	0.0	-100
Mandla	0.0	-100	5.5	41	0.0	-100
Narsingpur	0.0	-100	39.0	2067	0.0	-100
Panna	0.0	-100	10.1	247	0.0	-100
Rewa	0.0	-100	39.6	2229	0.0	-100
Sagar	0.0	-100	34.2	1165	0.0	-100
Satna	0.0	-100	69.4	1775	0.0	-100
Seoni	0.0	-100	1.5	-56	0.0	-100
Shahdol	0.0	-100	8.0	158	0.0	-100
Sidhi	0.0	-100	38.0	1052	0.0	-100
Singrauli	0.0	-100	25.0	1686	0.0	-100
Tikamgarh	0.0	-100	22.5	582	0.0	-100
Umaria	0.0	-100	34.6	636	0.0	-100
West Madhya Pradesh						
Agar	**	**	**	**	0.0	-100
Alirajpur	0.0	-100	0.0	-100	0.0	-100
Asoknagar	0.0	-100	20.6	1044	0.0	-100
Badwani	0.0	-100	5.9	1867	0.0	-100
Betul	0.0	-100	123.7	7634	0.0	-100
Bhind	0.0	-100	4.8	239	0.0	-100
Bhopal	1.0	-17	25.7	2470	0.0	-100
Burhanpur	1.3	-11	41.5	8193	0.0	-100
Datia	0.0	-100	17.2	1623	0.0	-100
Dewas	0.0	-100	70.6	4311	0.0	-100
Dhar	0.0	-100	10.4	1633	0.0	-100
Guna	0.0	-100	35.2	1574	0.0	-100
Gwalior	0.0	-100	2.9	19	0.0	-100
Harda	0.0	-100	29.1	1432	0.0	-100
Hosangabad	0.0	-100	30.5	1425	0.0	-100

Indore	0.0	-100	36.3	2923	0.0	-100
Jhabua	0.0	-100	1.6	33	0.0	-100
Khandwa	0.0	-100	42.1	3411	0.0	-100
Khargone	0.0	-100	20.7	1380	0.0	-100
Mandsaur	0.0	-100	15.3	1430	0.0	-100
Morena	0.0	-100	0.3	-88	0.0	-100
Neemuch	0.0	-100	8.3	421	0.0	-100
Raisen	0.0	-100	39.4	1308	0.0	-100
Rajgarh	0.0	-100	49.9	2672	0.0	-100
Ratlam	0.0	-100	29.1	1519	0.0	-100
Sehore	1.2	33	42.2	4589	0.0	-100
Shajapur	0.0	-100	44.3	1670	0.0	-100
Sheopur Kalani	0.0	-100	0.8	-70	0.0	-100
Shivpuri	0.0	-100	2.5	92	0.0	-100
Ujjain	0.0	-100	33.6	2140	0.0	-100
Vidisha	0.0	-100	23.6	974	0.0	-100
Chhattisgarh						
Bastar	0.0	-100	4.7	213	0.0	-100
Bijapur	0.0	-100	37.0	18400	0.0	-100
Bilaspur	3.8	73	20.6	610	0.0	-100
Dantewara	0.0	-100	**	**	0.0	-100
Dhamtari	0.0	-100	31.8	5200	0.0	-100
Durg	0.0	-100	20.8	1056	0.0	-100
Janjgir	0.0	-100	**	**	**	**
Jashpurnagar	0.0	-100	28.0	775	0.0	-100
Kanker	0.0	-100	**	**	**	**
Korba	0.0	-100	6.0	216	0.0	-100
Koriya	0.0	-100	23.2	829	0.0	-100
Kawardha	0.0	-100	**	**	**	**
Mahasumund	0.0	-100	2.0	186	0.0	-100
Narayanpur	0.0	-100	40.6	200	0.0	-100
Raigarh	0.0	-100	**	**	**	**
Raipur	0.0	-100	14.5	1218	0.0	-100
Rajandgaon	0.0	-100	12.1	998	0.0	-100
Surguja	0.0	-100	4.1	17	0.0	-100
East Uttar Pradesh						
Allahabad	0.0	-100	37.2	3000	0.0	-100
Ambedkar Nagar	0.0	-100	16.0	662	0.0	-100
Azamgarh	0.0	-100	0.0	-100	0.0	-100
Bahraich	0.0	-100	46.2	1026	0.0	-100
Ballia	0.0	-100	2.7	91	0.0	-100
Balrampur	0.0	-100	48.5	2105	0.0	-100
Banda	0.0	-100	4.9	185	0.0	-100
Barabanki	0.0	-100	17.6	633	0.0	-100
Basti	0.0	-100	12.6	425	0.0	-100
Chandauli	0.0	-100	7.5	317	0.0	-100
Deoria	0.0	-100	8.5	325	0.0	-100
Faizabad	0.0	-100	17.0	530	0.0	-100
Farrukhabad	0.0	-100	5.0	175	0.0	-100

Fatehpur	0.0	-100	3.0	57	0.0	-100
Gazipur	0.0	-100	12.9	396	0.0	-100
Gonda	0.0	-100	20.6	1044	0.0	-100
Gorakhpur	0.0	-100	17.2	514	0.0	-100
Hardoi	0.0	-100	10.5	451	0.0	-100
Jaunpur	0.0	-100	9.7	306	0.0	-100
Kannauj	0.0	-100	3.5	75	0.0	-100
Kanpur City	0.0	-100	13.7	496	0.0	-100
Kanpur Dehat	0.0	-100	8.7	410	0.0	-100
Kaushambi	0.0	-100	13.8	822	0.0	-100
Kheri	0.0	-100	17.6	310	0.0	-100
Kushi nagar	0.0	-100	10.2	467	0.0	-100
Lucknow	0.0	-100	9.1	203	0.0	-100
Maharajganj	0.0	-100	14.5	458	0.0	-100
Mau	0.0	-100	6.0	131	0.0	-100
Mirzapur	0.0	-100	34.5	1817	0.0	-100
Pratapgarh	0.0	-100	28.3	1317	0.0	-100
RaiBareilly	0.0	-100	6.2	289	0.0	-100
Sahuji Maharajnagar	0.0	-100	14.7	1028	0.0	-100
Sant Kabirnagar	0.0	-100	13.0	550	0.0	-100
Sant Ravidas Nagar	0.0	-100	16.0	789	0.0	-100
Shrawasti	**	**	**	**	**	**
Sidharthnagar	0.0	-100	9.3	387	0.0	-100
Sitapur	0.0	-100	10.9	337	0.0	-100
Sonbhadra	0.0	-100	27.4	2183	0.0	-100
Sultanpur	0.0	-100	14.7	674	0.0	-100
Unnao	0.0	-100	10.3	503	0.0	-100
Varanasi	0.0	-100	18.3	769	0.0	-100
West Uttar Pradesh						
Agra	0.0	-100	3.4	34	0.0	-100
Aligarh	0.0	-100	14.0	637	0.0	-100
Auraiya	0.0	-100	1.5	15	0.0	-100
Badaun	0.0	-100	15.6	643	0.0	-100
Baghpat	0.0	-100	7.9	204	1.0	-68
Bareilly	0.0	-100	18.3	453	0.0	-100
Bijnor	0.0	-100	17.8	305	0.2	-98
Bulandsahar	0.0	-100	3.5	30	0.0	-100
Etah	0.0	-100	10.1	533	0.0	-100
Etawah	0.0	-100	0.3	-76	0.0	-100
Firozabad	0.0	-100	3.2	32	0.0	-100
GBNagar	0.0	-100	13.0	348	1.5	-64
Ghaziabad	0.0	-100	11.3	277	0.1	-98
Hamirpur	0.0	-100	8.3	658	0.0	-100
Jalaun	0.0	-100	17.4	990	0.0	-100
Jhansi	0.0	-100	21.5	1244	0.0	-100
Jotiba Phule Nagar	0.0	-100	0.7	-83	0.0	-100
Kanshiramnagar	0.0	-100	12.0	362	0.0	-100
Lalitpur	0.0	-100	19.7	883	0.0	-100
Mahamaya Nagar	0.0	-100	8.2	356	0.0	-100

Mahoba	0.0	-100	3.9	129	0.0	-100
Mainpuri	0.0	-100	2.0	-5	0.0	-100
Mathura	0.0	-100	1.0	-29	0.0	-100
Meerut	0.0	-100	13.6	386	0.4	-93
Moradabad	0.0	-100	18.9	601	0.0	-100
Muzzaffarnagar	0.0	-100	11.6	241	0.7	-87
Pilibhit	0.0	-100	13.9	223	0.0	-100
Rampur	0.0	-100	17.8	324	0.0	-100
Saharanpur	0.0	-100	11.0	134	0.0	-100
Shahjahanpur	0.0	-100	15.4	451	0.0	-100
Uttarakhand						
Almora	0.0	-100	29.8	173	0.0	-100
Bageshwar	0.0	-100	42.0	285	0.0	-100
Chamoli	0.0	-100	63.6	584	4.5	-56
Champawat	0.0	-100	67.5	777	0.0	-100
Dehradun	0.0	-100	15.8	123	0.2	-99
Garhwal Pauri	0.0	-100	22.0	168	0.0	-100
Garhwal Tehri	0.0	-100	37.6	323	0.6	-94
Haridwar	0.0	-100	17.8	279	0.0	-100
Nainital	0.0	-100	72.9	701	0.0	-100
Pithorgarh	0.0	-100	64.9	613	0.0	-100
Rudraprayag	0.0	-100	49.4	134	2.2	-86
Udham Sing Nagar	0.0	-100	24.5	390	0.0	-100
Uttarkashi	0.0	-100	16.3	38	4.2	-75
Bihar						
Araria	0.0	-100	13.0	1344	0.0	-100
Arwal	0.0	-100	4.4	18	0.0	-100
Aurangabad	0.0	-100	3.8	-6	0.0	-100
Banka	**	**	27.8	2427	0.0	-100
Begusarai	0.0	-100	8.7	524	0.0	-100
Bhabua	0.0	-100	12.4	417	0.0	-100
Bhagalpur	0.0	-100	23.6	1869	0.0	-100
Bhojpur	0.0	-100	2.1	62	0.0	-100
Buxar	**	**	**	**	**	**
Darbhanga	0.0	-100	9.1	214	0.0	-100
East Champaran	0.0	-100	4.7	122	0.0	-100
Gaya	0.0	-100	12.7	694	0.0	-100
Gopalganj	0.0	-100	5.5	150	0.0	-100
Jahanabad	0.0	-100	4.9	73	0.0	-100
Jamui	0.0	-100	0.0	-100	0.0	-100
Kathihar	0.0	-100	44.0	1900	0.0	-100
Khagadia	0.0	-100	11.1	1747	0.0	-100
Kishanganj	0.0	-100	10.6	5200	0.0	-100
Lakhisarai	0.0	-100	2.7	48	0.0	-100
Madhepura	0.0	-100	12.1	709	0.0	-100
Madhubani	0.0	-100	25.6	967	0.0	-100
Monghyar	**	**	8.4	367	0.0	-100
Muzaffarpur	0.0	-100	7.0	233	0.0	-100
Nalanda	0.0	-100	7.9	367	0.0	-100

Nawada	0.0	-100	0.0	-100	0.0	-100
Patna	0.0	-100	4.9	206	0.0	-100
Purnea	0.0	-100	8.4	1580	0.0	-100
Rohtas	0.0	-100	4.9	133	0.0	-100
Saharsha	0.0	-100	12.0	200	0.0	-100
Samstipur	0.0	-100	8.4	301	0.0	-100
Saran	0.0	-100	5.2	102	0.0	-100
Sheikpura	0.0	-100	2.6	100	0.0	-100
Sheohar	0.0	-100	14.8	771	0.0	-100
Sitamarhi	0.0	-100	4.7	176	0.0	-100
Siwan	0.0	-100	6.2	285	0.0	-100
Supaul	0.0	-100	12.2	483	0.0	-100
Vaishali	0.0	-100	5.7	146	0.0	-100
West Champaran	0.0	-100	6.4	119	0.0	-100
Jharkhand						
Bokaro	0.0	-100	8.7	384	0.0	-100
Chatra	0.0	-100	0.0	-100	0.0	-100
Deoghar	0.0	-100	6.6	555	0.0	-100
Dhanbad	0.0	-100	11.7	737	0.0	-100
Dumka	0.0	-100	0.0	-100	0.0	-100
East Singbhum	0.0	-100	6.4	276	0.0	-100
Garhwa	0.0	-100	0.0	-100	0.0	-100
Giridih	0.0	-100	7.4	291	0.0	-100
Godda	0.0	-100	0.0	-100	0.0	-100
Gumla	0.0	-100	0.0	-100	0.0	-100
Hazaribagh	0.0	-100	4.9	224	0.0	-100
Jamtara	0.0	-100	16.4	811	0.0	-100
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderna	0.0	-100	2.3	35	0.0	-100
Latehar	0.0	-100	0.0	-100	0.0	-100
Lohardagga	0.0	-100	18.8	717	0.0	-100
Pakur	0.0	-100	13.0	900	0.0	-100
Palamau	0.0	-100	10.5	954	0.0	-100
Ramgarh	0.0	-100	9.8	1300	0.0	-100
Ranchi	0.0	-100	22.8	713	0.0	-100
Sahebganj	0.0	-100	2.0	100	0.0	-100
Saraikela	0.0	-100	6.4	256	0.0	-100
Simdega	0.0	-100	0.0	-100	0.0	-100
West Singbhum	0.0	-100	10.6	563	0.0	-100
East Rajasthan						
Ajmer	0.0	-100	0.0	-98	0.0	-100
Alwar	0.0	-100	0.1	-91	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	2.5	127	0.0	-100
Bhilwara	0.0	-100	0.0	-100	0.0	-100
Bundi	0.0	-100	0.3	-70	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	0.1	-89	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	0.0	-100	0.4	-84
Karauli	0.0	-100	0.0	-100	0.0	-100
Kota	0.0	-100	0.8	-15	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	0.1	-95	0.0	-100
Udaipur	0.0	-100	0.3	-64	0.0	-100
West Rajasthan						
Barmer	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100
Churu	0.0	-100	0.2	-80	0.5	-74
Hanumangarh	0.0	-100	0.0	-100	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.0	-100
Nagaur	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-100	0.6	-57
Gujarat Region						
Ahmedabad	0.0	-100	0.4	46	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	1.2	491	0.0	-100
DNH	**	**	0.0	-100	**	**
Dahod	0.0	-100	1.4	175	0.0	-100
Daman	**	**	0.0	-100	**	**
Dangs	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	0.0	-100	12.8	6300	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100
Narmada	0.0	-100	3.5	3400	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	0.0	-100	0.0	-100	0.0	-100
Surat	0.0	-100	0.0	-100	0.0	-100
Tapi	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100
S K & Diu region						
Amreli	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.0	-100	0.0	-100

Diu	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-100	0.0	-100	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.1	-17	0.0	-100
Maharashtra						
Konkan & Goa						
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	7.5	200	0.0	-100
Sindhudurg	0.0	-100	0.0	-100	0.0	-100
South Goa	0.0	-100	6.9	2183	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100
Madhya Maharashtra						
Ahmednagar	0.0	-100	0.5	433	0.0	-100
Dhule	0.0	-100	**	**	**	**
Jalgaon	**	**	0.0	-100	0.0	-100
Kolhapur	0.0	-100	0.2	-33	0.0	-100
Nandurbar	0.0	-100	**	**	**	**
Nasik	0.0	-100	0.9	200	0.0	-100
Pune	0.0	-100	0.0	-100	0.0	-100
Sangli	0.1	-56	8.6	8500	0.0	-100
Satara	0.0	-100	0.0	-100	0.0	-100
Solapur	0.0	-100	0.0	-100	0.0	-100
Marathwada						
Aurangabad	1.0	9	7.7	200	0.0	-100
Beed	0.0	-100	5.2	200	0.0	-100
Hingoli	0.0	-100	20.0	2403	**	**
Jalna	0.0	-100	16.0	3893	0.0	-100
Latur	0.0	-100	4.7	492	0.0	-100
Nanded	0.0	-100	11.1	1489	0.0	-100
Usmanabad	0.0	-100	8.2	2638	0.0	-100
Parbhani	0.0	-100	8.3	1963	0.0	-100
Vidarbha						
Akola	0.0	-100	43.3	2995	0.0	-100
Amraoti	0.4	-76	50.0	2076	0.0	-100
Bhandara	0.0	-100	10.9	180	0.0	-100
Buldhana	0.1	-90	25.0	4891	0.0	-100
Chandrapur	0.0	-100	35.5	1874	0.0	-100
Gadchiroli	0.0	-100	28.3	2471	0.0	-100
Gondia	0.0	-100	15.3	428	0.0	-100
Nagpur	0.0	-100	7.8	144	0.0	-100
Wardha	0.0	-100	13.8	667	0.0	-100
Washim	0.0	-100	14.2	916	0.0	-100
Yeotmal	0.0	-100	22.3	3622	0.0	-100

Odisha						
Angul	0.1	-95	8.4	367	0.0	-100
Balasore	0.0	-99	32.3	1015	0.5	-74
Bargarh	0.1	-91	0.3	-74	0.0	-100
Bhadrak	0.4	-47	22.8	685	0.0	-100
Bolangir	0.0	-100	16.5	684	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.0	-100	18.9	330	0.0	-100
Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.1	-97	11.4	568	0.0	-100
Gajapati	3.9	556	13.1	338	0.0	-100
Ganjam	3.8	248	42.8	944	0.0	-100
Jagatsingpur	1.3	229	37.6	916	0.0	-100
Jajpur	0.0	-100	16.3	225	0.0	-100
Jharsuguda	1.1	-56	13.2	371	0.0	-100
Kalahandi	0.0	-100	16.5	1963	0.0	-100
Kandhamal	4.0	233	21.4	724	0.0	-100
Kendrapara	1.4	75	44.2	1423	0.0	-100
Keonjhar	0.3	-71	11.7	351	0.0	-100
Khurda	0.1	-94	16.8	498	0.0	-100
Koraput	5.8	1817	3.7	115	0.0	-100
Malkangiri	0.0	-100	3.0	900	0.0	-100
Mayurbhanj	0.3	-78	21.6	1445	0.0	-100
Nawapara	0.0	-100	0.2	-89	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	38.6	1187	0.0	-100
Puri	3.9	330	66.3	860	0.0	-100
Rayagada	1.2	7	6.0	142	0.0	-100
Sambalpur	1.5	17	5.8	109	0.0	-100
Sonepur	0.0	-100	1.2	-35	0.0	-100
Sundargarh	0.2	-86	10.7	295	0.0	-100
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	100.5	149	8.3	-72	84.3	197
North & Middle Andaman	16.3	-15	0.0	-100	4.3	-69
South Andaman	6.8	-70	3.6	-73	33.9	145
GWB						
Bankura	0.0	-100	15.7	461	0.0	-100
Birbhum	0.0	-100	8.4	322	0.0	-100
Burdwan	0.0	-100	12.5	637	0.0	-100
East Midnapore	0.0	-100	10.5	208	0.0	-100
Hooghly	0.0	-100	8.7	181	0.0	-100
Howrah	1.9	-29	4.9	444	0.0	-100
Kolkata	0.1	-98	1.6	14	0.0	-100
Murshidabad	0.0	-100	1.0	11	0.0	-100
Nadia	0.0	-100	5.5	82	0.0	-100
24 Pargana (N)	1.9	-23	18.6	388	0.0	-100
Purulia	0.0	-100	24.4	1527	1.9	-36
24 Pargana (S)	0.8	-79	5.7	128	0.0	-100

West Midnapore	0.0	-98	10.3	346	0.0	-100
SHWB & Sikkim						
Cooch Behar	0.0	-100	17.0	1314	0.1	-97
Darjeeling	0.0	-100	3.6	-38	0.8	-91
East Sikkim	0.7	-88	3.0	-8	3.6	6
Jalpaiguri	0.0	-100	10.7	569	0.8	-54
Malda	0.0	-100	4.3	153	0.0	-100
North Dinajpur	0.0	-100	7.0	483	0.0	-100
North Sikkim	0.0	-100	6.9	-42	4.2	-57
South Dinajpur	0.0	-100	0.7	-58	0.0	-100
South Sikkim	0.0	-100	1.1	-68	0.3	-90
West Sikkim	0.0	-100	0.7	-94	4.0	-59
Karnataka						
Coastal Karnataka						
Dakshin Kannada	0.0	-100	1.6	215	0.0	-100
Udupi	0.0	-100	0.6	500	0.0	-100
Uttar Kannada	0.0	-100	1.8	820	0.0	-100
N I Karnataka						
Bagalkote	0.0	-100	0.3	186	0.0	-100
Belgaum	0.1	-56	0.5	389	0.0	-100
Bidar	0.0	-100	8.4	832	0.0	-100
Bijapur	0.0	-100	1.6	423	0.0	-100
Dharwad	0.0	-100	0.1	-95	0.0	-100
Gadag	0.0	-100	0.2	20	0.0	-100
Gulbarga	0.0	-100	5.6	5484	0.0	-100
Haveri	0.0	-100	0.0	-100	0.0	-100
Koppal	0.0	-100	0.5	409	0.0	-100
Raichur	0.0	-100	2.8	2717	0.0	-100
Yadgir	0.0	-100	8.0	200	0.0	-100
S I Karnataka						
Bangalore Rural	0.0	-100	19.0	3707	0.0	-100
Bangalore Urban	0.0	-100	7.7	1191	0.0	-100
Bellary	0.0	-100	0.7	568	0.0	-100
Chamarajnar	0.0	-100	0.3	-18	0.0	-100
Chichballapur	0.0	-100	6.2	935	0.0	-100
Chickmagalur	1.0	-46	0.0	-90	0.0	-100
Chitradurga	0.0	-100	0.5	138	0.0	-100
Davangere	0.0	-100	0.8	650	0.0	-100
Hassan	0.0	-100	0.0	-100	0.0	-100
Kodagu	0.9	-49	0.2	-78	0.0	-100
Kolar	0.0	-100	7.2	694	0.0	-100
Mandya	0.0*	-98	0.0	-100	0.0	-100
Mysore	0.6	-58	0.0	-100	0.0	-100
Ramnagara	0.0	-100	1.5	200	0.0	-100
Shimoga	0.0	-100	0.2	-7	0.0	-100
Tumkur	0.0	-100	0.6	56	0.0	-100
Kerala						
Alappuzha	2.6	-62	1.2	-74	0.9	-81
Kannur	0.0	-100	0.0	-100	0.0	-100

Ernakulam	2.7	-24	2.4	-25	0.0	-100
Idukki	7.7	40	0.2	-93	1.2	-63
Kasaragod	0.0	-100	0.9	200	0.0	-100
Kollam	9.9	3	6.3	44	0.0	-100
Kottayam	6.1	-4	3.0	-16	5.2	106
Kozhikode	0.0	-100	0.0	-100	0.0	-100
Malappuram	0.0	-100	0.0	-100	0.0	-100
Palakkad	0.6	-77	0.0	-100	0.0	-100
Pathanamthitta	3.5	-59	0.0	-100	5.3	-5
Thiruvananthapuram	10.1	17	9.0	120	0.0	-100
Thrissur	2.7	-20	0.9	-43	0.0	-100
Wayanad	0.0	-100	0.0	-100	0.0	-100
Tamil Nadu						
Ariyalur	7.0	-49	0.5	-93	0.0	-100
Chennai	105.2	354	10.8	151	0.0	-100
Coimbatore	9.8	103	0.0	-100	0.0	-100
Cuddalore	23.1	23	6.9	-19	0.0	-100
Dharmapuri	1.0	-73	25.5	722	0.0	-100
Dindigul	1.9	-85	32.6	493	0.0	-100
Erode	0.1	-97	1.2	-9	0.0	-100
Kanchipuram	59.0	334	0.7	-79	0.0	-100
Kanyakumari	12.9	63	3.4	-9	5.0	0
Karikal	46.7	-4	0.7	-96	0.0	-100
Karur	3.1	-48	18.2	691	0.0	-100
Krishnagiri	0.0	-100	6.5	180	0.0	-100
Madurai	5.4	-43	11.9	133	0.0	-100
Nagapattinam	59.6	48	10.2	-38	0.0	-100
Namakkal	0.6	-79	24.5	1065	0.0	-100
Nilgiris	5.7	-52	0.0	-100	0.0	-100
Perambalur	3.0	-66	20.3	516	0.0	-100
Puducherry	4.5	-80	19.0	84	0.0	-100
Pudukottai	4.1	-70	2.9	-53	0.0	-100
Ramanathapuram	7.9	-58	1.0	-91	0.0	-100
Salem	0.8	-80	17.5	662	0.0	-100
Sivaganga	0.9	-94	17.1	216	0.0	-100
Thanjavur	16.8	-9	0.8	-88	0.0	-100
Theni	3.2	-49	4.3	2	0.0	-100
Tirunelveli	12.7	-27	4.2	-53	0.0	-100
Tirupur	8.1	64	9.2	254	0.0	-100
Tiruvallur	45.3	421	0.7	-80	0.0	-100
Tiruvannamalai	2.4	-70	0.0	-100	0.0	-100
Tiruvarur	33.3	9	0.0	-100	0.0	-100
Toothukudi	14.1	0	2.4	-48	0.0	-100
Trichy	4.8	-47	9.1	121	0.0	-100
Vellore	1.7	-65	1.3	-31	0.0	-100
Villupuram	7.1	-45	2.0	-62	0.0	-100
Virudhunagar	5.8	-44	2.5	-36	0.0	-100
Andhra Pradesh						
Coastal Andhra Pradesh						

East Godavari	4.6	365	0.1	-97	0.0	-100
Guntur	0.8	-22	1.3	-34	0.0	-100
Krishna	9.4	1077	5.9	324	0.0	-100
Nellore	2.3	-74	0.3	-89	0.0	-100
Prakasam	0.0	-100	0.6	-75	0.0	-100
Sirkakulam	7.9	881	6.5	102	0.0	-100
Visakhapatnam	13.2	1544	1.4	-59	0.0	-100
Vizianagram	1.0	25	2.4	-29	0.0	-100
West Godavari	1.4	-22	0.6	-68	0.0	-100
Rayalaseema						
Anantapur	0.0	-100	0.0	-100	0.0	-100
Chittoor	2.9	-44	0.8	-59	0.0	-100
Cuddapah	0.0	-100	3.6	507	0.0	-100
Kurnool	0.0	-100	1.3	1221	0.0	-100
Telangana						
Adilabad	0.0	-100	36.4	5974	0.0	-100
Hyderabad	0.0	-100	0.1	-75	0.0	-100
Karimnagar	0.0	-100	31.9	2027	0.0	-100
Khammam	0.0	-100	1.9	55	0.0	-100
Mehabubnagar	0.0	-100	3.9	3803	0.0	-100
Medak	0.0	-100	8.5	1595	0.0	-100
Nalgonda	0.0	-100	0.0	-100	0.0	-100
Nizamabad	0.0	-100	15.1	3664	0.0	-100
Rangareddy	0.0	-100	7.1	1664	0.0	-100
Warangal	0.0	-100	6.2	340	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 Dinanat, 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, Nirmla, 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.

Gujarat

Watermelon: Sugar baby, Ashahipameto, Madhu, Jyoti, Pusa Bedana (Seedless).