

National Agromet Advisory Service Bulletin

Thursday 14th November, 2013
(For the period 14th to 17th November 2013)

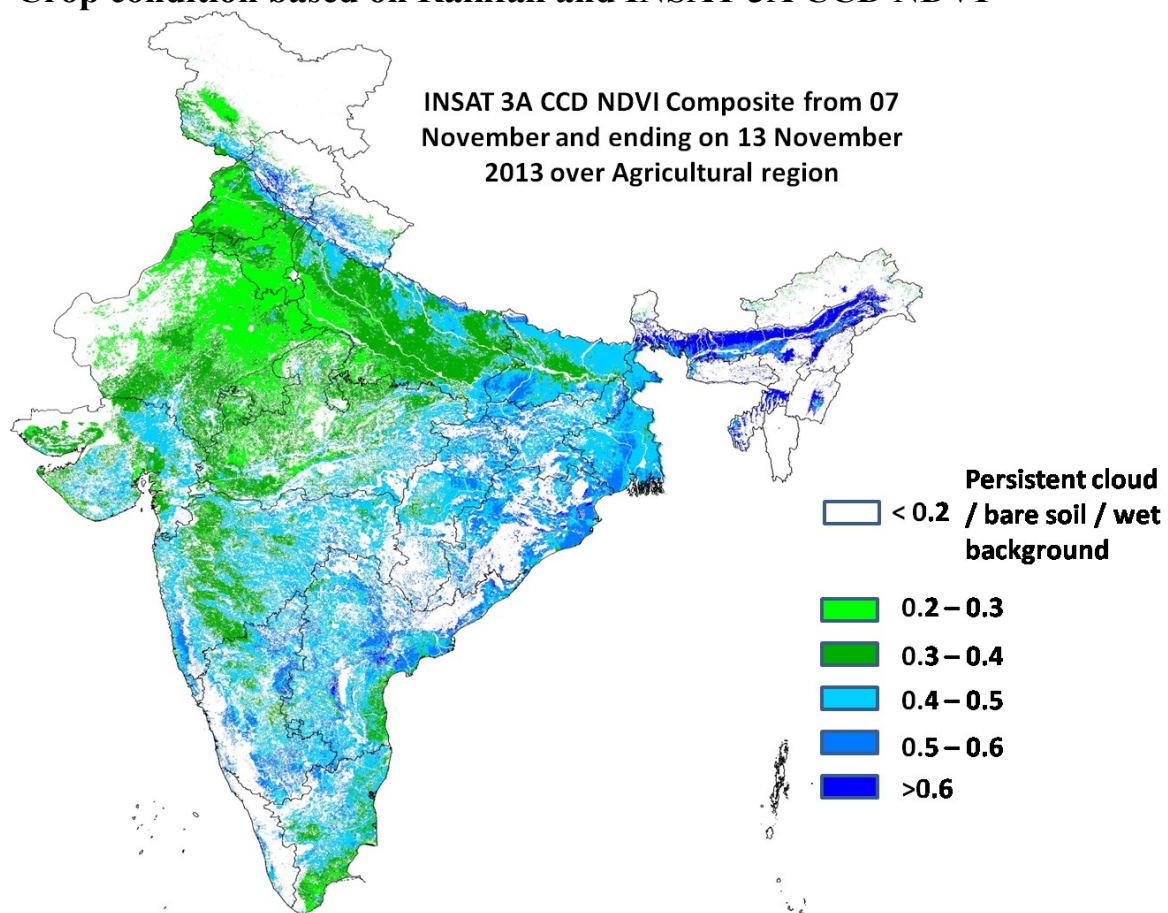


Issued by

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



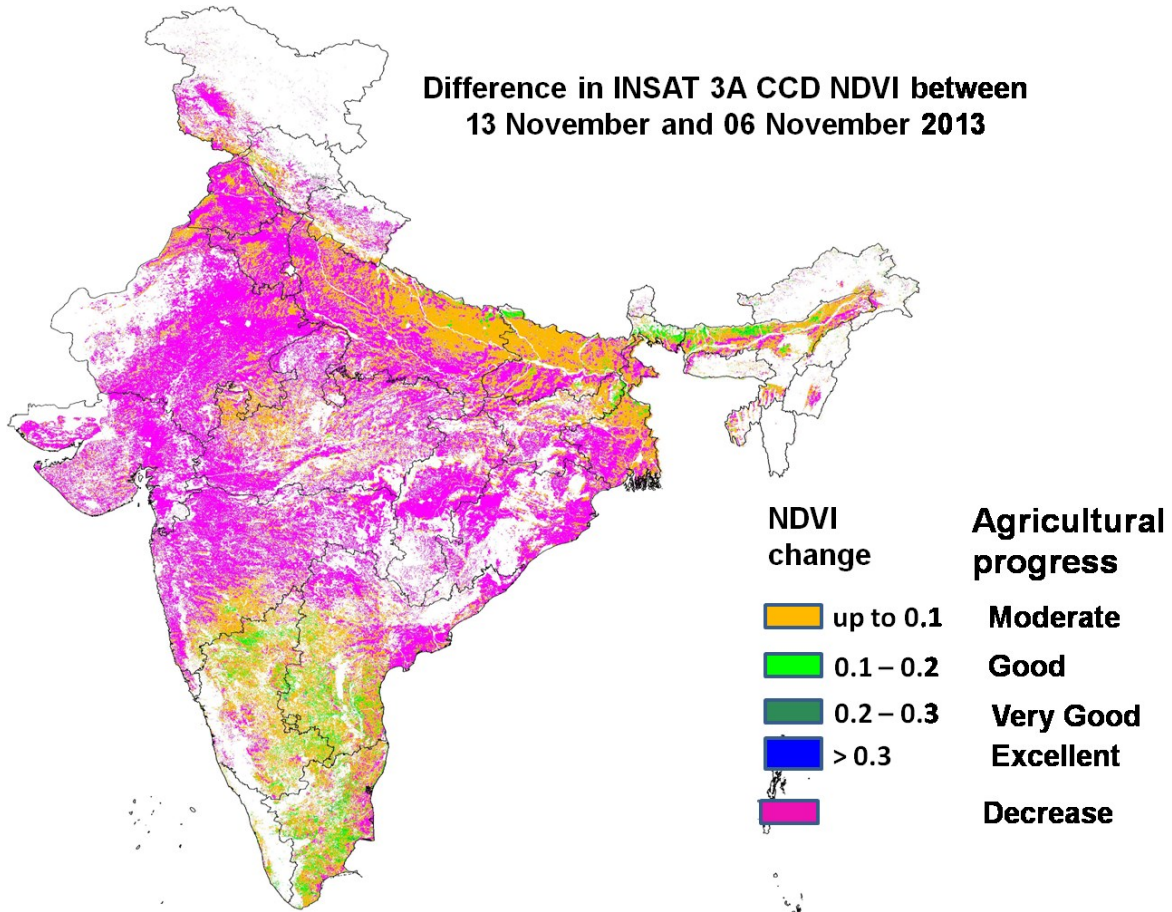
Crop condition based on Rainfall and INSAT 3A CCD NDVI **



Source: SAC, Ahmedabad

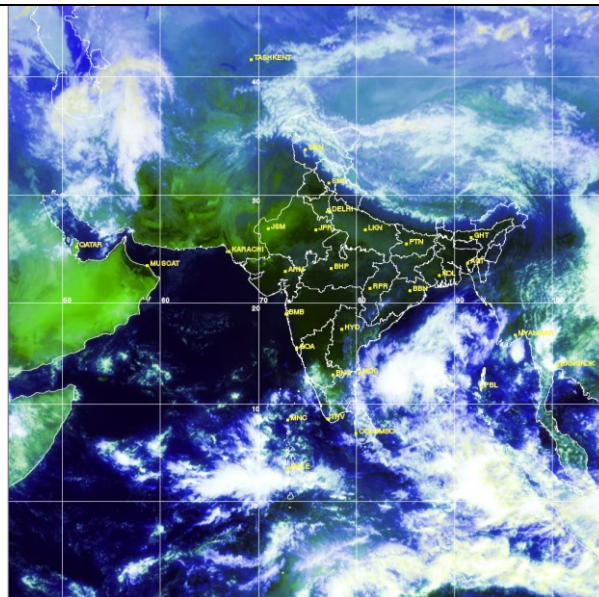
Overall Agricultural Situation: Agricultural conditions is in general very good to good over south-west Bihar, eastern Bihar, north eastern UP, pockets of western UP, West Bengal and Chhattisgarh, eastern MP, north and central Gujarat, eastern Maharashtra, pockets of north Karnataka, north and coastal AP, Odisha as NDVI vigour showed the range from 0.4 to 0.6 upto 13th November 2013. The NDVI remain low within range of 0.2 to 0.4 over states of Punjab, Haryana, Rajasthan, north and central MP, central Maharashtra and major part of UP.

**Difference in INSAT 3A CCD NDVI between
13 November and 06 November 2013**



Source: SAC, Ahmedabad

Progress of crop performance during last week: Agricultural progress between 13th November and 6th November 2013 was found to be moderate over few pockets of south west Punjab, north Punjab, western Haryana, north-eastern part of UP, north Bihar, few pockets of north MP. The good progress was observed in pockets of north Karnataka, parts of central and north AP and Tamil Nadu. Rest of India showed decrease in NDVI which may be due to end of Kharif crop season.



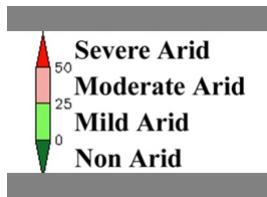
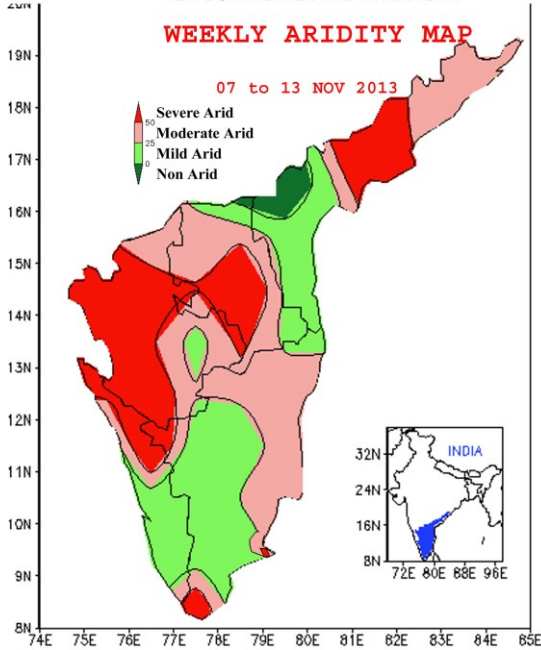
Satellite image dated 14.11.2013, 0600 UTC

Aridity Anomaly Map for the week ending 13.11.2013

भारत मौसम विज्ञान विभाग
अनाकृष्टि अनुसंधान अनुभाग - पुणे
INDIA METEOROLOGICAL DEPARTMENT
DROUGHT RESEARCH UNIT - PUNE

तटीय आंध्रप्रदेश, रायलसीमा, दक्षिण आंतरिक कर्नाटका,
केरल, तमिलनाडू और पॉन्डिचेरी के लिए

FOR
COASTAL ANDHRA PRADESH, RAYALASEEMA, SOUTH INTERIOR KARNATAKA,
KERALA, TAMIL NADU AND PONDICHERRY



During the week (07 to 13 November, 2013) the aridity anomaly map indicated the following aridity conditions over the five Meteorological sub-divisions viz. Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka, Tamil Nadu & Pondicherry and Kerala.

1. Areas having severe and moderate arid conditions are indicated below:

1.1 Areas affected by severe arid conditions :

Central parts of Coastal Andhra Pradesh; most of the parts of South Interior Karnataka and adjoining northeastern parts of Kerala, central and southwestern parts of Rayalaseema and adjoining northwestern parts of Tamil Nadu.

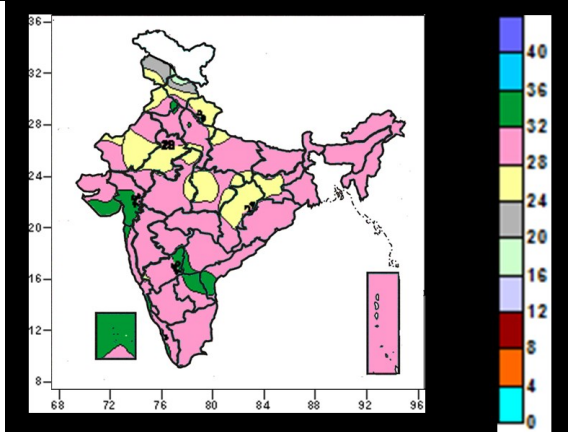
Isolated areas around Pamban and Palayamkottai (Tamil Nadu).

1.2 Areas affected by moderate arid conditions :

Northern and some central parts of Coastal Andhra Pradesh; most of the parts of Rayalaseema, northern and southeastern parts of South Interior Karnataka, northern , eastern and northwestern parts of Tamil Nadu, northwestern parts of Kerala; some southern parts of Tamil Nadu.

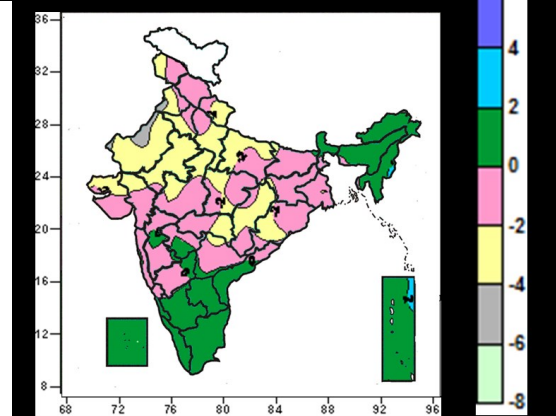
**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on
13.11.2013**

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 13.11.2013



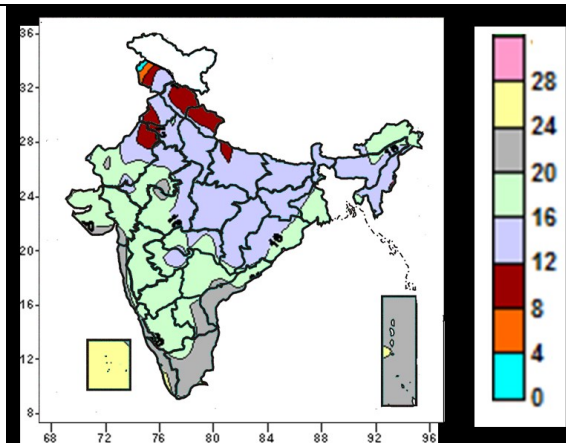
- 28 to 36 $^{\circ}\text{C}$ over entire country (except many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Rajasthan, Jharkhand, East Madhya Pradesh, Chattisgarh, some parts of Punjab, Uttar Pradesh, West Madhya Pradesh).
- 20 to 28 $^{\circ}\text{C}$ over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Rajasthan, Jharkhand, East Madhya Pradesh, Chattisgarh, some parts of Punjab, Uttar Pradesh, West Madhya Pradesh.
- 16 to 20 $^{\circ}\text{C}$ over some parts of Jammu & Kashmir, Himachal Pradesh.

Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 13.11.2013



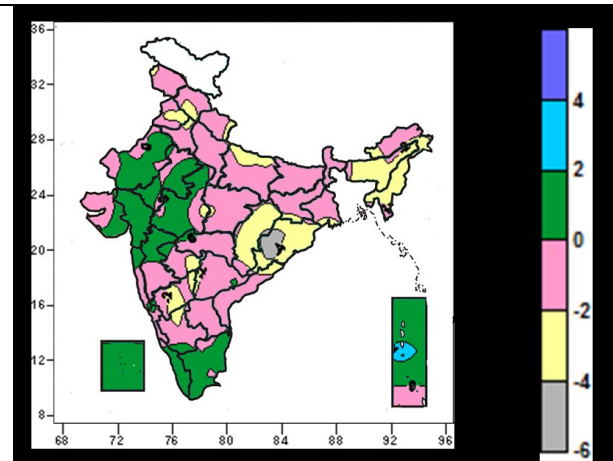
- -2 to 2 $^{\circ}\text{C}$ over entire country (except many parts of Uttarakhand, Rajasthan, Punjab, Haryana, Delhi, Uttar Pradesh, Chattisgarh, some parts of Jammu & Kashmir, Bihar, Jharkhand, Orissa, Madhya Pradesh, Gujarat, Saurashtra & Kutch, Vidarbha, Telangana).
- -6 to -2 $^{\circ}\text{C}$ over many parts of Uttarakhand, Rajasthan, Punjab, Haryana, Delhi, Uttar Pradesh, Chattisgarh, some parts of Jammu & Kashmir, Bihar, Jharkhand, Orissa, Madhya Pradesh, Gujarat, Saurashtra & Kutch, Vidarbha, Telangana.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 13.11.2013



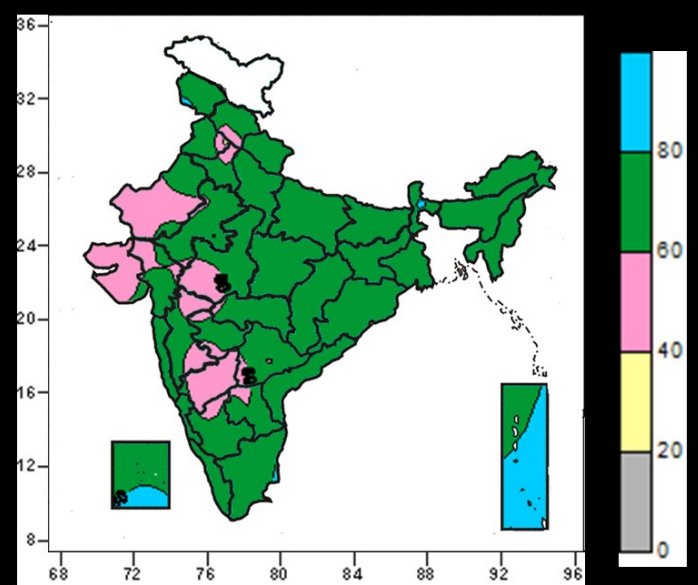
- 20 to 24 $^{\circ}\text{C}$ over many parts of Coastal Andhra Pradesh, Raylaseema, Tamil Nadu, Kerala, Konkan & Goa, Andaman & Nicobar Islands, some parts of Telangana, Coastal Karnataka, Gujarat, Saurashtra.
- 12 to 20 $^{\circ}\text{C}$ over the country (except many parts of Coastal Andhra Pradesh, Raylaseema, Tamil Nadu, Kerala, Konkan & Goa, Jammu & Kashmir, Himachal Pradesh, Uttarakhand Andaman & Nicobar Islands, some parts of Telangana, Coastal Karnataka, Gujarat, Saurashtra, Punjab, East Uttar Pradesh, West Rajasthan).
- 0 to 12 $^{\circ}\text{C}$ over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, some parts of Punjab, East Uttar Pradesh, West Rajasthan.

Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 13.11.2013



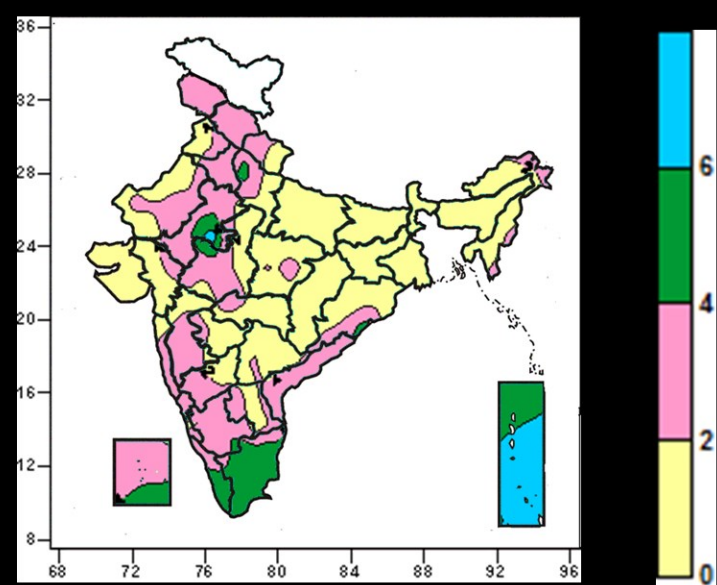
- 2 to 4 $^{\circ}\text{C}$ over some parts of Andaman & Nicobar Islands.
- -2 to 2 $^{\circ}\text{C}$ over all parts of country (except many parts of Odisha, Chattisgarh, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, East Uttar Pradesh, Jharkhand, Arunachal Pradesh, Telangana, Marathwada, North & South Interior Karnataka).
- -6 to -2 $^{\circ}\text{C}$ over many parts of Odisha, Chattisgarh, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, some parts of Jammu & Kashmir, Hararyana, Himachal Pradesh, Uttarakhand, Punjab, East Uttar Pradesh, Jharkhand, Arunachal Pradesh, Telangana, Marathwada, North & South Interior Karnataka.

Relative Humidity (%) over India for the week ending 13.11.2013



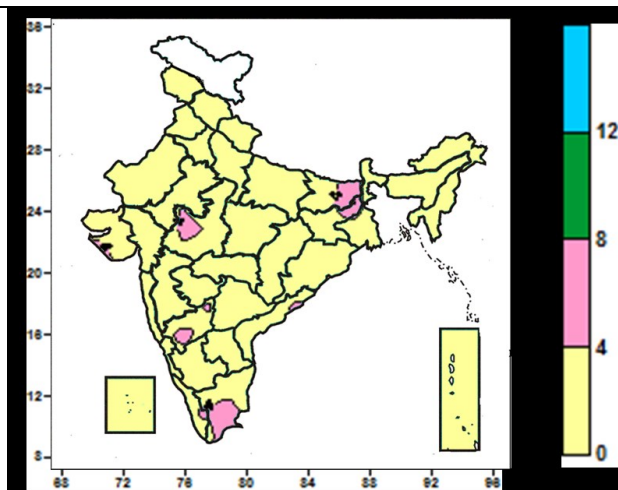
- 80 to 100% over many parts of Andman & Nicobar Islands and some parts of Jammu & Kashmir, Lakshadweep Islands.
- 40 to 80% over entire country (except many parts of Andman & Nicobar Islands and some parts of Jammu & Kashmir, Lakshadweep Islands).

Cloud amount (okta) over India for the week ending 13.11.2013



- 4 to 8 okta over many Tamil Nadu, Kerala, Andaman & Nicobar Islands and some parts of East Uttar Pradesh, East Rajasthan, South Interior Karnataka, Lakshadweep Islands.
- 2 to 4 okta over entire country (except many parts Tamil Nadu, Kerala, Andaman & Nicobar Islands and some parts of East Uttar Pradesh, East Rajasthan, South Interior Karnataka, Lakshadweep Islands).

Wind speed (knots) over India for the week ending 13.11.2013



- 4 to 8 knots over some parts of Bihar, Jharkhand, West Madhya Pradesh, North Interior Karnataka, Tamil Nadu, Kerala.
- 0 to 4 knots over entire country (except some parts of Bihar, Jharkhand, West Madhya Pradesh, North Interior Karnataka, Tamil Nadu, Kerala).

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 17th November, 2013)

- Rain/thundershowers would occur at isolated places over Tamilnadu during next 24 hours. Rain/thundershowers would occur at most places over north coastal Tamilnadu and at many places over rest Tamilnadu from tomorrow.
- Rain/thundershowers would occur at isolated places over south coastal Andhra Pradesh during next 24 hours and at most places from tomorrow.
- Rain/thundershowers would occur at isolated places over Rayalaseema during next 24 hours and at many places thereafter.
- Rain/thundershowers would occur at isolated places over South Interior Karnataka and South Coastal Karnataka from 15th onwards.
- Isolated rain/thundershowers would occur over North Coastal Andhra Pradesh during next 24 hours and at many places on 15th.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands.
- Rain/thundershowers would occur at a few places over Lakshadweep and Kerala during next 24 hours and isolated thereafter.
- No significant change in minimum and maximum temperatures over Northwest, Central and East India.
- Fog/shallow fog may occur at isolated pockets of Punjab and Haryana mainly in morning hours.
- Weather would be mainly dry/dry over rest of the country.

Weather Warning during next 3 days

14 November : No weather warning.

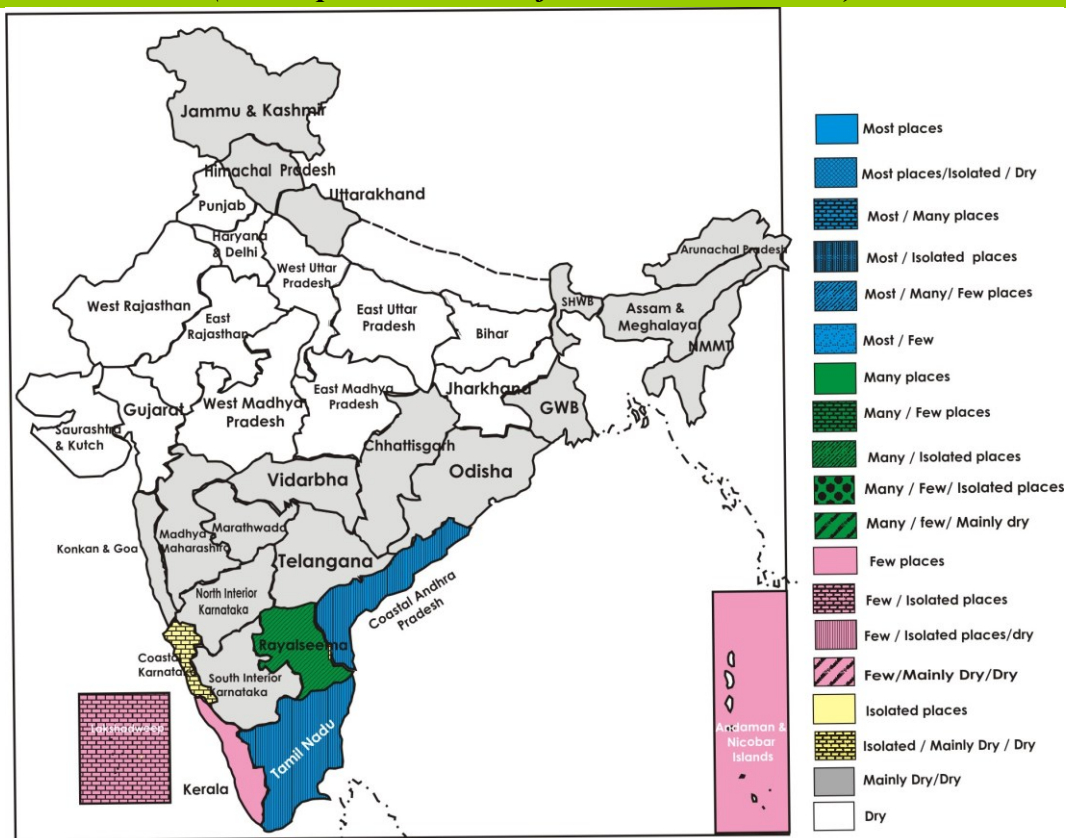
15 November: Heavy to very heavy rainfall would occur at a few places with extremely heavy falls (25 cms or more) at isolated places over north coastal Tamilnadu and heavy to very heavy falls at a few places over south Coastal Andhra Pradesh. Isolated heavy rainfall would also occur over Rayalaseema and rest Tamilnadu. Squally winds speed reaching 55 to 65 kmph gusting to 75 kmph would prevail along and off north Tamilnadu, Pudducherry and south Andhra Pradesh coast.

16 November: Heavy to very heavy rainfall would occur at a few places over south coastal Andhra Pradesh and north coastal Tamilnadu. Isolated heavy rainfall would also occur over Rayalaseema and rest Tamilnadu. Squally winds speed reaching 55 to 65 kmph gusting to 75 kmph would prevail along and off north Tamilnadu, Pudducherry and south Andhra Pradesh coast.

Weather Outlook for subsequent 4 days from 17th to 21st November, 2013

- Rain/thundershowers would occur at many places over Tamilnadu and south Andhra Pradesh with isolated heavy to very heavy falls on 16th and 17th November and rainfall activity would decrease thereafter.
- Rain/Thundershower would occur at many places over Kerala and at a few places over Andaman & Nicobar Islands.
- Weather would be mainly dry/dry over rest parts of the country.

Weather Forecast Map (Valid upto 0830 hours of 17th November, 2013)



Salient Advisories

South Region:

- In North Coastal Tamil Nadu, provide adequate drainage in cotton crop and other standing crops. Arrange mechanical support to banana and propping up in sugarcane/staking of vegetables, to prevent the crops from lodging due to strong winds. Postpone harvesting of rice, maize and onion in the Western Zone of Tamil Nadu.
- Postpone transplanting of *thaladi* rice in Cauvery Delta Zone of Tamil Nadu. Provide adequate drainage in standing crops.
- As rain / thundershowers is likely to occur at most / many places over Tamil Nadu, Rayalaseema and south Coastal Andhra Pradesh along with heavy to very heavy rainfall at a few / isolated places from 15th onwards, postpone sowing, intercultural operations and application of fertilizers and pesticides in the region. Arrange for extensive drainage facilities to avoid water stagnation in the crop fields.
- Postpone harvesting of cotton and rice in South Coastal Andhra Pradesh. Continue sowing of *rabi* pulses in the Krishna Godavari zone of Andhra Pradesh after current spells of heavy rain. Provide adequate drainage in standing crops.
- Continue planting of sugarcane; sowing of *rabi* bajra and wheat in the North East Transition Zone of Karnataka.
- Complete sowing of chick pea and undertake harvesting of groundnut, onion, bajra and fodder maize in clear weather in North Dry Zone of Karnataka.
- Continue sowing of *puncha* rice and planting of winter vegetables in the Problem Area Zone in Kerala. Continue sowing of *mundakan* rice in Southern and Central Zone of Kerala.

East Region:

- In East and South Eastern Coastal Plain Zone of Odisha, continue transplanting of cabbage, cauliflower and tomato and nursery raising of onion and sowing of mustard, groundnut, green pea, beans and cluster beans utilising the residual soil moisture.
- In North Eastern Plateau Zone of Odisha, undertake sowing of wheat, toria, groundnut and sunflower and planting of potato utilising the residual soil moisture.
- In New Alluvial Zone of West Bengal, continue harvesting of *aman* rice. After harvesting of *aman* rice prepare the field and undertake sowing of mustard utilising the residual soil moisture. Also continue transplanting of cauliflower, cabbage, tomato and brinjal.
- In Coastal Saline Zone of West Bengal, continue harvesting of *aman* rice. After harvesting of *aman* rice prepare land and undertake sowing of lentil, transplanting of cabbage, cauliflower and tomato and planting of potato and onion utilising the residual soil moisture.
- In North West Alluvial Plain Zone of Bihar, continue harvesting of matured rice and sugarcane. Continue sowing of pea, lentil, gram, rajmah and planting of potato. Continue sowing of wheat and *rabi* maize. Apply light irrigation after sowing or planting of crops.
- In Western Plateau Zone of Jharkhand continue harvesting of matured rice crop. Continue sowing of pea, green pea, mustard, gram, wheat, linseed and lentil and planting of potato followed by light irrigation.
- In Laterite and Red Soil Zone, New Alluvial Zone and Old Alluvial Zone of West Bengal, BPH may become severe in late transplanted *aman* rice. To control, apply Diclorovos or Carbaryl @ 1 ml per litre of water.

Northeast Region:

- In Barak Valley Zone of Assam, continue nursery sowing of onion, planting of potato and sowing of rapeseed and mustard followed by light irrigation.
- In Central Brahmaputra Valley Zone of Assam, continue sowing of rapeseed, mustard and wheat, transplanting of cole crops, which are 30-35 days old and planting of potato followed by light irrigation.
- In North Bank Plain Zone of Assam, continue planting of potato and transplanting of cole crops. Complete sowing of rapeseed and mustard at the earliest. Apply light irrigation after sowing, transplanting and planting of crops.
- In Sub Tropical Hill Zone of Arunachal Pradesh, continue sowing of pea and planting of potato utilising the residual soil moisture. Complete sowing of mustard at the earliest. Apply light irrigation after sowing, transplanting and planting of crops. Continue harvesting of turmeric and ginger.
- In Meghalaya, continue transplanting of cauliflower and winter vegetables followed by light irrigation. Also continue harvesting of matured groundnut and matured *sali* rice. Cover space between rows with rice straw

mulch in rapeseed / mustard crop to conserve soil moisture.

- In Sub Tropical Plain Zone of Manipur, continue transplanting of cole crops, sowing of rapeseed, mustard and pea and planting of potato. Continue land preparation for sowing of *rabi* maize. Apply light irrigation after sowing, transplanting and planting of crops.
- In Mild Tropical Hill Zone of Mizoram, continue transplanting of cole crops and tomato followed by light irrigation.
- In Mild Tropical Hill Zone of Nagaland, continue transplanting of cabbage, brocolli and tomato followed by light irrigation. Undertake harvesting of lowland rice.
- In Mid Tropical Plain Zone of Tripura, continue land preparation and planting of potato. Complete sowing of toria and lentil. Apply light irrigation after sowing, transplanting and planting of crops. Complete harvesting of *aman* rice. Apply light irrigation to cole crops and tomato.
- In Mild Tropical Hill Zone of Mizoram, there is chance of occurrence of leaf blotch in turmeric; spray Carbendazim @ 1 g / litre of water or Mancozeb @ 2.5 g / litre of water + 1 ml Sandovit.

West Region

- Complete sowing of gram in Central Vidarbha Zone and sowing of gram, wheat and linseed in Eastern Vidarbha Zone followed by light irrigation. Continue picking of fully opened cotton bolls.
- In Madhya Maharashtra, as there is no significant rain during last two weeks, apply irrigation to sugarcane, vegetable crops and early sown jowar and maize. Complete harvesting of late maturing rice varieties. Continue planting of pre seasonal sugarcane and complete sowing of irrigated gram and wheat. Thinning and weeding may be done in early sown *rabi* jowar and maize. Undertake sowing of improved varieties of lentil, gram and linseed pulse in harvested rice field in Western Ghat Region.
- In Marathwada region, as there is no significant rain during last two weeks, apply irrigation to sugarcane, vegetable crops, early sown jowar, maize, safflower and orchards. Continue harvesting of already matured *adsali* and pre-seasonal sugarcane. Continue picking of fully opened cotton bolls. Continue planting of pre seasonal sugarcane and complete sowing of wheat followed by light irrigation.
- Carry out picking of cotton during morning hours in Middle Gujarat Zone. Undertake harvesting of matured groundnut crop and dry in small heaps. Apply light irrigation before pulling, if soil is hard. Undertake land preparation and sowing of *rabi* crops like wheat, onion, maize, spices and mustard and planting of potato followed by light irrigation.
- In North West Zone of Gujarat, continue land preparation and sowing of mustard followed by light irrigation. Apply irrigation in alternate row at 8-10 days interval in cotton for better boll development in North Gujarat Zone and North West Zone of Gujarat.
- Carryout sowing of wheat, cumin and coriander in North Saurashtra Zone. Complete sowing of wheat in South Saurashtra Zone. Apply light irrigation after sowing of crops. Carry out picking of cotton during early morning hours and spray Napthelic Acetic Acid in 10 liters of water to reduce dropping of flower and immature cotton balls.

Central Region

- In Satpura Plateau Zone of Madhya Pradesh, continue sowing of wheat, gram and mustard utilising the residual soil moisture.
- In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, continue sowing of gram, linseed, mustard, lentil and toria and planting of potato. Prepare nursery for cabbage, cauliflower, radish, carrot and onion. Apply irrigation in tomato and brinjal and harvest the matured fruits.
- In Vindhya Plateau zone of Madhya Pradesh, continue sowing of wheat, lentil, gram and winter season sugarcane. Continue nursery preparation for planting of cabbage, cauliflower and vegetables. Undertake transplanting of onion.
- In Northern Hill Zone of Chattishgarh, continue sowing of wheat, gram and planting of potato and winter sugarcane utilising the residual soil moisture. Continue transplanting of cabbage, cauliflower, tomato and onion.
- In Chattisgarh Plain Zone, continue sowing of gram and undertake sowing of wheat and vegetable crops in upland area. Continue harvesting of rice.

North Region

- In Jammu & Kashmir, complete sowing of toria, gobhi sarson, continue sowing of wheat, oat, mustard, barley, berseem, field pea, gram, lentil, undertake sowing of vegetables viz. potato, radish, carrot, turnip, garlic, peas etc, and transplanting of onion in Intermediate Zone. Continue field preparation and start sowing of wheat, oat, pea, seed sowing of spinach, methi, peas, planting of garlic, pran and transplanting of onion seedlings in Valley Temperate Zone.
- In Uttarakhand, continue sowing of wheat, barley, oat, barseem in mid and high hills, vegetable pea, pulses (viz. chickpea, pea, rajmah, lentil), coriander, spinach, radish, Fenugreek etc. and planting of potato, complete nursery raising of onion, tomato, cauliflower and planting of autumn sugarcane in Bhabar and Tarai Zone of Uttarakhand. Also continue land preparation and sowing of wheat, barley, mustard, lentil, garlic, vegetables like turnip, radish, palak, rai and planting of onion and potato in Hill Zone of Uttarakhand,
- In Sub-Montane & Low Hills Sub-Tropical Zone and Mid Hills Sub-Humid Zone of Himachal Pradesh continue sowing of wheat, barley and oat and undertake nursery sowing of onion and cole crops.
- In Rajasthan, complete sowing of mustard, gram, undertake transplanting of late cauliflower, mid cabbage, *rabi* onion and sowing of wheat, barley, cumin, ajwain, methi, isabgol, carrot, radish & garlic in Semi Arid Eastern Plain Zon. Also continue sowing of wheat, barley, mustard, gram and nursery raising of chilli, brinjal and tomato utilising the residual soil moisture in Sub Humid Southern Plain and Aravali Hill Zone.
- In Central Plain Zone of Uttar Pradesh, complete sowing of wheat upto 30th November and complete sowing of pea and planting of potato. Continue nursery sowing of onion. In West Uttar Pradesh, continue sowing of wheat and gram in non-irrigated areas, sowing of pea, lentil, barley, potato and berseem and planting of winter season sugarcane and maize.. In East Uttar Pradesh, continue sowing of wheat, mustard, pea, lentil, linseed, chickpea and planting of early potato utilising the residual soil moisture.
- In Punjab, undertake sowing of wheat, barley, nursery of *rabi* onion, tomato, chilli, radish and spinach in Western Zone. Undertake sowing of wheat and barley in Sub Montane Undulating Zone. Also undertake sowing of wheat, Lucerne and oats, complete sowing of mustard crop, nursery sowing of *rabi* onion and tomato in Central Plain Zone of Punjab.
- In Delhi undertake sowing of wheat in the prepared fields having optimum moisture. Also undertake sowing of oat, barseem for fodder, lentil, carrot, radish, beetroot and turnip during this week. Weather is suitable for sowing of *rabi* onion and planting of potato. Undertake transplanting of mature seedlings of cauliflower, cabbage, broccoli in raised beds. Transplanting of late marigold should be done in this week.
- In Haryana, undertake sowing of wheat, give irrigation to berseem and vegetable crops in Eastern Zone. Also undertake sowing of wheat and picking of cotton bolls, complete sowing of mustard and berseem. in Western Zone.

Detailed Zonewise Agromet Advisories

NORTH INDIA [Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh & Rajasthan]



Rice



Sugarcane



Field preparation / sowing of rabi crops



- **Realised Rainfall:** Significant rainfall occurred in Chamba, Kangra, Kullu districts of Himachal Pradesh, Tarn Taran district Punjab, Ganderwal, Kathua, Rajouri, Reasi districts of Jammu & Kashmir. Weather remained mainly dry over rest parts of the region during week.
- **Weather Forecast:** Weather would be mainly dry/dry over the region. No significant change in minimum and maximum temperatures in northwest India. Fog/shallow fog may occur over Punjab and Haryana mainly in morning hours.
- **Weather Warning:** Nil
- **Weather Outlook:** Weather would be mainly dry/dry over the region.
- **Advisory :**
 - In Sub Tropical Zone of Jammu & Kashmir, continue sowing of wheat, pea, lentil and chickpea, mustard and transplanting of mature seedlings of cole crops like broccoli, lettuce, celery, Chinese cabbage and tomato. Harvest the rice crop at 80 per cent maturity.
 - In Intermediate Zone of Jammu & Kashmir, complete sowing of toria, gobhi sarson, continue sowing of wheat, oat, mustard, barley, berseem, field pea, gram, lentil, and also undertake sowing of vegetables viz. potato, radish, carrot, turnip, garlic, peas etc, and transplanting of onion.
 - In Valley Temperate Zone of Jammu & Kashmir, continue field preparation and start sowing of wheat, oat and pea. Continue seed sowing of spinach, methi, peas, planting of garlic, pran and transplanting of onion seedlings.
 - In Bhabar and Tarai Zone of Uttarakhand, undertake top dressing of 1.5 kg Urea per Nali & weeding & thinning operations in 30 days old toria and mustard crops. Continue sowing of wheat, barley, oat, barseem in mid and high hills, vegetable pea, pulses (viz. chickpea, pea, rajmah, lentil), coriander, spinach, radish, Fenugreek etc. and planting of potato. Complete nursery raising of onion, tomato, cauliflower and planting of autumn sugarcane.
 - In Hill Zone of Uttarakhand, continue land preparation and sowing of wheat. Continue sowing of barley, mustard, lentil, garlic, vegetables like turnip, radish, palak, rai and planting of onion and potato.
 - In Sub-Montane & Low Hills Sub-Tropical Zone and Mid Hills Sub-Humid Zone of Himachal Pradesh continue sowing of wheat, barley and oat and undertake nursery sowing of onion and cole crops.
 - In Flood Prone Eastern Plain Zone of Rajasthan, undertake land preparation for sowing of wheat and barley. Undertake sowing gram, lentil, planting of potato and late sowing varieties of mustard. Also undertake weeding and thinning operations in early sown mustard within 20-25 days after sowing.
 - In Semi Arid Eastern Plain Zone of Rajasthan complete sowing of mustard, gram, undertake transplanting of late cauliflower, mid cabbage, rabi onion and sowing of wheat, barley, cumin, ajwain, methi, isabgol, carrot, radish & garlic. In Southeastern Humid Plain Zone of Rajasthan, complete sowing of sarson and continue sowing of wheat and gram.
 - In Arid Western Plain Zone of Rajasthan, undertake sowing of wheat, cumin, methi and Rijka in Jodhpur. In Bikaner division, prepare land for sowing of rabi crops viz. wheat, barley, gram etc. To control soil borne diseases like wilt and root rot, apply Trichoderma @ 4kg/ha with FYM/compost after pre sowing irrigation.
 - In Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan, continue sowing of wheat, barley, mustard, gram and nursery raising of chilli, brinjal and tomato utilising the residual soil moisture.
 - In West Uttar Pradesh, continue sowing of wheat and gram in non-irrigated areas, sowing of pea, lentil, barley, potato and berseem and planting of winter season sugarcane and maize. Apply irrigation in toria and mustard.
 - In East Uttar Pradesh, continue sowing of wheat, mustard, pea, lentil, linseed, chickpea and planting of early potato utilising the residual soil moisture. Undertake the intercultural operations in maize.
 - In Central Plain Zone of Uttar Pradesh, complete sowing of wheat upto 30th November and complete sowing of pea and planting of potato. Continue nursery sowing of onion. Apply light irrigation to

vegetables, toria and early planted potato.

- In Western Zone of Punjab undertake sowing of wheat, barley, nursery of *rabi* onion, tomato, chilli, radish and spinach. In Sub Montane Undulating Zone of Punjab undertake sowing of wheat and barley.
 - In Western Plain Zone of Punjab, undertake sowing of wheat and complete it upto last week of this month. Undertake picking of cotton bolls and transplanting of 4 to 6 weeks old seedlings of cabbage. Complete the sowing of pea varieties Punjab 89 and Mithi Phali.
 - In Central Plain Zone of Punjab, undertake sowing of wheat, Lucerne and oats. Complete sowing of mustard crop. It is the right time for nursery sowing of *rabi* onion and tomato.
 - In Delhi undertake sowing of wheat in the prepared fields having optimum moisture. Also undertake sowing of oat, barseem for fodder, lentil, carrot, radish, beetroot and turnip during this week. Weather is suitable for sowing of *rabi* onion and planting of potato. Undertake transplanting of mature seedlings of cauliflower, cabbage, broccoli in raised beds. Transplanting of late marigold should be done in this week.
 - In Eastern Zone of Haryana undertake sowing of wheat. Give irrigation to berseem and vegetable crops.
 - In Western Zone of Haryana undertake sowing of wheat and picking of cotton bolls. Complete sowing of mustard and berseem.
 - In Arid Western Plain Zone of Rajasthan (Bikaner), due to high humidity in atmosphere, there are chances of attack of saw fly or painted bug in mustard. Apply dusting with methyl parathion @ 25 kg/ha to control these insect pests.
 - Stages of major crops are mentioned in Annexure I.
 - Varieties are mentioned in Annexure III.
- **Apiculture**
 - In Sub Montane & Low Hills Sub-Tropical Zone and Mid Hills Sub-Humid Zone of Himachal Pradesh due to expected fall in temperature, give winter packing immediately to bee colonies. Check the colonies for nectar and give artificial food to honey bees as there is scarcity of flowers during these days and keep colonies in sun on clear day.
 - **Animal Husbandry**
 - In Western Plain Zone of Punjab, in the present weather animals are susceptible to get diarrhoea due to internal parasites, to control, undertake deworming and treatment for diarrhoea in calves.
 - In Bhabar and Tarai Zone of Uttarakhand, due to expected cold conditions during this week in the night, farmers are advised to keep animals inside the shed during night time. Put rice straw in the floor of animal sheds for warmth. Keep down curtains in Poultry Farm in the night for safety of birds from these cold weather conditions.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane

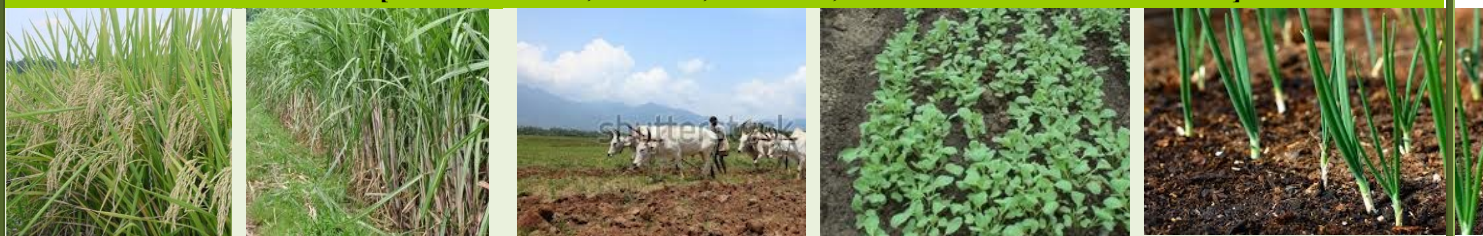


Field preparation / sowing for rabi crops

- **Realised Rainfall:** Mainly dry weather prevailed over the region during last week.
- **Weather forecast:** Weather would be mainly dry/dry over the region. No significant change in minimum and maximum temperatures over the region.
- **Weather Warning:** Nil
- **Weather Outlook:** Weather would be mainly dry/dry over the region.
- **Advisories:**
 - In Satpura Plateau Zone of Madhya Pradesh, continue sowing of wheat, gram and mustard utilising the residual soil moisture.
 - In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, continue sowing of gram, linseed, mustard, lentil and toria and planting of potato. Prepare nursery for cabbage, cauliflower, radish, carrot and onion. Apply irrigation in tomato and brinjal and harvest the matured fruits.
 - In Bundelkhand Zone of Madhya Pradesh, continue sowing of mixed crops of chickpea, mustard, lentil, pea and linseed and local and wheat. Undertake intercultural operation in vegetables.
 - In Central Narmada Valley Zone and Jhabua Hill Zone of Madhya Pradesh, complete sowing of wheat under semi-irrigated condition and continue sowing under irrigated condition upto 25th November. Continue sowing of safflower and linseed in rainfed condition and planting of potato. Continue sowing of mustard.

- In Vindhya Plateau zone of Madhya Pradesh, continue sowing of wheat, lentil, gram and winter season sugarcane. Continue nursery preparation for planting of cabbage, cauliflower and vegetables. Undertake transplanting of onion.
- In Gird Zone and Malwa Plateau Zone of Madhya Pradesh, continue sowing of gram and planting of potato and winter vegetables.
- In Northern Hill Zone of Chattishgarh, continue sowing of wheat, gram and planting of potato and winter sugarcane utilising the residual soil moisture. Continue transplanting of cabbage, cauliflower, tomato and onion.
- In Chattisgarh Plain Zone, continue sowing of gram and undertake sowing of wheat and vegetable crops in upland area. Continue harvesting of rice.
- In Bundelkhand Zone of Madhya Pradesh, fruit borer attack is observed in tomato and brinjal, spray Trizophos 40 E.C. 2 mm per one litre of water.
- In Jhabua Hill Zone of Madhya Pradesh, for control of sucking pests in cotton and vegetables, spray Thiomithaxim / Acetameprid @ 0.3 gm/liter of water. Also for control of stem & fruit borer in brinjal, tomato & okra, spray Trizofos @ 30 ml/pump (15 l. tank).
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III
- **ANIMAL HUSBANDRY & POULTRY**
 - In Jhabua Hills Zone of Madhya Pradesh, vaccinate the catles against H.S., B.Q. and FMD diseases and also deworming in cattles and goats. Use potassium permanganate @ 5 ml per liter of water for infected animals.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]



Rice

Sugarcane

*Field preparation /
sowing for rabi crops*

Cole crops

Onion

- **Realised Rainfall:** Dry weather prevailed over the states of the region during last week.
- **Weather Forecast:** Weather would be mainly dry / dry over the States of the region. No significant change in minimum temperature over the region.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be mainly dry / dry over the States of the region.
- **Advisories:**
 - In East and South Eastern Coastal Plain Zone of Odisha, continue transplanting of cabbage, cauliflower and tomato and nursery raising of onion and sowing of mustard, groundnut, green pea, beans and cluster beans utilising the residual soil moisture.
 - In North Eastern Plateau Zone of Odisha, undertake sowing of wheat, toria, groundnut and sunflower and planting of potato utilising the residual soil moisture.
 - In North Eastern Coastal Plain Zone of Odisha, undertake land preparation and sowing of mustard and groundnut in upland areas, nursery sowing of cole crops, brinjal and chilli utilising the residual soil moisture.
 - In Laterite and Red Soil Zone of West Bengal, continue harvesting of matured *aman* rice. Undertake seedbed preparation and transplanting of cabbage and cauliflower. After the harvest of *aman* rice, prepare land and undertake sowing of mustard and planting of potato utilising the residual soil moisture.
 - In New Alluvial Zone of West Bengal, continue harvesting of *aman* rice. After harvesting of *aman* rice prepare the field and undertake sowing of mustard utilising the residual soil moisture. Also continue transplanting of cauliflower, cabbage, tomato and brinjal.
 - In Coastal Saline Zone of West Bengal, continue harvesting of *aman* rice. After harvesting of *aman* rice prepare land and undertake sowing of lentil, transplanting of cabbage, cauliflower and tomato and planting of potato and onion utilising the residual soil moisture.
 - In Old Alluvial Zone and Terai Zone of West Bengal undertake sowing of wheat and mustard and planting of potato utilising the residual soil moisture.
 - In North West Alluvial Plain Zone of Bihar, continue harvesting of matured rice and sugarcane. Continue sowing of pea, lentil, gram, rajmah and planting of potato. Continue sowing of wheat and *rabi* maize.

- Apply light irrigation after sowing or planting of crops.
- In South Bihar Alluvial Zone, continue harvesting of matured rice crop. Complete sowing of winter maize, sunflower, mustard, linseed, vegetable pea etc. and planting of potato and continue transplanting of cauliflower and nursery raising of late variety of cauliflower. Continue sowing of fodder crop like barseem, lucern and oat. Apply light irrigation after sowing, transplanting or planting of crops.
- In Western Plateau Zone of Jharkhand continue harvesting of matured rice crop. Continue sowing of pea, green pea, mustard, gram, wheat, linseed and lentil and planting of potato followed by light irrigation.
- In South Eastern Plateau Zone of Jharkhand, continue sowing of green pea and mustard, nursery raising and transplanting of winter vegetables like brinjal, cabbage, cauliflower, tomato, capsicum etc. followed by light irrigation. Continue nursery raising of onion. Undertake intercultural operations in toria and pigeon pea.
- In Laterite and Red Soil Zone, New Alluvial Zone and Old Alluvial Zone of West Bengal, BPH may become severe in late transplanted *aman* rice. To control, apply Diclorovos or Carbaryl @ 1 ml per litre of water.
- In Mid Central Table Land Zone of Odisha, there is chance of red rot disease in sugarcane at grand growth stage. Bunding of affected fields should be done to avoid movement of water from affected field to non-affected fields. Destroy trashes from the infected plants by burning and spray Carbendazim @ 2 g / litre of water. Severely affected plants or canes should be uprooted and destroyed.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
 - Low temperature condition may adversely affect the milk production and performance of domestic animals. Farmers in North West Alluvial Plain Zone of Bihar are advised to give protein enriched diet to the animals. Do not keep the animals outside at night.

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



Sugarcane



Rice



Field preparation/ sowing of rabi crops



cole crops

- **Realised Rainfall:** Dry weather prevailed over the States of the region during last week.
- **Weather Forecast:** Weather would be mainly dry / dry over the States of the region.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be mainly dry / dry over the States of the region.
- **Advisories:**
 - Drain out water from the fields of *sali* rice in Meghalaya and regular WRC rice in Arunachal Pradesh 10-15 days before harvesting.
 - In Lower Bramhaputra Valley Zone of Assam, continue transplanting of brinjal, cauliflower, cabbage and knolkhol and land preparation and nursery sowing of onion and sowing of pumpkin, spinach and beet followed by light irrigation. Farmers are also advised to continue relay cropping of pea in the standing crop of rice about 15-25 days before harvesting.
 - In Barak Valley Zone of Assam, continue planting of potato and sowing of rapeseed and mustard followed by light irrigation.
 - In Central Bramhaputra Valley Zone of Assam, continue sowing of rapeseed, mustard and wheat, transplanting of the seedlings of cole crops, which are 30-35 days old and planting of potato followed by light irrigation.
 - In Hill Zone of Assam, continue transplanting of winter vegetables. Complete sowing of rapeseed and mustard. Continue land preparation and sowing of lentil and planting of potato. Apply light irrigation after sowing, transplanting and planting of crops. Undertake nursery raising of *boro* rice.
 - In North Bank Plain Zone of Assam, continue planting of potato and transplanting of cole crops. Complete sowing of rapeseed and mustard at the earliest. Apply light irrigation after sowing, transplanting and planting of crops.
 - In Sub Tropical Hill Zone of Arunachal Pradesh, continue sowing of pea and planting of potato utilising the residual soil moisture. Complete sowing of mustard at the earliest. Apply light irrigation after sowing, transplanting and planting of crops. Continue harvesting of turmeric and ginger.

- In Meghalaya, continue transplanting of cauliflower and winter vegetables followed by light irrigation. Also continue harvesting of matured groundnut and matured *sali* rice. Cover space between rows with rice straw mulch in rapeseed / mustard crop to conserve soil moisture.
 - In Sub Tropical Plain Zone of Manipur, continue transplanting of cole crops, sowing of rapeseed, mustard and pea and planting of potato. Continue land preparation for sowing of *rabi* maize. Apply light irrigation after sowing, transplanting and planting of crops.
 - In Mild Tropical Hill Zone of Mizoram, continue transplanting of cole crops and tomato followed by light irrigation.
 - In Mild Tropical Hill Zone of Nagaland, continue transplanting of cabbage, brocolli and tomato followed by light irrigation. Undertake harvesting of lowland rice.
 - In Mid Tropical Plain Zone of Tripura, continue land preparation and planting of potato. Complete sowing of toria and lentil. Apply light irrigation after sowing, transplanting and planting of crops. Complete harvesting of *aman* rice. Apply light irrigation to cole crops and tomato.
 - In Sub Tropical Hill Zone of Arunachal Pradesh, under present weather condition, severe attack of leaf eating caterpillars has been reported in cauliflower, cabbage, broccoli and knolkhol and likely to continue; spray Chlorpyrifos or Imidacloprid 17SL @ 1-2 ml per litre of water for leaf eating caterpillars.
 - In Mild Tropical Hill Zone of Mizoram, there is chance of occurrence of leaf blotch in turmeric; spray Carbendazim @ 1 g / litre of water or Mancozeb @ 2.5 g / litre of water + 1 ml Sandovit.
 - In Mid Tropical Plain Zone of Tripura, sudden reduction of soil moisture increase the chances of fruit cracking in banana; farmers are advised to provide proper mulching and nutrient management especially boron.
 - Stages of major crops are mentioned in Annexure I.
 - Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- In Sub Tropical Hill Zone of Arunachal Pradesh, maintain warmth by lighting with filament bulb in the shed of poultry, pigs and cattle.
 - In Mild Tropical Hill Zone of Nagaland, due to high Relative Humidity, there is chance of occurrence of *Coccidiosis* in poultry. Treat the birds with anticoccidiosis like coccinil plus, Amprolium, supercox with vitamin & mineral supplement. Litter material should also be dry and clean.
 - In Mizoram, cover or tie cattle with gunny bag during night to avoid cold. Also cover poultry house with gunny bags / polythene sheet and provide the heating during night for chicks less than 21 days old.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Field preparation / sowing of rabi crops

Sugarcane

Cotton

- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Weather Forecast:** Weather would be mainly dry / dry over the region.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be mainly dry / dry over the region.
- **Advisories:**
 - In Konkan, complete harvesting of late maturing rice varieties in morning hours and dry harvested produce for 1-2 days under sun and thresh them. Undertake sowing of short duration crops like cowpea, wal and kulthi utilizing residual moisture in the harvested rice fields on 'vapsa' condition and sowing of watermelon variety 'Sugar baby' on one side of ridges with a spacing of 4 x 1 m. Prepare raised nursery beds and undertake sowing of chilli, brinjal, cabbage, knol-khol and prepare field and undertake sowing of *rabi* groundnut followed by light irrigation.
 - As mainly dry weather would prevail over Vidarbha, continue intercropping operation, application of fertilizers in vegetables and orchards. Complete harvesting of *kharif* rice. Complete sowing of gram in Central Vidarbha Zone and sowing of gram, wheat and linseed in Eastern Vidarbha Zone followed by light irrigation. Continue picking of fully opened cotton bolls.
 - In Madhya Maharashtra, continue intercropping operations and application of fertilizers in sugarcane and vegetable crops like onion, brinjal, tomato, okra and guar. As there is no significant rain during last two

weeks, apply irrigation to sugarcane, vegetable crops and early sown jowar and maize. Complete harvesting of late maturing rice varieties. Continue planting of pre seasonal sugarcane and complete sowing of irrigated gram and wheat. Thinning and weeding may be done in early sown *rabi* jowar and maize. Continue harvesting of already matured *adsali* and pre-seasonal sugarcane. Undertake sowing of improved varieties of lentil, gram and linseed pulse in harvested rice field in Western Ghat Region.

- In Marathwada region, continue intercultural operations, application of fertilizers in vegetables, orchards and sugarcane. As there is no significant rain during last two weeks, apply irrigation to sugarcane, vegetable crops, early sown jowar, maize, safflower and orchards. Continue harvesting of already matured *adsali* and pre-seasonal sugarcane. Continue picking of fully opened cotton bolls. Continue planting of pre seasonal sugarcane and complete sowing of wheat followed by light irrigation.
- Carry out picking of cotton during morning hours in Middle Gujarat Zone. Undertake harvesting of matured groundnut crop and dry in small heaps. Apply light irrigation before pulling, if soil is hard. Undertake land preparation and sowing of *rabi* crops like wheat, onion, maize, spices and mustard and planting of potato followed by light irrigation.
- Apply regular irrigation in castor in Bhal and Coastal Zone of Gujarat. Continue land preparation and sowing of wheat, gram, cumin and mustard followed by light irrigation.
- Carry out intercultural operations and weeding in cotton and castor in North West Zone of Gujarat. Continue land preparation and sowing of mustard followed by light irrigation. Apply irrigation in alternate row at 8-10 days interval in cotton for better boll development in North Gujarat Zone and North West Zone of Gujarat.
- Undertake land preparation for planting of potato and sowing of cumin, fenugreek and gram followed by light irrigation in North Gujarat Zone. Undertake harvesting of matured fruits of aomla, guava and custard apple. Carry out earthing up operation in late sown *Kharif* fennel and apply irrigation.
- Undertake sowing of gram followed by light irrigation in South Gujarat Zone. Apply urea @ 75 g per banana plant and make ring around the plant for irrigation. Undertake mulching in sugarcane crop with its leaves for control of stem borer and to prevent moisture loss.
- Carryout sowing of chickpea, onion, garlic and coriander and continue planting of sugarcane followed by light irrigation in South Gujarat Heavy Rainfall Zone.
- Carryout sowing of wheat, cumin and coriander in North Saurashtra Zone. Complete sowing of wheat in South Saurashtra Zone. Apply light irrigation after sowing of crops. Carry out picking of cotton during early morning hours and spray Napthelic Acetic Acid in 10 liters of water to reduce dropping of flower and immature cotton balls.
- Present weather in Marathwada region is congenial for incidence of leaf eating cater pillar in early sown gram; spray Quinalphos @ 16 ml per 10 litres of water.
- Due to present weather there may be attack of mango hoppers in new flush and inflorescence of mango in South Konkan region; spray 25 % Cypermethrin @ 3 ml or 2.8 % Deltamethrin @ 9 ml per 10 liters of water.
- Weather conditions are favourable for outbreak of sucking pests and diseases in vegetables in North Saurashtra Zone; spray Acetamiprid 20 % SP @ 5.0 g / 10 litres of water and Hexaconazole 5% SC @ 10 ml / 10 liters of water to control it.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - In Gujarat, spray Deltamethrin or Amitraz @ 2 ml / litre of water for the control of tick and carry out vaccination with FMD vaccine for prevention of foot & mouth disease in animals. Maintain proper nutrient supplements in animal's diet.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]



Rice



Sugarcane



Transplanting of rice

- **Realized rainfall:** Significant rainfall occurred in Alapuzha, Ernakulam, Idukki, Kollam, Kottayam and

Pathanamthitta districts of Kerala and Kanyakumari, Nagapattinam and Toothukudi districts of Tamil Nadu. No significant rainfall occurred in the remaining parts of the region during last week.

- **Rainfall Forecast:** Rain/thundershowers would occur at isolated places over Tamil Nadu during next 24 hours, at most places over north coastal Tamil Nadu and at many places over rest Tamil Nadu from tomorrow. Rain/thundershowers would occur at isolated places over south coastal Andhra Pradesh during next 24 hours and at most places from tomorrow and at isolated places over Rayalaseema during next 24 hours and at many places thereafter, at isolated places over south interior Karnataka and south coastal Karnataka from 15th onwards, at isolated places over north coastal Andhra Pradesh during next 24 hours and at many places on 15th and at a few places over Kerala during next 24 hours and isolated thereafter.
- **Weather Warning:** Heavy to very heavy rainfall would occur at a few places with extremely heavy falls (25 cms or more) at isolated places over north coastal Tamil Nadu and heavy to very heavy falls at a few places over south coastal Andhra Pradesh and isolated heavy rainfall would also occur over Rayalaseema and rest of Tamil Nadu on 15th November. Heavy to very heavy rainfall would occur at a few places over south coastal Andhra Pradesh and north coastal Tamilnadu. Isolated heavy rainfall would also occur over Rayalaseema and rest Tamilnadu on 16th November.

Squally winds speed reaching 55 to 65 kmph gusting to 75 kmph would prevail along and off north Tamilnadu, Pudducherry and south Andhra Pradesh coast.

- **Weather Outlook:** Rain/thundershowers would occur at many places over Tamil Nadu and south Andhra Pradesh with isolated heavy to very heavy falls on 16th and 17th November and rainfall activity would decrease thereafter, at many places over Kerala.
- **Advisory:**
 - As rain / thundershowers is likely to occur at most / many places over Tamil Nadu, Rayalaseema and south Coastal Andhra Pradesh along with heavy to very heavy rainfall at a few / isolated places from 15th onwards, postpone sowing, intercultural operations and application of fertilizers and pesticides in the region. Arrange for extensive drainage facilities to avoid water stagnation in the crop fields.
 - Continue sowing of Bengal gram, *rabi* groundnut in Anantpur district and continue sowing of jowar, bengal gram and sunflower in Kurnool district of Scarce Rainfall Zone of Andhra Pradesh after current spells of heavy rainfall.
 - Continue sowing of maize and groundnut in North Coastal, South Telangana region under irrigated dry conditions.
 - Continue sowing of *rabi* crops like groundnut, pulses and maize in Northern Telangana Zone of Andhra Pradesh utilizing the residual soil moisture.
 - Postpone harvesting of cotton and rice in South Coastal Andhra Pradesh. Continue sowing of *rabi* pulses in the Krishna Godavari zone of Andhra Pradesh after current spells of heavy rain. Provide adequate drainage in standing crops.
 - Continue harvesting of groundnut in Eastern dry Zone of Karnataka.
 - Continue planting of sugarcane; sowing of *rabi* bajra and wheat in the North East Transition Zone of Karnataka.
 - Complete sowing of chick pea and undertake harvesting of groundnut, onion, bajra and fodder maize in clear weather in North Dry Zone of Karnataka.
 - Continue harvesting of ginger and intercultural operations in the crops of coffee, pepper, cardamom, banana, arecanut and coconut in High altitude zone of Kerala.
 - Continue sowing of *puncha* rice and planting of winter vegetables in the Problem Area Zone in Kerala. Continue sowing of *mundakan* rice in the Central Zone of Kerala.
 - Postpone transplanting of *thaladi* rice in Cauvery Delta Zone of Tamil Nadu and direct sowing of rice in the North Western Zone of Tamilnadu. Provide adequate drainage in standing crops. Arrange mechanical support to banana and propping up in sugarcane/staking of vegetables, to prevent the crops from lodging due to strong winds.
 - In North Coastal Tamil Nadu, provide adequate drainage in cotton crop and provide adequate drainage in standing crops. Arrange mechanical support to banana and propping up in sugarcane/staking of vegetables, to prevent the crops from lodging due to strong winds.
 - Postpone harvesting of rice, maize and onion in the Western Zone of Tamil Nadu.
 - Prevailing weather situation is congenial for leaf blight incidence in coconut and powdery mildew incidence in grapes in the Western Zone of Tamil Nadu. Monitor the crops and undertake root treatment with hexagonal to 2ml or carbendazim 2 g or Tridemorph 2ml per 100 ml to control leaf blight incidence and spray spray tridemorph 2ml per liter of water to control powdery mildew incidence after spells of heavy rain.

- Leaf folder incidence is noticed on red gram in the Kurnool district of Scarce Rainfall zone of Andhra Pradesh. To control spray Monocrotophos @1.6 ml per litre of water after spells of heavy rain..
- Prevailing weather conditions are congenial for incidence of wilt, leaf spot and grey mildew in cotton in the Southern Telangana zone of Andhra Pradesh. To control wilt drench the soil with Copper Oxy Chloride @ 3 g per litre of water, Leaf spot spray Copper-Oxy-Chloride @ 30 g and Plantomycin @ 1 g per 10 litres of water and Grey mildew spray wettable Sulphur @ 3 g per litre of water.
- Due to fall in day temperature, there is possibility of gray mildew on cotton and blast attack on rice in the Krishna Godavari Zone of Andhra Pradesh. Spray Wettable Sulphur 3 g or Carbandizm 1 g per liter of water to control gray mildew and Tricuclozoe 75% @ 0.6 ml od ediphinphos @ 1 ml per liter of water to control blast attack after spells of heavy rain.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
 - Avoid water leakage in cattle and poultry sheds and protect feeds of animals and poultries from rain to avoid spreading of diseases in the Western Zone of Tamil Nadu. Vaccinate animals to prevent spread of foot and mouth disease in cattle.
 - De-worm animals for round worm and tape worm, protect young animals from rain and chillness, avoid stagnation of water near animal in the North Western Zone of Tamil Nadu.

Annexure I Stages of Major Crops

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

- Wheat, barley, oat, (sowing), early peas, gobhi sarson (early vegetative / germination), cauliflower (transplanting), cucurbits viz. khira, bitter gourd, tori (fruiting/maturity), radish, carrot, turnip, beet leaf and fenugreek (direct sowing), onion (planting), apple (harvesting) in Himachal Pradesh.
- Wheat, barley, oat, berseem (sowing), ginger (vegetative), sugarcane (vegetative / active vegetative), sesame in low land area (early vegetative / vegetative), vegetable pea (sowing / germination), toria, chickpea (sowing/germination), tomato (transplanting), potato (planting / transplanting), Autumn sugarcane (planting), sarson, masoor (field preparation /sowing), coriander, spinach, radish, fenugreek (sowing/germination) in Uttarakhand.
- Rice (harvesting), wheat, barley (sowing), toria, gobi sarson, mustard (sowing /germination), brown sarson, oat, lentil, berseem, gram, field pea (land preparation/sowing), potato(planting), palak, radish, carrot, turnip, garlic, methi, spinach (sowing / germination), pole type beans (vegetative), radish, spinach (transplanting / early vegetative), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), fruit crops (planting) in Jammu & Kashmir.
- Wheat, barley (sowing), lentil (sowing), sesame(capsule maturity/harvesting), rainfed taramira, toria, gram and mustard, potato (sowing/seedling), tomato, brinjal, chilli (nursery sowing / transplanting), Shimla mirch (early vegetative / vegetative), new sugarcane (early vegetative / vegetative), castor (flowering), cucurbits (sowing), radish, Desi carrot (sowing), cabbage and cauliflower (nursery sowing/transplanting), onion(nursery raising/ transplanting), cumin, Ajwain, methi, Isabgol (sowing) in Rajasthan.
- wheat(sowing), oats, barseem (sowing), brinjal, tomato, early (cauliflower and cabbage) (vegetative / flowering), cauliflower, cabbage, broccoli and tomato (transplanting), early radish, spinach and coriander (vegetative), Sarson Saag, Bathua, radish, spinach, fenugreek, coriander and turnip (sowing), guar, bajra (flowering / grain filling), *rabi* onion (nursery sowing), mustard, gram, pea, carrot, garlic (sowing), oat, barseem (sowing) in Delhi.
- Jowar, bajra, (grain filling/maturity), pigeon pea (vegetative/branching), rice (maturity/harvesting), groundnut (pod formation / maturity), arhar, moong and urad (vegetative/ branching), tomato, brinjal, chilli (fruiting/picking), black gram, green gram (flowering/pod formation), spring sugarcane (active vegetative/grand growth), toria, potato (sprouting/early vegetative) in Uttar Pradesh.
- New sugarcane (tillering / vegetative), cotton (picking), cucurbits, cowpea (sowing), rice (grain formation / harvesting), black gram, green gram, soybean, arhar (vegetative/pod formation), moong, mash (vegetative) maize (cob formation / cob maturity) sesamum (vegetative), cauliflower (transplanting), potato (planting) in Punjab.
- New sugarcane (vegetative), cotton (picking), rice (grain formation/maturity) in Haryana.

CENTRAL INDIA [M.P., CHHATTISGARH]

- *Kharif* rice (grain maturity/harvesting), arhar (pod formation/ pod maturity), groundnut (pod formation/ maturity), sesame (capsule maturity/ harvesting), sugarcane (grand growth), vegetables (flowering/ fruiting), wheat, safflower, mustard, gram and linseed (sowing), potato, onion (planting) in Madhya Pradesh.
- Sugarcane (elongation), *kharif* rice (grain maturity/harvesting), jowar, (grain formation), groundnut (pod formation/ maturity), ragi and kodo millet (vegetative), ginger, turmeric, papaya (vegetative), onion (vegetative), vegetable crops (flowering/ fruiting), wheat, safflower and gram (sowing), potato, onion (planting) in Chhattisgarh.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL &SIKKIM]

- *Kharif* rice (maturity / harvesting), sugarcane (cane maturity / harvesting), onion (transplanting), yam (vegetative / tuber development), arhar (vegetative), winter maize, sunflower, mustard, toria, pea, lentil, gram, rajmah (sowing), cauliflower, cabbage, chilli, tomato, brinjal (transplanting) in Bihar.
- *Kharif* rice (maturity / harvesting), maize (harvesting), urad, marua (harvesting), arhar (vegetative / flowering), groundnut (grain maturity), onion (vegetative), ginger and turmeric (late vegetative), *kharif* vegetables viz. bhindi, bean, French bean (flowering / fruiting), tomato, cauliflower, cabbage (nursery sowing / transplanting), niger, horse gram (harvesting), sweet potato (stem elongation), potato (planting), green peas, bell pepper (sowing) in Jharkhand.
- Rice (grain maturity / harvesting), pigeon pea (pod formation / pod maturity), turmeric, ginger, yam (rhizome formation), *rabi* vegetables (transplanting), sugarcane (grand growth), banana (vegetative), mustard (sowing / seedling), wheat, sesame, groundnut, cluster bean, green pea (sowing) in Odisha.
- *Aman* rice (milk / dough / maturity / harvesting), ginger, turmeric (rhizome formation), tomato, brinjal (nursery sowing / transplanting), cabbage and cauliflower (transplanting), wheat, mustard (sowing), potato (planting), winter flower (seedbed preparation) in West Bengal.
- Ginger (vegetative), large cardamom (secondary flowering), *kharif* vegetables (vegetative) in Sikkim

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

- *Boro* rice (nursery raising), sugarcane (Autumn) (planting), *sali* rice (grain formation / grain maturity), rapeseed and mustard (sowing / early vegetative), lentil (sowing), sesame (flowering / capsule formation), green gram and black gram (pod formation / maturity), cauliflower, cabbage, knol-khol, brinjal (transplanting / early vegetative), wheat, niger (sowing), winter vegetables (transplanting), radish, carrot, spinach, beet (seedling), potato (planting), bottle gourd, pumpkin (sowing) in Assam.
- Regular WRC rice (grain maturity / harvesting), cauliflower, cabbage, broccoli and kholkhol (vegetative), radish, (maturity / harvesting), spinach, carrot (vegetative), mustard (sowing / vegetative), pea (sowing / early vegetative), winter maize (vegetative) and potato (planting / early vegetative) in Arunachal Pradesh.
- Rapeseed and mustard, pea (sowing), *rabi* vegetables, cole crops (transplanting / early vegetative), black gram and rice bean (pod maturity / harvesting), potato (planting), onion (nursery raising) in Manipur.
- *Sali* rice (grain maturity / harvesting), groundnut (pod maturity / harvesting), potato (vegetative), rapeseed and mustard (vegetative), cauliflower and other winter vegetables (transplanting) in Meghalaya.
- Ginger and turmeric (vegetative / rhizome formation), banana (fruiting / maturity / harvesting), cole crops (transplanting) in Mizoram.
- Lowland rice (grain maturity / harvesting), maize (early vegetative), mustard (sowing / early vegetative), potato, *rajama* (early vegetative), cabbage, broccoli (transplanting), tomato (transplanting / early vegetative) in Nagaland.
- *Rabi* maize (seedling), toria, lentil (sowing), potato (planting), winter vegetables (transplanting), banana (vegetative / fruiting / harvesting), cole crops, tomato, brinjal and radish (vegetative) in Tripura.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- *Kharif* rice (harvesting in late maturing varieties in Konkan, Kolhapur, Nasik (ghat), Pune (west) region and East Vidarbha), cotton (boll maturity / picking in Madhya Maharashtra, Marathwada and Vidarbha), red gram (pod development in Madhya Maharashtra, Vidarbha and Marathwada), *rabi* jowar (germination / early vegetative in Madhya Maharashtra and Marathwada), safflower (germination / early vegetative in Madhya Maharashtra, Marathwada and Vidarbha), gram (sowing / germination in Madhya Maharashtra and Marathwada), wheat (sowing in Madhya Maharashtra and Marathwada), maize (sowing / germination in Madhya Maharashtra), sugarcane (*adsali* and pre seasonal) (maturity / harvesting), sugarcane (*suru*) (elongation), New *adsali* (early tillering in Marathwada and Madhya Maharashtra), pre-seasonal sugarcane (planting) in Marathwada and Madhya Maharashtra).
- Castor (spike formation / maturity), cotton (boll maturity / picking), vegetables (flowering / fruiting), sugarcane (elongation), new sugarcane (planting), wheat, sweet corn, chickpea, mustard, garlic, cumin, coriander (sowing), cabbage, cauliflower, onion (transplanting) in Gujarat.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- *Kharif* crops: early sown groundnut (harvesting), maize (harvesting), Bt.cotton (boll maturity/harvest), late sown groundnut (harvest), cotton (boll maturation/harvest), {pulses (sowing to seedling / early vegetative),cotton (vegetative to flowering / boll formation stage), rice (maximum tillering to flowering),chilli (transplanting to seedling / vegetative stage) in Krishna Godavari Zone of Andhra Pradesh},sugarcane (Jan-March planted) (cane development), late sown *kharif* rice (grain formation), castor(panicle initiation to fruit development), banana (flowering/bunch formation), *rabi* crops: rice (tillering), *rabi* groundnut and pulses (sowing), maize (dough stage), red gram (vegetative/flowering), bengal gram and jowar (sowing to early vegetative) , chillies (pod maturity/harvest), vegetables (vegetative), onion (bulb development) , in Andhra Pradesh.
- Sugarcane (grand growth), late samba rice (transplanting/ tillering), thaladi rice (transplanting /tillering), direct sown rice (vegetative), cotton(vegetative/maturity), maize (vegetative to flowering/maturity), onion (vegetative), sunflower (seedling) , winter cotton (vegetative), groundnut (pod development / harvesting), vegetables (vegetative) and rainfed cotton, maize, sorghum and pulses (vegetative) in Tamil Nadu.
- Mundakan rice (transplanting), Pancha rice (sowing in Kottayam district), arecanut (harvesting), sugarcane (grand growth), Nendran banana (planting/ vegetative), rubber (tapping), *rabi* vegetables (early vegetative), pepper (berry maturity), cardamom (harvesting), in Kerala.
- Sugarcane (grand growth), *kharif* crops: ragi (grain formation/maturity), maize (cob maturity/ harvesting), red gram(flowering/pod formation), groundnut (maturity/ harvesting), rice (grain formation/ harvesting), cotton (boll formation/boll opening),vegetable crops (flowering/ fruiting) , *Rabi* Crops: Bengal gram, sunflower, sorghum, safflower and wheat(sowing), sugarcane(planting) in Karnataka.
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Annexure II

Week by week Rainfall Distribution

State/Districts	16.10.13		23.10.13		30.10.13		06.11.13		13.11.13	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh										
Anjaw	**	**	**	**	**	**	**	**	0.0	-100
Changlang	3.1	-96	24.6	-58	54.3	239	0.8	-96	0.0	-100
Dibang Valley	5.0	-91	92.0	238	105.0	919	37.0	47	0.0	-100
East Kameng	0.0	-100	1.2	-97	0.0	-100	0.0	-100	0.0	-100
East Siang	4.2	-87	65.7	63	59.6	308	0.2	-98	0.0	-100
Kurung Kumey	**	**	**	**	**	**	**	**	**	**
Lohit	2.0	-93	23.6	-31	44.5	298	10.5	22	0.0	-100
Lower Dibang Valley	0.0	-100	78.5	189	136.2	1222	11.8	-53	0.0	-100
Lower Subansari	**	**	0.0	-100	**	**	**	**	**	**
Papumpara	0.0	-100	16.1	-66	63.8	224	0.9	-85	0.0	-100
Tawang	9.0	-84	7.0	-83	47.0	139	28.0	284	0.0	-100
Tirap	0.0	-100	24.3	-51	78.1	637	1.4	-88	0.0	-100
Upper Siang	16.1	-80	76.3	32	112.2	302	71.0	64	0.0	-100
Upper Subansari	0.0	-100	34.2	9	26.8	253	21.2	458	0.0	-100
West Kameng	0.0	-100	37.7	-11	79.2	302	0.8	-89	0.0	-100
West Siang	6.0	-81	25.2	-15	51.0	99	7.0	-38	0.0	-100
Assam										
Baksa	0.0	-100	9.7	-65	34.7	224	0.0	-100	0.0	-100
Barpeta	1.0	-97	15.2	-46	30.2	182	5.8	100	0.0	-100
Bongaigaon	5.2	-88	2.9	-91	28.6	118	0.0	-100	0.0	-100
Cachar	2.0	-96	8.1	-69	59.8	222	0.0	-100	0.0	-100
Chirang	4.5	-90	11.3	-64	28.4	117	0.0	-100	0.0	-100
Darrang	0.0	-100	5.0	-70	18.0	67	4.0	-27	0.0	-100
Dhemaji	0.0	-100	8.5	-69	21.0	67	0.0	-100	0.0	-100
Dhubri	12.3	-57	0.5	-97	10.2	-7	7.4	-31	0.0	-100
Dibrugarh	0.1	-99	39.9	72	31.4	132	0.2	-98	0.0	-100
Goalpara	4.1	-91	0.0	-100	6.8	-54	2.0	-72	0.0	-100
Golghat	2.8	-92	4.9	-69	45.9	155	0.0	-100	0.0	-100
Hailakandi	5.1	-89	16.9	-5	67.2	585	0.0	-100	0.0	-100
Jorhat	0.0	-100	18.6	8	39.1	140	0.0	-100	0.0	-100
Kamrup(Rural)	0.0	-100	0.1	-99	10.1	-17	0.0	-100	0.0	-100
Kamrup(Metro)	0.4	-98	16.5	-22	5.3	-56	0.0	-100	0.0	-100
Karbi Anglong	1.9	-92	1.2	-96	9.8	60	0.0	-100	0.0	-100
Karimganj	0.0	-100	9.6	-39	36.0	22	0.0	-100	0.0	-100
Kokrajhar	29.5	-34	1.1	-98	56.0	559	0.0	-100	0.0	-100
Lakhimpur	0.2	-99	24.7	-10	26.9	113	0.0	-100	0.0	-100
Morigaon	2.6	-94	2.3	-92	5.4	-50	0.0	-100	0.0	-100
N.C.Hills	0.0	-100	2.3	-76	28.4	-75	0.0	-100	0.0	-100
Nowgong	5.9	-80	0.0	-100	4.1	-78	0.0	-100	0.0	-100
Nalbari	1.1	-94	5.1	-74	36.7	174	1.7	-43	0.0	-100
Sonitpur	0.0	-100	6.7	-74	14.2	2	1.2	-79	0.0	-100
Sibsagar	0.0	-100	9.4	-40	36.5	157	0.0	-100	0.0	-100

Tinsukia	0.0	-100	29.8	-9	55.7	406	2.8	-73	0.0	-100
Udalgiri	0.3	-99	2.6	-85	13.2	22	0.0	-100	0.0	-100
Meghalaya										
East Garo Hills	**	**	**	**	**	**	**	-100	0.0	-100
East Khasi Hills	2.4	-96	11.8	-75	24.2	-36	0.2	-98	0.0	-100
Jaintia Hills	0.0	-100	14.0	-79	15.0	-72	0.0	-100	0.0	-100
Ribhoi	2.7	-92	59.2	83	51.1	202	0.0	-100	0.0	-100
South Garo Hills	16.0	-52	0.0	-100	23.0	65	0.0	-100	0.0	-100
West Garo Hills	0.4	-99	4.4	-78	0.6	-96	10.0	45	0.0	-100
West Khasi Hills	6.0	-91	0.0	-100	**	**	0.0	-100	0.0	-100
Mizoram										
Aizwal	7.7	-85	38.2	10	31.6	-25	0.0	-100	0.0	-100
Champhai	1.0	-98	12.0	-64	84.0	95	0.0	-100	0.0	-100
Kolasib	1.0	-98	47.0	60	26.0	-13	0.0	-100	0.0	-100
Lawngtlai	1.0	-98	**	**	0.0	-100	0.0	-100	0.0	-100
Lunglei	8.0	-85	10.5	-72	106.0	215	0.0	-100	0.0	-100
Mamit	12.0	-77	8.0	-77	12.0	-71	0.0	-100	0.0	-100
Saiha	15.0	-50	48.5	55	119.0	289	0.0	-100	0.0	-100
Serchhip	23.0	-40	1.5	-94	9.0	-52	0.0	-100	0.0	-100
Manipur										
Bishnupur	0.0	-100	9.0	-44	19.0	-48	0.0	-100	0.0	-100
Chandel	0.0	-100	12.0	-59	7.0	-82	0.0	-100	0.0	-100
Churachandpur	1.0	-97	6.0	-62	24.0	-32	0.0	-100	0.0	-100
Imphal east	0.2	-99	10.1	-24	18.9	-32	0.0	-100	0.0	-100
Imphal west	**	**	**	**	**	**	**	**	**	**
Senapati	6.0	-83	2.0	-88	14.0	-30	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**	**	**	**	**
Thoubal	3.0	-84	3.5	-56	15.0	-36	0.0	-100	0.0	-100
Ukhrul	5.0	-85	4.0	-65	10.5	-42	0.0	-100	0.0	-100
Nagaland										
Dimapur	0.0	-100	0.0	-100	34.1	245	0.0	-100	0.0	-100
Kephire	2.0	-93	2.5	-75	8.0	-13	1.0	-92	0.0	-100
Kohima	5.5	-82	28.6	28	15.3	-27	0.0	-100	0.0	-100
Longleng	**	**	**	**	**	**	**	**	**	**
Mokokchung	9.0	-50	12.0	-49	8.0	-35	0.0	-100	0.0	-100
Mon	**	**	**	**	**	**	**	**	**	**
Paran	**	**	**	**	**	**	**	**	**	**
Phek	1.0	-97	18.0	-20	11.5	-45	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**	**	**	**	**
Wokha	11.0	-55	3.0	-89	4.0	-75	0.0	-100	0.0	-100
Zunheboto	**	**	**	**	**	**	**	**	**	**
Tripura										
Dhalai	0.0	-100	16.5	-44	5.5	-81	0.0	-100	0.0	-100
North tripura	3.0	-93	29.4	28	58.6	142	0.0	-100	0.0	-100
South tripura	5.7	-88	16.3	-42	15.3	-37	0.0	-100	0.0	-100
West tripura	10.1	-76	13.7	-44	11.5	-51	0.0	-100	0.0	-100
Himachal Pradesh										
Bilaspur	2.9	-42	0.0	-100	0.0	-100	2.6	-14	10.5	175
Chamba	0.0	-100	0.0	-100	0.0	-100	11.9	191	32.1	1361

Hamirpur	8.0	-44	0.0	-100	0.0	-100	0.0	-100	12.4	727
Kangra	37.5	275	0.0	-100	0.0	-100	1.4	-48	19.5	926
Kinnaur	4.8	-59	0.0	-100	0.0	-100	0.0	-100	8.4	127
Kullu	8.5	33	0.3	-98	0.0	-100	0.1	-98	21.8	328
Lahaul and Spiti	1.1	-93	0.0	-100	0.0	-100	1.3	-78	12.9	158
Mandi	5.2	-34	0.0	-100	0.0	-100	0.0	-99	17.6	469
Shimla	2.5	-69	0.0	-100	0.0	-100	2.1	-42	8.4	164
Sirmaur	1.4	-90	0.2	-97	0.0	-100	7.9	367	1.4	-11
Solan	2.1	-85	0.0	-100	0.0	-100	7.5	128	18.7	713
Una	24.6	402	0.0	-100	0.0	-100	3.7	38	7.8	289
Punjab										
Amritsar	24.9	329	0.0	-100	0.0	-100	0.0	-100	10.5	454
Barnala	4.5	-6	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhatinda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	4.0	3900
Faridkot	36.0	1900	0.0	-100	0.0	-100	2.0	18	11.0	900
Fatehgarh Saheb	5.0	6	0.0	-100	0.0	-100	8.0	122	3.0	650
Ferozpur	9.3	211	0.0	-100	0.0	-100	0.5	-64	12.3	1956
Gurdaspur	26.4	277	0.0	-100	0.0	-100	2.5	26	13.0	549
Hoshiarpur	3.4	-50	0.0	-100	0.0	-100	2.3	-6	3.7	103
Jalandhar	2.9	-50	0.0	-100	0.0	-100	2.7	27	2.6	189
Kapurthala	13.1	58	0.0	-100	0.0	-100	0.0	-100	0.3	-77
Ludhiana	10.1	90	0.0	-100	0.0	-100	6.1	222	0.2	-46
Mansa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.5	400
Moga	6.0	67	0.0	-100	0.0	-100	0.5	-44	4.6	667
Muktesar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.0	567
Nawashahar	4.0	-52	0.0	-100	0.0	-100	3.0	58	6.4	108
Patiala	3.7	-33	0.0	-100	0.0	-100	1.0	-54	0.3	14
Ropar	3.5	-31	0.0	-100	0.0	-100	3.6	38	8.7	136
Sangrur	6.4	19	0.0	-100	0.0	-100	1.0	-44	0.6	-25
Mohali	4.0	-38	0.0	-100	0.0	-100	2.0	-23	0.0	-100
TarnTaran	28.7	616	0.0	-100	0.0	-100	0.0	-100	25.2	2420
Haryana										
Ambala	3.7	-60	0.0	-100	0.0	-100	5.6	370	1.0	90
Bhiwani	9.5	333	0.0	-100	0.0	-100	0.0	-97	2.9	1350
Chandigarh	5.6	-14	0.0	-100	0.0	-100	12.9	257	0.4	-71
Faridabad	1.3	-64	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Fatehabad	1.0	-38	0.0	-100	0.0	-100	0.0	-100	1.0	233
Gurgaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hissar	0.4	-68	0.0	-100	0.0	-100	0.0	-100	5.7	5567
Jhajar	1.0	-44	0.0	-100	0.0	-100	0.0	-100	0.8	67
Jind	2.2	-2	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Katihah	6.3	69	0.0	-100	0.0	-100	0.8	-60	0.0	-100
Karnal	17.2	173	0.0	-100	0.0	-100	0.6	-73	0.0	-100
Kurukshetra	7.7	51	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mahendragarh	0.1	-96	0.0	-100	0.0	-100	0.0	-100	1.0	67
Mewat	15.0	456	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Palwal	17.8	224	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Panchkkula	0.5	-92	0.0	-100	0.0	-100	6.7	251	0.3	-70
Panipat	16.2	252	0.0	-100	0.0	-100	1.0	-58	0.1	43

Rewari	44.2	5425	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rohtak	17.0	639	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.0	150
Sonepat	39.4	604	0.0	-100	0.0	-100	0.0	-100	0.5	0
Yamunanagar	14.2	45	0.0	-100	0.0	-100	7.8	169	0.0	-100
Delhi	40.1	832	0.0	-100	0.0	-100	0.4	-68	0.4	34
Jammu & Kashmir										
Anantnag	18.5	81	0.3	-97	0.0	-100	23.1	157	10.7	69
Badgam	11.0	67	0.0	-100	0.0	-100	4.1	-53	2.2	-44
Bandipore	**	**	**	**	**	**	**	**	**	**
Baramula	15.9	123	3.5	-77	0.0	-100	14.8	-1	6.6	34
Doda	21.4	100	0.0	-100	0.0	-100	16.8	113	19.2	262
Ganderwal	18.4	212	0.0	-100	0.0	-100	22.2	231	22.3	321
Jammu	27.5	644	0.0	-100	0.0	-100	2.2	69	13.1	671
Kargil	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kathua	4.1	-20	0.0	-100	0.0	-100	2.8	250	21.8	1717
Kistwar	**	**	**	**	**	**	**	**	**	**
Kulgam	14.0	37	0.5	-95	0.0	-100	12.4	38	9.1	44
Kupwara	9.6	-32	0.0	-100	1.0	-93	17.3	33	11.1	31
Ladakh(Leh)	0.6	-57	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Poonch	22.3	243	2.3	15	0.0	-100	0.0	-100	0.0	-100
Pulwama	0.3	-92	0.0	-100	0.0	-100	8.2	82	5.0	61
Rajouri	3.5	-40	0.0	-100	0.0	-100	0.2	100	64.8	21500
Ramban	11.3	6	0.0	-100	0.0	-100	9.8	24	9.5	79
Reasi	58.4	446	0.0	-100	0.0	-100	6.0	50	29.5	1129
Samba	15.8	327	0.0	-100	0.0	-100	2.1	62	10.3	506
Shopian	23.0	435	0.0	-100	0.0	-100	10.0	122	6.0	94
Srinagar	13.1	122	0.0	-100	0.0	-100	11.4	70	5.2	-2
Udhampur	54.8	412	0.0	-100	0.0	-100	3.9	-3	14.8	517
East Madhya Pradesh										
Anuppur	17.8	100	0.0	-100	36.0	634	0.0	-100	0.0	-100
Balaghat	31.4	202	0.0	-100	7.2	-9	0.0	-100	0.0	-100
Chhatarpur	8.5	27	0.0	-100	0.0	-100	0.0	-100	0.6	-76
Chindwara	31.9	184	0.0	-100	3.1	-26	0.0	-100	0.0	-100
Damoh	18.1	130	0.0	-100	0.0	-100	0.0	-100	6.7	375
Dindori	0.0	-100	0.0	-100	28.0	306	0.0	-100	0.0	-100
Jabalpur	3.0	-63	0.0	-100	11.1	455	0.0	-100	0.0	-100
Katni	2.0	-78	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mandla	12.9	65	0.0	-100	4.4	-5	0.0	-100	0.0	-100
Narsingpur	65.2	873	0.0	-100	0.2	-86	0.0	-100	0.0	-100
Panna	2.5	-56	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rewa	11.2	180	0.0	-100	5.6	833	0.0	-100	0.0	-100
Sagar	4.3	-45	0.0	-100	0.2	-93	0.0	-100	0.4	-87
Satna	6.6	19	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Seoni	6.9	-38	0.0	-100	1.5	-65	0.0	-100	0.9	-67
Shahdol	17.0	198	0.0	-100	3.0	-32	0.0	-100	0.0	-100
Sidhi	19.0	222	0.0	-100	2.9	32	0.0	-100	0.0	-100
Singrauli	35.5	810	0.0	-100	8.0	627	0.0	-100	0.0	-100

Tikamgarh	9.3	17	0.0	-100	0.0	-100	0.0	-100	1.0	-29
Umariya	5.5	-30	0.0	-100	4.2	56	0.0	-100	0.0	-100
West Madhya Pradesh										
Alirajpur	22.4	143	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Asoknagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Badwani	9.6	-28	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Betul	31.7	79	0.0	-100	2.7	-37	0.0	-100	0.0	-100
Bhind	19.5	33	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhopal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Burhanpur	41.3	124	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Datia	1.4	-90	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dewas	6.6	-44	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhar	18.8	65	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Guna	11.8	202	0.0	-100	0.0	-100	0.0	-100	2.6	-17
Gwalior	15.1	7	0.0	-100	0.0	-100	0.0	-100	2.5	36
Harda	34.7	159	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hosangabad	11.6	-3	0.0	-100	4.9	123	0.0	-100	0.0	-100
Indore	35.2	346	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhabua	7.5	-40	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khandwa	20.5	83	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khargone	29.8	273	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mandsaur	12.2	53	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Morena	15.0	70	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Neemuch	15.3	113	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raisen	12.4	36	0.0	-100	0.0	-100	0.0	-100	1.6	123
Rajgarh	1.3	-86	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ratlam	17.4	39	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sehore	7.5	-34	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shajapur	4.0	-57	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sheopur Kalani	30.0	341	2.0	-51	0.0	-100	0.0	-100	0.0	-100
Shivpuri	0.8	-91	0.0	-100	2.3	221	0.0	-100	0.3	-83
Ujjain	11.3	0	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Vidisha	1.6	-74	0.0	-100	1.5	-21	0.0	-100	0.0	-100
Chattisgarh										
Bastar	15.2	-11	38.2	232	60.1	401	0.0	-100	0.0	-100
Bijapur	45.0	107	7.8	-46	126.3	1229	0.0	-100	0.0	-100
Bilaspur	19.2	199	3.7	-69	30.3	283	0.0	-100	0.0	-100
Dantewara	36.0	79	42.4	165	110.3	931	0.0	-100	0.0	-100
Dhamtari	5.6	-49	25.4	142	39.4	418	0.0	-100	0.0	-100
Durg	52.1	460	1.0	-90	19.8	164	0.0	-100	0.0	-100
Janjgir	30.5	349	1.8	-81	20.9	227	0.0	-100	0.0	-100
Jashpur nagar	103.8	631	2.6	-77	3.8	-69	0.0	-100	0.0	-100
Kanker	45.7	213	16.3	14	38.8	234	0.0	-100	0.0	-100
Korba	18.5	146	0.0	-100	22.1	427	0.0	-100	0.0	-100
Koriya	31.8	412	5.0	-18	41.2	1548	0.0	-100	0.0	-100
Kawardha	74.0	663	0.0	-100	58.0	695	0.0	-100	0.0	-100
Mahasamund	23.3	97	0.5	-93	8.7	21	0.0	-100	0.0	-100
Narayanpur	31.2	38	7.3	-34	35.1	200	0.0	-100	0.0	-100

Raigarh	21.9	81	0.0	-100	3.8	-55	0.0	-100	0.0	-100
Raipur	10.4	-14	17.9	84	10.9	60	0.0	-100	0.0	-100
Rajandgaon	32.9	210	12.8	3	46.7	484	0.0	-100	0.0	-100
Surguja	35.5	299	1.3	-87	14.0	129	0.0	-100	0.0	-100
East Uttar Pradesh										
Allahabad	44.2	474	6.1	14	0.0	-100	0.0	-100	0.0	-100
Ambedkar Nagar	73.0	602	1.0	-88	0.0	-100	0.0	-100	0.0	-100
Azamgarh	71.3	850	3.5	-45	0.0	-100	0.0	-100	0.0	-100
Bahraich	8.6	-42	0.5	-90	0.0	-100	0.0	-100	0.0	-100
Ballia	55.2	416	42.6	536	0.0	-100	0.0	-100	0.0	-100
Balrampur	29.0	110	0.8	-89	0.0	-100	0.0	-100	0.0	-100
Banda	5.8	-51	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Barabanki	9.0	-47	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Basti	51.0	227	2.7	-52	0.0	-100	0.0	-100	0.0	-100
Chandauli	44.2	750	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Deoria	106.8	853	36.0	490	0.0	-100	0.0	-100	0.0	-100
Faizabad	5.5	-53	0.5	-95	0.0	-100	0.0	-100	0.0	-100
Farrukhabad	7.1	-46	0.0	-100	0.0	-100	0.0	-100	4.1	413
Fatehpur	17.4	11	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gazipur	102.3	1117	16.9	138	0.0	-100	0.0	-100	0.0	-100
Gonda	6.7	-59	0.3	-95	0.0	-100	0.0	-100	0.0	-100
Gorakhpur	92.2	396	3.0	-67	0.0	-100	0.0	-100	0.0	-100
Hardoi	6.6	-68	0.0	-100	0.0	-100	0.0	-100	1.8	27
Jaunpur	46.8	508	21.7	456	0.0	-100	0.0	-100	0.0	-100
Kannauj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kanpur City	3.5	-82	0.0	-100	0.0	-100	0.0	-100	0.2	-84
Kanpur Dehat	1.3	-89	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kaushambi	10.9	-9	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kheri	11.9	-32	0.0	-100	5.3	2550	0.0	-100	4.8	1100
Kushi nagar	53.0	172	0.0	-100	0.0	-100	0.0	-100	2.0	567
Lucknow	10.3	-39	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Maharajganj	94.1	390	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mau	46.0	304	22.5	341	0.0	-100	0.0	-100	0.0	-100
Mirzapur	53.1	589	10.9	153	0.0	-100	0.0	-100	0.0	-100
Pratapgarh	28.0	172	6.0	-6	0.0	-100	0.0	-100	0.0	-100
RaiBareilly	18.4	-7	4.0	-38	0.0	-100	0.0	-100	0.1	-75
Sahuji Maharajnagar	8.0	3	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnnagar	96.0	674	2.0	-68	0.0	-100	0.0	-100	0.0	-100
Sant Ravidas Nagar	63.0	1112	12.0	380	0.0	-100	0.0	-100	0.0	-100
Shrawasti	19.2	28	0.0	-100	**	**	**	**		
Sidharthnagar	41.1	184	0.1	-98	0.0	-100	0.0	-100	0.0	-100
Sitapur	1.1	-92	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sonbhadra	48.0	713	0.0	-100	0.3	-87	0.0	-100	0.0	-100
Sultanpur	7.9	-53	10.8	44	0.0	-100	0.0	-100	0.0	-100
Unnao	7.8	-66	0.0	-100	0.0	-100	0.0	-100	1.3	25
Varanasi	49.2	478	13.8	253	0.0	-100	0.0	-100	0.0	-100
West Uttar Pradesh										
Agra	12.0	106	0.0	-100	0.0	-100	0.0	-100	0.2	-93
Aligarh	26.9	169	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Auraiya	0.0	-100	0.0	-100	0.0	-100	0.0	-100	6.0	186
Badaun	4.4	-73	0.0	-100	0.0	-100	0.0	-100	0.4	-64
Baghpat	57.8	1652	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bareilly	12.5	-27	0.0	-100	0.0	-100	0.0	-100	0.4	-39
Bijnor	38.8	300	0.0	-100	0.0	-100	0.0	-100	4.1	86
Bulandsahar	12.7	74	0.0	-100	0.0	-100	0.0	-100	1.7	28
Etah	5.3	-60	0.0	-100	0.0	-100	0.0	-100	0.3	-33
Etawah	2.0	-86	0.0	-100	0.0	-100	0.0	-100	2.0	25
Firozabad	4.6	-45	0.0	-100	0.0	-100	0.0	-100	0.0	-100
GBNagar	17.0	68	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ghaziabad	4.5	-42	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hamirpur	1.0	-86	0.0	-100	0.0	-100	0.0	-100	1.7	4
Jalaun	18.7	54	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhansi	7.9	-19	0.0	-100	0.0	-100	0.0	-100	4.0	48
Jotirba Phule Nagar	17.0	40	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kanshiramnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lalitpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mahamaya Nagar	25.0	160	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mahoba	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mainpuri	6.6	-38	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mathura	3.0	-50	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Meerut	56.4	781	0.0	-100	0.0	-100	0.0	-100	0.1	-91
Moradabad	31.0	152	0.0	-100	0.0	-100	0.0	-100	2.4	118
Muzzaffarnagar	65.4	891	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pilibhit	7.3	-45	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rampur	21.5	79	0.0	-100	0.0	-100	0.0	-100	2.2	2067
Saharanpur	69.3	670	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shahjahanpur	17.4	4	0.0	-100	0.0	-100	0.0	-100	7.3	1117
Uttarakhand										
Almora	2.4	-85	0.0	-100	0.0	-100	0.0	-100	9.6	336
Bageshwar	2.2	-86	2.0	-59	0.0	-100	0.0	-100	2.3	5
Chamoli	9.2	-37	0.3	-96	0.0	-100	0.0	-100	3.3	58
Champawat	20.5	-37	0.0	-100	0.0	-100	0.0	-100	0.5	-71
Dehradun	0.8	-96	3.0	-50	0.0	-100	0.4	-93	8.5	174
Garhwal Pauri	0.7	-96	0.0	-100	0.0	-100	0.0	-100	0.1	-95
Garhwal Tehri	0.2	-99	2.7	-65	0.0	-100	0.7	-83	2.6	-6
Haridwar	22.7	203	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nainital	8.7	-69	0.0	-100	0.0	-100	0.0	-100	1.7	24
Pithorgarh	12.4	-45	2.8	-59	0.0	-100	0.0	-100	5.5	82
Rudraprayag	1.8	-88	1.0	-77	0.0	-100	0.0	-100	3.1	182
Udham Sing Nagar	54.3	148	0.0	-100	0.0	-100	0.8	-50	0.1	-91
Uttarkashi	18.2	22	9.0	33	0.7	-90	0.0	-100	2.3	-18
Bihar										
Araria	169.2	944	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Arwal	143.2	1810	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Aurangabad	71.2	748	0.0	-100	2.3	-54	0.0	-100	0.0	-100
Banka	184.6	1083	14.0	57	21.4	219	0.0	-100	0.0	-100
Begusarai	199.7	1838	3.0	-79	0.0	-100	0.0	-100	0.0	-100
Bhabua	52.6	611	0.7	-85	0.0	-100	0.0	-100	0.0	-100

Bhagalpur	235.0	1143	44.3	195	42.6	847	6.8	70	0.0	-100
Bhojpur	173.4	2308	66.6	1181	0.0	-100	0.0	-100	0.0	-100
Buxar	105.2	1518	0.4	-92	0.0	-100	0.0	-100	0.0	-100
Darbhanga	143.5	1349	4.8	-36	0.0	-100	0.0	-100	0.0	-100
East Champaran	112.8	667	22.4	220	0.0	-100	0.0	-100	0.0	-100
Gaya	111.6	1495	1.0	-89	6.1	1	0.0	-100	0.0	-100
Gopalganj	81.5	758	53.5	430	0.0	-100	0.0	-100	0.0	-100
Jahanabad	99.5	1099	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jamui	153.9	1215	26.1	129	17.1	287	0.0	-100	0.0	-100
Kathihar	282.1	2193	20.8	70	6.7	110	1.2	-66	0.0	-100
Khagadia	124.1	848	0.4	-98	0.2	-95	1.6	-16	0.0	-100
Kishanganj	98.6	309	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lakhisarai	75.0	440	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Madhepura	259.9	1692	0.0	-100	0.4	-83	6.0	131	0.0	-100
Madhubani	108.6	634	7.5	-56	0.0	-100	0.0	-100	0.0	-100
Monghyar	167.8	1107	0.0	-100	2.8	-53	3.2	39	0.0	-100
Muzaffarpur	123.4	828	26.9	327	0.0	-100	0.0	-100	0.0	-100
Nalanda	123.3	1544	16.9	94	0.0	-100	0.0	-100	0.0	-100
Nawada	95.7	1067	2.5	-70	15.3	104	0.0	-100	0.0	-100
Patna	129.1	1042	32.5	460	0.0	-100	0.0	-100	0.0	-100
Purnea	203.2	1211	1.8	-88	12.6	688	0.0	-100	0.0	-100
Rohtas	72.7	870	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Saharsha	132.2	818	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Samstipur	169.5	1595	18.3	358	0.0	-100	0.0	-100	0.0	-100
Saran	103.3	903	86.0	1079	0.0	-100	0.0	-100	0.0	-100
Sheikpura	113.3	930	7.7	-35	0.7	-76	0.0	-100	0.0	-100
Sheohar	59.2	345	13.6	19	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	97.2	631	17.0	49	0.0	-100	0.0	-100	0.0	-100
Siwan	102.0	1278	147.7	1723	0.0	-100	0.0	-100	0.0	-100
Supaul	126.4	920	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Vaishali	97.8	743	24.5	158	0.0	-100	0.0	-100	0.0	-100
West Champaran	110.5	542	5.9	-39	0.0	-100	0.0	-100	0.0	-100
Jharkhand										
Bokaro	221.8	1182	15.2	48	39.1	483	0.0	-100	0.0	-100
Chatra	67.3	774	7.7	-5	23.4	655	0.0	-100	0.0	-100
Deoghar	0.0	-100	3.9	-74	24.9	168	0.0	-100	0.0	-100
Dhanbad	151.4	877	3.3	-79	41.5	400	0.0	-100	0.0	-100
Dumka	0.0	-100	**	**	**	**	**	**	**	**
East Singbhum	155.7	873	15.8	18	102.1	1757	0.0	-100	0.0	-100
Garhwa	46.9	178	6.0	28	5.0	72	0.0	-100	0.0	-100
Giridih	136.4	1086	3.0	-76	18.0	210	0.0	-100	0.0	-100
Godda	194.8	1125	14.9	-22	27.3	876	0.0	-100	0.0	-100
Gumla	136.7	951	**	**	**	**	**	**	**	**
Hazaribagh	124.8	1035	14.9	-38	8.1	1	0.0	-100	0.0	-100
Jamtara	112.9	689	2.8	-87	44.0	358	0.0	-100	0.0	-100
Khunti	137.0	735	30.0	216	56.0	657	0.0	-100	0.0	-100
Koderrna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Latehar	80.5	730	0.0	-100	16.5	162	0.0	-100	0.0	-100
Lohardagga	79.5	803	7.6	-42	22.0	323	0.0	-100	0.0	-100

Pakur	196.8	484	8.0	-65	142.5	1150	0.0	-100	0.0	-100
Palamau	113.7	864	2.0	-67	13.7	217	0.0	-100	0.0	-100
Ramgarh	123.4	964	1.0	-92	13.2	181	0.0	-100	0.0	-100
Ranchi	120.3	697	6.2	-59	23.6	136	0.0	-100	0.0	-100
Sahebganj	0.0	-100	0.0	-100	32.8	315	0.0	-100	0.0	-100
Saraikela	3.0	-78	0.0	-100	59.4	1349	0.0	-100	0.0	-100
Simdega	119.6	813	0.0	-100	**	**	**	**	**	**
West Singbhum	224.8	1222	0.0	-100	63.5	1196	0.0	-100	0.0	-100
East Rajasthan										
Ajmer	9.5	375	0.0	-100	0.0	-100	0.0	-100	0.3	-16
Alwar	20.8	372	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Banswara	7.2	-19	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Baran	0.5	-93	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bharatpur	2.3	-60	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhilwara	1.7	-33	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bundi	18.8	214	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chittorgarh	5.9	20	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dausa	26.6	478	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dholpur	13.3	13	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dungarpur	10.8	134	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jaipur	14.9	365	0.0	-100	0.0	-100	0.0	-100	0.6	29
Jhalawar	3.5	-65	0.0	-100	0.0	-100	0.0	-100	0.2	-92
Jhunjhunu	8.4	265	0.0	-100	0.0	-100	0.5	-34	13.3	4321
Karauli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kota	8.2	-23	0.0	-100	0.0	-100	0.0	-100	0.4	-85
Pratapgarh	11.0	57	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajsamand	4.7	68	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sawai Madhopur	0.4	-93	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sikar	8.1	329	0.0	-100	0.0	-100	0.0	-100	8.7	4257
Sirohi	22.6	630	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tonk	8.7	90	0.0	-100	0.0	-100	0.0	-100	0.5	-59
Udaipur	26.5	615	0.0	-100	0.0	-100	0.0	-100	0.0	-99
West Rajasthan										
Barmer	4.5	457	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bikaner	1.7	108	0.0	-100	0.0	-100	0.0	-100	0.4	200
Churu	0.1	-94	0.0	-100	0.0	-100	0.1	-91	9.0	4400
Hanumangarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.7	43
Jaisalmer	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jalore	18.6	1142	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nagaur	10.1	1022	0.0	-100	0.0	-100	0.0	-100	0.9	125
Pali	4.7	74	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	3.4	1017
Gujarat Region										
Ahmedabad	8.0	63	0.0	-100	0.0	-100	0.3	-78	0.0	-100
Anand	1.1	-84	0.0	-100	0.0	-100	0.3	-86	0.0	-100
Banaskantha	27.7	432	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Baroda	8.5	1	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Broach	3.5	-39	0.2	-84	0.0	-100	0.0	-100	0.0	-100

DNH	62.7	465	21.0	176	0.0	-100	0.0	-100	0.0	-100
Dahod	12.1	50	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Daman	9.0	-19	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dangs	15.3	-26	3.3	-68	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	14.4	167	0.3	-89	0.0	-100	0.8	-20	0.0	-100
Kheda	4.3	-18	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mehsana	19.6	232	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Narmada	10.0	8	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Navsari	8.7	-29	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Panchmahal	8.3	4	0.1	-97	0.1	-93	0.0	-100	0.0	-100
Patan	9.8	324	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	30.6	386	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Surat	15.8	86	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tapi	30.0	417	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Valsad	24.5	76	0.0	-99	0.0	-100	0.0	-100	0.0	-100
S K & Diu region										
Amreli	31.8	405	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	22.1	206	0.0	-100	0.1	-98	0.1	-95	0.0	-100
Diu	13.0	-23	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jamnagar	17.1	167	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Junagarh	12.6	73	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kutch	7.3	16	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Porbandar	7.3	86	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajkot	9.1	40	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Surendranagar	2.8	-42	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Maharashtra										
Konkan & Goa										
Goa	22.2	-3	18.9	-43	41.6	94	0.0	-100	0.0	-100
Mumbai	34.1	97	8.6	-9	0.0	-100	0.0	-100	0.0	-100
Raigad	30.9	16	5.6	-65	22.6	179	2.2	-55	0.0	-100
Ratnagiri	35.1	20	12.5	-47	16.5	36	0.3	-96	0.0	-100
Sindhudurg	16.4	-37	17.4	-31	12.0	-33	0.0	-100	0.0	-100
Thane	45.3	98	9.2	-19	0.0	-100	0.0	-100	0.0	-100
Madhya Maharashtra										
Ahmednagar	41.5	113	0.6	-95	3.2	-61	0.0	-100	0.0	-100
Dhule	48.5	301	0.0	-99	0.0	-100	0.0	-100	**	**
Jalgaon	33.6	133	0.1	-97	0.0	-100	0.0	-100	0.0	-100
Kolhapur	4.7	-79	5.7	-75	37.9	113	0.0	-100	0.0	-100
Nandurbar	18.2	32	0.7	-80	0.0	-100	0.0	-100	**	**
Nasik	48.8	170	2.1	-78	0.0	-99	0.0	-100	0.0	-100
Pune	5.3	-70	9.0	-44	6.0	-47	0.0	-100	0.0	-100
Sangli	6.6	-68	9.0	-55	34.9	139	0.0	-100	0.0	-100
Satara	3.5	-78	5.0	-76	15.1	19	0.0	-100	0.0	-100
Solapur	13.4	-32	5.8	-67	10.5	-21	4.9	-31	0.0	-100
Marathwada										
Aurangabad	40.7	118	0.0	-100	0.2	-97	0.0	-100	0.0	-100
Beed	18.6	6	1.7	-89	15.1	74	0.0	-100	**	**
Hingoli	22.4	18	0.0	-100	2.8	-69	0.0	-100	**	**

GWB										
Bankura	121.6	511	66.6	294	93.4	502	0.0	-100	0.0	-100
Birbhum	90.0	323	30.2	58	57.1	376	0.0	-100	0.0	-100
Burdwan	110.1	419	48.1	157	83.1	604	0.0	-100	0.0	-100
East Midnapore	70.5	64	53.1	96	171.5	472	0.0	-100	0.0	-100
Hooghly	84.5	347	25.5	34	71.5	438	0.0	-100	0.0	-100
Howrah	80.0	270	47.8	167	65.3	920	0.0	-100	0.0	-100
Kolkata	157.0	429	28.6	-6	184.0	868	0.0	-100	0.0	-100
Murshidabad	69.0	132	18.0	4	24.0	88	0.0	-100	0.0	-100
Nadia	85.1	191	15.4	48	70.5	317	0.0	-100	0.0	-100
24 Pargana (N)	77.7	232	45.5	93	101.6	308	0.0	-100	0.0	-100
Purulia	197.8	1011	13.9	-31	107.9	1320	0.0	-100	0.0	-100
24 Pargana (S)	83.5	86	28.0	-25	133.1	261	0.3	-99	0.0	-100
West Midnapore	80.8	262	26.4	59	137.2	1114	0.0	-100	0.0	-100
SHWB										
Cooch Behar	113.0	241	3.7	-87	0.5	-91	6.4	-4	0.0	-100
Darjeeling	146.2	446	16.9	-8	13.8	57	14.1	85	0.0	-100
East Sikkim	109.2	109	29.5	181	55.1	206	41.6	1199	0.0	-100
Jalpaiguri	78.1	97	16.7	-49	29.3	257	6.5	63	0.0	-100
Malda	148.1	633	4.3	-75	26.5	372	2.8	-44	0.0	-100
North Dinajpur	52.0	41	31.0	97	9.0	1025	**	**	0.0	-100
North Sikkim	65.8	-13	38.5	4	34.1	0	107.5	851	0.0	-100
South Dinajpur	137.7	494	6.0	-52	8.2	-9	0.0	-100	0.0	-100
South Sikkim	90.7	73	9.6	-9	21.4	19	2.2	-31	0.0	-100
West Sikkim	93.7	24	23.3	-37	27.0	-21	3.2	-72	0.0	-100
Karnataka										
Coastal Karnataka										
Dakshin Kannada	49.7	0	94.1	97	39.9	-14	28.0	7	2.6	-89
Udupi	65.6	60	61.6	45	41.6	-5	21.6	-6	5.5	-78
Uttar Kannada	25.3	-20	20.4	-24	65.3	144	12.1	4	0.0	-100
N I Karnataka										
Bagalkote	19.6	3	19.0	-6	74.1	274	0.0	-100	0.0	-100
Belgaum	9.0	-56	6.7	-73	51.4	185	0.0	-100	0.0	-100
Bidar	7.2	-63	0.1	-99	58.8	250	0.1	-99	0.0	-100
Bijapur	13.9	-30	17.4	-3	45.0	114	1.4	-87	0.0	-100
Dharwad	12.1	-53	15.3	-44	34.2	93	0.0	-100	0.0	-100
Gadag	16.7	-25	12.7	-51	42.8	147	0.0	-100	0.0	-100
Gulbarga	4.9	-72	11.5	-28	37.0	91	2.4	-67	0.0	-100
Haveri	6.4	-77	8.9	-65	44.8	136	0.0	-100	0.0	-100
Koppal	22.5	19	28.2	50	75.4	297	0.0	-100	0.0	-100
Raichur	12.0	-52	25.7	36	63.7	311	0.0	-100	0.0	-100
Yadgir	18.1	-21	36.2	98	71.2	142	0.0	-100	0.0	-100
S I Karnataka										
Bangalore Rural	14.2	-62	25.5	-13	40.2	49	11.2	-48	0.0	-100
Bangalore Urban	22.8	-25	20.6	-35	22.3	-9	10.1	-47	0.0	-100
Bellary	5.5	-74	46.3	120	45.6	113	7.6	-38	0.0	-100
Chamarajnagar	1.6	-95	77.6	128	4.7	-86	10.4	-52	0.2	-99
Chichballapur	14.4	-59	37.1	37	33.3	36	6.6	-71	0.0	-100
Chickmagalur	17.4	-49	16.2	-54	17.6	-47	5.6	-70	0.6	-97

Chitradurga	5.5	-77	27.5	27	14.0	-26	1.8	-85	0.0	-100
Davangere	4.1	-86	23.2	5	34.9	70	1.1	-92	0.0	-100
Hassan	13.9	-58	34.2	9	15.3	-54	3.1	-84	2.9	-82
Kodagu	17.9	-61	80.2	94	13.5	-66	9.1	-58	3.8	-83
Kolar	25.0	-29	26.3	4	26.4	2	3.5	-83	0.0	-100
Mandya	11.1	-69	50.4	69	26.8	-7	7.0	-62	1.2	-92
Mysore	13.8	-61	80.1	145	12.0	-62	8.1	-51	1.0	-92
Ramnagara	11.4	-70	55.2	63	39.1	33	6.4	-69	0.0	-100
Shimoga	22.8	-26	39.2	55	32.3	34	9.3	-19	0.0	-100
Tumkur	14.7	-51	44.3	76	27.9	5	4.3	-76	0.0	-100
Kerala										
Alappuzha	16.0	-76	100.2	28	11.6	-84	40.3	-43	45.3	-12
Kannur	44.5	-7	107.2	104	75.0	58	15.2	-59	0.0	-100
Ernakulam	32.7	-51	131.7	102	72.1	4	60.8	12	28.1	-31
Idukki	40.3	-49	111.8	24	40.0	-38	33.0	-51	40.4	-22
Kasaragod	33.7	-35	59.1	25	30.8	-36	7.4	-75	0.0	-100
Kollam	36.0	-55	158.8	74	31.3	-62	36.3	-59	65.4	3
Kottayam	33.1	-53	214.1	215	35.1	-53	41.2	-42	58.8	19
Kozhikode	128.0	131	62.6	16	17.7	-73	27.6	-42	1.0	-97
Malappuram	30.7	-56	86.4	17	49.9	-11	68.5	25	16.0	-51
Palakkad	21.6	-64	139.1	119	56.0	-8	24.9	-56	4.3	-88
Pathanamthitta	28.6	-65	209.2	139	2.7	-97	80.9	8	79.0	31
Thiruvananthapuram	3.6	-94	114.7	56	6.7	-89	34.4	-57	113.2	132
Thrissur	52.6	-20	153.3	121	113.7	75	37.1	-28	1.5	-97
Wyanad	11.0	-72	96.2	75	30.6	-36	18.7	-30	0.2	-99
Tamil Nadu										
Ariyalur	27.3	-20	23.5	-55	15.5	-65	28.3	217	13.3	-79
Chennai	24.0	-35	128.7	50	15.9	-79	0.0	-100	0.0	-100
Coimbatore	26.9	-13	107.9	152	10.3	-75	0.6	-89	7.9	-79
Cuddalore	51.4	27	43.2	-32	10.9	-82	21.7	39	11.8	-85
Dharmapuri	22.2	-43	56.9	39	33.3	-6	2.3	-54	0.0	-100
Dindigul	26.3	-34	67.7	30	10.7	-75	10.8	20	0.6	-99
Erode	23.7	-25	84.9	104	6.7	-82	0.2	-96	1.8	-94
Kanchipuram	25.2	-31	51.2	-26	36.6	-41	0.2	-99	0.0	-100
Kanyakumari	2.7	-94	56.7	-21	10.5	-81	0.1	-99	75.7	26
Karikal	23.1	-50	48.1	-28	17.8	-84	18.9	-42	2.1	-98
Karur	22.3	-30	31.4	-20	7.0	-77	6.5	-10	0.0	-100
Krishnagiri	17.3	-51	43.5	14	19.7	-39	0.3	-90	0.0	-100
Madurai	45.4	3	116.8	97	18.2	-59	3.6	-47	0.9	-98
Nagapattinam	36.9	-5	53.7	-31	14.7	-79	50.6	153	32.4	-71
Namakkal	17.7	-48	69.7	80	11.6	-64	0.8	-88	0.0	-100
Nilgiris	45.5	2	83.7	51	46.2	-19	1.1	-86	4.1	-93
Perambalur	22.0	-49	57.0	6	22.5	-40	9.0	27	0.8	-98
Puducherry	0.2	-99	49.2	-36	7.3	-92	0.4	-98	1.7	-98
Pudukottai	16.8	-51	39.4	-12	11.3	-68	5.6	-8	7.2	-81
Ramanathapuram	1.4	-96	74.4	34	0.0	-100	1.9	-78	13.3	-73
Salem	9.8	-76	59.0	30	20.0	-50	4.0	-22	0.0	-100
Sivaganga	13.4	-70	114.6	129	2.0	-96	4.3	-46	19.1	-54
Thanjavur	14.5	-57	50.0	-2	14.5	-70	34.2	183	8.6	-84

Theni	24.3	-34	107.7	127	3.8	-92	6.6	3	4.5	-89
Tirunelveli	4.2	-86	49.4	-3	2.0	-96	14.9	64	11.8	-80
Tirupur	20.7	-32	77.9	82	0.0	-100	0.0	-100	0.0	-100
Tiruvallur	31.5	-13	65.9	15	44.8	-21	0.0	-100	1.0	-99
Tiruvannamalai	41.5	2	37.1	-29	9.0	-77	0.0	-100	0.0	-100
Tiruvarur	8.1	-78	50.7	-19	2.2	-96	21.8	51	15.7	-79
Toothukudi	3.5	-89	56.2	14	5.5	-87	7.3	-19	30.4	-34
Trichy	14.5	-61	37.1	-16	13.1	-65	15.9	141	4.0	-90
Vellore	31.9	-12	35.5	-4	27.4	-13	0.0	-100	0.0	-100
Villupuram	25.1	-28	44.4	-13	22.7	-48	2.7	-72	1.3	-98
Virudhunagar	20.8	-44	101.8	94	0.8	-98	1.1	-89	4.4	-90
Andhra Pradesh										
Coastal Andhra Pradesh										
East Godavari	30.0	-31	127.4	156	293.9	965	2.0	-92	0.0	-100
Guntur	37.3	46	74.8	96	196.6	639	9.1	-69	0.0	-100
Krishna	45.1	30	72.5	69	221.6	783	1.3	-96	0.0	-100
Nellore	9.1	-75	143.4	78	59.1	-15	48.8	-49	0.1	-99
Prakasam	29.8	-3	102.7	120	189.3	348	9.4	-79	0.0	-100
Sirkakulam	102.9	164	152.0	198	366.6	845	0.0	-100	0.0	-100
Visakhapatnam	27.5	-31	104.4	107	280.1	900	0.0	-100	0.0	-100
Vizianagram	43.4	11	86.2	66	219.4	760	0.0	-100	0.0	-100
West Godavari	27.6	-36	87.6	88	173.8	506	1.3	-95	0.0	-100
Telangana										
Adilabad	34.2	169	2.8	-87	30.2	144	0.0	-100	0.0	-100
Hyderabad	78.3	326	26.5	39	110.7	492	0.0	-100	0.0	-100
Karimnagar	27.3	133	7.0	-64	99.8	540	0.0	-100	0.0	-100
Khammam	51.5	133	21.7	15	110.2	698	0.0	-100	0.0	-100
Mehabubnagar	25.2	70	33.9	108	151.0	1127	0.0	-100	0.0	-100
Medak	39.1	188	9.2	-48	84.7	392	0.0	-100	0.0	-100
Nalgonda	44.1	98	42.9	108	237.3	1412	0.0	-100	0.0	-100
Nizamabad	33.4	191	3.7	-83	38.8	111	0.0	-100	0.0	-100
Rangareddy	43.0	144	22.6	43	116.7	620	0.7	-90	0.0	-100
Warangal	32.7	110	12.1	-26	149.3	845	16.4	52	0.0	-100
Rayalaseema										
Anantapur	2.4	-89	31.0	48	31.8	83	3.4	-79	0.0	-100
Chittoor	6.0	-80	63.8	62	50.8	37	17.3	-58	0.0	-100
Cuddapah	5.7	-75	94.3	178	36.2	37	7.0	-76	0.0	-100
Kurnool	6.4	-68	44.5	106	52.4	229	4.9	-60	0.0	-100

	(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 III List of Varieties

Jammu & Kashmir

Mustard :- Pusa Sarson-25, Pusa Sarson-26, PusaAgnri, PusaTaraka, PusaMahak, NPJ 112, EJ17, PusaMahak and Kanti, Maya, Rohini, PusaJaikisan, Varuna, RGN13, RGN73, Bharat Sarson-1 (NRCD-2), Bharat Sarson-2 (NRCHB 101), Bharat Sarson-3, (NRCHB 506), Arawali, RGN48, Geeta and PBR 97, CS52, CS54, NarendraRai 1, Karan Tara, Narendra, - NRCYS-05-02, YSH401Tara, RSPR-01, RLM-514, RLM-619, Kranti, P. Gold, P. Basant.

Wheat: (irrigated) PBW-550, PBW-502, DPW-621-50, DBW-17, Raj-3077, HD-2967, HD-2687, RSP-303, VL-738, VL-804, HS-240, PBW-154, Raj-1555, Raj-3765, Lok-1, WH-147, GW-190, GW-322 and GW-273 (unirrigated) PBW-175, RSP-81 (Jitto) WH-1080, Raj 3077, PBW-396, HI-1500 and HI-1531

Barley: RD-2552, RD-2052, RD-2035, RD-2503, RD-2715, RD-2660, RD-2508, Ratna, Jyoti and Sonu

Chickpea: C-235, K-468, Gourav and PBG-1; Pea- AP-1, Bonnevillea, Rachna and Arkel; Chickpea-K-468, Gourav;

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

Field pea: T-163, PG-2 and Rachna

Oat: Kent, Sabzar

Gram: C-235, Gaurav, K-468, SCS-3, PBG-1, RSG 44, Dahod yellow, GNG 16, ICCV 10, RSG 888, GNG 469 and Pratap chana 1

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

Vegetables:

Potato: (Kufri Chandramukhi), K Badshah, K. Sinduri, K. Chipsona & K. Sona.

Cole crops (Cauliflower (var. Snowball-16, Pusa Snowball K-1), **Knol-khol** (var. White Vienna, Purple Vienna, King of Market),) and rare crops (broccoli, lettuce, celery, chienesese cabbage, pakchoi).

Cabbage: Golden Acre, Pride of India and Pusa Mukta, **Carrot:** PusaKesar, P. Yamdagani. **Turnip:** PTWG (Purple Top White Globe).

Garlic: Large Segmented, Yamuna Safed-3 Agrifound parvati, **Methi:** pusa early bunching and kasurimethi., **Radish** (var. P. Reshmi, Japanese White, Minowase), carrot (var. Pusa Kesar, P. Yamdagani), Peas var. Bonnevillea, AP-1, AP-3 & Punjab -89, **Onion** (Pusa Red ,N-53, Agrifound Dark Red & Agrifound Light Red), **Knolkhol** (King of Market and White Vienna), **Spinach Beet** (All Green).

Rajasthan

Wheat: HD-2329, HD-2687, HD-2009 (Arjun), HD-2967, WH 147, PBW 373, PBW502, PBW 550, RAJ 1482, RAJ 1555, RAJ 3077, RAJ 3777, RAJ 3765, RAJ 376, Raj 4037, HI 8381, HI 8498, HI 1544, WH 147, GW 273, GW 322, GW 190, GW 366, DL 803-3, PDW 215, and LOK 1.

Barley: RD- 2052, RD 2035, RD 2624, RD 2660, RD 2668, RD 2552, RD 2592, RD2503, RD-2508, RD-2715, for normal sowing DWRUB 52, DWRUB 64 (for late sowing), RD 2668, BL 2.

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

Vegetables:

Onion: Pusa Red, ArkaNiketan, Pusa White & Local Red, **Deshi carrot:** PusaKeshar, **Tomato:** Pusa Rubi, Pusa Early and Vihar, T-27, RTM 314, **Brinjal:** Pusa Summer Prolific Round, Pusa Summer Prolific Long, Meghdoot and Arka Bahar, **Cauliflower:** Pusa Snowball 1 and Hissar 1, **Cabbage:** Pusa Drum Head and Hybrid 10, **Potato:** late sowing var.- Kufri Badshah and Kufri Sindoori, Kufri-Ashok and Chandramukhi, **Mid sowing var.-** Kufri-Anand, Chipsona-1, 2, Jyoti and Pukhraj. **Methi:** RMT-1, RMT-143, RMT-305, Pusa, Rajendra Kranti, Radish : Japanese white and hill queen

Gram: RSG 44, C 235, G 130, H208, Dahod yellow, GNG 16, GNG 663 (Vardan), GNG 469 (Samrat), GNG 1581 (Gangaur), for Kabuli Chana (GNG 1449 (Gauri), GNG 1958 (Marudhar), GNG 1292, Kak-2), ICCV 10, RSG 888, GNG 469 GNG 149 and Pratap chana 1, RSG-888 (Anubhav), CSJD-884 (Aakash), RSG-2, BG-256, Phule G 5.

Mustard: PR 48, T-59, Bio-902, Laxmi, Aravali, Swarna Jyoti and Vasundhara, Bio- 902, Laxmi, RH 30, Pusa bold, T 59

Cumin: RZ-19, RZ-209, RZ-223, GC-4, Gujarat Jeera-2.

Rijka: Anand-2, LLC-3 (yearly), Type 9, RL-88, Igfree 244 (multiyearly)

Uttarakhand

Pea: VL Ageti Mater-7, Vivel Mater-10, Pant Subjee Mater-3, Azad Mater-3 and Arkel. High yielding varieties : Pant Pea-13, Pant Pea-14, Pant Pea-25, Pant Pea-42, Pant Pea-74] Pant Pea-86, Pant Pea-96, Pant Pea-108 etc.

Chickpea: Avrodhi, Radhey, Pant G-114, Uday etc.

Toria: Type -9, Pant Toria-30, Pant Toria-303, Uttara, Pant Toria-507, P.T.-303, P.T.-507,

Garlic: VL-Garlic or DARL-52.

Sugarcane: Co-238, Co-241, Co Pant, 3220, Co Pant 84211, COS-8436, COS-88230 etc. and medium to late sown varieties like Co Pant 90223, Co Pant-96219, COS-97222, COS-767, COS-1148 etc.

Wheat: VL-829, 802, 804, 892, 738 (Mundri wheat), 719, HL-272, UP 2572, VL-421, HS-240, UP-1109, VL-616, HS-277, VL-829, HD 2687, PBW 343, UP 2338, 2572, HD 2329, Raj 3077, etc.

Barley: Jow-1, VL Jow-56, 85, PRB-502, 507, 701.

Sarson: Varun, Kanti, Peeli sarson.

Masoor: Pant Masoor-4, 5, PL-234, PL- 639. Var. sown under sufficient soil moisture are VL masoor-1, 4, 203,

Potato: Kufri Satluj, Kufri Jawahar, , Kufri Chipsoma-1, Kufri Chipsoma-2, Kufri Jyoti, Kufri Giriraj etc.

Uttar Pradesh

Potato: Kuphari Chanramukhi, Kuphari Ashoka, Kuphari Bahar, Kuphari Surya, Kuphari Sutlaj, Kuphari Pukharaj

Peas: Pant-5, Aparna, Malaviya-2, Malaviya-15, Shikha, Sapana, Ta.- 163, Rachana, Malviya matar,-2

Bengal gram: Pusa, Shubhra

Mustard- Pussa-25, Varuna, Kranti, Krishna, Vardan, Vaibhav.

Sugarcane: Kosha-88230, Kosha-8436, Kosha-0238, Kosha-07250, UP-05125

Wheat : VL-829, VL-802, VL-804, VL-892, VL-738, VL-719, HS-277, UP-2572

Gram: Ta-3, Radhe, K-850, Pant, Kabuli, PDG-3, GPF-2, C-235, Gurav

Lentil: Ta.-8, Pant L- 406 & 234

Alsi- L.C.2023, L.C. 74

Onion- Pusa Red, Pusa White.

Himachal Pradesh

Wheat: HPW-89, 147 VL-738 and HS-240

Barley: HBL-316 and Dolma

Oat: Palampur-1

Cauliflower : Patna snowball and joint snowball.

Pea: Ageta-6 and ArkaMatar.

Raddish: Japanese white, Chinese pink and mino early white

Turnip :PTWG-1

Carrot :Pusa kesar

Fenugreek: I.C. 74, kasoori

Punjab

Radish: Punjab Pasand & Punjab Safed,

Turnip: L-1 & 4-white

Carrot: PC-34), potato and palak (Punjab Green).

Cauliflower: Pusa Snow ball 1 & Pusa Snow ball K-1.

Pea: Punjab 87, Punjab 88, Punjab 89 and Mithi Phali.

Raya: RLC-1, PBR-210, RLM-619, PBR-91 under irrigated conditions and PBR-97 under rainfed conditions.

Garlic: PG-17 .

Wheat: PBW 621, HD 2967, DBW-17, PBW-502, PBW-343, WH-542, and durum wheat WHD 943, PDW 291 and PDW-233 under irrigated conditions and PBW-644, PBW-527, PBW-175 under rainfed conditions.

Gram: L 552, L 550 & BG-1053.

Delhi

Wheat: H.D. 2687, H.D. 2851, H.D. 2894, H.D. 2967, D.B.W.-17

Gram: Kabuli type - Pusa 267, Pusa 1003, Pusa Chamatkar; local type – C235, Pusa 246, P.B.G. 1, Pusa 372.

Oat: J.H.O-822, O.L.-9, Pusa oat-5 and for barseem – Vardan, Buland Barseem-1, Masakavi, J.B-3

Lentil: Pusa Masoor -5 (L-4594).

Pea: Pusa Pragati, Arkel, Azad Matar-3, Pant Matar-3 and Bournville

Potato: Kufri Badshah (Late blight tolerant), Kufri Jyoti (Short duration), Kufri Alankar, Kufri Chandramukhi.

Garlic: G-1, G-41, G-50, G-282.

Carrot: Pusa Rudhira and Pusa Kesar

Sarson Saag- Pusa Saag-1; **Bathua-** Pusa Bathua-1; **Radish-** Japani White, Hill queen, French Radish; **Spinach-** All Green, Pusa Bharti;

Fenugreek- Pusa Kasuri; **Coriander-** Pant Haritama, Hybrids; **Turnip-** Pusa Swati, Local Red variety.

Madhya Pradesh:

Wheat: MP 1142, GW 273, GW 322, GW 190, MP 1106, Sujata, HW- 2004, HI-1500, MP 1142, GW 273, GW 322, GW 190, MP 1106.

Black Gram: JG-130, JG-315, JG-16, Jaki-9218, JG 6, JG 11, JG-14, JG-74, JG-322, JG-01,

Cicer kabulinum (Kabuli chana): KAK-2, JGK-1, JGK-2, JGK-3

Chickpea: KAK-2, JGK-1, J.G-11, J.G-315.

Pulse (Masoor): RVL-31, JL-2, Jawahar Lentil 1 & 2, K-75, J.L.S-4076, J.L.S-3.

Potato: K. surya, K.khyati, K Loukar, K Badshah.

Pea: Arkel, PSM3 arkil, PUSA Pragati, Jawahar Pea 1, Jawahar Pea 2, Jawahar Pea 5 and Bonvile etc.

Maize: JVM 421, JM 16.

Linseed: R.L.C.92, Deepika, Indira Alsi- 32, Kartika

Lentil: RVL-31, JL-2

Winter Sugarcane: Co. J. N. 86-572, Co. J. N. 86-141

Safflower: J.S.F. -1, A-1 (Sweta), D.S.H.- 129, J.S.I.- 7, Nari- 6, M.K.H.-II, D.S.H.- 129.

Mustard: Pusa Mahak, Pusa Agrani., Pusa Bold Jaggnath, Pusa Jay-Kisan, N.R.C.H.B- 506, J.M-02, 03

Chhattisgarh.

Wheat: Arpa, Vidisha, Kanchan

Gram: JG-16, 11, 74, 130, 315, indira chana-1 and vaibhav

Odisha

Cauliflower: Pusa Ketaki and Pusa Deepali.

Cabbage: Pride of India.

Beans: Pusa Parvati and Arka Komal.

Tomato: BT 2, BT 10, BT 12 Neeladri, Sada Bahar, Madhuri, Maharathi, Rashmi and Navin.

Mustard: Parbhathi, Anuradha, TS-29 and M-27.

Onion: Nasik Red, Patna Red, Pune Red, Bellary Red, Pusa Ratnar, Pusa Madhavi, Arka Niketan, Arka Pragati, Agrifound Light Red, Agrifound Dark, Punjab Selection, Patna White, Bombay White, Pusa White Round etc.

West Bengal

Banana: Mortoman, Chapa, Kathali, Singapuri.

Cabbage: Pride Of India, Pusa Early, Kranti.

Cauliflower: Jawhar Moti, Bharat Jyoti, Early Banaras.

Mustard: Agrani (B-54), Panchali (TWC-3), B-9, Rai-5 and Bhagiroti (RW-351) etc.

Potato: Kufri Jyoti, Ashoka.

Onion: Rupsa, Sukhsagar.

Jharkhand

Potato: Kufri Ashok, Kufri Kanchan.

Green Peas: Arkel, Kashi Nandini, P.E.-6, Birsa Matar.

Horse Gram: Birsa Kulthi-1, G.H.G.-20.

Sweet potato: Birsa Sakarkand-1 and Sri Bhadra.

Toria: T-9, B.R.-23 and P.T.-303.

Mustard: Shiwani, Varuna, Pusa Bold, BR-40.

Onion: N-53, Agrifound Dark Red and Basant-780, N 53, Pusa Red, Arka Niketan, Arka Kalia, Agrifound Dark Red, Pusa White Round and Flat, Pusa Madhavi, Bombay Selection, Patna White and Bellary Red.

Bihar

Onion: N-53, Agrifound Dark Red and Basant- 780.

Sweet potato (Shakarkand): Rajendra Shakarkand 5, Rajendra Shakarkand 35, Rajendra Shakarkand 43, Rajendra Shakarkand 47, Kalmegh, Shree Bhadra and Rajendra Shakarkand 92.

Potato: Kufri Chandramukhi, Kufri Ashoka, Kufri Pukharaj, Kufri Badhsha, Kufri Lalima, Kufri Jyoti and Rajendra Alu 2.

Pea: Malviya Mator 15, Harbhajan, Arpana and Pusa Prabhat.

Berseem: Vardan-1 and Skavi.

Oat: Kent.

Mustard: Varuna, Pusa bold, Kranti.

Assam

Boro rice: Mahsuri, IR-50, Dinanath, Bishnuprasad, Jyotiprasad, Kanaklata, Dinanath.

Wheat: Sonalika, UP 262, K 7410, WH 291 and HDR-77.

Rabi maize: HQPM- 1.

Mid Cauliflower: Improved Japanese, Pusa Synthetic, Pusa Snowball.

Tomato: Punjab Chhuhara, S-12, Punjab Kesri, Pusa Early Dwarf, Sioux, Pusa Ruby, VC- 48-1, Arka Abha (BWR-1), Arka Alok (BWR-5) BT-1, Bilahi-1, Bilahi-2, Trishul, Allrounder, T- 1408, T- 1458, Anup.

Cabbage: Golden Acre, Pride of India, BC- 76, Pusa Drum Head, Pusa Synthetic.

Knolkhol: White Vienna, Purple Vienna.

Potato: Kufri Chandramukhi, Kufri Jyoti and Kufri Sindhuri, Kufri Megha, Kufri Badshah, Pukhraj.

Rapeseed and mustard: M-27, TS-36, TS-38.

Pumpkin: Arka Suryamukhi, Arka chandan and local varieties.

Lentil: B-77, L-9-12.

Pea: T-163, HUP-2, KFPD1.

Onion: Pusa Red, Pusa Ratnar, Pusa White (Round), Pusa White (Flat), N-53, Agrifound Light Red, Punjab Red Round, Pusa Madhuri, Arka Niketa.

Bottle gourd: Pusa Summer Prolific Long, Pusa Summer Prolific Round, Pusa Meghdoot and Pusa Manjiri.

Pumpkin: Arka Suryamukhi, Arka Chandan, and local varieties.

Manipur

Rapeseed and mustard: M-27.

Pea: Rachana.

Potato: Kufri Megha and Kufri Jyoti.

Tripura

Maharashtra

Gram (Irrigated): Vikas, Vishwas, Phule G 12, Vijay, Vishal, Virat for Madhya Maharashtra and Akash, Vikas, Vishwas and Vijay for Marathwada.

Preseasonal sugarcane: CO.740, CO.7219 (Sanjivani), CO.88121 (Krishna), CO.8014 (Mahalaxmi), CO.86032 (Nira), CO.94012 (Phule Savitri), CO.M.0265 (Phule 265), CO.V.S.I.9805, CO.C.671 for Madhya Maharashtra and CO.94012, CO-86032, CO.V.S.I.9805, CO-C-671, Co-8014 for Marathwada.

Wheat: NIAW-301, NIAW-917 and NIDW-295 (for Madhya Maharashtra).

Toria: TRC-T-1-1-5-1.

Lentil: WBL – 58.

Gujarat

Wheat: GW-366, GW-496, GW-273, GW-322,OR GW-503.

Chick pea (unirrigated): Gujarat Chana-2.

Chick pea (irrigated): Gujarat Chana-3, Gujarat Chick Pea-1, Dahod Pila, ICC-4.

Mustard: Varuna, Gujarat Mastard 1 or 2 or 3.

Garlic: Gujarat Garlic-4 or Local.

Cabbage: Kranti, Golden Acre, Pride of India, Coppen Market.

Cauliflower: Pusa Early, Pusa Dipali, Pusa Kartiki, Early Kuvvari (for early maturity),
Pusa Synthetic, Early Snowball, Snowball (for medium duration).

Brinjal: Guj. Brinjal-6, P.L.R. 1, Junagadh Lambagoal, Mahicco- 11, 16.

Onion: Pusa Red, Nashik Lal, N 53 & H 48.

Raddish: Pusa Hemadri, White ICL, Japanees White, Pusa Rashmi, Pusa Chetaki.

Maize: Ganga Safed -2, GM -6.

Potato: Punkharaj, Kufari Chandramukhi, Kufari Jawahar, Kufari Bahar, Asoka (short duration), Kufari Laukar, Kufari Jyoti, Kufari
Badshah, Kufari Sinduri, Satalaj (long duration)

Fenugreek: Methi kasuri or Pusa early branching.

Coriandar: Guj. Coriander 1 or Guj. Coriander 2.

Cumin: Guj.Cumin 1, 2, 3, 4, MC-43.

Amaranthus: Gujarat Amaranth -3.

Andhra Pradesh

Blackgram:

LBG-20, T-9, LBG: 623, WBG: 26, PU: 31,

BG: 752

Green gram:

LGG: 407, LGG: 410, LGG: 450, WGG:2,

WGG: 37, LGG: 460, ML:267, Pusa:105,

MGG: 348, TM-96-2

Bengalgram:

Kranthi (ICCC: 37), Svetha (ICCC:2), Annegiri,

Jyothi, ICCV: 10 KAK:2, JG:1, Lamsanga:7

Redgram:

Laksmi (ICCPL85063), LRG-38, LRG-41, WRG-27
