

National Agromet Advisory Service Bulletin

Friday 29th November 2013

(For the period 29th November to 3rd December 2013)



Issued by

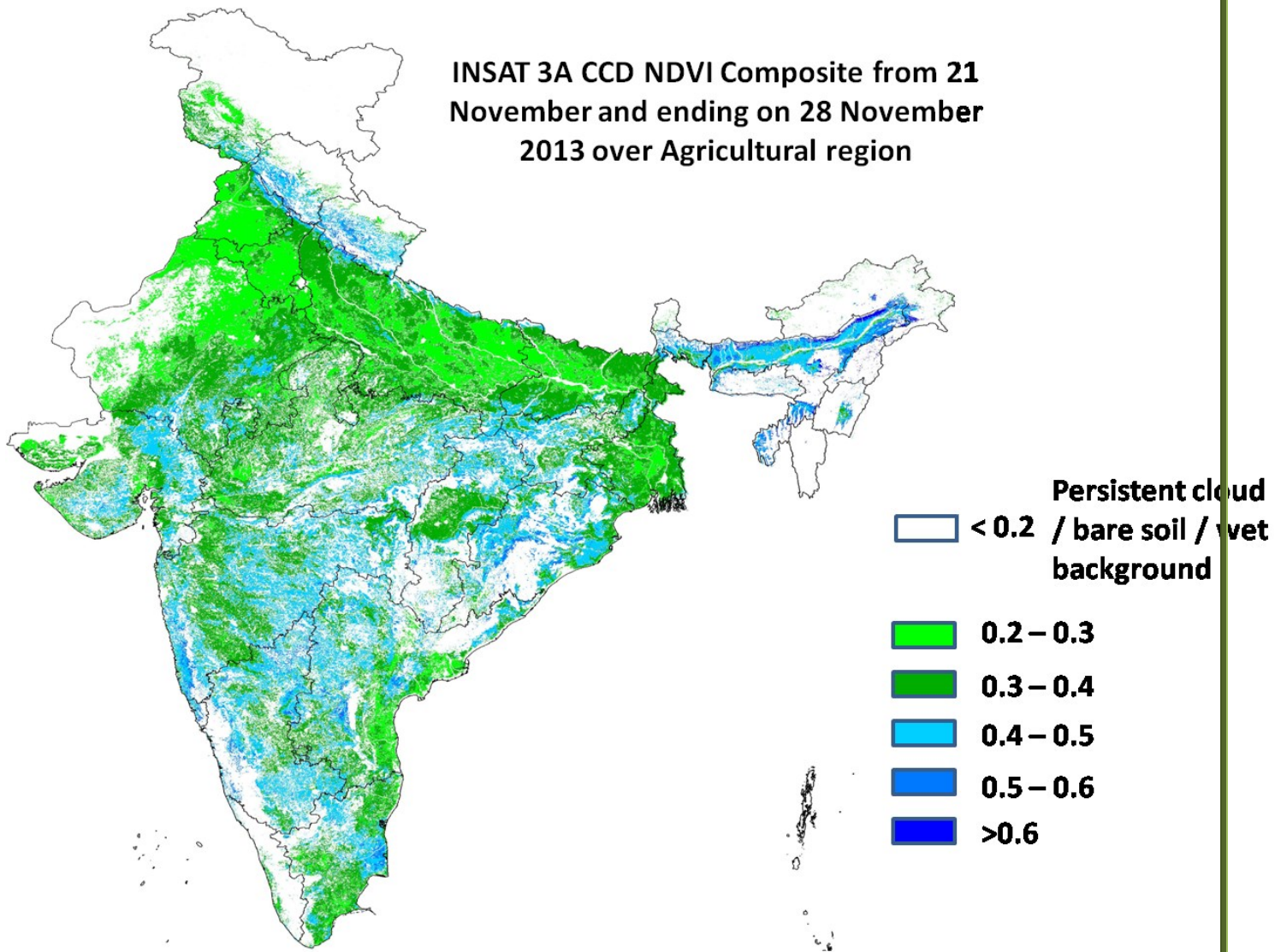
National Agrometeorological Advisory Service Centre,

Agricultural Meteorology Division,

India Meteorological Department, Shivajinagar, Pune.

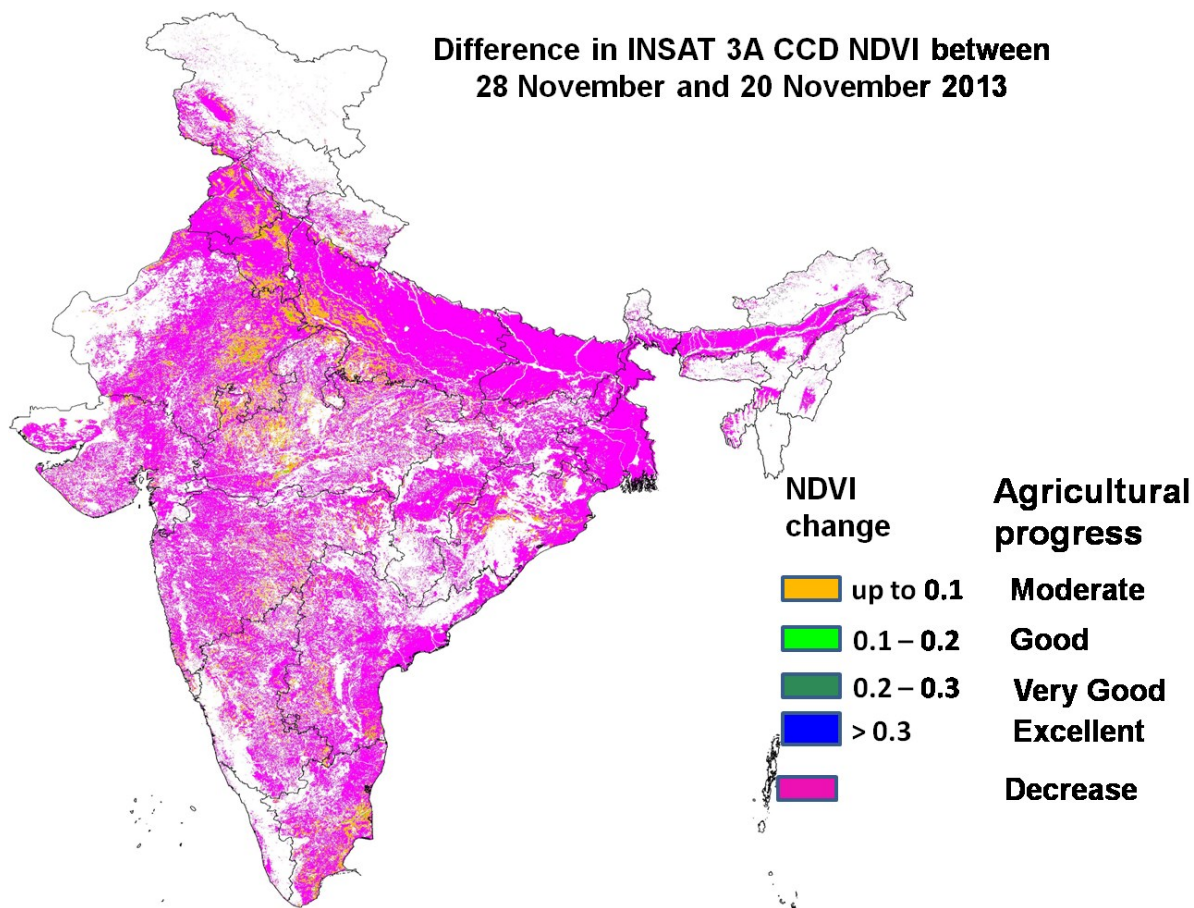


**INSAT 3A CCD NDVI Composite from 21
November and ending on 28 November
2013 over Agricultural region**



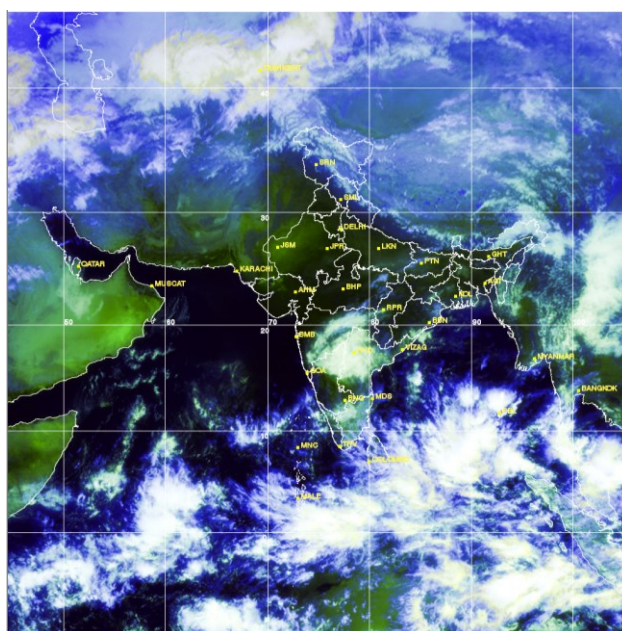
Agricultural conditions is in general good over south-west Chhattisgarh, eastern pockets of MP, and pockets of central MP, north and central Gujarat, eastern Maharashtra, pockets of north Karnataka, north-eastern AP, Odisha as NDVI vigour showed the range from 0.4 to 0.5 upto 28th November 2013. The NDVI remain low within range of 0.2 to 0.4 over states of Punjab, Haryana, Rajasthan, UP, north and central MP, central Maharashtra and major part of Bihar and West Bengal.

**Difference in INSAT 3A CCD NDVI between
28 November and 20 November 2013**



Source: SAC, Ahmedabad

Progress of crop performance during last week: Agricultural progress between 28th November and 20th November 2013 was found to be moderate over few pockets of north-west UP, pockets of central Punjab, pockets of north and south Haryana, eastern Rajasthan and adjoining MP, few pockets of central Tamil Nadu. Moderate progress was also observed over scanty pockets of Maharashtra and Karnataka. Rest of India showed no change or rise in NDVI which may be due to end of Kharif crop season.



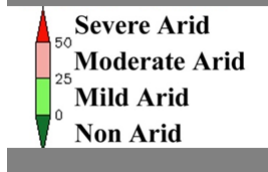
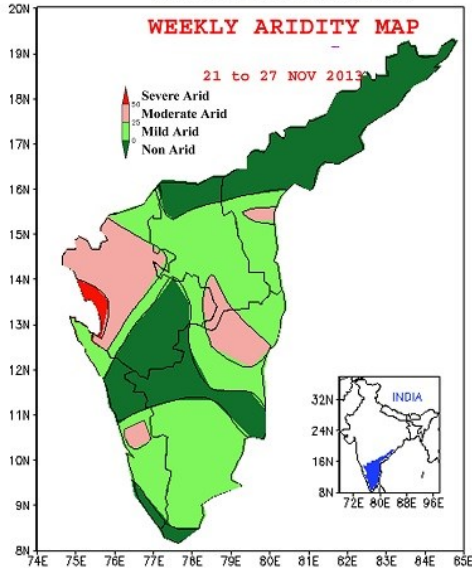
Satellite image dated 29.11.2013, 0530 UTC

Aridity Anomaly Map for the week ending 27.11.2013

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

राष्ट्रीय आंध्रप्रदेश, राजस्थानीया, दक्षिण अंतर्गत कर्नाटका,
केरल, तमिलनाडु और पॉन्डिचेरी के लिए

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

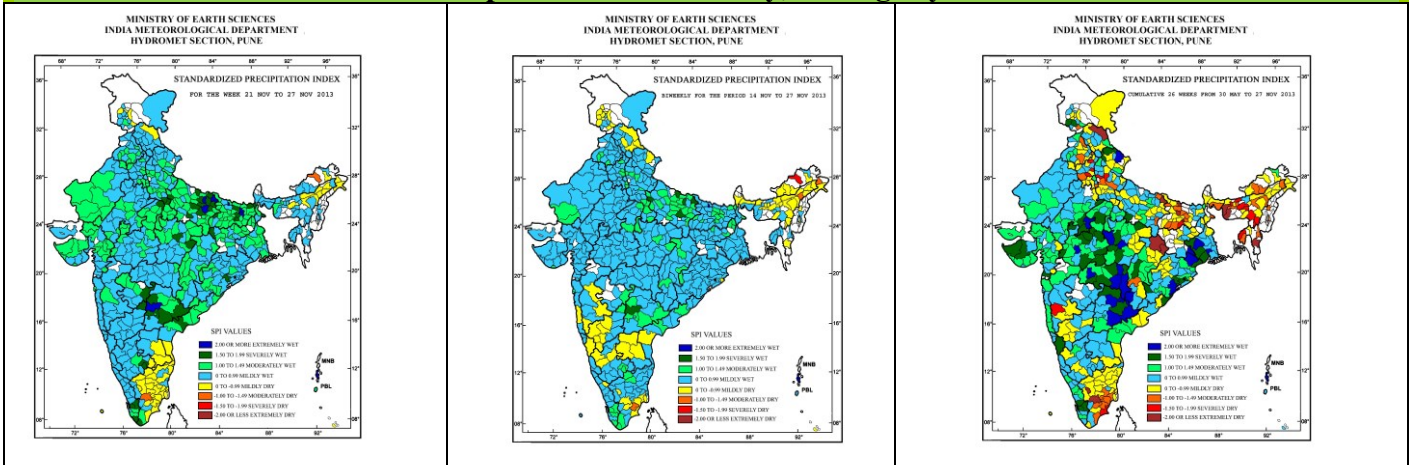


During the week (21 to 27 November, 2013) the aridity anomaly map indicated the following aridity conditions over the five Meteorological sub-divisions viz. Coastal Andhra Pradesh, Rayalaseema, South Interior Karnataka, Tamil Nadu & Pondicherry and Kerala.

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

- 1.1 **Areas affected by severe arid conditions :**
Isolated area around Chickmagalur (South Interior Karnataka).
- 1.2 **Areas affected by moderate arid conditions :**
Some central and northwestern parts of South Interior Karnataka; some northeastern parts of Tamil Nadu and adjoining southern parts of Rayalaseema and some eastern parts of South Interior Karnataka.
Isolated areas Ongole (Coastal Andhra Pradesh) and Palakkad (Kerala).

Standardised Precipitation Index weekly, fortnightly and seasonal



Weekly SPI values:

- Extremely wet/severely wet conditions over many parts of North Andhra Pradesh, East Uttar Pradesh and some parts Madhya Pradesh, Bihar and south Kerala.

Cumulative SPI values (bi-weekly):

- Extremely wet/severely wet conditions over some parts of Andhra Pradesh and East Uttar Pradesh.
- Extremely dry/severely dry conditions were observed over Some parts of Arunachal Pradesh.

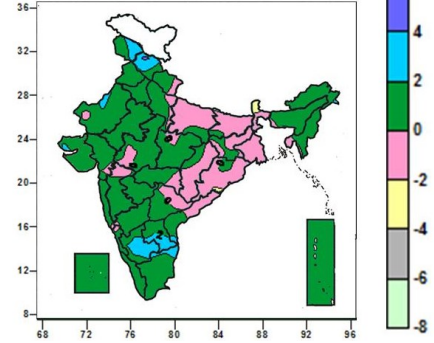
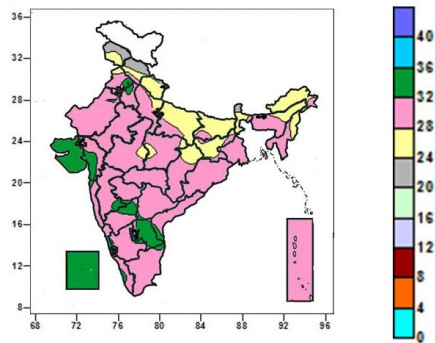
Cumulative SPI values of 26 weeks: (i.e. since the beginning of southwest monsoon.)

- Extremely wet/severely wet conditions over many parts of North Andhra Pradesh, Madhya Pradesh and some part of Gujarat, Maharashtra, odisha, West Bengal, Uttarakhand, Kerala and Rajasthan.
- Extremely dry/ severely dry conditions were observed over some parts of Assam, Meghalaya, Tripura, Bihar, Chhattisgarh, Hariyana, Uttar Pradesh and Tamil Nadu

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 27.11.2013

Actual Mean Maximum Temperature (°C) in India for the week ending 27.11.2013

Mean Maximum Temperature (°C) Anomaly in India for the week ending 27.11.2013

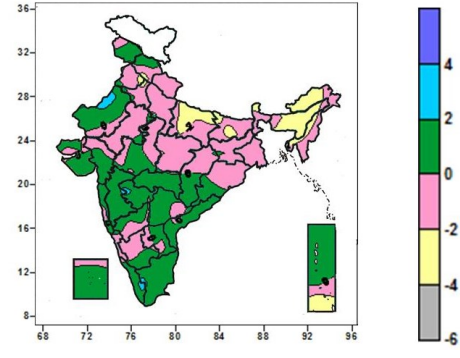
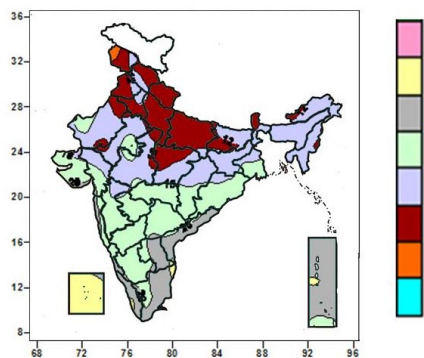


- 32 to 36°C over many parts of Saurashtra & Kutch, Raylaseema, Lakshadweep, some parts of Gujarat, Madhya Maharashtra, Coastal Andhra Pradesh, Tamil Nadu, Karnataka.
- 28 to 36°C over entire country (except many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal, Sikkim, Arunachal Pradesh, Nagaland, Saurashtra & Kutch, Raylaseema, Lakshadweep, some parts of Punjab, West Uttar Pradesh, Assam & Meghalaya, Manipur, Central India, Gujarat, Madhya Maharashtra, Coastal Andhra Pradesh, Tamil Nadu, Karnataka).
- 27 to 28°C over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal, Sikkim, Arunachal Pradesh, Nagaland, some parts of Punjab, West Uttar Pradesh, Assam & Meghalaya, Manipur, Central India.

- 2 to 4°C over many places Jammu & Kashmir, Himachal Pradesh, North Interior Karnataka, Raylaseema, some parts of West Rajasthan, Coastal Andhra Pradesh, Tamil Nadu, Saurashtra & Kutch.
- -2 to 27C over entire country (except many places Jammu & Kashmir, Himachal Pradesh, North Interior Karnataka, Raylaseema, Sikkim, some parts of West Rajasthan, Coastal Andhra Pradesh, Tamil Nadu, Saurashtra & Kutch).
- -4 to -27C over many parts of Sub-Himalyan West Bengal & Sikkim.

Actual Mean Minimum Temperature (°C) in India for the week ending 27.11.2013

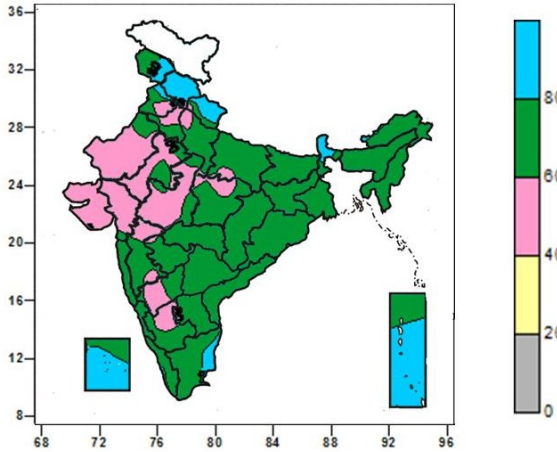
Mean Minimum Temperature (°C) Anomaly in India for the week ending 27.11.2013



- 24 to 28°C over many parts of Lakshadweep, some parts of Coastal Andhra Pradesh, Coastal Tamil Nadu and Andaman & Nicobar Islands.
- 16 to 24°C all over the country (except many parts of North India, Madhya Pradesh, Bihar, Jharkhand, Sub-Himalyan West Bengal & Sikkim, North East India, Lakshadweep, some parts of Gangetic west Bengal, Orissa, Chattisgarh, Gujarat, Saurashtra & Kutch, Coastal Andhra Pradesh, Coastal Tamil Nadu and Andaman & Nicobar Islands).
- 8 to 16°C over many parts of North India, Madhya Pradesh, Bihar, Jharkhand, Sub-Himalyan West Bengal & Sikkim, North East India, some parts of Gangetic west Bengal, Orissa, Chattisgarh, Gujarat, Saurashtra & Kutch.

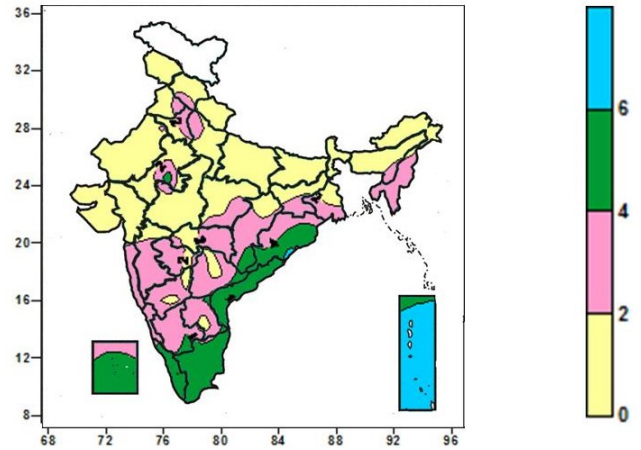
- 2 to 4°C over some parts of West Rajasthan, Tamil Nadu, Andaman & Nicobar Islands.
- -2 to 27C over all parts of country (except many parts of Odisha, some parts of Chattisgarh, Marathwada, North Interior Karnataka, Telanagana, West Rajasthan, Tamil Nadu, Andaman & Nicobar Islands).
- -4 to -27C over many parts of Odisha, some parts of Chattisgarh, Marathwada, North Interior Karnataka, Telanagana.

Relative Humidity (%) over India for the week ending 27.11.2013



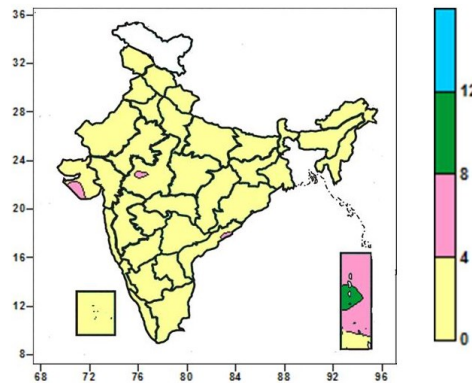
- 80 to 100% over many parts of Himachal Pradesh, Uttarakhand, Sub_himalayan West Bengal & Sikkim, Lakshadweep, Andaman Nicobar Islands, some parts of Jammu & Kashmir, Punjab, Tamil Nadu.
- 40 to 80% over entire country (except many parts of Himachal Pradesh, Uttarakhand, Sub_himalayan West Bengal & Sikkim, Lakshadweep, Andaman Nicobar Islands, some parts of Jammu & Kashmir, Punjab, Tamil Nadu).

Cloud amount (okta) over India for the week ending 27.11.2013



- 6 to 8 okta many places over Andaman & Nicobar Islands, some parts of some coastal Orissa.
- 2 to 6 okta over many parts of Nagaland, Manipur, Mizoram, Tripura, Chattisgarh, Orissa, South India, Maharashtra, Lakshadweep Islands, some parts of Himachal Pradesh, Haryana, Punjab, West Uttar Pradesh, East Rajasthan, Madhya Pradesh, Jharkhand, Gangetic West Bengal, Assam & Meghalaya.
- 0 to 2 okta over entire country (many parts of Nagaland, Manipur, Mizoram, Tripura, Chattisgarh, Orissa, South India, Maharashtra, Lakshadweep, Andaman & Nicobar Islands, some parts of Himachal Pradesh, Haryana, Punjab, West Uttar Pradesh, East Rajasthan, Madhya Pradesh, Jharkhand, Gangetic West Bengal, Assam & Meghalaya).

Wind speed (knots) over India for the week ending 27.11.2013



- 8 to 12 knots over some places over Andaman & Nicobar Islands.
- 4 to 8 knots over many places over Andaman & Nicobar Islands, some parts of West Madhya Pradesh, Coastal Andhra Pradesh, Saurashtra.
- 0 to 4 knots over entire country (except many places over Andaman & Nicobar Islands, some parts of West Madhya Pradesh, Coastal Andhra Pradesh, Saurashtra).

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 2nd December, 2013)

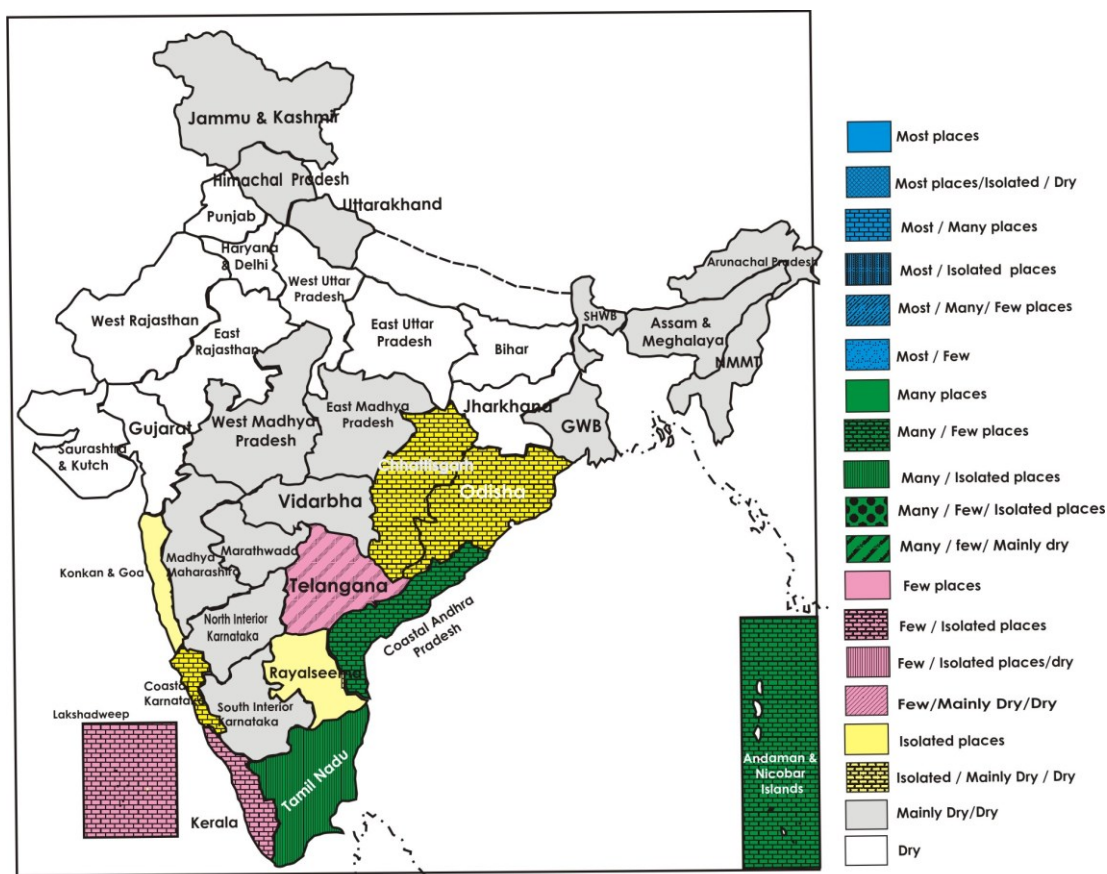
- Rain/thundershowers would occur at many places over coastal Andhra Pradesh during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at a few places over Telangana, Kerala and Lakshadweep during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at isolated places over south Odisha, south Chhattisgarh and coastal Karnataka during next 24 hours and mainly dry thereafter.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 24 hours and increase thereafter.
- Rain/thundershowers would occur at isolated places over Konkan & Goa and Rayalaseema.
- Rain/thundershowers would occur at isolated places over Tamilnadu during next 48 hours and at many places thereafter.
- Weather would be mainly dry/dry over rest of the country.
- Shallow fog (visibility upto 500 meters) would occur at isolated pockets of east Uttar Pradesh, Bihar, Jharkhand and coastal Odisha in the morning hours of 29th and 30th November.

Weather Warning during next 3 days Nil

Weather Outlook for subsequent 4 days from 2nd to 6th December, 2013

- Rain/thundershowers would occur at most places over Andaman & Nicobar Islands with heavy to very heavy rainfalls.
- Rain/thundershowers would occur at many places over South Peninsular India and at a few places over North Peninsular India.
- Weather would be mainly dry/dry over rest of the country.

Weather Forecast Map (Valid upto 0830 hours of 2nd December, 2013)



Salient Advisories

South Region:

- In Coastal Andhra Pradesh, as rain / thundershowers would occur at many places during next 24 hours, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Continue sowing of *rabi* pulses after current spells of rain.
- Continue sowing of *rabi* groundnut in Anantpur district and sowing of jowar, Bengal gram and sunflower in Kurnool district of Scarce Rainfall Zone of Andhra Pradesh.
- Continue sowing of *rabi* crops like groundnut, pulses and maize in Northern Telangana Zone of Andhra Pradesh.
- In the North Dry Zone of Karnataka, continue sowing of wheat, chick pea and sunflower in irrigated areas and continue harvesting of onion and maize.
- Continue transplanting of *rabi* rice in the Coastal Zone of Karnataka.
- Continue sowing of sunflower after proper seed treatment in the Hill Zone of Karnataka.
- Continue sowing of *puncha* rice and planting of winter vegetables in the Problem Area Zone in Kerala. Continue planting of banana in the Southern Zone of Kerala.
- Continue sowing of groundnut, sunflower, chickpea and sesame in the North Western Zone of Tamil Nadu.
- Prevailing weather condition is favourable for incidences of inter node borer in sugarcane, stem borer attack in maize and leaf folder in rice in the Western Zone of Tamil Nadu. Monitor the crops and undertake plant protection measures if noticed.

East Region:

- In East and South Eastern Coastal Plain Zone of Odisha, complete sowing of lentil, field pea and chickpea. Continue sowing of irrigated mustard. Also undertake sowing of sunflower. Apply light irrigation after sowing of crops.
- In North Eastern Coastal Plain Zone of Odisha, continue sowing of wheat, mustard and groundnut and nursery sowing of cole crops, brinjal and chilli followed by light irrigation.
- 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 utilizing the residual soil moisture. Also continue transplanting of cauliflower, cabbage, tomato and brinjal followed by light irrigation.
- In Old Alluvial Zone and Terai Zone of West Bengal, continue sowing of wheat and mustard and planting of potato utilizing the residual soil moisture.
- In Terai Zone of West Bengal, complete transplanting of marigold seedlings immediately.
- In Sikkim, apply irrigation to *rabi* vegetables and wheat. Undertake harvesting of matured large cardamom. Also apply irrigation in cardamom.
- In North West Alluvial Plain Zone of Bihar, continue sowing of wheat. Give light irrigation in the potato at 10-15 days interval. Undertake sowing of late sown varieties of mustard and give light irrigation to early sown crop. Apply light irrigation after sowing of crops.
- In South Bihar Alluvial Zone, complete sowing of winter maize, sunflower, mustard, linseed, vegetable pea, gram, etc. and continue transplanting of cauliflower and nursery raising of late variety of cauliflower. Undertake planting of mid season variety of potato. Apply light irrigation after sowing, transplanting or planting of crops. Undertake weeding in early planted potato and broadcast nitrogenous fertilizer.
- In South Eastern Plateau Zone of Jharkhand continue sowing of wheat, chick pea and mustard, nursery raising of onion, nursery raising and transplanting of winter vegetables like brinjal, cabbage, cauliflower, tomato, capsicum etc. followed by light irrigation.

Northeast Region:

- In Lower Brahmaputra Valley Zone of Assam, continue transplanting of 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 Central Brahmaputra Valley Zone of Assam, continue sowing of rapeseed, mustard and wheat, transplanting of seedlings of cole crops, which are 30-35 days old and planting of potato followed by light irrigation. Complete harvesting of matured *sali* rice immediately and continue sowing of *rabi* pulses and oil seeds.
- In North Bank Plain Zone of Assam, continue planting of potato. Complete sowing of rapeseed and mustard at the earliest. Apply light irrigation after sowing and planting of crops. Farmers are also advised to continue relay cropping of pea in the standing crop of rice about 20-25 days before harvesting.
- In Sub Tropical Hill Zone of Arunachal Pradesh, complete sowing of pea and planting of potato followed by light irrigation. Apply irrigation in mustard at flowering stage.
- In Meghalaya, continue transplanting of cauliflower and winter vegetables followed by light irrigation. Also continue harvesting of 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 sowing of rapeseed, mustard, pulses 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.

West Region

- Complete sowing of *rabi* crops like gram, wheat etc. up to 30th November in South Gujarat Heavy Rainfall Zone. Apply irrigation in early sown crops and apply split doze of nitrogen followed by hand weeding and intercultural operations.
- Carry out intercultural operations and weeding in castor and in vegetables like brinjal, chilli, tomato, cabbage, and cauliflower in North West Zone of Gujarat. Apply irrigation in castor and light irrigation during evening hours in vegetables. Irrigate wheat crop at 21 days after sowing.
- In Vidarbha, continue intercultural operation, application of fertilizers in vegetables and orchards. Apply irrigation to vegetable crops, early sown safflower, wheat and orchards. Continue late sowing of irrigated gram and wheat. Continue picking of fully opened cotton bolls during morning hours.
- In Madhya Maharashtra, continue intercultural operations and application of fertilizers in sugarcane, *rabi* jowar, maize and vegetable crops like onion, brinjal, tomato, okra and guar. Apply irrigation to sugarcane, vegetable crops and early sown jowar and maize. Continue harvesting of already matured *adsali* and pre-seasonal sugarcane. Continue picking of fully opened cotton bolls during morning hours in North Madhya Maharashtra.
- In Marathwada, continue intercultural operations, application of fertilizers in vegetables, orchards and sugarcane. Continue harvesting of already matured *adsali* and pre-seasonal sugarcane. Continue picking of fully opened cotton bolls during morning hours. Store the first and second picked cotton separately. Continue the late sowing of irrigated wheat.

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. Continue nursery for cabbage, cauliflower, onion and undertake sowing of carrot, coriander and fenugreek. 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.
- In Bundelkhand Zone of Madhya Pradesh, fruit borer attack is observed and is likely to continue in tomato and brinjal, spray Trizophos 40 E.C. 2 mm per one litre of water and spray Quinalphos 25 E.C. @ 2.0ml/L of water for semi looper and Diamond back in cauliflower and cabbage crops.

North Region

- As dry weather prevailed during last week and likely to prevail during next three days, farmers are advised apply irrigation in the early sown *rabi* crops in all the States of the region.
- In Intermediate Zone of Jammu & Kashmir, complete sowing of wheat, oat, mustard, barley, field pea, gram, lentil, vegetables viz. radish, carrot, turnip, garlic, peas etc, planting of potato and transplanting of onion. Apply nitrogen fertilizer through urea as 1st top dressing after irrigation in toria, sarson and mustard crops.
- In Valley Temperate Zone of Jammu & Kashmir, complete sowing of wheat and continue sowing of spinach, methi, planting of garlic and transplanting of onion seedlings.
- In Bhabar and Tarai Zone of Uttarakhand, complete sowing of wheat, barley, oat, berseem 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 Sub humid Sub tropic of Uttarakhand, continue sowing of wheat, planting of late potato and undertake sowing of berseem. Maintain proper moisture in toria, chickpea and lentil by applying light irrigation if required.
- In Mid-Hills Sub-Humid Zone of Himachal Pradesh, complete transplanting of onion and sowing of late varieties of pea.
- In Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, continue sowing of wheat, barley and oat and continue nursery sowing of onion and cole crops.
- In Flood Prone Eastern Plain Zone of Rajasthan, continue sowing of wheat and barley. Also continue sowing of gram, lentil, planting of potato and late sowing varieties of mustard. Apply light irrigation before sowing/planting of crops. Apply irrigation to potato in 10-15 days interval.
- In Arid Western Plain Zone of Rajasthan, complete sowing of wheat, cumin, methi and Rijka in Jodhpur. First irrigation in mustard at 25 days with remaining dose of nitrogen and in gram at 40-45 days.
- 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. Also 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. In Western Zone of Punjab, complete sowing of long duration varieties of wheat. Also undertake sowing of radish, turnip and transplanting of 4 to 6 weeks old seedlings of cabbage and late season cauliflower.
- In Delhi, continue sowing of wheat and apply irrigation to timely sown mustard crop. Also complete sowing of pea and undertake planting of late cultivars of potato, carrot, radish, beetroot, *rabi* onion and turnip.
- In Western Zone of Haryana, complete sowing of wheat and picking of cotton balls. Do the intercultural operations for conserving the moisture in mustard crop field.

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:** Weather remained mainly dry over the region during last week.
- **Weather Forecast:** Shallow fog (visibility upto 500 meters) would occur at isolated pockets of east Uttar Pradesh, in the morning hours of 29th and 30th November. Weather would be mainly dry/dry over rest of the region.
- **Weather Warning:** Nil
- **Weather Outlook:** Rain/snow may occur at isolated places over Jammu & Kashmir. Weather would be mainly dry/dry over rest parts of the region.
- **Advisories :**
 - As dry weather prevailed during last week and likely to prevail during next three days, farmers are advised apply irrigation in the early sown *rabi* crops in all the States of the region.
 - In Intermediate Zone of Jammu & Kashmir, complete sowing of wheat, oat, mustard, barley, field pea, gram, lentil, vegetables viz. radish, carrot, turnip, garlic, peas etc, planting of potato and transplanting of onion. Apply nitrogen fertilizer through urea as 1st top dressing after irrigation in toria, sarson and mustard crops.
 - In Valley Temperate Zone of Jammu & Kashmir, complete sowing of wheat and continue sowing of spinach, methi, planting of garlic and transplanting of onion seedlings.
 - In Cold Arid Zone of Jammu Kashmir, continue harvesting of Chinese cabbage, Palak, Pakchoi and lettuce, direct sowing of spinach, turnip & radish in greenhouses. Also cover the trenches and low tunnels with polythene in the night to avoid loss due to sudden temperature dip.
 - In Bhabar and Tarai Zone of Uttarakhand, complete sowing of wheat, barley, oat, berseem 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, complete sowing of wheat, barley, mustard, lentil, garlic and planting of onion and potato.
 - In Sub humid Sub tropic of Uttarakhand, continue sowing of wheat, planting of late potato and undertake sowing of berseem. Maintain proper moisture in toria, chickpea and lentil by applying light irrigation if required.
 - In Mid-Hills Sub-Humid Zone of Himachal Pradesh, complete transplanting of onion and sowing of late varieties of pea.
 - In Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, continue sowing of wheat, barley and oat and continue nursery sowing of onion and cole crops.
 - In Flood Prone Eastern Plain Zone of Rajasthan, continue sowing of wheat and barley. Also continue sowing of gram, lentil, planting of potato and late sowing varieties of mustard. Apply light irrigation before sowing/planting of crops. Also undertake weeding and thinning operations in early sown mustard within 20-25 days after sowing. Apply irrigation to potato in 10-15 days interval.
 - In Semi Arid Eastern Plain Zone of Rajasthan, complete 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, continue sowing of wheat and gram. Apply light irrigation before sowing/planting of crops.
 - In Arid Western Plain Zone of Rajasthan, complete sowing of wheat, cumin, methi and Rijka in Jodhpur. Apply light irrigation before sowing/planting of crops. First irrigation in mustard at 25 days with remaining dose of nitrogen and in gram at 40-45 days.
 - 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. Also 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 gram and nursery sowing of onion. Apply light irrigation to wheat, vegetables, toria, arhar, potato and mustard.
 - In Western Zone of Punjab, complete sowing of long duration varieties of wheat and undertake transplanting of gobhi sarson than direct sowing as it is more profitable. Also undertake sowing of radish, turnip and

transplanting of 4 to 6 weeks old seedlings of cabbage and late season cauliflower. Withhold the irrigation to deciduous fruits such as pear, peach so that the trees enter dormancy and become sufficiently hardened to withstand cool weather.

- In Central Plain Zone of Punjab, complete sowing of timely sown wheat during the period and undertake sowing of lucerne, oats. Also undertake sowing of the nursery of chilli, tomato and brinjal. Apply frequent but light irrigation to the newly planted fruit crops like guava, citrus, papaya, mango and litchi.
- In Delhi, continue sowing of wheat and apply irrigation to timely sown mustard crop. Undertake sowing of oats and barseem for fodder purpose. Also complete sowing of pea and undertake planting of late cultivars of potato, carrot, radish, beetroot, *rabi* onion and turnip. This is suitable time for sowing of leafy vegetables like-sarson saag, bathua, spinach, fenugreek and coriander. Undertake transplanting of mature seedlings of cauliflower, cabbage and broccoli.
- In Western Zone of Haryana, complete sowing of wheat and picking of cotton balls. Do the intercultural operations for conserving the moisture in mustard crop field.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, spray 1 % Dursban 5 ml per litre of water to control root borer infestation in apple trees.
- In Central Plain Zone of Punjab, prevailing weather conditions (temperature & humidity) are quite favourable for the incidences of late blight in potato, if symptoms observed spray Indofil M-45/ Antracol/Kavach @500g in 200 litres of water per acre. Repeat the spray at 7 days interval.
- In Arid Western Plain Zone and Southeastern Humid Plain Zone of Rajasthan, 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.
- In Semi-arid Eastern Plain Zone of Rajasthan, spray Dithane M-45 @ 2 g per litre of water in nursery onion to control pink root rot.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- In Cold Arid Zone of Jammu Kashmir, keep the animals inside the shelter during night to protect it from cold. Additional concentrate feed must be given during these days such as wheat bran, barley and gur.
- In Hill Zone of Uttarakhand, spread dry leaves of pine tree and other trees inside cattle shed. Keep small animals covered in morning and evening time to protect from cold.
- In Bhabar and Tarai Zone of Uttarakhand, 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.
- In Western Plain Zone of Punjab vaccination should be done for prevention of Gal Ghotu and Foot and Mouth disease. Regularly deworm the calves with piperazine liquid (4 ml/kg body weight) first at 15 days of age, then 7 days later twice and then on 3 months of age and then 3 months after upto 1 year of age.
- In Himachal Pradesh, due to diurnal variation in temperature, there is increase in respiratory diseases (Pneumonia) in cattle. Protect the animals during night hours from reducing temperature by covering them with dry gunny bags during night hours.
- In Uttar Pradesh protect the animals from cold during night.

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:** Rain/thundershowers would occur at isolated places over south Chhattisgarh during next 24 hours and mainly dry thereafter. 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 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. Continue nursery for cabbage, cauliflower, onion and undertake sowing of carrot, coriander and fenugreek. 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, continue sowing of safflower and linseed in rainfed condition and planting of potato. Continue sowing of mustard. Apply irrigation in early sown wheat at CRI stage and top dressing with nitrogenous fertilizer.
- 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 Bastar Plateau Zone of Chhattisgarh, continue harvesting of rice and harvested rice should be collected and brought to the threshing floor.
- In Bundelkhand Zone of Madhya Pradesh, fruit borer attack is observed and is likely to continue in tomato and brinjal, spray Trizophos 40 E.C. 2 mm per one litre of water and spray Quinalphos 25 E.C. @ 2.0ml/L of water for semi lopper and Diamond back in cauliflower and cabbage crops.
- 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).
- In Central Narmada Zone of Madhya Pradesh, vegetable crops are highly infested by sap sucking and leaf front cutting (feeding) insects. For control spray Chloropyriphos/Cipermetherin @ 0.5 ml/lit of water 3 sprays at the interval of 15 days or spray Trizophos @ 2 ml/lit of water.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III
- **Animal Husbandry**
- 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.
- In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, provide concentrated feed to cattle, mix with dry and green fodder and enrich diet with protein, carbohydrate, fat, vitamins etc.

EAST INDIA [JHARKHAND, BIHAR, ODISHA, 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:** Rain/thundershowers would occur at isolated places over south Odisha during next 24 hours and mainly dry thereafter. Shallow fog (visibility upto 500 meters) would occur at isolated pockets Bihar, Jharkhand and coastal Odisha in the morning hours of 29th and 30th November. Weather would be mainly dry / dry over rest parts of 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, complete sowing of lentil, field pea and chickpea.

Continue sowing of irrigated mustard. Also undertake sowing of sunflower. Apply light irrigation after sowing of crops.

- In North Eastern Plateau Zone of Odisha, continue sowing of wheat, toria, groundnut and sunflower and planting of potato followed by light irrigation.
- In North Eastern Coastal Plain Zone of Odisha, continue sowing of wheat, mustard and groundnut and nursery sowing of cole crops, brinjal and chilli followed by light irrigation.
- 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 utilizing the residual soil moisture. Also continue transplanting of cauliflower, cabbage, tomato and brinjal followed by light irrigation.
- In Coastal Saline Zone of West Bengal, complete harvesting of *aman* rice. Sow lathyrus as payra crop before harvesting of *aman* rice using the residual moisture. After harvesting of *aman* rice prepare land and undertake sowing of lentil and planting of potato and onion utilising the residual soil moisture.
- In Old Alluvial Zone and Terai Zone of West Bengal, continue sowing of wheat and mustard and planting of potato utilizing the residual soil moisture.
- In Terai Zone of West Bengal, complete transplanting of marigold seedlings immediately.
- In Sikkim, apply irrigation to *rabi* vegetables and wheat. Undertake harvesting of matured large cardamom. Also apply irrigation in cardamom.
- In North West Alluvial Plain Zone of Bihar, continue sowing of wheat. Give light irrigation in the potato at 10-15 days interval. Undertake sowing of late sown varieties of mustard and give light irrigation to early sown crop. Apply light irrigation after sowing of crops.
- In North East Alluvial Plain Zone of Bihar, continue harvesting of matured rice crop, sugarcane, ginger and turmeric. Continue sowing of wheat and maize. Undertake intercultural operations in pigeon pea. Start transplanting of winter vegetables like cauliflower, cabbage, chillies, tomato, brinjal etc. Undertake planting of autumn season sugarcane. Start nursery sowing of early autumn vegetables. Apply light irrigation after sowing, transplanting and planting of crops.
- In South Bihar Alluvial Zone, complete sowing of winter maize, sunflower, mustard, linseed, vegetable pea, gram, etc. and continue transplanting of cauliflower and nursery raising of late variety of cauliflower. Continue sowing of fodder crop like barseem, lucern and oat. Undertake planting of mid season variety of potato. Apply light irrigation after sowing, transplanting or planting of crops. Undertake weeding in early planted potato and broadcast nitrogenous fertilizer.
- In Western Plateau Zone of Jharkhand continue sowing of pea, green pea, mustard, gram, wheat, linseed, lentil and barley followed by light irrigation.
- In South Eastern Plateau Zone of Jharkhand continue sowing of wheat, chick pea and mustard, nursery raising of onion, nursery raising and transplanting of winter vegetables like brinjal, cabbage, cauliflower, tomato, capsicum etc. followed by light irrigation.
- In New Alluvial Zone of West Bengal, under present weather condition, there is chance of attack of fungal root rot disease in brinjal and tomato. Before transplanting dip the roots of seedling to the solution of Carbendazim 12% + Mancozeb 63% @ mixture (2 g per litre of water).
- In Mid Central Table Land Zone of Odisha, there is chance of red rot disease in sugarcane. 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.
- In North West Alluvial Plain Zone of Bihar, weather condition is favourable for occurrence of early blight in potato; spray Indofil M 45 @ 2-2.5 g / liter of water.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
 - In Bihar, keep the animals in shed to protect from cold during night and provide them salt in the feeds in the morning and in evening time.
 - In Coastal Saline Zone of West Bengal, deworm cattle, feed Albomer @ 1.5 g bolus per 150 kg weight and keep them in proper shed.



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:**
 - Farmers in North Bank Plain Zone, Barak Valley Zone, Central Brahmaputra Valley Zone and Hill Zone of Assam are advised to continue nursery sowing of *boro* rice.
 - In Lower Brahmaputra Valley Zone of Assam, continue transplanting of 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 Central Brahmaputra Valley Zone of Assam, continue sowing of rapeseed, mustard and wheat, transplanting of seedlings of cole crops, which are 30-35 days old and planting of potato followed by light irrigation. Complete harvesting of matured *sali* rice immediately and continue sowing of *rabi* pulses and oil seeds.
 - In Hill Zone of Assam, continue transplanting of winter vegetables, planting of potato. Complete sowing of rapeseed and mustard at the earliest. Apply light irrigation after transplanting and planting of crops.
 - In North Bank Plain Zone of Assam, continue planting of potato. Complete sowing of rapeseed and mustard at the earliest. Apply light irrigation after sowing and planting of crops. Farmers are also advised to continue relay cropping of pea in the standing crop of rice about 20-25 days before harvesting.
 - In Sub Tropical Hill Zone of Arunachal Pradesh, complete sowing of pea and planting of potato followed by light irrigation. Apply irrigation in mustard at flowering stage.
 - In Meghalaya, continue transplanting of cauliflower and winter vegetables followed by light irrigation. Also continue harvesting of 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 sowing of rapeseed, mustard, pulses 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, complete transplanting of brocolli and tomato followed by light irrigation.
 - In Manipur, due to high RH and low minimum temperature during morning hours, there is chance of aphid infestation in cabbage, cauliflower and brocolli. Farmers are advised to take appropriate plant protection measures.
 - 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 cattle.
 - 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:** Mainly dry / dry weather prevailed over the states in the region during last week.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Konkan & Goa. Weather would be mainly dry / dry over rest parts of the region.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at few places over north peninsular India. Weather would be mainly dry / dry over Gujarat State.
- **Advisories:**
 - In Konkan, continue intercultural operations and application of fertilizers in vegetable fields and mango, cashew and sapota orchards. Complete sowing of short duration crops like cowpea, wal and kulthi utilizing residual moisture in the harvested rice field and sowing of watermelon variety 'Sugar baby' on one side of ridges with a spacing of 4 x 1 m. Undertake sowing of chilli, brinjal, cabbage, knol-khol on raised nursery beds followed by light irrigation and prepare field for sowing of *rabi* groundnut.
 - In Vidarbha, continue intercultural operation, application of fertilizers in vegetables and orchards. Apply irrigation to vegetable crops, early sown safflower, wheat and orchards. Continue late sowing of irrigated gram and wheat. Continue picking of fully opened cotton bolls during morning hours.
 - In Madhya Maharashtra, continue intercultural operations and application of fertilizers in sugarcane, *rabi* jowar, maize and vegetable crops like onion, brinjal, tomato, okra and guar. Apply irrigation to sugarcane, vegetable crops and early sown jowar and maize. Continue harvesting of already matured *adsali* and pre-seasonal sugarcane. Continue picking of fully opened cotton bolls during morning hours in North Madhya Maharashtra.
 - In Marathwada, continue intercultural operations, application of fertilizers in vegetables, orchards and sugarcane. Continue harvesting of already matured *adsali* and pre-seasonal sugarcane. Continue picking of fully opened cotton bolls during morning hours. Store the first and second picked cotton separately. Continue the late sowing of irrigated wheat.
 - Carry out intercultural operations and weeding in castor and in vegetables like brinjal, chilli, tomato, cabbage, and cauliflower in North West Zone of Gujarat. Apply irrigation in castor and light irrigation during evening hours in vegetables. Irrigate wheat crop at 21 days after sowing.
 - Complete sowing of *rabi* crops like gram, wheat etc. up to 30th November in South Gujarat Heavy Rainfall Zone. Apply irrigation in early sown crops and apply split doze of nitrogen followed by hand weeding and intercultural operations.
 - Continue sowing of wheat, gram and spices and planting of potato followed by light irrigation in Middle Gujarat and North Gujarat Zone. Apply irrigation in castor in Middle Gujarat Zone and Bhal and Coastal Zone of Gujarat. Continue picking of cotton during morning hours in Middle Gujarat Zone.
 - In Bhal and Coastal Zone of Gujarat, complete sowing of wheat, gram, cumin and mustard, followed by light irrigation.
 - In North Gujarat Zone, apply irrigation in mustard, castor and vegetable crops in the evening. Continue sowing of gram followed by light irrigation in South Gujarat Zone.
 - Complete sowing of wheat, cumin and coriander without delay 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 morning hours.
 - Cloudy weather condition in South Gujarat Heavy Rainfall Zone is also favorable for heliothis and pod fly in pigeon pea crop; spray Monocrotophos 36 SL @ 20 ml / 10 liters of water at initiation of flowering and 50% of pod formation.
 - Due to dew formation, there are chances of downy mildew in cucurbits in North West Zone of Gujarat. Dust 20 kg / ha 300 mesh Sulphur to control the disease.
 - Weather conditions are favourable for outbreak of mealy bug in cotton in South Gujarat Zone; spray 50% Wettable Carbaril @ 40 g or 50 EC Profenphos @ 10 ml or 20 EC Quinalphos @ 20 ml with 10 g detergent powder in 10 liters of water.

- Due to cloudy weather, there may be attack of leaf eating caterpillar in gram in Marathwada region; spray Quinalphos @ 15 ml per 10 litres of water.
- Cloudy weather and light rain is congenial for incidence of downy mildew in grapes in Madhya Maharashtra; spray Metalaxyl-Mancozeb (0.2 %) or Cymoxanil-Mancozeb (0.2 %) at 12 days interval alternately.
- Prevailing cloudy weather is favourable for the incidence of mango hoppers in Konkan on new flush; spray 25 % Cypermethrin @ 4 ml per 10 litres of water.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- In Gujarat, provide adlib warm water to lactating animals. Keep young calves indoors during night time to avoid cold stress.

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



Rice



Sugarcane



Transplanting of rice

- **Realized rainfall:** Significant rainfall occurred in most of the districts in Kerala except Kasaragod, Thrissur and Wynad; most of the districts in Coastal Andhra Pradesh except Nellore and Prakasam; Medak, Nalgonda and Rangareddy districts in Telangana; Dakshin Kannada and Udipi districts in Coastal Karnataka; Bidar district in North Interior Karnataka; Bangalore (rural & urban), Mysore and Ramanagara districts in South Interior Karnataka; No significant rainfall occurred in the remaining parts of the region during the week ending 27.11.13.
- **Weather Forecast:** Rain/thundershowers would occur at many places over coastal Andhra Pradesh during next 24 hours and decrease thereafter. Rain/thundershowers would occur at a few places over Telangana, Kerala and Lakshadweep during next 24 hours and decrease thereafter. Rain/thundershowers would occur at isolated places over coastal Karnataka during next 24 hours and mainly dry thereafter. Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands during next 24 hours and increase thereafter. Rain/thundershowers would occur at isolated places over Rayalaseema. Rain/thundershowers would occur at isolated places over Tamilnadu during next 48 hours and at many places thereafter. Weather would be mainly dry/dry over rest parts of the region.
- **Weather Warning: Nil**
- **Weather Outlook:** Rain/thundershowers would occur at many places over Andaman & Nicobar Islands. Rain/thundershowers would occur at many places over south peninsular India and at isolated places over rest adjoining peninsular India. Weather would be mainly dry/dry over rest parts of the region.
- **Advisories:**
- In Coastal Andhra Pradesh, as rain / thundershowers would occur at many places over coastal Andhra Pradesh during next 24 hours, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Continue sowing of *rabi* pulses after current spells of rain.
- Continue sowing of *rabi* groundnut in Anantpur district and sowing of jowar, Bengal gram and sunflower in Kurnool district of Scarce Rainfall Zone of Andhra Pradesh.
- Continue sowing of *rabi* crops like groundnut, pulses and maize in Northern Telangana Zone of Andhra Pradesh.
- Continue harvesting of groundnut, ragi and fodder maize in clear weather in the Eastern Dry Zone of Karnataka.
- In the North Dry Zone of Karnataka, continue sowing of wheat, chick pea and sunflower in irrigated areas and continue harvesting of onion and maize.
- Continue transplanting of *rabi* rice in the Coastal Zone of Karnataka.
- Continue sowing of sunflower after proper seed treatment in the Hill Zone of Karnataka.
- Continue sowing of *puncha* rice and planting of winter vegetables in the Problem Area Zone in Kerala. Continue planting of banana in the Southern Zone of Kerala.

- Undertake top dressing of fertilizers during non- rainy situation with less water and stagnate only less height of water to facilitate more tillering in rice crop in the Western Zone of Tamil Nadu.
- Continue sowing of groundnut, sunflower, chickpea and sesame in the North Western Zone of Tamil Nadu.
- Prevailing weather condition is favourable for incidences of inter node borer in sugarcane, stem borer attack in maize and leaf folder in rice in the Western Zone of Tamil Nadu. Monitor the crops and undertake plant protection measures if noticed.
- Prevailing high cloud cover condition and humidity is congenial for the incidence of pests and diseases in the standing crops in the South Zone of Tamil Nadu. Monitor the crops and undertake plant protection measures if needed.
- Low temperature and slightly higher humid conditions are congenial for the growth of leaf folder worm attack in rice in the North Western Zone of Tamil Nadu. Spray Chloropriphos @ 2 ml in 1 litre of water, if the presence of such worms is high.
- 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 on a non rainy day.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- Undertake preventive measures to control incidence of Foot and Mouth disease noticed in livestock due to prevailing weather in the Cauvery Delta Zone and Western Zone of Tamil Nadu.
- Cover the sides of poultry farms for atleast 2 feet height with gunny bags or plastic sheets to prevent the entry of rain water or cool winds and give warmth to new born chicks in the North Western Zone of Tamil Nadu.
- Protect buffaloes and cattle from foot and mouth disease by periodic vaccination and sheep & goat from Blue tongue disease by giving antibiotics and tonics like Enfrofaccin @10 ml per animal in the Scarce Rainfall Zone of Andhra Pradesh.

Annexure I Stages of Major Crops

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

- Wheat, barley, oat, late peas (sowing/germination), 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) in Himachal Pradesh.
- Wheat, barley, oat, berseem (sowing/germination), 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.
- Wheat, barley (sowing/germination), toria, gobi sarson, mustard (sowing /germination), brown sarson, oat, lentil, berseem, gram, field pea (sowing / germination), 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/germination), lentil (sowing/germination), 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.
- Wheat (sowing/germination), Maize (knee height), barley/mustard/pea/chickpea/lentil/Linseed (seedling), Jowar, bajra, (grain filling/maturity), pigeon pea (vegetative/branching), 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, (pod formation) in Uttar Pradesh.
- New sugarcane (tillering / vegetative), cotton (picking), wheat (sowing/germination), cucurbits, cowpea (sowing), rice (grain maturity/ 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), *Kharif* onion (maturity/harvesting), arhar (pod maturity/ harvesting), groundnut (pod formation/ maturity), sugarcane (grand growth), winter sugarcane (planting), vegetables (flowering/ fruiting), wheat, safflower, mustard, gram and linseed (sowing/germination) , potato ,onion (planting) in Madhya Pradesh.
- Sugarcane (elongation), *kharif* rice (grain maturity/harvesting), jowar, (grain formation /maturity), 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, sugarcane, ginger (harvesting), Onion (transplanting), yam (tuber development / harvesting), *arhar* (vegetative), winter maize, sunflower, mustard, *toria*, pea, lentil, gram, rajmah (sowing), cauliflower, cabbage, chilli, tomato, brinjal (vegetative) in Bihar.
- *Kharif* rice, maize, urad, marua (harvesting), Arhar (vegetative / flowering), groundnut (grain maturity / harvesting), onion (vegetative), ginger and turmeric (rhizome maturity / harvesting), *kharif* vegetables viz. bhindi, bean, French bean (harvesting), tomato, cauliflower, cabbage (vegetative), sweet potato (stem elongation), potato (vegetative), green peas, bell pepper (vegetative) in Jharkhand.
- Rice (grain maturity / harvesting), pigeon pea (pod formation / pod maturity), turmeric, ginger (rhizome

formation), *rabi* vegetables (transplanting), sugarcane (grand growth), banana (vegetative), mustard (sowing / seedling), wheat, groundnut, cluster bean, green pea (sowing) in Odisha.

- *Aman* rice (maturity / harvesting), ginger, turmeric (rhizome formation), tomato, brinjal (transplanting / early vegetative), cabbage and cauliflower (transplanting), wheat, mustard (sowing), potato (planting), winter flower like marigold (transplanting) in West Bengal.
- Wheat (tillering), *rabi* vegetables (vegetative / late vegetative), large cardamom (harvesting), rice (grain maturity / harvesting), ginger (maturity / harvesting), mustard (vegetative), *rabi* potato (planting / germination / vegetative) in Sikkim.

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

- *Boro* rice (nursery sowing), sugarcane (Autumn) (active vegetative), *sali* rice (grain maturity / harvesting), rapeseed and mustard (sowing / vegetative / flowering), *rabi* pulses like lentil, rajmah, pea, lathyrus etc. (sowing / early vegetative), wheat (sowing / early vegetative), winter vegetables (transplanting / early vegetative), potato (planting / vegetative), bottle gourd, pumpkin (sowing) in Assam.
- Cauliflower, cabbage, broccoli and kholkhol (vegetative), spinach, carrot (vegetative), mustard (sowing / vegetative), pea (sowing / early vegetative), winter maize (vegetative) and potato (vegetative) in Arunachal Pradesh.
- Rapeseed and mustard, pea, pulses (sowing / early vegetative), *rabi* vegetables, cole crops (early vegetative / vegetative), potato (planting / early vegetative), onion (early vegetative) in Manipur.
- *Sali* rice (grain 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.
- Maize (vegetative), mustard (early vegetative), potato, *rajama* (early vegetative), cabbage, broccoli (vegetative), tomato (transplanting / early vegetative) in Nagaland.
- *Rabi* maize (seedling), 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* cotton (boll maturity / picking in Madhya Maharashtra, Marathwada and Vidarbha), red gram (pod development in Madhya Maharashtra, Vidarbha and Marathwada), *rabi* jowar (early vegetative / vegetative in Madhya Maharashtra and Marathwada), safflower (early vegetative in Madhya Maharashtra, Marathwada and Vidarbha), gram (early vegetative / branching in Madhya Maharashtra and Marathwada), wheat (germination / crown root initiation in Madhya Maharashtra and Marathwada), maize (early vegetative in Madhya Maharashtra), sugarcane (*adsali* and pre seasonal) (maturity / harvesting), sugarcane (*suru*) (elongation), new *adsali* (early tillering / tillering in Marathwada and Madhya Maharashtra), pre-seasonal sugarcane (sprouting in Marathwada and Madhya Maharashtra).
- Wheat (sowing / germination / vegetative), gram (sowing / germination), castor (spike formation / maturity), cotton (boll maturity / picking), *kharif* vegetables (flowering / fruiting), sugarcane (elongation), new sugarcane (planting), cumin, coriandar (sowing), fenugreek (seedling), cauliflower, cabbage, onion (vegetative), potato (planting) in Gujarat.

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

- Bt.cotton (boll maturity/harvest), cotton (boll maturation/harvest), pulses (sowing to seedling / early vegetative), chilli (seedling / vegetative stage) in Krishna Godavari Zone of Andhra Pradesh, sugarcane (Jan-March planted) (cane deveopment), late sown *kharif* rice (grain formation/maturity), castor (capsule maturity/harvest), banana (flowering/bunch formation), *rabi* crops: rice (tillering), *rabi* groundnut (sowing/seedling), pulses (sowing), chick-pea (vegetative/flowering), maize (dough stage), red gram (vegetative/flowering), Bengal gram (vegetative/flowering) and jowar (panicle initiation), chillies (maturity/harvest), vegetables (vegetative), onion (bulb development), in Andhra Pradesh.
- Sugarcane (grand growth), samba rice (tillering/panicle initiation), thaladi rice (tillering/sowing to germination of bapatla variety in Erode district), cotton (vegetative/maturity), maize (flowering/maturity), onion (vegetative), sunflower (seedling), winter cotton (vegetative), groundnut (pod development / harvesting), vegetables (growing), black gram (flowering) and

rainfed cotton, maize, sorghum (vegetative) and pulses (flowering) in Tamil Nadu.

- Mundakan rice (tillering), *Puncha* rice (sowing in Kottayam district), arecanut (harvesting), sugarcane (grand growth), Nendran banana (vegetative), rubber (tapping), *rabi* vegetables (growing), pepper (berry maturity), cardamom (harvesting), in Kerala.
- Sugarcane (grand growth), kharif crops: ragi (harvesting), maize (harvesting), red gram (flowering/pod formation), groundnut (harvesting), rice (harvesting), cotton (boll formation/boll opening), vegetable crops (flowering/ fruiting), Rabi Crops: Bengal gram, sunflower, sorghum, safflower and wheat (sowing), rice (transplanting in coastal Karnataka), sugarcane (planting) in Karnataka.

Annexure II

Week by week Rainfall Distribution

State/Districts	23.10.13		30.10.13		06.11.13		13.11.13		27.11.13	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh										
Anjaw	**	**	**	**	**	**	0.0	-100	0.0	-100
Changlang	24.6	-58	54.3	239	0.8	-96	0.0	-100	0.0	-100
Dibang Valley	92.0	238	105.0	919	37.0	47	0.0	-100	0.0	-100
East Kameng	1.2	-97	0.0	-100	0.0	-100	0.0	-100	0.0	-100
East Siang	65.7	63	59.6	308	0.2	-98	0.0	-100	0.0	-100
Kurung Kumey	**	**	**	**	**	**	**	**	**	**
Lohit	23.6	-31	44.5	298	10.5	22	0.0	-100	0.0	-100
Lower Dibang Valley	78.5	189	136.2	1222	11.8	-53	0.0	-100	0.0	-100
Lower Subansari	0.0	-100	**	**	**	**	**	**	**	**
Papumpara	16.1	-66	63.8	224	0.9	-85	0.0	-100	0.0	-100
Tawang	7.0	-83	47.0	139	28.0	284	0.0	-100	0.0	-100
Tirap	24.3	-51	78.1	637	1.4	-88	0.0	-100	0.0	-100
Upper Siang	76.3	32	112.2	302	71.0	64	0.0	-100	0.0	-100
Upper Subansari	34.2	9	26.8	253	21.2	458	0.0	-100	0.0	-100
West Kameng	37.7	-11	79.2	302	0.8	-89	0.0	-100	0.0	-100
West Siang	25.2	-15	51.0	99	7.0	-38	0.0	-100	0.0	-100
Assam										
Baksa	9.7	-65	34.7	224	0.0	-100	0.0	-100	0.0	-100
Barpeta	15.2	-46	30.2	182	5.8	100	0.0	-100	0.0	-100
Bongaigaon	2.9	-91	28.6	118	0.0	-100	0.0	-100	0.0	-100
Cachar	8.1	-69	59.8	222	0.0	-100	0.0	-100	0.0	-100
Chirang	11.3	-64	28.4	117	0.0	-100	0.0	-100	0.0	-100
Darrang	5.0	-70	18.0	67	4.0	-27	0.0	-100	0.0	-100
Dhemaji	8.5	-69	21.0	67	0.0	-100	0.0	-100	0.0	-100
Dhubri	0.5	-97	10.2	-7	7.4	-31	0.0	-100	0.0	-100
Dibrugarh	39.9	72	31.4	132	0.2	-98	0.0	-100	0.0	-100
Goalpara	0.0	-100	6.8	-54	2.0	-72	0.0	-100	0.0	-100
Golghat	4.9	-69	45.9	155	0.0	-100	0.0	-100	0.0	-100
Hailakandi	16.9	-5	67.2	585	0.0	-100	0.0	-100	0.0	-100
Jorhat	18.6	8	39.1	140	0.0	-100	0.0	-100	0.0	-100
Kamrup(Rural)	0.1	-99	10.1	-17	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	16.5	-22	5.3	-56	0.0	-100	0.0	-100	0.0	-100
Karbi Anglong	1.2	-96	9.8	60	0.0	-100	0.0	-100	0.0	-100
Karimganj	9.6	-39	36.0	22	0.0	-100	0.0	-100	0.0	-100
Kokrajhar	1.1	-98	56.0	559	0.0	-100	0.0	-100	0.0	-100
Lakhimpur	24.7	-10	26.9	113	0.0	-100	0.0	-100	0.0	-100
Morigaon	2.3	-92	5.4	-50	0.0	-100	0.0	-100	0.0	-100
N.C.Hills	2.3	-76	28.4	-75	0.0	-100	0.0	-100	0.0	-100
Nowgong	0.0	-100	4.1	-78	0.0	-100	0.0	-100	0.0	-100
Nalbari	5.1	-74	36.7	174	1.7	-43	0.0	-100	0.0	-100
Sonitpur	6.7	-74	14.2	2	1.2	-79	0.0	-100	0.0	-100
Sibsagar	9.4	-40	36.5	157	0.0	-100	0.0	-100	0.0	-100
Tinsukia	29.8	-9	55.7	406	2.8	-73	0.0	-100	0.0	-100

Udalgiri	2.6	-85	13.2	22	0.0	-100	0.0	-100	0.0	-100
Meghalaya										
East Garo Hills	**	**	**	**	**	-100	0.0	-100	**	**
East Khasi Hills	11.8	-75	24.2	-36	0.2	-98	0.0	-100	0.0	-100
Jaintia Hills	14.0	-79	15.0	-72	0.0	-100	0.0	-100	0.0	-100
Ribhoi	59.2	83	51.1	272	0.0	-100	0.0	-100	0.0	-100
South Garo Hills	0.0	-100	23.0	65	0.0	-100	0.0	-100	0.0	-100
West Garo Hills	4.4	-78	0.6	-96	10.0	45	0.0	-100	0.0	-100
West Khasi Hills	0.0	-100	**	**	0.0	-100	0.0	-100	0.0	-100
Mizoram										
Aizwal	38.2	10	31.6	-25	0.0	-100	0.0	-100	0.0	-100
Champhai	12.0	-64	84.0	95	0.0	-100	0.0	-100	0.0	-100
Kolasib	47.0	60	26.0	-13	0.0	-100	0.0	-100	0.0	-100
Lawngtlai	**	**	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lunglei	10.5	-72	106.0	215	0.0	-100	0.0	-100	0.0	-100
Mamit	8.0	-77	12.0	-71	0.0	-100	0.0	-100	0.0	-100
Saiha	48.5	55	119.0	289	0.0	-100	0.0	-100	0.0	-100
Serchhip	1.5	-94	9.0	-52	0.0	-100	0.0	-100	0.0	-100
Manipur										
Bishnupur	9.0	-44	19.0	-48	0.0	-100	0.0	-100	0.0	-100
Chandel	12.0	-59	7.0	-82	0.0	-100	0.0	-100	0.0	-100
Churachandpur	6.0	-62	24.0	-32	0.0	-100	0.0	-100	0.0	-100
Imphal east	10.1	-24	18.9	-32	0.0	-100	0.0	-100	0.0	-100
Imphal west	**	**	**	**	**	**	**	**	**	**
Senapati	2.0	-88	14.0	-30	0.0	-100	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**	**	**	**	**
Thoubal	3.5	-56	15.0	-36	0.0	-100	0.0	-100	0.0	-100
Ukhrul	4.0	-65	10.5	-42	0.0	-100	0.0	-100	0.0	-100
Nagaland										
Dimapur	0.0	-100	34.1	245	0.0	-100	0.0	-100	0.0	-100
Kephire	2.5	-75	8.0	-13	1.0	-92	0.0	-100	0.0	-100
Kohima	28.6	28	15.3	-27	0.0	-100	0.0	-100	0.0	-100
Longleng	**	**	**	**	**	**	**	**	**	**
Mokokchung	12.0	-49	8.0	-35	0.0	-100	0.0	-100	0.0	-100
Mon	**	**	**	**	**	**	**	**	**	**
Paren	**	**	**	**	**	**	**	**	**	**
Phek	18.0	-27	11.5	-45	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**	**	**	**	**
Wokha	3.0	-89	4.0	-75	0.0	-100	0.0	-100	0.0	-100
Zunheboto	**	**	**	**	**	**	**	**	**	**
Tripura										
Dhalai	16.5	-44	5.5	-81	0.0	-100	0.0	-100	0.0	-100
North tripura	29.4	28	58.6	142	0.0	-100	0.0	-100	0.0	-100
South tripura	16.3	-42	15.3	-37	0.0	-100	0.0	-100	0.0	-100
West tripura	13.7	-44	11.5	-51	0.0	-100	0.0	-100	0.0	-100
Himachal Pradesh										
Bilaspur	0.0	-100	0.0	-100	2.6	-14	10.5	175	0.0	-100
Chamba	0.0	-100	0.0	-100	11.9	191	32.1	1361	0.0	-100
Hamirpur	0.0	-100	0.0	-100	0.0	-100	12.4	727	0.0	-100

Kangra	0.0	-100	0.0	-100	1.4	-48	19.5	926	0.0	-100
Kinnaur	0.0	-100	0.0	-100	0.0	-100	8.4	127	0.0	-100
Kullu	0.3	-98	0.0	-100	0.1	-98	21.8	328	0.0	-100
Lahaul and Spiti	0.0	-100	0.0	-100	1.3	-78	12.9	158	0.0	-100
Mandi	0.0	-100	0.0	-100	0.0	-99	17.6	469	0.0	-100
Shimla	0.0	-100	0.0	-100	2.1	-42	8.4	164	0.0	-100
Sirmaur	0.2	-97	0.0	-100	7.9	367	1.4	-11	0.0	-100
Solan	0.0	-100	0.0	-100	7.5	128	18.7	713	0.0	-100
Una	0.0	-100	0.0	-100	3.7	38	7.8	289	0.0	-100
Punjab										
Amritsar	0.0	-100	0.0	-100	0.0	-100	10.5	454	0.0	-100
Barnala	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhatinda	0.0	-100	0.0	-100	0.0	-100	4.0	3900	0.0	-100
Faridkot	0.0	-100	0.0	-100	2.0	18	11.0	900	0.0	-100
Fatehgarh Saheb	0.0	-100	0.0	-100	8.0	122	3.0	650	0.0	-100
Ferozpur	0.0	-100	0.0	-100	0.5	-64	12.3	1956	0.0	-100
Gurdaspur	0.0	-100	0.0	-100	2.5	26	13.0	549	0.0	-100
Hoshiarpur	0.0	-100	0.0	-100	2.3	-6	3.7	103	0.0	-100
Jalandhar	0.0	-100	0.0	-100	2.7	27	2.6	189	0.0	-100
Kapurthala	0.0	-100	0.0	-100	0.0	-100	0.3	-77	0.0	-100
Ludhiana	0.0	-100	0.0	-100	6.1	222	0.2	-46	0.0	-100
Mansa	0.0	-100	0.0	-100	0.0	-100	2.5	400	0.0	-100
Moga	0.0	-100	0.0	-100	0.5	-44	4.6	667	0.0	-100
Muktesar	0.0	-100	0.0	-100	0.0	-100	2.0	567	0.0	-100
Nawashahar	0.0	-100	0.0	-100	3.0	58	6.4	108	0.0	-100
Patiala	0.0	-100	0.0	-100	1.0	-54	0.3	14	0.0	-100
Ropar	0.0	-100	0.0	-100	3.6	38	8.7	136	0.0	-100
Sangrur	0.0	-100	0.0	-100	1.0	-44	0.6	-25	0.0	-100
Mohali	0.0	-100	0.0	-100	2.0	-23	0.0	-100	0.0	-100
TarnTaran	0.0	-100	0.0	-100	0.0	-100	25.2	2427	0.0	-100
Haryana										
Ambala	0.0	-100	0.0	-100	5.6	370	1.0	90	0.0	-100
Bhiwani	0.0	-100	0.0	-100	0.0	-97	2.9	1350	0.0	-100
Chandigarh	0.0	-100	0.0	-100	12.9	257	0.4	-71	0.0	-100
Faridabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Fatehabad	0.0	-100	0.0	-100	0.0	-100	1.0	233	0.0	-100
Gurgaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hissar	0.0	-100	0.0	-100	0.0	-100	5.7	5567	0.0	-100
Jhajar	0.0	-100	0.0	-100	0.0	-100	0.8	67	0.0	-100
Jind	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Katihah	0.0	-100	0.0	-100	0.8	-60	0.0	-100	0.0	-100
Karnal	0.0	-100	0.0	-100	0.6	-73	0.0	-100	0.0	-100
Kurukshetra	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mahendragarh	0.0	-100	0.0	-100	0.0	-100	1.0	67	0.0	-100
Mewat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Palwal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Panchkkula	0.0	-100	0.0	-100	6.7	251	0.3	-70	0.0	-100
Panipat	0.0	-100	0.0	-100	1.0	-58	0.1	43	0.0	-100
Rewari	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Rohtak	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100	1.0	150	0.0	-100
Sonepat	0.0	-100	0.0	-100	0.0	-100	0.5	0	0.0	-100
Yamunanagar	0.0	-100	0.0	-100	7.8	169	0.0	-100	0.0	-100
Delhi	0.0	-100	0.0	-100	0.4	-68	0.4	34		
Jammu & Kashmir									0.0	-100
Anantnag	0.3	-97	0.0	-100	23.1	157	10.7	69	0.0	-100
Badgam	0.0	-100	0.0	-100	4.1	-53	2.2	-44	0.0	-100
Bandipore	**	**	**	**	**	**	**	**	**	**
Baramula	3.5	-77	0.0	-100	14.8	-1	6.6	34	0.0	-100
Doda	0.0	-100	0.0	-100	16.8	113	19.2	262	0.0	-100
Ganderwal	0.0	-100	0.0	-100	22.2	231	22.3	321	0.0	-100
Jammu	0.0	-100	0.0	-100	2.2	69	13.1	671	0.0	-100
Kargil	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kathua	0.0	-100	0.0	-100	2.8	250	21.8	1717	0.0	-100
Kistwar	**	**	**	**	**	**	**	**	**	**
Kulgam	0.5	-95	0.0	-100	12.4	38	9.1	44	0.0	-100
Kupwara	0.0	-100	1.0	-93	17.3	33	11.1	31	0.0	-100
Ladakh(Leh)	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Poonch	2.3	15	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pulwama	0.0	-100	0.0	-100	8.2	82	5.0	61	0.0	-100
Rajouri	0.0	-100	0.0	-100	0.2	100	64.8	21500	0.0	-100
Ramban	0.0	-100	0.0	-100	9.8	24	9.5	79	0.0	-100
Reasi	0.0	-100	0.0	-100	6.0	50	29.5	1129	0.0	-100
Samba	0.0	-100	0.0	-100	2.1	62	10.3	506	0.0	-100
Shopian	0.0	-100	0.0	-100	10.0	122	6.0	94	0.0	-100
Srinagar	0.0	-100	0.0	-100	11.4	70	5.2	-2	0.0	-100
Udhampur	0.0	-100	0.0	-100	3.9	-3	14.8	517	0.0	-100
East Madhya Pradesh										
Anuppur	0.0	-100	36.0	634	0.0	-100	0.0	-100	0.0	-100
Balaghat	0.0	-100	7.2	-9	0.0	-100	0.0	-100	0.0	-100
Chhatarpur	0.0	-100	0.0	-100	0.0	-100	0.6	-76	0.0	-100
Chindwara	0.0	-100	3.1	-26	0.0	-100	0.0	-100	0.0	-100
Damoh	0.0	-100	0.0	-100	0.0	-100	6.7	375	0.0	-100
Dindori	0.0	-100	28.0	306	0.0	-100	0.0	-100	0.0	-100
Jabalpur	0.0	-100	11.1	455	0.0	-100	0.0	-100	0.0	-100
Katni	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mandla	0.0	-100	4.4	-5	0.0	-100	0.0	-100	0.0	-100
Narsingpur	0.0	-100	0.2	-86	0.0	-100	0.0	-100	0.0	-100
Panna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rewa	0.0	-100	5.6	833	0.0	-100	0.0	-100	0.0	-100
Sagar	0.0	-100	0.2	-93	0.0	-100	0.4	-87	0.0	-100
Satna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Seoni	0.0	-100	1.5	-65	0.0	-100	0.9	-67	0.0	-100
Shahdol	0.0	-100	3.0	-32	0.0	-100	0.0	-100	0.0	-100
Sidhi	0.0	-100	2.9	32	0.0	-100	0.0	-100	0.0	-100
Singrauli	0.0	-100	8.0	627	0.0	-100	0.0	-100	0.0	-100
Tikamgarh	0.0	-100	0.0	-100	0.0	-100	1.0	-29	0.0	-100
Umaria	0.0	-100	4.2	56	0.0	-100	0.0	-100	0.0	-100

West Madhya Pradesh										
Alirajpur	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Betul	0.0	-100	2.7	-37	0.0	-100	0.0	-100	0.0	-100
Bhind	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Datia	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Guna	0.0	-100	0.0	-100	0.0	-100	2.6	-17	0.0	-100
Gwalior	0.0	-100	0.0	-100	0.0	-100	2.5	36	0.0	-100
Harda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hosangabad	0.0	-100	4.9	123	0.0	-100	0.0	-100	0.0	-100
Indore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhabua	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khandwa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khargone	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mandsaur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Morena	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	0.0	-100	0.0	-100	1.6	123	0.0	-100
Rajgarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ratlam	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sehore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shajapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sheopur Kalani	2.0	-51	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shivpuri	0.0	-100	2.3	221	0.0	-100	0.3	-83	0.0	-100
Ujjain	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Vidisha	0.0	-100	1.5	-21	0.0	-100	0.0	-100	0.0	-100
Chhattisgarh										
Bastar	38.2	232	60.1	401	0.0	-100	0.0	-100	0.3	-86
Bijapur	7.8	-46	126.3	1229	0.0	-100	0.0	-100	0.0	-100
Bilaspur	3.7	-69	30.3	283	0.0	-100	0.0	-100	0.0	-100
Dantewara	42.4	165	110.3	931	0.0	-100	0.0	-100	0.0	-100
Dhamtari	25.4	142	39.4	418	0.0	-100	0.0	-100	0.0	-100
Durg	1.0	-90	19.8	164	0.0	-100	0.0	-100	0.0	-100
Janjgir	1.8	-81	27.9	227	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	2.6	-77	3.8	-69	0.0	-100	0.0	-100	0.0	-100
Kanker	16.3	14	38.8	234	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	22.1	427	0.0	-100	0.0	-100	0.0	-100
Koriya	5.0	-18	41.2	1548	0.0	-100	0.0	-100	0.0	-100
Kawardha	0.0	-100	58.0	695	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.5	-93	8.7	21	0.0	-100	0.0	-100	0.0	-100
Narayanpur	7.3	-34	35.1	270	0.0	-100	0.0	-100	0.0	-100
Raigarh	0.0	-100	3.8	-55	0.0	-100	0.0	-100	0.0	-100
Raipur	17.9	84	10.9	60	0.0	-100	0.0	-100	0.0	-100
Rajandgaon	12.8	3	46.7	484	0.0	-100	0.0	-100	0.0	-100

Surguja	1.3	-87	14.0	129	0.0	-100	0.0	-100	0.0	-100
East Uttar Pradesh										
Allahabad	6.1	14	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ambedkar Nagar	1.0	-88	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Azamgarh	3.5	-45	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bahraich	0.5	-90	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ballia	42.6	536	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Balrampur	0.8	-89	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Banda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Barabanki	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Basti	2.7	-52	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chandauli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Deoria	36.0	490	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Faizabad	0.5	-95	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Farrukhabad	0.0	-100	0.0	-100	0.0	-100	4.1	413	0.0	-100
Fatehpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gazipur	16.9	138	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gonda	0.3	-95	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gorakhpur	3.0	-67	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hardoi	0.0	-100	0.0	-100	0.0	-100	1.8	27	0.0	-100
Jaunpur	21.7	456	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.2	-84	0.0	-100
Kanpur Dehat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kaushambi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kheri	0.0	-100	5.3	2550	0.0	-100	4.8	1100	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100	2.0	567	0.0	-100
Lucknow	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Maharajganj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mau	22.5	341	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mirzapur	10.9	153	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pratapgarh	6.0	-6	0.0	-100	0.0	-100	0.0	-100	0.0	-100
RaiBareilly	4.0	-38	0.0	-100	0.0	-100	0.1	-75	0.0	-100
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnagar	2.0	-68	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sant Ravidas Nagar	12.0	380	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shrawasti	0.0	-100	**	**	**	**			0.0	-100
Sidharthnagar	0.1	-98	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sitapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sonbhadra	0.0	-100	0.3	-87	0.0	-100	0.0	-100	0.0	-100
Sultanpur	10.8	44	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Unnao	0.0	-100	0.0	-100	0.0	-100	1.3	25	0.0	-100
Varanasi	13.8	253	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Uttar Pradesh										
Agra	0.0	-100	0.0	-100	0.0	-100	0.2	-93	0.0	-100
Aligarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Auraiya	0.0	-100	0.0	-100	0.0	-100	6.0	186	0.0	-100
Badaun	0.0	-100	0.0	-100	0.0	-100	0.4	-64	0.0	-100
Baghpat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Bareilly	0.0	-100	0.0	-100	0.0	-100	0.4	-39	0.0	-100
Bijnor	0.0	-100	0.0	-100	0.0	-100	4.1	86	0.0	-100
Bulandsahar	0.0	-100	0.0	-100	0.0	-100	1.7	28	0.0	-100
Etah	0.0	-100	0.0	-100	0.0	-100	0.3	-33	0.0	-100
Etawah	0.0	-100	0.0	-100	0.0	-100	2.0	25	0.0	-100
Firozabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
GBNagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ghaziabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hamirpur	0.0	-100	0.0	-100	0.0	-100	1.7	4	0.0	-100
Jalaun	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhansi	0.0	-100	0.0	-100	0.0	-100	4.0	48	0.0	-100
Jotirba Phule Nagar	0.0	-100	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	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mathura	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Meerut	0.0	-100	0.0	-100	0.0	-100	0.1	-91	0.0	-100
Moradabad	0.0	-100	0.0	-100	0.0	-100	2.4	118	0.0	-100
Muzzaffarnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pilibhit	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rampur	0.0	-100	0.0	-100	0.0	-100	2.2	2767	0.0	-100
Saharanpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shahjahanpur	0.0	-100	0.0	-100	0.0	-100	7.3	1117	0.0	-100
Uttarakhand										
Almora	0.0	-100	0.0	-100	0.0	-100	9.6	336	0.0	-100
Bageshwar	2.0	-59	0.0	-100	0.0	-100	2.3	5	0.0	-100
Chamoli	0.3	-96	0.0	-100	0.0	-100	3.3	58	0.0	-100
Champawat	0.0	-100	0.0	-100	0.0	-100	0.5	-71	0.0	-100
Dehradun	3.0	-50	0.0	-100	0.4	-93	8.5	174	0.0	-100
Garhwal Pauri	0.0	-100	0.0	-100	0.0	-100	0.1	-95	0.0	-100
Garhwal Tehri	2.7	-65	0.0	-100	0.7	-83	2.6	-6	0.0	-100
Haridwar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nainital	0.0	-100	0.0	-100	0.0	-100	1.7	24	0.0	-100
Pithorgarh	2.8	-59	0.0	-100	0.0	-100	5.5	82	0.0	-100
Rudraprayag	1.0	-77	0.0	-100	0.0	-100	3.1	182	0.0	-100
Udham Sing Nagar	0.0	-100	0.0	-100	0.8	-50	0.1	-91	0.0	-100
Uttarkashi	9.0	33	0.7	-90	0.0	-100	2.3	-18	0.0	-100
Bihar										
Araria	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Arwal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Aurangabad	0.0	-100	2.3	-54	0.0	-100	0.0	-100	0.0	-100
Banka	14.0	57	21.4	219	0.0	-100	0.0	-100	0.0	-100
Begusarai	3.0	-79	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhabua	0.7	-85	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhagalpur	44.3	195	42.6	847	6.8	70	0.0	-100	0.0	-100
Bhojpur	66.6	1181	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Buxar	0.4	-92	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Darbhangha	4.8	-36	0.0	-100	0.0	-100	0.0	-100	0.0	-100
East Champaran	22.4	227	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gaya	1.0	-89	6.1	1	0.0	-100	0.0	-100	0.0	-100
Gopalganj	53.5	430	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jahanabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jamui	26.1	129	17.1	287	0.0	-100	0.0	-100	0.0	-100
Kathihar	27.8	70	6.7	110	1.2	-66	0.0	-100	0.0	-100
Khagadia	0.4	-98	0.2	-95	1.6	-16	0.0	-100	0.0	-100
Kishanganj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lakhisarai	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Madhepura	0.0	-100	0.4	-83	6.0	131	0.0	-100	0.0	-100
Madhubani	7.5	-56	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Monghyar	0.0	-100	2.8	-53	3.2	39	0.0	-100	0.0	-100
Muzaffarpur	26.9	327	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nalanda	16.9	94	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawada	2.5	-70	15.3	104	0.0	-100	0.0	-100	0.0	-100
Patna	32.5	460	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Purnea	1.8	-88	12.6	688	0.0	-100	0.0	-100	0.0	-100
Rohtas	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Saharsha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Samstipur	18.3	358	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Saran	86.0	1079	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sheikpura	7.7	-35	0.7	-76	0.0	-100	0.0	-100	0.0	-100
Sheohar	13.6	19	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	17.0	49	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Siwan	147.7	1723	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Supaul	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Vaishali	24.5	158	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Champaran	5.9	-39	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jharkhand										
Bokaro	15.2	48	39.1	483	0.0	-100	0.0	-100	0.0	-100
Chatra	7.7	-5	23.4	655	0.0	-100	0.0	-100	0.0	-100
Deoghar	3.9	-74	24.9	168	0.0	-100	0.0	-100	0.0	-100
Dhanbad	3.3	-79	41.5	400	0.0	-100	0.0	-100	0.0	-100
Dumka	**	**	**	**	**	**	**	**	**	**
East Singbhum	15.8	18	102.1	1757	0.0	-100	0.0	-100	0.0	-100
Garhwa	6.0	28	5.0	72	0.0	-100	0.0	-100	0.0	-100
Giridih	3.0	-76	18.0	210	0.0	-100	0.0	-100	0.0	-100
Godda	14.9	-22	27.3	876	0.0	-100	0.0	-100	0.0	-100
Gumla	**	**	**	**	**	**	**	**	**	**
Hazaribagh	14.9	-38	8.1	1	0.0	-100	0.0	-100	0.0	-100
Jamtara	2.8	-87	44.0	358	0.0	-100	0.0	-100	0.0	-100
Khunti	30.0	216	56.0	657	0.0	-100	0.0	-100	0.0	-100
Koderna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Latehar	0.0	-100	16.5	162	0.0	-100	0.0	-100	0.0	-100
Lohardagga	7.6	-42	22.0	323	0.0	-100	0.0	-100	0.0	-100
Pakur	8.0	-65	142.5	1150	0.0	-100	0.0	-100	0.0	-100
Palamau	2.0	-67	13.7	217	0.0	-100	0.0	-100	0.0	-100
Ramgarh	1.0	-92	13.2	181	0.0	-100	0.0	-100	0.0	-100

Ranchi	6.2	-59	23.6	136	0.0	-100	0.0	-100	0.0	-100
Sahebganj	0.0	-100	32.8	315	0.0	-100	0.0	-100	0.0	-100
Saraikela	0.0	-100	59.4	1349	0.0	-100	0.0	-100	**	**
Simdega	0.0	-100	**	**	**	**	**	**	**	**
West Singhbhum	0.0	-100	63.5	1196	0.0	-100	0.0	-100	0.0	-100
East Rajasthan										
Ajmer	0.0	-100	0.0	-100	0.0	-100	0.3	-16	0.0	-100
Alwar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Banswara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bharatpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhilwara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bundi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chittorgarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dausa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dholpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dungarpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.0	-100	0.0	-100	0.0	-100	0.6	29	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100	0.2	-92	0.0	-100
Jhunjhunu	0.0	-100	0.0	-100	0.5	-34	13.3	4321	0.0	-100
Karauli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kota	0.0	-100	0.0	-100	0.0	-100	0.4	-85	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajsamand	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sawai Madhopur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sikar	0.0	-100	0.0	-100	0.0	-100	8.7	4257	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-100	0.0	-100	0.0	-100	0.5	-59	0.0	-100
Udaipur	0.0	-100	0.0	-100	0.0	-100	0.0	-99	0.0	-100
West Rajasthan										
Barmer	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100	0.4	270	0.0	-100
Churu	0.0	-100	0.0	-100	0.1	-91	9.0	4400	0.0	-100
Hanumangarh	0.0	-100	0.0	-100	0.0	-100	0.7	43	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.9	125	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-100	0.0	-100	3.4	1017	0.0	-100
Gujarat Region										
Ahmedabad	0.0	-100	0.0	-100	0.3	-78	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.3	-86	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Broach	0.2	-84	0.0	-100	0.0	-100	0.0	-100	0.0	-100
DNH	21.0	176	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dahod	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Daman	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Dangs	3.3	-68	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	0.3	-89	0.0	-100	0.8	-27	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Narmada	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.1	-97	0.1	-93	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Surat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tapi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-99	0.0	-100	0.0	-100	0.0	-100	0.0	-100
S K & Diu region										
Amreli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.1	-98	0.1	-95	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Maharashtra										
Konkan & Goa										
Goa	18.9	-43	41.6	94	0.0	-100	0.0	-100	0.0	-100
Mumbai	8.6	-9	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raigad	5.6	-65	22.6	179	2.2	-55	0.0	-100	0.0	-100
Ratnagiri	12.5	-47	16.5	36	0.3	-96	0.0	-100	0.0	-100
Sindhudurg	17.4	-31	12.0	-33	0.0	-100	0.0	-100	0.0	-100
Thane	9.2	-19	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Madhya Maharashtra										
Ahmednagar	0.6	-95	3.2	-61	0.0	-100	0.0	-100	0.0	-100
Dhule	0.0	-99	0.0	-100	0.0	-100	**	**	**	**
Jalgaon	0.1	-97	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kolhapur	5.7	-75	37.9	113	0.0	-100	0.0	-100	0.0	-100
Nandurbar	0.7	-80	0.0	-100	0.0	-100	**	**	**	**
Nasik	2.1	-78	0.0	-99	0.0	-100	0.0	-100	0.0	-100
Pune	9.0	-44	6.0	-47	0.0	-100	0.0	-100	0.0	-100
Sangli	9.0	-55	34.9	139	0.0	-100	0.0	-100	0.0	-100
Satara	5.0	-76	15.1	19	0.0	-100	0.0	-100	0.0	-100
Solapur	5.8	-67	10.5	-21	4.9	-31	0.0	-100	0.0	-100
Marathwada										
Aurangabad	0.0	-100	0.2	-97	0.0	-100	0.0	-100	0.0	-100
Beed	1.7	-89	15.1	74	0.0	-100	**	**	**	**
Hingoli	0.0	-100	2.8	-69	0.0	-100	**	**	**	**
Jalna	0.0	-100	2.6	-60	0.0	-100	**	**	**	**
Latur	0.3	-98	34.2	198	0.0	-100	0.0	-100	0.0	-100
Nanded	0.3	-99	18.0	71	0.0	-100	0.0	-100	0.0	-100
Usmanabad	2.4	-87	22.9	144	0.0	-100	0.0	-100	0.0	-100

Parbhani	0.0	-100	4.2	-42	0.0	-100	0.0	-100	0.0	-100
Vidarbha										
Akola	0.1	-97	3.5	-54	0.0	-100	0.0	-100	0.0	-100
Amraoti	0.4	-94	1.8	-69	0.0	-100	0.0	-100	0.0	-100
Bhandara	0.0	-100	12.9	38	0.0	-100	0.0	-100	0.0	-100
Buldhana	0.3	-96	3.5	-35	0.0	-100	0.0	-100	0.0	-100
Chandrapur	0.1	-99	34.5	291	0.0	-100	0.0	-100	0.0	-100
Gadchiroli	3.4	-71	38.3	378	0.0	-100	0.0	-100	0.0	-100
Gondia	0.0	-100	6.7	-23	0.0	-100	0.0	-100	0.0	-100
Nagpur	0.6	-93	2.4	-79	0.0	-100	0.0	-100	0.0	-100
Wardha	0.7	-94	2.9	-68	0.0	-100	0.0	-100	0.0	-100
Washim	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Yeotmal	0.2	-98	9.0	3	0.0	-100	0.0	-100	0.0	-100
Odisha										
Angul	39.7	117	96.1	512	0.0	-100	0.0	-100	0.0	-100
Balasore	58.4	101	198.2	533	0.0	-100	0.0	-100	0.0	-100
Bargarh	6.5	-39	13.9	162	0.0	-100	0.0	-100	0.0	-100
Bhadrak	125.5	408	183.3	725	0.0	-100	0.0	-100	0.0	-100
Bolangir	21.6	61	43.4	302	0.0	-100	0.0	-100	0.0	-100
Boudh	35.8	138	64.7	426	0.0	-100	0.0	-100	0.0	-100
Cuttack	108.2	408	224.4	1416	0.0	-100	0.0	-100	0.0	-100
Deogarh	30.1	162	53.4	529	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	44.5	114	162.5	645	0.0	-100	0.0	-100	0.0	-100
Gajapati	51.4	63	303.8	3898	0.0	-100	0.0	-100	0.0	-100
Ganjam	110.5	123	348.4	1028	0.0	-100	0.0	-100	0.0	-100
Jagatsingpur	63.4	101	223.2	1161	0.0	-100	0.0	-100	0.0	-100
Jajpur	78.7	312	270.9	1276	0.0	-100	0.0	-100	0.0	-100
Jharsuguda	5.9	-44	29.9	368	0.0	-100	0.0	-100	0.0	-100
Kalahandi	36.0	161	39.5	490	0.0	-100	0.0	-100	0.0	-100
Kandhamal	58.5	290	86.4	603	0.0	-100	0.0	-100	0.0	-100
Kendrapara	96.2	234	275.0	1395	0.0	-100	0.0	-100	0.0	-100
Keonjhar	26.1	17	72.4	479	0.0	-100	0.0	-100	0.0	-100
Khurda	110.0	241	225.9	829	0.0	-100	0.0	-100	0.0	-100
Koraput	28.7	-14	73.9	371	0.0	-100	0.0	-100	0.0	-100
Malkangiri	28.5	31	62.6	256	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	22.1	14	166.8	1019	0.0	-100	0.0	-100	0.0	-100
Nawapara	7.5	-27	45.0	552	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	38.1	154	95.4	601	0.0	-100	0.0	-100	0.0	-100
Nayagarh	96.1	329	324.3	1361	0.0	-100	0.0	-100	0.0	-100
Puri	102.4	192	162.1	387	0.0	-100	0.0	-100	0.0	-100
Rayagada	47.1	100	96.5	1362	0.0	-100	0.0	-100	0.0	-100
Sambalpur	36.6	218	26.4	211	0.0	-100	0.0	-100	0.0	-100
Sonepur	18.2	102	25.9	146	0.0	-100	0.0	-100	0.0	-100
Sundargarh	17.6	117	21.7	294	0.0	-100	0.0	-100	0.0	-100
West Bengal										
GWB										
Bankura	66.6	294	93.4	502	0.0	-100	0.0	-100	0.0	-100
Birbhum	30.2	58	57.1	376	0.0	-100	0.0	-100	0.0	-100
Burdwan	48.1	157	83.1	604	0.0	-100	0.0	-100	0.0	-100

East Midnapore	53.1	96	171.5	472	0.0	-100	0.0	-100	0.0	-100
Hooghly	25.5	34	71.5	438	0.0	-100	0.0	-100	0.0	-100
Howrah	47.8	167	65.3	927	0.0	-100	0.0	-100	0.0	-100
Kolkata	28.6	-6	184.0	868	0.0	-100	0.0	-100	0.0	-100
Murshidabad	18.0	4	24.0	88	0.0	-100	0.0	-100	0.0	-100
Nadia	15.4	48	70.5	317	0.0	-100	0.0	-100	0.0	-100
24 Pargana (N)	45.5	93	101.6	308	0.0	-100	0.0	-100	0.0	-100
Purulia	13.9	-31	107.9	1327	0.0	-100	0.0	-100	0.0	-100
24 Pargana (S)	28.0	-25	133.1	261	0.3	-99	0.0	-100	0.0	-100
West Midnapore	26.4	59	137.2	1114	0.0	-100	0.0	-100	0.0	-100
SHWB										
Cooch Behar	3.7	-87	0.5	-91	6.4	-4	0.0	-100	0.0	-100
Darjeeling	16.9	-8	13.8	57	14.1	85	0.0	-100	0.0	-100
East Sikkim	29.5	181	55.1	276	41.6	1199	0.0	-100	0.0	-100
Jalpaiguri	16.7	-49	29.3	257	6.5	63	0.0	-100	0.0	-100
Malda	4.3	-75	26.5	372	2.8	-44	0.0	-100	0.0	-100
North Dinajpur	31.0	97	9.0	1025	**	**	0.0	-100	0.0	-100
North Sikkim	38.5	4	34.1	0	107.5	851	0.0	-100	0.0	-100
South Dinajpur	6.0	-52	8.2	-9	0.0	-100	0.0	-100	0.0	-100
South Sikkim	9.6	-9	21.4	19	2.2	-31	0.0	-100	0.0	-100
West Sikkim	23.3	-37	27.0	-21	3.2	-72	0.0	-100	0.0	-100
Karnataka										
Coastal Karnataka										
Dakshin Kannada	94.1	97	39.9	-14	28.0	7	2.6	-89	16.5	-16
Udupi	61.6	45	41.6	-5	21.6	-6	5.5	-78	10.3	-27
Uttar Kannada	27.4	-24	65.3	144	12.1	4	0.0	-100	0.0	-100
N I Karnataka										
Bagalkote	19.0	-6	74.1	274	0.0	-100	0.0	-100	0.0	-100
Belgaum	6.7	-73	51.4	185	0.0	-100	0.0	-100	0.0	-100
Bidar	0.1	-99	58.8	250	0.1	-99	0.0	-100	0.0	-100
Bijapur	17.4	-3	45.0	114	1.4	-87	0.0	-100	0.0	-100
Dharwad	15.3	-44	34.2	93	0.0	-100	0.0	-100	0.0	-100
Gadag	12.7	-51	42.8	147	0.0	-100	0.0	-100	0.0	-100
Gulbarga	11.5	-28	37.0	91	2.4	-67	0.0	-100	0.0	-100
Haveri	8.9	-65	44.8	136	0.0	-100	0.0	-100	0.0	-100
Koppal	28.2	50	75.4	297	0.0	-100	0.0	-100	2.2	-68
Raichur	25.7	36	63.7	311	0.0	-100	0.0	-100	0.0	-100
Yadgir	36.2	98	71.2	142	0.0	-100	0.0	-100	0.0	-100
S I Karnataka										
Bangalore Rural	25.5	-13	40.2	49	11.2	-48	0.0	-100	13.0	45
Bangalore Urban	27.6	-35	22.3	-9	10.1	-47	0.0	-100	10.8	4
Bellary	46.3	127	45.6	113	7.6	-38	0.0	-100	1.9	-75
Chamarajnaragar	77.6	128	4.7	-86	10.4	-52	0.2	-99	36.0	181
Chichballapur	37.1	37	33.3	36	6.6	-71	0.0	-100	8.8	4
Chickmagalur	16.2	-54	17.6	-47	5.6	-70	0.6	-97	0.2	-99
Chitradurga	27.5	27	14.0	-26	1.8	-85	0.0	-100	1.6	-82
Davangere	23.2	5	34.9	70	1.1	-92	0.0	-100	0.0	-100
Hassan	34.2	9	15.3	-54	3.1	-84	2.9	-82	4.7	-59
Kodagu	80.2	94	13.5	-66	9.1	-58	3.8	-83	1.3	-90

Kolar	26.3	4	26.4	2	3.5	-83	0.0	-100	16.9	49
Mandya	50.4	69	26.8	-7	7.0	-62	1.2	-92	15.6	79
Mysore	80.1	145	12.0	-62	8.1	-51	1.0	-92	15.0	25
Ramnagara	55.2	63	39.1	33	6.4	-69	0.0	-100	9.1	1
Shimoga	39.2	55	32.3	34	9.3	-19	0.0	-100	1.4	-90
Tumkur	44.3	76	27.9	5	4.3	-76	0.0	-100	6.4	-19
Kerala										
Alappuzha	100.2	28	11.6	-84	40.3	-43	45.3	-12	26.7	-30
Kannur	107.2	104	75.0	58	15.2	-59	0.0	-100	5.5	-67
Ernakulam	131.7	102	72.1	4	60.8	12	28.1	-31	64.6	122
Idukki	111.8	24	40.0	-38	33.0	-51	40.4	-22	28.1	-9
Kasaragod	59.1	25	30.8	-36	7.4	-75	0.0	-100	6.5	-66
Kollam	158.8	74	31.3	-62	36.3	-59	65.4	3	44.9	-1
Kottayam	214.1	215	35.1	-53	41.2	-42	58.8	19	52.9	68
Kozhikode	62.6	16	17.7	-73	27.6	-42	1.0	-97	41.4	66
Malappuram	86.4	17	49.9	-11	68.5	25	16.0	-51	21.8	-23
Palakkad	139.1	119	56.0	-8	24.9	-56	4.3	-88	14.5	-42
Pathanamthitta	279.2	139	2.7	-97	80.9	8	79.0	31	74.9	41
Thiruvananthapuram	114.7	56	6.7	-89	34.4	-57	113.2	132	32.4	-15
Thrissur	153.3	121	113.7	75	37.1	-28	1.5	-97	50.0	110
Wyanad	96.2	75	30.6	-36	18.7	-30	0.2	-99	1.8	-90
Tamil Nadu										
Ariyalur	23.5	-55	15.5	-65	28.3	217	13.3	-79	89.5	82
Chennai	128.7	50	15.9	-79	0.0	-100	0.0	-100	127.9	63
Coimbatore	107.9	152	10.3	-75	0.6	-89	7.9	-79	27.6	-10
Cuddalore	43.2	-32	10.9	-82	21.7	39	11.8	-85	91.6	25
Dharmapuri	56.9	39	33.3	-6	2.3	-54	0.0	-100	79.1	291
Dindigul	67.7	30	10.7	-75	10.8	27	0.6	-99	17.6	-44
Erode	84.9	104	6.7	-82	0.2	-96	1.8	-94	35.8	78
Kanchipuram	51.2	-26	36.6	-41	0.2	-99	0.0	-100	77.8	46
Kanyakumari	56.7	-21	10.5	-81	0.1	-99	75.7	26	66.2	61
Karikal	48.1	-28	17.8	-84	18.9	-42	2.1	-98	159.6	85
Karur	31.4	-27	7.0	-77	6.5	-10	0.0	-100	59.0	188
Krishnagiri	43.5	14	19.7	-39	0.3	-90	0.0	-100	55.7	238
Madurai	116.8	97	18.2	-59	3.6	-47	0.9	-98	6.6	-75
Nagapattinam	53.7	-31	14.7	-79	50.6	153	32.4	-71	143.0	46
Namakkal	69.7	80	11.6	-64	0.8	-88	0.0	-100	47.5	167
Nilgiris	83.7	51	46.2	-19	1.1	-86	4.1	-93	64.9	81
Perambalur	57.0	6	22.5	-40	9.0	27	0.8	-98	117.1	236
Puducherry	49.2	-36	7.3	-92	0.4	-98	1.7	-98	126.0	64
Pudukottai	39.4	-12	11.3	-68	5.6	-8	7.2	-81	17.1	-52
Ramanathapuram	74.4	34	0.0	-100	1.9	-78	13.3	-73	3.1	-91
Salem	59.0	30	27.0	-50	4.0	-22	0.0	-100	55.7	101
Sivaganga	114.6	129	2.0	-96	4.3	-46	19.1	-54	0.6	-98
Thanjavur	50.0	-2	14.5	-70	34.2	183	8.6	-84	56.0	24
Theni	107.7	127	3.8	-92	6.6	3	4.5	-89	19.8	-25
Tirunelveli	49.4	-3	2.0	-96	14.9	64	11.8	-80	64.2	46
Tirupur	77.9	82	0.0	-100	0.0	-100	0.0	-100	21.5	3
Tiruvallur	65.9	15	44.8	-21	0.0	-100	1.0	-99	81.2	47

Tiruvannamalai	37.1	-29	9.0	-77	0.0	-100	0.0	-100	91.1	144
Tiruvarur	50.7	-19	2.2	-96	21.8	51	15.7	-79	64.7	-12
Toothukudi	56.2	14	5.5	-87	7.3	-19	30.4	-34	36.4	-8
Trichy	37.1	-16	13.1	-65	15.9	141	4.0	-90	94.9	244
Vellore	35.5	-4	27.4	-13	0.0	-100	0.0	-100	38.5	47
Villupuram	44.4	-13	22.7	-48	2.7	-72	1.3	-98	99.4	114
Virudhunagar	101.8	94	0.8	-98	1.1	-89	4.4	-90	15.6	-56
Andhra Pradesh										
Coastal Andhra Pradesh										
East Godavari	127.4	156	293.9	965	2.0	-92	0.0	-100	0.0	-99
Guntur	74.8	96	196.6	639	9.1	-69	0.0	-100	0.2	-99
Krishna	72.5	69	221.6	783	1.3	-96	0.0	-100	0.0	-100
Nellore	143.4	78	59.1	-15	48.8	-49	0.1	-99	87.9	43
Prakasam	102.7	127	189.3	348	9.4	-79	0.0	-100	3.7	-84
Sirkakulam	152.0	198	366.6	845	0.0	-100	0.0	-100	0.0	-100
Visakhapatnam	104.4	107	280.1	900	0.0	-100	0.0	-100	0.0	-100
Vizianagram	86.2	66	219.4	760	0.0	-100	0.0	-100	0.0	-100
West Godavari	87.6	88	173.8	506	1.3	-95	0.0	-100	0.1	-99
Telangana										
Adilabad	2.8	-87	30.2	144	0.0	-100	0.0	-100	0.0	-100
Hyderabad	26.5	39	110.7	492	0.0	-100	0.0	-100	0.0	-100
Karimnagar	7.0	-64	99.8	540	0.0	-100	0.0	-100	0.0	-100
Khammam	21.7	15	110.2	698	0.0	-100	0.0	-100	0.0	-100
Mehabubnagar	33.9	108	151.0	1127	0.0	-100	0.0	-100	0.0	-100
Medak	9.2	-48	84.7	392	0.0	-100	0.0	-100	0.0	-100
Nalgonda	42.9	108	237.3	1412	0.0	-100	0.0	-100	0.0	-100
Nizamabad	3.7	-83	38.8	111	0.0	-100	0.0	-100	0.2	-93
Rangareddy	22.6	43	116.7	627	0.7	-90	0.0	-100	0.0	-100
Warangal	12.1	-26	149.3	845	16.4	52	0.0	-100	0.0	-100
Rayalaseema										
Anantapur	31.0	48	31.8	83	3.4	-79	0.0	-100	0.8	-89
Chittoor	63.8	62	50.8	37	17.3	-58	0.0	-100	39.6	40
Cuddapah	94.3	178	36.2	37	7.0	-76	0.0	-100	12.6	-8
Kurnool	44.5	106	52.4	229	4.9	-60	0.0	-100	0.0	-100

	(27% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-27 to -59%) deficient rainfall	**	Data not available

Annexure III List of Varieties

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.

Garlic: Phawari, Rajalbadi, Jamnagar, G-282.

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

Potato: Kufri Chandramukhi, Kufri Chamatkar, Kufri Jyoti, Kufri Sinduri and Kufri Alankar.

West Bengal

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 Bhagirothi (RW-351) etc.

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

Onion: Rupsa, Sukhsagar.

Jharkhand

Potato: Kufri Ashok, Kufri Kanchan, Kufri Pukhraj, Kufri Pushkar, Kufri Lalima.

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

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

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

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

Wheat: Irrigated varieties - K.-9107 or Birsa Genhu-3; unirrigated varieties - H.D.R.-77, K.-8027, C.-306, or Birsa Genhu-3.

Chick Pea: B.G.-372, B.G.-256, K.W.R.-108, Pant G.-186, Pant G. -114 and for Kabuli gram are H.K.-94-134, B.G.-1053, B.G.-1003.

Barley: Jyoti, Ratna, D.L.-36, B.R.-32 (all irrigated condition) and B.R.-31, K.-125 (unirrigated condition).

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 Pukhraj, 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.

Wheat: HD 2733, HD 2824, PBW 343, PBW 443, UP 262, RW 346, HP 1761, HP 1731, K 9107.

Assam

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

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

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, T-136, Bonneville.

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, Kufri Chipsona and Kufri Jyoti.

Maharashtra

Wheat (Late sown): NIAW – 34, AKAW-4627 (for Pune), Niphad 34, Trimbak NACS-6122, NIAW-294 and Tapowan in Western Ghat region, AKW – 1071, AKW 4627 in East Vidarbha, AKW 1071, Washim 1472 and Vimal for Yavatmal districts, HD-2189, Parbhani 51, Lokwan and Trimbak in Marathwada.

Linseed: NL-97, PKV NL-260 in East Vidarbha.

Gujarat

Wheat: GW-366, GW-496, GW-273, Lok-1, GW-322, GW-503.

Chick pea (unirrigated): Gujarat Chana-2.

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

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

Cauliflower: Pusa Early, Pusa Dipali, Pusa Kartiki, Early Kuvari for early maturity, Pusa Synthetic, Early Snowball, Snowball for medium duration.

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

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.

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

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

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: Lakshmi (ICCPL85063), LRG-38, LRG-41, WRG-27

Tamil Nadu

Groundnut: TMV-13 or CO-6

Gingelly: TMV-7 or SVPR-1

Chickpea: CO-4

Jammu & Kashmir

Mustard :- Pusa Sarson-25, Pusa Sarson-26, PusaAgrni, 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, chienesse 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, RAJ 4120, HI 8381, HI 8498, HI 1544, HI-1500, HI-1531, 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: RS-1,RZ-19, RZ-209, RZ-223, GC-4, Gujarat Jira-1, Gujarat Jeera-2, Gujarat jira-3

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, Pant G-186, BG-56, Uday etc.

Gram: Kabuli Chana are BG-1003, BG-1053

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, VL-421, HS-240, VL-616, HS-277, VL-829, HD 2687, HD 2329, PBW 343, PBW-550, PBW-502, Raj 3077, UP 2338, UP-1109, UP-2382, UP-2584, UP-2572, UP-2554 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.

Onion : Pusa Red, Pusa Ratnar, Nasik Red, Pusa Madhavi, Punjab Round Red 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, 2338, Pusa- 256, KWR- 108, K-850, KGD- 1168, PVW- 343, 443, WH- 542, K- 9107, 9006, 9423,307, Raj-3077.

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.

Berseem : VL- 01, 10, Maskavi

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

Tomato: (TH-1/TH-2312/TH 802/Punjab NR 7/Punjab Tropic/ Pb Chhuara/Punjab kesri)

Chilli: CH-1, CH-3, Punjab Surkh, Punjab Tej, Punjab Sindhuri or Punjab Guchhedar.

Delhi

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

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

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.

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
