

National Agromet Advisory Service Bulletin

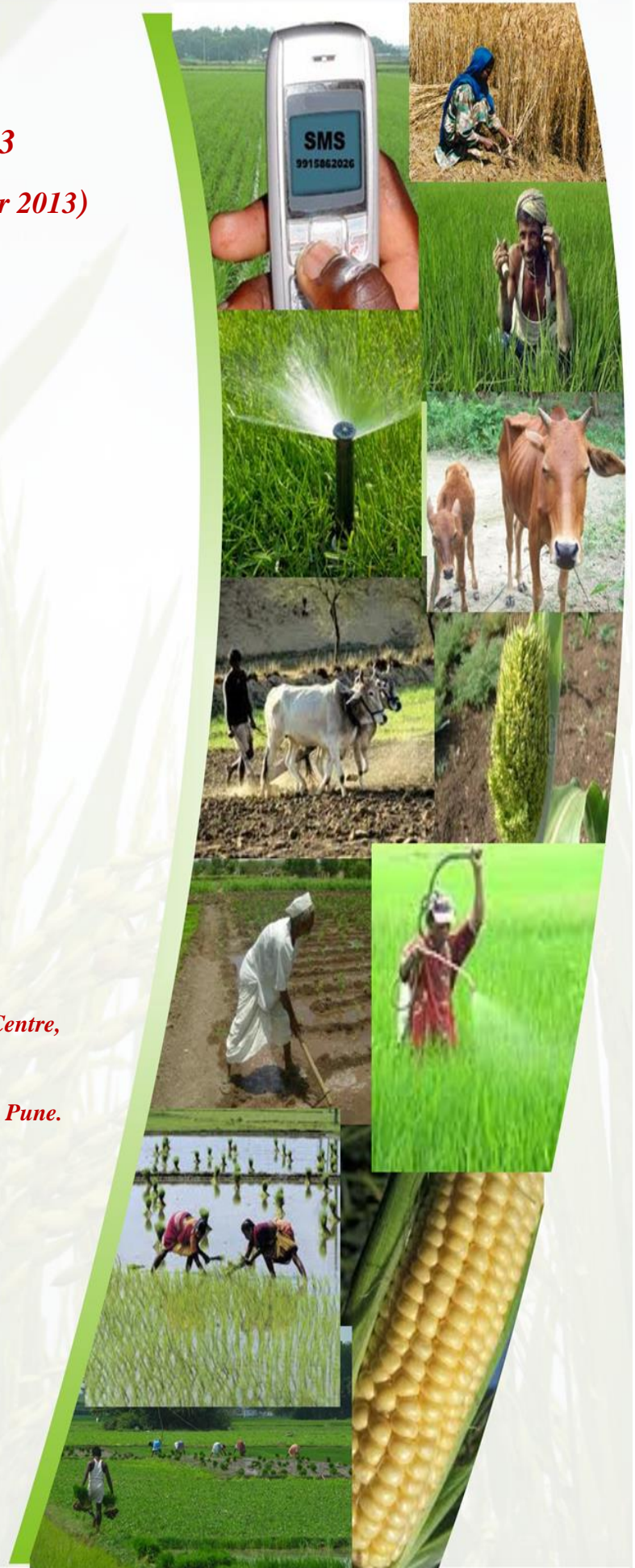
Friday 13th December 2013

(For the period 13th to 17th December 2013)

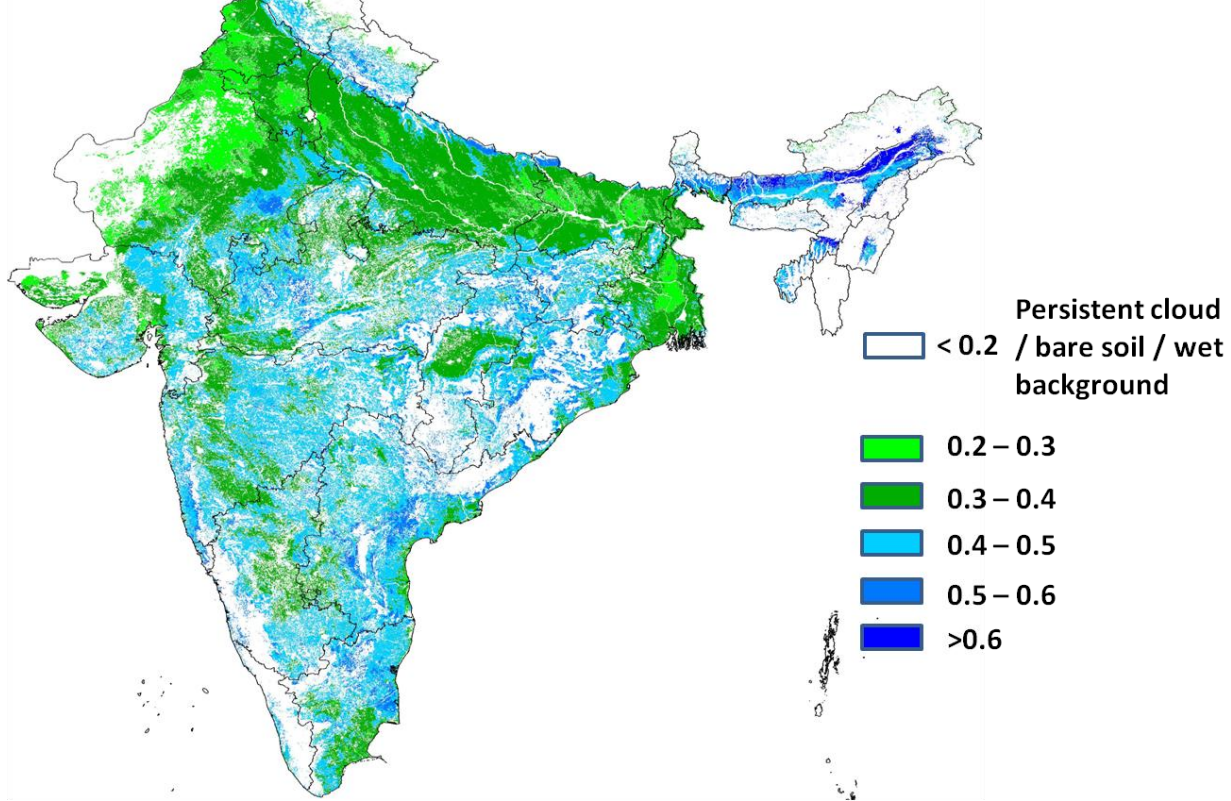


Issued by

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



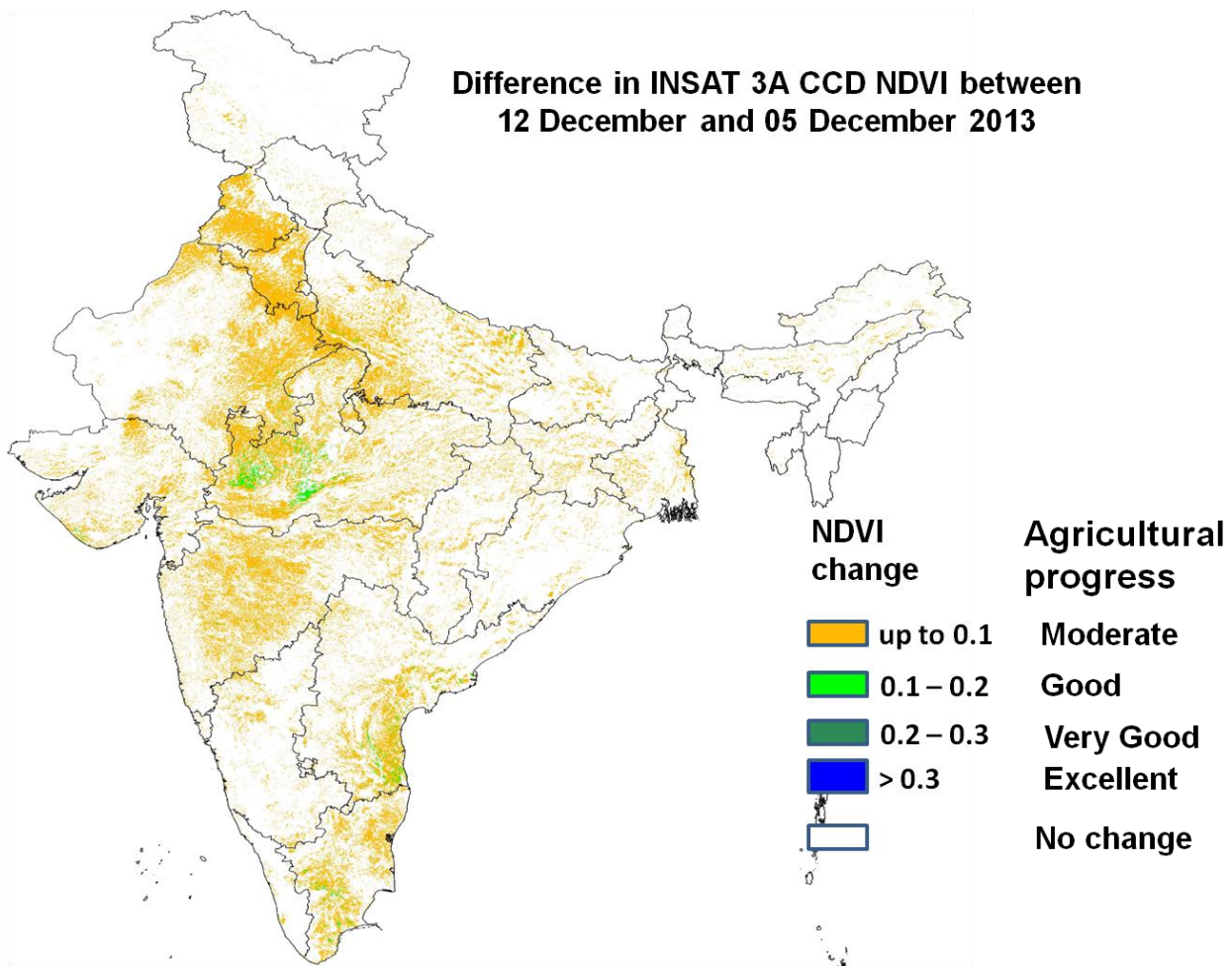
**INSAT 3A CCD NDVI Composite from 06
December and ending on 12 December
2013 over Agricultural region**



Source: SAC, Ahmedabad

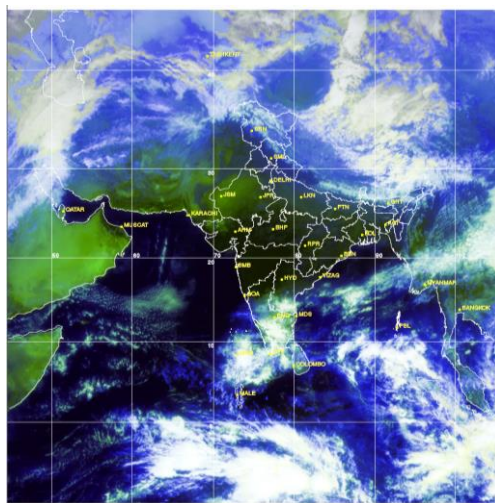
Agricultural conditions is in general very good over few pockets of western Rajasthan, pockets of central UP and north UP and pockets of AP and west MP as NDVI value range between 0.5 to 0.6. Agricultural conditions is good over UP, Punjab, Rajasthan, Bihar, south-west Chhattisgarh, eastern pockets of MP, and pockets of central MP, north and central Gujarat, eastern Maharashtra, pockets of north Karnataka, north-eastern AP, parts of Odisha as NDVI vigour showed the range from 0.3 to 0.4 and few upto 12th December 2013. The NDVI remain low within range of 0.2 to 0.3 over states of south-west Punjab, central Haryana, interior of Rajasthan and central Bengal.

**Difference in INSAT 3A CCD NDVI between
12 December and 05 December 2013**



Source: SAC, Ahmedabad

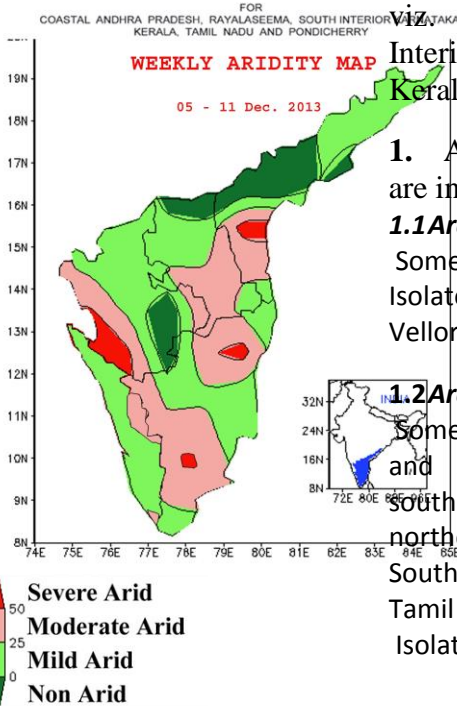
Agricultural progress between 12th December and 5th December 2013 was found to be good over few pockets of western and central MP and coastal AP. Agricultural progress was moderate over Punjab, Haryana, UP, Rajasthan, part of Bihar, Gujarat, and other states. As compare to previous week this week showed the *rabi* crop activities were in full swing.



Satellite image dated 13.12.2013, 0600 UTC

Aridity Anomaly Map for the week ending 11.12.2013

भारत मौसम विज्ञान विभाग
अनाकृष्टि अनुसंधान अनुभाग - पुणे
INDIA METEOROLOGICAL DEPARTMENT
DROUGHT RESEARCH UNIT - PUNE
उत्तर प्रदेश, राजस्थान, दक्षिण आन्ध्र प्रदेश,
केरल, तमिलनाडु और पोंडिचेरी के लिए



During the week (05 to 11 December, 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:

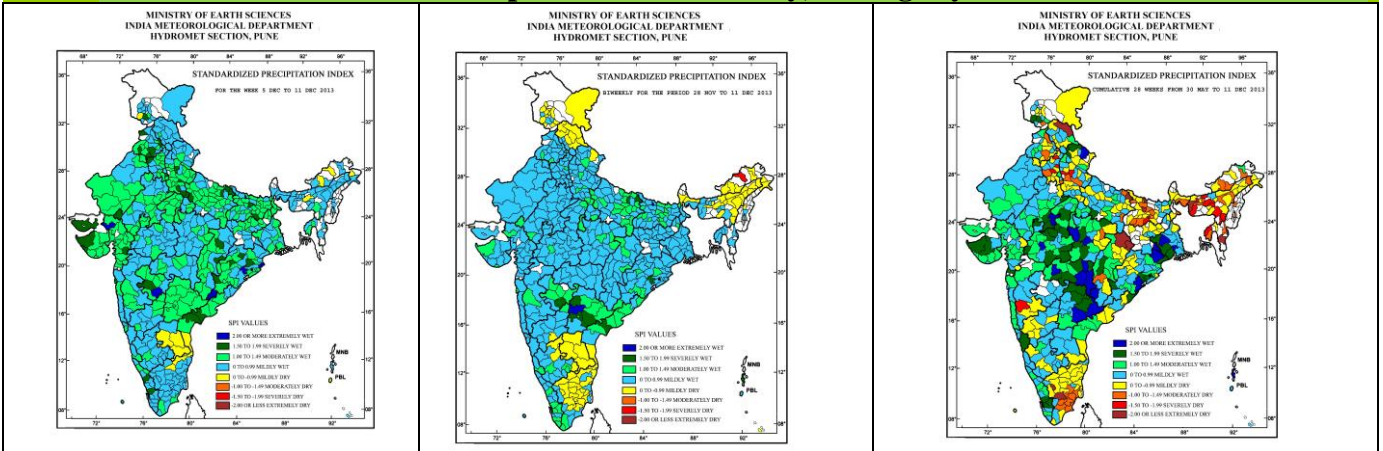
1.1 Areas affected by severe arid conditions :

Some southwestern parts of South Interior Karnataka. Isolated areas around Ongole (Coastal Andhra Pradesh), Vellore and Madurai (Tamil Nadu & Pondicherry).

1.2 Areas affected by moderate arid conditions :

Some southern parts of Coastal Andhra Pradesh, central and southern parts of Rayalaseema adjoining some southeastern parts of South Interior Karnataka and some northern parts of Tamil Nadu; some western parts of South Interior Karnataka, western and southern parts of Tamil Nadu and adjoining some eastern parts of Kerala. Isolated area around Thiruvanthapuram (Kerala).

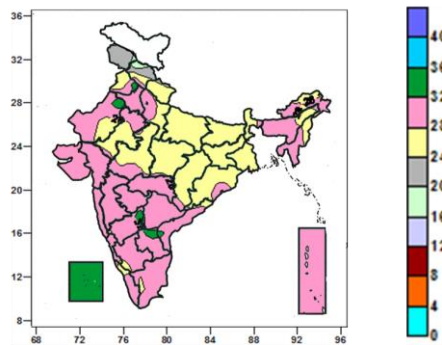
Standardised Precipitation Index weekly, fortnightly and seasonal



<p>Weekly SPI values:</p> <ul style="list-style-type: none"> Extremely wet/severely wet conditions over many parts of Saurashtra & Kutch, Punjab and some parts Jammu & Kashmir, Uttar Pradesh, Bihar, Orissa, Chattisgarh, Marathwada, North Coastal Andhra Pradesh and Kerala. 	<p>Cumulative SPI values (bi-weekly):</p> <ul style="list-style-type: none"> Extremely wet/severely wet conditions over many parts of Telangana, some parts of East Uttar Pradesh, Marathwada, Coastal Andhra Pradesh and Odisha. Extremely dry/severely dry conditions were observed over Some parts of Arunachal Pradesh. 	<p>Cumulative SPI values of 28 weeks: (i.e. since the beginning of southwest monsoon.)</p> <ul style="list-style-type: none"> Extremely wet/severely wet conditions over many parts of North Andhra Pradesh, Madhya Pradesh, Vidarbha, Gangetic West Bengal and some part of Jammu & Kashmir, Uttarakhnad, Marathwada, Saurashtra & Kutch, East Uttar Pradesh, East Rajasthan, Odisha, Chattisgarh, Coastal Karnataka and Kerala. Extremely dry/ severely dry conditions were observed over many parts of Haryana, West Uttar Pradesh, Bihar some parts of Himachal Pradesh, Punjab, East Uttar Pradesh, Jharkhand, North East India, Chattisgarh, Tamil Nadu, Madhya Maharashtra, East Madhya Pradesh.
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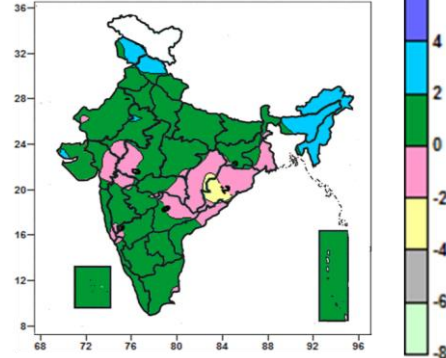
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 11.12.2013

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 11.12.2013



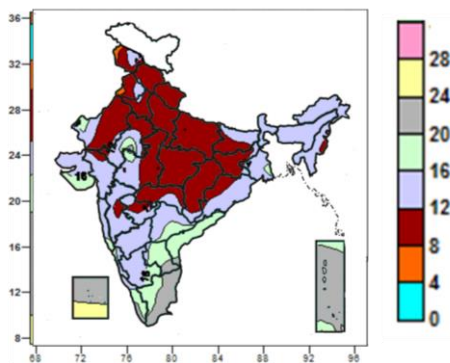
- 32 to 36 $^{\circ}\text{C}$ over many parts of Lakshadweep, some parts of Punjab, West Rajasthan, North Interior Karnataka, Raylaseema.
- 24 to 32 $^{\circ}\text{C}$ over entire country (except many parts of Jammu & Kashmir, Himachal Pradesh, Lakshadweep, some parts of Punjab, Uttarakhand, West Rajasthan, North Interior Karnataka, Raylaseema)
- 16 to 24 $^{\circ}\text{C}$ over many parts of Jammu & Kashmir, Himachal Pradesh, some parts of Uttarakhand.

Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 11.12.2013



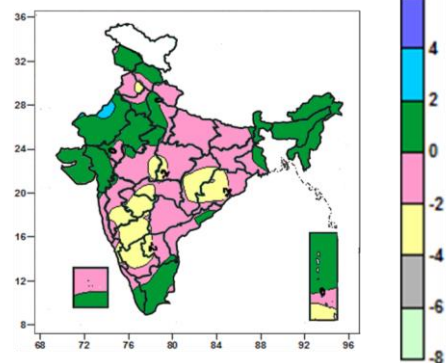
- 2 to 4 $^{\circ}\text{C}$ over many places Jammu & Kashmir, Himachal Pradesh, North East India, some parts of East Rajasthan, Kutch.
- -2 to 2 $^{\circ}\text{C}$ over entire country (except over many places Jammu & Kashmir, Himachal Pradesh, North East India, some parts of East Rajasthan, Kutch, Odisha, Chattisgarh.
- -4 to -2 $^{\circ}\text{C}$ over some parts of Odisha, Chattisgarh.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 11.12.2013



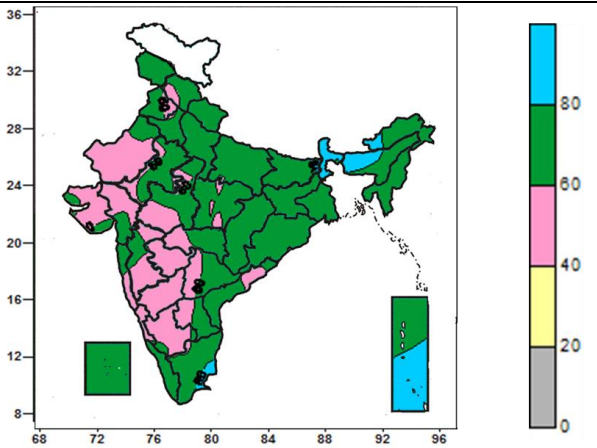
- 20 to 28 $^{\circ}\text{C}$ over many parts of Coastal Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, some parts of Kerala.
- 12 to 24 $^{\circ}\text{C}$ over rest parts of the country except many parts of North India, Central India, Bihar, Jharkhand, Vidarbha, Coastal Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands some parts of Gujarat, Madhya Maharashtra, Marathwada, Odisha, Kerala, Lakshadweep.
- 8 to 12 $^{\circ}\text{C}$ over many parts of North India, Central India, Bihar, Jharkhand, Vidarbha, some parts of Gujarat, Madhya Maharashtra, Marathwada, Odisha.
- 4 to 8 $^{\circ}\text{C}$ over some parts of Jammu & Kashmir, Punjab.

Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 11.12.2013



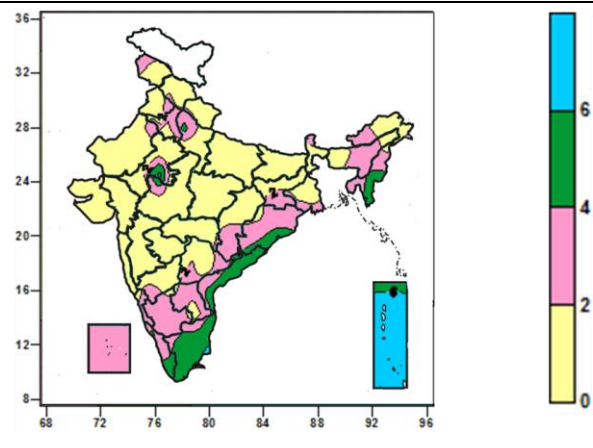
- 2 to 4 $^{\circ}\text{C}$ over some parts of West Rajasyhan.
- -2 to 2 $^{\circ}\text{C}$ over all parts of country (except many parts of North & South Interior Karnataka, Chattisgarh, Odisha, Madhya Maharashtra, Marathwada, some parts of Punjab, West Rajasyhan Madhya Pradesh, Vidarbha, Raylaseema, Coastal Karnataka, Andhaman & Nicobar Islands).
- -4 to -2 $^{\circ}\text{C}$ over many parts of North & South Interior Karnataka, Chattisgarh, Odisha, Madhya Maharashtra, Marathwada, some parts of Punjab, Madhya Pradesh, Vidarbha, Raylaseema, Coastal Karnataka, Andhaman & Nicobar Islands.

**Relative Humidity (%) over India for the week ending
11.12.2013**



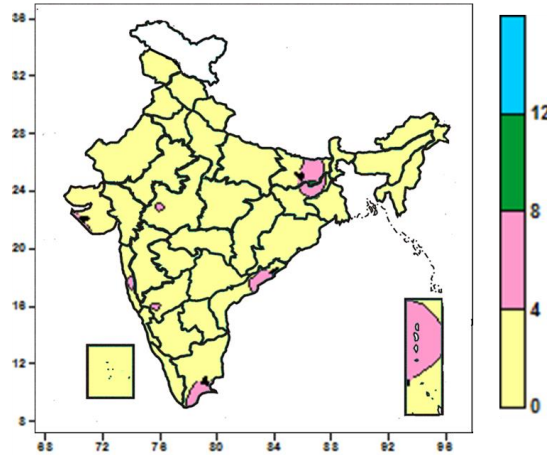
- 80 to 100% over many parts of Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, some parts of Arunachal Pradesh, Assam & Meghalaya, Tamil Nadu.
- 40 to 80% over entire country (many parts of Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, some parts of Arunachal Pradesh, Assam & Meghalaya, Tamil Nadu).

**Cloud amount (okta) over India for the week ending
11.12.2013**



- 6 to 8 okta many places over Andaman & Nicobar Islands.
- 4 to 6 okta over many parts of Tamil Nadu, Coastal Andhra Pradesh, some parts of West Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Coastal Odisha, Mizoram, Tripura, Kerala, Andaman & Nicobar Islands.
- 0 to 4 okta over entire country (over many parts of Tamil Nadu, Coastal Andhra Pradesh, Andaman & Nicobar Islands, some parts of West Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Coastal Odisha, Mizoram, Tripura, Kerala).

Wind speed (knots) over India for the week ending 11.12.2013



- 4 to 8 knots over many places over Andaman & Nicobar Islands, some places of Bihar, Jharkhand, West Madhya Pradesh, Saurashtra, North Interior Karnataka, Coastal Andhra Pradesh, Tamil Nadu.
- 0 to 4 knots over entire country (except Andaman & Nicobar Islands, some places of Bihar, Jharkhand, West Madhya Pradesh, Saurashtra, North Interior Karnataka, Coastal Andhra Pradesh, Tamil Nadu).

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 16th December, 2013)

- Rain/thundershowers would occur at many places over Kerala & Lakshadweep during next 24 hours and decrease thereafter
- Rain/thundershowers would occur at few places over Tamilnadu during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands.
- Rain/thundershowers would occur at isolated places over south interior Karnataka, Assam & Meghalaya and Arunachal Pradesh during next 24 hours and mainly dry thereafter.
- Rain/thundershowers would occur at isolated places over Rayalaseema and south coastal Andhra Pradesh during next 24 hours and mainly dry thereafter.
- Rain/thundershowers would occur at isolated places over coastal Karnataka..
- Weather would be mainly dry/dry over rest of the country.
- Minimum temperatures may fall by about 2°C over some parts of northwest and adjoining central & east India during next 48 hours.

Weather Warning during next 3 days

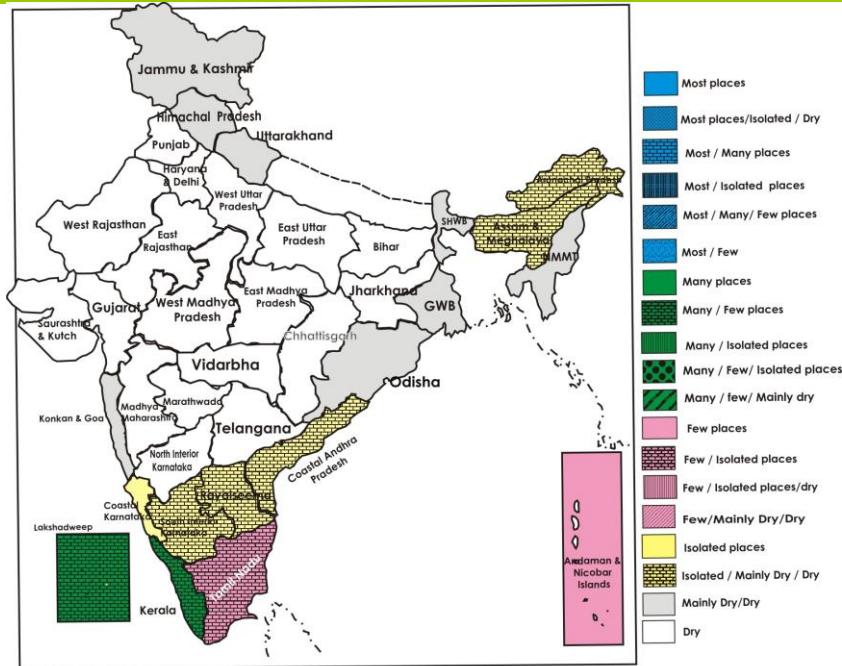
- 13 December:** Isolated heavy rain would occur over Lakshadweep. Fishermen along and off Lakshadweep & Kerala coasts are advised not to venture into the sea. Cold wave conditions would occur over interior Odisha.
- 14 December:** Cold wave conditions would occur over interior Odisha.
- 15 December:** No weather warning.

Weather Outlook for subsequent 4 days from 16th to 20th December, 2013

- Rain/thundershowers would occur at many places over Andaman & Nicobar Islands and Lakshadweep.
- An easterly wave would affect extreme south peninsular India from 15th onwards.
- A fresh western disturbance would move forward and approach Jammu & Kashmir from 16th onwards and rain/ snow would occur at isolated places.
- Weather would be mainly dry/dry over rest of the country.

Weather Forecast Map

(Valid upto 0830 hours of 16th December, 2013)



Salient Advisories

North Region

- In Western Zone of Punjab, undertake sowing of short duration varieties of wheat. The young trees as well as the newly planted fruit trees should be covered with thatches or kullies made of sarkanda or farm waste materials to save them from frost. Also save the sugarcane crop from frost by applying irrigation and cover the young fruit plants and vegetable crops by providing polythene sheet/Sarkanda/Kahi/ rice straw to save the plants from frost.
- In Intermediate Zone of Jammu & Kashmir, complete sowing of vegetables *viz.* radish, carrot, turnip, garlic, peas etc., planting of potato and transplanting of onion. Continue hoeing and thinning in mustard and pulse crops.
- In Sub-Tropical Zone of Jammu & Kashmir, continue transplanting of onion. Complete hoeing and weeding in gram in order to avoid moisture loss and apply irrigation thereafter.
- In Hill Zone of Uttarakhand, complete planting of onion and potato. In Sub humid Sub tropic of Uttarakhand, complete sowing of wheat, planting of late potato and continue sowing of barseem. Maintain proper moisture in toria, chickpea and lentil by applying light irrigation and apply first irrigation in late sown wheat crop at crown root initiation stage. Apply light & frequent irrigation in standing crops in the evening to protect crops from cold injury. Also arrange for smoking around the field during night.
- In Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, complete sowing of late sown varieties of wheat and pea. Complete transplanting of onion and undertake planting of potato. Apply light and frequent irrigation in standing crops in the evening hours to protect crops from cold injury. Also arrange for smoking around the field during night.
- In Flood Prone Eastern Plain Zone of Rajasthan, continue sowing of gram, lentil, planting of potato and late sown varieties of mustard. Apply irrigation in late sown wheat at Crown Root Initiation stage and 35 days old mustard crops.
- In East Uttar Pradesh, complete sowing of wheat, barley, gram, lentil and pea. Continue sowing of mustard, pea, lentil, linseed, chickpea and late sown varieties of wheat. Also undertake the intercultural operations in maize and apply irrigation to wheat crop at CRI stage and barley at tillering stage.
- In Western Zone of Haryana, complete sowing of late varieties of wheat and apply the irrigation to timely sown wheat crop.
- In Delhi, apply irrigation in timely sown wheat crop which is about 21-25 days old and are in the CRI stage. Transplant mature seedlings of tomato, cauliflower, cabbage, knolkhol and broccoli in the raised bed. Undertake sowing of late sown varieties of wheat.

South Region

- In Krishna Godavari Zone of Andhra Pradesh, continue sowing of *rabi* pulses and undertake picking of cotton.
- Continue sowing of *rabi* groundnut and maize in Anantpur district and rice in Kurnool district of Scarce Rainfall Zone of Andhra Pradesh.
- Continue sowing of *rabi* crops like rice, Bengal gram, maize and continue picking of cotton in Northern Telangana Zone of Andhra Pradesh
- Continue harvesting of groundnut, ragi, red gram and fodder maize in clear weather in the Eastern Dry Zone of Karnataka.
- In the North Dry Zone of Karnataka, complete sowing of wheat and continue harvesting of onion and maize.
- Continue transplanting of *rabi* rice in the Coastal Zone of Karnataka
- In the Problem Area Zone in Kerala, continue sowing of *puncha* rice and planting of winter vegetables in the Problem Area Zone in Kerala
- The expected weather having high cloud cover and humidity is conducive for the incidence of thrips in chillies and rice, stem borer in maize, boll worms in cotton and cut worms in green gram in the South Zone of Tamil Nadu. Undertake plant protection measures on a non-rainy day.

East Region

- In East and South Eastern Coastal Plain Zone of Odisha, continue sowing of sesame, sunflower and transplanting of cole crops. Complete sowing of *rabi* pulses of green gram and black gram.
- In North Eastern Plateau Zone of Odisha, continue sowing of wheat and sunflower and planting of potato followed by light irrigation.
- In Laterite and Red soil Zone of West Bengal, undertake nursery bed preparation of *boro* rice and land preparation for sowing of wheat, mustard and planting of potato. Also undertake sowing of seasonal flower like marigold, verbena, jarberra, jinia etc.
- In New Alluvial Zone of West Bengal, complete harvesting of *aman* rice and after harvesting of *aman* rice, undertake sowing of mustard. Complete planting of potato within middle of December. For timely sown wheat crop, at 21 days after sowing, thinning and other intercultural operation should be done. Also continue transplanting of cauliflower, cabbage, tomato and brinjal.
- In North East Alluvial Plain Zone of Bihar, continue harvesting of sugarcane, ginger and turmeric. Continue sowing of wheat and maize. Start transplanting of winter vegetables like cauliflower, cabbage, chillies, tomato, brinjal etc. Undertake planting of autumn season sugarcane. Undertake nursery sowing of *boro* rice.

- In Western Plateau Zone of Jharkhand continue sowing wheat, followed by light irrigation. Apply urea @ 50 kg per acre after earthing up to one month old potato crop. Undertake inter culture operations in pulses and oilseed crops and spray Monocrotophos @ 2 ml per litre of water or Emidachlorpyrd @ 1 ml per litre of water to control aphids.
- 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.

Northeast Region:

- In Assm, continue nursery bed preparation and sowing of *boro* rice.
- In Central Brahmaputra Valley Zone of Assam, continue sowing of wheat, transplanting of cole crops and planting of potato. Continue harvesting of matured *sali* rice and continue sowing of *rabi* pulses.
- In Hill Zone of Assam, complete transplanting of winter vegetables and continue planting of potato. Continue harvesting of matured *Sali* rice and undertake picking of cotton.
- In Sub Tropical Hill Zone of Arunachal Pradesh, apply irrigation in mustard at flowering stage.
- In Meghalaya, complete transplanting of cauliflower, cabbage and broccoli. 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. Continue land preparation for sowing of *rabi* maize.
- In Mild Tropical Hill Zone of Mizoram, continue transplanting of cole crops and tomato.

West Region

- In Konkan, continue intercultural operations and application of fertilizers in vegetables and mango, cashew and sapota orchards. Continue preparation of raised nursery bed for *rabi* rice.
- In North Madhya Maharashtra, as minimum temperature is likely to prevail below normal, apply light and frequent irrigation to banana and fig and drip irrigation in grape orchards in the evening. Protect banana & fig orchards by smudging (make smoke during night time). Apply mulch of crop residue and other plant waste product. Complete picking of fully opened cotton bolls during morning hours in North Madhya Maharashtra.
- In Marathwada, as night temperature is prevailing below normal (around 10°C), give light and frequent irrigation to banana and fig orchards in the evening. Also make smoke in the orchards during night time. Apply mulch of crop residue and other plant waste product. As there is no significant rain during last few weeks, apply irrigation to sugarcane, wheat, gram, vegetable crops, banana, jowar and maize. Complete picking fully opened cotton bolls during morning hours.
- In Vidarbha, continue intercultural operation, application of fertilizers in safflower, vegetables, wheat, linseed and orchards. As there is no significant rain during last few weeks, apply irrigation to early sown safflower, wheat, vegetable crops and orchards. Start preparation of nursery bed for sowing of summer rice. Complete late sowing of irrigated wheat. Complete picking fully opened cotton bolls during morning hours.
- In Middle Gujarat Zone, apply irrigation in early sown *rabi* crops. Also undertake sowing of coriander and cumin.
- In Bhal and Coastal Zone of Gujarat, carryout hand weeding operation, apply regular irrigation and second split doze of Nitrogen fertilizer @ 25 kg/ha in castor at 70 DAS. Apply irrigation in cotton crop at 15- 20 days interval according to the type of soil.

Central Region

- In Jhabua Hill Zone of Madhya Pradesh, continue sowing of late sown wheat and winter maize utilising the residual soil moisture.
- In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, continue sowing of wheat and gram under irrigated conditions. Undertake weeding and intercultural operations after 20-25 days after sowing in wheat, chickpea, mustard and lentil, nursery raising of cabbage, cauliflower, onion and sowing of carrot, coriander and fenugreek. Apply irrigation in tomato and brinjal as per requirement and harvest the matured fruits.
- In Northern Hill Zone of Chattishgarh, continue sowing of wheat, undertake weeding in gram, pea and intercultural operations in vegetables. Continue transplanting of cabbage, cauliflower, tomato and onion.
- In Chattisgarh Plain Zone, continue sowing of gram and continue sowing of wheat and provide irrigation to vegetable crops.
- In Bastar Plateau Zone of Chhattisgarh, continue harvesting of rice, continue sowing of wheat with irrigation facility. After harvesting of rice, continue sowing of linseed, safflower, pulse and pea. Continue transplanting of onion.

Detailed Zonewise Agromet Advisories

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



Wheat

Sugarcane

Transplanting of rice

- **Realised Rainfall:** Weather remained mainly dry over the region during the week.
- **Weather Forecast:** Weather would be mainly dry/dry over the region. Minimum temperature may fall by about 2°C over Northwest India during next 48 hours.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain / snow would occur at isolated places over Jammu and Kashmir.

Advisories :

- As dry weather prevailed during last two weeks and also likely to prevail during next three days, apply irrigation in the early sown *rabi* crops in the States of the region.
- In Western Zone of Punjab, undertake sowing of short duration varieties of wheat. The young trees as well as the newly planted fruit trees should be covered with thatches or kullies made of sarkanda or farm waste materials to save them from frost. Also save the sugarcane crop from frost by applying irrigation and cover the young fruit plants and vegetable crops by providing polythene sheet/Sarkanda/Kahi/ rice straw to save the plants from frost.
- In Undulating Plain Zone of Punjab, complete sowing of recommended late sown varieties of wheat. Harvest early maturing varieties of sugarcane. Also, in Central Plain Zone of Punjab, it is the right time for sowing of late sown short duration varieties of wheat and complete sowing of mustard crop. Undertake nursery raising of chilli, tomato and brinjal and apply light and frequent irrigation to the newly planted fruit crops like guava, citrus, papaya, mango and litchi to protect from the cold.
- In Intermediate Zone of Jammu & Kashmir, complete sowing of vegetables *viz.* radish, carrot, turnip, garlic, peas etc., planting of potato and transplanting of onion. Continue hoeing and thinning in mustard and pulse crops.
- In Valley Temperate Zone of Jammu & Kashmir, complete sowing of spinach, methi, planting of garlic and transplanting of onion seedlings. For brown sarson and pulses, weeding and thinning operations should be continued.
- In Sub-Tropical Zone of Jammu & Kashmir, continue transplanting of onion. Complete hoeing and weeding in gram in order to avoid moisture loss and apply irrigation thereafter.
- In Bhabar and Tarai Zone of Uttarakhand, complete sowing of wheat. Continue weeding & thinning operations in standing crops like pea, chickpea, rajmash, garlic, onion nursery etc. for their better growth. Mulching may be done by putting grass in between rows to conserve soil moisture.
- In Hill Zone of Uttarakhand, complete planting of onion and potato. In Sub humid Sub tropical zone of Uttarakhand, complete sowing of wheat, planting of late potato and continue sowing of barseem. Maintain proper moisture in toria, chickpea and lentil by applying light irrigation and apply first irrigation in late sown wheat crop at crown root initiation stage. Apply light & frequent irrigation in standing crops in the evening to protect crops from cold injury. Also arrange for smoking around the field during night.
- In Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, complete sowing of late sown varieties of wheat and pea and apply light irrigation. Complete transplanting of onion and undertake sowing of potato. Apply light & frequent irrigation in standing crops in the evening to protect crops from cold injury. Also arrange for smoking around the field during night.
- In Flood Prone Eastern Plain Zone of Rajasthan, continue sowing of gram, lentil, planting of potato and late sown varieties of mustard. Apply irrigation in late sown wheat at Crown Root Initiation stage and 35 days old mustard crops.
- In West Uttar Pradesh, continue sowing of pea, lentil, barley, potato and berseem and planting of winter season sugarcane and maize. Apply irrigation in toria and mustard. Undertake weeding in pea and gram and harvesting of sugarcane.
- In East Uttar Pradesh, complete sowing of wheat, barley, gram, lentil and pea. Continue sowing of mustard, pea, lentil, linseed, chickpea and late sown varieties of wheat. Also undertake the intercultural operations in maize and apply irrigation to wheat crop at CRI stage and barley at tillering stage.
- In Western Zone of Haryana, complete sowing of late varieties of wheat and apply irrigation to timely sown wheat crop.
- In Delhi, apply irrigation in timely sown wheat crop which is about 21-25 days old and are in the CRI stage. Transplant mature seedlings of tomato, cauliflower, cabbage, knolkhol and broccoli in the raised bed. Undertake

sowing of late sown varieties of wheat.

- In Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills, Sub-Tropical Zone of Himachal Pradesh, downy mildew is expected in cruciferous vegetables; spray Redomil M-Z @ 25 g per litres of water at 15 days interval.
- In Arid Western Plain Zone of Rajasthan, apply irrigation in timely sown wheat and barley crop and top dress urea @ 66 kg/ha in standing wheat crop at 21-25 days after sowing and top dress urea @ 100 kg/ha in standing barley crop with 1st irrigation at 25-30 days after sowing.
- In Semi-Arid Eastern Plain Zone of Rajasthan, attack of blight white rust and mildew in mustard is observed and is likely to increase; spray Blitox-50 @ 3 gm or Mencozeb 2 gm per litre of water.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.

• **Animal Husbandry**

- 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, 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 Mid-Hills Sub-Humid Zone and Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, protect the animals from low temperatures at night using jute gunny bags and provide 2.5-3.0 kg dana and 3.0g khanij mixture.
- In Semi-Arid Eastern Plain Zone and Arid Western Plain Zone of Rajasthan, protect animals from cold by covering the door of animal house and wrapping jute bags around animal back.
- In East Uttar Pradesh, protect animals from cold by keeping them inside the shed during night, spread rice straw on floor of cattle shed, cover animals with gunny bag in morning and evening time. Vaccination should be done for prevention foot and mouth disease (FMD). Before any vaccination de-worming should be compulsory to get better results.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane

Transplanting of rice

- **Realised Rainfall:** Mainly dry weather prevailed over the region during the week ending 11.12.13.
- **Weather forecast:** Weather would be mainly dry/dry over the region. Minimum temperature may fall by 2- 4⁰C over the region during next 48 hours.
- **Weather Warning:** Nil
- **Weather Outlook:** Weather would be mainly dry over the region.
- **Advisories:**
 - In Jhabua Hill Zone of Madhya Pradesh, continue sowing of late sown wheat and winter maize utilising the residual soil moisture.
 - In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, continue sowing of wheat and gram under irrigated conditions. Undertake weeding and intercultural operations after 20-25 days after sowing in wheat, chickpea, mustard and lentil, nursery raising of cabbage, cauliflower, onion and sowing of carrot, coriander and fenugreek. Apply irrigation in tomato and brinjal as per requirement and harvest the matured fruits.
 - In Bundelkhand Zone of Madhya Pradesh, continue sowing of medium varieties of irrigated wheat. Apply irrigation in wheat crop the CRI stage, about 20-25 days old and mustard crop which is about 30-35days old. Undertake intercultural operations in vegetables.
 - In Central Narmada Valley 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 nursery preparation for planting of cabbage, cauliflower and vegetables. Continue transplanting of onion.
 - In Gird Zone and Malwa Plateau Zone of Madhya Pradesh, continue sowing of wheat, gram and planting of potato and winter vegetables.
 - In Northern Hill Zone of Chattishgarh, continue sowing of wheat, undertake weeding in gram, pea and intercultural operations in vegetables. Continue transplanting of cabbage, cauliflower, tomato and onion.

- In Chattisgarh Plain Zone, continue sowing of gram and continue sowing of wheat and provide irrigation to vegetable crops.
- In Bastar Plateau Zone of Chhattisgarh, continue harvesting of rice, continue sowing of wheat with irrigation facility. After harvesting of rice, continue sowing of linseed, safflower, pulse and pea. Continue transplanting of onion.
- In Bundelkhand Zone of Madhya Pradesh, for control of semi lopper and Diamond back in cauliflower and cabbage crops, spray Quinalphos 25 E.C. @ 2.0ml/l of water and for shoot and fruit borer in tomato and brinjal crops, spray of trizophos 40 E.C. @ 2.0 ml. per litre of water.
- In Jhabua Hill Zone of Madhya Pradesh, for control of Gamossis & anthecnose disease in citrus spray blitox or Phytolon @2.5gm/l solution.
- In Bastar Plateau Zone of Chhattisgarh, for control of powdery mildew infestation in lathyrus and lentils, apply sulphur containing fungicides.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III
- **Animal Husbandry**
- In Bundelkhand Zone of Madhya Pradesh, provide 5-6 hours light in poultry houses during night and cover the poultry shed with gunny bags in order to protect the birds from cold weather.
- 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



Transplanting of rice



Cole crops



Onion

- **Realised Rainfall:** Dry weather prevailed over the region during last week ending on 11.12.13.
- **Weather Forecast:** Minimum temperature may fall by 2-4⁰C over east India during next 48 hours. Fog/shallow would occur at a few places over Bihar, Jharkhand and Sub-Himalayan West Bengal & Sikkim. Weather would be mainly dry/dry over rest of the region.
- **Weather Warning:** Cold wave conditions would occur over interior Odisha on 12th and 13th.
- **Weather Outlook:** Weather would be mainly dry/dry over the region.
- **Advisories:**
- In East and South Eastern Coastal Plain Zone of Odisha, continue sowing of sesame, sunflower and transplanting of cole crops. Complete sowing of rabi pulses of green gram and black gram.
- In North Eastern Plateau Zone of Odisha, continue sowing of wheat and sunflower and planting of potato.
- In Western Undulating Zone of Odisha, undertake hoeing and weeding in tomato and apply 54kg Urea /acre in rings followed by earthing up and apply irrigation in the crop.
- In Coastal Saline Zone of West Bengal, complete harvesting of aman rice and prepare upland field for nursery bed preparation of Boro rice. After harvesting of aman rice undertake planting of onion and potato utilising the residual soil moisture.
- In Laterite and Red soil Zone of West Bengal, undertake nursery bed preparation of *boro* rice and land preparation for sowing of wheat, mustard and planting of potato. Apply light irrigation after sowing depending upon the available soil moisture. Also undertake sowing of seasonal flower like marigold, verbena, jarberra, jinia etc.
- In New Alluvial Zone of West Bengal, complete harvesting of *aman* rice and after harvesting of *aman* rice, undertake sowing of mustard. Complete planting of potato within middle of December. For timely sown wheat crop, at 21 days after sowing, thinning and other intercultural operation should be done. Also continue transplanting of cauliflower, cabbage, tomato and brinjal followed by light irrigation.
- In North West Alluvial Plain Zone of Bihar, undertake sowing of late sown wheat varieties and apply 40 kg N, 40 kg phosphorus and 20 kg potassium per hectare at the time of sowing. Apply irrigation in wheat crop which is at crown root initiation stage. Undertake nursery sowing of *boro* rice. Apply light irrigation after sowing of crops and light irrigation to potato and tomato crops at an interval of 10-20 days. To prevent early and late blight diseases in potato and tomato, spray Endophil M 45 fungicide @ 2.0 - 2.5 gm/liter. Undertake inter-

culturing in toria crop which is sown around 2nd November and apply N@30 kg per hectare after giving irrigation.

- In North East Alluvial Plain Zone of Bihar, continue harvesting of matured rice crop, sugarcane, ginger and turmeric. Continue sowing of wheat and maize. 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. Undertake nursery sowing of boro rice.
- In Western Plateau Zone of Jharkhand continue sowing wheat, followed by light irrigation. Apply urea @ 50 kg per acre after earthing up to one month old potato crop. Undertake inter culture operations in pulses and oilseed crops and spray Monocrotophos @ 2 ml per litre of water or Emidachlorpyrd @ 1 ml per litre of water to control aphids.
- 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. Undertake intercultural operations in toria, green pea and pigeon pea. Do earthing in one month old potato crop.
- In Western Undulating Zone of Odisha, there is chances of pod borer attack in green gram and black gram crops at pod development and pod filling stages. For control spray Triazophous/ Rofenophos 2ml/lit of water. If Yellow mosaic vein appear in the leaves, uproot the plant and destroy it and spray Dimethoate or Metesystox @2ml/lit of water.
- In East and South Eastern Coastal Plain Zone of Odisha, the cloudy weather may favour infestation of aphid and powdery mildew on pulses, spray 5 ml Imidachloprid or 20 ml Metacystox in 10 litre water.
- In North Eastern Plateau Zone of Odisha, the early sown potato crops may likely to be infested with blight due to cool weather, spray Ridomil MZ @ 2 gm or Copper Oxychloride @ 3-4 g /liter of water to arrest its further spread.
- In Western Plateau Zone of Jharkhand there are chances of powdery mildew disease in green pea, spray Karathen @ 1 ml per litre of water or Sulfex @ 3 gm per litre of water.
- In New Alluvial Zone of West Bengal, under present weather condition, seedlings of winter vegetables are very much vulnerable to disease infestation, apply Hexaconazole 5% WP+ Captan 70% WP@ 1.5 gm per litre of water.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- Low temperature condition may adversely affect the milk production and performance of domestic animals. Farmers in North West Alluvial Plain Zone of Bihar are advised to give protein enriched diet to the animals. Do not keep the animal in the open.
- Weather is favourable for attack of F.M.D. in milch animals. Farmers in Western Plateau Zone of Jharkhand are advised to take preventive measures to control this disease and vaccinate animals twice in a year.
- In Coastal Saline Zone of West Bengal, cattle may be affected by viral pneumonia due to cold. Cowshed should be kept dry. Cover the openings of cowshed by jute bags.

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



Sugarcane



Rice



Transplanting of rice



cole crops

- **Realised Rainfall:** Dry weather prevailed over the States of the region during the week ending 11.12.13.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Assam, Meghalaya and Arunachal Pradesh during next 48 hours and decrease thereafter. Weather would be mainly dry / dry over rest part of the region.
- **Weather Warning:** Nil.
- **Weather Outlook:** Weather would be mainly dry / dry over the region.
- **Advisories:**
 - In Assm, continue nursery bed preparation and sowing of *boro* rice.
 - In Central Bramhaputra Valley Zone of Assam, continue sowing of wheat, transplanting of cole crops and planting of potato. Continue harvesting of matured *sali* rice and continue sowing of *rabi* pulses.
 - In Hill Zone of Assam, complete transplanting of winter vegetables and continue planting of potato. Apply light irrigation after transplanting and planting of crops. Continue harvesting of matured *Sali* rice and

undertake picking of cotton.

- In North Bank Plain Zone of Assam, continue sowing of wheat, *rabi* pulses like lentil, rajmah, pea, lathyrus and planting of potato. Apply light irrigation after sowing and planting of crops. Continue transplanting of *boro* rice.
- In Lower Brahmaputra Valley Zone of Assam, continue land preparation and sowing of bottle gourd, pumpkin, carrot, potato, spinach beet, onion, chilli and capsicum.
- In Sub Tropical Hill Zone of Arunachal Pradesh, apply irrigation in mustard at flowering stage.
- In Meghalaya, complete transplanting of cauliflower, cabbage and broccoli. 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. Continue land preparation for sowing of *rabi* maize.
- In Mild Tropical Hill Zone of Mizoram, continue transplanting of cole crops and tomato followed by light irrigation.
- In Hill Zone of Assam, humid and cloudy weather is congenial for occurrence of late blight in tomato. Apply Ridomil MZ-72 (2g/ lit) and Indofil M-45 2.5g / lit alternately.
- In Mid Tropical Plain Zone of Tripura, present weather is conducive for occurrence of leaf spot in banana. Apply Propiconazole or Soaf @ 2g/l at 20-30 day interval to control the leaf spot. 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 and Tripura, 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]



Transplanting of rice



Sugarcane



Cotton



Transplanting of rice

- **Realised Rainfall:** Mainly dry weather prevailed over the States of the region during last week.
- **Weather Forecast:** Mainly dry weather would prevail over the region.
- **Weather Warning:** Nil
- **Weather Outlook:** Weather would be mainly dry over the region.
- **Advisories:**

- In Konkan, continue intercultural operations and application of fertilizers in vegetables and mango, cashew and sapota orchards. Continue preparation of raised nursery bed for *rabi* rice. Complete sowing of chilli, brinjal, cabbage, knol-khol on raised nursery beds and complete the preparatory tillage for sowing of *rabi* groundnut.
- As minimum temperature would prevail below normal (around 8-10 °C) in North Madhya Maharashtra during next 24 hours, apply irrigation to banana and fig and drip irrigation in grape orchards in the evening. Protect banana & fig orchards by smudging (make smoke during night time). Apply mulch of crop residue and other plant waste product. Continue intercultural operations and application of fertilizers in sugarcane, *rabi* jowar, maize and vegetable crops like onion, brinjal, tomato, okra and guar. As there is no significant rain during last few weeks, apply irrigation to sugarcane, vegetable crops and jowar and maize. Complete picking of fully opened cotton bolls during morning hours in North Madhya Maharashtra.
- In Marathwada, as night temperature is prevailing below normal (around 10°C), give light and frequent irrigation to banana and fig orchards in the evening. Also make smoke in the orchards during night time. Apply mulch of crop residue and other plant waste product. Continue intercultural operations, application of fertilizers in jowar, gram, maize, vegetables, orchards and sugarcane. As there is no significant rain during last few weeks, apply irrigation to sugarcane, wheat, gram, vegetable crops, banana, jowar and maize. Complete picking fully opened cotton bolls during morning hours.

- In Vidarbha, continue intercultural operation, application of fertilizers in safflower, vegetables, wheat, linseed and orchards. As there is no significant rain during last few weeks, apply irrigation to early sown safflower, wheat, vegetable crops and orchards. Start preparation of nursery bed for sowing of summer rice. Continue late sowing of irrigated wheat upto 15th December. Complete picking fully opened cotton bolls during morning hours.
- In Middle Gujarat Zone, apply irrigation in early sown rabi crops. Also undertake sowing of coriander and cumin.
- In Bhal and Coastal Zone of Gujarat, carryout hand weeding operation, apply regular irrigation and second split doze of Nitrogen fertilizer @ 25 kg/ha in castor at 70 DAS. Apply irrigation in cotton crop at 15- 20 days interval according to the type of soil.
- In North West Zone of Gujarat, wilt resistant varieties GC-3 and GC-4 of cumin may be sown in wilt affected fields. Undertake sowing of Isabgol.
- In North Gujarat Zone for late sowing of wheat, select varieties G.W.-173, G.W.-11 or lok-1. Apply irrigation in vegetables like Brinjal, Chilli, Tomato, Cabbage, and Cauliflower.
- In South Sourashtra Zone apply irrigation to wheat crop after 18-21 days after sowing (at crown root initiation stage). Apply first dose of top dressing @ 132 kg Urea/ha.
- Prevailing cold and dry weather in Pune region is congenial for incidence of powdery mildew in pea, chilli and tomato; spray Sulphur WS 80 % @ 25 g per 10 litres of water.
- Due to cloudy weather in South Konkan, there may be incidence of tea mosquito bug, leaf miner and leaf eating beetle on new cashew flush; spray 36 % Monochrotophos @ 14 ml per 10 litres of water.
- In Bhal and Coastal Zone of Gujarat, there are chances of powdery mildew in cucurbits. Dust 20 kg/ha 300 mesh Sulphur to control the disease. After 15 days apply second dose for effective control.
- In North Sourashtra Zone, present weather conditions are favourable for severe attack of thrips and aphids on cumin crop. Spray thiomethoxam 4 g/10 litres of water. Spray Mancozeb 25 g/10 liters of water
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.

Animal Husbandry

In North Sourashtra Zone of Gujarat it is advised to spray Deltamethrin or Amitraz 2 ml/litre of water for the control of tick, brucella and other infections , reproductive diseases evaluation. Avoid transportation of poultry birds during noon time. Put curtains on west side of poultry house.

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



Rice



Sugarcane



Transplanting of rice

- **Realized rainfall:** Significant rainfall occurred in Karaikal, Nagapattinam and Thiruvarur districts in Tamil Nadu. Weather remained mainly dry/ dry in the remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Kerala during next 24 hours and decrease thereafter; few places over Tamil Nadu during next 24 hours and decrease thereafter; isolated places over south interior Karnataka during next 24 hours and mainly dry thereafter; isolated places over Rayalaseema and south coastal Andhra Pradesh during next 24 hours and mainly dry thereafter and isolated places over coastal Karnataka. Weather would be mainly dry/dry over rest of the region.
- **Weather Warning:** Fishermen along and off Kerala coasts are advised not to venture into the sea on 13th.
- **Weather Outlook (16th to 20th):** An easterly wave would affect extreme south peninsular India from 15th onwards.
- **Advisory:**
 - In Krishna Godavari Zone of Andhra Pradesh, continue sowing of *rabi* pulses and undertake picking of cotton.
 - Continue sowing of *rabi* groundnut and maize in Anantpur district and rice in Kurnool district of Scarce Rainfall Zone of Andhra Pradesh.
 - Low temperatures during the *rabi* season may cause cold injury in rice nurseries in the Southern Telangana Zone of Andhra districts. Cover the nursery beds with polythene sheet during night and

remove in the morning to overcome cold injury, irrigate the nursery bed every day in the evening and let out the water in the morning for better nursery growth , and apply 2 kg urea for 200 m² nursery area at 10-15 days after sowing.

- Continue sowing of *rabi* crops like rice, Bengal gram, maize and continue picking of cotton in Northern Telangana Zone of Andhra Pradesh.
- Continue harvesting of groundnut, ragi, red gram and fodder maize in clear weather in the Eastern Dry Zone of Karnataka.
- In the North Dry Zone of Karnataka, complete sowing of wheat and continue harvesting of onion and maize.
- Continue transplanting of *rabi* rice in the Coastal Zone of Karnataka.
- Continue picking of cotton and harvesting of rice in the North East Dry Zone and Central Dry Zone of Karnataka.
- Continue harvesting of rice and ragi in the Southern Dry Zone of Karnataka.
- In the Problem Area Zone in Kerala, continue sowing of *puncha* rice and planting of winter vegetables in the Problem Area Zone in Kerala
- Due to cloudy weather *Helicoverpa* is noticed in early sown Bengal gram .Spray insecticides like Profenophos or Chlorpyriphos @ 2ml/liter of water in the Bellary, Koppal and Yadgir districts of North East Dry Zone of Karnataka.
- Undertake proper control measures against pink disease in rubber and sheath blight and sheath rot in rice in the Southern Zone of Kerala. Spray Bavistin 200 gm/Tilt (Propiconazol) 150 ml/ 200 litre of water to control sheath blight and sheath rot. Chisel out the affected part and apply Bordeaux paste to control pink disease in rubber.
- Incidence of Bacterial Leaf Blight, Bacterial Leaf Streak, Stem borer & Leaf folder are being noticed in the *samba* rice fields in the Cauvery Delta Zone of Tamil Nadu. Spray streptomycin + tetracycline 120 g + Copper oxy chloride 500 g mixture/acre or copper hydroxide at 500 g/ac in 200 litre of water to control Bacterial Leaf Blight and Bacterial Leaf Streak and Profenophos 400 ml/acre to control Stem borer & Leaf folder, on a non-rainy day.
- Prevailing low night temperature with high humidity is favourable for the gall midge attack, sheath rot incidence and blast incidence in rice and downy mildew incidence in grapes in the Western Zone of Tamil Nadu. Monitor the crop and spray Chloripyriphos @ 1250ml/ha or Carbosulfan @ 1000ml/ha to control gall midge, carbendazim @ 500gm /ha or Hexagonazol @ 0.1gm/lr of water to control sheath rot, Streptomycin sulphate + Tetracycline combination 300 g +Copper oxychloride 1250 g/ha to control blast incidence and undertake suitable measures to control downy mildew incidence on a non-rainy day.
- Shoot fly incidence is noticed in rainfed sorghum. Monitor the pest and if incidence crosses economic threshold level (10%) spray dimethoate 500 ml/ ha. The expected weather having high cloud cover and humidity is conducive for the incidence of thrips in chillies and rice, stem borer in maize, boll worms in cotton and cut worms in green gram in the South Zone of Tamil Nadu. Undertake plant protection measures on a non-rainy day.
- The present weather is most congenial for the incidence of bacterial leaf blight in rice, sucking pests and incidence of viral diseases in vegetables and skippers, hairy caterpillar & leaf swarming caterpillar in banana in the Problem Area Zone of Kerala. Undertake plant protection measures if noticed.
- Leaf folder incidence was observed in *rabi* rice the Scarce Rainfall Zone of Andhra Pradesh. As prevailing weather conditions are favourable for further spread of the same, spray Profenophos @2.0 ml or Chlorpyriphos@2.5 ml or Monocrotophos@1.6 ml per litre of water.
- 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.
- 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, gobhisarson (early vegetative / germination), cauliflower (transplanting), cucurbits viz. khira, bitter gourd, tori (fruiting/maturity), radish, carrot, turnip, beet leaf and fenugreek (direct sowing), onion (planting), potato (planting) in Himachal Pradesh.
- Wheat, barley, oat, berseem (sowing/germination), ginger (vegetative), sugarcane (active vegetative/grand growth), sesame in low land area (early vegetative / vegetative), vegetable pea (sowing / germination), toria, chickpea (germination/vegetative), tomato (transplanting), potato (planting / transplanting), Autumn sugarcane (planting), sarson, masoor (sowing/early vegetative), coriander, spinach, radish, fenugreek (sowing/germination) in Uttarakhand.
- Wheat, barley (sowing/germination), toria, gobisarson, 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/ germination), onion, cole crops (nursery sowing / transplanting), fruit crops (planting) in Jammu & Kashmir.
- Wheat, barley (sowing/germination), lentil (sowing/germination), toria (active vegetative/flowering), rainfed taramira, gram and mustard, potato (sowing/seedling), tomato, brinjal, Shimla mirch (early vegetative / vegetative), new sugarcane (early vegetative / vegetative), castor (flowering/spike formation), cucurbits (sowing/), radish, Desi carrot (sowing/ germination), cabbage and cauliflower (nursery sowing/transplanting), onion (nursery raising/ transplanting), cumin, ajwain, methi, Isabgol (sowing) in Rajasthan.
- wheat (sowing/germination / crown root initiation), oats, barseem (sowing/ germination), 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/ crown root initiation), Maize (knee height), barley/mustard/pea/chickpea/lentil/Linseed (seedling), potato (sowing), 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 (grand growth/harvesting), toria (pod formation) in Uttar Pradesh.
- Sugarcane (grand growth), wheat (sowing/germination), cucurbits, cowpea (sowing), 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.
- Wheat (sowing / germination), New sugarcane (vegetative), cotton (picking), rice (grain formation/maturity) in Haryana.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Pigeon pea (pod formation) sugarcane (grand growth), winter sugarcane (planting), winter vegetables (sowing nursery raising), wheat, safflower, mustard, gram and linseed (sowing/ germination), potato, onion (planting) in Madhya Pradesh.
- Sugarcane (elongation), kharif rice (grain maturity/harvesting), groundnut (pod formation/ maturity), ragi and kodo millet (vegetative), ginger, turmeric, papaya (vegetative), cole crops (transplanting), 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), boro rice (sowing) 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 (ster elongation), potato (vegetative), green peas, bell pepper (vegetative), wheat (sowing) 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), boro paddy (seed bed preparation/sowing), ginger, turmeric (rhizome formation), tomato, brinjal (transplanting / early vegetative), cabbage and cauliflower (transplanting), wheat, mustard (sowing), potato (planting), winter flower like marigold (sowing/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/ transplanting), sugarcane (autumn) (active vegetative), *sali* rice (grain maturity / harvesting), rapeseed and mustard (vegetative / flowering/ pod formation), *rabi* pulses like lentil, rajmah, pea, lathyrus etc. (sowing / early vegetative), wheat (sowing / early vegetative), winter vegetables (transplanting / early vegetative), potato (planting / vegetative/ stolon formation), cole crops (transplanting / vegetative) in Assam.
- Cauliflower, cabbage, broccoli and kholkhol (vegetative/maturity), spinach, carrot (vegetative), mustard (active vegetative/ flowering), pea (early vegetative), winter maize (vegetative/ flowering) and potato (vegetative) in Arunachal Pradesh.
- Rapeseed and mustard, pea, pulses (sowing / early vegetative), *rabi* vegetables, cole crops (early vegetative / vegetative), potato (early vegetative), onion (early vegetative), ginger/turmeric (maturity/ harvesting), cucurbits (sowing) 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/tasseling), mustard (vegetative), potato, rajmah (vegetative), cabbage, broccoli (vegetative/ head formation), tomato (early vegetative/ vegetative) in Nagaland.
- *Rabi* maize (vegetative), lentil (sowing), potato (planting), winter vegetables (transplanting), banana (vegetative / fruiting / harvesting), toria (active vegetative/ flowering), cole crops, tomato, brinjal and radish (vegetative) in Tripura.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- *kharif* Cotton (boll maturity/picking in Madhya Maharashtra, Marathwada, Vidarbha), red gram (pod development / pod maturity in Madhya Maharashtra, Vidarbha and Marathwada), *rabi* jowar (early vegetative/vegetative/flag leaf initiation in Madhya Maharashtra, Marathwada), safflower (early vegetative / vegetative in Madhya Maharashtra, Marathwada and Vidarbha), gram (branching / flowering in Madhya Maharashtra, Marathwada, Vidarbha), wheat (germination/crown root initiation in Madhya Maharashtra, Marathwada and Vidarbha), Maize (early vegetative / vegetative in Madhya Maharashtra), adsali and pre seasonal (maturity/harvesting), *suru* (elongation), New *adsali* (early tillering / tillering in Marathwada and Madhya Maharashtra), pre-seasonal sugarcane (sprouting / early tillering in Marathwada and Madhya Maharashtra).
- Wheat (germination / crown root initiation), gram (germination / vegetative), castor (spike development), cotton (boll maturity / picking), sugarcane (elongation), new sugarcane (planting / vegetative), isabgol (sowing), cumin (sowing / early vegetative), fenugreek (seedling/growth), cauliflower, cabbage (vegetative), onion (vegetative), potato (vegetative) in Gujarat.

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

- Cotton (boll formation/picking)in Krishna Godavari and North Telangana zone of Andhra Pradesh,sugarcane (Jan-March planted) (cane development), late sown *kharif* rice (grain filling/maturity), castor(capsule maturity/harvest), banana (fruit development), *rabi* crops: rice (nursery/tillering), groundnut (sowing/seedling), pulses (sowing), maize (sowing), red gram (flowering/pod initiation), Bengal gram (flowering/pod development),jowar (panicle initiation), chillies (maturity/harvest), vegetables (vegetative), onion (bulb development) in Andhra Pradesh.
- Sugarcane (grand growth), samba rice (tillering/panicle initiation to flowering), thaladi rice (tillering/sowing to vegetative in the Western Zone), cotton(boll formation/maturity), maize(cob formation /maturity), onion (vegetative), sunflower (seedling), winter cotton (vegetative), groundnut (pod development / harvesting), vegetables (growing), black gram (flowering), rainfed cotton(squaring), rainfed maize, pearl millet and sorghum (flowering) and pulses (flowering) in Tamil Nadu.
- Mundakan rice (tillering/ panicle initiation), Uma variety rice (harvesting) and *Puncha* rice (sowing) in Kottayam district, arecanut (harvesting), sugarcane (grand growth), rubber (tapping), *rabi* vegetables (planting), pepper (berry maturity), cardamom (harvesting), in Kerala.
- Sugarcane (grand growth), *kharif* crops: ragi (harvesting), maize (harvesting), red gram (harvesting), groundnut (harvesting), rice (harvesting), cotton (picking), *Rabi* Crops: Bengal gram (vegetative), sunflower, sorghum, safflower and wheat (sowing), rice (transplanting in coastal Karnataka), sugarcane (planting) in Karnataka.

Annexure II
Week by week Rainfall Distribution

State/Districts	13.11.13		20.11.13		27.11.13		04.12.13		11.12.13	
	Actual	% dep.	Actual	% dep.	Actual	% dep.	Actual	% dep.	Actual	% dep.
Arunachal Pradesh										
Anjaw	0.0	-100	0.0	-100	0.0	-100	**	**	**	**
Changlang	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dibang Valley	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.0	-71
East Kameng	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.0	-80
East Siang	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kurung Kumey	**	**	**	**	**	**	**	**	**	**
Lohit	0.0	-100	0.0	-100	0.0	-100	0.3	-96	0.0	-100
Lower Dibang Valley	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lower Subansari	**	**	**	**	**	**	**	**	**	**
Papumpara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tawang	0.0	-100	0.0	-100	0.0	-100	5.0	-38	2.0	-60
Tirap	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Upper Siang	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Upper Subansari	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Kameng	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Siang	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.0	-83
Assam										
Baksa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Barpeta	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bongaigaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Cachar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chirang	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Darrang	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhemaji	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhubri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dibrugarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Goalpara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Golghat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hailakandi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jorhat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kamrup(Rural)	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Karbi Anglong	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Karimganj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kokrajhar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lakhimpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Morigaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
N.C.Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nowgong	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nalbari	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sonitpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Sibsagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tinsukia	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Udalgiri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Meghalaya										
East Garo Hills	0.0	-100	**	**	**	**	0.0	-100	**	**
East Khasi Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jaintia Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ribhoi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
South Garo Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Garo Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Khasi Hills	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mizoram										
Aizwal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Champhai	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kolasib	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lawngtlai	0.0	-100	0.0	-100	0.0	-100	1.0	-84	0.0	-100
Lunglei	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mamit	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Saiha	0.0	-100	0.0	-100	0.0	-100	11.0	67	0.0	-100
Serchhip	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Manipur										
Bishnupur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chandel	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Churachandpur	0.0	-100	0.0	-100	0.0	-100	**	**	**	**
Imphal east	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Imphal west	**	**	**	**	**	**	**	**	**	**
Senapati	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tamenglong	**	**	**	**	**	**	**	**	**	**
Thoubal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ukhrul	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nagaland										
Dimapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kephire	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kohima	0.0	-100	0.0	-100	0.0	-100	0.0	-100	1.5	150
Longleng	**	**	**	**	**	**	**	**	**	**
Mokokchung	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mon	**	**	**	**	**	**	**	**	**	**
Paren	**	**	**	**	**	**	**	**	**	**
Phek	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	**	**	**	**	**	**
Wokha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Zunheboto	**	**	**	**	**	**	**	**	**	**
Tripura										
Dhalai	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
North tripura	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
South tripura	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West tripura	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Himachal Pradesh										
Bilaspur	10.5	175	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chamba	32.1	1361	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Hamirpur	12.4	727	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kangra	19.5	926	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kinnaur	8.4	127	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kullu	21.8	328	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lahaul and Spiti	12.9	158	0.0	-100	0.0	-100	0.0	-100	1.3	-84
Mandi	17.6	469	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shimla	8.4	164	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sirmaur	1.4	-11	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Solan	18.7	713	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Una	7.8	289	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Punjab										
Amritsar	10.5	454	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Barnala	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhatinda	4.0	3900	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Faridkot	11.0	900	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Fatehgarh Saheb	3.0	650	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ferozpur	12.3	1956	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	13.0	549	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hoshiarpur	3.7	103	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jalandhar	2.6	189	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kapurthala	0.3	-77	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ludhiana	0.2	-46	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mansa	2.5	400	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Moga	4.6	667	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Muktesar	2.0	567	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawashahar	6.4	108	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Patiala	0.3	14	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ropar	8.7	136	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sangrur	0.6	-25	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mohali	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
TarnTaran	25.2	2420	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Haryana										
Ambala	1.0	90	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhiwani	2.9	1350	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chandigarh	0.4	-71	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Faridabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Fatehabad	1.0	233	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gurgaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hissar	5.7	5567	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhajar	0.8	67	0.0	-100	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Karnal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kurukshetra	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mahendragarh	1.0	67	0.0	-100	0.0	-100	0.0	-100	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	0.3	-70	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Panipat	0.1	43	0.0	-100	0.0	-100	0.0	-100	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	1.0	150	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.5	0	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Yamunanagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Delhi	0.4	34	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jammu and Kashmir										
Anantnag	10.7	69	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Badgam	2.2	-44	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bandipore	**	**	**	**	**	**	**	**	**	**
Baramula	6.6	34	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Doda	19.2	262	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ganderwal	22.3	321	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jammu	13.1	671	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kargil	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kathua	21.8	1717	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kistwar	**	**	**	**	**	**	**	**	**	**
Kulgam	9.1	44	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kupwara	11.1	31	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ladakh(Leh)	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Poonch	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pulwama	5.0	61	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajouri	64.8	21500	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ramban	9.5	79	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Reasi	29.5	1129	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Samba	10.3	506	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shopian	6.0	94	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Srinagar	5.2	-2	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Udhampur	14.8	517	0.0	-100	0.0	-100	0.0	-100	0.0	-100
East Madhya Pradesh										
Anuppur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Balaghat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chhatarpur	0.6	-76	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chindwara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Damoh	6.7	375	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dindori	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jabalpur	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Narsingpur	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sagar	0.4	-87	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Satna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Seoni	0.9	-67	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shahdol	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sidhi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Singrauli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tikamgarh	1.0	-29	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Umaria	0.0	-100	0.0	-100	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	0.0	-100	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	1.2	-82	0.0	-100
Dhar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Guna	2.6	-17	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gwalior	2.5	36	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Harda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hosangabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Indore	0.0	-100	0.0	-100	0.0	-100	5.2	126	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	0.7	-88	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	1.6	123	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajgarh	0.0	-100	0.0	-100	0.0	-100	8.2	83	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shivpuri	0.3	-83	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ujjain	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Vidisha	0.0	-100	0.0	-100	0.0	-100	1.1	-78	0.0	-100
Chattisgarh										
Bastar	0.0	-100	0.3	-86	3.4	-6	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dantewara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Durg	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Koriya	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kawardha	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Narayanpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raigarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Raipur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rajandgaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Surguja	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

East Uttar Pradesh										
Allahabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ambedkar Nagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Azamgarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bahraich	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ballia	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Balrampur	0.0	-100	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	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Faizabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Farrukhabad	4.1	413	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Fatehpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gazipur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gonda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gorakhpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hardoi	1.8	27	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jaunpur	0.0	-100	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	0.2	-84	0.0	-100	0.0	-100	0.0	-100	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	4.8	1100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kushi nagar	2.0	567	0.0	-100	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Mirzapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
RaiBareilly	0.1	-75	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnnagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shrawasti	**	**	0.0	-100	**	**	**	**	**	**
Sidharthnagar	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sultanpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Unnao	1.3	25	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Varanasi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Uttar Pradesh										
Agra	0.2	-93	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Aligarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Auraiya	6.0	186	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Badaun	0.4	-64	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Baghpat	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Bareilly	0.4	-39	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bijnor	4.1	86	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bulandsahar	1.7	28	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Etah	0.3	-33	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Etawah	2.0	25	0.0	-100	0.0	-100	0.0	-100	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	1.7	4	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jalaun	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhansi	4.0	48	0.0	-100	0.0	-100	0.0	-100	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	0.1	-91	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Moradabad	2.4	118	0.0	-100	0.0	-100	0.0	-100	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	2.2	2067	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Saharanpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Shahjahanpur	7.3	1117	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Uttarakhand										
Almora	9.6	336	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bageshwar	2.3	5	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chamoli	3.3	58	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Champawat	0.5	-71	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dehradun	8.5	174	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Garhwal Pauri	0.1	-95	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Garhwal Tehri	2.6	-6	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Haridwar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nainital	1.7	24	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pithorgarh	5.5	82	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rudraprayag	3.1	182	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Udham Sing Nagar	0.1	-91	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Uttarkashi	2.3	-18	0.0	-100	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Banka	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Begusarai	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhabua	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhagalpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhojpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Buxar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Darbhanga	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

East Champaran	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gaya	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gopalganj	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kathihar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khagadia	0.0	-100	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Madhubani	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Monghyar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Muzaffarpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nalanda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawada	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Patna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Purnea	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Saran	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sheikpura	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sheohar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Siwan	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Champaran	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jharkhand										
Bokaro	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chatra	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Deoghar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhanbad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dumka	**	**	**	**	0.0	-100	**	**	0.0	-100
East Singbhum	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Garhwa	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Giridih	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Godda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gumla	**	**	**	**	0.0	-100	**	**	0.0	-100
Hazaribagh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jamtara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Khunti	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Koderrna	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Latehar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Lohardagga	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pakur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Palamau	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ramgarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Ranchi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sahebganj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Saraikela	0.0	-100	**	**	0.0	-100	**	**	0.0	-100
Simdega	**	**	**	**	0.0	-100	**	**	0.0	-100
West Singhbhum	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
East Rajasthan										
Ajmer	0.3	-16	0.0	-100	0.0	-100	0.0	-100	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	0.6	29	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhalawar	0.2	-92	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	13.3	4321	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Karauli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kota	0.4	-85	0.0	-100	0.0	-100	0.0	-100	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	8.7	4257	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Tonk	0.5	-59	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Udaipur	0.0	-99	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Rajasthan										
Barmer	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.4	200	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Churu	9.0	4400	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hanumangarh	0.7	43	0.0	-100	0.0	-100	0.0	-100	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	0.9	125	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	3.4	1017	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gujarat Region										
Ahmedabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100	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	0.1	-97	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
DNH	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	**	**	**	**
Dangs	0.0	-100	0.0	-100	2.7	-55	0.0	-100	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	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	-100	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	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	7.0	27	1.4	0	0.0	-100
Mumbai	0.0	-100	0.0	-100	6.4	300	0.5	-64	0.0	-100
Raigad	0.0	-100	0.0	-100	0.9	-75	4.9	157	0.0	-100
Ratnagiri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sindhudurg	0.0	-100	0.0	-100	6.4	8	0.0	-100	0.0	-100
Thane	0.0	-100	0.0	-100	0.3	-88	0.0	-100	0.0	-100
Madhya Maharashtra										
Ahmednagar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhule	**	**	**	**	**	**	0.0	-100	**	**
Jalgaon	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kolhapur	0.0	-100	0.0	-100	0.6	-90	0.0	-100	0.0	-100
Nandurbar	**	**	**	**	0.0	-100	0.0	-100	**	**
Nasik	0.0	-100	0.0	-100	1.7	-66	0.0	-100	0.0	-100
Pune	0.0	-100	0.0	-100	13.6	142	5.1	65	0.0	-100
Sangli	0.0	-100	0.0	-100	7.6	65	2.4	85	0.0	-100
Satara	0.0	-100	0.0	-100	5.6	-10	4.1	65	0.0	-100
Solapur	0.0	-100	0.0	-100	0.0	-100	0.7	-68	0.0	-100
Marathwada										
Aurangabad	0.0	-100	0.0	-100	10.4	76	9.6	12	0.0	-100
Beed	**	**	**	**	3.0	-49	22.4	702	0.0	-100
Hingoli	**	**	**	**	**	**	1.0	-68	**	**
Jalna	**	**	**	**	6.8	6	8.6	56	**	**
Latur	0.0	-100	0.0	-100	2.9	-8	32.6	1023	0.0	-100
Nanded	0.0	-100	0.0	-100	13.9	673	0.0	-100	0.0	-100
Usmanabad	0.0	-100	0.0	-100	4.7	5	2.1	24	0.0	-100
Parbhani	0.0	-100	0.0	-100	6.2	78	16.5	449	0.0	-100
Vidarbha										
Akola	0.0	-100	0.0	-100	0.0	-100	0.1	-99	0.0	-100
Amraoti	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Bhandara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Buldhana	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Chandrapur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gadchiroli	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gondia	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nagpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Wardha	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	0.2	-94	0.0	-100	0.0	-100
Odisha										
Angul	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Balasore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bargarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bhadrak	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Bolangir	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Deogarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gajapati	0.0	-100	0.0	-100	7.4	200	0.2	-71	0.0	-100
Ganjam	0.0	-100	0.0	-100	2.6	-66	0.0	-100	0.0	-100
Jagatsingpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jajpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jharsuguda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kalahandi	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kandhamal	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kendrapara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Keonjhar	0.0	-100	0.0	-100	0.1	-87	0.0	-100	0.0	-100
Khurda	0.0	-100	0.0	-100	0.0	-100	0.1	-96	0.0	-100
Koraput	0.0	-100	0.0	-100	10.8	121	0.0	-100	0.0	-100
Malkangiri	0.0	-100	0.0	-100	10.0	355	0.0	-100	0.0	-100
Mayurbhanj	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawapara	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Puri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Rayagada	0.0	-100	0.0	-100	1.7	68	0.0	-100	0.0	-100
Sambalpur	0.0	-100	0.0	-100	0.0	-98	0.0	-100	0.0	-100
Sonepur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sundargarh	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Bengal										
GWB										
Bankura	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Birbhum	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Burdwan	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
East Midnapore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Hooghly	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Howrah	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kolkata	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Murshidabad	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100

Nadia	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
24 Pargana (N)	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Purulia	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
24 Pargana (S)	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Midnapore	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
SHWB										
Cooch Behar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Darjeeling	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
East Sikkim	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.1	-99
Jalpaiguri	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Malda	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
North Dinajpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
North Sikkim	0.0	-100	0.0	-100	0.0	-100	0.0	-100	7.1	97
South Dinajpur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
South Sikkim	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
West Sikkim	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Karnataka										
Coastal Karnataka										
Dakshin Kannada	2.6	-89	16.5	-16	29.3	107	27.1	420	0.0	-100
Udupi	5.5	-78	10.3	-27	21.8	64	2.3	-73	0.0	-100
Uttar Kannada	0.0	-100	0.0	-100	4.5	-34	0.8	-86	0.0	-100
N I Karnataka										
Bagalkote	0.0	-100	0.0	-100	0.3	-90	0.4	-88	0.0	-100
Belgaum	0.0	-100	0.0	-100	1.8	-61	0.6	-80	0.0	-100
Bidar	0.0	-100	0.0	-100	25.3	503	2.2	-20	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100	0.3	-83	0.0	-100
Dharwad	0.0	-100	0.0	-100	0.4	-94	1.4	-77	0.0	-100
Gadag	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Gulbarga	0.0	-100	0.0	-100	2.9	-7	1.2	-52	0.0	-100
Haveri	0.0	-100	0.0	-100	1.7	-74	0.0	-100	0.0	-100
Koppal	0.0	-100	2.2	-68	0.0	-100	0.0	-100	0.0	-100
Raichur	0.0	-100	0.0	-100	2.3	-27	0.9	-49	0.0	-100
Yadgir	0.0	-100	0.0	-100	0.6	-82	0.6	-69	0.0	-100
S I Karnataka										
Bangalore Rural	0.0	-100	13.0	45	35.6	275	5.1	-22	0.0	-100
Bangalore Urban	0.0	-100	10.8	4	42.4	300	1.4	-79	0.0	-100
Bellary	0.0	-100	1.9	-75	0.8	-73	0.0	-100	0.0	-100
Chamarajnaragar	0.2	-99	36.0	181	3.2	-72	2.9	-67	0.0	-100
Chichballapur	0.0	-100	8.8	4	7.6	-32	3.7	-34	0.0	-100
Chickmagalur	0.6	-97	0.2	-99	9.8	-6	4.3	-8	0.0	-100
Chitradurga	0.0	-100	1.6	-82	0.4	-91	0.1	-95	0.0	-100
Davangere	0.0	-100	0.0	-100	3.9	-32	0.0	-100	0.0	-100
Hassan	2.9	-82	4.7	-59	18.9	108	7.4	116	0.0	-100
Kodagu	3.8	-83	1.3	-90	17.9	10	6.9	16	0.0	-100
Kolar	0.0	-100	16.9	49	0.5	-96	3.6	-53	0.0	-100
Mandya	1.2	-92	15.6	79	18.9	137	4.0	43	0.0	-100
Mysore	1.0	-92	15.0	25	22.6	159	0.2	-95	0.0	-100
Ramnagara	0.0	-100	9.1	1	20.8	115	3.7	-15	0.0	-100
Shimoga	0.0	-100	1.4	-90	3.3	-54	1.2	-68	0.0	-100
Tumkur	0.0	-100	6.4	-19	18.7	92	0.3	-92	0.0	-100

Kerala										
Alappuzha	45.3	-12	26.7	-30	58.1	87	12.6	-30	0.0	-100
Kannur	0.0	-100	5.5	-67	21.7	30	19.8	133	0.0	-100
Ernakulam	28.1	-31	64.6	122	53.3	113	48.5	362	0.0	-100
Idukki	40.4	-22	28.1	-9	79.7	219	17.4	5	1.6	-91
Kasaragod	0.0	-100	6.5	-66	14.7	7	9.5	83	0.0	-100
Kollam	65.4	3	44.9	-1	67.3	118	17.6	-1	0.0	-100
Kottayam	58.8	19	52.9	68	90.1	202	15.1	34	0.0	-100
Kozhikode	1.0	-97	41.4	66	25.7	31	14.7	56	0.0	-100
Malappuram	16.0	-51	21.8	-23	42.1	82	40.7	422	0.0	-100
Palakkad	4.3	-88	14.5	-42	30.0	30	7.1	-38	0.0	-100
Pathanamthitta	79.0	31	74.9	41	66.5	128	14.9	-2	0.0	-100
Thiruvananthapuram	113.2	132	32.4	-15	95.1	256	13.7	-37	0.4	-98
Thrissur	1.5	-97	50.0	110	19.4	-11	9.5	-17	0.8	-95
Wyanad	0.2	-99	1.8	-90	6.8	-63	19.1	136	0.0	-100
Tamil Nadu										
Ariyalur	13.3	-79	89.5	82	0.0	-100	29.8	-27	4.8	-91
Chennai	0.0	-100	127.9	63	0.0	-100	71.4	38	14.5	-75
Coimbatore	7.9	-79	20.6	-10	1.9	21	17.5	10	0.1	-99
Cuddalore	11.8	-85	91.6	25	0.0	-100	61.2	5	3.6	-95
Dharmapuri	0.0	-100	79.1	291	0.0	-100	5.5	-64	0.0	-100
Dindigul	0.6	-99	17.6	-44	0.0	-100	19.9	-22	0.1	-99
Erode	1.8	-94	35.8	78	0.0	-100	9.6	-39	0.0	-100
Kanchipuram	0.0	-100	77.8	46	0.0	-100	38.8	-14	4.1	-93
Kanyakumari	75.7	26	66.2	61	0.0	-100	16.4	-25	4.8	-73
Karikal	2.1	-98	159.6	85	0.0	-100	120.2	63	111.1	32
Karur	0.0	-100	59.0	188	0.0	-100	15.4	-5	0.0	-100
Krishnagiri	0.0	-100	55.7	238	0.0	-100	7.9	-21	0.0	-100
Madurai	0.9	-98	6.6	-75	0.1	-94	10.6	-41	1.6	-91
Nagapattinam	32.4	-71	143.0	46	0.0	-100	111.7	28	68.4	-33
Namakkal	0.0	-100	47.5	167	0.0	-100	7.8	-51	0.0	-100
Nilgiris	4.1	-93	64.9	81	2.1	-16	30.4	4	0.0	-100
Perambalur	0.8	-98	117.1	236	0.0	-100	21.6	-24	0.0	-100
Puducherry	1.7	-98	126.0	64	0.0	-100	39.5	-36	0.0	-100
Pudukottai	7.2	-81	17.1	-52	0.0	-100	32.1	1	1.2	-96
Ramanathapuram	13.3	-73	3.1	-91	0.0	-100	93.2	147	2.6	-93
Salem	0.0	-100	55.7	101	0.0	-100	12.4	-37	0.0	-100
Sivaganga	19.1	-54	0.6	-98	0.0	-100	30.8	26	0.4	-98
Thanjavur	8.6	-84	56.0	24	0.0	-100	52.2	20	13.1	-77
Theni	4.5	-89	19.8	-25	0.5	-69	10.8	-22	1.5	-91
Tirunelveli	11.8	-80	64.2	46	2.2	-49	64.5	107	6.5	-73
Tirupur	0.0	-100	21.5	3	0.0	-100	19.2	26	0.0	-100
Tiruvallur	1.0	-99	81.2	47	0.3	-96	18.5	-53	4.1	-91
Tiruvannamalai	0.0	-100	91.1	144	0.0	-100	16.1	-35	0.0	-100
Tiruvarur	15.7	-79	64.7	-12	0.0	-100	94.7	33	32.5	-57
Toothukudi	30.4	-34	36.4	-8	0.0	-100	52.3	72	6.5	-73
Trichy	4.0	-90	94.9	244	0.0	-100	19.2	-13	0.4	-99
Vellore	0.0	-100	38.5	47	0.0	-100	2.6	-86	0.0	-100
Villupuram	1.3	-98	99.4	114	0.0	-100	30.7	-16	0.0	-100
Virudhunagar	4.4	-90	15.6	-56	0.6	-84	15.1	-31	6.7	-64

Andhra Pradesh										
Coastal Andhra Pradesh										
East Godavari	0.0	-100	0.0	-99	37.0	136	13.2	371	0.0	-100
Guntur	0.0	-100	0.2	-99	39.3	236	21.7	538	0.0	-100
Krishna	0.0	-100	0.0	-100	68.8	488	18.9	721	0.0	-100
Nellore	0.1	-99	87.9	43	11.5	-78	1.9	-95	0.5	-99
Prakasam	0.0	-100	3.7	-84	10.6	-47	21.4	158	0.0	-100
Sirkakulam	0.0	-100	0.0	-100	37.3	171	1.0	-61	0.0	-100
Visakhapatnam	0.0	-100	0.0	-100	70.9	403	9.0	222	0.0	-100
Vizianagram	0.0	-100	0.0	-100	28.0	61	1.1	-48	0.0	-100
West Godavari	0.0	-100	0.1	-99	24.5	95	20.2	819	0.0	-100
Telangana										
Adilabad	0.0	-100	0.0	-100	0.6	-74	3.8	79	0.0	-100
Hyderabad	0.0	-100	0.0	-100	11.2	332	4.6	185	0.0	-100
Karimnagar	0.0	-100	0.0	-100	8.6	195	0.7	-51	0.0	-100
Khammam	0.0	-100	0.0	-100	17.5	298	3.1	179	0.0	-100
Mehabubnagar	0.0	-100	0.0	-100	3.2	-16	3.8	48	0.0	-100
Medak	0.0	-100	0.0	-100	31.5	799	1.7	11	0.0	-100
Nalgonda	0.0	-100	0.0	-100	20.3	350	9.1	469	0.0	-100
Nizamabad	0.0	-100	0.2	-93	16.9	504	2.7	83	0.0	-100
Rangareddy	0.0	-100	0.0	-100	21.7	579	3.2	113	0.0	-100
Warangal	0.0	-100	0.0	-100	6.8	107	5.8	240	0.0	-100
Rayalaseema										
Anantapur	0.0	-100	0.8	-89	1.4	-78	0.0	-100	0.0	-100
Chittoor	0.0	-100	39.6	40	17.0	-36	0.4	-98	0.0	-100
Cuddapah	0.0	-100	12.6	-8	2.1	-85	0.0	-100	0.0	-100
Kurnool	0.0	-100	0.0	-100	0.5	-90	0.9	-59	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

Jammu & Kashmir

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 Pratapchana 1

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

Vegetables:

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

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

Cabbage : Golden Acre, Pride of India and Pusa Mukta, Carrot : Pusa Kesar, 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, Arka Niketan, Pusa White & Local Red, Deshi carrot: Pusa Keshar, 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 Pratapchana 1, RSG-888 (Anubhav), CSJD-884 (Aakash), RSG-2, BG-256, Phule G 5.

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

Chickpea : Avrodhi, Radhey, Pant G-114, Pant G-186, BG-56, Uday etc.

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

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, 816, 892, 738 (Mundri wheat), 719, HL-272, VL-421, HS-240, VL-616, HS-277, VL-829, HD 2687, HD 2329, PBW 343, PBW-373, PBW-550, PBW-502, Raj 3077, Raj-3765, UP 2338, UP-1109, UP-2382, UP-2584, UP-2572, UP-2554, UP-2565, UP-2338, UP-2425

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

Sarson: Varun, Kanti, Peelisarson,

Masoor: Pant Masoor-1, 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, Kufri Lalima, Kufri Alankar, Kufri and Kufri Badshah

Onion : Pusa Red, Pusa Ratnar, Nasik Red, Pusa Madhavi, Punjab Round Red etc

Uttar Pradesh

Potato:KuphariChanramukhi, KuphariAshoka, KuphariBahar, Kuphari Surya, KuphariSutlaj, KuphariPukharaj

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 : malvie-234, VL-829, VL-802,VL-804,VL-892, VL-738, VL-719, HS-277, UP-2572, 2338, 2328, Pusa- 256, KWR- 108, K-850, 9107, KGD- 1168, PVW- 343, 443, WH- 542, 1021, K- 9107, 9006, 9423,307, 8020, Raj-3077, 3765, PBW-373, 544, 590, DBW-16, 17, HUW-510, HP-1731, NW-1012, UP-2382, HD-2733, HD-2888, Ganga, Narendra-1014, Trivani, Halna

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 ArkalMatar.

Raddish: Japanese white, Chinese pink and mino early white

Turnip :PTWG-1

Carrot :Pusakesar

Fenugreek: I.C. 74, kasoori

Potato: KufriJyoti, KufriGiriraj, KufriChandramukhi

Punjab

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

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.

Late Sown varieties of wheat: PBW 590, PBW 373 and PBW 509

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

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

Delhi

Wheat (late sown): H.D. 2733, H.D. 2851, P.B.W.373, WR-544, U.P.2338, U.P.2425.

Odisha

Cauliflower: Pusa Ketaki and Pusa Deepali.

Cabbage: Pride of India.

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

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.

Sesame: Vinayek, Kanak, Kalika, Prachi and Nirmala.

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.

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

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

Berseem: Vardan-1 and Skavi.

Oat: Kent.

Mustard: Varuna, Pusa bold, Kranti.

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

HUW 234, PBW 343, DBW 14, HP 1744, HD 2643, NW 2036 and HW 2045

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.

Chhattisgarh.

Wheat: Arpa, Vidisha, Kanchan

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

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

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

Pulse(lathyrus) : Mahatiwada.

Pea: Ambika and Subra.

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 Chuhara, 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.

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.

Manipur

Rapeseed and mustard: M-27.

Pea: Rachana.

Potato: Kufri Megha, Kufri Chipsona and Kufri Jyoti.

Andhra Pradesh

Blackgram: LBG-20, T-9, LBG: 623, WBG: 26, PU: 31, BG: 752

Green gram: LGG: 407, LGG: 410, LGG: 450, WGG:2, WGG: 37, LGG: 460, ML:267, Pusa:105, MGG: 348, TM-96-2

Bengalgram: Kranthi (ICCC: 37), Svetha (ICCC:2), Annegiri, Jyothi, ICCV: 10 KAK:2, JG:1, Lamsanga:7

Redgram: Laksmi (ICCPL85063), LRG-38, LRG-41, WRG-27.

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.

Rabi groundnut : TG-26, TAG-24, TPG-41, Konkan Gaurav, Konkan Tapora in Konkan.

Gujarat

Late sowing wheat: G.W.-173, G.W.-11 or lok-1.

Cumin: Guj. Cumin 1, GC-2, GC

Coriander: Guj. Coriander 1 , Guj. Coriander

Isabgol: Gujarat Isabgol 2 , Gujarat Isab

Andhra Pradesh

Blackgram: LBG-20, T-9, LBG: 623, WBG: 26, PU: 31, BG: 752

Green gram: LGG: 407, LGG: 410, LGG: 450, WGG:2, WGG: 37, LGG: 460, ML:267, Pusa:105, MGG: 348, TM-96-2

Bengalgram: Kranthi (ICCC: 37), Svetha (ICCC:2), Annegiri, Jyothi, ICCV: 10 KAK:2, JG:1, Lamsanga:7

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