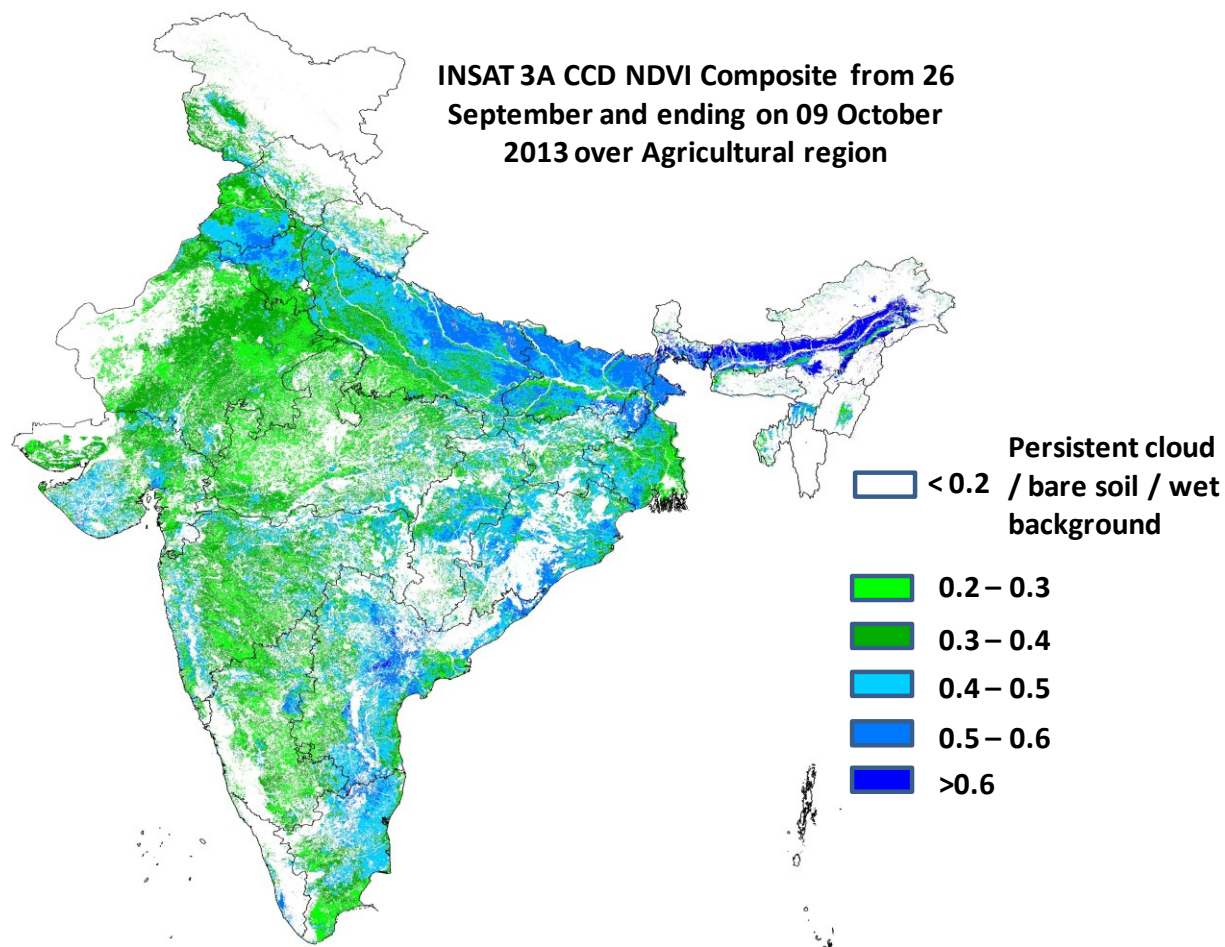




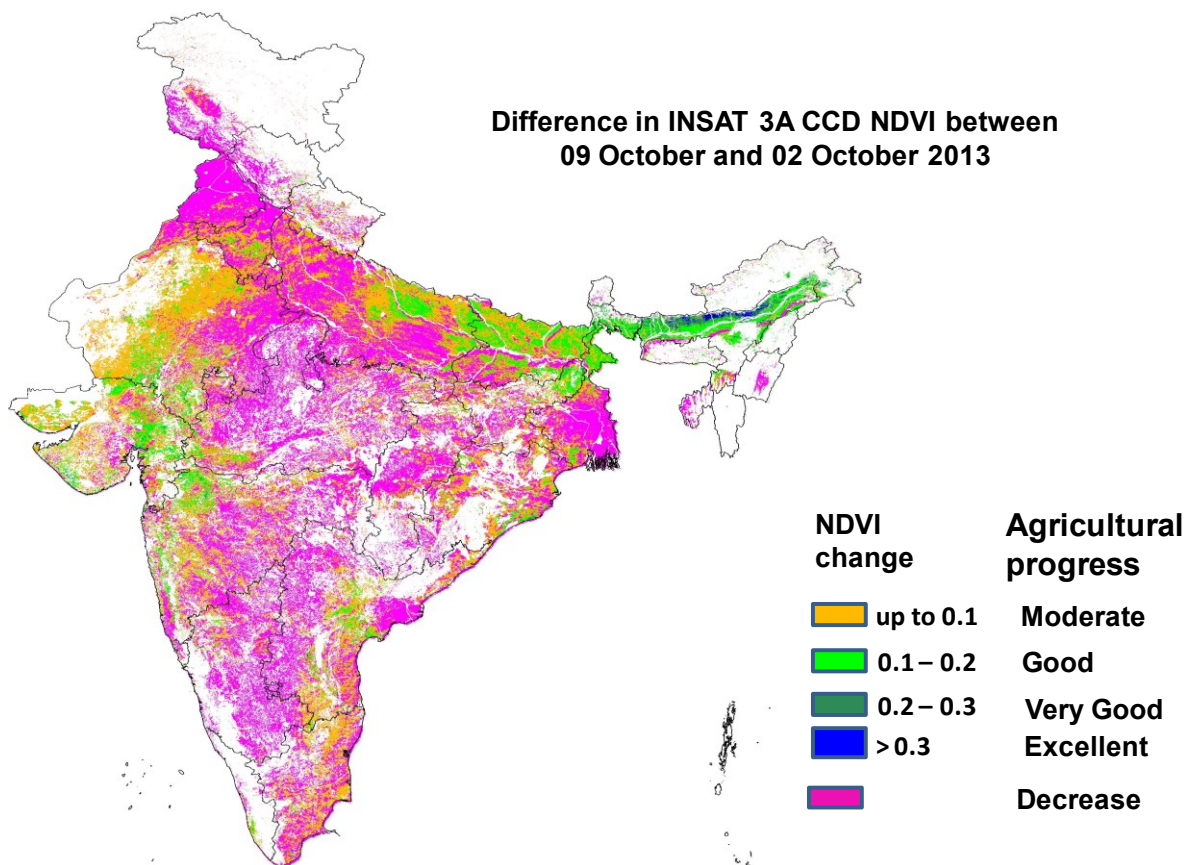
## Crop condition based on Rainfall and INSAT 3A CCD NDVI \*\*



Source: SAC, Ahmedabad

**Overall Agricultural Situation:** Agricultural conditions is in general good to very good over eastern and north UP, eastern and north Bihar, pockets of Haryana and Punjab, parts of middle Chhattisgarh, north AP, pockets of western West Bengal, pockets of central Gujarat and coastal Tamil Nadu as NDVI vigour showed the range from 0.4 to 0.6 upto 9<sup>th</sup> October. The crop conditions are moderate over large part of Rajasthan, southern part of UP (Bundelkhand region), M.P, Maharashtra, part of Karnataka, southern part of Tamil Nadu.

Source: SAC Ahmedabad

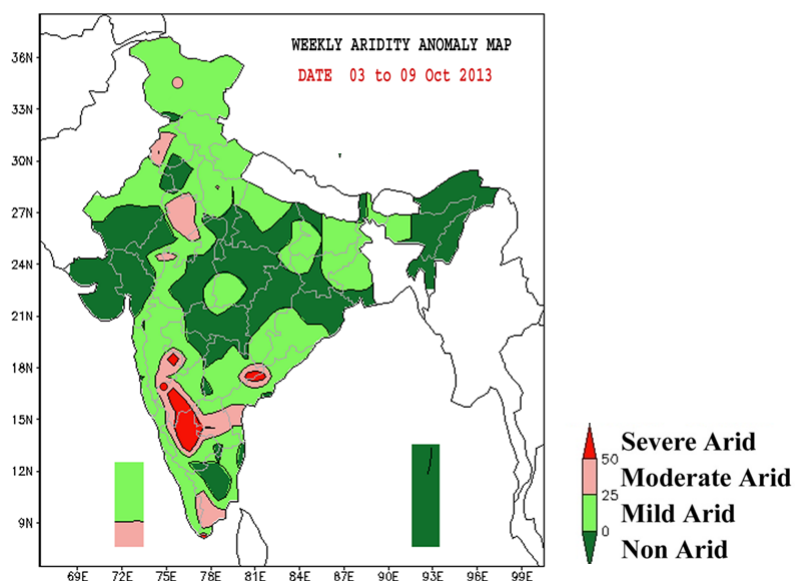


**Progress of crop performance during last week:** Agricultural progress between 9<sup>th</sup> October and 02<sup>nd</sup> October 2013 was found to be moderate over western Maharashtra, Gujarat and adjoin Rajasthan, north-eastern UP, north-eastern Bihar and few pockets of AP and coastal Orissa. Rest of India showed decrease in NDVI which may be due to start of crop ripening

**\*\* Prepared jointly by Space Application Centre, Ahmedabad and Agricultural Meteorology Division, India Meteorological Department, Pune**

### Aridity Anomaly Map for the week ending 09.10.2013

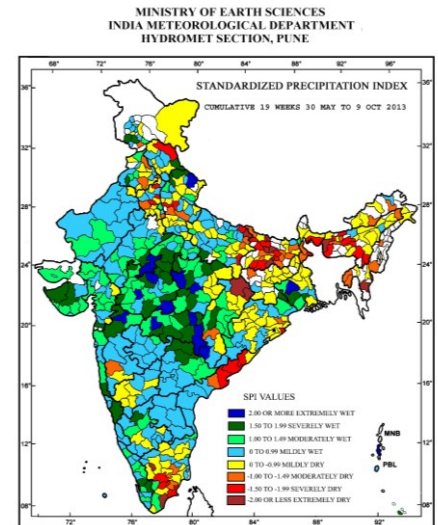
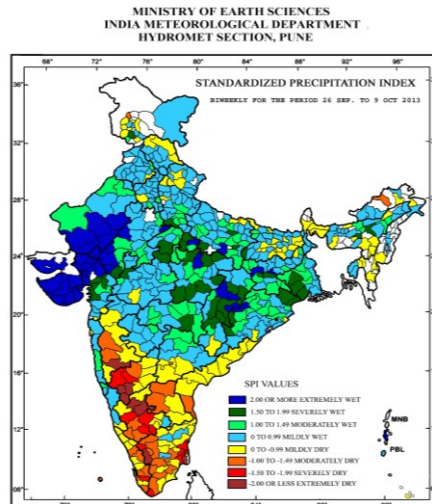
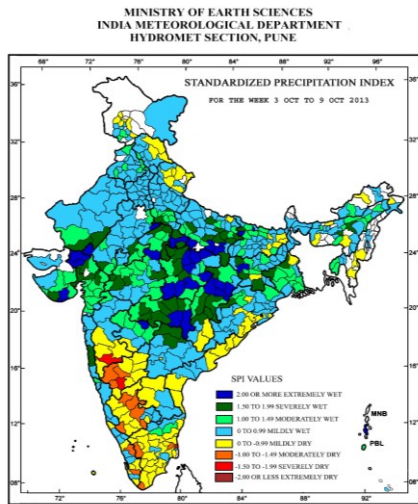
भारत मौसम विज्ञान विभाग  
अनावृष्टि अनुसंधान अनुभाग - पुणे  
INDIA METEOROLOGICAL DEPARTMENT  
DROUGHT RESEARCH UNIT - PUNE



- Severe Arid conditions are observed in in many parts of Interior Karnataka and some parts of Madhya Maharashtra, Andhra Pradesh.

- Moderate Arid conditions are observed in many parts of Rayalaseema, some parts of Interior Karnataka, Andhra Pradesh, Madhya Maharashtra, Tamil Nadu and Lakshadweep Islands.

## Standard Precipitation Index weekly, fortnightly and seasonal



### Weekly SPI values:

- Extremely wet/severely wet conditions over many parts of Gujarat, Saurashtra & Kutch, Madhya Pradesh, Chattisgarh, Vidarbha, Marathwada and some parts of Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal.
- Extremely dry/ severely dry conditions were observed over some parts of Madhya Maharashtra, North Interior Karnataka.

### Cumulative SPI values (bi-weeks):

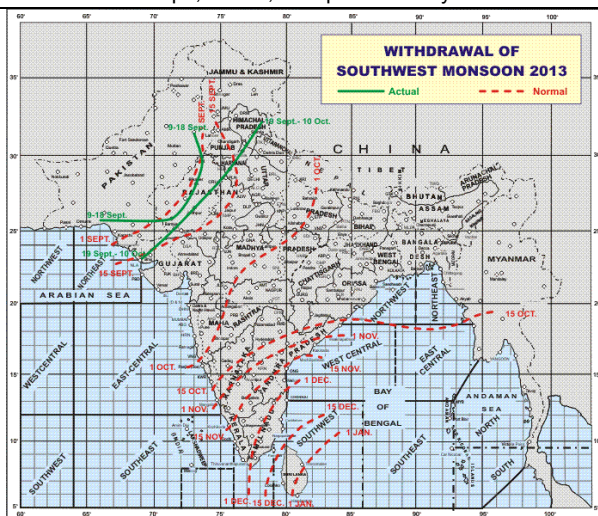
- Extremely wet/severely wet conditions over many parts of West Rajasthan, Gujarat, Saurashtra & Kutch and some parts of Jammu & Kashmir, East Rajasthan, Uttar Pradesh, Gangetic West Bengal, Assam, Madhya Pradesh, Chattisgarh, Bihar, Jharkhand, Orissa, Vidarbha, Konkan.
- Extremely dry/severely dry conditions were observed over many parts of Interior Karnataka, some parts of, Madhya Maharashtra, Kerala, Tamil Nadu.

### Cumulative SPI values of nineteenth weeks) (i.e. since the beginning of southwest monsoon

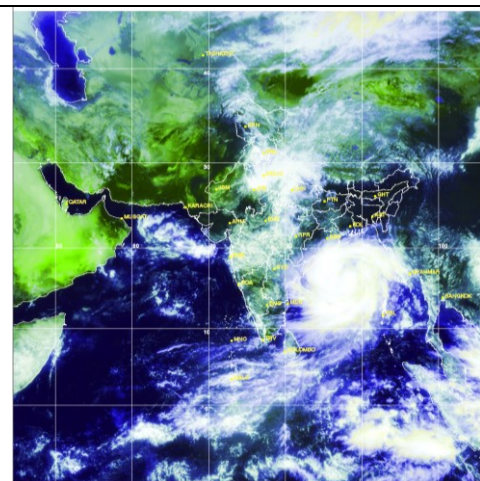
- Extremely wet/severely wet conditions over many parts of Madhya Pradesh, Vidarbha, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West India, Chattisgarh, Gangetic West Bengal, Konkan & Goa, Telangana, South Interior Karnataka, Kerala.
- Extremely dry/ severely dry conditions were observed over many parts of Bihar, Assam & Meghalaya, some parts of Himachal Pradesh, Uttar Pradesh, Jharkhand, Sub-Himalayan West Bengal, Tripura, Chattisgarh, Coastal Andhra Pradesh, Tamil Nadu.

## Withdrawal of Southwest Monsoon 2013

The withdrawal line of southwest monsoon continue to pass through Kalpa, Hissar, Jodhpur and Naliya.



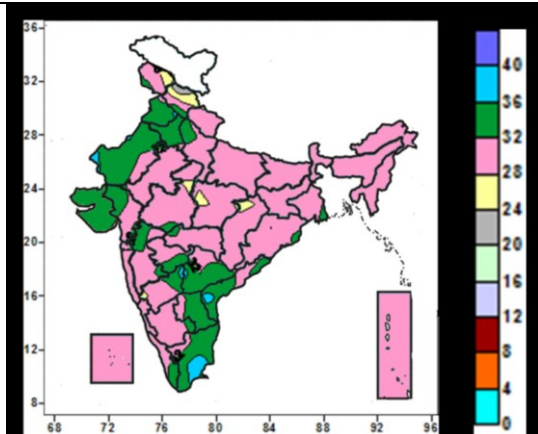
*Withdrawal of Southwest Monsoon 2013*



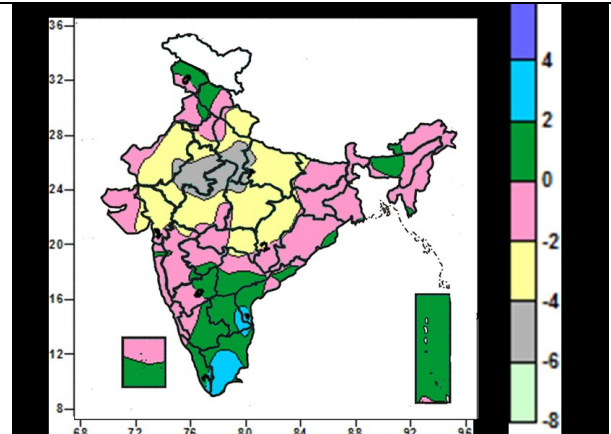
*Satellite image dated 11.10.2013, 0630 UTC*

**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 09.10.2013**

**Actual Mean Maximum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 09.10.2013**



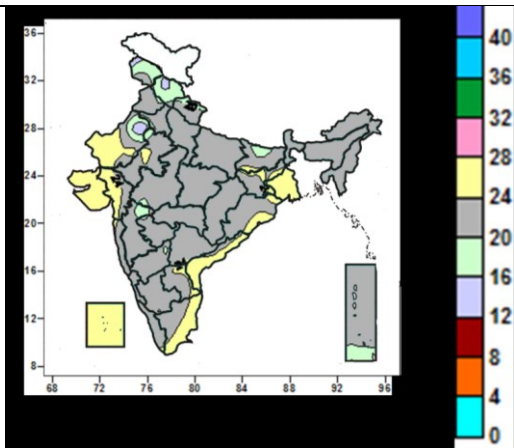
**Mean Maximum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 09.10.2013**



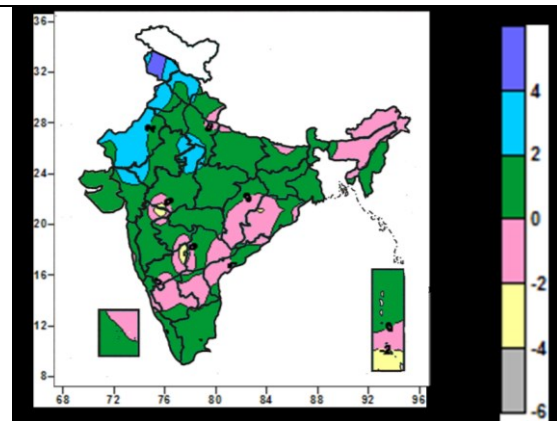
- 36 to 40 $^{\circ}\text{C}$  over some parts of West Rajasthan, North Interior Karnataka, Coastal Andhra Pradesh, Telangana, Tamil Nadu.
- 28 to 36 $^{\circ}\text{C}$  over many parts of the country (except many parts of Himachal Pradesh, some parts of Jammu & Kashmir, Madhya Pradesh, Chattisgarh, North Interior Karnataka, West Rajasthan, Coastal Andhra Pradesh, Telangana, Tamil Nadu).
- 20 to 28 $^{\circ}\text{C}$  over many parts of Himachal Pradesh, some parts of Jammu & Kashmir, Madhya Pradesh, Chattisgarh, North Interior Karnataka.

- 2 to 4 $^{\circ}\text{C}$  over many parts of Tamil Nadu, some parts of Coastal Andhra Pradesh, Raylaseema.
- -2 to 2 $^{\circ}\text{C}$  over many parts of the country (except many parts of Uttarakhand, Uttar Pradesh, Rajasthan, Gujarat, Madhya Pradesh, Chattisgarh, Tamil Nadu, some parts of Haryana, Bihar, Jharkhand, Vidarbha, Madhya Maharashtra, Coastal Andhra Pradesh, Raylaseema).
- -6 to -2 $^{\circ}\text{C}$  over many parts of Uttarakhand, Uttar Pradesh, Rajasthan, Gujarat, Madhya Pradesh, Chattisgarh, some parts of Haryana, Bihar, Jharkhand, Vidarbha, Madhya Maharashtra.

**Actual Mean Minimum Temperature ( $^{\circ}\text{C}$ ) in India for the week ending 09.10.2013**



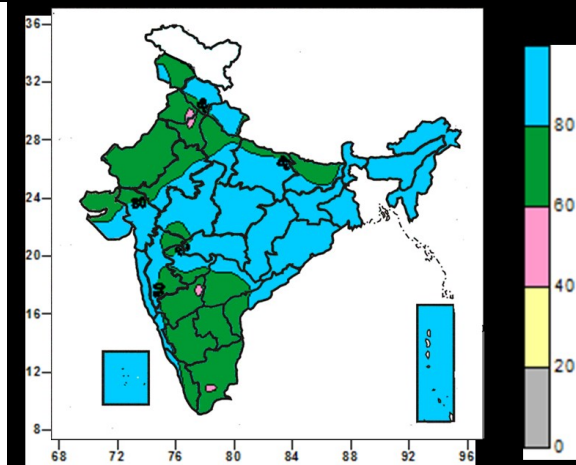
**Mean Minimum Temperature ( $^{\circ}\text{C}$ ) Anomaly in India for the week ending 09.10.2013**



- 20 to 28 $^{\circ}\text{C}$  over many parts of country (except many parts Jammu & Kashmir, Himachal Pradesh, some parts of Rajasthan, Haryana, Bihar, West Madhya Pradesh, Madhya Maharashtra).
- 12 to 20 $^{\circ}\text{C}$  over many parts Jammu & Kashmir, Himachal Pradesh, some parts of Rajasthan, Haryana, Bihar, West Madhya Pradesh, Madhya Maharashtra.

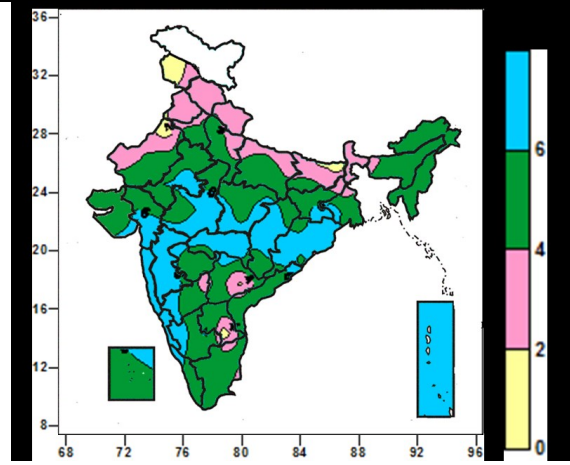
- 2 to 6 $^{\circ}\text{C}$  over many parts of Jammu & Kashmir, Himachal Pradesh, Punjab, West Rajasthan, some parts of East Rajasthan, West Uttar Pradesh, Madhya Pradesh, Gujarat.
- -2 to 2 $^{\circ}\text{C}$  over all the parts of country (except many parts of Jammu & Kashmir, Himachal Pradesh, Punjab, West Rajasthan, some parts of East Rajasthan, West Uttar Pradesh, Madhya Pradesh, Gujarat, North Madhya Maharashtra, North Interior Karnataka, Andaman & Nicobar Islands).
- -4 to -2 $^{\circ}\text{C}$  over some parts of West Madhya Pradesh, North Madhya Maharashtra, North Interior Karnataka, Andaman & Nicobar Islands.

**Relative Humidity (%) over India for the week ending 09.10.2013**



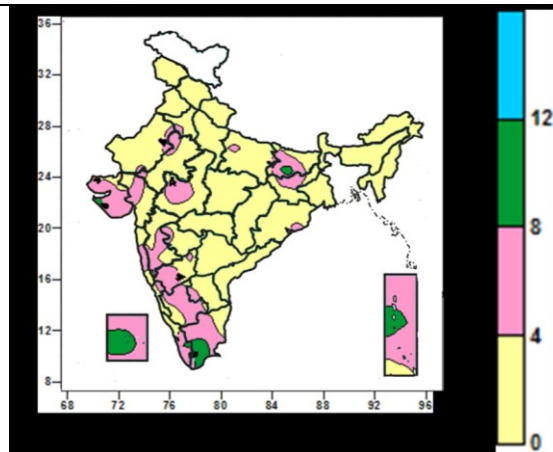
- 60 to 100% over entire country (except some parts of Punjab, Haryana, North Interior Karnataka, Tamil Nadu).
- 40 to 60% over some parts of Punjab, Haryana, North Interior Karnataka, Tamil Nadu.

**Cloud amount (okta) over India for the week ending 09.10.2013**



- 4 to 8 okta over entire country (except many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Bihar, Sub-Himalayan West Bengal & Sikkim, some parts of Haryana, Assam, West Rajasthan, Jharkhand, Gangetic West Bengal, North Interior Karnataka, Andhra Pradesh, Tamil Nadu).
- 0 to 4 okta over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Bihar, Sub-Himalayan West Bengal & Sikkim, some parts of Haryana, Assam, West Rajasthan, Jharkhand, Gangetic West Bengal, North Interior Karnataka, Andhra Pradesh, Tamil Nadu.

**Wind speed (knots) over India for the week ending 09.10.2013**



- 8 to 12 knots over some parts of Saurashtra, Bihar, Tamil Nadu, Kerala, Lakshadweep and Andaman & Nicobar Islands.
- 4 to 8 knots over many parts of Bihar, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, Interior Karnataka, Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of East Uttar Pradesh, Haryana, Jharkhand, Coastal Orissa, Rajasthan, West Madhya Pradesh, Gujarat, Raylaseema, Coastal Karnataka.
- 0 to 4 knots over many parts of the country (except many parts of Bihar, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, Interior Karnataka, Tamil Nadu, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of East Uttar Pradesh, Haryana, Jharkhand, Coastal Orissa, Rajasthan, West Madhya Pradesh, Gujarat, Raylaseema, Coastal Karnataka).

# Weather Forecast

## Weather Forecast for next 3 days (upto 0830 hours IST of 14<sup>th</sup> October, 2013)

- Rain/thundershowers would occur at most places over Andaman & Nicobar Islands during next 48 hours and decrease thereafter.
- Rain/thundershowers would occur at many places over Gangetic West Bengal, Chhattisgarh and Odisha during next 24 hours and increase thereafter.
- Rain/thundershowers would occur at many places over Marathwada, Vidarbha, coastal Andhra Pradesh, Telengana and Kerala.
- Rain/thundershowers would occur at many places over Gujarat state during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at a few places over Rayalaseema, Tamilnadu, Karnataka, Konkan & Goa, Madhya Maharashtra and Lakshadweep.
- Rain/thundershowers would occur at a few places over Jharkhand during next 24 hours and increase thereafter.
- Isolated rain/thundershowers would occur over rest parts of the country outside west Rajasthan and northeastern states where weather would be mainly dry.

## Weather Warning during next 3 days

**11 October:** Heavy to very heavy rainfall would occur at a few places with isolated extremely heavy falls over Odisha from today night . Isolated heavy to very heavy rainfall would also occur over north coastal Andhra Pradesh from today night, Squally/gale winds speed reaching 4555

Kmph gusting to 65 Kmph would prevail over along and off Odisha coast and north Andhra Pradesh coast. State of sea would be rough to very rough along and off Odisha coast and north Andhra Pradesh coast.

**12 October:** Heavy to very heavy rainfall would occur at a few places with isolated extremely heavy falls over Odisha. Isolated heavy to very heavy rainfall would occur over north coastal Andhra Pradesh, Gale wind speed would reach 205- 215 kmph along and off coastal districts of north coastal Andhra Pradesh and

south Odisha at the time of landfall. State of sea would be phenomenal (wave height more than 14 m). It will be rough to very rough along and off West Bengal

**13 October:** Heavy to very heavy rainfall would occur at a few places with isolated extremely heavy falls(> 25 cm) over Odisha.

Heavy to very heavy rainfall would occur at a few places over north coastal Andhra Pradesh. Isolated heavy to very heavy rainfall would occur over Gangetic West Bengal.

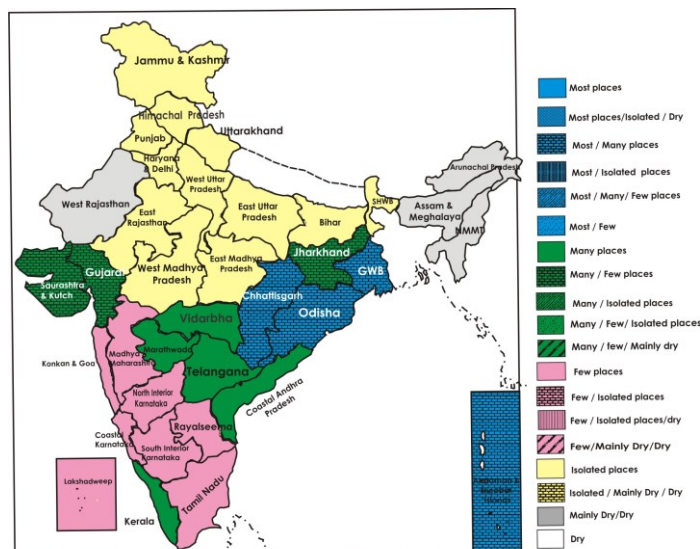
Gale wind speed would reach 205- 215 kmph along and off coastal districts of north coastal Andhra Pradesh and south Odisha at the time of landfall. State of sea would be phenomenal (wave height more than 14 m).It will be rough to very rough along and off West Bengal

## Weather Outlook for subsequent 4 days from 14<sup>th</sup> to 18<sup>th</sup> October, 2013

- Rain/thundershower would occur at most places over east India and east Uttar Pradesh with isolated heavy to very heavy falls over north Chhattisgarh & east Uttar Pradesh on 14<sup>th</sup>.
- Rain/thundershower would occur at a few places over central and adjoining west & south peninsular India
- Rain/thundershower would occur at isolated places over remaining parts of the country outside Jammu & Kashmir, Punjab, Haryana, west Uttar Pradesh and west Rajasthan, where weather would be mainly dry.

## Weather Forecast Map

(Valid upto 0830 hours of 14<sup>th</sup> October, 2013)



## Salient Advisories

### East Region

- In **Odisha**, postpone sowing of mustard, green pea and early *rabi* vegetable crops.
- Arrange adequate drainage channels in soybean, arhar, green gram, black gram, sesame, castor, groundnut and cotton crop fields.
- Arrange for adequate drainage to remove excess water from rice fields and maintain 8-10 cm of water.
- Postpone harvesting of matured vegetable crops.
- Arrange for propping in sugarcane and banana crops to prevent lodging due to high winds.
- Postpone intercultural operations and application of fertilizers and plant protection measures in standing crops.
- In **Gangetic West Bengal** harvest matured maize and vegetable crops immediately. Keep harvested crops in safe places.
- Postpone transplanting of tomato, cabbage and cauliflower.
- Arrange for adequate drainage to remove excess water from rice fields and maintain 5-7 cm of water. Provide adequate drainage channels in fields of vegetables and pulses.
- In **Jharkhand**, harvest matured maize immediately. Keep harvested crops in safe places.
- Postpone sowing of toria, mustard, green peas and planting of potato. And also transplanting of tomato, cauliflower, cabbage.
- Arrange for adequate drainage to remove excess water from rice fields and maintain 5-7 cm of water. Provide adequate drainage channels in fields of arhar, onion, ginger, turmeric, vegetables and pulses.
- In North West Alluvial Plain Zone of **Bihar**, undertake sowing of rapeseed and tobacco.

### South Region

- Farmers are In North Coastal Andhra Pradesh, postpone harvesting of matured groundnut, pulses and maize crops and picking of cotton. Keep harvested crops in safe places.
- Postpone sowing of Chillies.
- Postpone top dressing of fertilizer in rice at panicle initiation stage as the fertilizer may be washed out due to cyclonic rains.
- Arrange for adequate drainage to remove excess water from rice fields and maintain 5-7 cm of water in rice fields. Provide adequate drainage channels in fields of sugarcane, red gram and cotton crops.
- Drain out excess water from cotton field followed by drenching with COC @ 3 g/l.
- Arrange for propping in sugarcane and banana crops to prevent lodging due to high winds.
- Utilizing the residual soil moisture, undertake sowing of sunflower, safflower, *Rabi* Jawar and chickpea in the North Dry zone of Karnataka after proper seed treatment.
- Continue harvesting of soybean in the North East Transition Zone of Karnataka and undertake sowing of Bengal gram.

### Northeast Region

- Maintain standing water in *sali* rice in Assam and Meghalaya, regular WRC rice in Arunachal Pradesh, *khari* rice in Manipur and Nagaland and *aman* rice in Tripura, wherever crops are at panicle initiation / flowering / grain formation stage.
- In Central Brahmaputra Valley Zone of Assam, continue nursery sowing and transplanting of early cole crops, brinjal and radish and also field preparation for *rabi* pulses and oilseeds
- In North Bank Plain Zone of Assam, undertake land preparation for sowing of rapeseed / mustard. Continue planting of potato and nursery sowing of cole crops.
- In Sub Tropical Hill Zone of Arunachal Pradesh, continue nursery sowing of cauliflower, cabbage, sowing of carrot and radish, continue field preparation and sowing of pea, maize, sesame, mustard and planting of potato. Continue harvesting of WRC rice (early sown).
- In Meghalaya, continue nursery raising of early cauliflower and winter vegetables, land preparation and sowing of potato, rapeseed and mustard. Also harvest matured groundnut.
- Continue sowing for *rabi* vegetables like carrot, radish, coriander etc. in Sub Tropical Plain Zone of Manipur. Also continue land preparation for transplanting of onion and for planting potato.
- In Mild Tropical Hill Zone of Nagaland, continue nursery raising of cabbage and tomato and land preparation and sowing of rajma and potato. Undertake sowing of maize. Continue harvesting of matured Upland rice.

### West Region

- Postpone irrigation, intercultural operation, application of fertilizers and plant protection measures in Gujarat region and Saurashtra. Arrange for adequate drainage to remove excess water from the crop fields.
- In Vidarbha, postpone irrigation, intercultural operation, application of fertilizers and plant protection measures in cotton, red gram and vegetables. Maintain upto 7 cm water level in rice fields in Bhandara, Gondia, Gadchiroli and Chandrapur districts. Complete the harvesting of matured soybean after current spells of rain. Harvested crop may be kept in safer place.
- In Madhya Maharashtra, undertake intercultural operations, application of fertilizers and plant protection measures in cotton, red gram, sugarcane, onion and vegetable crops like brinjal, tomato, okra on a non-rainy day. Maintain 8-10 cm water level in rice fields. Complete the harvesting of already matured soybean on bright sunny days. Continue sowing of *rabi* jowar and safflower in the harvested fields of green gram, black gram and bajra. Pruning may be done in grapes. Start harvesting of already matured *adsali* and pre-seasonal sugarcane and already matured groundnut.
- In Marathwada, postpone intercultural operations, application of fertilizers and plant protection measures in cotton, red gram, vegetables and sugarcane. Postpone harvesting of already matured soybean.
- Undertake land preparation for sowing of garlic and chickpea in North Saurashtra Zone, for *rabi* crops in South Gujarat Heavy Rainfall Zone and for *rabi* (unirrigated) crops in North Gujarat Zone and also continue planting of sugarcane in South Gujarat Zone

### Central Region

- In Chattisgarh, harvest matured soybean, green gram, arhar immediately (within two days). Keep harvested crops in safe places.
- Postpone sowing of toria, mustard, green peas and planting of potato.
- Arrange for adequate drainage to remove excess water from rice fields and termaintain 5-7 cm of water. Provide adequate drainage channels in sugarcane, vegetables, maize, ragi and groundnut crop fields.
- In Central Narmada Valley Zone, Jhabua Hill Zone, Grid Zone, Malwa Plateau zone and Nimar Valley Zone of Madhya Pradesh, continue harvesting of matured green gram, black gram, maize, til and soybean.
- In Kymore Plateau Zone and Satpura Hill Zone, Gird Zone and Malwa Plateau zone of Madhya Pradesh, continue land preparation for sowing of peas, sarsoon masoor and toria.

### North Region

- In Sub Tropical Zone of Jammu & Kashmir, undertake sowing of mustard and harvesting of rice, maize and bajra. In Intermediate zone of Jammu & Kashmir, continue planting of potato, cauliflower, onion and also harvesting of matured maize.
- In Bhabar and Tarai Zone of Uttarakhand, continue field preparation and sowing of toria, mustard and also undertake sowing of autumn sugarcane and undertake sowing of tomato in nursery and sowing of vegetables viz. pea, coriander, spinach, radish, fenugreek, etc. and complete harvesting of rice, soybean, moong and urad.
- In East Uttar Pradesh, postpone sowing of toria and potato and continue land preparation for planting of sugarcane. In Central Plain Zone of Uttar Pradesh undertake sowing of peas, Bengal gram, winter maize and winter vegetables
- In Eastern Zone of Haryana, harvest the mature rice crop and complete planting of winter sugarcane. Give irrigation to vegetable and horticultural crops.
- In Western Plain Zone of Punjab undertake picking of cotton. Plant CoJ 64, CoJ 83 and CoJ 85 varieties of sugarcane.
- In Arid Western Plain Zone of East Rajasthan, start harvesting of mothbean, pearl millet etc. Also undertake land preparation for sowing of *rabi* crops viz. taramira, sarson, mustard and gram.

## Detailed Zonewise Agromet Advisories

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



**Rice**



**Groundnut**



**Sugarcane**



**Maize**



**Jowar**

- **Realised Rainfall:** Significant rainfall occurred in Kangra, Sirmaur and Una districts of Himachal Pradesh, all districts of east Uttar Pradesh except Maharajganj, Agra, Auraiya, Badaun, Bareilly, Etah, Firozabad, Hamirpur, Jalaun, Jhansi, Kanshiramnagar, Lalitpur, Mahamaya nagar, Mahoba, Mainpuri, Mathura and Pilibhit districts of west Uttar Pradesh, Dehradun district of Uttarakhand, Jammu, Kathua and Reasi districts of Jammu & Kashmir, Fatehgarh Sahib and Gurdaspur districts of Punjab, Banswara, Baran, Bharatpur, Dholpur, Dungarpur, Jhalawar, Kota, Pratapgarh and Sirohi districts of east Rajasthan.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over region out side west Rajasthan. Mainly dry weather would occur over west Rajasthan.
- **Weather Outlook:** Rain/ thundershowers would occur at most places over east Uttar Pradesh with isolated heavy to very heavy fall over east Uttar Pradesh. Weather would mainly be dry over Jammu & Kashmir, Punjab, Haryana, west Uttar Pradesh and west Rajasthan.

### **Advisory :**

- In Sub Tropical Zone of Jammu & Kashmir, undertake sowing of mustard and harvesting of rice, maize, bajra. In Intermediate zone of Jammu & Kashmir, continue sowing / planting of potato, cauliflower, onion and also harvesting of matured maize.
- In Bhabar and Tarai Zone of Uttarakhand, continue field preparation and sowing of toria, mustard and also undertake sowing of rai, autumn sugarcane and undertake sowing of tomato in nursery and sowing of vegetables viz. pea, coriander, spinach, radish, fenugreek, etc. and complete harvesting of rice, soybean, moong and urad.
- In Hill Zone of Uttarakhand, undertake land preparation for sowing of onion, sarson, masoor, garlic, radish, palak, rai and cabbage.
- In Arid Western Plain Zone of East Rajasthan, start harvesting of mothbean, pearl millet etc. Also undertake land preparation for sowing of *rabi* crops viz. taramira, sarson, mustard and gram.
- In Southeastern plain Zone of Rajasthan, undertake land preparation for sowing of sarson.
- In Irrigated North Western Zone of Rajasthan, undertake picking of cotton and land preparation for sowing of gram, sarson. Also start land preparation for sowing of gram in Sub-Humid Southern Plain and Aravali Hill Zone.
- In High Hill Temperate Dry Zone of Himachal Pradesh, continue harvesting of matured pods of peas and undertake mulching in apple to retain soil moisture as it is in fruit enlargement and ripening stage.
- In Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, undertake sowing of Gobhi sarson and early peas.
- In East Uttar Pradesh, undertake sowing of toria and potato and continue land preparation for planting of sugarcane .
- In Central Plain Zone of Uttar Pradesh undertake sowing of peas, Bengal gram, winter maize and winter vegetables like spinach, fenugreek, coriander, radish and carrot and sowing of potato with intercropping of mustard.
- In Central Plain Zone of Uttar Pradesh, undertake harvesting of matured maize at the earliest and maintain water level 3 to 5 cm standing in rice at flowering/early grain formation stage.
- In Delhi keeping temperature in view sowing of early mustard should be done in this week. Sowing of carrot can be done in raised beds. This is suitable time for sowing of pea, sarson saag, radish, spinach, coriander. fenugreek, turnip and planting of early potato.
- In Western Zone of Haryana, farmers are advised to prepare the field and start the sowing for raya and gram when weather is clear. Do the Picking of cotton balls and harvest the ripened bajra and cluster bean crop.
- In Eastern Zone of Haryana, harvest the mature rice crop and complete planting of winter sugarcane. Give irrigation to vegetable and horticultural crops.

- In Central Plain Zone in Punjab, start planting of garlic, sowing of turnip and carrot and planting of potato.
- In Western Plain Zone of Punjab undertake picking of cotton. Plant CoJ 64, CoJ 83 and CoJ 85 varieties of sugarcane. Use Punjab Naroya, Punjab White and PRO 6 varieties of onion to raise seedlings for transplanting in one acre. Also transplant 4-6 weeks old seedlings of cabbage and chinese cabbage.
- In Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, red beetle attack is seen in the cucurbits, spray Malathion @ 1ml per litres of water or Carbaryl @ 2g per litres of water. Fruit fly attack is also seen in cucurbits, spray Malathion @1ml + 10 g jaggery per litres of water.
- Due to humid and cloudy weather in Eastern Plain Zone of Uttar Pradesh, there are chances of occurrence of blast disease on rice at panicle initiation stage, spray Quinalphos @ 1 litre/ha or Carbendazim @ 1Kg/ha after spells of heavy rain.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Floriculture**

- In Delhi, undertake marigold plantation in this weather conditions.
- In Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, due to high humidity attack of blue beetle is observed in roses and balsam, for control, spray Endosulphon @0.1% or Cypermythrin @0.05%. Weather is conducive for attack of mites in carnation, for control spray Cypermythrin @ 0.05% in 15 days interval.

#### ➤ **Animal Husbandry**

- In Mid Hills Sub-Humid Zone of Himachal Pradesh, occurrence of tick infestation is observed in grazing animals, apply Ectoparasiticide like Cypermethrin (10%w/v) @ 2-3ml per litres of water. Cattle sheds (floors and crevices) must be sprayed using this drug @5ml/litre of water. Due to diurnal variation in temperature occurrence of respiratory diseases (Pneumonia) increases, protect the animals during night hours from reducing temperature. New born and young calves may be covered with dry gunny bags during night hours.

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



*Rice*



*Soybean*



*Sugarcane*



*Maize*



*Green gram*

- **Realised Rainfall:** Significant rainfall occurred in all the districts of East Madhya Pradesh and in most all the districts of West Madhya Pradesh except Badwani, Khandwa, Khargone, Mandsaur, Neemuch, Sehore and Vidisha and in all the districts of Chhattisgarh except Baster and Dantewada districts during the week.
- **Weather forecast:** Rain/thundershowers would occur at many places over Chhattisgarh during next 24 hours and increase thereafter and at isolated places over Madhya Pradesh.
- **Weather Warning:** nil
- **Weather Outlook:** Isolated heavy to very heavy falls over north Chhattisgarh 14<sup>th</sup> and at few places over the region.
- **Advisories:**
  - In Chattisgarh, harvest matured soybean, green gram, arhar immediately. Keep harvested crops in safe places.
  - Postpone sowing of toria, mustard, green peas and planting of potato.
  - Arrange for adequate drainage to remove excess water from rice fields and maintain 5-7 cm of water. Provide adequate drainage channels in sugarcane, vegetables, maize, ragi and groundnut crop fields.
  - In Central Narmada Valley Zone, Jhabua Hill Zone, Grid Zone, Malwa Plateau zone and Nimar Valley Zone of Madhya Pradesh, continue harvesting of matured green gram, black gram, maize, til and soybean.

- In Kymore Plateau Zone and Satpura Hill Zone, Gird Zone and Malwa Plateau zone of Madhya Pradesh, continue land preparation for sowing of peas, sarsoon masoor and toria.
- In Bundelkhand Zone, Kymore Plateau Zone and Satpura Hill Zone, Malwa Plateau zone and Nimar Valley Zone of Madhya Pradesh, continue nursery raising of tomato, chilli, brinjal, cabbage and cauliflower. Continue land preparation for sowing of radish, methi, sarsoon, palak, coriander, beet.
- In Chhattisgarh Plain Zone, present weather conditions are congenial for infestation rice plant hopper, spray of Ethiemidachlorprid @ 60 ml/acre or Biprophagin@1ml/ liter of water for the control after spells of heavy rain and if hopper infestation is in initial stage draining off water from their field and again fill it after 2-3 days for the control.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III
- **ANIMAL HUSBANDRY & POULTRY**
  - In Chattisgarh, keep animals indoor during the period to protect from heavy rain.
  - In Madhya Pradesh, vaccinate the catles against H.S., B.Q. and FMD diseases and also deworming in cattles and goats.

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



*Rice*

*Sugarcane*

*Maize*

*Groundnut*

*Turmeric*

- **Realised Rainfall:** Significant rainfall occurred in most districts of Odisha except Bolangir, Boudh, Deogarh, Gajapati and Nawapara; in all districts of Gangetic West Bengal except Murshidabad; in all districts of Sub-Himalayan West Bengal; in North Sikkim; in most districts of Jharkhand except Deoghar, Khunti and Saraikela; in many districts of Bihar except in Araria, Bhagalpur, Jahanabad, Katihar, Lakhisarai, Monghyar, Purnea, Saharsha and Sheikpura during last week.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Gangetic West Bengal and Odisha during next 24 hours and increase thereafter, few places over Jharkhand during next 24 hours and increase thereafter, at isolated places over rest part of the region.
- **Weather Warning:** Heavy to very heavy rainfall would occur at few places over Odisha with isolated extremely heavy falls over Odisha during the period and isolated heavy to very heavy rainfall would occur over Gangetic West Bengal on 13<sup>th</sup>.
- Squally, Gale winds speed reaching 45 to 55 kmph gusting to 65 kmph would prevail over along and off Odisha Coast on 11<sup>th</sup>. Gale winds speed would reach 205 to 215 kmph along SOUTH Odisha at the time of land fall on 12<sup>th</sup> and 13<sup>th</sup>.
- Sea condition will be rough to very rough along and off West Bengal. Fishermen are advised not to venture into east central Bay of Bengal. Fishermen out at sea along Odisha and West Bengal coast are advised return to coast.
- **Weather Outlook:** Rain/thundershower would occur at most places over east India on 14<sup>th</sup>.
- **Advisories:**
  - In Odisha, postpone sowing of mustard, green pea and early *rabi* vegetable crops.
  - Arrange adequate drainage channels in soybean, arhar, green gram, black gram, sesame, castor, groundnut and cotton crop fields.
  - Arrange for adequate drainage to remove excess water from rice fields and maintain 8-10 cm of water.
  - Harvest matured vegetable crops immediately.
  - Arrange for propping in sugarcane and banana crops to prevent lodging due to high winds.
  - Postpone intercultural operations and application of fertilizers and plant protection measures in standing crops.
  - In Gangetic West Bengal harvest matured maize and vegetable crops immediately. Keep harvested crops in safe places.
  - Postpone transplanting of tomato, cabbage and cauliflower.
  - Arrange for adequate drainage to remove excess water from rice fields and maintain 5-7 cm of

- water. Provide adequate drainage channels in fields of vegetables and pulses.
- In Jharkhand, harvest matured maize immediately. Keep harvested crops in safe places.
  - Postpone sowing of toria, mustard, green peas and planting of potato. And also transplanting of tomato, cauliflower, cabbage.
  - Arrange for adequate drainage to remove excess water from rice fields and maintain 5-7 cm of water within paddies. Provide adequate drainage channels in fields of arhar, onion, ginger, turmeric, vegetables and pulses.
  - Postpone intercultural operations and application of fertilizers and plant protection measures in standing crops.
  - In North West Alluvial Plain Zone of Bihar, undertake sowing of rapeseed and tobacco. Undertake intercultural operation in the pigeon pea crop sown during August – September and apply urea 10 kg per acre and undertake weeding/hoeing and top dressing of urea in early transplanted cauliflower, chilli, brinjal and tomato.
  - Due to humid weather conditions in New Alluvial Zone, Laterite and Red Soil Zone, Terai Zone of West Bengal sheath blight can be seen in *aman* rice, apply Validamycin (sheath mar) @2ml or Propiconazol 25% @ 0.75ml per litre of water and to protect the crop from stem borer or leaf hopper, apply Chlorpyrifos 2.5ml or Triazophos 2ml per litre of water after spells of heavy rain.
  - Present temperature and humidity conditions in New Alluvial Zone, Laterite and Red Soil Zone of West Bengal are congenial for the rapid spread of thrips and mites leading to the leaf curling in chilli and also white fly in okra leading to the spread of yellow mosaic virus. Spray Difenthiuron @ 0.75g per litre of water after spells of heavy rain. Repeat after 7-10 days interval.
  - Due to high humidity and cloudy sky in Laterite and Red Soil Zone of West Bengal, Fungal and bacterial diseases may be seen in kharif maize. Apply 2.5g Mancozeb for fungal attack and 0.1g Streptocycline per litre of water in case of bacterial rot after spells of heavy rain.
  - In Western Plateau Zone and South Eastern Plateau Zone of Jharkhand, rice crop are at flowering stage and this stage is susceptible to the attack of the Gandhi bug. To control the insects, dusting of Chlorpyrifos / Quinolphos /Methyl parathion dust @ 10 kg per acre may be done after spells of heavy rain.
  - White ant attack in groundnut has been found in the dry areas of North Central Plateau Zone of Odisha. Undertake soil drenching with 2 ml Chloropyrifos in each litre water after spells of heavy rain. For control of leaf minor has occurred, spray 2 ml Chloropyrifos /litre water to control it after spells of heavy rain.
  - **Animal Husbandry**
  - Keep animals indoor during the period of heavy rain and high winds in Odisha, West Bengal and Jharkhnd.
  - Stages of major crops are mentioned in Annexure I.
  - Varieties are mentioned in Annexure III.

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



*Sugarcane*



*Rice*



*Groundnut*



*Maize*



*Cucurbits*

- **Realised Rainfall:** Significant rainfall occurred in most of the districts of the States of the region except Anjaw, Kurung, Kumey, Lower Subansari, Upper Subansari and West Siang of Arunachal Pradesh, Baksa district of Assam, East Garo Hills and West Khasi Hills districts of Meghalaya, Chhimtuipui and Kolasib districts of Mizoram, Imphal West and Tamenglong districts of Manipur, Kephire, Longleng, Mon, Paren, Tuensang and Zunheboto districts of Nagaland.
  - **Weather Forecast:** Mainly dry weather would occur over the States of the region during the period.
  - **Weather Warning:** Nil.
  - **Weather Outlook:** Rain / thundershower would occur at isolated places over the states of the region.
- Advisories:**
- Maintain standing water in *sali* rice in Assam and Meghalaya, regular WRC rice in Arunachal Pradesh,

*kharif* rice in Manipur and Nagaland and *aman* rice in Tripura, wherever crops are at panicle initiation / flowering / grain formation stage.

- In Hill Zone of Assam, continue nursery raising of winter vegetables.
- In Lower Brahmaputra Valley Zone of Assam, continue sowing of niger, nursery raising of brinjal, mid cauliflower, early cabbage and kholkhol and land preparation for onion. In Barak Valley Zone of Assam, continue transplanting of early varieties of cabbage, cauliflower, knolkhol, Autumn planting of sugarcane and field preparation for planting of potato. Continue intercropping of rapeseed or mustard with Autumn planted sugarcane.
- In Central Brahmaputra Valley Zone of Assam, continue nursery sowing and transplanting of early cole crops, brinjal and radish and also field preparation for *rabi* pulses and oilseeds.
- In North Bank Plain Zone of Assam, undertake land preparation for sowing of rapeseed / mustard. Continue planting of potato and nursery sowing of cole crops.
- In Sub Tropical Hill Zone of Arunachal Pradesh, continue nursery sowing of cauliflower, cabbage, sowing of carrot and radish, continue field preparation and sowing of pea, maize, sesame, mustard and planting of potato. Continue harvesting of WRC rice (early sown).
- In Meghalaya, continue nursery raising of early cauliflower and winter vegetables, land preparation and sowing of potato, rapeseed and mustard. Also harvest matured groundnut.
- Continue sowing for *rabi* vegetables like carrot, radish, coriander etc. in Sub Tropical Plain Zone of Manipur. Also continue land preparation for transplanting of onion and for planting potato.
- In Mild Tropical Hill Zone of Nagaland, continue nursery raising of cabbage and tomato and land preparation and sowing of rajma and potato. Undertake sowing of maize. Continue harvesting of matured Upland rice.
- Continue transplanting of early cauliflower, radish and brinjal and land preparation for planting of potato in Mid Tropical Plain Zone of Tripura. Complete harvesting of *jhum* rice. After harvesting of *jhum* rice is completed, undertake land preparation for sowing of sesame.
- In Hill Zone of Assam, there is chance of infestation of rice blast and stem borer in *sali* rice; spray Hinosan @ 1 ml / litre of water for rice blast and spray Chloropyriphos (20%) @ 2 ml / litre of water for stem borer.
- In North Bank Plain Zone of Assam, there is a chance of infestation of Gundhi bug in *sali* rice; apply Malathion 5% dust @ 20 kg / ha to control Gundhi bug in *sali* rice.
- In Sub Tropical Hill Zone of Arunachal Pradesh, under present weather conditions, large scale attack of Gundhi bug has been reported in WRC rice and likely to continue; apply Malathion dust 5% @ 20 kg / ha to control Gundhi bug in *sali* rice.
- In Mild Tropical Plain Zone of Tripura, weather is conducive for the attack of Gundhi bug in *aman* rice (short duration); manage the attack of gandhi bug in the field by applying Cypermethrin + Propenophos @ 1.5 ml per litre or Cartap Hydrochloride @ 1.5 g per litre of water. Weather is favourable for the development of rice blast in *aman* rice (long duration); spray Benlate or mancozeb @ 0.25% to manage rice blast.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
  - The present weather condition in Mild Tropical Plain Zone of Tripura is favourable for infestation of round worm, flukes and tapeworms in cattle. De-worming may be done undertaken. Due to continuous rain, chances of contamination of feed from fungus and bacteria increases; hence, farmers are requested to boil the feeds before giving to pigs to kill harmful insects or parasites.
  - In Mild Tropical Hill Zone of Nagaland, there is a high risk of occurrence of Avian influenza after monsoon; therefore, keep watch on any unusual sickness or mortality in birds and inform the nearest concerned authorities for control of the disease.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



*Rice*



*Groundnut*



*Cotton*



*Sugarcane*



*Cotton*

- **Realised Rainfall:** All the districts of Konkan and Vidarbha, Ahmednagar, Jalgaon, Nandurbar and Nasik district in Madhya Maharashtra and all the districts in Marathwada except Usmanabad district received significant rainfall during last week. Significant rainfall occurred in all the districts of Gujarat State except Anand, Jamnagar, Kutch, Rajkot and Surendranagar districts.
- **Weather Forecast:** Rain / thundershowers would occur at many places over Marathawada and Vidarbha and at a few places over Konkan & Goa and Madhya Maharashtra during the period. Rain / thundershowers would occur at many places over Gujarat state during next 24 hours and decrease thereafter.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain / thundershower would occur at a few places over Marathwada and Vidarbha and at isolated places over the rest of the region.
- **Advisories:**
  - Postpone irrigation, intercultural operation, application of fertilizers and plant protection measures in Gujarat region and Saurashtra.
  - In Vidarbha, postpone irrigation, intercultural operation, application of fertilizers and plant protection measures in cotton, red gram and vegetables. Maintain upto 7 cm water level in rice fields in Bhandara, Gondia, Gadchiroli and Chandrapur districts. Complete the harvesting of matured soybean after current spells of rain. Harvested crop may be kept in safer place.
  - Undertake intercultural operations, application of fertilizers and plant protection measures in vegetable fields and mango, cashew and sapota orchards in Konkan on a non-rainy day. Maintain water level upto 8-10 cm in rice fields in mid late and late maturing rice field. As early maturing variety of rice is at maturity stage in Konkan, undertake harvesting on bright sunny days.
  - In Madhya Maharashtra, undertake intercultural operations, application of fertilizers and plant protection measures in cotton, red gram, sugarcane, onion and vegetable crops like brinjal, tomato, okra on a non-rainy day. Maintain 8-10 cm water level in rice fields. Complete the harvesting of already matured soybean on bright sunny days. Continue sowing of *rabi* jowar and safflower in the harvested fields of green gram, black gram and bajra. Pruning may be done in grapes. Start harvesting of already matured *adsali* and pre-seasonal sugarcane and already matured groundnut.
  - In Marathwada, postpone intercultural operations, application of fertilizers and plant protection measures in cotton, red gram, vegetables and sugarcane. Postpone harvesting of already matured soybean.
  - Undertake land preparation for sowing of garlic and chickpea in North Saurashtra Zone, for *rabi* crops in South Gujarat Heavy Rainfall Zone and for *rabi* (unirrigated) crops in North Gujarat Zone and also continue planting of sugarcane in South Gujarat Zone.
  - Considering the forecast of rainfall, temperature and humidity in Western Ghat region, there is possibility of incidence of leaf roller in rice; spray Chlorpyrifos @ 15 ml or Monocrotophos @15 ml per 10 litres of water on a non-rainy day.
  - Due to uneven rain and high relative humidity, there may be attack of aphids, leaf hoppers, red pumpkin beetle, leaf eating caterpillars, leaf miner in gourd vegetables in South Konkan; spray Malathion 20 ml or Dimethoate 15 ml per 10 litres of water at 10 to 15 days interval on a non-rainy day.
  - Humid weather is congenial for attack of sap sucking pests in cotton in Marathwada region; spray Acephate 75% @ 20 g against thrips, Thiamethoxam 25% @ 25 g against jassids and Triazophos 40% @ 20 ml per 10 litres of water against white fly after current spells of rain.
  - Prevailing high humid, cloudy weather and temperature around 30<sup>0</sup>C in Pune region is favourable for the spread of downy mildew on cucumber like vegetables; spray Metalaxyl 8% + Mancozeb 64% @ 20 g per 10 liters of water with sticker at 10-12 days interval on a non-rainy day.
  - Stages of major crops are mentioned in Annexure I.

- **Animal Husbandry**

- In Gujarat, keep animals under sheds during heavy rainfall. Provide clean drinking water at least thrice a day. Provide 6-8 kg of good quality of dry fodder with 15 to 20 kg green fodder to animals.

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



*Rice*

*Sugarcane*

*Groundnut*

*Black gram*

*Cotton*

- **Realized rainfall:** Significant rainfall occurred in most of the districts in Coastal Andhra Pradesh except Nellore and Vizianagaram; Chittoor and Cuddapah in Rayalaseema; most of the districts in Telangana except Hyderabad; Dharmapuri, Karur, Karaikal, Krishnagiri, Nammakal, Pudukkotai, Salem, Thiruvannamalai Trichy, Vellore, Nilgiris, Perambalur and Villupuram in Tamil Nadu; all the districts in Coastal Karnataka; Bidar in North Interior Karnataka; Bangalore Rural & Urban, Chickballapur, Kolar and Shimoga districts in South Interior Karnataka and most of the districts in Kerala except Malappuram, Palakkad, Pathanamthitta and Thiruvananthapuram. No significant rainfall occurred in the remaining parts of the region during the week.
- **Rainfall Forecast:** Rain/thundershowers would occur at most places over Andaman & Nicobar Islands during next 48 hours and decrease thereafter, many places over Coastal Andhra Pradesh, Telangana and Kerala and few places over Rayalaseema, Tamil Nadu and Karnataka.
- **Weather Warning:** Isolated heavy to very heavy rainfall would occur over north coastal Andhra Pradesh on 11<sup>th</sup> and 12<sup>th</sup>; heavy to very heavy rainfall at a few places on 13<sup>th</sup> October.
- Squally, Gale winds speed reaching 45 to 55 kmph gusting to 65 kmph would prevail over along and off North Coastal Andhra Pradesh on 11<sup>th</sup> Gale winds speed would reach 205 to 215 kmph along and off North Coastal Andhra Pradesh, at the time of land fall on 12<sup>th</sup> and 13<sup>th</sup>.
- **Weather Outlook:** Rain/thundershowers would occur few places over south peninsular India and isolated places over remaining parts of the region.
- Farmers are In North Coastal Andhra Pradesh, harvest matured groundnut, pulses and maize crops and picking of cotton immediately. Keep harvested crops in safe places.
- Postpone sowing of Chillies.
- Postpone top dressing of fertilizer in rice at panicle initiation stage as the fertilizer may be washed out due to cyclonic rains.
- Arrange for adequate drainage to remove excess water from rice fields and maintain 5-7 cm of water in rice fields. Provide adequate drainage channels in fields of sugarcane, red gram and cotton crops.
- Drain out excess water from cotton field followed by drenching with COC @ 3 g/l.
- Arrange for propping in sugarcane and banana crops to prevent lodging due to high winds.
- **Advisories:**
- Utilizing the residual soil moisture, land preparation for sowing of bengal gram, rabi groundnut and jowar (Kurnool district only) may be undertaken in Scarce Rainfall zone of Andhra Pradesh. Undertake intercultivation to aerate the soil and apply urea 10 Kg and muriate of potash 15 kg per acre as a booster dose to prevent inundation of cotton crop showing stunted growth due to lack of aeration to root system.
- Undertake intercultural operations in ragi, groundnut and red gram crops in the Eastern Dry zone of Karnataka.
- Utilizing the residual soil moisture, undertake sowing of sunflower, safflower, *Rabi* Jawar and chickpea in the North Dry zone of Karnataka after proper seed treatment.
- Undertake intercultural operations and complete spray schedules (Insecticide/Herbicide/Fungicide) in the standing crops like red gram, groundnut, rice and maize in Southern Transition Zone of Karnataka.
- Continue harvesting of soybean in the North East Transition Zone of Karnataka and undertake sowing of bengal gram after proper seed treatment with varieties such as JG -11, Annegeri -1, ICCV-10 and also of *rabi* sorghum after soaking the seeds in 30g Calcium Chloride solution in 1.5 litres of water for 8 hours,

and then shade-dry to induce drought resistance.

- Undertake spraying of mixture of 2% urea or 2% KNO<sub>3</sub> or 1% of 19:19:19 soluble fertilizer with 1% MgSO<sub>4</sub> and Planofix (5 ml in 15 lit of water) to minimize leaf reddening and square dropping in cotton in the North Transition Zone of Karnataka and check for excessive vegetative growth if noticed nip of growing shoot tip is also advised.
- As cotton crop is flowering formation stage spray Planofix @0.25 ml per litre of water to reduce the square/flower bud/flower drop and undertake harvesting of maize crop in Central Dry zone of Karnataka.
- Undertake land preparation for Mundakan rice crop in the Northern and Southern Zone of Kerala.
- Short duration vegetable crops like Amaranthus, cow pea etc. may be sown in the interspaces of newly planted banana plantation in the High Altitude Zone of Kerala.
- Undertake land preparation for new planting of banana in the Problem Area Zone in Kerala.
- Continue transplanting of samba rice in the Cauvery Delta zone of Tamilnadu. Undertake harvesting of matured *kuruvai* rice and land preparation for nursery sowing of *thaladi* rice in Nagapattinam district.
- Undertake land preparation for sowing of sorghum, cowpea, green gram and cluster bean in the Western Zone of Tamil Nadu.
- Undertake land preparation and sowing of maize, cotton and rainfed crops in the Southern Zone of Tamil Nadu.
- Undertake sowing of cotton, maize, sorghum, pulses and minor millets in South Zone of Tamil Nadu.
- Undertake proper drainage facility in turmeric crop field to avoid root rot diseases and pour copper oxide chloride @ of 3 gm / of water in the root region if incidences are seen, in the Western Zone of Tamil Nadu.
- Undertake spraying of Carbendazim @ 1gm/ litre of water or Tricyclozole @0.6 gm/litre of water and remove the weed hosts around the rice fields to control blast disease in the Southern Dry Zone of Karnataka.
- Undertake ovicidal insecticide spraying of Thiodicarb 75 WP @1g/lit of water for controlling pink bollworm along with Copperoxychloride @ 3 g /lit and Streptocycline @ 0.5 gm/lit of water to control boll rotting in 100-110 days old cotton crop in North Transition zone of Karnataka.
- There is possibility of incidence of purple blotch in onion due to continues cloudy weather and drizzling rainfall, to control this undertake spraying of chlorothalonil or mancozeb (at the rate of 2 gram per liter ) with adhesive gum to the spraying mixture in the Hill Zone of Karnataka.
- Monitor for the incidence of stem borer, blast and brown spot diseases rice fields in the High Altitude Zone of Kerala. “Trichogramma” egg cards may be used for reducing the rice stem borer infestation. As a prophylactic measure to control blast and sheath rot diseases, spray 2.0 g Pseudomonas per one liter of water on a non rainy day at weekly intervals and avoid excess usage of nitrogen fertilizers.
- Present weather is congenial for brown plant hopper (BPH), rice bug, leaf roller, brown spot and bacterial leaf blight in rice, leaf fall & dieback disease in nutmeg and viral diseases in vegetables in the Problem Area zone of Kerala. Undertake plant protection measures if noticed after spells of heavy rain.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- Keep animals indoor during the period in North Coastal Andrapradesh during the period.
- Blue tongue disease is prevalent during North East monsoon season in the North Western Zone of Tamil Nadu. Vaccinate sheep of above 3 months of age against the disease and repeat the vaccination once a year. Ensure cool drinking water to the birds throughout the day, vaccinate the birds against Ranikhet disease and do not offer feed the birds when the temperature is high, since elevated temperatures are likely to cause mortality in poultry particularly heavy male birds.
- North east monsoon is expected to start by next week. Hence, avoid water leakage in cattle and poultry sheds and protect feeds of animals and poultries from rain to avoid spreading of diseases in the Western Zone of Tamil Nadu.

## Annexure I Stages of Major Crops

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

- Tomato, brinjal, chilli (vegetative / flowering / fruiting), French bean, okra (fruiting/ harvesting), rice (panicle initiation), maize (cob maturity/harvesting), soybean (harvesting), peas (pod formation / maturity), cauliflower (Transplanting), cucurbits *viz. khira*, bitter gourd, tori (flowering / fruiting), radish, carrot, turnip, beet leaf and fenugreek (direct sowing), gobhi sarsson (sowing), onion (planting), potato (tuber maturity/harvesting), apple (fruit maturity/harvesting) in Himachal Pradesh.
- Rice (maturity / harvesting), ginger (vegetative), sugarcane (vegetative / active vegetative), urad, moong, soybean (pod maturity / harvesting), pigeon pea, cowpea, horse gram, rice bean (maturity/ harvesting), sesame in low land area (early vegetative / vegetative), pearl millet (grain maturity/ harvesting), vegetable pea (sowing / germination), toria (land preparation / sowing), tomato, mustard(nursery sowing / transplanting), potato(planting / transplanting), rai, Autumn sugarcane(planting), sarson, masoor(field preparation for sowing) in Uttarakhand.
- Rice (maturity/harvesting), maize (cob maturity/harvesting), pole type beans (vegetative), cowpea (pod maturity/harvesting), sunflower (vegetative / flowering), radish, spinach (transplanting / early vegetative), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), fruit crops (planting), *Kharif*pulses (moong, mash) (pod maturity/harvesting), beans, moong, rajmash (Valley Temperate Zone) (pod maturity / picking), toria (sowing/emergence), potato, palak (sowing / planting) in Jammu & Kashmir.
- Rice (flowering/maturity), cotton (flowering / boll formation/ picking), tomato, brinjal, chilli (nursery sowing / transplanting), mothbean, pearl millet (maturity/harvesting), Shimla mirch (early vegetative / vegetative), groundnut (early vegetative / vegetative), new sugarcane (early vegetative / vegetative), soybean (Pod maturity/harvesting), sesame(flowering /capsule formation), castor (flowering), rainfed taramira, toria, gram and mustard, potato (field preparation / sowing), cucurbits (sowing), radish, Deshi carrot –sowing, cabbage and cauliflower (nursery sowing), onion(nursery raising) and fruit crops (ber, aonla, pomegranate, phalsa) (transplanting) in Rajasthan.
- Rice (grain maturity/ harvesting), *Kharif* maize (maturity), fodder maize, bajra, sorghum and other fodder crops(vegetative / cutting), Lady's finger, chilli and cucurbits crop (flowering / fruiting / picking),brinjal, tomato, chilli, cauliflower and cabbage(vegetative / flowering), soybean (flower initiation/maturity), radish, spinach and coriander (vegetative), guar, bajra (flowering / grain filling), onion (vegetative), Cucurbitaceous crops (flowering / fruiting / picking), mustard, pea, carrot(land preparation / sowing) in Delhi.
- *Kharif* maize (cob maturity/harvesting), jowar, bajra, (flowering/grain filling/ milking), pigeon pea (vegetative/branching) rice (flowering/early grain formation), groundnut, arhar, moong and urad (vegetative/branching), tomato, brinjal, chilli (fruiting/picking), sesamum (capsule formation/capsule maturity), black gram, green gram (flowering/pod formation), spring sugarcane (active vegetative/grand growth), toria, potato (sowing / sprouting/early vegetative) in Uttar Pradesh.
- New sugarcane (tillering / vegetative), cotton (vegetative), cucurbits, cowpea (sowing), rice (flowering), black gram, green gram, soybean, arhar (vegetative/pod formation), moong, mash (vegetative) maize (cob formation / cob maturity) sesamum (vegetative), cauliflower (transplanting), potato(land preparation / planting) in Punjab.
- New sugarcane (vegetative), cotton (vegetative), rice (panicle initiation/flowering/dough formation/grain formation) in Haryana.
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### CENTRAL INDIA [M.P., CHHATTISGARH]

- *Kharif* rice (flowering/grain formation), soybean, green gram, black gram (pod maturity/ harvesting), onion (vegetative), maize (cob formation/cob maturity/harvesting), jowar, arhar, sesame, groundnut (vegetative/flowering), sugarcane (grand growth), vegetables (flowering/ fruiting ) in Madhya Pradesh.
- Sugarcane (elongation), *kharif* rice (flowering), maize, jowar, groundnut (vegetative), arhar, soybean, green gram (pod maturity/harvesting), ragi and kodomillet (vegetative), ginger, turmeric, papaya (vegetative), onion (vegetative), vegetable crops (vegetative/flowering/ fruiting ) in Chhattisgarh.
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### EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL &SIKKIM]

- *Kharif* rice (flowering), maize (cob formation), sugarcane (tillering/grand growth), onion(transplanting), urad (grain formation), yam (vegetative), arhar (vegetative) in Bihar.
- *Kharif* rice (flowering), maize (cob maturity), urad, marua (grain formation/grain maturity), arhar, groundnut (vegetative), onion (vegetative), ginger and turmeric (late vegetative), *kharif* vegetables *viz.* bhindi, bean, French bean (vegetative), tomato, cauliflower, cabbage (nursery sowing/transplanting), niger, horse gram(vegetative), sweet potato (stem elongation), green peas, potato, bell paper (sowing) in Jharkhand.
- Rice (tillering), pigeon pea, groundnut, arhar, maize, cotton and kharif vegetables (early vegetative /vegetative), fruit crops (planting), green gram, black gram, cowpea, sesame, ragi, castor, soybean (sowing/germination), Jute (active vegetative), turmeric, ginger, yam (vegetative), sugarcane (tillering), banana (planting/vegetative), tomato (fruiting / harvesting), marigold(Planting), in Odisha.

- *Aman* rice (booting to panicle initiation stage), *kharif* maize (cob maturity/ harvesting ), ginger, turmeric (tuber formation), pigeon pea (early vegetative), *kharif* vegetables (vegetative), brinjal, okra, tomato and chilli (flowering/fruitleting), pointed gourd, banana (fruiting), tomato (nursery sowing), early cabbage & cauliflower (seedbed preparation/sowing), Winter flower(seedbed preparation) in West Bengal.
- Ginger (vegetative), large cardamom (secondary flowering), *kharif* vegetables (vegetative) in Sikkim

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

- Sugarcane (Autumn) (planting), sugarcane (elongation), *sali* rice (flowering / early grain formation), maize (vegetative), sesame (flowering / capsule formation), pigeon pea (early vegetative / flowering), green gram and black gram (early vegetative / vegetative), ginger, turmeric (vegetative), early cauliflower, cabbage, knol-khol, brinjal (transplanting / early vegetative), niger (sowing), winter vegetables (nursery raising), radish, carrot, spinach, beet (seedling) in Assam.
- WRC rice (early sown) (harvesting), regular WRC rice (flowering / grain formation), turmeric, ginger (vegetative), cauliflower and cabbage (nursery preparation / transplanting / vegetative), radish, spinach, carrot (sowing), mustard (sowing) in Arunachal Pradesh.
- *Kharif* rice (flowering / grain formation), groundnut (pod formation / pod maturity), soybean (pod maturity / harvesting), early *rabi* vegetables (nursery preparation), black gram and rice bean (vegetative / flowering), ginger, turmeric (rhizome formation / maturity), onion (nursery raising), brinjal (flowering / fruiting) in Manipur.
- *Sali* rice (panicle initiation / flowering), turmeric and ginger (rhizome formation / rhizome maturity), cucurbits (flowering / fruiting), green gram and black gram (vegetative), groundnut (pod maturity), potato, rapeseed and mustard (sowing), early cauliflower and other winter vegetables (sowing / nursery sowing) in Meghalaya.
- *Jhum* rice (flowering / grain formation), ginger and turmeric (vegetative), banana (fruiting), cole crops (nursery raising) in Mizoram.
- Lowland rice (flowering / grain filling), maize (sowing), ginger (vegetative), cabbage and tomato (nursery raising) and cucurbits (fruiting / harvesting) in Nagaland.
- *Jhum* rice (harvesting), *aman* rice (long duration) (panicle initiation / flowering), *aman* rice (short duration) (grain filling / maturity), banana (maturity / harvesting), *kharif* vegetables like okra, cucurbits etc. (vegetative / flowering), early cauliflower, brinjal and radish (transplanting) in Tripura.

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

- *Kharif* rice (grain maturity / harvesting in early maturing varieties and grain formation in mid late and late maturing varieties in Konkan and grain formation in Kolhapur, Nasik (ghat), Pune (west) region and East Vidarbha), Cotton (flowering / boll formation in Madhya Maharashtra, Marathwada and Vidarbha), jowar (grain formation in Madhya Maharashtra, Marathwada and Vidarbha), red gram (secondary branching in Madhya Maharashtra, Vidarbha and Marathwada), soybean ( harvesting in Madhya Maharashtra, Marathwada and Vidarbha), groundnut (pod development / pod maturity in Madhya Maharashtra, Marathwada and Vidarbha), sugarcane (*adsali* and pre seasonal) (elongation/maturity), *suru* (active tillering / elongation), New *adsali* (early tillering in Marathwada and Madhya Maharashtra), *rabi* jowar & safflower (sowing /germination in Madhya Maharashtra and Marathwada), rainfed gram (sowing in Madhya Maharashtra and Marathwada) in Maharashtra.
- *Kharif* rice (milk / dough), castor (capsule formation), pearl millet (grain filling / maturity / harvesting), sesame (maturity / harvesting), groundnut ( maturity / harvesting ), cotton (boll formation / opening), pulses (pod development / maturity / harvesting), vegetables (flowering / fruiting), sugarcane (vegetative), sugarcane (planting) in Gujarat.

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

- *Kharif* crops: early sown groundnut (pod maturation/ harvesting), maize (cob development/ harvesting), Bt.cotton (boll formation / boll maturity), late sown groundnut (pod formation to development), cotton (boll initiation/development ), pulses (vegetative in Krishna Godavari Zone of Andhra Pradesh and harvesting in North Coastal Zone), sugarcane(Jan-March planted) (grand growth), rainfed sugarcane (tillering), late sown *kharif* rice (tillering to panicle initiation / grain formation), castor(capsule development), banana (vegetative), onion (vegetative), *rabi* rice (nursery sowing/transplanting), bengal gram and jowar (sowing), and vegetables (vegetative) in Andhra Pradesh.
- *Kharif* crops: sugarcane (grand growth), kuruvai rice (harvesting), samba rice (nursery sowing to transplanting/vegetative), thaladi rice (nursery sowing), direct sown rice (seedling), irrigated rice (flowering), rainfed cotton and maize (seedling), maize (flowering/maturity), onion (vegetative), sunflower (flowering), black gram (flowering), winter cotton (vegetative), groundnut (pod development) and vegetables (vegetative) in Tamil Nadu.

- *Virippu* rice (tillering to grain development/harvesting), *Mundakan* rice (planting), arecanut (harvesting), sugarcane (grand growth), Nendran banana (planting/harvesting), rubber (tapping/planting), kharif vegetables (vegetative/fruitle), pepper (berry maturity), cardamom (harvesting), ginger (vegetative) in Kerala.
- Sugarcane (grand growth), new arecanut (planting), *kharif* crops: sunflower( vegetative) sorghum (maturity), sugarcane(vegetative) ragi (tillering/head emergence), maize(cob maturity), red gram(flowering), groundnut (pod formation/maturity), and soybean ( harvesting), rice (tillering), cotton (square formation stage/flowering), vegetable crops (transplanting/early vegetative) *Rabi* Crops: Bengal gram, sunflower, sorghum, safflower and chickpea (sowing) in Karnataka.
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	11.09.13	18.09.13	25.09.13	02.10.13	09.10.13
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**Annexure-II**  
**Week by week Rainfall Distribution**

State/Districts	Actual	% dep.	Actual	% dep.	Actual	% dep.	Actual	% dep.	Actual	% dep.
<b>Arunachal Pradesh</b>										
Anjaw	**	**	**	**	**	**	**	**	**	**
Changlang	56.7	-4	28.9	-81	23.9	-64	17.5	-77	73.7	-25
Dibang Valley	163.0	274	18.0	-82	1.0	-98	3.0	-96	78.0	36
East Kameng	52.6	-13	22.8	-72	20.6	-64	41.5	-6	73.0	107
East Siang	172.0	36	0.0	-100	1.5	-99	13.1	-87	117.2	35
Kurung Kumey	**	**	**	**	**	**	**	**	**	**
Lohit	101.0	44	2.9	-97	5.7	-91	11.4	-79	46.5	-40
Lower Dibang Valley	166.3	281	4.5	-95	0.0	-100	20.9	-70	96.1	68
Lower Subansari	0.2	-99	**	**	**	**	**	**	**	**
Papumpara	80.2	-34	1.8	-98	0.4	-99	158.7	68	70.2	-18
Tawang	36.0	-68	65.0	-57	71.0	-30	7.0	-93	67.0	-21
Tirap	28.5	-74	22.7	-83	40.3	-46	27.4	-69	64.5	-21
Upper Siang	318.2	99	12.2	-94	162.0	-14	59.0	-50	35.0	-49
Upper Subansari	16.6	-32	0.0	-100	11.8	-66	9.2	-78	19.2	32
West Kameng	110.5	-2	26.1	-83	24.3	-76	89.3	-11	90.6	7
West Siang	172.5	200	2.8	-97	0.0	-100	14.7	-69	11.9	-59
<b>Assam</b>										
Baksa	192.6	99	2.0	-99	4.6	-95	32.2	-56	20.6	-64
Barpeta	370.6	284	5.7	-97	55.3	-40	29.5	-60	74.0	28
Bongaigaon	363.0	289	0.0	-100	60.4	-32	3.4	-96	147.4	130
Cachar	87.4	-16	24.4	-73	40.7	-33	12.3	-82	103.5	42
Chirang	350.9	277	12.5	-89	44.1	-50	17.6	-79	132.1	106
Darrang	38.0	-31	1.0	-99	5.0	-86	37.0	-3	56.0	91
Dhemaji	24.0	-77	0.0	-100	14.0	-84	31.0	-58	22.0	-57
Dhubri	44.6	-26	0.0	-100	1.5	-97	61.1	-14	89.2	15
Dibrugarh	26.2	-72	18.0	-80	47.6	-18	63.2	12	96.5	112
Goalpara	93.5	95	0.0	-100	17.2	-74	54.9	-30	83.5	46
Golghat	12.3	-79	1.5	-97	47.8	17	31.2	0	84.2	199
Hailakandi	113.9	24	20.5	-72	4.1	-93	7.9	-87	83.3	26
Jorhat	6.1	-93	0.0	-100	6.2	-89	52.3	4	79.6	108
Kamrup(Rural)	68.9	36	28.2	-41	62.3	95	27.5	-36	104.1	188
Kamrup(Metro)	17.7	-65	5.5	-89	22.8	-29	45.3	5	120.9	234
Karbi Anglong	59.3	-2	30.0	-29	28.4	-3	11.8	-68	62.6	66
Karimganj	89.9	-20	87.0	-30	33.3	-51	52.0	-23	108.3	-4
Kokrajhar	339.0	227	0.0	-100	12.9	-88	41.7	-56	98.0	116
Lakhimpur	46.0	-55	0.2	-99	10.5	-88	40.6	-45	53.1	4
Morigaon	14.6	-74	14.4	-76	51.8	25	63.8	57	84.4	157
N.C.Hills	51.5	135	56.4	53	0.0	-100	30.0	-38	54.8	56
Nowgong	93.7	48	3.9	-92	23.6	-46	64.1	48	102.0	165
Nalbari	110.0	157	4.5	-94	15.7	-62	26.9	-41	96.2	148
Sonitpur	71.8	24	2.9	-96	3.4	-92	53.8	33	53.7	112
Sibsagar	11.5	-80	0.0	-100	8.7	-77	55.5	84	48.1	58

Tinsukia	27.8	-70	20.7	-76	29.6	-53	37.8	-22	70.0	75
Udalgiri	139.6	152	18.8	-77	8.3	-77	73.8	94	46.7	59
<b>Meghalaya</b>										
East Garo Hills	**	**	**	**	**	**	**	**	**	**
East Khasi Hills	71.8	-50	34.4	-83	15.0	-82	59.1	-47	274.8	184
Jaintia Hills	33.0	-86	11.0	-95	5.0	-96	96.0	-42	147.0	-37
Ribhoi	11.3	-82	59.4	-37	161.5	152	20.0	-62	71.6	110
South Garo Hills	154.0	81	1.0	-99	47.0	-25	21.0	-66	81.0	13
West Garo Hills	13.8	-84	16.0	-84	38.6	-39	86.4	40	50.8	-29
West Khasi Hills	5.0	-96	25.0	-77	4.0	-96	12.0	-84	5.0	-92
<b>Mizoram</b>										
Aizwal	70.1	-31	57.8	-43	127.1	79	49.0	-41	44.8	-53
Champhai	11.0	-86	9.0	-88	18.0	-72	43.0	-22	47.0	-46
Chhimituipui	**	**	**	**	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**	**	**	13.0	-86
Lawngtlai	145.0	61	207.0	139	29.0	-68	**	**	56.0	-40
Lunglei	138.0	30	153.0	80	45.0	-59	90.0	12	55.0	-42
Mamit	178.0	75	68.0	-33	111.0	56	41.0	-50	50.0	-48
Saiha	172.0	79	268.0	194	76.0	-27	138.0	88	65.0	-33
Serchhip	15.0	-81	20.0	-74	29.0	-65	9.0	-87	50.0	-23
<b>Manipur</b>										
Bishnupur	**	**	11.0	-66	1.0	-97	0.0	-100	69.0	-15
Chandel	**	**	1.0	-99	0.0	-100	14.0	-88	31.0	-60
Churachandpur	23.0	-73	10.0	-89	5.0	-94	24.0	-66	52.0	-11
Imphal east	134.7	227	54.0	11	0.0	-100	43.4	10	46.8	-9
Imphal west	**	**	**	**	**	**	**	**	**	**
Senapati	43.0	-12	49.0	-10	0.0	-100	14.0	-72	75.0	32
Tamenglong	**	**	**	**	**	**	**	**	**	**
Thoubal	39.0	68	13.0	-47	1.0	-96	47.0	74	46.0	94
Ukhrul	**	**	60.0	87	25.0	-40	104.0	85	94.0	173
<b>Nagaland</b>										
Dimapur	68.0	109	29.9	-42	26.7	-2	25.5	158	102.3	77
Kephire	32.0	-41	6.0	-92	5.0	-89	9.0	-86	6.0	-88
Kohima	36.2	-52	33.9	-43	53.2	13	36.9	-11	50.5	11
Longleng	**	**	**	**	**	**	**	**	**	**
Mokokchung	104.0	39	10.0	-86	63.0	142	33.0	48	55.0	-23
Mon	**	**	**	**	**	**	**	**	**	**
Paren	**	**	**	**	**	**	**	**	**	**
Phek	40.7	-47	16.5	-72	0.0	-100	45.0	9	119.0	161
Tuensang	**	**	**	**	**	**	**	**	**	**
Wokha	43.0	-55	37.0	-54	32.0	-24	50.0	66	117.0	127
Zunheboto	**	**	**	**	**	**	**	**	**	**
<b>Tripura</b>										
Dhalai	91.5	51	3.5	-95	35.8	-19	21.8	-66	68.4	10
North tripura	87.4	26	54.2	-28	31.3	-37	14.5	-77	65.8	7
South tripura	102.3	69	50.2	-14	68.5	18	75.7	21	109.6	93
West tripura	125.2	110	37.7	-41	64.0	27	45.1	-16	138.8	114
<b>Himachal Pradesh</b>										
Bilaspur	29.2	-44	16.6	-47	2.6	-92	18.1	3	3.3	-68

Chamba	17.2	-74	10.4	-73	12.5	-73	13.0	-48	0.0	-100
Hamirpur	40.7	2	17.0	-38	2.6	-91	7.8	-72	14.4	-7
Kangra	67.1	-10	17.9	-62	27.9	-18	48.1	72	32.6	36
Kinnaur	0.8	-95	3.2	-80	61.7	204	4.6	-47	0.0	-100
Kullu	8.6	-68	10.3	-39	9.5	-54	16.6	58	0.9	-90
Lahaul and Spiti	0.0	-100	5.3	-74	8.8	-68	2.1	-87	0.0	-100
Mandi	42.7	-13	19.5	-37	19.9	-29	20.3	18	7.0	-48
Shimla	14.8	-57	9.7	-58	23.3	-7	20.6	68	6.6	-45
Sirmaur	14.2	-77	10.8	-73	22.1	-30	12.0	-49	31.3	77
Solan	42.8	-20	7.3	-78	21.5	-36	34.6	50	4.4	-74
Una	47.5	10	20.2	-20	4.2	-87	24.4	13	27.5	37
<b>Punjab</b>										
Amritsar	7.3	-72	4.4	-60	1.3	-93	2.8	-82	4.8	-69
Barnala	0.0	-100	1.8	-88	4.5	-73	0.0	-100	0.0	-100
Bhatinda	0.0	-100	0.0	-100	0.0	-100	10.0	6	0.0	-100
Faridkot	0.0	-100	20.0	144	0.5	-96	2.5	-69	0.0	-100
Fatehgarh Sahib	30.0	11	1.0	-94	9.0	-72	0.0	-100	20.0	108
Ferozpur	0.5	-97	4.7	-56	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	39.2	2	6.3	-71	9.1	-57	23.6	2	45.5	126
Hoshiarpur	11.6	-69	5.9	-68	9.2	-72	12.8	-38	8.8	-43
Jalandhar	7.0	-80	2.2	-86	5.7	-74	11.5	-35	0.0	-100
Kapurthala	2.8	-86	3.2	-79	7.6	-58	9.0	-41	0.0	-100
Ludhiana	14.9	-52	2.3	-86	7.9	-67	0.0	-100	4.7	-64
Mansa	0.0	-100	10.2	-32	11.1	-36	0.5	-95	0.0	-100
Moga	0.0	-100	4.5	-64	1.0	-92	0.0	-100	6.2	-56
Muktesar	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawashahar	55.2	42	6.9	-67	3.7	-91	7.8	-64	5.4	-55
Patiala	11.7	-60	0.8	-95	17.6	-33	0.1	-99	0.0	-100
Ropar	11.2	-69	10.6	-41	3.2	-90	20.6	62	5.2	-33
Sangrur	0.4	-99	2.1	-76	11.3	-52	0.2	-98	0.0	-100
Mohali	8.0	-81	0.0	-100	1.0	-95	48.0	236	10.0	28
TarnTaran	0.0	-100	4.2	-35	0.0	-100	0.0	-100	0.0	-100
<b>Haryana</b>										
Ambala	10.7	-80	0.0	-99	24.2	-26	5.7	-78	5.0	-70
Bhiwani	0.0	-100	0.0	-100	24.7	120	0.2	-95	0.0	-100
Chandigarh	30.6	-34	3.8	-89	37.7	18	2.1	-91	17.7	6
Faridabad	0.0	-100	0.0	-100	39.3	160	22.0	67	0.0	-100
Fatehabad	0.0	-100	3.7	-60	10.3	-24	2.3	-51	0.8	-87
Gurgaon	1.6	-95	0.0	-100	9.0	5	25.1	230	0.0	-100
Hissar	0.0	-100	0.0	-100	93.3	647	12.2	164	1.0	-85
Jhajar	0.0	-100	0.0	-100	25.6	137	14.4	194	0.3	-92
Jind	0.0	-100	0.0	-100	3.4	-86	1.0	-89	0.0	-100
Katihah	0.6	-97	0.0	-100	24.2	89	1.2	-88	0.0	-100
Karnal	3.6	-88	0.0	-100	31.6	53	0.0	-100	0.0	-100
Kurukshetra	0.8	-97	0.0	-100	20.5	15	0.0	-100	0.0	-100
Mahendragarh	0.0	-100	1.8	-86	35.9	428	4.0	3	0.0	-100
Mewat	0.0	-100	0.0	-100	31.0	230	2.7	-83	0.0	-100
Palwal	0.0	-100	0.0	-100	24.0	97	30.2	94	0.0	-100
Panchkkula	32.5	-46	11.8	-70	16.5	-41	1.9	-89	17.5	165

Panipat	0.4	-99	0.0	-100	11.7	-30	2.7	-78	1.4	-85
Rewari	0.0	-100	0.0	-100	45.4	399	29.8	309	0.0	-100
Rohtak	0.0	-100	0.0	-100	20.9	92	12.4	143	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100	0.2	-96	0.0	-100
Sonepat	0.1	-99	0.1	-99	44.0	276	24.7	147	0.0	-100
Yamunanagar	41.2	-17	4.5	-84	13.3	-35	19.7	10	1.5	-90
Delhi	0.7	-98	0.2	-99	47.1	187	9.8	-51	0.7	-93
<b>Jammu &amp; Kashmir</b>										
Anantnag	2.7	-82	19.2	88	0.3	-98	6.8	-20	0.0	-100
Badgam	4.5	-77	10.5	83	0.0	-100	12.5	116	0.0	-100
Bandipore	**	**	**	**	**	**	**	**	**	**
Baramula	6.3	-54	26.9	175	1.0	-93	8.7	-17	0.7	-90
Doda	4.4	-82	21.6	143	4.2	-87	37.0	133	0.8	-92
Ganderwal	0.0	-100	20.8	285	0.5	-95	7.1	22	0.0	-100
Jammu	33.7	-22	5.3	-85	0.0	-100	60.5	445	47.9	405
Kargil	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kathua	20.7	-54	1.1	-98	1.2	-97	39.6	222	144.0	714
Kistwar	**	**	**	**	**	**	**	**	**	**
Kulgam	1.8	-88	4.5	-56	0.0	-100	5.0	-41	0.0	-100
Kupwara	0.0	-100	25.6	320	0.0	-100	1.0	-86	0.0	-100
Ladakh(Leh)	0.0	-100	0.2	-83	0.0	-100	7.4	829	0.0	-100
Poonch	8.0	-85	22.0	-44	1.0	-96	0.0	-100	0.0	-100
Pulwama	2.6	-79	3.8	-37	0.0	-100	7.4	23	0.0	-100
Rajouri	19.9	-1	28.9	-17	0.0	-100	0.0	-100	11.5	-7
Ramban	9.2	-63	8.2	-8	0.9	-97	9.8	-38	0.0	-100
Reasi	41.6	-15	58.7	44	0.0	-100	48.7	183	71.0	330
Samba	73.7	71	14.5	-59	0.0	-100	19.6	76	13.2	39
Shopian	4.0	-67	12.0	100	0.0	-100	4.0	-33	0.0	-100
Srinagar	10.6	21	20.1	273	0.0	-100	1.8	-69	0.0	-100
Udhampur	16.2	-67	1.5	-96	0.0	-100	22.7	32	1.3	-92
<b>East Madhya Pradesh</b>										
Anuppur	6.2	-91	51.1	-26	44.0	50	16.2	-36	115.8	460
Balaghat	23.1	-64	32.9	-36	94.4	162	5.1	-81	50.2	134
Chhatarpur	0.0	-100	9.6	-82	11.7	-48	9.7	-28	122.7	593
Chindwara	1.6	-97	25.7	-43	78.5	155	7.9	-66	111.8	577
Damoh	0.5	-99	1.0	-98	25.0	-5	13.0	-9	62.2	364
Dindori	0.9	-98	7.0	-84	20.0	-32	14.0	-47	33.9	171
Jabalpur	6.6	-90	12.3	-77	27.5	-1	0.9	-94	68.2	398
Katni	1.6	-98	14.7	-73	19.8	-17	7.1	-58	64.5	451
Mandla	1.6	-97	23.3	-60	22.5	-29	27.3	32	87.2	518
Narsingpur	1.4	-98	4.4	-93	28.0	-17	0.4	-98	62.4	369
Panna	0.0	-100	0.0	-100	13.3	-54	1.0	-92	193.8	1142
Rewa	0.0	-100	8.2	-85	100.6	259	3.4	-78	114.0	555
Sagar	0.6	-99	4.3	-93	26.0	-10	19.2	22	44.0	190
Satna	0.1	-99	12.7	-76	51.1	73	10.6	-36	135.7	645
Seoni	0.6	-99	45.4	-19	32.5	-4	8.7	-59	115.8	633
Shahdol	1.1	-98	7.8	-85	48.1	105	21.0	15	50.5	234
Sidhi	0.0	-100	1.0	-98	43.0	34	54.6	119	54.4	191

Singrauli	0.0	-100	4.0	-92	82.0	228	15.3	40	24.0	24
Tikamgarh	0.0	-100	0.0	-100	15.0	-26	7.0	-41	94.5	605
Umaria	35.6	-48	14.3	-77	38.8	40	3.8	-79	29.2	54
<b>West Madhya Pradesh</b>										
Alirajpur	68.5	33	77.4	155	197.2	597	28.3	30	48.5	276
Asoknagar	0.0	-100	0.0	-100	53.0	93	3.0	-75	115.3	1076
Badwani	10.7	-71	23.4	-11	188.7	515	15.4	-31	11.9	3
Betul	8.1	-87	20.3	-66	58.4	88	10.3	-40	51.3	204
Bhind	0.6	-99	2.3	-94	2.0	-91	3.0	-75	79.7	366
Bhopal	2.3	-96	0.0	-100	36.3	23	3.7	-82	25.9	116
Burhanpur	0.3	-99	56.3	49	108.3	344	9.3	-50	23.1	53
Datia	0.0	-100	0.0	-100	27.7	9	15.4	13	75.0	291
Dewas	4.7	-91	0.0	-100	100.8	223	0.0	-100	36.5	157
Dhar	2.9	-94	48.1	29	149.7	351	22.8	-20	56.2	267
Guna	0.0	-100	0.0	-100	51.5	89	0.9	-93	36.1	123
Gwalior	0.0	-100	0.0	-100	24.9	4	0.2	-98	58.5	215
Harda	0.0	-100	17.1	-61	123.2	253	0.0	-100	31.2	92
Hosangabad	0.0	-100	18.5	-75	64.4	69	5.8	-72	30.3	120
Indore	1.0	-98	36.4	-9	141.1	264	3.7	-87	73.5	287
Jhabua	4.5	-91	40.3	47	93.2	252	38.1	46	70.3	563
Khandwa	0.0	-100	28.0	-33	168.0	364	3.0	-84	6.5	-57
Khargone	0.0	-100	6.0	-79	103.1	204	9.1	-56	10.7	-27
Mandsaur	0.0	-100	5.9	-79	69.5	207	3.0	-76	17.8	2
Morena	0.0	-100	2.5	-94	29.8	93	0.0	-100	57.0	371
Neemuch	0.0	-100	1.1	-96	71.6	324	36.9	173	8.2	-48
Raisen	1.0	-99	12.6	-77	43.1	35	2.6	-83	57.1	329
Rajgarh	0.0	-100	0.5	-98	55.0	117	5.5	-60	44.4	308
Ratlam	1.0	-98	5.9	-81	101.3	200	80.7	257	61.8	220
Sehore	4.6	-93	1.8	-96	62.4	94	3.4	-83	15.1	12
Shajapur	0.0	-100	0.0	-100	64.3	105	1.8	-89	31.3	104
Sheopur Kalani	0.0	-100	0.0	-100	6.7	-54	0.5	-94	20.7	43
Shivpuri	0.0	-100	7.0	-83	32.3	64	45.0	359	51.5	239
Ujjain	3.2	-93	6.1	-82	80.7	173	14.5	-33	41.6	157
Vidisha	0.0	-100	1.0	-98	49.4	132	1.2	-91	17.9	79
<b>Chattisgarh</b>										
Bastar	34.5	-47	27.4	-52	23.2	-47	113.8	264	10.2	-65
Bijapur	35.8	-47	78.4	51	62.2	51	21.6	-37	33.3	0
Bilaspur	42.4	-26	33.9	-38	24.1	-29	102.3	306	174.1	717
Dantewara	55.7	-7	24.0	-50	66.9	74	24.6	-24	10.3	-69
Dhamtari	13.8	-77	33.8	-42	39.4	-10	56.6	214	115.8	459
Durg	2.4	-95	44.5	-18	52.8	15	83.4	242	65.6	208
Janjgir	9.3	-88	23.2	-51	42.6	-2	128.0	406	78.8	501
Jashpurnagar	13.0	-85	23.5	-63	33.1	-22	79.9	121	43.6	74
Kanker	3.2	-94	72.3	9	34.6	-17	81.1	162	74.0	226
Korba	35.5	-53	9.0	-84	18.5	-39	66.9	157	98.0	508
Koriya	2.7	-96	62.5	9	47.5	100	18.1	-14	44.0	368
Kawardha	13.0	-70	3.0	-92	107.0	194	45.0	75	63.0	151
Mahasumund	8.6	-86	44.9	-13	93.7	165	80.6	444	42.3	127
Narayanpur	24.4	-62	91.8	69	38.6	-6	61.4	146	33.7	20



Agra	0.0	-100	0.1	-99	6.7	-55			71.3	514
Aligarh	0.1	-99	0.0	-100	4.9	-71			9.5	-42
Auraiya	0.0	-100	0.0	-100	0.0	-100			23.0	7
Badaun	5.0	-88	0.2	-99	10.0	-59			45.6	56
Baghpat	2.0	-92	0.0	-100	64.2	468			0.0	-100
Bareilly	1.2	-97	6.1	-87	34.2	8			33.1	18
Bijnor	24.8	-50	4.5	-90	14.3	-33			1.5	-90
Bulandsahar	4.5	-87	0.0	-100	1.4	-93			6.8	-56
Etah	0.0	-100	0.0	-100	15.3	2			47.7	155
Etawah	0.0	-100	9.7	-79	9.0	-52			15.0	-32
Firozabad	0.0	-100	0.0	-100	10.2	-50			68.6	246
GBNagar	0.0	-100	0.0	-100	17.0	-4			0.0	-100
Ghaziabad	0.0	-100	0.0	-100	16.1	14			0.0	-100
Hamirpur	0.0	-100	13.9	-75	1.5	-92			103.5	448
Jalaun	0.5	-99	7.1	-88	4.5	-76			122.7	401
Jhansi	0.0	-100	1.8	-97	12.5	-39			149.7	656
Jotirba Phule Nagar	0.0	-100	6.5	-86	27.0	0			0.0	-100
Kanshiramnagar	0.0	-100	0.0	-100	11.5	-29			84.0	270
Lalitpur	0.0	-100	0.0	-100	33.0	57			84.5	422
Mahamaya Nagar	0.0	-100	0.0	-100	0.0	-100			23.5	112
Mahoba	0.0	-100	15.4	-69	4.4	-73			64.4	491
Mainpuri	0.0	-100	0.0	-100	26.3	63			59.5	169
Mathura	0.0	-100	0.0	-100	5.0	-61			31.3	192
Meerut	5.8	-87	21.1	-53	42.4	104			0.0	-100
Moradabad	5.1	-90	2.1	-95	29.0	-11			6.1	-67
Muzzaffarnagar	4.8	-88	6.2	-84	42.1	109			0.0	-100
Pilibhit	0.9	-98	2.2	-96	28.0	-32			26.7	-29
Rampur	1.5	-96	2.2	-95	23.1	-44			6.4	
Saharanpur	43.0	9	6.3	-85	14.3	-9			2.7	-84
Shahjahanpur	18.3	-65	36.0	-29	2.1	-90			15.7	-51
<b>Uttarakhand</b>										
Almora	18.7	-52	10.0	-77	17.3	-45	22.0	-9	10.6	-53
Bageshwar	41.4	6	9.1	-79	15.0	-53	45.7	90	5.5	-75
Chamoli	10.7	-76	18.6	-37	37.4	63	32.4	129	1.3	-90
Champawat	25.0	-62	6.0	-90	14.5	-70	27.5	-3	15.0	-33
Dehradun	46.4	-48	23.8	-65	30.2	-19	49.7	79	31.2	13
Garhwal Pauri	8.7	-86	5.7	-89	19.1	-28	14.9	-36	0.0	-100
Garhwal Tehri	24.3	-54	0.3	-99	22.2	-1	16.3	10	0.2	-99
Haridwar	22.3	-55	3.2	-91	6.0	-71	4.9	-74	0.0	-100
Nainital	24.2	-65	29.1	-60	11.6	-79	26.2	-13	5.0	-84
Pithorgarh	57.3	-37	20.9	-70	18.7	-64	52.9	67	4.5	-79
Rudraprayag	28.0	-65	11.4	-81	27.6	-8	43.5	75	0.9	-96
Udham Sing Nagar	25.9	-53	3.3	-95	12.9	-68	27.8	-17	11.7	-56
Uttarkashi	29.5	-49	26.2	-62	54.4	70	39.3	64	11.0	-54
<b>Bihar</b>										
Araria	43.2	-38	8.3	-89	11.7	-76	49.4	-18	62.4	79
Arwal	0.0	-100	0.0	-100	24.6	-27	0.0	-100	11.4	2
Aurangabad	0.8	-99	18.1	-69	40.2	52	5.7	-74	43.8	170
Banka	2.2	-95	0.0	-100	15.4	-67	28.8	-53	81.8	126

Begusarai	1.2	-98	1.0	-98	23.2	-56	49.1	23	20.0	-7
Bhabua	0.0	-100	8.8	-89	25.0	-36	114.5	312	28.8	50
Bhagalpur	0.5	-99	0.1	-99	20.5	-61	47.5	-11	15.1	-55
Bhojpur	0.0	-100	0.0	-100	43.1	17	3.2	-88	55.9	144
Buxar	2.4	-96	7.0	-90	27.6	16	3.8	-79	43.2	29
Darbhanga	14.7	-70	10.8	-74	3.0	-92	28.5	-35	62.4	90
East Champaran	12.4	-78	4.6	-92	19.5	-47	4.6	-88	92.4	137
Gaya	0.0	-100	19.4	-55	34.5	9	9.8	-70	33.2	51
Gopalganj	13.4	-79	6.1	-92	0.0	-100	14.9	-52	95.3	278
Jahanabad	0.0	-100	4.0	-93	12.4	-70	6.8	-78	8.1	-48
Jamui	6.0	-89	11.7	-76	26.2	-47	20.1	-64	14.9	-50
Kathihar	4.7	-93	2.8	-96	10.9	-78	59.9	-14	14.9	-58
Khagadia	14.3	-77	2.7	-96	111.2	61	44.8	-10	21.6	-34
Kishanganj	124.7	37	4.4	-95	17.3	-73	58.6	-7	22.8	-32
Lakhisarai	0.0	-100	0.0	-100	35.0	-38	35.0	-30	5.0	-83
Madhepura	2.5	-96	4.9	-93	17.3	-57	68.9	31	41.7	19
Madhubani	26.7	-50	0.6	-99	4.6	-87	17.6	-52	74.8	117
Monghyar	0.2	-99	0.0	-100	24.2	-57	17.7	-65	5.5	-81
Muzaffarpur	16.7	-66	4.7	-93	4.4	-89	6.5	-83	80.5	145
Nalanda	0.0	-100	20.3	-62	28.4	-35	41.6	33	23.0	0
Nawada	0.0	-100	2.0	-95	56.8	89	3.4	-92	25.0	-5
Patna	0.4	-99	15.3	-74	14.6	-65	9.8	-76	27.1	0
Purnea	66.5	-13	2.4	-97	25.6	-49	42.0	-41	8.0	-79
Rohtas	0.0	-100	41.1	-34	32.9	17	26.2	25	36.9	65
Saharsha	6.2	-92	7.2	-91	32.0	-35	26.7	-58	10.4	-70
Samstipur	8.7	-84	7.5	-88	11.8	-80	16.8	-67	26.5	-24
Saran	0.0	-100	0.0	-100	25.7	-29	12.1	-70	62.9	145
Sheikpura	0.0	-100	0.0	-100	5.3	-87	26.3	-18	11.0	-58
Sheohar	14.8	-69	6.0	-87	20.6	-42	0.0	-100	89.6	195
Sitamarhi	31.0	-35	8.4	-82	8.2	-77	3.0	-92	36.3	19
Siwan	3.9	-95	0.9	-99	37.1	-10	22.5	-35	133.2	770
Supaul	21.2	-57	0.4	-99	23.4	-38	23.4	-52	45.0	22
Vaishali	8.4	-87	15.4	-72	21.6	-53	11.4	-77	50.4	49
West Champaran	25.5	-54	6.6	-93	0.0	-100	13.4	-66	25.6	7
<b>Jharkhand</b>										
Bokaro	5.7	-92	3.3	-94	46.9	35	97.4	98	38.1	16
Chatra	7.9	-87	3.6	-94	9.7	-74	56.7	31	71.2	175
Deoghar	7.4	-86	2.7	-95	27.0	-54	60.4	-4	19.2	-32
Dhanbad	14.3	-80	20.4	-67	46.4	-4	131.1	89	49.0	25
Dumka	25.0	-63	19.5	-65	44.1	-9	37.4	-53	68.8	35
East Singbhum	31.7	-50	74.7	62	113.2	185	128.0	194	34.7	53
Garhwa	0.0	-100	6.5	-89	2.0	-93	70.8	155	28.0	43
Giridih	8.2	-87	36.4	-30	32.1	-23	58.3	-4	82.0	152
Godda	16.0	-68	10.5	-83	22.8	-42	30.7	-45	24.8	-22
Gumla	23.2	-69	15.2	-76	57.3	30	59.6	53	88.8	267
Hazaribagh	22.6	-66	12.2	-79	36.9	14	73.2	77	54.9	109
Jamtara	44.7	-39	6.9	-91	65.2	32	40.8	-48	60.2	15
Khunti	27.0	-69	28.5	-54	74.2	77	57.5	39	17.5	-35
Koderma	54.5	-13	14.1	-70	22.6	-49	65.6	29	38.8	6

Latehar	11.5	-86	49.8	9	15.6	-49	180.1	329	98.5	316
Lohardagga	24.0	-61	21.2	-63	61.2	58	160.1	306	49.5	110
Pakur	3.5	-95	11.1	-86	27.0	-69	109.3	46	70.4	25
Palamau	6.3	-91	42.2	-29	24.3	-31	71.6	138	63.3	286
Ramgarh	0.0	-100	28.8	-52	50.4	38	203.0	422	64.4	110
Ranchi	30.3	-58	7.3	-87	33.4	-19	189.0	324	43.3	81
Sahebganj	3.0	-96	9.8	-86	0.0	-100	170.8	73	72.6	103
Saraikela	53.2	-27	23.4	-58	55.0	42	117.3	157	17.3	-30
Simdega	30.8	-66	54.2	-25	56.8	35	64.9	66	53.5	143
West Singhbhum	75.5	10	16.9	-61	40.1	1	36.9	-4	71.5	215
<b>East Rajasthan</b>										
Ajmer	0.3	-99	8.3	0	37.1	370	114.2	2905	0.0	-100
Alwar	0.8	-98	11.6	-37	48.0	281	**	**	**	**
Banswara	0.0	-100	23.5	-10	79.2	279	95.8	589	28.7	178
Baran	0.0	-100	0.0	-100	21.6	21	0.0	-100	31.8	208
Bharatpur	6.1	-83	2.0	-91	10.5	3	23.1	157	28.3	272
Bhilwara	0.0	-100	1.8	-86	59.1	373	39.4	412	0.3	-93
Bundi	0.0	-100	2.3	-84	35.0	157	1.0	-89	12.7	78
Chittorgarh	0.9	-98	3.6	-79	76.7	440	39.3	260	5.9	-23
Dausa	0.0	-100	21.4	20	21.0	52	12.4	46	0.2	-97
Dholpur	0.0	-100	1.8	-95	18.3	38	27.8	181	115.8	1216
Dungarpur	0.0	-100	12.8	-36	71.7	451	118.6	1086	53.1	717
Jaipur	0.0	-100	11.6	-17	16.1	76	14.7	144	0.0	-99
Jhalawar	0.0	-100	0.0	-100	61.5	167	23.0	83	27.2	155
Jhunjhunu	0.0	-100	15.6	27	28.3	167	22.3	291	0.0	-100
Karauli	0.0	-100	7.8	-65	10.2	-9	11.2	53	0.3	-95
Kota	0.0	-100	0.6	-97	55.2	219	11.2	44	51.0	530
Pratapgarh	0.0	-100	10.4	-59	66.2	178	57.0	206	46.8	169
Rajsamand	1.6	-95	8.0	-19	40.1	164	80.6	974	16.9	356
Sawai Madhopur	1.3	-96	7.6	-63	29.0	146	7.5	-25	12.5	24
Sikar	0.0	-100	4.4	-60	27.9	342	28.0	383	0.4	-91
Sirohi	0.5	-99	17.5	-29	39.8	213	189.3	1980	67.4	2148
Tonk	0.3	-99	13.0	-10	13.6	23	3.8	-14	1.6	-73
Udaipur	0.0	-100	8.4	-50	59.6	287	93.1	812	6.4	18
<b>West Rajasthan</b>										
Barmer	0.0	-100	3.3	-46	8.8	108	60.3	1488	5.1	361
Bikaner	0.0	-100	0.0	-100	6.7	-5	1.1	-70	0.0	-100
Churu	0.0	-100	0.1	-99	29.8	260	11.1	71	6.2	48
Hanumangarh	0.0	-100	0.0	-100	3.0	-53	23.4	681	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	5.1	199	4.1	245	0.0	-100
Jalore	0.1	-99	10.7	30	23.4	388	134.6	3184	13.6	1034
Jodhpur	0.0	-100	6.2	-4	14.2	150	85.0	2400	0.4	-70
Nagaur	0.0	-100	2.7	-65	15.6	108	98.5	2636	1.4	-52
Pali	0.5	-98	0.2	-98	16.8	95	99.6	2520	10.7	312
Sri Ganganagar	0.0	-100	0.0	-100	0.2	-97	5.3	231	0.0	-100
<b>Gujarat Region</b>										
Ahmedabad	12.9	-68	11.6	-43	116.8	668	97.0	758	52.5	540
Anand	12.2	-80	13.4	-22	186.8	915	78.7	540	18.6	205
Banaskantha	0.5	-99	3.6	-84	28.3	233	238.4	2844	46.8	1238

Baroda	14.7	-77	36.6	23	414.5	1488	56.2	180	32.0	213
Broach	4.6	-91	24.1	5	334.6	1078	112.3	344	37.2	284
DNH	56.0	-47	62.1	106	552.5	459	9.1	-86	17.4	85
Dahod	3.0	-95	20.5	-32	79.4	245	34.5	84	20.1	69
Daman	87.0	-17	44.8	48	191.4	94	29.6	-54	63.8	579
Dangs	56.9	-45	85.3	61	308.5	415	4.0	-94	25.8	29
Gandhinagar	14.7	-76	5.8	-65	125.8	717	65.4	381	54.7	693
Kheda	11.9	-82	4.6	-78	151.1	652	81.8	554	37.6	453
Mehsana	3.0	-94	3.8	-88	50.7	284	79.7	605	40.5	523
Narmada	17.2	-70	35.7	14	608.8	2059	17.3	-46	36.1	268
Navsari	36.2	-58	91.6	100	319.2	681	64.1	23	31.7	138
Panchmahal	1.5	-98	15.8	-49	135.5	469	66.7	354	36.7	358
Patan	3.5	-89	5.9	-74	37.2	389	121.3	1683	42.0	1034
Sabarkantha	0.2	-99	6.4	-75	71.8	304	121.4	956	35.3	326
Surat	20.4	-69	69.4	130	319.9	824	110.4	169	33.5	199
Tapi	11.3	-85	160.0	369	248.2	611	26.7	-42	26.6	221
Valsad	68.6	-26	85.8	95	360.1	606	20.9	-65	32.8	119
<b>S K &amp; Diu region</b>										
Amreli	4.0	-81	31.6	73	51.7	104	154.7	706	52.0	752
Bhavnagar	3.7	-89	19.1	21	110.3	350	118.2	648	23.6	252
Diu	0.2	-99	27.2	164	73.0	668	83.6	548	82.6	1080
Jamnagar	9.0	-53	3.9	-72	39.4	463	328.5	3906	0.1	-98
Junagarh	3.6	-85	44.8	115	60.3	233	157.9	846	36.4	461
Kutch	1.2	-95	0.6	-97	45.5	828	282.5	6042	2.7	8
Porbandar	4.1	-75	40.3	78	14.0	-1	226.2	1867	26.4	355
Rajkot	1.3	-94	28.3	37	99.3	488	272.9	1952	19.4	146
Surendranagar	5.2	-84	5.3	-61	106.8	593	136.3	1173	17.3	128
<b>Maharashtra</b>										
<b>Konkan &amp; Goa</b>										
Goa	38.7	-47	101.5	82	143.4	188	100.8	44	98.6	74
Mumbai	19.2	-72	91.5	70	119.1	83	76.5	26	23.5	-34
Raigad	72.9	-27	122.2	81	68.9	-9	70.7	-14	46.5	2
Ratnagiri	53.9	-42	79.3	34	133.1	99	87.3	5	190.9	252
Sindhudurg	44.6	-36	134.7	109	113.4	88	82.2	11	80.1	52
Thane	46.3	-48	109.8	97	168.3	157	28.1	-56	47.3	46
<b>Madhya Maharashtra</b>										
Ahmednagar	60.1	133	82.2	176	36.4	-1	6.6	-83	26.6	9
Dhule	17.0	-21	56.2	200	68.2	131	35.6	34	8.5	-51
Jalgaon	7.7	-74	84.6	240	75.3	180	8.6	-62	20.7	27
Kolhapur	19.7	-51	61.1	94	47.2	9	27.9	-45	15.6	-65
Nandurbar	28.7	-31	86.2	262	306.8	980	31.8	4	28.0	124
Nasik	38.2	-22	73.7	127	104.7	167	4.7	-89	30.0	27
Pune	78.7	169	89.8	192	56.2	29	8.8	-82	12.2	-58
Sangli	28.3	24	91.9	233	40.0	1	5.8	-87	2.1	-95
Satara	37.4	47	112.7	324	56.1	36	12.2	-73	11.9	-65
Solapur	51.4	69	116.1	185	51.8	13	13.9	-70	7.5	-77
<b>Marathwada</b>										
Aurangabad	26.4	0	95.0	222	23.6	-39	7.4	-78	44.2	166
Beed	24.0	-28	77.1	111	42.5	-2	19.4	-47	30.5	34

Hingoli	20.3	-43	84.5	214	33.5	-8	4.9	-82	111.6	407
Jalna	20.5	-21	93.9	205	32.4	-8	9.4	-65	55.3	192
Latur	11.9	-73	67.0	93	22.2	-35	16.3	-49	45.2	43
Nanded	44.0	11	40.7	33	44.0	3	1.5	-95	72.8	157
Usmanabad	51.0	38	82.4	78	68.2	52	13.4	-66	15.6	-45
Parbhani	18.8	-52	93.7	208	64.9	62	7.5	-74	60.2	135
<b>Vidarbha</b>										
Akola	18.5	-39	92.8	218	124.4	315	1.3	-93	79.7	292
Amraoti	11.5	-71	31.8	-4	85.5	165	3.4	-84	62.2	214
Bhandara	15.6	-75	19.8	-56	52.8	73	24.5	-14	80.2	286
Buldhana	13.5	-53	66.4	147	49.7	78	1.2	-94	39.9	127
Chandrapur	14.1	-76	18.7	-57	69.3	92	27.5	1	125.3	475
Gadchiroli	40.3	-33	30.2	-22	99.1	202	24.0	-19	110.9	393
Gondia	13.3	-79	26.1	-49	81.8	161	19.7	-33	58.6	173
Nagpur	7.6	-85	43.9	23	49.5	51	2.3	-89	87.4	343
Wardha	7.0	-85	21.9	-24	66.4	96	6.5	-72	83.8	286
Washim	30.9	-21	49.7	35	66.2	109	1.9	-91	89.2	300
Yeotmal	18.4	-54	43.9	81	42.1	28	3.0	-89	85.3	318
<b>Odisha</b>										
Angul	20.8	-69	25.2	-47	70.6	58	101.0	245	26.2	-6
Balasore	61.4	-28	19.3	-70	119.8	79	239.8	219	87.3	62
Bargarh	29.1	-61	18.8	-66	68.8	101	81.7	304	73.5	340
Bhadrak	30.1	-51	15.6	-71	81.7	77	125.6	175	69.8	64
Bolangir	25.1	-62	19.8	-64	30.3	-13	98.7	238	19.4	-10
Boudh	13.7	-79	15.0	-74	44.3	-6	108.3	197	11.5	-74
Cuttack	25.2	-71	17.4	-66	82.8	82	99.1	143	52.8	16
Deogarh	28.9	-66	6.3	-88	45.1	17	92.7	255	15.1	-26
Dhenkanal	38.0	-47	6.1	-86	81.3	76	114.6	184	33.3	-11
Gajapati	59.1	19	49.4	-24	51.1	-11	57.3	48	12.5	-73
Ganjam	87.2	59	25.0	-48	92.5	101	68.3	33	32.2	-45
Jagatsingpur	44.2	-37	39.3	-34	34.8	-23	27.2	-35	32.2	-27
Jajpur	21.6	-65	28.4	-52	72.7	15	77.3	70	56.5	17
Jharsuguda	18.3	-77	24.0	-59	42.7	28	53.9	96	42.3	69
Kalahandi	18.6	-74	19.3	-68	52.4	42	87.3	169	21.8	-26
Kandhamal	11.4	-83	57.9	-1	67.7	43	66.7	83	33.6	-23
Kendrapara	37.2	-48	17.2	-68	49.0	-14	48.7	-13	90.2	27
Keonjhar	42.1	-21	16.3	-68	90.5	81	66.1	73	46.4	45
Khurda	47.3	-39	32.3	-43	109.6	108	111.2	144	26.1	-56
Koraput	26.5	-65	44.4	-27	23.5	-60	72.2	68	35.0	-26
Malkangiri	35.5	-55	69.0	55	130.0	211	18.2	-44	64.4	89
Mayurbhanj	48.7	-30	17.9	-70	130.1	131	160.7	182	83.6	130
Nawapara	29.9	-40	31.9	-31	43.5	19	106.2	342	17.0	-30
Nawarangpur	43.1	-30	38.4	-34	33.4	-31	117.5	288	47.1	31
Nayagarh	34.0	-51	41.4	-7	90.5	47	61.7	40	27.1	-49
Puri	41.7	-46	42.4	-20	72.0	56	42.6	-29	60.3	8
Rayagada	39.4	-31	28.8	-47	52.8	42	49.2	45	28.1	-29
Sambalpur	20.8	-75	22.9	-57	55.2	43	57.7	121	42.6	109
Sonepur	46.3	-51	4.2	-92	42.6	4	70.7	110	31.6	52
Sundargarh	33.2	-54	36.0	-33	59.5	79	74.6	232	38.6	124

<b>West Bengal</b>										
<b>GWB</b>										
Bankura	11.5	-82	7.3	-84	65.4	26	174.6	197	59.7	81
Birbhum	22.7	-68	10.5	-79	19.6	-71	86.4	24	113.3	243
Burdwan	29.2	-56	9.7	-82	23.9	-53	90.9	46	83.3	180
East Midnapore	49.1	-51	70.8	29	79.5	0	225.9	140	78.2	44
Hooghly	15.7	-70	5.6	-88	28.0	-44	102.9	94	99.0	165
Howrah	35.0	-48	37.5	-40	35.1	-38	100.5	14	72.6	88
Kolkata	155.4	88	34.3	-42	39.5	-31	109.0	24	114.2	134
Murshidabad	39.0	-39	37.0	-28	2.9	-95	139.9	97	19.8	-53
Nadia	36.6	-32	21.1	-40	12.0	-79	99.5	86	47.2	107
24 Pargana (N)	20.3	-73	24.3	-55	32.6	-49	102.0	46	91.3	141
Purulia	4.0	-94	36.8	-38	53.5	38	139.1	118	74.0	153
24 Pargana (S)	77.8	-12	27.3	-62	36.7	-53	150.0	86	73.3	11
West Midnapore	59.2	-9	41.1	-31	77.2	66	165.0	136	96.5	179
<b>SHWB</b>										
Cooch Behar	203.1	85	11.7	-91	2.3	-97	42.8	-54	51.9	-8
Darjeeling	141.1	0	18.0	-85	30.5	-68	26.1	-74	36.0	-19
East Sikkim	56.0	-39	39.2	-54	30.3	-53	31.0	-54	18.3	-64
Jalpaiguri	220.5	89	16.9	-87	31.7	-65	36.8	-61	78.2	33
Malda	15.0	-78	0.2	-99	2.3	-96	98.5	21	23.9	-39
North Dinajpur	47.8	-38	0.0	-100	0.5	-99	55.0	-49	29.0	2
North Sikkim	72.6	-28	42.9	-53	32.4	-58	38.0	-52	63.2	-28
South Dinajpur	19.3	-72	0.0	-100	0.0	-100	83.4	41	58.9	3
South Sikkim	65.9	-28	34.6	-60	50.2	-21	13.5	-80	16.3	-68
West Sikkim	130.7	29	51.3	-44	128.2	68	41.0	-48	9.0	-90
<b>Karnataka</b>										
<b>Coastal Karnataka</b>										
Dakshin Kannada	81.4	2	103.5	75	154.1	147	42.0	-48	78.4	13
Udupi	106.2	-5	102.9	43	183.4	127	55.1	-46	82.0	24
Uttar Kannada	65.9	1	90.1	75	147.3	176	36.0	-42	82.3	62
<b>N I Karnataka</b>										
Bagalkote	64.7	276	52.3	52	13.6	-70	10.6	-75	5.6	-86
Belgaum	39.9	168	91.0	264	28.1	-20	10.8	-76	10.1	-73
Bidar	40.6	9	85.8	134	46.1	6	11.7	-68	51.0	62
Bijapur	67.0	169	65.5	81	38.5	-21	11.9	-75	9.5	-75
Dharwad	46.6	233	57.6	111	15.7	-61	3.7	-91	7.7	-79
Gadag	76.0	344	53.5	67	11.8	-74	11.4	-76	3.3	-92
Gulbarga	60.9	66	98.0	131	92.6	104	7.5	-84	17.6	-55
Haveri	46.5	365	48.0	93	27.3	-6	2.1	-95	9.1	-73
Koppal	78.0	273	52.1	36	13.3	-70	22.9	-50	17.8	-47
Raichur	81.1	216	71.9	124	29.4	-32	6.7	-85	22.1	-40
Yadgir	139.8	316	94.5	151	37.1	-31	11.3	-76	11.3	-71
<b>S I Karnataka</b>										
Bangalore Rural	75.4	140	131.9	220	6.6	-88	1.5	-97	55.0	6
Bangalore Urban	70.7	114	120.3	177	6.6	-88	0.1	-99	28.6	-41
Bellary	55.1	184	36.0	1	12.3	-70	23.2	-48	13.5	-63
Chamarajnaragar	30.0	96	96.8	184	2.3	-94	1.0	-97	20.2	-49
Chichballapur	79.9	227	46.7	21	2.3	-95	2.7	-94	42.8	-14

Chickmagalur	42.1	46	86.9	166	66.3	31	6.5	-88	17.8	-60
Chitradurga	37.9	307	95.4	270	4.6	-87	4.5	-90	0.5	-98
Davangere	57.7	385	72.1	133	12.5	-66	3.9	-91	5.2	-86
Hassan	55.2	360	66.0	178	26.4	-32	6.1	-86	12.9	-69
Kodagu	38.1	-17	81.5	112	98.2	98	29.5	-49	16.0	-69
Kolar	33.8	26	62.1	60	3.6	-92	2.8	-94	71.1	65
Mandya	71.8	335	38.0	17	5.5	-88	2.0	-95	9.6	-77
Mysore	41.7	239	29.9	15	11.6	-67	7.7	-79	9.1	-76
Ramnagara	153.4	468	71.5	45	2.4	-96	4.2	-93	2.5	-95
Shimoga	41.9	55	84.0	254	81.3	127	16.5	-62	37.3	-10
Tumkur	86.5	339	112.4	194	2.5	-95	3.5	-93	5.7	-87
<b>Kerala</b>										
Alappuzha	63.0	4	168.2	176	44.1	-35	19.4	-74	41.5	-50
Kannur	71.6	29	160.1	342	77.4	66	26.6	-63	71.4	29
Ernakulam	82.2	23	164.7	163	44.0	-43	23.5	-71	66.4	-4
Idukki	119.1	91	233.3	304	111.7	46	17.0	-83	34.1	-55
Kasaragod	97.6	40	89.7	74	61.7	17	25.5	-61	47.7	-25
Kollam	67.2	61	228.3	421	40.1	-37	17.3	-73	56.8	-30
Kottayam	77.5	32	149.9	158	53.8	-14	8.3	-90	47.9	-35
Kozhikode	44.9	-18	146.8	245	37.6	-40	9.9	-87	56.9	-6
Malappuram	55.7	30	226.1	432	34.9	-29	14.6	-80	20.4	-67
Palakkad	46.9	37	155.1	394	54.1	21	13.5	-78	10.2	-81
Pathanamthitta	39.0	-32	134.3	142	76.7	15	10.4	-87	14.2	-81
Thiruvananthapuram	78.0	141	100.2	242	16.9	-63	19.2	-63	12.1	-79
Thrissur	52.7	-8	158.7	180	50.8	-25	20.4	-76	73.1	6
Wyanad	36.9	-24	87.9	103	96.4	108	14.6	-77	36.0	-27
<b>Tamil Nadu</b>										
Ariyalur	110.3	212	48.7	40	0.0	-100	0.0	-100	7.3	-84
Chennai	118.5	374	25.1	-6	0.0	-100	11.1	-71	17.5	-58
Coimbatore	23.8	208	29.8	49	0.0	-100	1.9	-92	6.5	-75
Cuddalore	76.9	168	41.7	45	0.0	-100	0.3	-99	9.3	-76
Dharmapuri	83.0	177	68.2	50	0.0	-100	0.0	-100	88.9	98
Dindigul	38.6	68	13.2	-62	0.0	-100	3.1	-91	17.7	-52
Erode	36.3	124	22.4	-26	0.0	-100	4.3	-87	12.7	-61
Kanchipuram	83.0	146	54.7	79	0.0	-100	20.6	-55	17.5	-54
Kanyakumari	15.0	-24	41.6	105	0.0	-100	4.1	-88	1.9	-95
Karikal	69.2	204	50.0	88	0.0	-100	0.0	-100	25.2	-31
Karur	35.2	101	21.1	-28	0.0	-100	3.6	-88	52.9	70
Krishnagiri	69.6	171	90.7	102	0.0	-100	0.8	-99	62.3	35
Madurai	33.6	19	3.4	-90	0.0	-100	7.9	-80	13.4	-66
Nagapattinam	73.2	190	28.6	42	0.0	-100	0.0	-99	1.5	-96
Namakkal	26.9	16	28.8	-25	0.0	-100	1.3	-96	26.4	-28
Nilgiris	45.9	92	64.7	84	0.2	-96	1.3	-97	24.5	-43
Perambalur	112.0	367	33.5	6	0.0	-100	3.0	-90	23.8	-46
Puducherry	130.2	283	0.0	-100	0.0	-100	0.3	-99	7.3	-82
Pudukottai	61.1	163	33.1	24	0.0	-100	0.6	-98	35.3	9
Ramanathapuram	9.6	0	2.9	-79	0.0	-100	1.9	-89	5.1	-78
Salem	112.1	283	25.1	-44	0.0	-100	0.6	-99	33.8	-25
Sivaganga	27.0	26	3.5	-85	0.0	-100	0.0	-100	14.7	-56

Thanjavur	78.2	220	36.9	42	0.0	-100	0.0	-100	11.7	-66
Theni	11.8	48	20.4	20	0.0	-100	0.5	-98	5.2	-80
Tirunelveli	0.2	-95	21.0	147	0.0	-100	0.2	-99	1.3	-93
Tirupur	13.3	65	0.7	-97	0.0	-100	0.0	-100	3.3	-88
Tiruvallur	86.2	214	71.8	131	3.1	-56	13.3	-68	44.6	13
Tiruvannamalai	47.3	30	49.6	9	0.0	-100	26.8	-37	79.5	76
Tiruvarur	35.9	42	68.3	245	0.0	-100	0.0	-100	7.0	-78
Toothukudi	4.0	-37	1.3	-84	0.0	-100	0.0	-100	6.3	-67
Trichy	64.0	143	35.3	-11	0.0	-100	3.9	-89	20.8	-49
Vellore	73.1	127	61.2	44	0.5	-91	15.9	-62	41.0	-2
Villupuram	91.8	182	16.8	-61	0.0	-100	15.2	-59	30.2	-27
Virudhunagar	29.5	103	0.1	-99	0.0	-100	0.0	-100	13.5	-59
<b>Andhra Pradesh</b>										
<b>Coastal Andhra Pradesh</b>										
East Godavari	35.7	-4	16.3	-51	51.6	1	22.9	-54	38.8	-36
Guntur	35.2	9	75.3	171	11.3	-73	24.3	-43	39.0	1
Krishna	38.0	8	50.7	70	22.1	-53	22.2	-54	35.9	-20
Nellore	30.2	54	38.8	71	6.4	-79	7.0	-82	11.4	-72
Prakasam	52.5	142	43.7	110	13.4	-64	3.0	-93	24.0	-45
Sirkakulam	53.5	1	35.4	-24	50.2	-1	50.1	6	27.1	-57
Visakhapatnam	35.4	-15	41.2	0	31.4	-34	25.4	-50	30.9	-52
Vizianagram	22.9	-53	19.4	-62	17.7	-65	27.5	-41	13.2	-76
West Godavari	29.8	-27	47.5	35	13.9	-71	20.0	-60	52.9	-9
<b>Telangana</b>										
Adilabad	25.5	-41	66.3	115	63.8	49	23.2	-18	93.8	257
Hyderabad	61.1	49	33.7	4	93.6	97	1.5	-96	10.8	-64
Karimnagar	23.7	-42	35.4	15	59.4	38	18.2	-42	109.1	280
Khammam	34.2	-24	22.3	-29	65.9	57	49.1	29	42.8	10
Mehabubnagar	86.0	189	55.0	80	24.7	-39	3.6	-91	30.4	0
Medak	39.9	11	57.7	55	71.4	61	5.9	-81	43.4	54
Nalgonda	86.5	149	37.9	33	14.0	-66	11.4	-70	35.5	-1
Nizamabad	23.2	-51	32.7	2	50.9	33	6.2	-81	55.3	84
Rangareddy	55.2	33	67.1	74	50.1	-3	1.9	-94	31.5	-9
Warangal	19.7	-47	21.7	-32	53.7	40	23.5	-21	37.6	24
<b>Rayalaseema</b>										
Anantapur	75.7	281	60.9	83	4.0	-90	8.3	-78	14.0	-64
Chittoor	65.0	141	46.1	33	9.8	-72	4.6	-89	60.0	42
Cuddapah	54.6	123	50.3	79	1.6	-96	4.4	-87	47.3	17
Kurnool	63.5	141	59.1	111	14.4	-67	3.4	-91	15.2	-54

#### Legends

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

**Annexure III**  
**List of Varieties**

**Himachal Pradesh**

**Cauliflower** : Patna snowball and joint snowball.

**Pea**: Ageta-6 and Arkal Matar, **Mater ageta-6**

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

**Turnip** :PTWG-1

**Carrot** :Pusakesar

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

**Delhi**

**Carrot**: PusaRudhira and PusaKesar.

**Mid season cauliflower** (Nov.-Dec.): Pusasharad, Pusa hybrid-2, Pant shubra.

**Sarsonsaag**- Pusa saag-1; **Radish**- Versa kee rani, summer long, long chetaki; **Spinach**- All green; **Coriander**- pant Haritama or other hybrids.

**Mustard** : **Pusa Sarson-25, Pusa Sarson-26, PusaAgni, PusaTaraka, PusaMahak.**

**Pea**: **Pusa Pragati, Arkel**

**Potato**: Kufri Badshah, Kufri Surya.

**Jammu & Kashmir**

Toria : local toria, RSPT-1 & RSPT-2

**Potato**: (KufriChandramukhi), K Badshah, K.Sinduri, K.Chipsona&K.Sona.

**Palak** (All Green), Methi (Pusa Early Bunching,KasuriMethi)

**Mustard** :- Pusa Sarson-25, Pusa Sarson-26, PusaAgni, PusaTaraka, PusaMahak, NPJ 112, EJ17, PusaMahak and Kanti, Maya, Rohini, PusaJaikisan, Varuna, RGN13, RGN73, Bharat Sarson-1 (NRC DR-2), Bharat Sarson-2 (NRCHB 101), Bharat Sarson-3,(NRCHB 506), Arawali, RGN48, Geeta and PBR 97, CS52, CS54, NarendraRai 1, Karan Tara, Narendra, - NRCYS-05-02, YSH401Tara

**Radish** :P.Reshmi, Minowase Japanese White

**Cabbage** : Golden Acre, Pride of India and PusaMukta,

**Carrot** :PusaKesar,P.Yamdagani.

**Turnip** :PTWG).

**Garlic** :yamunasafedagrifoundparvati

**Methi** :pusa early bunching and kasurimethi.

**Spinach** :all green.

**Rajasthan**

**Onion**:Pusa Red, ArkaNiketan, Pusa White & Local Red

**Deshi carrot**:PusaKeshar:

**Raddish** :PusaRasmi

**Tomato**: Pusa Rubi, Pusa Early and Vihar

**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**: Kufri-Ashok and Chandramukhi, **Mid var.**-Kufri-Anand, Chipsona-1, 2, Jyoti and Pukhraj.

**Gram** : **RSG 44, Dahod yellow, GNG 16, ICCV 10, RSG 888, GNG 469 and Pratap chana 1, RSG-888 (Anubhav), CSJD-884 (Aakash), RSG-44, Pusa-209, C-235, H-208.**

**Uttarakhand**

**Pea** : VL Ageti Mater-7, Vivel Mater-10, Pant Subjee Mater-3, Azad Mater-3 and Arkel.

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

**Garlic** : VL-Garlic or DARL-52.

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

**Wheat**: VL-829, 802, 804, 892, 738, 719, HL-272, UP 2572.

**Sarson**:Varun, Kanti

**Masoor**:Masoor-4, 5, VL masoor-1, 4, 203

**Uttar Pradesh**

**Toria**-T-1, T-303, T-9, T-36, PT-506, PT-507, Bhawani, Pant-303,

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

**Peas**: Pant-5, Aparna, Malaviya-2, Malaviya-15, Shikha, Sapana

**Bengal gram**: Pusa, Shubhra

**Mustard**- Pusa-25

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

**Himachal Pradesh**

**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

### **Punjab**

**Toria:** PBT 37/ TL 15  
**Radish:** Punjab Pasand & Punjab Safed,  
**Turnip:** L-1 & 4-white  
**Carrot:** PC-34), potato and palak (Punjab Green).  
**Cauliflower:** Pusa Snow ball 1 & Pusa Snow ball K-1.  
**Pea:** Punjab 87, Punjab 88, Punjab 89 and Mithi Phali.  
**Garlic:** PG-17

### **Odisha**

**Ragi:** Divyasinha, AKP-2, AKP-3, AKP-7, Godavari, Neelachal, Bhairavi, Shubhra, and Chilika.  
**Sesame:** Prachi, Kalika, Kanak, Vinayak.  
**Ragi:** Divyasingh, AKP-2, AKP-3, AKP-7, Godavari, Neelachal, Bhairavi, Shubhra, and Chilika.  
**Banana:** Hampa, Patakpara, Bantal, Robusta and Kabuli etc.  
**Raddish:** Pusa chetaki, Pusa Rashmi, and Pusa Himani,  
**Cauliflower:** Pusa Ketaki, and Pusa Deepali.,  
**Cabbage:** Pride of India, Beans: Pusa Parvati and Arka Komal,  
**Tomato:** BT 2. BT 10, BT 12 Neeladri, Sada Bahar, Madhuri, Maharathi, Rashmi and navin.

### **West Bengal**

**Banana :** Mortoman, Chapa, Kathali, Singapuri,  
**Tomato & brinjal :** P Avinash-2, 448  
**Vadu Kalai :** Kalindi, Sarada.  
**Cabbage :** Pride of India, Pusa early, Kranti.  
**Cauliflower :** Jawhar moti, Bharat Jyoti, Early banaras.

### **Jharkhand**

**Potato:** Kufri Ashok, Kufri Kanchan.  
**Green Peas:** Arkel, Kashi Nandini, P.E.-6, Birsa Matar.  
**Horse Gram:** Birsa kulthi-1, G.H.G.-20.  
**Sweet Potato:** Birsa sakarkand-1 and Sri Bhadra.

### **Bihar**

**Radish:** Pusa Chetki, Pusa Himani, Pusa Rashmi, Japni Saphed.  
**Onion:** N-53, Agrifound Dark Red and Basant- 780.  
**Sweet potato (Shakarkand):** Rajendra Shakarkand 5, Rajendra Shakarkand35, Rajendra Shakarkand 43, Rajendra Shakarkand 47, Kalmegh, shree Bhadra and Rajendra Shakarkand 92.

### **Assam**

**Early cauliflower:** Early Kunwari, Pusa Katki, Pusa Deepali, CFL- 4048, Pusa Early Synthetic, Kamaya, Suhasihi.  
**Mid Cauliflower:** Improved Japanese, Pusa Synthetic, Pusa Snowball.  
**Tomato:** Punjab Chhuhara, S-12, Punjab Kesri, Pusa Early Dwarf, Sioux, Pusa Ruby, VC- 48-1, Arka Abha (BWR-1), Arka Alok (BWR-5), BT-1, Bilahi-1, Bilahi-2, Trishul, Allrounder, T- 1408, T- 1458, Anup.  
**Cabbage:** Golden Acre, Pride of India, BC- 76, Pusa Drum Head, Pusa Synthetic.  
**Knolkhol:** White Vienna, Purple Vienna.  
**Potato:** Kufri Chandramukhi, Kufri Jyoti and Kufri Sindhuri.  
**Onion:** Pusa Red, Pusa Ratnar, Pusa White (Round), Pusa white (Flat), N-53, Agrifound Light Red, Punjab Red Round, Pusa Madhuri, Arka Niketan.  
**Brinjal:**  
**Long varieties:** Cluster, JC-1, Kuchia, Pusa Kranti, Pusa Purple Long.  
**Round varieties:** Pusa Purple Round, Pusa Vairab, JC-2.  
**Rapeseed and mustard:** M-27, TS-36, TS-38.

### **Tripura**

**Tomato:** Trishul, Allrounder, T- 1408, T- 1458, Anup.  
**Cauliflower:** CFL- 4048, Pusa Early Synthetic, Kamaya.  
**Cabbage:** BC- 76, Pusa Drum Head, Pusa Synthetic.

