

# National Agromet Advisory Service Bulletin

**Friday 19<sup>th</sup> September 2014**

**(For the period 19<sup>th</sup> to 23<sup>rd</sup> September 2014)**

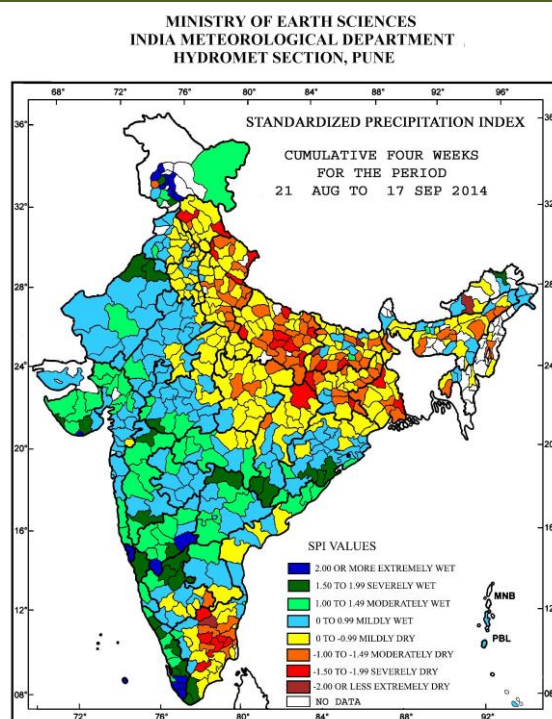


**Issued by**

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



**Standardised Precipitation Index**  
**Four Weekly**  
**for the Period 21<sup>st</sup> August 2014 to 17<sup>th</sup> September 2014**

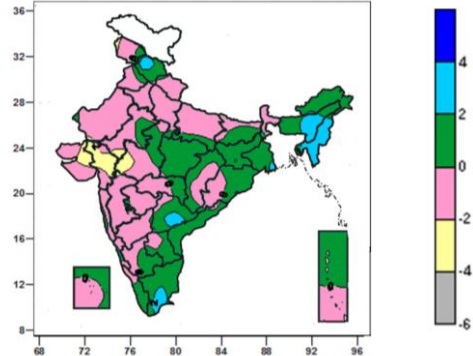
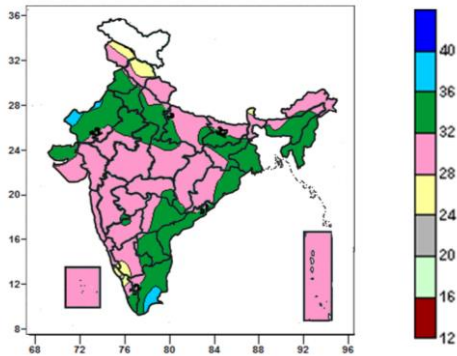


- Extremely/severely wet conditions experienced in many districts of Jammu & Kashmir and Kerala, few districts of Karnataka; Sriganganagar and Hanumangarh district of West Rajasthan; Amreli and Porbandar districts of Gujarat; Dantewada and Bijapur district of Chattisgarh; Rayagada, Gajapati and Ganjam districts of Odisha; Upper Siang district of Arunachal Pradesh; Dhule and Sangli districts of Maharashtra; North and South Goa, Diu, Adilabad district of Telangana; Tiruppur and Kanyakumari districts of Tamil Nadu.
- Extremely/ moderately/ severely dry conditions experienced in many districts of Uttar Pradesh and Bihar; few districts of Jharkhand, Uttarakhand, North East, West Bengal, Tamil Nadu; Poonch district of Jammu & Kashmir; Panchkula district of Haryana; Kangra, Hamirpur and Kinnaur districts of Himachal Pradesh; Katni, Damoh and Rewa districts of West Madhya Pradesh; Surguja and Kowarda districts of Chattisgarh.
- Rest of the country experienced moderately wet, mild wet/dry conditions.

**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 17.09.2014**

**Actual Mean Maximum Temperature (°C) in India for the week ending 17.09.2014**

**Mean Maximum Temperature (°C) Anomaly in India for the week ending 17.09.2014**

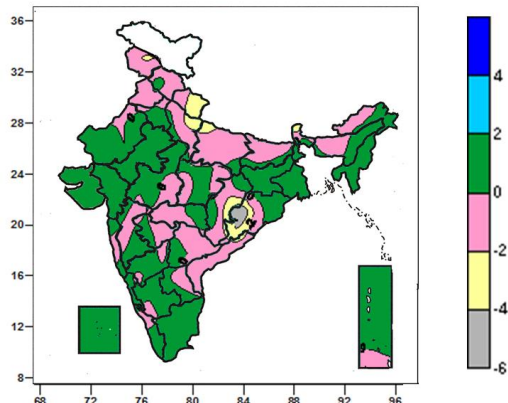
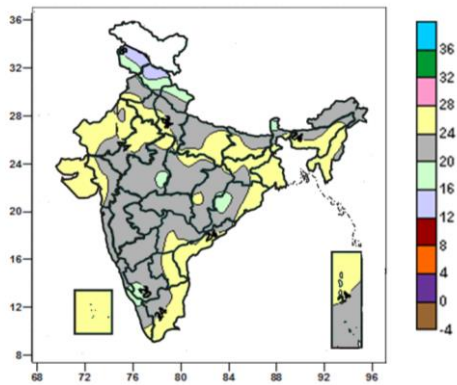


- 36 to 40°C over some parts of East Rajasthan and Tamil Nadu.
- 32 to 36°C over many parts of Punjab, Haryana, Delhi, West Uttar Pradesh, West Rajasthan, Jharkhand, Gangetic West Bengal, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Andhra Pradesh, Tamil Nadu, some parts of East Uttar Pradesh, Bihar, Arunachal Pradesh, Odisha, Central India, Vidarbha, Madhya Maharashtra, Interior Karnataka and Kerala.
- 28 to 32°C over entire country 32 to 36°C over many parts of Punjab, Haryana, Delhi, West Uttar Pradesh, West Rajasthan, Jharkhand, Gangetic West Bengal, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Andhra Pradesh, Tamil Nadu, some parts of Jammu & Kashmir, Himachal Pradesh, East Uttar Pradesh, East Rajasthan, Bihar, Arunachal Pradesh, Odisha, Central India, Vidarbha, Madhya Maharashtra, Interior Karnataka and Kerala.
- 24 to 28°C some parts of Jammu & Kashmir, Himachal Pradesh.

- 2 to 4°C over many parts of Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, some parts of Himachal Pradesh, Telangana, Tamil Nadu and Kerala.
- 0 to 2°C over many parts of Himachal Pradesh, Bihar, Jharkhand, Arunachal Pradesh, Gangetic West Bengal, Odisha, Chhattisgarh, East Madhya Pradesh, Andhra Pradesh, Tamil Nadu, Kerala, South Interior Karnataka, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Punjab, Uttar Pradesh, Rajasthan, Assam & Meghalaya, Vidarbha, Marathwada, Madhya Maharashtra, Vidarbha, Konkan, Coastal & North Interior Karnataka and Lakshadweep Islands.
- -4 to 0°C over entire country except many parts of Himachal Pradesh, Bihar, Jharkhand, North East India, Gangetic West Bengal, Odisha, Chhattisgarh, East Madhya Pradesh, Andhra Pradesh, Tamil Nadu, Kerala, South Interior Karnataka, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Uttar Pradesh, Rajasthan, Vidarbha, Marathwada, Madhya Maharashtra, Vidarbha, Konkan, Coastal & North Interior Karnataka, and Lakshadweep Islands.

**Actual Mean Minimum Temperature (°C) in India for the week ending 17.09.2014**

**Mean Minimum Temperature (°C) Anomaly in India for the week ending 17.09.2014**



- 24 to 28°C over many parts of Haryana, Delhi, Bihar, West Bengal & Sikkim, North East India, Rajasthan, Saurashtra & Kutch, Coastal Andhra Pradesh, Coastal Tamil Nadu, Lakshadweep, some parts of Punjab, Uttar Pradesh, Jharkhand, Odisha, Gujarat region, Madhya Pradesh and

- 0 to 2°C over entire country except over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Punjab, Bihar, Sikkim, Arunachal Pradesh, Assam & Meghalaya, Chhattisgarh, Andhra Pradesh, Marathwada, Vidarbha, some parts of Jammu &



Rayalaseema.

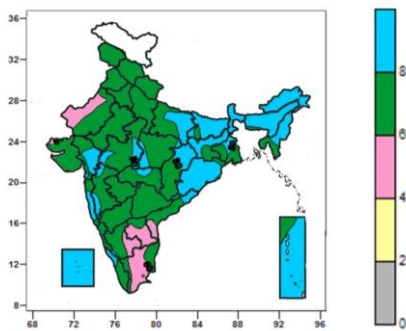
- 20 to 24<sup>0</sup>C over entire country except Jammu & Kashmir, Himachal Pradesh, Haryana, Delhi, Bihar, West Bengal & Sikkim, North East India, Odisha, Rajasthan, Saurashtra & Kutch, Coastal Andhra Pradesh, Coastal Tamil Nadu, Lakshadweep, some parts of Punjab, Uttar Pradesh, Jharkhand, Odisha, Gujarat, Madhya Pradesh and Rayalaseema.
- 12 to 20<sup>0</sup>C over many parts of Jammu & Kashmir, Himachal Pradesh.

Kashmir, Uttar Pradesh, Chhattisgarh, Haryana, West Rajasthan, Madhya Pradesh, Jharkhand, Sub-Himalayan West Bengal, Odisha, Madhya Maharashtra, Konkan, Kerala and Interior Karnataka.

- -2 to 0<sup>0</sup>C over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Punjab, Bihar, Arunachal Pradesh, Assam & Meghalaya, Chhattisgarh, Andhra Pradesh, Marathwada, Vidarbha, some parts of Haryana, West Rajasthan, Madhya Pradesh, Jharkhand, Sub-Himalayan West Bengal, Odisha, Madhya Maharashtra, Konkan, Kerala and Interior Karnataka.
- -4 to -2<sup>0</sup>C over many parts of Uttarakhand, Sikkim, some parts of Jammu & Kashmir, Uttar Pradesh, Chhattisgarh, Odisha.

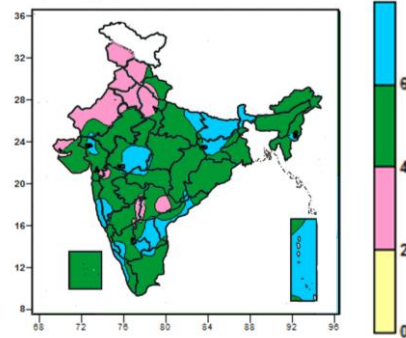
**Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 17.09.2014**

**Relative Humidity (%) over India for the week ending 17.09.2014**



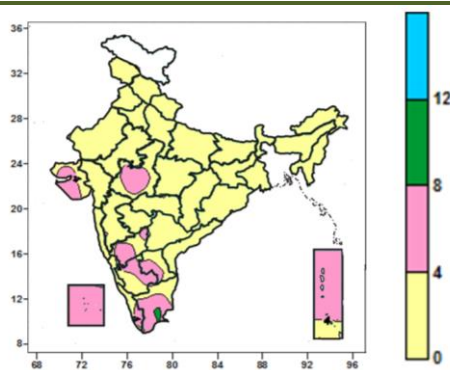
- 80 to 100% over many parts of East Uttar Pradesh, East Rajasthan, Bihar, Sub-Himalayan West Bengal & Sikkim, North East India (except Tripura), Odisha, Konkan & Goa, Lakshadweep, Andaman & Nicobar Islands, some parts of Jharkhand, Gangetic West Bengal Central India, Madhya Maharashtra, Vidarbha and Kerala.
- 60 to 80% over entire country except many parts of East Uttar Pradesh, East Rajasthan, Bihar, Sub-Himalayan West Bengal & Sikkim, North East India (except Tripura), Odisha, Konkan & Goa, Rayalaseema, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, some parts of Jharkhand, Gangetic West Bengal Central India, Madhya Maharashtra, Vidarbha, South Interior Karnataka and Kerala.
- 40 to 60% over many parts of Rayalaseema, Tamil Nadu, some parts of West Rajasthan, Coastal Andhra Pradesh, Kutch and South Interior Karnataka.

**Cloud amount (okta) over India for the week ending 17.09.2014**



- 6 to 8 okta over many parts of Bihar, Sub-Himalayan West Bengal & Sikkim, Rayalaseema, Konkan & Goa, Andaman & Nicobar Islands, some parts of East Uttar Pradesh, Jharkhand, Mizoram, Central India, Coastal Andhra Pradesh, Tamil Nadu, Coastal & South Interior Karnataka, Madhya Maharashtra, Vidarbha and Gujarat region.
- 4 to 6 okta over entire country, Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, West Uttar Pradesh, West Rajasthan, Bihar, Sub-Himalayan West Bengal & Sikkim, Rayalaseema, Konkan & Goa, Andaman & Nicobar Islands, some parts of Uttarakhand, East Rajasthan, East Uttar Pradesh, Jharkhand, Mizoram, Central India, Coastal Andhra Pradesh, Telangana, Tamil Nadu, Coastal & South Interior Karnataka, Madhya Maharashtra, Vidarbha and Gujarat region.
- 2 to 4 okta over many parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, West Uttar Pradesh, West Rajasthan, some parts of Uttarakhand, East Rajasthan, Gujarat, Madhya Maharashtra, Telangana and Interior Karnataka.

### Wind speed (knots) over India for the week ending 17.09.2014



- 8 to 12 Knots over some parts of Tamil Nadu.
- 4 to 8 knots over many parts of Saurashtra & Kutch, West Madhya Pradesh, North Interior Karnataka, Tamil Nadu, Kerala, Lakshadweep Islands, Andaman & Nicobar Islands, some parts of Rayalaseema and South Interior Karnataka.
- 0 to 4 knots over entire country except many parts of Saurashtra & Kutch, West Madhya Pradesh, North Interior Karnataka, Tamil Nadu, Kerala, Lakshadweep Islands, Andaman & Nicobar Islands, some parts of Rayalaseema and South Interior Karnataka.

### Monsoon Watch

- Conditions are becoming favourable for withdrawal of Southwest Monsoon from some parts of northwest India during next 3 days.

### Weather Forecast

#### Weather Forecast for next 3 days (upto 0830 hours IST of 22<sup>nd</sup> September, 2014)

- Rain/thundershowers would occur at many places over Andaman & Nicobar Islands during next 48 hours and at a few places thereafter.
- Rain/thundershowers would occur at many places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Sub-Himalayan West Bengal & Sikkim during next 24 hours and at most places thereafter.
- Rain/thundershowers would occur at many places over Gangetic West Bengal, Odisha, Coastal Andhra Pradesh and Rayalaseema during the period.
- Rain/thundershowers would occur at a few places over Jharkhand and Chhattisgarh during next 24 hours and over Bihar during next 48 hours and at many places thereafter.
- Rain/thundershowers would occur at a few places over Konkan & Goa, Karnataka and Telangana during the period.
- Rain/thundershowers would occur at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, East Madhya Pradesh and Gujarat Region during the period.
- Rain/thundershowers would occur at isolated places over Madhya Maharashtra and Marathwada during next 24 hours and over Vidarbha, Tamil Nadu & Pudducherry during next 48 hours and at a few places thereafter.
- Mainly dry weather would prevail over West Uttar Pradesh, Punjab, Haryana & Delhi, Rajasthan and Saurashtra & Kutch during the period.

#### Weather Warning during next 3 days

- **19 September (Day 1):** Heavy to very heavy rainfall would occur at a few places over Nagaland, Manipur, Mizoram & Tripura and at isolated places over Assam & Meghalaya. Heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim, Odisha, Arunachal Pradesh and Coastal Andhra Pradesh.
- **20 September (Day 2):** Heavy to very heavy rainfall would occur at a few places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and at isolated places over Sub-Himalayan West Bengal & Sikkim and Arunachal Pradesh. Heavy rainfall would occur at isolated places over Odisha and Coastal Andhra Pradesh.
- **21 September (Day 3):** Heavy to very heavy rainfall would occur at a few places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and at isolated places over Sub-Himalayan West Bengal & Sikkim and Arunachal Pradesh. Heavy rainfall would occur at isolated places over Odisha, Chhattisgarh and Coastal Andhra Pradesh.

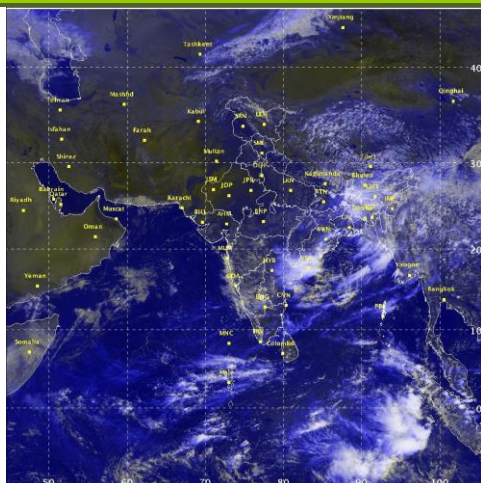
#### Weather Outlook for subsequent 4 days from 22<sup>nd</sup> to 26<sup>th</sup> September 2014

- Widespread rainfall activity accompanied with heavy to very heavy falls likely to continue over northeastern states.
- Rain/thundershowers would occur at many places over West Bengal & Sikkim, Odisha, Andhra Pradesh and north Tamilnadu.
- Rain/thundershowers would occur at isolated

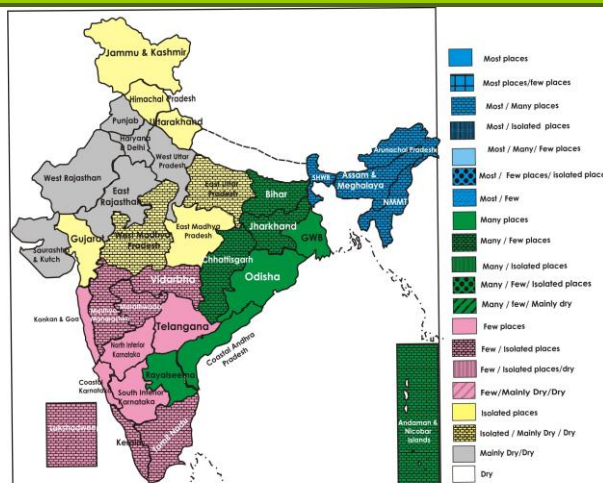
- Rain/thundershowers would occur at a few places over Kerala and Lakshadweep during next 24 hours and at isolated places thereafter.
- Rain/thundershowers would occur at isolated places over West Madhya Pradesh during next 24 hours and mainly dry thereafter.
- Mainly dry weather would prevail over East Uttar Pradesh during next 24 hours and rain/thundershowers would occur at isolated places thereafter.

places over rest part of the country outside parts of plains of northwest India and adjoining central India where weather would be mainly dry.

**Satellite image dated, 19.09.2014, 0600 UTC**



**Weather Forecast Map (Valid upto 0830 hours of 22<sup>nd</sup> September 2014)**



### Salient Advisories

- In **Jammu & Kashmir**, arrange for extensive drainage facilities to remove excess water from fields wherever feasible and then apply top dressing of nitrogen @ 3.25 kg urea per kanal in rice and in maize. Monitor maize crop for the incidence of stalk rot and apply Blitox @ 2g/ litre of water. Drain out excess water from pulses and vegetable fields in Valley Temperate Zone, Sub-Tropical and Intermediate Zone of Jammu & Kashmir.
- Undertake land preparation for *rabi* sowing utilizing the realized rainfall. Nipping of shoot tip of cotton is advised in 90 days old crop to check excess vegetative growth and spray 2% DAP along with 1% MgSO<sub>4</sub> and Planofix (0.25 ml/lit of water) on a non rainy day to manage leaf reddening and square dropping in the North Transition Zone of **Karnataka**.
- Continue nursery preparation for *Mundakan* rice in the Southern Zone of **Kerala**.
- As rain/thundershowers would occur at many/most places over **Assam, Meghalaya and Arunachal Pradesh** on 19<sup>th</sup> & 20<sup>th</sup> September along with heavy to very heavy spells at isolated/few places, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
- As rain/thundershowers would occur at many/most places over **Nagaland, Manipur, Mizoram and Tripura** during the period along with heavy to very heavy spells at a few places, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
- In North Eastern Coastal Plain Zone and Ghat Zone of **Odisha**, prevailing temperature and humidity favours attack of stem borer on rice. Install pheromone traps to monitor the adult population. If the damage is above ETL, spray Lambda-Cyhalothrin or Triazophos @ 400 ml/acre or apply Cartap Hydrochloride SP @ 400g/acre after current spells of rain.



## Detailed Zonewise Agromet Advisories

### SOUTH INDIA [TAMIL NADU, TELANGANA, ANDHRA PRADESH, KARNATAKA, KERALA]



*Rice*



*Sugarcane*



*Okra*



*Soybean*

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala except Alapuzha, Malappuram, Palakkad, Thiruvananthapuram and Wynad; all districts of Coastal Karnataka; Bidar, Gulbarga, Koppal, Raichur and Yadgir districts of North Interior Karnataka; Bellary district of South Interior Karnataka; all districts of Andhra Pradesh except East Godavari, Nellore, Prakasam, Anantapur and Chittoor; Khammam, Mahbubnagar, and Nalgonda districts of Telangana; Chennai, Kancheepuram, Puducherry, Tiruvallur, Thiruvannamalai, Vellore and Villupuram districts of Tamil Nadu. Mainly dry weather prevailed over remaining parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Coastal Andhra Pradesh and Rayalaseema; at a few places over Telangana and Karnataka during the period. Rain/thundershowers would occur at a few places over Kerala during next 24 hours and at isolated places thereafter. Rain/thundershowers would occur at isolated places over Tamil Nadu & Puducherry during next 48 hours and at a few places thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Coastal Andhra Pradesh during the period.
- **Weather Outlook:** Rain/thundershowers would occur at many places over Andhra Pradesh and north Tamil Nadu. Rain/thundershowers would occur at isolated places over rest parts of the region.
- **Advisories:**
  - **Karnataka:**
    - Continue sowing of sunflower and fodder crops in some areas and undertake land preparation for *rabi* sowing utilizing the realized rainfall in the North Dry Zone of Karnataka.
    - In Eastern Dry Zone of Karnataka, continue sowing of ragi, cow-pea and field-bean.
    - Undertake land preparation for *rabi* sowing utilizing the realized rainfall. Nipping of shoot tip of cotton is advised in 90 days old crop to check excess vegetative growth and spray 2% DAP along with 1% MgSO<sub>4</sub> and Planofix (0.25 ml/lit of water) on a non rainy day to manage leaf reddening and square dropping in the North Transition Zone of Karnataka.
    - Undertake harvesting of black gram in the North East Transition and North East Dry Zone of Karnataka in clear weather.
    - Cotton crop is at square formation to flowering stage in the Hill Zone of Karnataka, to reduce the square/flower bud/flower drop undertake spraying of Planofix @0.25 ml/litre of water on a non rainy day.
    - In the Southern Dry Zone of Karnataka, ginger crop is severely affected by Rhizome rot disease which is likely to spread due to moist conditions. Spray Copper Oxychloride @ 3 g/litre of water on a non rainy day to manage the disease.
  - **Kerala:**
    - Continue nursery preparation for *Mundakan* rice in the Southern Zone of Kerala. Undertake crown cleaning in coconut and ploughing of fields before onset of Northeast monsoon for more retention of rain water and control of weeds.
    - Present humid weather condition is congenial for incidence of rice bug in rice and leaf fall disease in rubber plant in the Problem Area Zone of Kerala. Avoid overlapping of cultivation, keep the field and bunds free of weeds and grasses and when bugs are seen in large numbers spray Malathion @ 2ml/litre of water or DDVP@ 2ml/litre of water on a non rainy day. For one hectare rubber plantation, apply COC 8kg +40litres of water to manage leaf fall disease.
  - High humidity is congenial for incidence of sheath blight disease in rice and leaf fall disease in nutmeg in the Central Zone of Kerala. Apply Propiconazole 25 EC @ 500 ml per ha to control sheath blight and apply 1% Bordeaux mixture to nutmeg to control leaf fall on a non rainy day.
  - **Telangana and Andhra Pradesh:**
    - As rain/thundershowers would occur at many places over Coastal Andhra Pradesh and Rayalaseema during the period along with heavy rainfall at isolated places over Coastal Andhra Pradesh, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage

in standing crops in Coastal Andhra Pradesh to remove excess water.

- Continue direct seeding of chilli and gap filling in direct seeded rice. Apply biogyme, micronutrients and mineral mixture to overcome from slow growth due to micro nutrients deficiencies and excess moisture in the Krishna Godavari Zone of Andhra Pradesh after current spells of rain.
- In Scarce Rainfall Zone of Rayalaseema, continue sowing of contingency crops like sorghum, bajra, foxtail millet, cowpea, sunflower, green gram, field bean, castor and horse gram utilizing the realised rainfall. Lay out dead furrows across the slope for every 3.6mts / 12 rows in groundnut fields for moisture conservation.
- Prevailing moisture conditions are congenial for the incidence of blast in rice and likely to be more severe in BPT variety in the Southern Telangana Zone. Spray Tricyclazole @ 0.6 g per litre of water on a non rainy day. Also incidence of black arm disease is noticed in cotton and is likely to spread. Spray Copper-Oxy-Chloride @30g + Plantamycin @ 2g in 10 litres of water on a non rainy day.
- Continue direct seeding of chilli and gap filling in direct seeded rice. Apply biogyme, micronutrients and mineral mixture to overcome from slow growth due to micro nutrients deficiencies and excess moisture in the Krishna Godavari Zone of Andhra Pradesh.
- Due to cloudy and humid conditions, incidence of thrips and bacterial blight was observed in chilli and is likely to continue in the Scarce Rainfall Zone of Rayalaseema. Spray Pipronil @2ml/litre or Acetamprid @0.2g/litre to manage thrips incidence and copper oxy chloride @30g + Streptocyclin @1g in 10 litres of water after current spells of rain to manage bacterial blight.
- **Tamil Nadu:**
  - Continue sowing and transplanting of *samba* rice and nursery sowing of *Thaladi* rice in the Cauvery Delta Zone of Tamil Nadu.
  - In the Western Zone of Tamil Nadu, continue harvesting of groundnuts and jowar/millets in clear weather.
  - Prevailing temperature with humid weather is congenial for incidence of brown plant hopper in rice in the Western Zone of Tamil Nadu. Dust Malathion 5% @ 25kg per ha towards the basal portion of the stem on a non rainy day.
  - Arrange farm inputs for dry land cultivation and undertake cultivation of chilli in the North East Monsoon season in the South Zone of Tamil Nadu. Select drought resistant varieties of cotton, maize, jowar, green gram, sunflower and pearl millet.
- **Animal Husbandry**
  - Prevailing weather conditions are congenial for Anthrax and Enterotoxaemia in livestock in the Scarce Rainfall Zone of Andhra Pradesh. Vaccinate the animals to prevent the diseases.
  - Present weather conditions are congenial for respiratory infections in sheep and goat in the North Western Zone of Tamil Nadu. Keep the floor clean and dry, place curtains on the open sided wall of the house to prevent cold wind entering into the animal shed and do not allow any water stagnation around the sheds.

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



*Rice*



*Okra*



*Jute*



*Green Gram*

- **Realised Rainfall:** Rainfall occurred in East Siang, Papumpara, Tawang, Upper Siang, West Kameng and West Siang districts of Arunachal Pradesh; Bongaigaon, Cachar, Chirang, Darrang, Dhemaji, Dhubri, Dibrugarh, Golghat, Hailakandi, Karimganj, Kokrajhar, Lakhimpur, Morigaon, N.C.Hills, Nowgaon, Sonitpur, Sibsagar and Tinsukia districts of Assam; East Garo Hills, East Khasi Hills, Jaintia Hills, Ribhoi and South Garo Hills districts of Meghalaya; Aizwal, Saiha and Serchhip districts of Mizoram; Chandel and Imphal West district of Manipur; Kohima and Phek districts of Nagaland and Dhalai district of Tripura. Mainly dry weather prevailed over remaining parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 24 hours and at most places thereafter.
- **Weather Warning:** Heavy to very rainfall would occur at a few places over Nagaland, Manipur, Mizoram & Tripura during the period; over Assam & Meghalaya on 20<sup>th</sup> and 21<sup>st</sup> September and at isolated places over Assam & Meghalaya on 19<sup>th</sup> September. Heavy to very rainfall would occur at isolated places over Arunachal Pradesh on 20<sup>th</sup> and 21<sup>st</sup> September. Heavy rainfall would occur at isolated places over Arunachal Pradesh on 19<sup>th</sup> September.
- **Weather Outlook:** Widespread rainfall activity accompanied with heavy to very heavy falls likely to continue over northeastern states.



• **Advisories:**

▪ **Assam & Meghalaya, Arunachal Pradesh:**

- As rain/thundershowers would occur at many/most places over Assam, Meghalaya and Arunachal Pradesh on 19<sup>th</sup> & 20<sup>th</sup> September along with heavy to very heavy spells at isolated/few places, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
- In Assam, continue sowing of green gram, black gram, sesame and nursery sowing of cole crops after spells of heavy rain.
- In Upper Brahmaputra Valley Zone of Assam, complete sowing of pulses like green gram and black gram. Continue nursery raising of cole crops after spells of heavy rain.
- In Hill Zone of Assam, replanting of dead hills or gap filling with seedlings of *sali* rice of similar age should be done within 7-10 days of transplanting.
- In Sub Tropical Hill Zone of Arunachal Pradesh, continue harvesting of *jhum* rice after current spells of rain.
- In Meghalaya, continue nursery preparation/ sowing of vegetables like cabbage, cauliflower, carrot, radish, broccoli and French bean and planting of potato and continue sowing of pea in high altitude areas of East Khasi Hills after spells of heavy rain. Avoid water logging in ginger/turmeric to avoid rhizome rot and fungal disease.
- Due to cloudy and humid weather, there is chance of attack of rice hispa in *sali* rice at tillering stage in Hill Zone of Assam, spray with Quinolphos @ 10 ml /5 litre of water. Also in cloudy weather, there is chance of attack of stem borer in maize, spray Fenitrotheon @ 1 litre in 200-250 litre of water per ha. Apply chemicals after current spells of rain.
- Due to prevailing humid weather conditions, there is chance of attack of hispa, blast and leaf folder in *Sali* rice in Barak Valley Zone Upper Brahmaputra Valley, North Bank Plain Zone and Lower Brahmaputra Valley of Assam. Spray 0.02% Chloropyriphos 20 EC or Quinalphos 25 EC @ 2.5 ml per litre of water against pests. Apply chemicals after current spells of rain.
- In Central Brahmaputra Valley Zone of Assam, stem borer and caseworm infestation may occur in *sali* rice which may be controlled by draining out of excess water or spraying Chloropyriphos (20%) @ 2 ml/litre of water after current spells of rain.
- Due to prevailing humid weather conditions, there is chance of attack of gundhi bug in early transplanted rice and blast in normal transplanted rice in Arunachal Pradesh. Dust with Malathion 5D @ 20 kg/ha for gundhi bug and undertake foliar spray of Hexaconazole 5% EC @ 2 ml/litre of water or Carbendazim 12 % WP+Mancozeb 63% WP @ 2 g/litre of water against blast after current spells of rain.
- In Meghalaya, due to cloudy weather & high humidity, there is chance of incidence of blast in *kharif* rice. Spray Mancozeb @ 2g/litre or Carbendazim @ 1g/litre. Also present weather is congenial for development of late leaf spot in groundnut. Spray Carbendazim (0.05%) + Mancozeb (0.2 %). Apply plant protection measures after current spells of rain.

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

- As rain/thundershowers would occur at many/most places over Nagaland, Manipur, Mizoram and Tripura during the period along with heavy to very heavy spells at a few places, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
- In Manipur, maintain water level of 5-8cm in *kharif* rice and weeding may be done before top dressing. Continue main field preparation for transplanting of cole crops after current spells of heavy rain.
- In Mizoram, continue nursery preparation for cole crops like cabbage, cauliflower, broccoli and knolkhol after current spells of heavy rain.
- In Mild Tropical Plain Zone of Tripura, undertake harvesting of *jhum* rice and groundnut and sowing of winter vegetable particularly tomato, cauliflower, cabbage, broccoli after current spells of rain.
- In Mizoram, due to continuous wet condition, there is chance of leaf spot on ginger & turmeric; spray Dithane M-45 @ 2.5 g/litre of water or Bavistin @ 1 g/litre of water or Blitox @ 3 g/litre of water after current spells of rain.
- Due to prevailing cloudy and humid weather, there is chance of attack stem borer and gundhi Bug in *aman* rice (short duration) in Mild Tropical Plain Zone of Tripura. Apply Novacron @ 2ml per litre of water to control stem borer and Cypermethri + Propanophos @ 1.5ml per litre or Cartap Hydrochloride (Dollar) @ 1.5 g per litre of water to manage the attack of gundhi Bug. Apply the chemicals after current spells of rain.

• **Animal Husbandry**

- In Meghalaya, in rainy season, litter should be changed periodically to avoid dampness and prevent disease development like coccidiosis in poultry. During day time sufficient ventilation should be provided to reduce the humidity inside the sheds.
- In Tripura, damp litter and high moisture may cause Coccidiosis in the chicken, so avoid dampness in the deep litter. Prevailing high humidity may cause ammonia fumes which irritate the respiratory tract and eyes in poultry. Provide good ventilation in poultry sheds.
- In Manipur, provide clean drinking water to livestock. Avoid water logging around the sheds as it may help in mosquito breeding.

## EAST INDIA [JHARKHAND, BIHAR, ODISHA, WEST BENGAL & SIKKIM, ANDAMAN & NICOBAR ISLANDS]



**Sugarcane**

**Jute**

**Onion**

**Rice**

- **Realised Rainfall:** Rainfall occurred in all districts of Bihar except Araria, Buxar, Katihar, Madhubani, Monghyr and Purnea; all districts of Jharkhand except Bokaro, Dhanbad, East Singhbhum, Gumla, Khunti, Koderma and Seraikela; all districts of Odisha except Balasore, Bargarh, Jagatsinghpur, Kendrapara, Keonjhar, Khurda and Sundergarh; Howrah, Kolkata, Murshidabad and South 24 Parganas districts of Gangetic West Bengal; all districts of Sub-Himalayan West Bengal & Sikkim except West Sikkim; all districts of Andaman & Nicobar Islands.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Gangetic West Bengal and Odisha during the period. Rain/thundershowers would occur at many places over Sub-Himalayan West Bengal & Sikkim during next 24 hours and at most places thereafter. Rain/thundershowers would occur at many places over Andaman & Nicobar Islands during next 48 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over Jharkhand during next 24 hours and over Bihar during next 48 hours and at many places thereafter.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim on 20<sup>th</sup> and 21<sup>st</sup> September. Heavy rainfall would occur at isolated places over Odisha during the period and over Sub-Himalayan West Bengal & Sikkim on 19<sup>th</sup> September.
- **Weather Outlook:** Rain/thundershowers would occur at many places over West Bengal & Sikkim and Odisha. Rain/thundershowers would occur at isolated places over rest parts of the region.
- **Advisories:**
  - **West Bengal:**
    - As rain/thundershowers would occur at most/many places over Sub Himalayan West Bengal and many places over Gangetic West Bengal during the period along with isolated heavy spells over Sub Himalayan West Bengal, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water in Sub Himalayan West Bengal.
    - In New Alluvial Zone of West Bengal, keep 5-7 cm water in *aman* rice fields at the time of tillering stage. Continue seedbed / land preparation for early winter vegetables like radish, broccoli etc. and sowing of onion, cabbage, cauliflower etc. in the nursery bed.
    - In Laterite and Red Soil Zone undertake harvesting of maize after current spells of rain. In *aman* rice field, maintain 3-5 cm standing water at panicle initiation stage.
    - In Old Alluvial Zone of West Bengal, continue sowing of black gram and land preparation for transplanting of 4-6 weeks old seedlings of cole crops like cauliflower and cabbage after current spells of heavy rain.
    - In Old Alluvial Zone, due to cloudy and humid weather, there is chance of occurrence of stem borer, leaf folder and sheath blight in *aman* rice, apply Chloropyrifos @ 2.5 ml/litre of water or Cartap Hydrochloride 50 WP @ 1 g/litre of water against stem borer and leaf folder. To control sheath blight, spray Validamycin @ 2.5ml or Carbendazim 50% WP @ 1g per litre of water. Apply the chemicals after current spells of rain.
    - In Laterite and Red Soil Zone, due to cloudy and humid weather, there is chance of occurrence of blast disease in *aman* rice. Apply Carbendazim + Mancozeb @ 2.5 g/litre of water after current spells of rain.
    - In Coastal Saline Zone, there is chance of sheath blight in *aman* rice and stem rot or blunt rot in vegetables due to prevailing high humidity. Spray Kopiconazole @ 1.5 ml/litre of water after current spells of rain. Spray a mixture of Bavitin @ 1g/litre of water and Diethane against stem rot or blunt rot in vegetables after current spells of rain.
    - Due to humid condition, there is chance of sheath blight, stem borer, gall midge in *aman* rice in Terai Zone. Spray Propiconazole @ 1 ml/litre of water against sheath blight, spray Fipronil 8% WDG @ 2 g per 15 litre of water against stem borer and gall midge. Also due to humid condition damping off may occur in vegetable nursery, to manage the disease spray Carbendazim 12% + Mancozeb 64% @ 2 g/litre of water. Apply the chemicals after current spells of rain.
  - **Andaman and Nicobar Islands:**
    - As rain/thundershowers would occur at many places over Andaman and Nicobar Islands on 19<sup>th</sup> & 20<sup>th</sup> September, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
    - In North and Middle Andaman, provide adequate drainage in vegetable nurseries.

▪ **Odisha:**

- As rain/thundershowers would occur at many places over Odisha along with isolated heavy spells during the period, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to remove excess water.
- In East and South Eastern Coastal Plain Zone of Odisha, continue land preparation and sowing of pre *rabi* crops like green gram, black gram, horse gram, cow pea and sesame in fallow upland and medium uplands after spells of heavy rain.
- In North Central Plateau Zone of Odisha, continue planting of lemon and mango after spells of heavy rain.
- In Western Undulating Zone of Odisha, waterlogged conditions with high humidity (75-80%) favours buildup of scale insect, whitefly and Pyrilla in sugarcane. Spray Imidacloprid @ 1 ml / 4 litres of water after current spells of rain.
- In East and South Eastern Coastal Plain Zone and North Central Plateau Zone of Odisha, prevailing temperature may favour egg laying of stem borer in rice. To attract the borer butterflies, place 4 Pheromone Traps/acre, collect the adults and destroy them by burying them under soil or by burning and spray Prophenophos @ 2 ml per litre water after current spells of rain.
- In North Central Plateau Zone of Odisha, in the prevailing temperature, there are chances of occurrence of Yellow vein mosaic disease in arhar. Spray Dimethoate @ 300g a.i./Ha or Methyl Demeton @ 250g a.i./ha after current spells of rain to control the insect vector.
- In East and South Eastern Coastal Plain Zone of Odisha, current temperature and humidity may favour the infestation of tikka disease and root rot in groundnut. To control these, spray Saaf, Companion or Sixer @ 2 ml per litre of water after current spells of rain.
- In Western Undulating Zone of Odisha, there is chance of red rot disease in sugarcane at grand growth stage. Bunding of affected field should be done to avoid movement of rain or floodwater from affected field to non affected fields. Destroy trashes from the infected plant by burning and spray Carbendazim @2g/litre of water after current spells of rain. Severely affected plants or canes should be uprooted and destroyed.
- In North Eastern Coastal Plain Zone and Ghat Zone of Odisha, prevailing temperature and humidity favours attack of stem borer on rice. Install pheromone traps to monitor the adult population. If the damage is above ETL, spray Lambda-Cyhalothrin or Triazophos @ 400 ml/acre or apply Cartap hydrochloride SP @ 400g/acre after current spells of rain.

▪ **Bihar:**

- As rain/thundershowers would occur at many places over Bihar on 21<sup>st</sup> September, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
- In North West Alluvial Plain Zone of Bihar, undertake transplanting of tomato and cauliflower. Continue nursery sowing of cabbage. Complete sowing of arhar. Undertake top-dressing of nitrogen in rice which is in booting stage.
- In North East Alluvial Plain Zone of Bihar, maintain optimum water level in rice. Complete sowing of September arhar and transplanting of early autumn vegetable *viz.* cauliflower, cabbage and brinjal etc.
- In South Bihar Alluvial Zone, complete sowing of kulthi and *rabi* pigeon pea in upland areas. Maintain 5 cm water in rice fields.
- Due to humid weather, there are chances of attack of brown plant hopper in rice crop in North East Alluvial Plain Zone of Bihar, spray Imidacloprid 17.8% EC @ 0.5 ml/L of water in evening after current spells of rain.

▪ **Jharkhand:**

- As rain/thundershowers would occur at many places over Jharkhand on 20<sup>th</sup> & 21<sup>st</sup> September, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops
- In Western Plateau Zone of Jharkhand, in upland areas, continue sowing toria. Continue field preparation for cultivation of early potato and green peas. Maintain optimum water level in rice. Undertake nursery raising of the seedlings of winter vegetables like cauliflower, cabbage, chilli tomato, brinjal etc.
- In South Eastern Plateau Zone of Jharkhand, continue land preparation for the cultivation of short duration early potato. In fallow land undertake sowing of green pea and toria.
- In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of toria, green pea and potato. Continue sowing of tomato, cabbage and cauliflower in raised seed bed. Conserve rain water by repairing the broken bunds of the rice fields.
- In South Eastern Plateau Zone of Jharkhand, due to high humidity and extended leaf wetness, there are chances of Blast in rice crop, spray Tricyclazole @ 6 g per litre of water after current spells of rain.
- Due to prevailing humid weather conditions, there is chance of attack of gundhi bug in timely sown rice in Western Plateau Zone of Jharkhand. To control the insects, dusting of Chlorpyrifos / Quinolphos / Methyl parathion dust @ 10 kg per acre after current spells of rain. As an alternative method (in the case of unavailability of the insecticides), dusting of coal / wood ash mixed with kerosene.
- Suitable varieties are given in Annexure II.



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



**Sugarcane**

**Rice**

**Okra**

**Green Gram**

- **Realised Rainfall:** Rainfall occurred in Anupur, Balaghat, Dindori, Katni, Mandla, Narsinghpur, Sagar, Satna, Seoni, Siddhi and Tikamgarh districts of East Madhya Pradesh; Ashoknagar, Bhind, Burhanpur, Datia, Guna, Gwailor, Harda, Khandwa, Khargone, Mandsaur, Morena, Neemuch, Raisen, Sheopur, Shivpuri and Vidisha districts of West Madhya Pradesh; Bastar, Bijapur, Bilaspur, Dantewada, Durg, Jashpur, Korba, Koriya, Narayanpur, Raigarh, Raipur and Rajnandgaon districts of Chhattisgarh. Mainly dry weather prevailed over remaining parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over East Madhya Pradesh during the period. Rain/thundershowers would occur at a few places over Chhattisgarh during next 24 hours and at many places thereafter. Rain/thundershowers would occur at isolated places over West Madhya Pradesh during next 24 hours and mainly dry weather would prevail thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Chhattisgarh on 21<sup>st</sup> September.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over the region.
- **Advisories:**
  - **Madhya Pradesh:**
    - In Vindhya Plateau Zone of Madhya Pradesh, if *kharif* crops are damaged due to heavy rain, farmers may undertake nursery sowing of onion, garlic and planting of short duration varieties of potato. The sowing may be done upto 15<sup>th</sup> October. Sowing of green gram (K-851, Jawahar Mung -721, Pant Mung- 4, T.J. M 3), black gram (Pant U-30, R.B.U.-38, Jawahar Urd-3, J. U-37)) by ridge furrow method is recommended.
    - Undertake sowing of sarson saag, radish, spinach and coriander in Bundelkhand Zone of Madhya Pradesh utilising the realised rainfall.
    - As mainly dry weather would prevail, undertake harvesting of matured urad and moong in Bundelkhand Zone and vegetables in Vindhya Plateau Zone and Nimar Valley Zone of Madhya Pradesh.
    - Due to cloudy weather, there are chances of attack of semilooper, tobacco caterpillar and girdle beetle in soybean, moong and urad in Jhabua Hill Zone of Madhya Pradesh, Spray Profenophos @ 2 ml per litre of water.
    - Due to cloudy and humid weather, there are chances of incidence of stem borer and fruit borer in chilli, tomato, brinjal and okra in Gird Zone of Madhya Pradesh. For control, spray Dimethoate @ 1 g per litre of water.
    - Due to humid weather, there is possibility of attack of yellow mosaic virus in urad and soybean in Bundelkhand Zone and Nimar Valley Zone of Madhya Pradesh, spray Methyldameton @ 2.0 ml. or Imedachloprid @ 0.5 ml. per litre of water.
  - **Chhattisgarh:**
    - As rain/thundershowers would occur at many places over Chhattisgarh on 20<sup>th</sup> & 21<sup>st</sup> September along with heavy rainfall at isolated places on 21<sup>st</sup> September, postpone irrigation, inter-cultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crop fields to remove excess water.
    - In Plain Zone and North Hill Zone of Chhattisgarh, in fallow upland, sowing of horse gram and Niger may be completed.
    - In North Hill Zone of Chhattisgarh, raise the seedlings of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal etc.
    - Due to cloudy weather, there are chances of attack of blast in rice in North Hill Zone and Plain Zone of Chhattisgarh, apply Tricyclazole @ 120 g per acre after current spells of rain.
- **Animal Husbandry**
  - In Madhya Pradesh, provide clean water and concentrate feed mixed with dry and green fodder to cattle.

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



*Rice*

*Sugarcane*

*Bottle Gourd*

*Onion*

- **Realised Rainfall:** Rainfall occurred in North Delhi and South Delhi districts of Delhi; Mandi district of Himachal Pradesh; Kapurtala district of Punjab; all districts of East Uttar Pradesh except Allahabad, Banda, Chandauli, Deoria, Fatehpur, Kanpur(dehat).Kaushambi, Mau, Pratapgarh, Sahuji Maharajnagar, Sant Ravidas Nagar, Sonbhadra; Aligarh, Bijnor, Bulandshahar, Etah, Firozabad, Jhansi, Lalitpur, Mahamayanagar, Mainpuri, Meerut, Muradabad, Saharanpur and Shahjahanpur districts of West Uttar Pradesh; Almora, Dehradun, Nainital and Pithorgarh districts of Uttarakhand; Alwar, Baran, Bharatpur, Chittorgarh, Dausa, Dholpur, Jaipur, Jhalawar, Karauli, Rajasamand, Sawai Madhopur, Sirohi and Udaipur districts of East Rajasthan; Churu and Pali districts of West Rajasthan. Mainly dry weather prevailed over remaining parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Uttarakhand, Himachal Pradesh and Jammu & Kashmir during the period. Mainly dry weather would prevail over East Uttar Pradesh during next 24 hours and rain/thundershowers would occur at isolated places thereafter. Mainly dry weather would prevail over West Uttar Pradesh, Haryana & Delhi, Punjab, and Rajasthan during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Mainly dry weather would prevail over plains of northwest India.
- **Advisories:**
  - **Jammu & Kashmir:**
    - Arrange for extensive drainage facilities to remove excess water from fields wherever feasible and then apply top dressing of nitrogen @ 3.25 kg urea per kanal in rice and in maize. Monitor maize crop for the incidence of stalk rot and apply Blitox @ 2 g/ litre of water.
    - Undertake harvesting of mash and moong crops immediately in Sub-tropical Zone to avoid shattering and other losses.
    - Drain out excess water from pulses and vegetable fields in Valley Temperate Zone and Intermediate Zone of Jammu & Kashmir.
    - Undertake sowing of toria (RSPT-1 and local toria) and nursery bed preparation for winter vegetables and nursery raising of cole crops and onion. Sowing of root crops like radish, carrot, turnip etc. may also be undertaken in Sub-Tropical Zone of Jammu & Kashmir.
  - **Himachal Pradesh:**
    - Continue sowing of radish, turnip, carrot and leafy vegetable crops like spinach and fenugreek in mid hill areas and early varieties of pea in Sub-Montane and Low Hills Sub-Humid Tropical Zone and Bilaspur district of Mid Hills Sub-Humid Zone. Nursery sowing of cauliflower (late group), cabbage, knol khol, broccoli and Chinese cabbage and direct sowing of radish, carrot, turnip, spinach and fenugreek and planting of onion (30X 10 cm spacing ) can also be undertaken in mid hill areas. Continue transplanting of mid season cauliflower in low hill areas.
    - Undertake sowing of fodder crops like maize (African tall), berseem, lucerne and oats in Sub-Montane and Low Hills Sub-Humid Tropical Zone and Bilaspur district of Mid Hills Sub-Humid Zone of Himachal Pradesh.
    - As mainly dry weather would prevail, undertake harvesting of rajmah in High Hill Temperate Dry Zone of Himachal Pradesh. In high altitude areas, undertake sowing of red and white clover.
    - Undertake intercultural operation like weeding in peas in High Hill Temperate Dry Zone of Himachal Pradesh. Spray Glycel @ 5ml per liter of water for weed control.
    - In Sub Montane and Low Hills Sub-Humid Tropical Zone and Bilaspur district of Mid Hills Sub-Humid Zone of Himachal Pradesh, due to prevailing humid weather condition, there are chances of incidence of rice blast, spray Bavistin 0.01or Beam 75 WP 0.06% and repeat at an interval of 10-15 days. For control of rice hispa and leaf folder, spray Cypermethrin 10 EC @ 1ml or Chloropyriphos 20 EC @ 2.5ml per litre of water.
    - Due to prevailing humid weather condition, there are chances of attack of white fly in tomato in Mid Hills Sub-Humid Zone of Himachal Pradesh. Use yellow trap one trap/100 m<sup>2</sup> to prevent the attack and spray Imidacloprid (Confidor) @ 7.5 ml or Malathion @ 22.5 ml or Metasystox @ 15ml in 15litres of water.
    - Due to prevailing humid weather conditions, there are chances of attack of aphids in cabbage and cauliflower in High Hill Temperate Dry Zone of Himachal Pradesh. Spray Cypermethrin @ 1ml per litre of water.

- Weather is congenial for attack of anar butter fly and incidence of fruit rot in anar in Mild Hills Sub Humid Zone of Himachal Pradesh. Spray Quinalphos @ 500 ml per 200 litres of water against attack of anar butter fly and Captan @ 600g per 200 litres of water to prevent fruit rot in anar.
- **Uttarakhand:**
  - Continue sowing of mustard, palak, methi, raddish and continue sowing of early toria, pea in Hill Zone of Uttarakhand. In Bhabar and Tarai Zone, undertake sowing of toria.
  - In Sub humid Sub Tropical Zone of Uttarakhand, as rice crop is at active tillering stage, maintain 5cm water level and apply second dose of Urea at this stage.
  - Under present weather conditions, there may be attack of leaf hopper on vegetables like brinjal and okra in Sub humid Sub Tropical Zone of Uttarakhand. To control, apply Dichlorvas @ 1ml/liter of water.
  - Due to rise in temperature, there are chances of attack of leaf folder and stem borer on rice in Bhabar and Tarai Zone of Uttarakhand. If the incidence is more than 10 % then spray Cartap Hydrochloride 50 WP @ 250 g dissolved in 200 to 250 liters of water per acre.
- **Punjab, Haryana and Delhi:**
  - In Punjab, in view of deficit rainfall, adopt moisture conservation practices like hoeing, weeding, mulching in crops like sugarcane, maize, cotton to reduce the evapotranspiration losses and to conserve moisture for *rabi* crops. De-tasselling in maize is advised to reduce transpiration losses
  - In Western Undulating Zone of Punjab, continue nursery sowing of mid-season cauliflower, desi varieties of radish, carrot and turnip and planting of mango and litchi utilising the available moisture.
  - Under hot and humid conditions, whitefly incidence may increase in cotton in Western Plain Zone of Punjab, when whitefly population exceeds ETL level, spray Triazophos 40 EC @ 600ml/acre or Ethion 50 EC @ 800 ml/acre.
  - In Central Plain Zone of Punjab, continue sowing of desi varieties of carrot, radish and turnip crops and undertake transplanting of rainy season tomato. Continue sowing of potato, palak and nursery sowing of cauliflower utilising the available moisture.
  - In Undulating Plain Zone of Punjab, higher humidity due to intermittent rainfall may lead to sheath blight in rice, spray Tilt @ 0.1% on the disease spots. Present weather condition is very congenial for attack of fruit rot in chilli, spray Indofil M45 @ 390 g/acre in 100-200 litres of water. Due to intermittent rainfall during previous week, false smut infection in rice heads may occur, spray Blitox @ 500 gm/acre to prevent. Grain discoloration in rice may occur due to rainfall during flowering stage, spray Tilt @ 200 ml/acre to prevent fungal infection in the unfilled grains.
  - In Western Zone of Haryana, complete sowing of fodder crop jowar mixed with cowpea to increase the nutritive value for continuous supply of green fodder. Undertake plantation of new orchard.
  - In Delhi, continue transplanting of onion seedling in the prepared fields and continue planting of early potato. In the present weather conditions, false smut may appear in rice crop, Apply Blitox @ 500 grams per acre at 10 days interval (2-3 times).
- **Uttar Pradesh:**
  - Undertake second top dressing of urea @ 60 kg or Nitrogen @ 18 kg per hectare in rice after formation of tillers and urea @ 85-105 kg per ha in bajra in Central Plain Zone of Uttar Pradesh. Also apply Thirum at rate of 0.15 % two to three times at the time of flowering at an interval of 7-10 days.
  - Undertake transplanting of cauliflower (60x60 cm row spacing), brinjal (75x60 cm row spacing), cabbage, tomato and chilli and planting of fruit crops in Barabanki, Faizabad, Ambedkarnagar districts of Eastern Plain Zone of Uttar Pradesh utilizing the realized rainfall.
  - Undertake sowing of toria @ 4kg seed per ha in Fatehpur, Pratapgarh, Allahabad, Chitrakut, Kaushambi, Agra, Mathura, Lucknow and Kanpur districts of Central Plain Zone; varieties like Sangam, TL-17, 67 in Western Plain Zone and continue sowing of toria (T-9, T-36, Bhavani, Pant -30,303, 507) at a row spacing of 30 cm in Deoria, Basti and Ballia districts of Eastern Plain Zone and Central Plain Zone of Uttar Pradesh.
  - Continue transplanting of cauliflower, cabbage, tomato, chilli and brinjal and sowing of palak, cucumber, methi, ageti carrot and planting of fruit crops like mango, papaya, lemon, amla, etc. in Jhansi district of Bundelkhand Zone of Uttar Pradesh. Undertake second top dressing of urea @ 20 kg + Zinc Sulphate @ 5 kg per ha in rice.
  - Under prevailing humid weather condition, there are chances of incidence of tikka diseases in groundnut in Central Plain Zone of Uttar Pradesh. Spray Zinib 75% @ 2.5kg per hectare or Thirum 27% liquid @ 3 litre per hectare 2-3 times after 10 days interval.
  - Under prevailing humid weather condition, there are chances of incidence of blast disease in rice in Western Plain Zone of Uttar Pradesh. For control of rice blast, spray Beem @ 120 g per 200 litres of water. For control of leaf eating caterpillar in vegetable, spray Di-corovas @ 1ml per litre of water.
  - Due to prevailing humid weather condition, there are chances of attack of beetle in banana in Central Plain Zone of Uttar Pradesh. Spray Monocrotophos @ 125 ml per litre of water or add 3-4 g Carbofuron in soil. For control of Mosaic or Anthracnose disease in banana, spray Copper Oxychloride @ 3ml per litre of water.
- **Rajasthan:**
  - As mainly dry weather would prevail, undertake harvesting of matured bajra and jowar in Flood Prone Eastern Plain Zone of Rajasthan.
  - Undertake nursery raising of tomato, brinjal, chillies, cabbage etc. in Transitional Plain Zone of Inland Drainage of



Rajasthan, utilizing recent rainfall.

- Continue nursery sowing of cauliflower (Japanese, Pusa hybrid-2 and Himjoyti) and radish (Pusa Chetki) and undertake sowing of rainfed Taramira, Toria and Mustard in Semi Arid Eastern Plain Zone of Rajasthan utilizing realised rainfall.
- Continue nursery sowing of mid season cauliflower (Japanese, Pusa hybrid-2 and Himjoyti) and sowing radish (Pusa Chetki) in Arid Western Plain Zone of Rajasthan. Apply remaining half dose of nitrogen *i. e.* 30 kg/ha through urea in 25-30 days old pearl millet crop.
- In Arid Western Plain Zone of Rajasthan, in the present weather conditions there may be increased attack of pod borer in moong and moth crops at flowering/pod formation stage. To control spray Quinalphose 25EC @ one litre/ha.
- In Southern Humid Plain Zone of Rajasthan, in the present temperature conditions, there are is chance of attack of grass hopper on maize. To control, dusting of Methyl Parathion 2% @ 25 kg/ha is advised.
- Due to humid and cloudy conditions, there are incidence of bollworm and jassids in cotton in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan, to control apply Karberil 50% dust @ 2.5 kg/ha.
- **Animal Husbandry:**
- Under prevailing humid weather condition, there are chances of attack of ticks and mites on animals also in Flood Prone Eastern Plain Zone of Rajasthan. For control spray Butox @ 2.0 ml per litre of water. Clean the cowshed with phenyl and keep the animal sheds dry and clean.
- Under prevailing humid weather condition, there are may be attack of parasite diseases like Babesia & Thelaria in animals in Semi Arid Eastern Plain Zone of Rajasthan. Treat the animals immediately.

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



*Rice*

*Sugarcane*

*Okra*

*Soybean*

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa except Mumbai city and Mumbai Suburban; Gadchiroli district of Vidarbha; Banaskantha, Dahod, Gandhinagar, Mehesana, Navsari, Panchmahal, Patan, Sabarkantha, Surat, Tapi and Valsad districts of Gujarat region; Junagarh, Porbandar and Surendranagar districts of Saurashtra & Kutch. Mainly dry weather prevailed over remaining parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Gujarat region and at a few places over Konkan & Goa during the period. Rain/thundershowers would occur at isolated places over Madhya Maharashtra and Marathwada during next 24 hours and over Vidarbha during next 48 hours and at a few places thereafter. Mainly dry weather would prevail over Saurashtra & Kutch during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over the region.
- **Advisories:**
  - **Maharashtra:**
  - In Konkan, maintain water level upto 5-8 cm in rice fields. Undertake fertilizer application and intercultural operations in rice, finger millet, vegetable fields and mango and cashew orchards.
  - In Madhya Maharashtra, maintain the water level of 5 cm in transplanted rice field. Undertake intercultural operations like weeding and fertilizer application in sugarcane, vegetables and in late sown cotton, red gram and sunflower. In fallow and already harvested fields of green gram and black gram, undertake sowing of *rabi* jowar and safflower utilizing the available soil moisture.
  - In Marathwada, undertake intercultural operations in cotton, soybean, red gram and sunflower. Continue plucking of already matured green gram and black gram pods. Soybean is in flowering stage. For better growth, spray Urea @ 20 g per 10 litres of water.
  - In Vidarbha, apply fertilizers and undertake intercultural operations in cotton and red gram. Maintain water level up to 5 cm in already transplanted rice field in East Vidarbha. Continue plucking of already matured green gram and black gram pods in West Vidarbha. Prepare the field for sowing of safflower in the harvested field of green gram and black gram. To avoid floral bud dropping in cotton, spray Planofix @ 4.5 ml per 10 litres of water on a non rainy day.
  - Due to rise in temperature in Western Maharashtra Scarcity Zone, there may be attack of mealy bug and sap sucking pests in cotton; spray Verticillium Lecanii @ 40 g per 10 litres of water on a non rainy day.
  - Under prevailing temperature (around 25-26OC) in South Konkan, there may be attack of brown hopper in rice in

low lying area; spray 50EC Malathion @10 ml per 10 litres of water on a non rainy day.

- Due to prevailing humid and cloudy weather in East Vidarbha, there may be attack of green semilooper and tobacco leaf eating caterpillar in soybean; spray Quinalphos 25EC @ 20 ml per 10 litres of water from the lower sides of the leaf on a non rainy day.

▪ **Gujarat:**

- As mainly dry weather would prevail, carry out intercultural operations and mulching in castor to conserve soil moisture in North West Zone of Gujarat.
- Taking advantage of mainly dry weather, undertake harvesting of matured pearl millet and pulse crops in North Gujarat Zone. Carry out weeding, hoeing and intercultural operations in castor, cotton and sesame for effective weed control and to conserve the soil moisture.
- Undertake gap filling in late sown castor and fennel crops in Bhal and Coastal Zone and carry out intercultural operations and weeding in paddy, pulses and cotton in Middle Gujarat zone.
- Undertake hand weeding and intercultural operation in late sown castor and pulses in South Gujarat Heavy Rainfall Zone.
- In the prevailing humid weather conditions, there are chances of sucking pests in cotton in North West Zone, spray Imidacloprid or Thiomethoxam @4 ml/10 liters of water for control.
- Due to humid weather, there is chance of infestation of powdery mildew disease in sesame in North Gujarat Zone; for control, spray Hexaconazole 5 % EC @ 20 ml in 10 liters of water.

• **Animal Husbandry**

- In Gujarat, spraying of Neon @ 1 to 1.5 ml per liter water in cattle shed is advised for controlling ticks.

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

**Annexure I**  
**Week by week Rainfall Distribution**

Sub-Divisions	03.09.14		10.09.14		17.09.14	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>						
Anjaw	**	**	**	**	**	**
Changlang	4.7	-86	61.0	-1	13.1	-91
Dibang Valley	**	**	**	**	**	**
East Kameng	4.7	-92	4.8	-92	13.3	-84
East Siang	0.0	-100	72.4	-41	53.1	-71
Kurung Kumey	**	**	**	**	**	**
Lohit	40.9	-47	53.7	-27	22.5	-77
Lower Dibang Valley	8.3	-74	61.2	49	22.7	-78
Lower Subansari	**	**	**	**	**	**
Papumpara	13.5	-90	61.9	-51	93.5	2
Tawang	73.0	-26	106.0	1	45.0	-69
Tirap	23.2	-77	77.4	-32	26.8	-80
Upper Siang	26.6	-65	104.6	-37	103.8	-49
Upper Subansari	3.8	-90	33.6	14	6.4	-83
West Kameng	22.8	-77	77.6	-26	184.4	26
West Siang	8.0	-85	46.5	-21	55.5	-44
<b>Assam&amp;Meghalaya</b>						
<b>Assam</b>						
Baksa	28.6	-70	14.6	-85	0.0	-100
Barpeta	70.2	-26	8.4	-92	19.2	-88
Bongaigaon	84.4	4	9.0	-91	51.8	-50

Cachar	27.1	69	203.1	93	60.4	-34
Chirang	54.0	-34	27.6	-71	79.2	-24
Darrang	10.0	-81	27.0	-46	71.0	-10
Dhemaji	12.0	-87	181.0	78	41.0	-66
Dhubri	19.0	-73	9.8	-83	79.1	-40
Dibrugarh	23.8	-68	61.0	-35	87.7	-3
Goalpara	32.1	-49	17.8	-66	26.9	-66
Golghat	5.8	-90	54.5	-10	37.8	-30
Hailakandi	35.8	-51	165.5	82	55.5	-30
Jorhat	9.3	-86	66.5	-17	15.6	-77
Kamrup(Rural)	44.0	9	17.2	-64	25.0	-48
Kamrup(Metro)	11.7	-71	18.0	-63	23.1	-52
Karbi Anglong	2.1	-94	74.1	31	15.8	-67
Karimganj	57.0	-37	168.6	43	45.3	-63
Kokrajhar	53.2	-62	16.3	-85	71.2	-35
Lakhimpur	3.2	-97	136.6	34	114.8	-4
Morigaon	15.4	-76	35.0	-34	114.4	100
N.C.Hills	5.6	-91	125.8	511	65.8	82
Nowgong	46.0	-24	54.7	-5	58.8	2
Nalbari	46.0	-18	5.4	-89	10.8	-84
Sonitpur	3.2	-95	40.2	-32	73.1	8
Sibsagar	29.4	-51	6.4	-90	30.0	-42
Tinsukia	13.8	-84	76.3	-15	30.2	-67
Udalgiri	28.8	-45	49.5	-2	7.3	-91
<b>Meghalaya</b>						
East Garo Hills	45.8	-2	13.3	-85	113.4	5
East Khasi Hills	110.8	-27	104.2	-29	80.7	-63
Jaintia Hills	34.0	-79	20.0	-92	49.0	-77
Ribhoi	64.4	-27	36.5	-46	48.0	-49
South Garo Hills	37.0	-43	49.0	-40	35.0	-66
West Garo Hills	39.6	-39	8.6	-89	20.4	-80
West Khasi Hills	**	**	**	**	**	**
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	101.7	9	121.9	17	64.1	-34
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	40.0	-50	331.0	218	186.0	120
Serchhip	142.4	93	52.1	-40	149.4	87
<b>Manipur</b>						
Bishnupur	**	**	**	**	**	**
Chandel	49.0	-44	28.0	-66	60.0	5
Churachandpur	**	**	**	**	**	**
Imphal east	37.3	-41	2.4	-95	12.4	-71
Imphal west	0.8	-98	285.7	541	34.1	36
Senapati	20.0	-69	0.0	-100	28.0	-45



Tamenglong	**	**	**	**	**	**
Thoubal	**	**	**	**	**	**
Ukhrul	**	**	**	**	**	**
<b>Nagaland</b>						
Dimapur	36.9	-29	37.0	-4	22.6	-58
Kephire	**	**	**	**	**	**
Kohima	38.2	-49	54.6	-27	86.6	47
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	5	-93	23	-69	43	-27
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
<b>Tripura</b>						
Dhalai	93.0	48	109.9	79	64.7	-1
North tripura	61.2	-16	198.4	192	7.0	-91
South tripura	74.1	14	8.4	-86	19.3	-69
West tripura	89.9	36	34.2	-45	14.8	-76
<b>Himachal Pradesh</b>						
Bilaspur	18.3	-62	61.8	16	2.6	-92
Chamba	22.5	-73	96.5	34	4.4	-90
Hamirpur	19.3	-67	39.6	-15	8.5	-73
Kangra	24.5	-69	64.4	-25	12.2	-75
Kinnaur	3.5	-80	7.0	-56	0.4	-98
Kullu	18.2	-32	36.1	35	6.4	-67
Lahaul and Spiti	24.6	-13	28.5	19	0.0	-100
Mandi	43.1	-19	65.7	28	32.5	-1
Shimla	25.8	-20	41.3	19	5.6	-78
Sirmaur	50.7	-26	87.4	35	9.1	-78
Solan	43.4	-10	80.1	45	7.8	-79
Una	27.6	-39	74.1	64	1.1	-96
<b>Punjab</b>						
Amritsar	12.8	-50	100.3	226	19.1	54
Barnala	2.0	-89	27.5	64	3.7	-80
Bhatinda	24.5	119	97.6	433	1.0	-94
Faridkot	1.5	-91	110.5	416	0.5	-96
Fatehgarh Saheb	0.3	-99	91.7	236	6.0	-66
Ferozpur	2.8	-88	76.2	297	6.7	-46
Gurdaspur	6.6	-84	164.0	295	10.0	-61
Hoshiarpur	6.6	-78	37.5	-2	9.3	-58
Jalandhar	8.6	-76	44.5	30	20.8	15
Kapurthala	12.9	-43	88.0	349	48.9	183
Ludhiana	5.3	-80	60.5	102	13.1	-33
Mansa	25.9	109	20.9	17	2.5	-87
Moga	1.0	-94	60.0	200	6.1	-57
Muktesar	4.2	-76	195.2	607	2.4	-67
Nawashahar	23.0	-46	39.2	-6	13.1	-46

Patiala	5.3	-84	132.7	399	2.3	-89
Ropar	42.5	15	68.3	78	10.8	-41
Sangrur	7.8	-61	52.3	95	14.4	37
Mohali	5.5	-83	79.3	81	0.0	-100
TarnTaran	5.5	-76	153.2	587	27.2	289
<b>Haryana,Chd,Delhi</b>						
<b>Haryana</b>						
Ambala	16.3	-67	57.8	9	4.3	-90
Bhiwani	16.6	-24	20.2	16	5.9	-61
Chandigarh	3.3	-91	104.5	170	2.0	-95
Faridabad	7.3	-86	34.2	-21	12.3	-50
Fatehabad	6.4	-59	21.2	49	4.2	-63
Gurgaon	15.5	-48	20.0	-35	5.3	-75
Hissar	16.2	-10	18.7	21	3.4	-78
Jhajar	27.4	26	86.3	170	21.7	42
Jind	36.1	64	52.3	77	10.2	-29
Katihah	7.9	-66	53.8	112	5.0	-68
Karnal	42.9	60	128.9	385	5.3	-78
Kurukshetra	11.3	-64	81.3	202	2.2	-91
Mahendragarh	8.1	-62	29.9	38	17.9	37
Mewat	6.6	-83	29.8	-23	23.7	-1
Palwal	1.5	-93	35.5	22	21.8	-12
Panchkkula	12.5	-76	50.5	-20	1.0	-98
Panipat	20.3	-11	112.0	237	26.4	60
Rewari	4.8	-81	43.9	59	17.0	-1
Rohtak	26.4	-21	21.6	-18	5.4	-69
Sirsa	10.0	-6	64.2	629	7.2	-50
Sonepat	10.3	-68	50.1	78	9.5	-54
Yamunanagar	39.2	-36	78.5	47	7.7	-72
<b>Delhi</b>						
Central Delhi	25.0	-38	52.0	34	6.0	-83
East Delhi	9.0	-78	7.0	-82	6.0	-83
New Delhi	44.4	9	29.6	-24	18.3	-47
North Delhi	32.7	-19	65.5	69	41.7	21
North East Delhi	28.0	-31	39.0	1	24.0	-30
North West Delhi	4.3	-89	28.3	-27	1.0	-97
South Delhi	40.0	-1	36.3	-3	30.3	-12
South West Delhi	56.8	40	50.5	30	4.0	-89
West Delhi	41.0	1	47.0	21	1.0	-97
<b>Jammu &amp; Kashmir</b>						
Anantnag	93.2	451	309.1	168	2.0	-71
Badgam	35.8	209	76.7	293	0.0	-100
Bandipore	**	**	**	**	**	**
Baramula	25.6	61	255.9	1489	0.0	-100
Doda	42.6	149	320.8	767	0.0	-100
Ganderbal	91.2	902	32.6	233	0.0	-100
Jammu	40.2	-15	354.2	801	0.0	-100
Kargil	**	**	**	**	**	**
Kathua	4.2	-93	193.2	692	0.0	-100

Kistwar	**	**	**	**	**	**
Kulgam	80.3	375	460.2	1850	1.0	-89
Kupwara	7.6	6	129.2	1984	0.0	-100
Ladakh(Leh)	10.2	540	10.5	192	0.0	-100
Poonch	14.1	-58	10.8	-80	0.0	-100
Pulwama	50.0	282	242.7	1711	1.0	-64
Rajouri	49.4	7	43.2	92	0.0	-100
Ramban	92.7	442	425.6	1144	2.0	-79
Reasi	69.6	-8	556.0	926	0.0	-100
Samba	20.2	-57	47.4	21	0.0	-100
Shopian	58.0	343	348.0	2953	2.0	-81
Srinagar	43.5	378	148.0	1410	8.5	93
Udhampur	25.0	-67	605.5	785	0.0	-100
<b>East Madhya Pradesh</b>						
Anuppur	64.8	-12	112.6	81	79.5	6
Balaghat	71.5	-17	32.9	-52	44.3	-19
Chhatarpur	26.9	-66	69.1	5	15.8	-72
Chindwara	90.7	50	43.4	-17	20.7	-55
Damoh	48.0	-29	31.0	-49	13.8	-77
Dindori	28.0	-57	56.8	-6	93.7	86
Jabalpur	77.6	-3	83.2	22	22.0	-61
Katni	1.6	-82	32.8	-51	56.0	-2
Mandla	93.1	14	58.7	-14	68.1	14
Narsingpur	95.0	20	66.0	-12	36.0	-41
Panna	14.7	-79	85.2	25	19.1	-72
Rewa	43.6	-36	57.7	-17	18.9	-70
Sagar	54.8	-23	44.7	-34	36.6	-35
Satna	30.6	-45	136.9	128	36.4	-37
Seoni	71.8	13	50.4	-8	33.7	-42
Shahdol	72.0	7	149.0	127	7.2	-87
Sidhi	10.4	-87	57.8	-22	32.0	-46
Singrauli	21.0	-63	63.4	1	28.6	-44
Tikamgarh	63.0	4	21.0	-51	30.5	-34
Umaria	33.3	-56	70.1	-6	26.2	-58
<b>West Madhya Pradesh</b>						
Alirajpur	49.4	-11	252.1	421	12.2	-67
Asoknagar	42.5	-18	22.8	-56	64.3	30
Badwani	99.3	121	203.2	451	11.3	-63
Betul	104.2	77	73.6	24	14.4	-77
Bhind	57.1	12	60.0	20	32.7	-20
Bhopal	97.0	30	33.1	-50	9.4	-80
Burhanpur	116.7	114	165.1	297	53.0	47
Datia	50.3	-16	80.6	47	41.4	-15
Dewas	103.0	36	79.8	41	19.7	-52
Dhar	87.1	40	179.7	259	14.7	-62
Guna	17.6	-72	30.4	-44	62.9	62
Gwalior	3.8	-94	23.1	-54	59.3	13
Harda	179.6	126	171.7	146	51.3	9
Hosangabad	115.9	17	162.6	78	11.1	-85



Indore	86.5	31	134.5	187	9.9	-77
Jhabua	151.4	142	110.4	139	13.0	-56
Khandwa	121.3	83	406.7	679	57.3	36
Khargone	63.7	-1	206.1	311	32.1	12
Mandsaur	86.1	29	60.2	26	73.3	141
Morena	36.8	-23	62.0	48	52.3	32
Neemuch	130.7	147	37.3	-27	58.1	85
Raisen	128.1	61	62.5	-19	46.4	-12
Rajgarh	117.8	65	64.3	29	26.4	-24
Ratlam	112.5	74	72.9	33	7.3	-78
Sehore	115.4	31	119.4	74	11.6	-76
Shajapur	113.3	69	96.8	89	9.8	-71
Sheopur Kalani	54.0	25	48.0	31	73.0	167
Shivpuri	72.3	43	9.3	-82	46.5	12
Ujjain	109.2	59	36.8	-22	26.7	-30
Vidisha	69.0	-6	92.5	64	79.2	101
<b>Chhattisgarh</b>						
Bastar	101.5	35	121.5	83	69.1	9
Bijapur	227.8	152	301.7	337	37.0	-36
Bilaspur	68.8	5	100.0	62	41.5	-27
Dantewara	302.1	304	76.8	18	69.3	43
Dhamtari	105.0	62	90.6	61	13.8	-79
Durg	89.0	56	97.8	101	31.1	-50
Janjgir	35.5	-47	110.6	38	19.2	-62
Jashpurnagar	96.7	20	52.0	-37	36.8	-48
Kanker	70.2	-10	167.0	179	26.9	-61
Korba	39.5	-37	75.8	4	32.2	-49
Koriya	73.1	7	69.7	9	30.2	-52
Kawardha	63.6	-3	20.1	-55	10.6	-75
Mahasumund	84.5	17	111.4	79	15.4	-75
Narayanpur	217.4	191	92.7	31	47.5	-13
Raigarh	116.0	71	94.1	23	32.3	-53
Raipur	75.6	18	87.3	57	35.7	-39
Rajandgaon	61.0	-21	100.0	66	38.0	-32
Surguja	45.1	-39	40.7	-45	25.0	-58
<b>East Uttar Pradesh</b>						
Allahabad	8.4	-82	41.6	-19	18.8	-70
Ambedkar Nagar	1.0	-98	0.0	-100	51.3	0
Azamgarh	7.8	-85	8.7	-87	45.3	-45
Bahraich	7.3	-88	14.2	-76	185.8	206
Ballia	14.8	-68	10.6	-75	39.0	-28
Balrampur	2.8	-96	0.0	-100	56.2	-18
Banda	26.9	-51	47.8	-4	11.6	-78
Barabanki	17.0	-69	13.2	-80	74.5	2
Basti	49.7	-8	13.4	-77	113.3	90
Chandauli	4.4	-91	5.2	-91	18.0	-70
Deoria	4.5	-91	0.0	-100	19.0	-71
Faizabad	9.7	-81	11.6	-82	75.2	28
Farrukhabad	9.8	-75	24.1	-49	91.1	103

Fatehpur	24.3	-41	14.2	-70	23.2	-65
Gazipur	15.3	-68	31.6	-41	51.1	-35
Gonda	6.6	-88	6.7	-90	87.3	26
Gorakhpur	19.0	-67	9.9	-86	53.7	-40
Hardoi	22.7	-53	27.8	-43	35.7	-37
Jaunpur	7.1	-86	2.5	-96	37.5	-52
Kannauj	13.8	-72	33.6	-37	77.3	59
Kanpur City	17.4	-53	38.0	3	98.0	96
Kanpur Dehat	5.1	-90	15.4	-69	16.8	-65
Kaushambi	19.8	-53	25.5	-43	5.9	-89
Kheri	13.7	-75	26.9	-49	137.3	141
Kushi nagar	2.0	-96	0.0	-100	68.0	-16
Lucknow	13.3	-72	43.1	-3	66.1	15
Maharajganj	12.5	-78	0.0	-100	51.6	-41
Mau	4.0	-92	3.0	-95	18.0	-81
Mirzapur	4.7	-92	18.3	-74	42.5	-44
Pratapgarh	17.0	-65	30.3	-48	16.7	-75
RaiBareilly	9.9	-78	10.2	-78	56.4	0
Sahuji Maharajnagar	38.5	-40	74.5	38	6.5	-91
Sant Kabirnnagar	25.0	-52	0.0	-100	54.0	-18
Sant Ravidas Nagar	28.0	-45	29.0	-50	13.0	-79
Shrawasti	14.0	-77	9.9	-83	109.8	81
Sidharthnagar	12.8	-77	0.0	-100	130.2	97
Sitapur	19.7	-69	15.4	-75	65.9	8
Sonbhadra	21.0	-61	22.3	-63	22.4	-69
Sultanpur	23.2	-55	12.2	-76	33.6	-42
Unnao	11.3	-73	33.2	-26	108.8	84
Varanasi	9.5	-83	26.1	-63	68.9	-15
<b>West Uttar Pradesh</b>						
Agra	20.7	-59	29.2	-7	12.0	-71
Aligarh	2.5	-93	20.1	-44	53.8	20
Auraiya	9.0	-80	31.5	-26	4.0	-91
Badaun	3.4	-94	14.8	-64	29.2	-35
Baghpat	28.6	23	99.6	279	1.0	-96
Bareilly	6.4	-89	59.2	31	27.2	-48
Bijnor	15.9	-63	99.5	101	36.3	-30
Bulandsahar	9.1	-77	41.6	20	34.2	-23
Etah	6.7	-81	21.3	-33	36.8	-19
Etawah	1.3	-97	29.3	-39	27.1	-44
Firozabad	10.8	-76	38.9	20	47.9	-8
GBNagar	0.0	-100	56.0	113	11.0	-75
Ghaziabad	1.3	-97	26.5	-23	12.9	-69
Hamirpur	38.5	-24	38.0	-21	28.5	-47
Jalaun	36.8	-29	73.8	56	13.3	-74
Jhansi	33.3	-43	49.1	-5	40.7	-21
Jotiba Phule Nagar	1.5	-96	28.8	-28	8.0	-83
Kanshiramnagar	6.0	-88	50.0	40	26.0	-53
Lalitpur	35.0	-54	2.0	-96	82.0	60
Mahamaya Nagar	0.5	-99	11.0	-59	53.5	26

Mahoba	10.0	-78	76.6	54	2.0	-96
Mainpuri	5.1	-88	6.6	-82	31.1	-34
Mathura	16.3	-60	34.9	45	8.3	-78
Meerut	21.7	-43	54.4	16	33.6	-28
Moradabad	5.7	-88	50.0	5	42.5	-14
Muzzaffarnagar	31.1	-2	66.7	57	0.0	-100
Pilibhit	8.4	-88	29.7	-44	10.1	-85
Rampur	12.6	-76	30.9	-15	14.1	-71
Saharanpur	20.7	-47	55.0	36	40.7	-3
Shahjahanpur	12.5	-74	12.9	-76	44.6	-21
<b>Uttarakhand</b>						
Almora	28.2	-29	13.2	-68	31.7	-29
Bageshwar	32.0	-19	5.0	-88	9.8	-78
Chamoli	46.2	-1	16.2	-66	25.5	-12
Champawat	17.0	-79	35.5	-38	14.0	-81
Dehradun	46.9	-48	41.0	-54	39.2	-44
Garhwal Pauri	57.7	-18	51.3	-17	29.3	-46
Garhwal Tehri	52.0	-17	41.0	-27	1.4	-97
Haridwar	32.0	-38	110.1	109	7.5	-78
Nainital	70.4	-7	40.1	-41	63.2	-20
Pithorgarh	38.6	-61	26.6	-71	36.6	-52
Rudraprayag	38.0	-59	24.2	-70	14.8	-78
Udham Sing Nagar	15.8	-73	5.2	-91	8.6	-87
Uttarkashi	56.2	-20	29.6	-49	14.0	-80
<b>Bihar</b>						
Araria	36.8	-39	44.4	-43	27.0	-63
Arwal	14.5	-63	1.3	-97	72.8	13
Aurangabad	5.8	-90	21.9	-60	53.0	-18
Banka	23.4	-48	2.7	-94	34.3	-25
Begusarai	15.2	-73	1.8	-97	117.5	140
Bhabua	12.9	-76	16.1	-77	75.2	-14
Bhagalpur	41.6	-12	21.5	-60	81.6	58
Bhojpur	19.5	-63	4.5	-92	107.3	65
Buxar	0.4	-99	0.6	-99	4.6	-94
Darbhanga	3.2	-93	24.5	-50	40.8	-10
East Champaran	0.9	-98	1.8	-97	65.9	19
Gaya	6.0	-87	5.5	-89	60.3	26
Gopalganj	3.4	-93	1.1	-98	41.0	-50
Jahanabad	10.9	-75	1.1	-98	44.9	-24
Jamui	16.7	-67	2.5	-95	74.0	47
Kathihar	20.5	-54	0.8	-99	24.7	-63
Khagadia	24.4	-42	4.2	-93	55.5	-20
Kishanganj	20.7	-78	46.6	-52	77.6	-6
Lakhisarai	70.2	33	0.9	-99	59.3	20
Madhepura	4.3	-93	0.9	-99	82.7	18
Madhubani	1.7	-97	35.0	-40	24.5	-52
Monghyar	68.2	30	1.6	-97	20.5	-59
Muzaffarpur	4.7	-90	5.8	-88	122.2	85
Nalanda	19.1	-60	0.0	-100	56.8	-1

Nawada	11.6	-73	5.0	-91	34.3	-26
Patna	25.6	-32	8.6	-86	67.3	5
Purnea	5.1	-92	12.9	-84	26.7	-66
Rohtas	5.1	-91	29.7	-41	35.9	-44
Saharsha	0.0	-100	0.0	-100	31.5	-65
Samstipur	0.9	-98	8.8	-84	140.4	121
Saran	19.6	-55	9.8	-83	100.8	48
Sheikpura	25.2	-42	68.1	36	46.7	-12
Sheohar	14.0	-70	0.0	-100	94.4	96
Sitamarhi	4.4	-91	0.0	-100	65.3	36
Siwan	33.4	-24	0.6	-99	50.5	-45
Supaul	8.8	-81	45.1	-20	64.5	13
Vaishali	9.7	-75	4.2	-94	55.9	-4
West Champaran	2.1	-97	2.2	-95	76.2	-23
<b>Jharkhand</b>						
Bokaro	81.2	19	38.8	-50	28.1	-50
Chatra	16.5	-70	22.5	-66	105.1	76
Deoghar	41.7	-11	9.5	-82	74.4	35
Dhanbad	67.2	8	26.3	-61	26.6	-61
Dumka	36.7	-36	1.6	-97	59.1	-6
East Singbhum	35.8	-46	50.6	-20	6.9	-87
Garhwa	1.0	-98	3.9	-94	102.6	57
Giridih	56.9	6	17.9	-72	40.3	-31
Godda	47.7	19	1.9	-96	120.4	84
Gumla	82.6	25	85.7	16	28.2	-56
Hazaribagh	49.9	-8	18.7	-70	74.9	14
Jamtara	37.6	-38	12.5	-83	50.9	-37
Khunti	65.0	-11	38.0	-56	9.5	-85
Koderrna	33.7	-40	15.5	-73	21.3	-60
Latehar	26.3	-56	50.8	-33	138.8	164
Lohardagga	58.9	14	51.2	-15	102.5	76
Pakur	61.7	-14	0.0	-100	38.6	-49
Palamau	11.9	-81	19.9	-72	57.3	-9
Ramgarh	47.0	-21	46.8	-36	33.0	-45
Ranchi	43.7	-38	44.4	-37	35.6	-35
Sahebganj	67.2	8	4.2	-94	95.0	28
Saraikela	17.1	-77	17.7	-74	23.5	-63
Simdega	139.7	66	95.9	12	51.2	-36
West Singbhum	28.6	-60	50.0	-22	56.6	10
<b>East Rajasthan</b>						
Ajmer	62.7	159	47.6	69	17.0	70
Alwar	38.1	-7	50.4	33	52.3	131
Banswara	138.9	104	132.3	138	17.5	-40
Baran	46.1	-13	67.5	52	48.0	96
Bharatpur	27.7	-34	41.6	9	31.0	19
Bhilwara	53.0	37	49.2	39	26.3	59
Bundi	68.2	63	20.0	-53	24.7	46
Chittorgarh	84.2	46	63.8	43	44.0	117
Dausa	46.8	28	43.8	30	42.0	96



Dholpur	37.8	-4	65.8	72	46.8	28
Dungarpur	144.5	190	97.3	143	23.8	-3
Jaipur	44.2	37	38.3	39	38.8	144
Jhalawar	56.3	-14	43.0	-20	56.5	118
Jhunjhunu	27.5	18	34.9	74	20.3	40
Karauli	51.5	33	32.8	1	54.8	118
Kota	30.5	-46	51.5	1	18.1	-19
Pratapgarh	143.0	106	79.2	27	20.0	-38
Rajsamand	76.1	114	39.3	20	39.9	232
Sawai Madhopur	50.7	42	20.8	-31	54.6	130
Sikar	47.0	113	27.7	50	22.9	90
Sirohi	56.8	-21	140.1	115	78.5	182
Tonk	44.2	24	35.7	17	16.0	-5
Udaipur	56.5	17	117.8	215	78.8	328
<b>West Rajasthan</b>						
Barmer	11.7	-21	80.5	335	0.4	-95
Bikaner	33.7	122	42.0	173	5.7	-20
Churu	14.0	-20	37.3	135	49.9	419
Hanumangarh	23.0	100	97.9	737	20.3	178
Jaisalmer	14.8	45	1.0	-91	5.3	20
Jalore	22.1	-14	124.5	282	20.5	85
Jodhpur	29.9	102	95.3	350	2.1	-71
Nagaur	30.1	43	48.7	154	14.9	71
Pali	10.6	-66	80.6	135	45.1	237
Sri Ganganagar	23.9	107	129.1	871	3.8	-20
<b>Gujarat Region</b>						
Ahmedabad	80.0	99	138.1	233	18.2	-17
Anand	75.5	33	250.5	320	25.8	14
Banaskantha	86.2	130	177.7	345	30.8	26
Baroda	39.2	-42	206.4	252	14.6	-59
Broach	63.6	22	83.7	69	13.9	-44
DNH	146.0	-20	255.8	133	73.7	104
Dahod	86.1	20	123.5	105	36.1	12
Daman	193.4	6	134.0	22	80.6	123
Dangs	114.0	-20	127.0	17	28.5	-52
Gandhinagar	97.7	79	142.9	145	50.1	107
Kheda	73.6	19	239.5	265	27.9	7
Mehsana	83.0	64	239.9	415	50.6	48
Narmada	38.4	-54	107.6	88	26.7	-25
Navsari	71.9	-33	170.1	81	67.8	39
Panchmahal	68.2	-4	245.5	290	59.3	77
Patan	93.9	156	169.7	437	31.8	28
Sabarkantha	154.2	146	225.6	336	83.0	187
Surat	92.0	16	134.0	99	35.0	4
Tapi	40.4	-59	131.2	63	43.2	16
Valsad	123.3	5	150.9	50	63.3	29
<b>S K &amp; Diu region</b>						
Amreli	120.2	292	55.2	148	18.7	11
Bhavnagar	100.0	172	42.7	28	19.4	20

Diu	140.4	582	160.8	584	2.3	-80
Jamnagar	79.5	171	72.4	309	15.0	-14
Junagarh	98.7	146	76.6	205	66.7	190
Kutch	69.2	207	46.7	90	4.2	-80
Porbandar	173.2	391	64.7	235	97.7	265
Rajkot	104.1	231	42.8	96	20.0	-10
Surendranagar	81.5	151	103.9	191	35.3	152
<b>Maharashtra &amp; Goa</b>						
<b>Konkan &amp; Goa</b>						
Mumbai City	274.9	147	71.3	-2	16.6	-71
Mumbai Suburban	233.4	100	58.4	-20	13.1	-77
North Goa	458.8	401	115.3	44	111.8	103
Raigad	297.0	92	229.6	110	59.2	-14
Ratnagiri	319.3	129	256.7	157	81.0	36
Sindhudurg	317.2	185	92.6	28	74.7	12
South Goa	441.6	379	105.4	39	119.1	146
Thane	203.7	60	199.0	107	36.8	-37
<b>Madhya Maharashtra</b>						
Ahmednagar	68.3	142	21.7	-14	1.6	-95
Dhule	68.4	153	97.7	354	1.2	-94
Jalgaon	86.8	103	128.0	306	20.3	-20
Kolhapur	130.9	101	94.3	116	20.4	-32
Nandurbar	43.8	-14	98.1	130	7.1	-73
Nasik	86.2	59	121.3	150	14.9	-57
Pune	81.2	101	49.6	56	9.3	-68
Sangli	91.6	382	16.8	-20	5.6	-79
Satara	66.1	122	32.6	33	7.6	-70
Solapur	79.6	182	7.2	-74	10.1	-73
<b>Marathwada</b>						
Aurangabad	66.2	46	51.0	79	15.3	-48
Beed	90.6	112	13.5	-60	8.4	-77
Hingoli	158.4	135	73.1	71	5.5	-79
Jalna	101.9	114	49.5	71	13.5	-56
Latur	114.2	110	13.9	-69	11.2	-69
Nanded	104.5	85	50.6	22	10.9	-64
Usmanabad	81.7	107	13.2	-64	10.1	-78
Parbhani	108.7	90	32.8	-29	8.6	-71
<b>Vidarbha</b>						
Akola	134.9	198	92.1	201	23.9	-23
Amraoti	113.8	132	123.1	192	14.2	-58
Bhandara	40.2	-48	112.3	74	11.3	-77
Buldhana	123.1	200	87.4	195	12.8	-53
Chandrapur	143.6	82	184.4	196	21.4	-55
Gadchiroli	202.3	141	273.5	326	32.4	-25
Gondia	45.7	-47	64.4	0	13.1	-76
Nagpur	54.0	-24	79.6	46	21.0	-43
Wardha	91.4	46	111.2	114	20.0	-29
Washim	130.6	168	70.1	70	6.1	-83
Yeotmal	175.6	207	101.8	129	16.9	-31

<b>Odisha</b>						
Angul	93.5	21	92.6	27	59.2	12
Balasore	159.4	143	54.1	-23	23.2	-70
Bargarh	71.2	8	135.8	78	29.7	-53
Bhadrak	122.1	81	53.7	-1	40.7	-32
Bolangir	46.3	-48	112.3	59	33.3	-46
Boudh	100.7	29	168.2	182	46.2	-32
Cuttack	145.1	132	101.0	21	47.4	-17
Deogarh	157.5	88	61.0	-29	89.4	43
Dhenkanal	93.3	27	89.9	26	46.5	-6
Gajapati	86.4	46	201.1	315	72.4	11
Ganjam	133.3	120	157.1	209	51.1	-1
Jagatsingpur	215.2	262	117.2	71	17.9	-70
Jajpur	129.3	83	78.0	28	55.7	-13
Jharsuguda	131.6	67	66.1	-17	33.6	-48
Kalahandi	70.0	12	140.0	103	64.9	-3
Kandhamal	101.9	31	174.2	192	48.0	-29
Kendrapara	199.7	195	91.5	31	17.7	-67
Keonjhar	60.6	-14	61.5	16	25.5	-54
Khurda	134.7	120	95.3	27	26.6	-57
Koraput	106.8	43	92.5	23	45.3	-31
Malkangiri	165.0	106	125.2	50	135.4	190
Mayurbhanj	96.3	14	68.1	0	45.4	-32
Nawapara	99.3	72	106.8	101	89.3	78
Nawarangpur	145.2	67	114.2	56	62.7	9
Nayagarh	85.8	18	73.1	9	53.1	14
Puri	220.0	212	144.4	103	34.6	-44
Rayagada	86.6	59	169.1	165	68.6	35
Sambalpur	102.7	23	140.6	64	57.8	-7
Sonepur	74.6	-5	182.2	77	85.4	43
Sundargarh	110.8	47	66.5	-5	23.9	-62
<b>West Bengal &amp; Andaman Nicobar Islands</b>						
<b>A &amp; N ISLAND</b>						
Nicobar	5.7	-91	95.1	21	178.7	152
North & Middle Andaman	136.8	27	187.1	61	115.1	20
South Andaman	68.4	-34	169.4	76	162.9	75
<b>GWB</b>						
Bankura	63.1	-5	27.0	-56	16.2	-69
Birbhum	50.3	-9	10.1	-85	11.8	-78
Burdwan	71.6	31	26.1	-58	9.0	-85
East Midnapore	157.3	70	28.1	-67	22.2	-69
Hooghly	61.2	-3	37.7	-40	6.9	-86
Howrah	58.4	-21	16.0	-75	30.1	-58
Kolkata	56.7	-21	43.2	-44	62.7	-6
Murshidabad	60.9	14	24.0	-61	55.0	5
Nadia	67.9	40	41.0	-25	0.5	-99
24 Pargana (N)	62.0	16	21.2	-69	8.7	-85
Purulia	48.9	-36	19.3	-72	29.9	-55






24 Pargana (S)	75.1	-21	44.0	-47	34.4	-59
West Midnapore	58.9	-21	44.9	-31	18.7	-71
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	41.7	-65	162.3	38	61.3	-52
Darjeeling	78.1	30	115.9	-17	88.3	-31
East Sikkim	91.5	-5	75.3	-20	36.1	-60
Jalpaiguri	25.5	-81	145.8	22	30.4	-76
Malda	26.6	-47	4.3	-94	106.9	72
North Dinajpur	18.1	-78	1.3	-99	44.5	-50
North Sikkim	108.3	4	107.2	2	70.8	-28
South Dinajpur	15.2	-70	9.5	-86	88.7	17
South Sikkim	73.8	-24	64.2	-32	62.3	-31
West Sikkim	36.0	-66	64.0	-39	10.5	-89
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshin Kannada	198.1	93	156.6	88	86.9	44
Udupi	303.6	154	154.4	37	113.6	54
Uttar Kannada	264.1	221	120.4	76	36.6	-28
<b>N I Karnataka</b>						
Bagalkote	39.2	158	19.6	4	2.6	-91
Belgaum	55.0	201	31.1	113	6.1	-74
Bidar	89.2	97	11.4	-70	36.3	0
Bijapur	91.0	251	12.7	-46	28.9	-16
Dharwad	53.0	227	17.2	21	5.9	-75
Gadag	32.6	94	10.2	-47	5.9	-79
Gulbarga	121.7	192	15.8	-56	35.7	-9
Haveri	54.7	270	19.6	104	6.0	-72
Koppal	36.5	57	20.2	-5	50.1	50
Raichur	101.2	255	28.2	20	39.0	23
Yadgir	95.6	167	13.0	-58	37.5	6
<b>S I Karnataka</b>						
Bangalore Rural	2.6	-91	10.1	-65	2.6	-94
Bangalore Urban	2.9	-90	7.2	-77	6.9	-84
Bellary	33.7	53	5.9	-69	40.1	27
Chamarajnagar	9.4	-37	2.6	-81	3.4	-89
Chichballapur	6.0	-76	19.5	-19	2.6	-93
Chickmagalur	87.8	94	51.0	57	10.5	-65
Chitradurga	22.2	61	8.3	-6	4.8	-80
Davangere	44.1	204	14.0	25	5.4	-80
Hassan	23.6	22	16.2	26	7.9	-62
Kodagu	209.9	207	111.6	125	26.0	-31
Kolar	2.7	-87	4.4	-82	4.7	-88
Mandya	5.3	-65	0.8	-94	4.0	-87
Mysore	26.6	80	8.5	-27	11.0	-54
Ramnagara	1.7	-95	7.5	-67	13.8	-71
Shimoga	186.3	327	105.5	261	22.5	-6
Tumkur	5.3	-73	5.5	-71	8.4	-77
<b>Kerala</b>						
Alappuzha	166.8	210	51.9	-11	27.8	-53



Kannur	315.7	383	118.6	102	40.5	8
Ernakulam	262.5	381	63.0	0	36.4	-42
Idukki	300.8	298	68.5	14	53.7	-7
Kasaragod	319.2	277	132.8	88	47.9	-9
Kollam	194.3	325	38.1	-9	37.1	-5
Kottayam	238.9	294	50.4	-9	34.1	-40
Kozhikode	317.1	432	112.7	91	36.7	-14
Malappuram	174.1	232	82.0	79	13.3	-67
Palakkad	199.4	357	55.0	53	11.9	-64
Pathanamthitta	231.5	316	32.8	-39	52.4	-8
Thiruvananthapuram	209.0	833	26.8	-13	3.4	-88
Thrissur	197.0	222	61.1	13	30.2	-48
Wayanad	208.3	162	84.8	59	20.6	-50
<b>Tamil Nadu</b>						
Ariyalur	12.9	-68	1.5	-95	3.5	-91
Chennai	92.8	149	63.2	172	41.4	44
Coimbatore	43.4	277	19.8	168	7.1	-62
Cuddalore	17.7	-53	11.3	-54	17.5	-44
Dharmapuri	8.8	-72	1.9	-92	0.0	-100
Dindigul	28.6	34	2.0	-91	8.8	-74
Erode	37.5	100	5.5	-61	0.0	-100
Kanchipuram	19.1	-51	46.4	39	59.1	91
Kanyakumari	141.8	839	11.2	-45	0.2	-99
Karikal	5.5	-81	58.4	230	1.0	-96
Karur	11.2	-40	0.0	-100	1.0	-97
Krishnagiri	5.4	-80	1.0	-96	5.8	-86
Madurai	21.5	-16	0.9	-97	12.3	-65
Nagapattinam	8.3	-70	18.3	-17	8.6	-61
Namakkal	10.8	-60	4.5	-77	5.8	-85
Nilgiris	49.3	40	49.0	99	20.1	-39
Perambalur	10.3	-60	1.0	-95	4.0	-87
Puducherry	5.0	-85	2.0	-94	90.7	214
Pudukottai	14.1	-59	21.0	1	21.9	-19
Ramanathapuram	7.5	-33	4.2	-52	5.3	-63
Salem	29.5	-14	10.4	-58	4.6	-90
Sivaganga	4.2	-84	11.6	-38	26.6	6
Thanjavur	18.1	-46	6.8	-68	15.6	-41
Theni	37.4	398	6.1	-18	1.1	-93
Tirunelveli	28.5	400	1.4	-67	0.1	-99
Tirupur	29.1	203	0.2	-97	3.3	-84
Tiruvallur	38.3	9	41.7	67	52.4	58
Tiruvannamalai	7.1	-81	2.9	-92	72.6	59
Tiruvarur	17.2	-39	4.4	-80	16.3	-25
Toothukudi	3.6	-32	0.0	-100	1.8	-76
Trichy	9.5	-62	2.8	-88	3.8	-90
Vellore	11.5	-64	17.6	-38	63.8	46
Villupuram	15.1	-60	0.9	-97	51.4	22
Virudhunagar	14.8	1	0.7	-94	14.6	-36
<b>Andhra Pradesh</b>						

<b>Coastal Andhra Pradesh</b>						
East Godavari	58.8	53	46.2	18	21.2	-33
Guntur	32.9	0	1.6	-95	75.8	180
Krishna	24.6	-37	8.7	-76	52.3	74
Nellore	15.8	-20	17.4	-9	27.5	27
Prakasam	15.8	-39	2.1	-90	28.7	50
Sirkakulam	95.1	104	110.8	128	38.2	-21
Visakhapatnam	130.7	228	38.9	-6	35.6	-9
Vizianagram	127.8	210	46.7	-1	62.2	20
West Godavari	59.1	30	48.5	15	39.1	18
<b>Rayalaseema</b>						
Anantapur	9.2	-56	5.1	-70	17.7	-46
Chittoor	4.4	-83	14.5	-45	26.8	-24
Cuddapah	13.1	-32	14.8	-37	41.6	52
Kurnool	40.6	42	15.2	-35	52.5	87
<b>Telangana</b>						
Adilabad	129.8	104	164.9	256	19.1	-40
Hyderabad	104.1	188	40.9	9	12.4	-64
Karimnagar	131.8	172	82.7	100	13.0	-58
Khammam	100.7	97	72.0	65	30.2	-13
Mehabubnagar	83.0	136	8.1	-70	47.2	49
Medak	84.4	96	16.4	-54	5.0	-86
Nalgonda	56.3	65	5.3	-85	86.1	208
Nizamabad	105.0	88	36.8	-21	8.8	-74
Rangareddy	118.0	222	19.6	-50	27.2	-29
Warangal	132.8	183	60.3	52	25.5	-19

### Legends

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

**Annexure II**  
**List of varieties**

**Bihar**

**Shakarkand:** Rajendra Shakarkand- 5, Rajendra Shakarkand-35, Rajendra Shakarkand-43, Rajendra Shakarkand-47, Kalmegh and Rajendra Shakarkand-92.

**Pigeon Pea:** arhar: Bahar, Pusa 9, Narendra Arhar 1

**Urd:** T-9, Pant U-19, Pant Urd 31, PDU-1

**Radish:** Pusa Chetki, Pusa Himani, Pusa Rashmi, Japani Saphed

**Pointed gourd:** Rajendra Parwal-1, Rajendra parwal-2, FP1 and 3

**Jharkhand:**

**Urd:** T 9, Pant U 19, 30, 35 and Birsa urd 1

**Moong:** Pusa Vishal, S M L 668, K 885, P S 16, Pant Moong 2 and P D M 11.

**Arhar:** Birsa Arhar (210 days), Bahar (240 Days) and ICPH 2671 (210 days),

**Maize:** short duration variety: Birsa Vikas Maize-2 and medium duration variety: Birsa Maize-1.