

National Agromet Advisory Service Bulletin

Friday 12th September 2014

(For the period 12th to 16th September 2014)

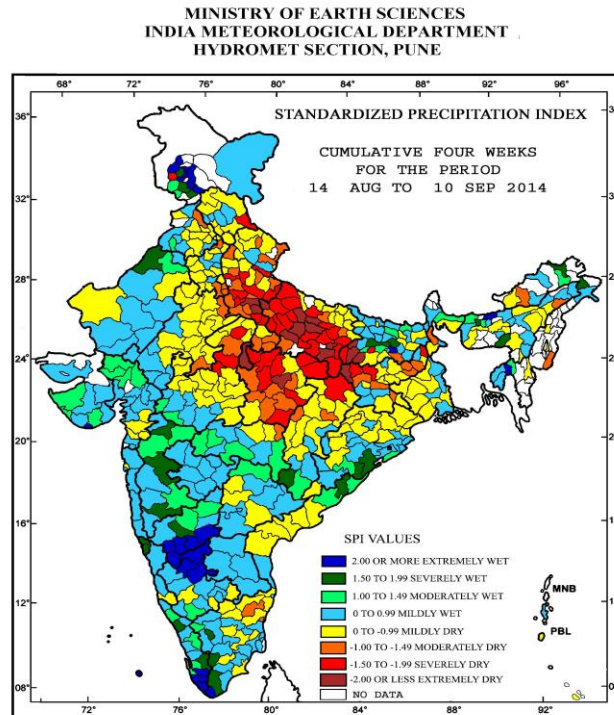


Issued by

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



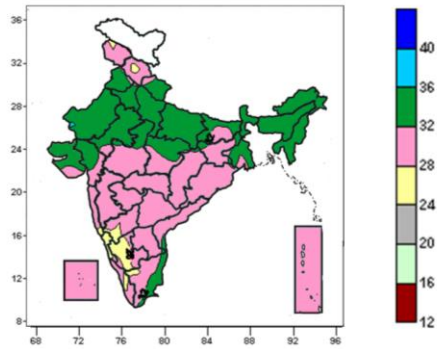
Standardised Precipitation Index
Four Weekly
for the Period 14th August to 10th September 2014



- Extremely/severely wet conditions experienced Many districts of Jammu, few districts of Karnataka and Kerala; in Sriganganagar district of Rajasthan; Patna, Lakhisarai and Begusarai districts of Bihar; Bijapur district of Chattisgarh; Gajapati and Ganjam districts of Odisha; Lohit and Upper Siang district of Arunachal Pradesh; Dhalai district of Tripura; East Khasi Hills district of Meghalaya; Bongangian and Baksa districts of Assam; Dhule Ahmednagar and Sangli districts of Maharashtra; North and South Goa, Diu, Vizianagaram district of Andhra Pradesh; Tiruppur, Theni, Tirunelveli and Kanyakumari districts of Tamil Nadu.
- Extremely/ moderately/ severely dry conditions experienced in most of the districts in most districts of Uttar Pradesh; many districts Madhya Pradesh; few districts of Jharkhand; Poonch district of Jammu & Kashmir; Hoshiarpur district of Punjab, Ambala, Mewat, Faridabad, Kurukshetra districts of Haryana; Kinnaur district of Himachal Pradesh; Pithoragarh, Udham Singh Nagar, Rudraprayag and Almora districts of Uttarakhand; Bhabua, Buxar, Rohtas, Aurangabad, Jamui and Arwal districts of Bihar; Surguja, Janjgir and Kowarda districts of Chattisgarh; North Dinajpur district of West Bengal; East Kameng district of Arunachal Pradesh; Sibsagar district of Assam; Chandel district of Manipur; Tiruvannamalai district of Tamil Nadu and Puducherry.
- Rest of the country experienced moderately, mild wet/dry conditions.

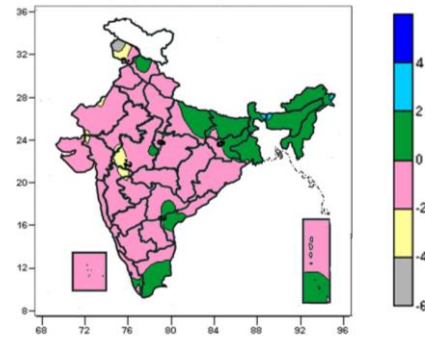
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 10.09.2014

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 10.09.2014



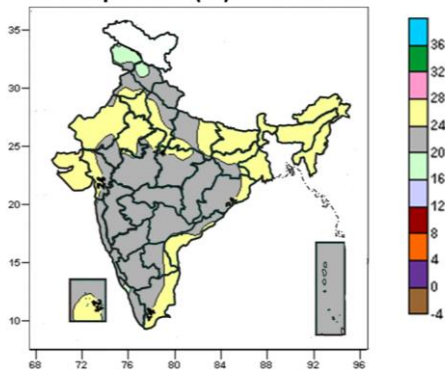
- 32 to 36 $^{\circ}\text{C}$ over many parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, West Bengal & Sikkim, North East India, Gujarat, some parts of Bihar, Jharkhand, Madhya Pradesh, Coastal Andhra Pradesh and Tamil Nadu.
- 28 to 32 $^{\circ}\text{C}$ over entire country except many parts of Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, West Bengal & Sikkim, North East India, Gujarat, Coastal & South Interior Karnataka, some parts of Bihar, Jharkhand, Madhya Pradesh, Coastal Andhra Pradesh Kerala, and Tamil Nadu.
- 24 to 28 $^{\circ}\text{C}$ many parts of Coastal & South Interior Karnataka some parts of Goa, Kerala and Tamil Nadu.

Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 10.09.2014



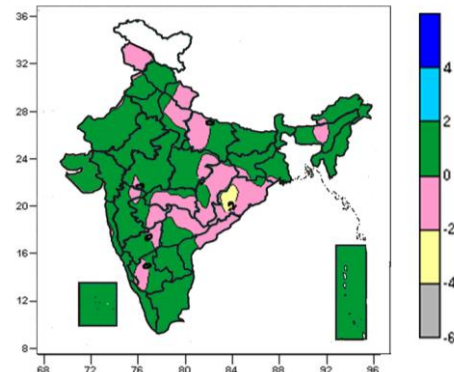
- 2 to 4 $^{\circ}\text{C}$ over entire country except many parts of Jammu & Kashmir, East Uttar Pradesh, Bihar, Jharkhand, West Bengal & Sikkim, North East India, Tamil Nadu, some parts of Himachal Pradesh, Rajasthan, Gujarat region, Telangana, Madhya Maharashtra, Coastal Andhra Pradesh, Kerala and Andaman & Nicobar Islands.
- 0 to 2 $^{\circ}\text{C}$ over many parts of East Uttar Pradesh, Bihar, Jharkhand, West Bengal & Sikkim, North East India, Tamil Nadu, some parts of Himachal Pradesh, Telangana, West Madhya Pradesh, Coastal Andhra Pradesh, Kerala and Andaman & Nicobar Islands,
- -4 to -2 $^{\circ}\text{C}$ over many Parts of Jammu & Kashmir, some parts of Rajasthan, Gujarat region, West Madhya Pradesh and Madhya Maharashtra.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 10.09.2014



- 24 to 28 $^{\circ}\text{C}$ 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 Rayalaseema.
- 20 to 24 $^{\circ}\text{C}$ 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.
- 16 to 20 $^{\circ}\text{C}$ over many parts of Jammu & Kashmir, some parts of Himachal Pradesh.

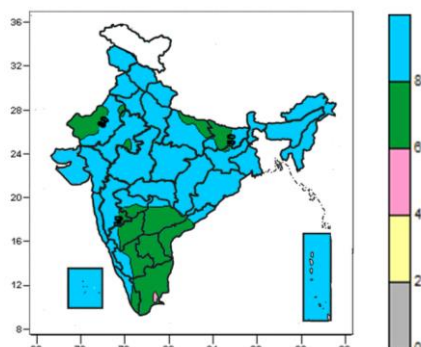
Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 10.09.2014



- 0 to 2 $^{\circ}\text{C}$ over entire country except many parts of Jammu & Kashmir, Uttarakhand, Uttar Pradesh, Chhattisgarh, Odisha, Coastal Andhra Pradesh, Telangana, Marathwada, Vidarbha, some parts of Jharkhand, Gangetic West Bengal, Arunachal Pradesh, Assam & Meghalaya, Madhya Pradesh, East Rajasthan, Telangana, Madhya Maharashtra and Interior Karnataka.
- -2 to 0 $^{\circ}\text{C}$ over many parts of Jammu & Kashmir, Uttarakhand, Uttar Pradesh, Chhattisgarh, Odisha, Coastal Andhra Pradesh, Telangana, Marathwada, Vidarbha, some parts of Jharkhand, Gangetic West Bengal, Arunachal Pradesh, Assam & Meghalaya, Madhya Pradesh, East Rajasthan, Telangana, Madhya Maharashtra and Interior Karnataka.
- -4 to -2 $^{\circ}\text{C}$ over some parts of Odisha.

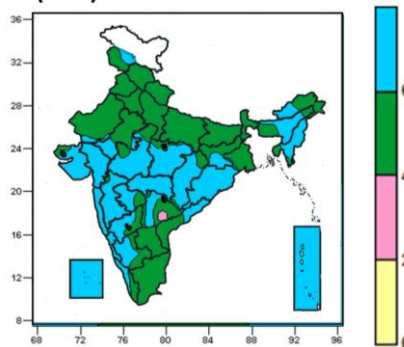
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 10.09.2014

Relative Humidity (%) over India for the week ending 10.09.2014



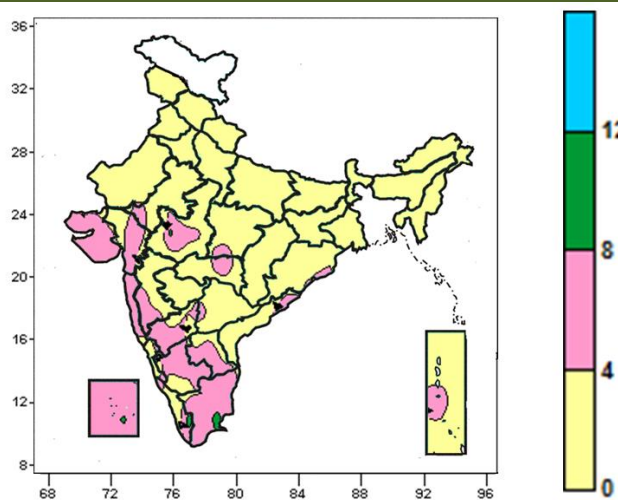
- 80 to 100% over entire country except many parts of Bihar, Andhra Pradesh, Interior Karnataka, Tamil Nadu, some parts of West Rajasthan, East Uttar Pradesh, Madhya Maharashtra, Marathwada and Kerala.
- 60 to 80% over many parts of Bihar, Andhra Pradesh, Interior Karnataka, Tamil Nadu, some parts of West Rajasthan, East Uttar Pradesh, Madhya Maharashtra, Marathwada and Kerala.

Cloud amount (okta) over India for the week ending 10.09.2014



- 6 to 8 okta over many parts of Assam & Meghalaya, Manipur, Mizoram, Tripura, West India, Central India, Odisha, Karnataka, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Arunachal Pradesh, Nagaland, Bihar, Rajasthan, Coastal Andhra Pradesh, Telangana and Kerala.
- 4 to 6 okta over entire country many parts of Assam & Meghalaya, Manipur, Mizoram, Tripura, West India, Central India, Odisha, Karnataka, Kerala, Lakshadweep, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Arunachal Pradesh, Nagaland, Bihar, Rajasthan, Coastal Andhra Pradesh, Telangana and Kerala.
- 0 to 2 okta over some parts of Telangana.

Wind speed (knots) over India for the week ending 10.09.2014



- 4 to 8 knots over many parts of Gujarat, Konkan & Goa, Interior Karnataka, Rayalaseema, Tamil Nadu, Lakshadweep Islands, some parts of East Rajasthan, Madhya Pradesh, Odisha, Madhya Maharashtra, Vidarbha, Coastal Andhra Pradesh, Telangana, Coastal Karnataka, Kerala and Andaman & Nicobar Islands.
- 0 to 4 knots over entire country except many parts of Gujarat, Konkan & Goa, Interior Karnataka, Rayalaseema, Tamil Nadu, Lakshadweep Islands, some parts of East Rajasthan, Madhya Pradesh, Odisha, Madhya Maharashtra, Vidarbha, Coastal Andhra Pradesh, Telangana, Coastal Karnataka, Kerala and Andaman & Nicobar Islands.

Monsoon Watch

- The southwest monsoon was active over East Rajasthan, Gujarat region and Konkan & Goa.

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 15th September, 2014)

- Rain/thundershowers would occur at many places over Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Odisha, Jharkhand, Bihar, Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, Konkan & Goa and Coastal Karnataka during the period.
- Rain/thundershowers would occur at a few places over Gangetic West Bengal, Haryana & Delhi, West Madhya Pradesh, Coastal Andhra Pradesh, Telangana, South Interior Karnataka and Kerala and at isolated places over Punjab, Himachal Pradesh, West Rajasthan, Marathwada, Vidarbha, Rayalaseema, Tamil Nadu & Puducherry, North Interior Karnataka and Lakshadweep during the period.
- Rain/thundershowers would occur at many places over Sub-Himalayan West Bengal & Sikkim during next 24 hours; at most places on 13th September and at many places thereafter.
- Rain/thundershowers would occur at many places over Uttarakhand and East Rajasthan during next 24 hours and over Gujarat region during next 48 hours and at a few places thereafter.
- Rain/thundershowers would occur at a few places over Jammu & Kashmir and Madhya Maharashtra during next 24 hours and over Saurashtra & Kutch during next 48 hours and at isolated places thereafter.

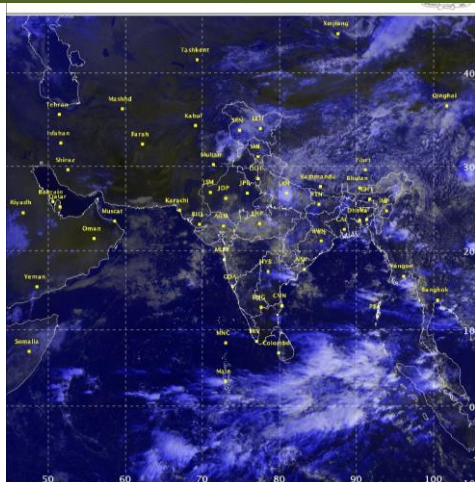
Weather Warning during next 3 days

- 12 September (Day 1):** Heavy rainfall would occur at isolated places over East Rajasthan, West Uttar Pradesh, East Uttar Pradesh, East Madhya Pradesh, Bihar, Gujarat region, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Odisha, Konkan & Goa and Andaman & Nicobar Islands.
- 13 September (Day 2):** Heavy rainfall would occur at isolated places over West Uttar Pradesh, East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Odisha and Konkan & Goa.
- 14 September (Day 3):** Heavy rainfall would occur at isolated places over West Uttar Pradesh, East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya and Odisha.

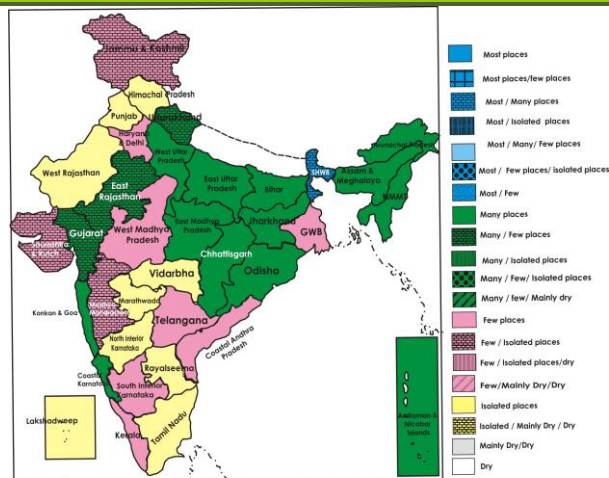
Weather Outlook for subsequent 4 days from 15th to 19th September 2014

- Rain/thundershowers would occur at many places along west coast and over east & northeast India.
- Rain/thundershowers would occur at a few places over central and adjoining peninsular India.
- Rain/thundershowers would occur at isolated places over rest part of the country.

Satellite image dated, 12.09.2014, 0430 UTC



Weather Forecast Map (Valid upto 0830 hours of 15th September)



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. Apply Blitox @ 2g/ litre of water for controlling stalk rot. Apply urea to rice seedlings in the nurseries after receding of excess water.
- In Vindhya Plateau Zone and Jhabua Hill 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 between 15th September to 15th 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.
- 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.
- As rain occurred in all districts of Gujarat State and also rain would occur at many places over **Gujarat region** on 12th & 13th September with heavy rainfall at isolated places on 12th September, postpone irrigation, inter-cultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to avoid water stagnation.
- Avoid water logging in castor in **Middle Gujarat Zone**, drain out excess water from the maize, sugarcane, green gram, black gram, ginger, turmeric and vegetable crop fields in South Gujarat Zone. Apply urea 20 kg/ha in deshi cotton whereas 40 kg/ha in hybrid variety after current spells of rain.
- Drain out excess water from standing crop fields in Khammam, Karimnagar and Adilabad districts in **Telangana**. Wherever the rice fields are inundated and damaged hills are found, undertake gap filling with survived hills (split into individual tillers). In water logged cotton fields, spray Multi K (13-0-45) @ 10 g per litre of water.

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 Thiruvananthapuram; all districts of Coastal Karnataka; Belgaum district of North Interior Karnataka; Chikmagalur, Kodagu and Shimoga districts of South Interior Karnataka; East and West Godavari, Srikakulam, Vishakapatnam and Vizianagaram districts of Andhra Pradesh; Adilabad, Hyderabad, Karimnagar, Khammam, Nizamabad and Warangal districts of Telangana; Chennai, Kancheepuram, Karaikal, Nilgiris and Tiruvallur 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 Karnataka during the period. Rain/Thundershowers would occur at a few places over Coastal Andhra Pradesh, Telangana, South Interior Karnataka and Kerala and at isolated places over Rayalaseema, Tamil Nadu & Puducherry and North Interior Karnataka during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over peninsular India adjoining to central India and at isolated places over rest of the region.
- **Advisories:**
 - **Karnataka:**
 - As rain/thundershowers would occur at many places over Coastal Karnataka during the period, postpone irrigation, inter-cultural operations and application of fertilizers and plant protection measures in standing crops.

- 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 and provide support to newly planted horticultural crops to prevent the crops from lodging.
- Undertake land preparation for *rabi* sowing utilizing the realized rainfall. Nipping of growing shoot tip of cotton is advised in 90 days old crop to check excess vegetative growth and spray 2% DAP along with 1% MgSO₄ and Planofix (0.25 ml/lit of water) to manage leaf reddening and square dropping in the North Transition Zone of Karnataka.
- Due to prevailing humid weather, leaf roller were noticed in banana (Yelakki) in Mysore district in the Southern Dry Zone of Karnataka, for control, spray Ekalux@ 2ml/litre of water; To control Root knot Nematode menace in cucurbitaceous crops, apply Carbofuran @ 5-10gms per plant at root zone on a non-rainy day and cover with soil.
- **Kerala:**
- Undertake crown cleaning, phytosanitation, regulation of shade and provide proper drainage to prevent mid-whorl yellowing in coconut in the Southern Zone of Kerala.
- Present high humid weather condition is congenial for incidence of pink disease in rubber plant in the Problem Area Zone of Kerala. Brush the forking region with Bordeaux paste or Thiride mixed with rubberkote @ 10g/kg as a prophylactic measure on a non rainy day. Also to control foot rot in pepper , drench the basal portion of pepper vines with 2% pseudomonas solution followed by application of trichoderma enriched cowdung+ neem cake @ 1kg /vine to manage foot rot on a non rainy day.
- High humidity and continuous rain are congenial for incidence of sucking insects in vegetables in the Central Zone of Kerala and it is likely to increase. Apply 2% neem oil-garlic-soap emulsion for control of aphids on a non rainy day.
- **Telangana and Andhra Pradesh:**
- Drain out excess water from standing crop fields in Khammam, Karimnagar and Adilabad districts in Telangana. Wherever the rice fields are inundated and damaged hills are found, undertake gap filling with survived hills (split into individual tillers). In water logged cotton fields, spray Multi K (13-0-45) @ 10 g per litre of water.
- 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.
- In flood affected areas in Telangana, incidence of bacterial leaf blight (BLB) and blast was observed in rice. Postpone (5-7 days) the application of nitrogen fertilizers to avoid further spread of bacterial leaf blight. The incidence is more severe in BPT 5204. To manage, spray Tricyclazole @ 0.6 g per litre of water. Also Prevailing excess moisture conditions are congenial for the incidence of stalk rot in maize, spodotera, helicoverpa etc, in maize and leaf sport diseases in cotton. Monitor the crops and take up timely control measures.
- Undertake direct seeding of chilli and gap filling in direct seeded rice. Apply biogyme, micronutrients and mineral mixture in cotton to recover from slow growth in the Krishna Godavari Zone of Andhra Pradesh on a non rainy day.
- 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 to manage bacterial blight.
- **Tamil Nadu:**
- Continue sowing and transplanting of *samba* rice in the Cauvery Delta Zone of Tamil Nadu.
- In the Western Zone of Tamil Nadu, to avoid flower shedding in cotton, spray NAA @ 40 PPM in 60 - 90 days after sowing. (40 mg of NAA dissolved in 1 liter of water will give the concentration of 40 PPM). Undertake harvesting of sorghum and other millets.
- Cloudy weather and frequent drizzling is congenial for leaf spot diseases in turmeric and bacterial leaf blight in rice in the Western Zone of Tamil Nadu. Monitor the crops and spray Mancozeb @ 2.5g / liter of water to manage leaf spot diseases and Kocide @2g per liter of water to manage bacterial leaf blight.
- Arrange farm inputs for dry land cultivation 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.
- Due to high humidity, cattle and poultry feed may get affected with aflatoxin. Feed toxin free feeds to the livestock in the Western Zone of Tamil Nadu.
- Vaccinate livestock against Foot and Mouth disease (FMD vaccination), Black Quarter disease (BC vaccination) and Haemorrhagic Septicaemia. Vaccinate sheep and goats with (ET vaccine) against Enterotoxemia in the North Dry Zone of Karnataka.

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



Rice



Okra



Jute



Green Gram

- **Realised Rainfall:** Rainfall occurred in Changlang, East Siang, Lohit, Lower Dibang Valley, Papumpara, Tawang, Tirap, Upper Siang, Upper Subansari, West Kameng and West Siang districts of Arunachal Pradesh; Cachar, Dhemaji, Dibrugarh, Golghat, Hailakandi, Jorhat, Karbi Anglong, Karimganj, Lakhimpur, Morigaon, N.C.Hills, Nowgaon, Sonitpur, Tinsukia and Udalgiri districts of Assam; East Khasi Hills, Ribhoi and South Garo Hills districts of Meghalaya; Aizwal, Saiha and Serchhip districts of Mizoram; Imphal West district of Manipur; Dimapur and Kohima districts of Nagaland and all districts of Tripura except South 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 the period.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Assam & Meghalaya during the period and over Arunachal Pradesh on 14th September.
- **Weather Outlook:** Rain/thundershowers would occur at many places over northeast India.
- **Advisories:**
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - As rain/thundershowers would occur at many places over Assam, Meghalaya and Arunachal Pradesh during the period along with heavy rainfall at isolated 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 Central Brahmaputra Valley Zone of Assam, continue sowing of green gram, black gram, sesame and nursery sowing of cole crops.
 - In Upper Brahmaputra Valley Zone of Assam, gap filling in rice in the main field may be done with seedlings of same age. Continue sowing of pulses like green gram and black gram and cole crops.
 - In Barak Valley Zone of Assam, farmers in the flood affected areas should select short duration HYV rice varieties like Luit, Kapili, Kolong, Dishang etc. 20-25 days old seedling of these cultivars can be transplanted in the main field upto mid September.
 - 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. Continue land preparation and planting of potato. Sowing of pea can be started now in high altitude of East Khasi Hills. Avoid water logging in ginger/turmeric to avoid rhizome rot and fungal disease.
 - Cloudy and humid weather is favourable for attack of leaf folder in rice in Upper Brahmaputra Valley of Assam, spray Chloropyrifos 20 EC @ 1 ml per liter of water after current spells of rain.
 - Due to cloudy and humid weather, there is chance of attack of rice hispa in *sali* rice at tillering stage in 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 after current spells of rain.
 - Due to prevailing humid weather conditions in Lower Brahmaputra Valley of Assam, there is chance of attack of stem borer, leaf folder and Rice bug in Sali rice. Apply 6-8 releases of Trichogramma Japonicum and T. Chilonis @ 50,000/ha/week against stem borer and leaf folder starting from 30 days after transplanting. Apply Malathion 5% dust (20 kg/ha) against Rice bug. For control of stem and root rot in jute for seed, apply Carbendazim @ 1gm/litre of water. 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 Chloropyrifos (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 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 direct seeded *ahu* 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%) after current spells of rain.
- **Nagaland, Manipur, Mizoram and Tripura:**
- As rain/thundershowers would occur at many places over Nagaland, Manipur, Mizoram and Tripura during the period, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
- In Manipur, maintain water level of 5-8cm in *kharif* rice and weeding may be done before top dressing. Undertake main field preparation for transplanting of cole crops.
- In Mizoram, continue nursery preparation for cole crops like cabbage, cauliflower, broccoli and knolkhol.
- In Mild Tropical Plain Zone of Tripura, provide adequate drainage in groundnut at pod filling stage particularly in low and medium lands and where there is a chance of water stagnation due to rain.
- In Mizoram, due to continuous wet condition, there is chance of leaf spot on ginger & turmeric, spray Dithane M-45 @ 2.5g/litre of water or Bavistin @ 1g/litre of water or Blitox @ 3 g/litre of water. Also spray Monocrotophos 36 WSC @ 1.5 ml/litre against gundhi bug infestation in rice. Insecticide application should be done if the population reaches ETL. Apply the chemicals after current spells of rain.
- In Mild Tropical Plain Zone of Tripura, there is chance of attack of blast in *aman* rice due to prevailing cloudy and humid weather. Apply Tricyclazole 75 WP @ 0.6 g/litre of water or Carbendazim 50 WP (Bavistin) @ 1 g per litre of water. Also, in the present weather, there may be attack of downy mildew in bitter gourd and pointed gourd. Redomil –MZ @ 2 g per litre may be applied to manage the attack. 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 Araria, Kishanganj, Sheikhpura and Supaul districts of Bihar; Bokaro, East Singhbhum, Gumla, Khunti, Latehar, Lohardaga, Ramgarh, Ranchi and Simdega districts of Jharkhand; all districts of Odisha; Hooghly, Kolkata, Nadia, South 24 Parganas and West Midnapore districts of Gangetic West Bengal; all districts of Sub-Himalayan West Bengal & Sikkim except Malda, North Dinajpur and South Dinajpur; all districts of Andaman & Nicobar Islands. Mainly dry weather prevailed over remaining parts of the region.
- **Weather Forecast:** Rain/Thundershowers would occur at many places over Andaman & Nicobar Islands, Odisha, Jharkhand and Bihar and at a few places over Gangetic West Bengal during the period. Rain/thundershowers would occur at many places over Sub-Himalayan West Bengal & Sikkim during next 24 hours; at most places on 13th September and at many places thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim, Bihar and Odisha during the period and over Andaman & Nicobar Islands on 12th September.
- **Weather Outlook:** Rain/thundershowers would occur at many places over east India.
- **Advisories:**
 - As rain/thundershowers would occur at most/many places over Sub-Himalayan West Bengal & Sikkim along with isolated heavy spells during the period, rain/thundershowers at many places over Odisha, Jharkhand and Bihar during the period along with isolated heavy spells over Odisha on 12th & 14th September and over Bihar 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.

▪ **West Bengal:**

- In New Alluvial Zone of West Bengal, keep 5-7cm water in *aman* rice fields at the time of tillering stage. Undertake seedbed / land preparation for early winter vegetables like radish, broccoli etc. and sowing of onion, cabbage, cauliflower etc. in the nursery bed.
- 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 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 blast in *aman* rice, apply Chloropyriphos @ 2.5 ml/litre of water or Cartap Hydrochloride 50WP @ 1 g/litre of water against stem borer and leaf folder. To prevent the attack of blast, spray Tricyclazole @ 0.5 g/litre of water. Apply the chemicals after current spells of rain.
- Due to cloudy and high humid weather conditions, there is chance of attack of blast in *aman* rice in New Alluvial Zone. For control, apply Carbendazim + Mancozeb @ 2.5g/litre of water against blast. Apply Redomil -MZ (@2 g per litre to control downy mildew and mosaic in bitter and pointed gourd. Spray Difenthiuron @ 0.75g per litre of water against thrips and mites in chilli. Apply the chemicals on a non rainy day.
- In Laterite and Red Soil Zone, due to cloudy weather conditions, there is chance of attack of cutworm in maize. To protect the crop, apply Chloropyrithos @ 3.5 kg / bigha (1.5% powder) on a non rainy day.
- Due to humid condition in Terai zone, damping off may occur in vegetable nursery, to manage the disease, spray Carbendazim 12% + Mancozeb 64% @ 2 gm/litre of water. Also spray Carbendazim 12% + Mancozeb 64%, 2 gram per litre of water against collar rot in chilli and beans after current spells of rain.

▪ **Andaman and Nicobar Islands:**

- As rain/thundershowers would occur at many places over Andaman and Nicobar Islands during the period, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops.
- In North and Middle Andaman, provide support to the fruit bearing banana trees to prevent damage by high winds.

▪ **Odisha:**

- In East and South Eastern Coastal Plain Zone of Odisha, undertake 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.
- In Western Undulating Zone of Odisha, waterlogged conditions with high humidity (75-80%) favours buildup of scale insect, whitefly and Pyrrilla 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 to control the insect vector after current spells of rain.
- In North Eastern Plateau Zone of Odisha, maize crop has been infested with aphids and likely to increase in the present weather. To manage, spray Dimethoate @ 400 ml in 200 liters of water per acre after current spells of rain.
- 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.

▪ **Bihar:**

- In North West Alluvial Plain Zone of Bihar, continue sowing of pigeon pea and urad in upland areas and planting of Shakarkand. Continue nursery sowing of cabbage and cauliflower.
- In North East Alluvial Plain Zone of Bihar, maintain optimum water level in rice. Undertake sowing of September arhar. Complete transplanting of early autumn vegetable viz cauliflower, cabbage and brinjal etc.
- In South Bihar Alluvial Zone, complete sowing of *rabi* pigeon pea up to mid September also complete sowing of kulthi in upland areas. Maintain 5 cm water in rice fields.

▪ **Jharkhand:**

- In Western Plateau Zone of Jharkhand, in upland areas, continue sowing of kulthi, niger and toria. In rice, apply urea after 20-25 days of transplanting. Undertake field preparation for cultivation of early potato and green peas.
- In South Eastern Plateau Zone of Jharkhand, in fallow slopy lands, continue sowing of September Pigeonpea, Kulthi, Niger, Lobia, Rice bean. Undertake land preparation for the cultivation of short duration early potato.
- In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of urad, horse gram, niger and sweet 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 hot and humid weather, attack of stem borer in rice is being seen in Western Plateau Zone of Jharkhand. To control the stem borer, spray Monocrotophos 36 E.C. @ 1-2 ml per litre of water and mix Tipol in the solution or prepare the solution in soap water after current spells of rain. In case of heavy infestation of the insect, apply granular insecticide like Carbofuran 3 G @ 12 kg per acre or Phorate 10 G (@ 4 kg per acre. However, at the time of broadcasting of granular insecticide, stagnated water in the field is must.
- 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.
- **Animal Husbandry**
- In Coastal Saline Zone of West Bengal, there is chance of worm infection in grazing cattle. Feed Bolus (albomer, albozen, wormer-1.5 g) @ 1 bolus per 150 kg body weight.
- In North and Middle Andaman, provide artificial light in the form of electric bulb at night in the poultry sheds of egg laying birds to compensate for the cloudy weather.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane



Rice



Okra



Green Gram

- **Realised Rainfall:** Rainfall occurred in all districts of East Madhya Pradesh except Tikamgarh; all districts of West Madhya Pradesh except Ashoknagar, Gwalior and Shivpuri; all districts of Chhattisgarh except Kowardha.
- **Weather Forecast:** Rain/Thundershowers would occur at many places over East Madhya Pradesh and Chhattisgarh during the period. Rain/Thundershowers would occur at a few places over West Madhya Pradesh during the period.
- **Weather Warning:** Heavy rainfall would occur at isolated places over East Madhya Pradesh on 12th September.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over Central India.
- **Advisories:**
 - As rain/thundershowers would occur at many places over East Madhya Pradesh and Chhattisgarh during the period, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers in the standing crops. As heavy rainfall would occur at isolated places over East Madhya Pradesh on 12th September, provide adequate drainage in standing crop fields.
 - **Madhya Pradesh:**
 - Drain out excess water from standing crop fields in Vidisha and Sehore districts in Vindhya Plateau Zone and in Jhabua Hill Zone of 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 between 15th September to 15th 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.
 - 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 on a non rainy day.
 - 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 on a non rainy day.
 - Due to heavy rain there are chances of stem rot in ginger and turmeric in Vindhya Plateau Zone of Madhya Pradesh, spray Blitox 50 E. C. @ 2.5gm per litre of water on a non rainy day.
 - Due to humid weather, there is possibility of attack of cercospora leaf spot disease in the *til* (sesame) in Bundelkhand Zone of Madhya Pradesh, spray Mancozeb @ 2.5 g per litre of water after current spells of rain.
 - **Chhattisgarh:**
 - Drain out excess water from standing crop fields in North Hill Zone of Chhattisgarh.
 - In Plain Zone and North Hill Zone of Chhattisgarh, in fallow upland, sowing of horse gram and Niger may be undertaken upto mid September.
 - 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.
- Due to cloudy weather there are chances of incidence of leaf blight in maize in Bastar Plateau Zone of Chhattisgarh, spray Mencozeb @ 2 g per litre of water 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 all districts of Jammu & Kashmir except Ladakh and Poonch; all districts of Himachal Pradesh except Kinnaur and Lahul & Spiti; all districts of Punjab except Barnala and Mansa; all districts of Haryana except Bhiwani, Fatehbad, Gurgaon, Hissar, Mahendragarh, Mewat and Rohtak; all districts of Delhi except East Delhi, New Delhi and NorthWest Delhi; all districts of West Rajasthan except Jaisalmer; all districts of East Rajasthan except Bundi, Sawai Madhopur and Sikar; Allahabad, Banda, Gazipur, Kannauj, Kanpur city, Lucknow, Pratapgarh, Sahuji Maharajgarh and Unnao districts of East Uttar Pradesh; Auraiya, Baghpat, Bareilly, Bijnor, Bulandshahar, Firozabad, Gautam Buddha Nagar, Hamirpur, Jalaun, Jhansi, Kanshiramnagar, Mahoba, Mathura, Meerut, Moradabad, Muzaffarnagar, Pilibhit, Rampur and Saharanpur districts of West Uttar Pradesh; Champawat, Dehradun, Garhwal Pauri, Garhwal Tehri, Haridwar and Nainital districts of Uttarakhand. Mainly dry weather prevailed over remaining parts of the region.
- **Weather Forecast:** Rain/Thundershowers would occur at many places over Uttar Pradesh; at a few places over Haryana & Delhi and at isolated places over Punjab, Himachal Pradesh and West Rajasthan during the period. Rain/thundershowers would occur at many places over Uttarakhand and East Rajasthan during next 24 hours and at a few places thereafter. Rain/thundershowers would occur at a few places over Jammu & Kashmir during next 24 hours and at isolated places thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Uttar Pradesh during the period and over East Rajasthan on 12th September.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over the region.
- **Advisories:**
 - As rain/thundershowers would occur at many places over Uttar Pradesh during the period, over Uttarakhand and East Rajasthan on 12th September along with heavy rainfall at isolated places over Uttar Pradesh during the period and over East Rajasthan on 12th September, postpone irrigation, intercultural operations, application of plant protection measures and fertilizers in the standing crops. Provide adequate drainage in standing crops to remove excess water in Uttar Pradesh and East Rajasthan.
 - **Jammu & Kashmir:**
 - 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. Apply Blitox @ 2g/ litre of water for stalk rot. Apply urea to rice seedlings in the nurseries after receding of excess water.
 - Drain out excess water from pulses and vegetable fields in Valley Temperate Zone, Sub-Tropical and Intermediate Zone of Jammu & Kashmir. Monitor the pulse crops for root/shoot rot. Apply Bavistin @ 1g/litre of water if observed.
 - Due to humid weather conditions, there is attack of aphids on vegetable crops in Cold Arid Zone of Jammu & Kashmir. To control apply Malathion @ 1ml/litre of water, on a non rainy day and repeat after 12 days of interval.
 - Due to high humid weather conditions, there is chance of attack of sheath blight and blast on rice in Intermediate Zone of Jammu & Kashmir. Monitor the crop and apply Bavistin @ 2 g/lit of water or Propiconazole 25 EC @ 1 ml/litre of water after receding of flood water.
 - **Himachal Pradesh:**
 - Undertake sowing of radish, turnip, carrot and leafy vegetable 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 of Himachal Pradesh. 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. Undertake transplanting of mid season cauliflower in low hill areas.

- Weather is conducive for attack of rice blast, hispa, leaf folder in rice in in Sub-Montane and Low Hills Sub-Humid Tropical Zone and Bilaspur district of Mid Hills Sub-Humid Zone of Himachal Pradesh. For control of rice blast, spray Bavistin 0.01or Beam 75 WP 0.06% in 10-15 days interval. For rice hispa and leaf folder, spray Chloropyriphos 20 EC (2.5ml /litres) of water.
- Due to prevailing humid weather conditions, there are chances of attack of aphids in cabbage and cauliflower in High Hill Dry Temperate 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 @ 500ml 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 fodder crops like sorghum, maize, lobia etc. (Chara Serson-602 and African Tall, Jawahar or Kisan). Continue sowing of early vegetable pea like VL Ageti Mater-7, Vivek Mater-10, and Arkel at high hills in Bhabar and Tarai Zone of Uttarakhand.
- Continue sowing of mustard, phalak, methi, radish and continue sowing of early toria, pea in Hill Zone of Uttarakhand.
- 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 are incidence of *Khaira* disease on rice in Sub humid Sub Tropical Zone of Uttarakhand. To control, apply Zinc sulphate @ 25 kg/ha. If crop shows signs of yellow colour apply 30 kg of Urea/ acre after current spells of rain.
- Under present weather conditions, there are incidence of stem borer in rice in Bhabar and Tarai Zone of Uttarakhand. If the incidence is more than 10 %, spray Phipronil 5 SC @ 400 ml dissolved in 200 liters of water per acre after current spells of rain.
- **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 Plain Zone of Punjab, continue field preparation and sowing of short duration hybrid maize (PMH 2) utilizing the realised rainfall.
- In Western Plain and Undulating Plain Zone of Punjab, continue nursery sowing of mid-season cauliflower, desi varieties of radish, carrot and turnip.
- In Central Plain Zone of Punjab, undertake sowing of desi varieties of carrot, radish and turnip crops and undertake transplanting of rainy season tomato. Undertake sowing of potato, palak and nursery sowing of cauliflower.
- In Undulating Plain Zone of Punjab, complete new plantation of fruit crops as weather of this period is favourable for the establishment and growth of small plants. 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 cloudy weather, there are chances of occurrence of sucking pests *viz.* white fly and Jassids in cotton in Western Zone of Punjab. Monitor the crops and spray Oberon @ 200 ml/acre for white fly and Ulala 80g/acre on a non rainy day for the management of Jassids.
- 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 undertake 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 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 and expected rainfall.
- Continue sowing of toria (T-9, T-36, Bhavani, Pant -30,303, 507) at a row spacing of 30 cm in Deoria and Ballia districts of Eastern Plain Zone and Central Plain Zone of Uttar Pradesh after current spells of heavy rain.
- Undertake 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 after current spells of rain.
- 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 after current spells of rain. For control of leaf eating caterpillar in vegetable, spray Di-corovas @ 1ml per litre of water after current spells of rain,
- Due to humid weather condition, there are chances of incidence of yellow mosaic in urad and moong in

Raibareilly, Amethi and Sultanpur districts of Eastern plain Zone and in Central Plain Zone of Uttar Pradesh. Spray Dimethoate 30 E.C. or Methyl-O-Dimeton 25 E.C. @ 1 litre in 1000 litres of water per hectare after current spells of rain and repeat at an interval of 8-10 days .

▪ **Rajasthan:**

- 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, due to warm and cloudy weather condition there may be chances of blight disease in til, moong crops. To control spray Mancozeb @ 2kg per ha.
- 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, after current spells of rain.
- **Animal Husbandry:**
- Keep the cattle in sheds during heavy rainfall period in Uttar Pradesh and East Rajasthan.
- The weather is suitable for the attack of pink eye disease in newly born calves in Sub-Montane and Low Hills Sub-Tropical Zone of Himachal Pradesh. For control prepare the solution of 1% boric acid in boiled water and wash the eyes at regular interval of three hours.
- 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.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Rice

Sugarcane

Okra

Soybean

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa and Vidarbha, all districts of Madhya Maharashtra except Ahmednagar, Sangli and Sholapur; all districts of Marathwada except Beed, Latur and Osmanabad; all districts of Gujarat State.
- **Weather Forecast:** Rain/Thundershowers would occur at many places over Konkan & Goa and at isolated places over Marathwada and Vidarbha during the period. Rain/Thundershowers would occur at many places over Gujarat region during next 48 hours and at a few places thereafter. Rain/Thundershowers would occur at a few places over Madhya Maharashtra during next 24 and over Saurashtra & Kutch during next 48 hours and at isolated places thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Konkan & Goa on 12th and 13th September and over Gujarat region on 12th September.
- **Weather Outlook:** Rain/thundershowers would occur at many places along west coast and at isolated places over rest of the region.
- **Advisories:**
 - **Maharashtra:**
 - As rain/thundershowers would occur at many places over Konkan during the period along with heavy rainfall at isolated places on 12th & 13th September, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to avoid water stagnation.
 - In Konkan, maintain water level upto 5-8 cm in rice fields. Drain out excess water from the rice, finger millet & vegetable fields.
 - In Madhya Maharashtra, complete planting of *adsali* sugarcane utilising the current rains. Maintain the water level of 5 cm in transplanted rice field.
 - In Marathwada, undertake intercultural operations in cotton, soybean, red gram and sunflower.
 - In Vidarbha, spray 2 % urea at flowering stage in cotton and soybean for better growth. Maintain water level upto 5 cm in transplanted rice fields in East Vidarbha. Undertake intercultural operations in cotton, soybean, maize and jowar.
 - Prevailing rainy weather in Pune region is congenial for incidence of thrips and blight in onion; spray Carbendazim

- @ 10 gm + Fipronil 10 ml with 10 ml sticker per 10 litres of water at 15 days interval on a non rainy day.
- Due to prevailing humid and cloudy weather in East Vidarbha, there may be attack of green semilooper and tobacco eating caterpillar in soybean; spray Quinalphos 25% @ 20 ml per 10 litres of water from the lower sides of the leaf.
 - **Gujarat:**
 - As rain occurred in all districts of Gujarat State and also rain would occur at many places over Gujarat region on 12th & 13th September with heavy rainfall at isolated places on 12th September, postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in standing crops to avoid water stagnation. Harvest rain water for future use.
 - Avoid water logging in castor in Middle Gujarat Zone, drain out excess water from maize, sugarcane, green gram, black gram, ginger, turmeric and vegetable crop fields in South Gujarat Zone as stagnant water in the root zone is harmful to these crops. Apply urea 20 kg/ha in deshi cotton whereas 40 kg/ha in hybrid variety after current spells of rain.
 - Carry out gap filling in late sown castor in North West Zone and in South Gujarat Heavy Rainfall Zone after current spells of heavy rain. Avoid water logging in low lying areas of cotton, pulses, castor and sesame crop fields in North West Zone.
 - In North Saurashtra Zone, to reduce dropping of flower and immature bolls, spray Nephthalic acetic acid @ 7 ml /10 liters of water on a non rainy day.
 - Due to increase in humidity there is a chance of increased attack of Helicoverpa Armigera in soybean in South Saurashtra Zone; for control spray Dichlorvos @ 0.05 (5ml) or Fenitrothion @ 0.05 (10 ml) in 10 litre of water on a non rainy day.
 - Due to humid weather, there is possibility of leaf spot disease in groundnut in North Saurashtra Zone; spray Hexaconazole @ 15 ml or Tebuconazole @ 10 ml in 10 liters of water on a non rainy day. Also there is chance of infestation of powdery mildew disease in sesame; spray Hexaconazole 5 % EC @ 20 ml in 10 liters of water on a non rainy day.
 - **Animal Husbandry**
 - In Gujarat, keep fodder in safe place to avoid spoilage due to heavy rain and take care of animals during heavy rain. Keep animal sheds hygienic and clean to avoid flies and mosquitoes.

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

Annexure I
Week by week Rainfall Distribution

Sub-Divisions	27.08.14		03.09.14		10.09.14	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	220.5	279	4.7	-86	61.0	-1
Dibang Valley	**	**	**	**	**	**
East Kameng	41.2	-36	4.7	-92	4.8	-92
East Siang	557.3	247	0.0	-100	72.4	-41
Kurung Kumey	**	**	**	**	**	**
Lohit	259.4	155	40.9	-47	53.7	-27
Lower Dibang Valley	625.9	1199	8.3	-74	61.2	49
Lower Subansari	**	**	**	**	**	**
Papumpara	175.3	35	13.5	-90	61.9	-51
Tawang	65.0	-49	73.0	-26	106.0	1
Tirap	74.0	-42	23.2	-77	77.4	-32
Upper Siang	440.4	335	26.6	-65	104.6	-37
Upper Subansari	113.0	152	3.8	-90	33.6	14

West Kameng	147.8	16	22.8	-77	77.6	-26
West Siang	138.0	39	8.0	-85	46.5	-21
Assam&Meghalaya						
Assam						
Baksa	178.4	19	28.6	-70	14.6	-85
Barpeta	234.3	56	70.2	-26	8.4	-92
Bongaigaon	467.6	190	84.4	4	9.0	-91
Cachar	165.5	70	27.1	69	203.1	93
Chirang	498.4	210	54.0	-34	27.6	-71
Darrang	34.0	-48	10.0	-81	27.0	-46
Dhemaji	212.0	102	12.0	-87	181.0	78
Dhubri	127.0	2	19.0	-73	9.8	-83
Dibrugarh	122.3	33	23.8	-68	61.0	-35
Goalpara	114.4	17	32.1	-49	17.8	-66
Golghat	59.2	-10	5.8	-90	54.5	-10
Hailakandi	22.0	-72	35.8	-51	165.5	82
Jorhat	76.3	-2	9.3	-86	66.5	-17
Kamrup(Rural)	59.0	-7	44.0	9	17.2	-64
Kamrup(Metro)	54.5	-14	11.7	-71	18.0	-63
Karbi Anglong	24.6	-54	2.1	-94	74.1	31
Karimganj	144.4	33	57.0	-37	168.6	43
Kokrajhar	309.9	91	53.2	-62	16.3	-85
Lakhimpur	220.0	110	3.2	-97	136.6	34
Morigaon	51.7	-23	15.4	-76	35.0	-34
N.C.Hills	43.4	-25	5.6	-91	125.8	511
Nowgong	44.8	-39	46.0	-24	54.7	-5
Nalbari	93.6	11	46.0	-18	5.4	-89
Sonitpur	38.7	-52	3.2	-95	40.2	-32
Sibsagar	57.2	-22	29.4	-51	6.4	-90
Tinsukia	207.3	174	13.8	-84	76.3	-15
Udalgiri	93.4	42	28.8	-45	49.5	-2
Meghalaya						
East Garo Hills	506.3	494	45.8	-2	13.3	-85
East Khasi Hills	588.8	122	110.8	-27	104.2	-29
Jaintia Hills	185.0	-33	34.0	-79	20.0	-92
Ribhoi	109.1	41	64.4	-27	36.5	-46
South Garo Hills	68.0	-28	37.0	-43	49.0	-40
West Garo Hills	143.8	52	39.6	-39	8.6	-89
West Khasi Hills	**	**	**	**	**	**
NMMT						
Mizoram						
Aizwal	55.0	-53	101.7	9	121.9	17
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	40.0	-64	40.0	-50	331.0	218
Serchhip	125.4	21	142.4	93	52.1	-40

Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	18.0	-83	49.0	-44	28.0	-66
Churachandpur	**	**	**	**	**	**
Imphal east	80.0	38	37.3	-41	2.4	-95
Imphal west	121.4	192	0.8	-98	285.7	541
Senapati	48.0	-13	20.0	-69	0.0	-100
Tamenglong	**	**	**	**	**	**
Thoubal	**	**	**	**	**	**
Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	42.0	-35	36.9	-29	37.0	-4
Kephire	**	**	**	**	**	**
Kohima	68.8	-17	38.2	-49	54.6	-27
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	139	68	5.0	-93	23	-69
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	4.0	-93	93.0	48	109.9	79
North tripura	39.2	-48	61.2	-16	198.4	192
South tripura	56.2	-38	74.1	14	8.4	-86
West tripura	31.9	-55	89.9	36	34.2	-45
Himachal Pradesh						
Bilaspur	2.6	-95	18.3	-62	61.8	16
Chamba	3.1	-96	22.5	-73	96.5	34
Hamirpur	2.8	-97	19.3	-67	39.6	-15
Kangra	14.9	-87	24.5	-69	64.4	-25
Kinnaur	0.0	-100	3.5	-80	7.0	-56
Kullu	0.0	-100	18.2	-32	36.1	35
Lahaul and Spiti	0.0	-100	24.6	-13	28.5	19
Mandi	3.2	-95	43.1	-19	65.7	28
Shimla	0.0	-99	25.8	-20	41.3	19
Sirmaur	0.1	-99	50.7	-26	87.4	35
Solan	0.0	-100	43.4	-10	80.1	45
Una	5.1	-91	27.6	-39	74.1	64
Punjab						
Amritsar	1.4	-96	12.8	-50	100.3	226
Barnala	0.0	-100	2.0	-89	27.5	64
Bhatinda	0.0	-100	24.5	119	97.6	433
Faridkot	0.5	-98	1.5	-91	110.5	416
Fatehgarh Saheb	0.0	-100	0.3	-99	91.7	236
Ferozpur	1.0	-95	2.8	-88	76.2	297
Gurdaspur	6.3	-88	6.6	-84	164.0	295
Hoshiarpur	0.0	-100	6.6	-78	37.5	-2

Jalandhar	0.0	-100	8.6	-76	44.5	30
Kapurthala	4.3	-85	12.9	-43	88.0	349
Ludhiana	0.0	-100	5.3	-80	60.5	102
Mansa	0.0	-100	25.9	109	20.9	17
Moga	0.0	-100	1.0	-94	60.0	200
Muktesar	0.0	-100	4.2	-76	195.2	607
Nawashahar	0.0	-100	23.0	-46	39.2	-6
Patiala	0.0	-100	5.3	-84	132.7	399
Ropar	0.0	-100	42.5	15	68.3	78
Sangrur	0.0	-100	7.8	-61	52.3	95
Mohali	0.0	-100	5.5	-83	79.3	81
TarnTaran	0.0	-100	5.5	-76	153.2	587
Haryana,Chd,Delhi						
Haryana						
Ambala	0.0	-100	16.3	-67	57.8	9
Bhiwani	0.0	-100	16.6	-24	20.2	16
Chandigarh	0.0	-100	3.3	-91	104.5	170
Faridabad	0.0	-100	7.3	-86	34.2	-21
Fatehabad	0.0	-100	6.4	-59	21.2	49
Gurgaon	0.0	-100	15.5	-48	20.0	-35
Hissar	0.0	-100	16.2	-10	18.7	21
Jhajar	0.0	-100	27.4	26	86.3	170
Jind	0.0	-100	36.1	64	52.3	77
Katihah	0.0	-100	7.9	-66	53.8	112
Karnal	0.0	-100	42.9	60	128.9	385
Kurukshetra	0.0	-100	11.3	-64	81.3	202
Mahendragarh	0.0	-100	8.1	-62	29.9	38
Mewat	0.0	-100	6.6	-83	29.8	-23
Palwal	0.0	-100	1.5	-93	35.5	22
Panchkkula	0.0	-100	12.5	-76	50.5	-20
Panipat	0.0	-100	20.3	-11	112.0	237
Rewari	0.0	-100	4.8	-81	43.9	59
Rohtak	0.0	-100	26.4	-21	21.6	-18
Sirsa	0.0	-100	10.0	-6	64.2	629
Sonepat	0.0	-100	10.3	-68	50.1	78
Yamunanagar	0.0	-100	39.2	-36	78.5	47
Delhi						
Central Delhi	0.0	-100	25.0	-38	52.0	34
East Delhi	0.0	-100	9.0	-78	7.0	-82
New Delhi	0.0	-100	44.4	9	29.6	-24
North Delhi	0.0	-100	32.7	-19	65.5	69
North East Delhi	0.0	-100	28.0	-31	39.0	1
North West Delhi	0.0	-100	4.3	-89	28.3	-27
South Delhi	0.0	-100	40.0	-1	36.3	-3
South West Delhi	0.0	-100	56.8	40	50.5	30
West Delhi	0.0	-100	41.0	1	47.0	21
Jammu & Kashmir						
Anantnag	13.0	0	93.2	451	309.1	168
Badgam	2.6	-71	35.8	209	76.7	293

Bandipore	**	**	**	**	**	**
Baramula	5.0	-62	25.6	61	255.9	1489
Doda	3.6	-76	42.6	149	320.8	767
Ganderbal	34.0	174	91.2	902	32.6	233
Jammu	3.6	-94	40.2	-15	354.2	801
Kargil	**	**	**	**	**	**
Kathua	1.2	-98	4.2	-93	193.2	692
Kistwar	**	**	**	**	**	**
Kulgam	4.5	-65	80.3	375	460.2	1850
Kupwara	7.7	-24	7.6	6	129.2	1984
Ladakh(Leh)	0.5	-79	10.2	540	10.5	192
Poonch	9.3	-72	14.1	-58	10.8	-80
Pulwama	4.8	-60	50.0	282	242.7	1711
Rajouri	16.2	-63	49.4	7	43.2	92
Ramban	9.6	-37	92.7	442	425.6	1144
Reasi	7.9	-91	69.6	-8	556.0	926
Samba	0.0	-100	20.2	-57	47.4	21
Shopian	7.0	-41	58.0	343	348.0	2953
Srinagar	10.3	-17	43.5	378	148.0	1410
Udhampur	1.1	-99	25.0	-67	605.5	785
East Madhya Pradesh						
Anuppur	11.2	-86	64.8	-12	112.6	81
Balaghat	26.8	-70	71.5	-17	32.9	-52
Chhatarpur	0.0	-100	26.9	-66	69.1	5
Chindwara	66.7	28	90.7	50	43.4	-17
Damoh	6.7	-91	48.0	-29	31.0	-49
Dindori	12.2	-85	28.0	-57	56.8	-6
Jabalpur	0.0	-100	77.6	-3	83.2	22
Katni	4.0	-95	1.6	-82	32.8	-51
Mandla	5.4	-93	93.1	14	58.7	-14
Narsingpur	4.2	-93	95.0	20	66.0	-12
Panna	0.0		14.7	-79	85.2	25
Rewa	0.0	-100	43.6	-36	57.7	-17
Sagar	6.3	-92	54.8	-23	44.7	-34
Satna	3.3	-95	30.6	-45	136.9	128
Seoni	15.4	-75	71.8	13	50.4	-8
Shahdol	1.0	-99	72.0	7	149.0	127
Sidhi	0.0	-100	10.4	-87	57.8	-22
Singrauli	0.0	-100	21.0	-63	63.4	1
Tikamgarh	1.5	-98	63.0	4	21.0	-51
Umaria	13.0	-85	33.3	-56	70.1	-6
West Madhya Pradesh						
Alirajpur	80.0	24	49.4	-11	252.1	421
Asoknagar	0.0	-100	42.5	-18	22.8	-56
Barwani	44.2	-2	99.3	121	203.2	451
Betul	42.9	-17	104.2	77	73.6	24
Bhind	0.0	-100	57.1	12	60.0	20
Bhopal	14.6	-80	97.0	30	33.1	-50
Burhanpur	33.6	-46	116.7	114	165.1	297

Datia	1.0	-98	50.3	-16	80.6	47
Dewas	9.0	-85	103.0	36	79.8	41
Dhar	34.5	-30	87.1	40	179.7	259
Guna	1.2	-99	17.6	-72	30.4	-44
Gwalior	0.0	-100	3.8	-94	23.1	-54
Harda	15.2	-76	179.6	126	171.7	146
Hosangabad	15.5	-81	115.9	17	162.6	78
Indore	39.4	-20	86.5	31	134.5	187
Jhabua	75.1	52	151.4	142	110.4	139
Khandwa	59.3	23	121.3	83	406.7	679
Khargone	34.0	-28	63.7	-1	206.1	311
Mandsaur	6.3	-87	86.1	29	60.2	26
Morena	0.0	-100	36.8	-23	62.0	48
Neemuch	9.5	-83	130.7	147	37.3	-27
Raisen	5.2	-93	128.1	61	62.5	-19
Rajgarh	30.0	-54	117.8	65	64.3	29
Ratlam	21.9	-62	112.5	74	72.9	33
Sehore	27.6	-62	115.4	31	119.4	74
Shajapur	4.8	-91	113.3	69	96.8	89
Sheopur	0.0	-100	54.0	25	48.0	31
Shivpuri	0.0	-100	72.3	43	9.3	-82
Ujjain	26.8	-51	109.2	59	36.8	-22
Vidisha	2.6	-97	69.0	-6	92.5	64
Chhattisgarh						
Bastar	61.1	-17	101.5	35	121.5	83
Bijapur	71.1	-22	227.8	152	301.7	337
Bilaspur	20.5	-66	68.8	5	100.0	62
Dantewara	14.2	-81	302.1	304	76.8	18
Dhamtari	107.2	61	105.0	62	90.6	61
Durg	4.6	-93	89.0	56	97.8	101
Janjgir	16.5	-80	35.5	-47	110.6	38
Jashpurnagar	17.6	-80	96.7	20	52.0	-37
Kanker	67.1	-17	70.2	-10	167.0	179
Korba	42.3	-47	39.5	-37	75.8	4
Koriya	55.1	-23	73.1	7	69.7	9
Kawardha	5.5	-90	63.6	-3	20.1	-55
Mahasumund	38.8	-30	84.5	17	111.4	79
Narayanpur	92.6	12	217.4	191	92.7	31
Raigarh	30.1	-52	116.0	71	94.1	23
Raipur	14.5	-76	75.6	18	87.3	57
Rajandgaon	9.7	-86	61.0	-21	100.0	66
Surguja	5.9	-92	45.1	-39	40.7	-45
East Uttar Pradesh						
Allahabad	2.1	-97	8.4	-82	41.6	-19
Ambedkar Nagar	0.0	-100	1.0	-98	0.0	-100
Azamgarh	0.0	-100	7.8	-85	8.7	-87
Bahraich	13.6	-81	7.3	-88	14.2	-76
Ballia	25.4	-57	14.8	-68	10.6	-75
Balrampur	10.8	-85	2.8	-96	0.0	-100

Banda	6.8	-89	26.9	-51	47.8	-4
Barabanki	9.2	-85	17.0	-69	13.2	-80
Basti	1.3	-98	49.7	-8	13.4	-77
Chandauli	0.0	-100	4.4	-91	5.2	-91
Deoria	40.0	-44	4.5	-91	0.0	-100
Faizabad	0.0	-100	9.7	-81	11.6	-82
Farrukhabad	0.0	-100	9.8	-75	24.1	-49
Fatehpur	0.0	-100	24.3	-41	14.2	-70
Gazipur	9.0	-84	15.3	-68	31.6	-41
Gonda	0.5	-99	6.6	-88	6.7	-90
Gorakhpur	26.7	-68	19.0	-67	9.9	-86
Hardoi	0.0	-100	22.7	-53	27.8	-43
Jaunpur	4.0	-94	7.1	-86	2.5	-96
Kannauj	0.0	-100	13.8	-72	33.6	-37
Kanpur City	0.0	-100	17.4	-53	38.0	3
Kanpur Dehat	0.0	-100	5.1	-90	15.4	-69
Kaushambi	0.0	-100	19.8	-53	25.5	-43
Kheri	0.0	-100	13.7	-75	26.9	-49
Kushi nagar	18.0	-80	2.0	-96	0.0	-100
Lucknow	0.0	-100	13.3	-72	43.1	-3
Maharajganj	51.0	-40	12.5	-78	0.0	-100
Mau	18.0	-79	4.0	-92	3.0	-95
Mirzapur	0.0	-100	4.7	-92	18.3	-74
Pratapgarh	1.3	-98	17.0	-65	30.3	-48
RaiBareilly	0.9	-98	9.9	-78	10.2	-78
Sahuji Maharajnagar	0.0	-100	38.5	-40	74.5	38
Sant Kabirnnagar	30.0	-52	25.0	-52	0.0	-100
Sant Ravidas Nagar	0.0	-100	28.0	-45	29.0	-50
Shrawasti	57.7	-18	14.0	-77	9.9	-83
Sidharthnagar	22.5	-71	12.8	-77	0.0	-100
Sitapur	1.6	-98	19.7	-69	15.4	-75
Sonbhadra	3.5	-94	21.0	-61	22.3	-63
Sultanpur	0.3	-99	23.2	-55	12.2	-76
Unnao	0.0	-100	11.3	-73	33.2	-26
Varanasi	16.7	-75	9.5	-83	26.1	-63
West Uttar Pradesh						
Agra	0.0	-100	20.7	-59	29.2	-7
Aligarh	0.0	-100	2.5	-93	20.1	-44
Auraiya	0.0	-100	9.0	-80	31.5	-26
Badaun	0.0	-100	3.4	-94	14.8	-64
Baghpat	0.0	-100	28.6	23	99.6	279
Bareilly	0.0	-100	6.4	-89	59.2	31
Bijnor	0.0	-100	15.9	-63	99.5	101
Bulandsahar	0.0	-100	9.1	-77	41.6	20
Etah	0.0	-100	6.7	-81	21.3	-33
Etawah	0.0	-100	1.3	-97	29.3	-39
Firozabad	0.0	-100	10.8	-76	38.9	20
GBNagar	0.0	-100	0.0	-100	56.0	113
Ghaziabad	0.0	-100	1.3	-97	26.5	-23

Hamirpur	0.8	-99	38.5	-24	38.0	-21
Jalaun	3.5	-93	36.8	-29	73.8	56
Jhansi	2.9	-95	33.3	-43	49.1	-5
Jotiba Phule Nagar	0.0	-100	1.5	-96	28.8	-28
Kanshiramnagar	0.0	-100	6.0	-88	50.0	40
Lalitpur	0.0	-100	35.0	-54	2.0	-96
Mahamaya Nagar	0.0	-100	0.5	-99	11.0	-59
Mahoba	0.0	-100	10.0	-78	76.6	54
Mainpuri	0.0	-100	5.1	-88	6.6	-82
Mathura	0.0	-100	16.3	-60	34.9	45
Meerut	0.0	-100	21.7	-43	54.4	16
Moradabad	0.0	-100	5.7	-88	50.0	5
Muzzaffarnagar	0.0	-100	31.1	-2	66.7	57
Pilibhit	0.0	-100	8.4	-88	29.7	-44
Rampur	0.0	-100	12.6	-76	30.9	-15
Saharanpur	0.0	-100	20.7	-47	55.0	36
Shahjahanpur	0.0	-100	12.5	-74	12.9	-76
Uttarakhand						
Almora	0.0	-100	28.2	-29	13.2	-68
Bageshwar	0.0	-100	32.0	-19	5.0	-88
Chamoli	8.8	-85	46.2	-1	16.2	-66
Champawat	8.0	-91	17.0	-79	35.5	-38
Dehradun	3.2	-98	46.9	-48	41.0	-54
Garhwal Pauri	0.0	-100	57.7	-18	51.3	-17
Garhwal Tehri	0.0	-100	52.0	-17	41.0	-27
Haridwar	0.0	-100	32.0	-38	110.1	109
Nainital	0.0	-100	70.4	-7	40.1	-41
Pithorgarh	14.1	-87	38.6	-61	26.6	-71
Rudraprayag	0.1	-99	38.0	-59	24.2	-70
Udham Sing Nagar	0.0	-100	15.8	-73	5.2	-91
Uttarkashi	0.0	-100	56.2	-20	29.6	-49
Bihar						
Araria	77.5	-17	36.8	-39	44.4	-43
Arwal	21.4	-66	14.5	-63	1.3	-97
Aurangabad	0.0	-100	5.8	-90	21.9	-60
Banka	17.8	-65	23.4	-48	2.7	-94
Begusarai	88.2	31	15.2	-73	1.8	-97
Bhabua	43.0	-45	12.9	-76	16.1	-77
Bhagalpur	29.6	-53	41.6	-12	21.5	-60
Bhojpur	64.1	-7	19.5	-63	4.5	-92
Buxar	1.2	-98	0.4	-99	0.6	-99
Darbhanga	24.9	-66	3.2	-93	24.5	-50
East Champaran	85.8	2	0.9	-98	1.8	-97
Gaya	36.2	-42	6.0	-87	5.5	-89
Gopalganj	39.4	-53	3.4	-93	1.1	-98
Jahanabad	58.9	16	10.9	-75	1.1	-98
Jamui	7.3	-88	16.7	-67	2.5	-95
Kathihar	98.5	40	20.5	-54	0.8	-99
Khagadia	25.3	-64	24.4	-42	4.2	-93

Kishanganj	215.8	99	20.7	-78	46.6	-52
Lakhisarai	128.0	86	70.2	33	0.9	-99
Madhepura	92.4	8	4.3	-93	0.9	-99
Madhubani	85.8	7	1.7	-97	35.0	-40
Monghyar	10.4	-85	68.2	30	1.6	-97
Muzaffarpur	78.4	-4	4.7	-90	5.8	-88
Nalanda	17.9	-71	19.1	-60	0.0	-100
Nawada	5.0	-92	11.6	-73	5.0	-91
Patna	27.1	-65	25.6	-32	8.6	-86
Purnea	72.2	-15	5.1	-92	12.9	-84
Rohtas	1.0	-98	5.1	-91	29.7	-41
Saharsha	5.0	-94	0.0	-100	0.0	-100
Samstipur	63.8	8	0.9	-98	8.8	-84
Saran	12.0	-85	19.6	-55	9.8	-83
Sheikpura	18.1	-72	25.2	-42	68.1	36
Sheohar	3.6	-96	14.0	-70	0.0	-100
Sitamarhi	75.1	-17	4.4	-91	0.0	-100
Siwan	81.7	9	33.4	-24	0.6	-99
Supaul	158.1	89	8.8	-81	45.1	-20
Vaishali	38.4	-51	9.7	-75	4.2	-94
West Champaran	128.6	16	2.1	-97	2.2	-95
Jharkhand						
Bokaro	30.6	-50	81.2	19	38.8	-50
Chatra	14.3	-76	16.5	-70	22.5	-66
Deoghar	38.6	-34	41.7	-11	9.5	-82
Dhanbad	21.8	-68	67.2	8	26.3	-61
Dumka	54.9	-11	36.7	-36	1.6	-97
East Singbhum	50.9	-12	35.8	-46	50.6	-20
Garhwa	4.6	-91	1.0	-98	3.9	-94
Giridih	27.9	-54	56.9	6	17.9	-72
Godda	24.6	-64	47.7	19	1.9	-96
Gumla	61.1	-6	82.6	25	85.7	16
Hazaribagh	17.1	-73	49.9	-8	18.7	-70
Jamtara	22.7	-72	37.6	-38	12.5	-83
Khunti	52.5	-28	65.0	-11	38.0	-56
Koderna	17.1	-70	33.7	-40	15.5	-73
Latehar	18.1	-70	26.3	-56	50.8	-33
Lohardagga	25.2	-60	58.9	14	51.2	-15
Pakur	69.8	-11	61.7	-14	0.0	-100
Palamau	31.6	-47	11.9	-81	19.9	-72
Ramgarh	55.6	-1	47.0	-21	46.8	-36
Ranchi	30.5	-51	43.7	-38	44.4	-37
Sahebganj	4.2	-94	67.2	8	4.2	-94
Saraikelela	30.7	-51	17.1	-77	17.7	-74
Simdega	21.5	-72	139.7	66	95.9	12
West Singbhum	46.8	-29	28.6	-60	50.0	-22
East Rajasthan						
Ajmer	1.8	-95	62.7	159	47.6	69
Alwar	0.2	-99	38.1	-7	50.4	33

Banswara	13.7	-77	138.9	104	132.3	138
Baran	1.4	-98	46.1	-13	67.5	52
Bharatpur	0.0	-100	27.7	-34	41.6	9
Bhilwara	11.0	-78	53.0	37	49.2	39
Bundi	0.0	-100	68.2	63	20.0	-53
Chittorgarh	14.0	-78	84.2	46	63.8	43
Dausa	0.0	-100	46.8	28	43.8	30
Dholpur	0.0	-100	37.8	-4	65.8	72
Dungarpur	15.8	-67	144.5	190	97.3	143
Jaipur	0.0	-100	44.2	37	38.3	39
Jhalawar	7.1	-90	56.3	-14	43.0	-20
Jhunjhunu	1.5	-95	27.5	18	34.9	74
Karauli	0.0	-100	51.5	33	32.8	1
Kota	0.0	-100	30.5	-46	51.5	1
Pratapgarh	17.0	-70	143.0	106	79.2	27
Rajsamand	26.7	-32	76.1	114	39.3	20
Sawai Madhopur	0.0	-100	50.7	42	20.8	-31
Sikar	3.3	-89	47.0	113	27.7	50
Sirohi	21.7	-62	56.8	-21	140.1	115
Tonk	0.0	-100	44.2	24	35.7	17
Udaipur	46.7	5	56.5	17	117.8	215
West Rajasthan						
Barmer	1.4	-92	11.7	-21	80.5	335
Bikaner	2.2	-86	33.7	122	42.0	173
Churu	5.1	-78	14.0	-20	37.3	135
Hanumangarh	0.1	-99	23.0	100	97.9	737
Jaisalmer	0.0	-100	14.8	45	1.0	-91
Jalore	5.4	-80	22.1	-14	124.5	282
Jodhpur	0.0	-100	29.9	102	95.3	350
Nagaur	0.0	-100	30.1	43	48.7	154
Pali	21.6	-33	10.6	-66	80.6	135
Sri Ganganagar	1.2	-91	23.9	107	129.1	871
Gujarat Region						
Ahmedabad	15.4	-49	80.0	99	138.1	233
Anand	8.3	-82	75.5	33	250.5	320
Banaskantha	10.3	-71	86.2	130	177.7	345
Baroda	19.2	-65	39.2	-42	206.4	252
Broach	28.9	-21	63.6	22	83.7	69
DNH	160.7	40	146.0	-20	255.8	133
Dahod	30.4	-44	86.1	20	123.5	105
Daman	117.2	2	193.4	6	134.0	22
Dangs	52.0	-54	114.0	-20	127.0	17
Gandhinagar	19.2	-45	97.7	79	142.9	145
Kheda	21.1	-55	73.6	19	239.5	265
Mehsana	22.6	-37	83.0	64	239.9	415
Narmada	26.4	-52	38.4	-54	107.6	88
Navsari	43.9	-49	71.9	-33	170.1	81
Panchmahal	38.4	-36	68.2	-4	245.5	290
Patan	27.6	-13	93.9	156	169.7	437

Sabarkantha	34.8	-27	154.2	146	225.6	336
Surat	45.6	-17	92.0	16	134.0	99
Tapi	57.6	-25	40.4	-59	131.2	63
Valsad	82.4	-13	123.3	5	150.9	50
S K & Diu region						
Amreli	28.6	27	120.2	292	55.2	148
Bhavnagar	18.9	-30	100.0	172	42.7	28
Diu	0.6	-95	140.4	582	160.8	584
Jamnagar	1.5	-89	79.5	171	72.4	309
Junagarh	6.1	-68	98.7	146	76.6	205
Kutch	0.0	-99	69.2	207	46.7	90
Porbandar	6.3	-53	173.2	391	64.7	235
Rajkot	24.3	16	104.1	231	42.8	96
Surendranagar	1.9	-92	81.5	151	103.9	191
Maharashtra & Goa						
Konkan & Goa						
Mumbai City	64.7	-41	274.9	147	71.3	-2
Mumbai Suburban	83.7	-23	233.4	100	58.4	-20
North Goa	163.0	30	458.8	401	115.3	44
Raigad	120.2	-28	297.0	92	229.6	110
Ratnagiri	57.9	-63	319.3	129	256.7	157
Sindhudurg	103.5	-27	317.2	185	92.6	28
South Goa	202.8	101	441.6	379	105.4	39
Thane	106.4	-14	203.7	60	199.0	107
Madhya Maharashtra						
Ahmednagar	106.2	310	68.3	142	21.7	-14
Dhule	78.2	209	68.4	153	97.7	354
Jalgaon	61.4	60	86.8	103	128.0	306
Kolhapur	78.5	-4	130.9	101	94.3	116
Nandurbar	36.2	-20	43.8	-14	98.1	130
Nasik	74.6	53	86.2	59	121.3	150
Pune	96.2	144	81.2	101	49.6	56
Sangli	69.6	215	91.6	382	16.8	-20
Satara	108.5	262	66.1	122	32.6	33
Solapur	87.6	214	79.6	182	7.2	-74
Marathwada						
Aurangabad	81.1	114	66.2	46	51.0	79
Beed	77.7	129	90.6	112	13.5	-60
Hingoli	39.1	-27	158.4	135	73.1	71
Jalna	71.9	85	101.9	114	49.5	71
Latur	85.3	57	114.2	110	13.9	-69
Nanded	69.0	17	104.5	85	50.6	22
Usmanabad	96.5	116	81.7	107	13.2	-64
Parbhani	62.7	5	108.7	90	32.8	-29
Vidarbha						
Akola	53.5	28	134.9	198	92.1	201
Amraoti	55.5	30	113.8	132	123.1	192
Bhandara	43.2	-44	40.2	-48	112.3	74
Buldhana	71.0	71	123.1	200	87.4	195

Chandrapur	16.9	-79	143.6	82	184.4	196
Gadchiroli	34.6	-62	202.3	141	273.5	326
Gondia	37.8	-58	45.7	-47	64.4	0
Nagpur	37.6	-28	54.0	-24	79.6	46
Wardha	36.6	-32	91.4	46	111.2	114
Washim	68.0	36	130.6	168	70.1	70
Yeotmal	73.1	29	175.6	207	101.8	129
Odisha						
Angul	49.8	-23	93.5	21	92.6	27
Balasore	11.0	-84	159.4	143	54.1	-23
Bargarh	27.7	-61	71.2	8	135.8	78
Bhadrak	32.8	-53	122.1	81	53.7	-1
Bolangir	40.7	-39	46.3	-48	112.3	59
Boudh	57.6	-23	100.7	29	168.2	182
Cuttack	59.7	-20	145.1	132	101.0	21
Deogarh	59.7	-24	157.5	88	61.0	-29
Dhenkanal	42.6	-42	93.3	27	89.9	26
Gajapati	71.4	14	86.4	46	201.1	315
Ganjam	47.1	-15	133.3	120	157.1	209
Jagatsingpur	27.1	-60	215.2	262	117.2	71
Jajpur	45.0	-42	129.3	83	78.0	28
Jharsuguda	17.2	-76	131.6	67	66.1	-17
Kalahandi	15.3	-80	70.0	12	140.0	103
Kandhamal	58.7	-22	101.9	31	174.2	192
Kendrapara	26.9	-61	199.7	195	91.5	31
Keonjhar	36.4	-34	60.6	-14	61.5	16
Khurda	63.5	-8	134.7	120	95.3	27
Koraput	87.4	8	106.8	43	92.5	23
Malkangiri	40.8	-54	165.0	106	125.2	50
Mayurbhanj	34.5	-48	96.3	14	68.1	0
Nawapara	34.4	-54	99.3	72	106.8	101
Nawarangpur	106.3	25	145.2	67	114.2	56
Nayagarh	43.9	-29	85.8	18	73.1	9
Puri	14.1	-77	220.0	212	144.4	103
Rayagada	47.4	-28	86.6	59	169.1	165
Sambalpur	35.9	-54	102.7	23	140.6	64
Sonepur	46.5	-35	74.6	-5	182.2	77
Sundargarh	12.3	-81	110.8	47	66.5	-5
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	63.5	4	5.7	-91	95.1	21
North & Middle Andaman	90.0	-16	136.8	27	187.1	61
South Andaman	63.0	-28	68.4	-34	169.4	76
GWB						
Bankura	61.7	1	63.1	-5	27.0	-56
Birbhum	46.4	-24	50.3	-9	10.1	-85
Burdwan	66.5	12	71.6	31	26.1	-58
East Midnapore	7.1	-90	157.3	70	28.1	-67

Hooghly	39.5	-37	61.2	-3	37.7	-40
Howrah	25.1	-51	58.4	-21	16.0	-75
Kolkata	14.6	-81	56.7	-21	43.2	-44
Murshidabad	20.0	-64	60.9	14	24.0	-61
Nadia	38.7	-15	67.9	40	41.0	-25
24 Pargana (N)	29.1	-55	62.0	16	21.2	-69
Purulia	39.2	-36	48.9	-36	19.3	-72
24 Pargana (S)	24.1	-76	75.1	-21	44.0	-47
West Midnapore	55.7	-19	58.9	-21	44.9	-31
SHWB & Sikkim						
Cooch Behar	150.3	-6	41.7	-65	162.3	38
Darjeeling	274.0	66	78.1	30	115.9	-17
East Sikkim	186.5	73	91.5	-5	75.3	-20
Jalpaiguri	377.1	129	25.5	-81	145.8	22
Malda	42.9	-44	26.6	-47	4.3	-94
North Dinajpur	78.3	4	18.1	-78	1.3	-99
North Sikkim	331.6	216	108.3	4	107.2	2
South Dinajpur	122.8	89	15.2	-70	9.5	-86
South Sikkim	267.4	148	73.8	-24	64.2	-32
West Sikkim	96.0	-9	36.0	-66	64.0	-39
Karnataka						
Coastal Karnataka						
Dakshin Kannada	138.7	-13	198.1	93	156.6	88
Udupi	182.5	4	303.6	154	154.4	37
Uttar Kannada	164.3	41	264.1	221	120.4	76
N I Karnataka						
Bagalkote	75.9	339	39.2	158	19.6	4
Belgaum	71.8	224	55.0	201	31.1	113
Bidar	86.1	85	89.2	97	11.4	-70
Bijapur	57.2	162	91.0	251	12.7	-46
Dharwad	57.6	211	53.0	227	17.2	21
Gadag	97.0	427	32.6	94	10.2	-47
Gulbarga	96.7	155	121.7	192	15.8	-56
Haveri	80.2	295	54.7	270	19.6	104
Koppal	130.3	535	36.5	57	20.2	-5
Raichur	129.7	381	101.2	255	28.2	20
Yadgir	59.2	57	95.6	167	13.0	-58
S I Karnataka						
Bangalore Rural	96.2	235	2.6	-91	10.1	-65
Bangalore Urban	55.6	92	2.9	-90	7.2	-77
Bellary	95.9	361	33.7	53	5.9	-69
Chamarajnagar	67.5	304	9.4	-37	2.6	-81
Chichballapur	50.0	94	6.0	-76	19.5	-19
Chickmagalur	79.0	11	87.8	94	51.0	57
Chitradurga	93.4	581	22.2	61	8.3	-6
Davangere	94.1	411	44.1	204	14.0	25
Hassan	23.3	-3	23.6	22	16.2	26
Kodagu	36.9	-62	209.9	207	111.6	125
Kolar	10.0	-53	2.7	-87	4.4	-82

Mandya	29.9	95	5.3	-65	0.8	-94
Mysore	42.1	217	26.6	80	8.5	-27
Ramnagara	45.4	65	1.7	-95	7.5	-67
Shimoga	108.6	52	186.3	327	105.5	261
Tumkur	69.1	302	5.3	-73	5.5	-71
Kerala						
Alappuzha	192.6	128	166.8	210	51.9	-11
Kannur	79.4	-25	315.7	383	118.6	102
Ernakulam	143.7	79	262.5	381	63.0	0
Idukki	139.5	35	300.8	298	68.5	14
Kasaragod	83.8	-29	319.2	277	132.8	88
Kollam	233.5	269	194.3	325	38.1	-9
Kottayam	192.8	133	238.9	294	50.4	-9
Kozhikode	202.1	113	317.1	432	112.7	91
Malappuram	110.8	46	174.1	232	82.0	79
Palakkad	70.4	10	199.4	357	55.0	53
Pathanamthitta	265.1	226	231.5	316	32.8	-39
Thiruvananthapuram	181.6	464	209.0	833	26.8	-13
Thrissur	157.4	84	197.0	222	61.1	13
Wayanad	79.8	-29	208.3	162	84.8	59
Tamil Nadu						
Ariyalur	12.9	-66	12.9	-68	1.5	-95
Chennai	92.8	157	92.8	149	63.2	172
Coimbatore	45.1	299	43.4	277	19.8	168
Cuddalore	19.2	-48	17.7	-53	11.3	-54
Dharmapuri	8.8	-71	8.8	-72	1.9	-92
Dindigul	29.1	46	28.6	34	2.0	-91
Erode	37.5	126	37.5	100	5.5	-61
Kanchipuram	19.1	-54	19.1	-51	46.4	39
Kanyakumari	133.2	759	141.8	839	11.2	-45
Karikal	5.5	-83	5.5	-81	58.4	230
Karur	11.4	-33	11.2	-40	0.0	-100
Krishnagiri	10.6	-61	5.4	-80	1.0	-96
Madurai	22.6	-5	21.5	-16	0.9	-97
Nagapattinam	8.4	-69	8.3	-70	18.3	-17
Namakkal	13.2	-49	10.8	-60	4.5	-77
Nilgiris	53.7	52	49.3	40	49.0	99
Perambalur	10.3	-56	10.3	-60	1.0	-95
Puducherry	4.9	-86	5.0	-85	2.0	-94
Pudukottai	14.1	-54	14.1	-59	21.0	1
Ramanathapuram	8.0	-27	7.5	-33	4.2	-52
Salem	30.0	-12	29.5	-14	10.4	-58
Sivaganga	4.2	-83	4.2	-84	11.6	-38
Thanjavur	18.4	-45	18.1	-46	6.8	-68
Theni	41.1	504	37.4	398	6.1	-18
Tirunelveli	29.9	443	28.5	400	1.4	-67
Tirupur	30.1	234	29.1	203	0.2	-97
Tiruvallur	38.2	14	38.3	9	41.7	67
Tiruvannamalai	6.9	-81	7.1	-81	2.9	-92

Tiruvarur	19.8	-30	17.2	-39	4.4	-80
Toothukudi	4.5	-15	3.6	-32	0.0	-100
Trichy	9.6	-59	9.5	-62	2.8	-88
Vellore	14.1	-58	11.5	-64	17.6	-38
Villupuram	15.1	-60	15.1	-60	0.9	-97
Virudhunagar	17.0	37	14.8	1	0.7	-94
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	16.2	-62	58.8	53	46.2	18
Guntur	45.1	14	32.9	0	1.6	-95
Krishna	21.9	-53	24.6	-37	8.7	-76
Nellore	45.9	95	15.8	-20	17.4	-9
Prakasam	31.7	9	15.8	-39	2.1	-90
Sirkakulam	47.1	-2	95.1	104	110.8	128
Visakhapatnam	41.5	-8	130.7	228	38.9	-6
Vizianagram	57.2	5	127.8	210	46.7	-1
West Godavari	41.6	-16	59.1	30	48.5	15
Rayalaseema						
Anantapur	41.8	114	9.2	-56	5.1	-70
Chittoor	26.9	5	4.4	-83	14.5	-45
Cuddapah	57.2	86	13.1	-32	14.8	-37
Kurnool	97.4	223	40.6	42	15.2	-35
Telangana						
Adilabad	63.9	10	129.8	104	164.9	256
Hyderabad	28.0	-24	104.1	188	40.9	9
Karimnagar	46.8	9	131.8	172	82.7	100
Khammam	30.7	-41	100.7	97	72.0	65
Mehabubnagar	58.1	69	83.0	136	8.1	-70
Medak	55.5	41	84.4	96	16.4	-54
Nalgonda	35.3	5	56.3	65	5.3	-85
Nizamabad	47.6	-25	105.0	88	36.8	-21
Rangareddy	68.3	80	118.0	222	19.6	-50
Warangal	45.9	3	132.8	183	60.3	52

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.