

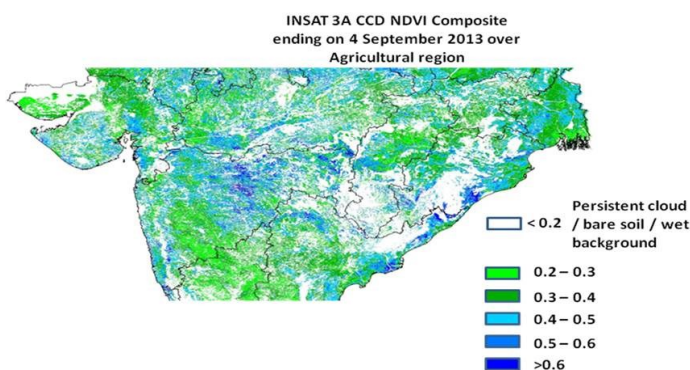
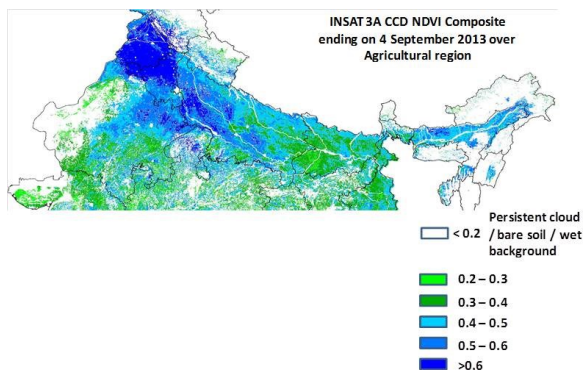
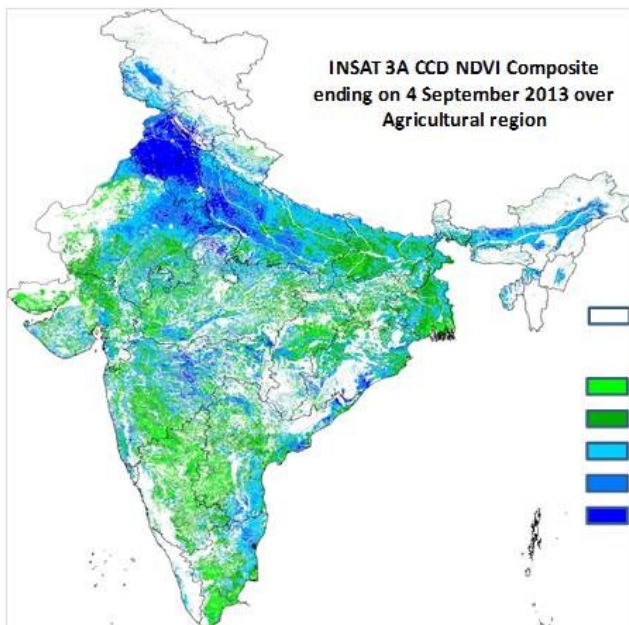
National Agromet Advisory Service Bulletin
 Friday 6th September, 2013
 (For the period 6th to 9th September 2013)

Issued by

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

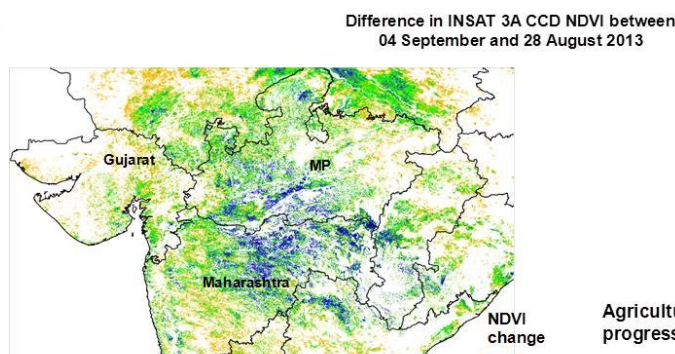
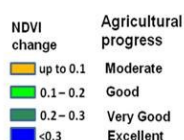
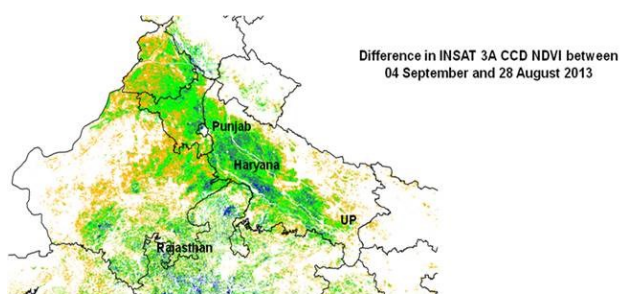
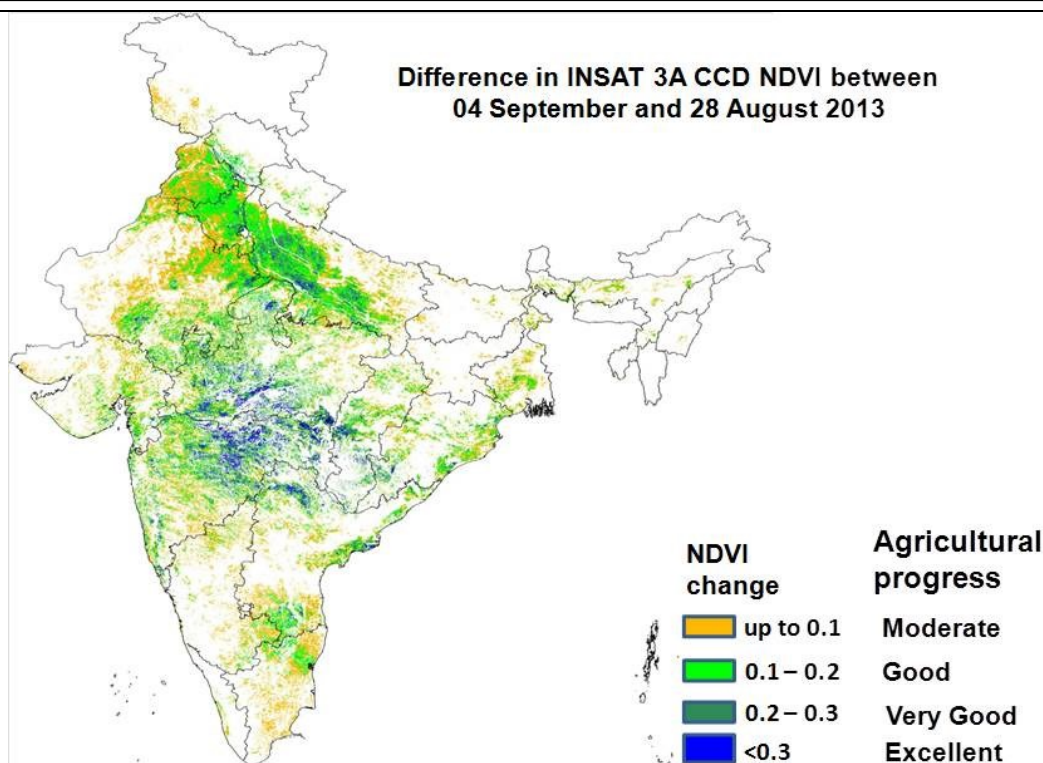


Crop condition based on Rainfall and INSAT 3A CCD NDVI **



Source: SAC, Ahmedabad

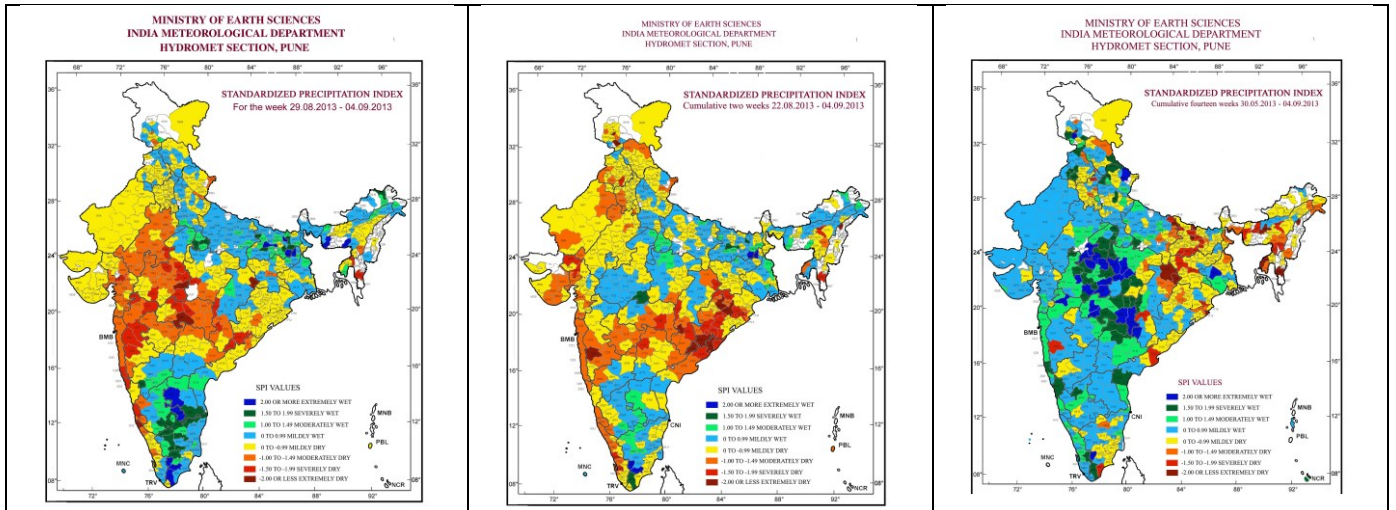
Overall Agricultural Situation: Agricultural growth is very good (NDVI greater than 0.4) over Punjab, Haryana, pockets of eastern Rajasthan and central Rajasthan, south-west Uttar Pradesh and adjoining areas of Madhya Pradesh, eastern and central parts of Maharashtra, pockets of coastal Odisha, pockets of Saurashtra and central Gujarat, coastal Andhra Pradesh and few pockets in coastal Tamil Nadu as NDVI vigour showed more than 0.5 up to 4th September. Maximum NDVI value was observed over whole Punjab, northern Haryana (except few districts of south Haryana), pockets of eastern Rajasthan and western Uttar Pradesh. The growth is good over rest parts of Haryana, Uttar Pradesh, Bihar, Madhya Pradesh, eastern Rajasthan, Central and Southern Gujarat, Maharashtra, West Bengal, Odisha, interior Andhra Pradesh and Tamil Nadu as NDVI vigour showed the range from 0.3 to 0.4. Same time decay of NDVI also observed in few states like eastern Uttar Pradesh, north Gujarat and adjoining Rajasthan, Bihar, central Andhra Pradesh, Karnataka may be due to maturity of crops. Rest of the country showed moderate growth (NDVI: 0.2 to 0.3).



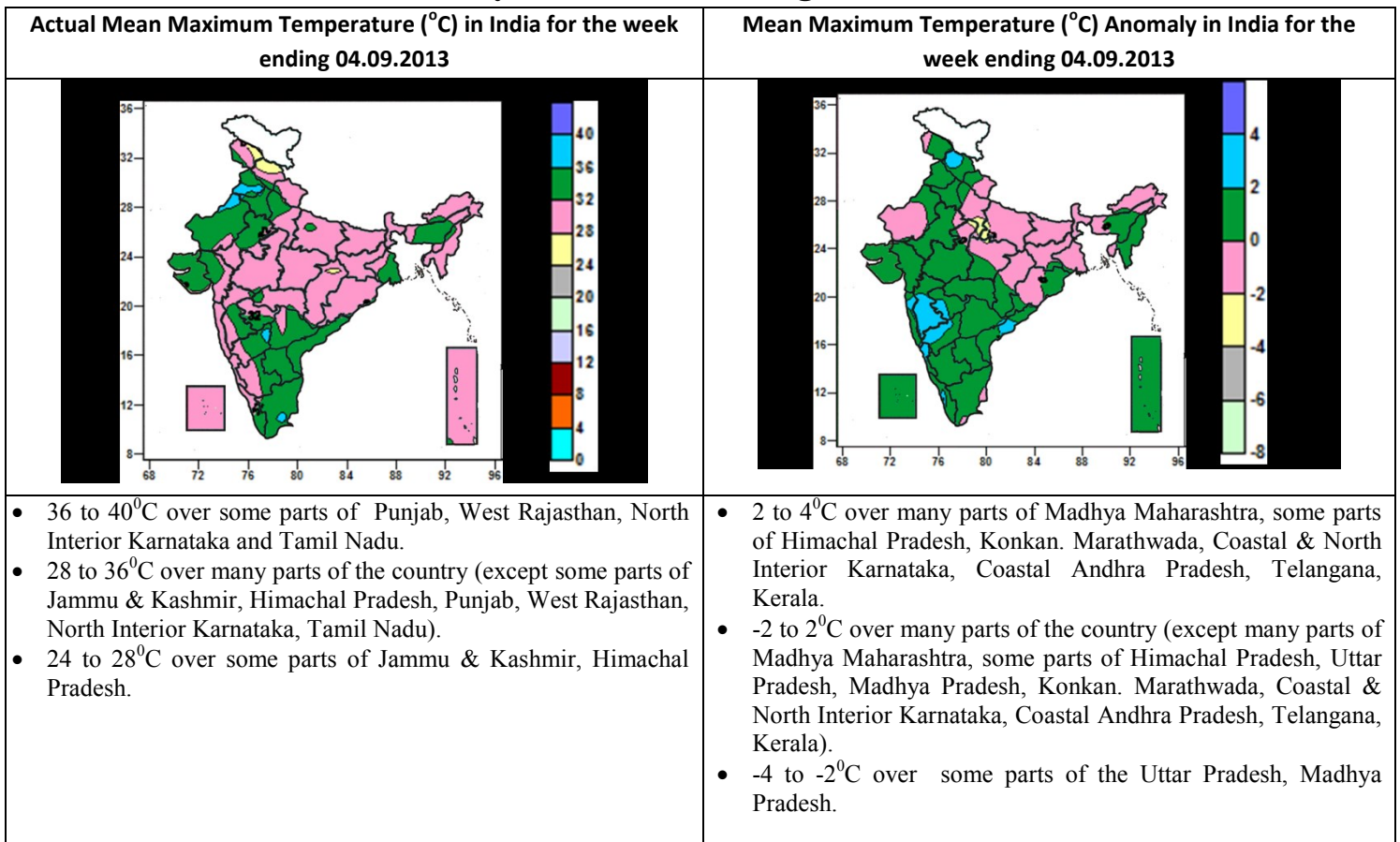
Progress of crop performance during last week: Agricultural progress between 4th September and 28th August 2013 was found to be excellent and very good in eastern Haryana and adjoining Uttar Pradesh, few pockets of eastern Rajasthan, few pockets of north Madhya Pradesh adjoining to Uttar Pradesh, central Madhya Pradesh, eastern and central Maharashtra, few pockets of western Chhattisgarh. Rest of India shows moderate progress. This information is in consistence with the good amount of rainfall received in the above mentioned areas (Annexure II).

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

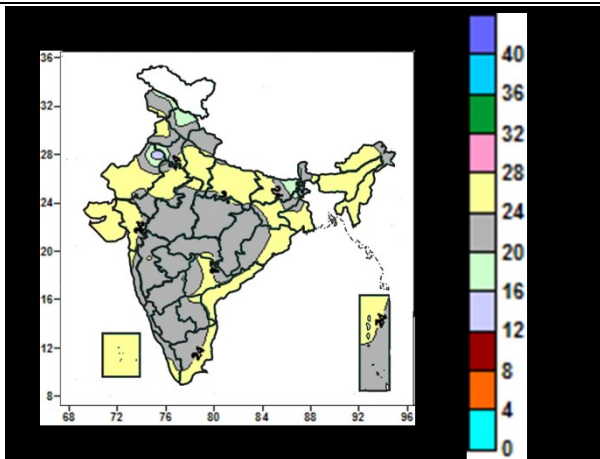
Standard Precipitation Index weekly, fortnightly and seasonal



Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 04.09.2013

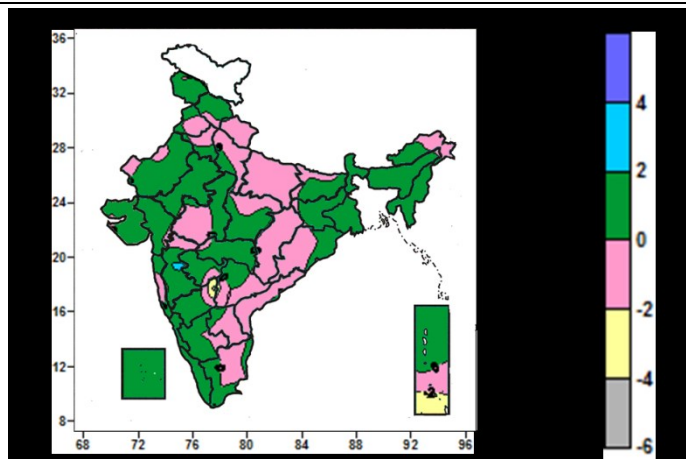


Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 04.09.2013



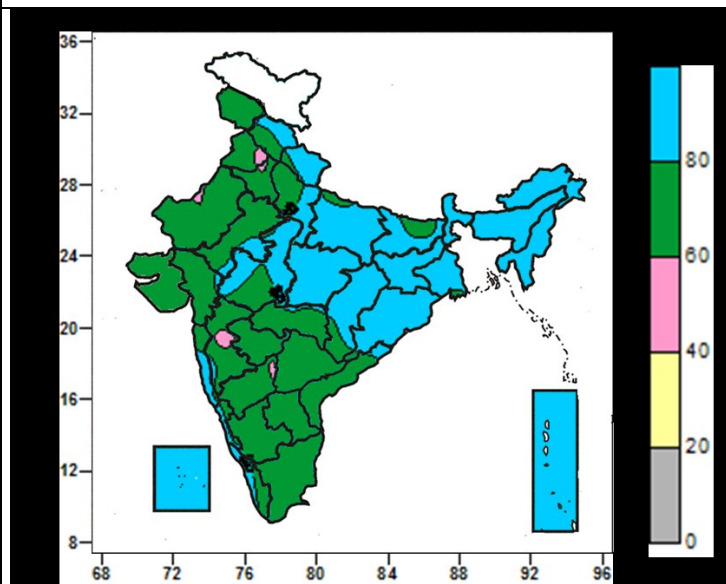
- 20 to 28 $^{\circ}\text{C}$ over entire parts of country (except many parts Himachal Pradesh, some parts of Jammu & Kashmir, West Rajasthan, Haryana, Bihar, and Jharkhand).
- 12 to 20 $^{\circ}\text{C}$ over many parts Himachal Pradesh, some parts of Jammu & Kashmir, West Rajasthan, Haryana, Bihar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

Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 04.09.2013



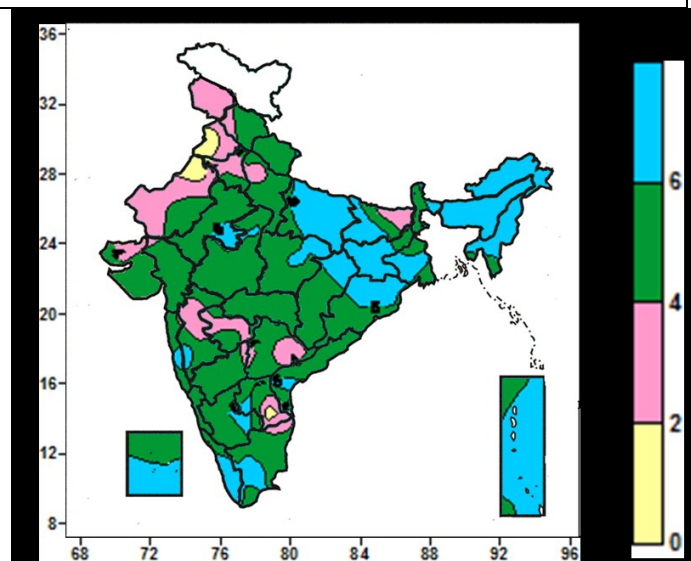
- 2 to 4 $^{\circ}\text{C}$ over some parts of Madhya Maharashtra.
- -2 to 2 $^{\circ}\text{C}$ over all the parts of country (except some parts of Madhya Maharashtra, North Interior Karnataka, Telangana, Andaman & Nicobar Islands).
- -4 to -2 $^{\circ}\text{C}$ over some parts of North Interior Karnataka, Telangana, Andaman & Nicobar Islands.

Relative Humidity (%) over India for the week ending 04.09.2013



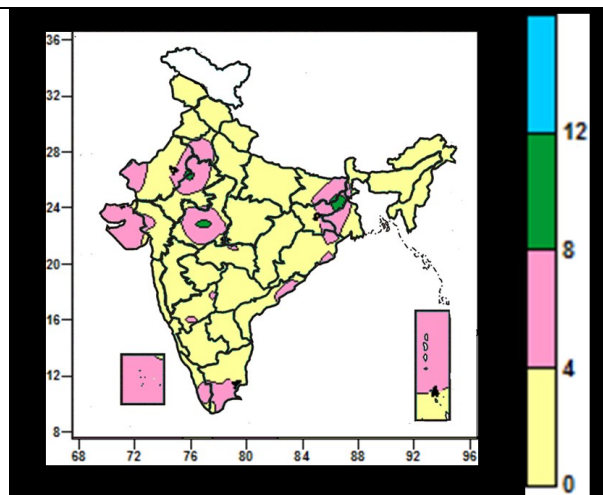
- 60 to 100% over entire country except some parts of Punjab, Haryana, West Rajasthan, Madhya Maharashtra, North Interior Karnataka.
- 40 to 60% over some parts of Punjab, Haryana, West Rajasthan, Madhya Maharashtra, North Interior Karnataka.

Cloud amount (okta) over India for the week ending 04.09.2013



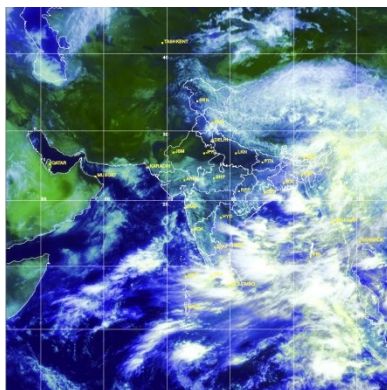
- 4 to 8 okta over many parts of the country (except many parts of Jammu & Kashmir, Punjab, Haryana, West Rajasthan, some parts of Himachal Pradesh, West Uttar Pradesh, Bihar, Gujarat, Kutch, Madhya Maharashtra, Marathwada, Telangana, Rayalaseema, North Interior Karnataka, Tamil Nadu).
- 0 to 4 okta over many parts of Jammu & Kashmir, Punjab, Haryana, West Rajasthan, some parts of Himachal Pradesh, West Uttar Pradesh, Bihar, Gujarat, Kutch, Madhya Maharashtra, Marathwada, Telangana, Rayalaseema, North Interior Karnataka, Tamil Nadu.

Wind speed (knots) over India for the week ending 04.09.2013



- 8 to 12 knots over some parts of Rajasthan, Bihar, Jharkhand, West Madhya Pradesh.
- 0 to 8 knots over entire country (except some parts of Rajasthan, Bihar, Jharkhand, West Madhya Pradesh).

Southwest monsoon was active over Assam & Meghalaya, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura.



Satellite image dated 06.09.2013, 0600 UTC

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 9th September, 2013)

- Rain/thundershowers would occur at many places over northeastern states, Sub-Himalayan West Bengal & Sikkim, Coastal Karnataka, Kerala and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at a few places over Gangetic West Bengal, South interior Karnataka, Lakshadweep and Tamilnadu.
- Rain/thundershowers would occur at isolated places over Odisha, Chhattisgarh and Andhra Pradesh during next 24 hours and increase thereafter.
- Rain/thundershowers would occur at isolated places over western Himalayan region, Bihar, Jharkhand, Madhya Pradesh, Gujarat region, Konkan & Goa and Madhya Maharashtra.
- Rain/thundershowers would occur at isolated places over North Interior Karnataka and Marathwada during next 48 hours and increase thereafter.
- Weather would be mainly dry over rest parts of the country.

Weather Warning during next 3 days

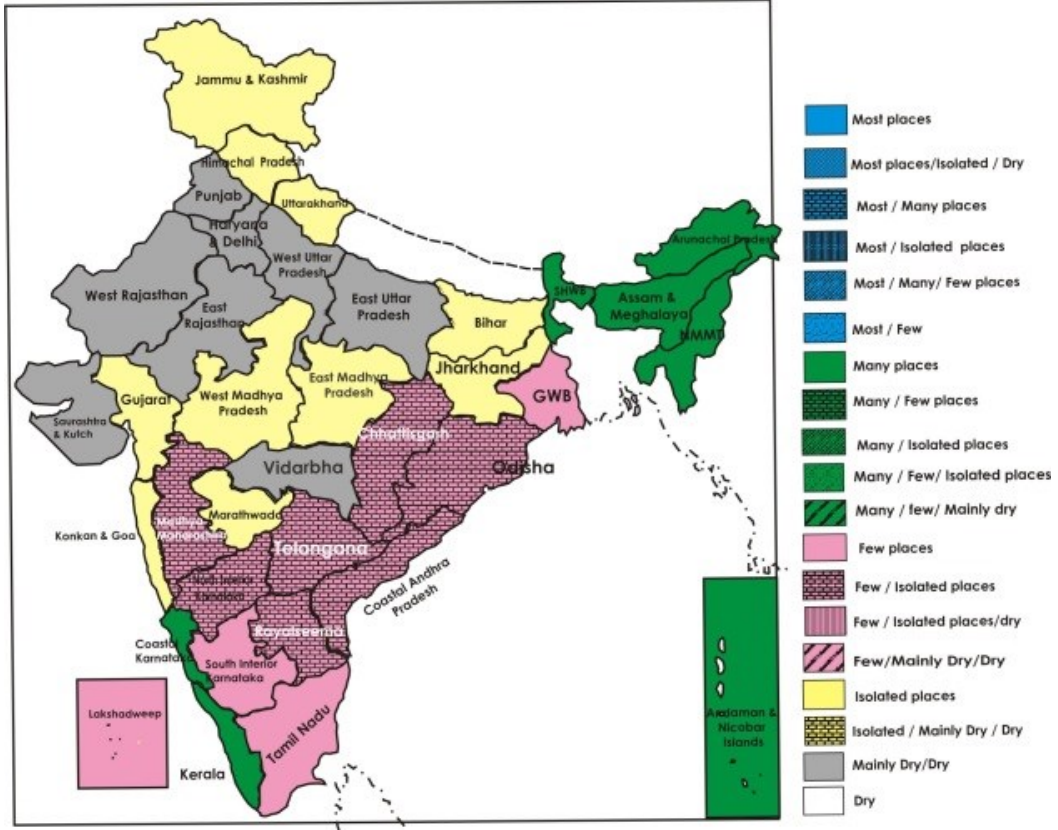
- 06 September:** Heavy rainfall would occur at isolated places over Arunachal Pradesh and Assam & Meghalaya.
- 07 September:** No weather warning.
- 08 September:** No weather warning.

Weather Outlook for subsequent 4 days from 9th to 13th September, 2013

- Rain/thundershower would occur at many places over northeastern states, Lakshadweep and Andaman & Nicobar Islands.
- Rain/thundershower would occur at many places over Andhra Pradesh, Karnataka and Maharashtra.
- Rain/thundershower would occur at a few places over Central India and extreme South Peninsular India and isolated over Western Himalayan region and Eastern States.
- Weather would be mainly dry over plains of Northwest India.

Weather Forecast Map

(Valid upto 0830 hours of 9th September, 2013)



Salient Advisories

Northeast Region

- Postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops in the States of the region. Drain out excess water from the crop fields in Arunachal Pradesh, Assam & Meghalaya.
- In Hill Zone of Assam, continue sowing of green gram and black gram, transplanting of early cauliflower and undertake nursery raising of winter vegetables after current spells of heavy rain.
- In Lower Brahmaputra Valley Zone of Assam, continue sowing of sesame, black gram, and green gram and in Upper Brahmaputra Valley Zone of Assam, undertake sowing of improved varieties of mid cauliflower and pulses after current spells of heavy rain.
- In Barak Valley Zone of Assam, continue transplanting of early varieties of cabbage, cauliflower, knol khol and brinjal and undertake sowing of radish after current spells of heavy rain.
- In Sub Tropical Hill Zone of Arunachal Pradesh, prepare nursery bed of cauliflower, cabbage and undertake sowing of radish after current spells of heavy rain.
- In the upland areas of Sub Tropical Plain Zone of Manipur, continue sowing of black gram and rice bean and undertake nursery raising for early *rabi* vegetables (cabbage, cauliflower etc.).
- In Temperate Sub Alpine Zone of Meghalaya, continue sowing of green gram and black gram, after current spells of heavy rain, where *sali* rice could not be sown due to long dry spell.
- Continue nursery sowing for early cauliflower, radish and brinjal in Mid Tropical Plain Zone of Tripura.
- In Mild Tropical Hill Zone of Mizoram, continue sowing of soybean.

South Region

- In Kerala, continue planting of Nendran banana in the Problem Area Zone and complete transplanting of late sown rice in Wayanad district of High Altitude Zone.
- In Anantapur district of Rayalaseema, complete sowing of contingency crops like horse gram, green gram, cow pea, cluster bean and fodder jowar. Continue direct sowing of rice in puddled soil or directly with drum seeder and intercropping fox tail millet(korra) + red gram (1:5) with irrigation in Kurnool district.
- In North Coastal Andhra Pradesh, continue transplanting of rice. Farmers who are undertaking transplanting of rice with aged nursery seedlings, apply 25 % extra nitrogen, follow closer spacing (44 hill/m²) and 3-4 seedlings/hill.
- Complete transplanting of *kharif* rice and sowing of short duration varieties of ragi in Southern Transition Zone of Karnataka.
- In North East Dry Zone of Karnataka, continue sowing of sunflower, transplanting of chilli, harvesting of green gram and intercultural operations in *kharif* crops like red gram, cotton etc. wherever crops are at 25-60 days.
- In North Interior Karnataka, continue sowing of sunflower and transplanting of chilli and harvesting of green gram.
- Continue nursery sowing of *samba* rice, dry sowing of long duration varieties of rice, prepare late *samba* nursery, continue sowing of rainfed cotton and maize and provide light irrigation in the evening hours to *samba* nursery (within 2 days after sowing) to avoid the displacement of paddy seeds in the Cauvery Delta Zone of Tamil Nadu. Continue transplanting of *samba* rice and sowing of irrigated maize and winter irrigated cotton in the Western Zone of Tamil Nadu.

West Region

- In Konkan, undertake intercultural operations in rice, finger millet, vegetable fields and mango, cashew and sapota orchards. Maintain water level upto 8-10 cm in rice fields.
- In Madhya Maharashtra as Ahmednagar, Sangli, Satara, Solapur and Pune districts received deficient or scanty rain during last three weeks, apply protective light irrigation to orchards, sugarcane, vegetables, cotton, soybean, bajra and groundnut.
- In Marathwada, apply protective light irrigation to orchards, sugarcane, vegetables, cotton, soybean and groundnut in Jalna, Parbhani, Beed and Osmanabad districts.
- In Gujarat region, apply irrigation in groundnut, cotton, pulses and vegetables. In North Saurashtra Zone, provide irrigation in cotton, groundnut and vegetable crops. Irrigate the groundnut crop timely particularly GG-20 variety to prevent infestation of *Sclerotium rolfsii*. Spray 7 ml Nephthalic Acetic acid / 10 litres of water in cotton to reduce drooping of flowers and immature cotton bolls.

Central Region

- In Malwa Plateau Zone and Central Narmada Valley Zone of Madhya Pradesh, due to continuous rain, growth of maize, soybean and vegetable crops has been affected. Undertake intercultural operations and spray or apply top dressing of urea.
- In Central Narmada Valley Zone of Madhya Pradesh, soybean crop is particularly infested by sap sucking insects and girdle beetle. Chlorpyrifos @ 1 lit./ha or Quinalphos @ 1.5 lit/ha may be sprayed to control insect pest.
- In North Hill Plain Zone of Chhattisgarh, present weather is congenial for chance of occurrence of yellow Mosaic Virus in pulses, spray Dimethoate @ 2 ml/liter of water.

East Region

- In Sub Himalayan West Bengal & Sikkim postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
- In Odisha, complete sowing of green gram, black gram, in Western Undulating Zone. Complete transplanting of rice if not done and planting of papaya. Continue planting of banana, cashewnut and marigold in East and South Eastern Coastal Plain Zone of Odisha.
- In Sub-Himalayan West Bengal, continue transplanting of early cabbage and cauliflower and provide adequate drainage in standing crop fields.
- In Old alluvial Zone and Terai Zone of West Bengal, carry out weeding followed by topdressing of urea in timely sown rice crop at 3 weeks after transplanting. In New Alluvial Zone of West Bengal, complete weeding and top dressing operation, keep the field weed free and maintain 5-7cm water at tillering stage of *Aman* rice
- In Sheikpura, Jahanabad and Gaya districts of South Bihar Alluvial Zone of Bihar, where normal Kharif crops could not be carried out due to deficient rain, undertake sowing of September arhar. In other parts in fallow land undertake sowing of barja, toria and vegetables.
- In Jharkhand, due to deficient rain during July and August, area under rice maize oilseeds and pulses have been reduced significantly, undertake sowing of horse gram till 15th September in areas where Kharif crops could not be sown.

North Region

- In Intermediate Zone of Jammu & Kashmir, undertake sowing of toria where harvesting of *kharif* jowar (fodder) is completed. In Valley Temperate Zone of Jammu & Kashmir, continue transplanting of cole crops. In Sub-Tropical Zone of Jammu & Kashmir, continue nursery sowing of cauliflower, cabbage and knol khol and also prepare field for sowing of toria crop.
- In Sub-Montane Zone & Low Hills Sub-Tropical Zone of Himachal Pradesh, undertake sowing of toria, planting of onion and transplanting of cauliflower.
- In East Uttar Pradesh, continue nursery sowing of *Capsicum*, cabbage and tomato and also sowing of toria. Apply top dressing of urea in rice crop. Drain out excess water from the maize fields.
- In West Uttar Pradesh, continue transplanting of brinjal, chilli and onion, new planting of mango, guava, amla, banana and lichi.
- In Bhabar and Tarai Zone of Uttarakhand, continue sowing of pea, nursery sowing of cauliflower. Undertake land preparation and sowing of toria in the Hill Zone.
- In Western Zone of Punjab, undertake sowing of toria and early varieties of radish, turnip, carrot, potato. Transplant main season varieties of cauliflower and undertake nursery sowing of late season varieties of cauliflower with supplementary irrigation.
- In Delhi, undertake sowing of carrot, sarson saag, radish, spinach and coriander on raised bed. Also, undertake transplanting of brinjal, tomato, chilli, cauliflower, onion and cabbage if the seedlings are ready and prepare nursery on raised beds for mid-season cauliflower.
- In Western Zone of Haryana, undertake sowing of carrot, brinjal, chilli, onion and early cauliflower on ridge with supplementary irrigation.
- In East Rajasthan, continue sowing of radish and nursery raising for mid-season cauliflower, early cauliflower and continue transplanting of brinjal and chilli and undertake sowing of radish and carrot.
- In West Rajasthan, undertake sowing of early varieties of radish and nursery sowing of early varieties cabbage and cauliflower with irrigation.

Detailed Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall has occurred in all the districts of East Uttar Pradesh except Farrukhabad, Kannauj, Kaushambi districts, many districts of West Uttar Pradesh except Badaun, Baghpat, Bulandsahar, GB Nagar, Ghaziabad, Jotirba Phule Nagar, Lalitpur, Mainpuri, Pilibhit, Rampur, Shahjahanpur districts, Bilaspur, Hamirpur, Kangra, Sirmaur, Solan, Una districts of Himachal Pradesh, Dehradun, Garhwal Pauri, Garhwal Tehri, Nainital, Rudraprayag, Uttarkashi districts of Uttarakhand, Gurdaspur, Nawashahar, Ropar districts of Punjab, Ambala, Yamunanagar districts of Haryana, Doda, Jammu, Kathua, Reasi districts of Jammu & Kashmir and Dholpur district of East Rajasthan. Weather remained mainly dry over remaining parts of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand and weather would be mainly dry over remaining parts of the region.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain/thundershower would occur at isolated places over Western Himalayan region and weather would be mainly dry over plains of the region.
- **Advisory :**
 - In Intermediate Zone of Jammu & Kashmir, undertake sowing of toria where harvesting of *kharif* jowar (fodder) is completed. In Valley Temperate Zone of Jammu & Kashmir, continue transplanting of cole crops. Start picking of mature pods of beans, moong, rajmash etc. In Sub-Tropical Zone of Jammu & Kashmir, continue nursery sowing of cauliflower, cabbage and knol khol and also prepare field for sowing of toria crop.
 - In Sub-Montane Zone & Low Hills Sub-Tropical Zone of Himachal Pradesh, undertake sowing of toria, planting of onion and transplanting of cauliflower.
 - In East Uttar Pradesh, continue nursery sowing of *Capsicum*, cabbage and tomato and also sowing of toria. Apply top dressing of urea in rice crop. Drain out excess water from the maize fields.
 - In West Uttar Pradesh, continue transplanting of brinjal, chilli and onion, new planting of mango, guava, amla, banana and litchi.
 - In Bhabar and Tarai Zone of Uttarakhand, continue sowing of pea, nursery sowing of cauliflower. Undertake land preparation and sowing of toria in the Hill Zone.
 - In Western Zone of Punjab, undertake sowing of toria and early varieties of radish, turnip, carrot, potato and palak. Transplant main season varieties of cauliflower and undertake nursery sowing of late season varieties of cauliflower.
 - In Delhi, undertake sowing of carrot, sarson saag, radish, spinach and coriander on raised bed. Also, undertake transplanting of brinjal, tomato, chilli, cauliflower, onion and cabbage if the seedlings are ready and prepare nursery on raised beds for mid-season cauliflower.
 - In East Rajasthan, continue sowing of radish and nursery raising for mid-season cauliflower, early cauliflower and continue transplanting of brinjal and chilli and undertake sowing of radish and carrot. In Transitional Plain Zone, undertake transplanting of fruit plants like ber, aonla, pomegranate.
 - In West Rajasthan, undertake sowing of early varieties of radish and nursery sowing of early varieties cabbage and cauliflower.
 - In Bhabar and Tarai Zone of Uttarakhand, due to low rainfall and increased temperature conditions, there is chance of incidence of leaf folder in rice crop at ear head emergence stage. If the incidence of leaf folder is more than 10 %, spray 500-600 ml of 36 EC Monochrotophos or one litre of Chlorepyphephos dissolved in 200 litres of water for one acre crop area.
 - In Central Plain Zone in Punjab, weather is congenial for occurrence of sheath blight on rice. If the symptoms are observed, spray Tilt or Folicur @ 200 ml in 200 litres of the water per acre.



Rice



Groundnut



Sugarcane



Maize

- In Mild Hills Sub Humid Zone of Himachal Pradesh, due to humid weather, there are chances of downey mildew in *kheera, kaddu and karela*, spray Endofil M-45@35-40gm/15 litre water at an interval of 7-10 days. In case severe damage use ridomil MZ @ 35-40gm/15 litre of water. Humid weather is also congenial for white fly in French bean and okra, powdery mildew in bhindi, spray acephate @0.05 %7g/litres of water) to control white fly and Cantaf/sitra @0.5 ml per litres or Karathane@ 1 ml per litres of water to control powdery mildew.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
 - In Intermediate Zone of Jammu & Kashmir, weather is conducive for ticks and mites attack on animals. To control, spray Butox@ 2.0 ml per litres of water. Save birds from heat stress via proper ventilation arrangements and reducing humidity in poultry houses.
- **Floriculture**
 - In Flood Prone Eastern Plain Zone of Rajasthan, complete transplanting of marigold, balsam and zenia.
 - In Himachal Pradesh, complete planting of marigold, cosmos, glardia, gomphrina, balsam and zenia.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Significant rainfall occurred in Anuppur, Chhatrapur, Dindori, Jabalpur, Mandla, Panna, Rewa, Satna, Sidhi, Tikamgarh, Umaria districts of East Madhya Pradesh, Bhind, Datia, Gwalior, Morena, Shivpuri districts of West Madhya Pradesh, Bilaspur, Dhamtari, Durg, Janjgir, Korba, Koriya, Mahasumund, Raigarh, Raipur, Surguja districts of Chhattisgarh
- **Weather forecast:** Rain/thundershowers would occur at isolated places over Chhattisgarh during next 24 hours and increase thereafter and at isolated places over Madhya Pradesh during the period.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rainfall/thundershower would occur at a few places over the region.
- **Advisories:**
 - In Malwa Plateau Zone and Central Narmada Valley Zone of Madhya Pradesh, due to continuous rain, growth of maize, soybean and vegetable crops has been affected. Undertake intercultural operations and spray or apply top dressing of urea.
 - In Chhattisgarh Plain Zone and North Hill Plain Zone, maintain 5 to 7 cm water level in the rice field.
 - In Central Narmada Valley Zone of Madhya Pradesh, soybean crop is particularly infested by sap sucking insects and girdle beetle. Chlorpyrifos @ 1 lit./ha or Quinalphos @ 1.5 lit/ha may be sprayed to control insect pest.
 - In Jabua Hill Zone of Madhya Pradesh, present weather is congenial for attack of pod borer and tobacco caterpillar in soybean, apply Profenophos @ 40 ml/lit..
 - In North Hill Plain Zone of Chhattisgarh, there is chance of occurrence of yellow Mosaic Virus in pulses, spray Dimethoate @ 2 ml/liter of water.
 - Stages of major crops are mentioned in Annexure I.
 - Varieties are mentioned in Annexure III
- **ANIMAL HUSBANDRY & POULTRY**
 - Farmers of Madhya Pradesh are advised that due to humid weather condition, cattle should be kept in dry and clean places and create smoke in evening to save them from mosquitoes and bees and undertake vaccination to protect the animals from mouth and jahari fever disease.
 - Farmers of Madhya Pradesh are advised to provide dry feed along with green feed in (50:50) ratio and 20-30 g mineral mixture and salt for the dairy animal's every day in this humid and rainy weather condition.



Rice



Soybean



Sugarcane



Maize

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

- **Realised Rainfall:** Significant rainfall occurred in all districts of Sikkim, Sub Himalayan West Bengal, Bihar; in all districts of Gangetic West Bengal except Bankura; in most of the districts of Odisha except Angul, Boudh, Gajapati, Koraput, Kandhamal, Sonapur, Malkangiri and Kalahandi; in most districts of Jharkhand except Garhwa, Ramgarh and Ranchi.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Sub Himalayan West Bengal & Sikkim, at a few places over Gangetic West Bengal and isolated places over Odisha, Bihar, Jharkhand..
- **Warning:** Nil
- **Weather Outlook:** Rain/thundershower would occur at a few places over East India.
- **Advisories:**
 - In Sub Himalayan West Bengal & Sikkim postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
 - In Odisha, complete sowing of green gram, black gram, in Western Undulating Zone. Complete transplanting of rice if not done and planting of papaya.
 - Continue planting of banana, cashew and marigold in East and South Eastern Coastal Plain Zone of Odisha.
 - In North West Alluvial Plain Zone of Bihar, undertake sowing of September pigeon pea in the upland areas. Undertake planting of papaya, guava, mango and litchi. Apply nitrogen@20 kg per hectare after hand weeding in the rice field.
 - In North East Alluvial Zone of Bihar, complete transplanting of medium and late varieties of rice and undertake sowing of September arhar.
 - In South Bihar Alluvial Zone of Bihar, in Sheikpura, Jahanabad and Gaya districts, in areas where normal Kharif crops could not be carried out due to deficient rain, undertake sowing of September arhar. In other parts in fallow land undertake sowing of barja, toria and vegetables.
 - In Jharkhand, due to deficient rain during July and August, area under rice maize oilseeds and pulses have been reduced significantly, undertake sowing of horse gram till 15th September in areas where Kharif crops could not be sown.
 - In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of til, urad, sweet potato and horse gram, green peas. Continue planting of potato and marigold. In rice crop, undertake intercultural operations and top dressing of urea.
 - In Coastal Saline Zone of West Bengal (Purba Medinipur, 24 Parganas (North) and 24 Parganas (South) districts), where water level is very deep in fields, postpone transplanting of rice till flood water recedes. Transplanting operation can be extended up to 1st week of September till the water level will be normal in submerged fields. Drain out excess water from the crop fields.
 - In Old alluvial Zone and Terai Zone of West Bengal, carry out weeding followed by topdressing of urea in timely sown rice crop at 3 weeks after transplanting.
 - In New Alluvial Zone of West Bengal, complete weeding and top dressing operation, keep the field weed free and maintain 5-7cm water at tillering stage of *Aman* rice.
 - Due to humid weather conditions in Laterite and Red Soil Zone, New Alluvial Zone of West Bengal, attack of brown spot and blast may be found in *Aman* rice. If leaves are affected more than 5% apply Carbendazim +Mancozeb 2.5g/litre of water. In *Aman* rice attack of stem borer and rice hispa may be found. Apply Chlorpyrifos 2.5ml / Triazophos 2 ml per litre of water on a non rainy day. Combined attack of downy mildew and mosaic may be seen in bitter gourd and pointed gourd, apply Ridomil -MZ @2 gm per litre of water on a non rainy day.
 - In some areas of South Eastern Plateau Zone of Jharkhand, rice is infected with leaf blast, spray Bavistin @ 1 g or Beam (Tricyclazole) @ 6 g per 10 liter of water by mixing Teepol @ 0.5 ml per liter of water.
 - In Western Plateau Zone of Jharkhand, timely sown rice crops (direct seeded in last week of June) are at flowering stage and this stage is susceptible to the attack of the Gundhi bug. To control the insects, dusting of Chlorpyrifos / Quinolphos /Methyl parathion dust @ 10



Rice



Sugarcane



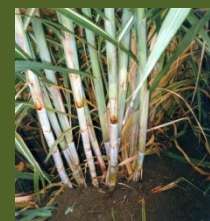
Maize

kg per acre may be done.

- In Western Plateau Zone of Jharkhand, attack of stem borer is noticed. Spray Monocrotophos 36 E.C. @ 1-2 ml per litre of water and mix Teepol in the solution or prepare the solution in soap water. In case of heavy infestation, apply granular insecticide like Carbofuran 3 G @ 12 kg per acre or Forate 10 G (@ 4 kg per acre with stagnated water in the field.
- Due to humid and cloudy weather condition, there is chances of sucking pest incidence in vegetables and cotton in Western Undulating Zone of Odisha, spray Imidacloprid @1ml/4 litre water to control sucking pest in vegetables and Acephate @1ml/litre of water in cotton.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.

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

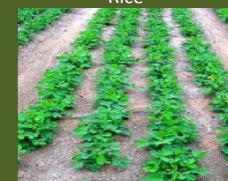
- **Realised Rainfall:** Significant rainfall occurred all districts of Arunachal Pradesh except Lower Subansiri district, in most of the districts of Assam except Baksa, Hailakandi, Karbi Anglong and Nowgong districts, in most of the districts of Meghalaya except West Khasi Hills and Ri-bhoi districts; in Lawngtlai, Lunglei, and Saiha districts of Mizoram, in Churachandpur district of Manipur and Phek, Wokha and Kephire districts of Nagaland and Dhalai and South Tripura districts of Tripura.
- **Weather Forecast:** Rain / thundershowers would occur at many places over the States of the region.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Arunachal Pradesh, Assam & Meghalaya on 6th September.
- **Weather Outlook:** Rainfall / thundershower would occur at many places over the States of the region.
- **Advisories:**
 - Postpone irrigation, intercultural operations and application of fertilizers and plant protection measures in standing crops in the States of the region. Drain out excess water from the crop fields in Arunachal Pradesh, Assam & Meghalaya.
 - In Hill Zone of Assam, continue sowing of green gram and black gram, transplanting of early cauliflower and undertake nursery raising of winter vegetables after current spells of heavy rain.
 - In Lower Bramhaputra Valley Zone of Assam, continue sowing of sesame, black gram, and green gram after current spells of heavy rain.
 - In Upper Bramhaputra Valley Zone of Assam, undertake sowing of improved varieties of mid cauliflower and pulses after current spells of heavy rain.
 - In Barak Valley Zone of Assam, continue transplanting of early varieties of cabbage, cauliflower, knol khol and brinjal and undertake sowing of radish after current spells of heavy rain.
 - In Central Bramhaputra Valley Zone of Assam and North Blank Plain Zone of Assam, continue nursery sowing of early cole crops, brinjal and sowing of green gram, black gram and radish after current spells of heavy rain.
 - In flood affected areas of Upper Bramhaputra Valley Zone of Assam, undertake late and staggered planting of *sali* rice after receding of flood water with old seedlings of the varieties like Prafulla and Gitesh up to middle of September. The old seedlings of other improved long duration variety like Monohar Sali, Salpona, Prasadbhog, Gobind bhog etc. can also be transplanted up to mid of September.
 - In North Bank Plain Zone of Assam, in flood affected areas undertake transplanting of 20-25 days old seedlings of short duration cultivars like Luit, Kapilee, Kolong, Dishang etc. in the main field with a spacing of 15x15 cm up to mid of September. In partially flood affected fields, farmers are advised to apply $1/3^{\text{rd}}$ N + 50% K₂O of total dose as top dressing during tillering stage after current spells of rain.
 - In Sub Tropical Hill Zone of Arunachal Pradesh, prepare nursery bed of cauliflower,



Sugarcane



Rice



Groundnut



Maize

cabbage and undertake sowing of radish after current spells of heavy rain.

- In the upland areas of Sub Tropical Plain Zone of Manipur, continue sowing of black gram and rice bean and undertake nursery raising for early *rabi* vegetables (cabbage, cauliflower etc.).
 - In Temperate Sub Alpine Zone of Meghalaya, continue sowing of green gram and black gram, after current spells of heavy rain, where *sali* rice could not be sown due to long dry spell.
 - Continue nursery sowing for early cauliflower, radish and brinjal in Mid Tropical Plain Zone of Tripura.
 - In Mild Tropical Hill Zone of Mizoram, continue sowing of soybean.
 - Due to favourable weather conditions, there is chance of attack of leaf folder and rice hispa in seedling and tillering stages of *sali* rice in Upper Brahmaputra Valley Zone and North Bank Plain Zone of Assam and rice hispa in *sali* rice in Central Brahmaputra Valley Zone of Assam. Farmers are advised to spray Chloropyrifos 20 EC @ 1 ml per liter of water or Monocrotophos 40 EC @ 1.5 ml per liter of water after current spells of rain.
 - Due to cloudy and humid weather, there may be chance of infestation of sheath blight and Gundhi bug in rice in Mild Tropical Plain Zone of Tripura. Apply *Trichoderma viride* or *Chetomyum globosum* @ 6 to 8 ml per litre of water at 7 days interval for 3 to 4 times for sheath blight and Cypermethrin + Propenophos @ 1.5 ml per liter of water for Gundhi bug.
 - Stages of major crops are mentioned in Annexure I.
 - Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- In flood affected areas of Assam, provide adequate clean drinking water to cattle and poultry. Provide proper vaccination schedule to protect the cattle from viral and bacterial diseases. Administer 1 week old chicks with RDF1 to protect it from ranikhet disease and undertake vaccination of 2 weeks old chicks to protect from gumboro disease.
 - In Sub Tropical Hill Zone of Arunachal Pradesh, in present weather conditions, vaccinate pigs against swine fever and cattle against FMD, BQ and Worm.
 - In Mild Tropical Plain Zone of Tripura, damp litter and high moisture may cause Coccidiosis in the chicken; avoid dampness in the deep litter. Vaccination and deworming may be done to protect the pigs from swine fever and internal parasite disease

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

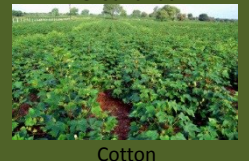
- **Realised Rainfall:** No significant rainfall occurred in most of the districts of the States of the region.
- **Weather Forecast:** Rain / thundershowers would occur at isolated places over Gujarat region, Konkan & Goa and Madhya Maharashtra. Rain / thundershowers would occur at isolated places over Marathwada during next 48 hours and increase thereafter. Weather would be mainly dry over Vidarbha and Saurashtra & Kutch.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain / thundershowers would occur at many places over Maharashtra. Weather would be mainly dry over Gujarat region and Saurashtra & Kutch.
- **Advisories:**
 - In Konkan, undertake intercultural operations in rice, finger millets, vegetable fields and mango, cashew and sapota orchards. Maintain water level upto 8-10 cm in rice fields.
 - In Madhya Maharashtra undertake intercultural operations in cotton, red gram and vegetable crops. Maintain water level of 5-7 cm in rice field. As Ahmednagar, Sangli, Satara, Solapur and Pune districts received deficient or scanty rain during last three weeks; apply light protective irrigation to orchards, sugarcane, vegetables, cotton, soybean, bajra and groundnut.
 - In Marathwada, undertake intercultural operations in cotton, red gram, vegetables, orchards and sugarcane. Apply protective light irrigation to orchards, sugarcane, vegetables, cotton, soybean and groundnut in Jalna, Parbhani, Beed and Osmanabad districts.
 - In Vidarbha undertake intercultural operation in rice, cotton, red gram and pulses. Maintain 7-8 cm water level in rice field.
 - In Gujarat, apply irrigation in groundnut, cotton, pulses and vegetables.
 - In North Saurashtra Zone, provide irrigation in cotton, groundnut and vegetable crops. Irrigate the groundnut crop timely particularly GG-20 variety to prevent infestation of *Sclerotium rolfsii*. Spray 7 ml Nephathalic Acetic acid / 10 litres of water in cotton to reduce dropping of flowers and immature cotton bolls.
 - Undertake intercultural operation and hand weeding in *kharif* crops in Middle Gujarat and Bhal and Coastal Zone of Gujarat. Continue transplanting of tobacco in Middle Gujarat Zone.
 - Complete sowing of castor and sorghum in Bhal and Coastal Zone and sowing of castor in Middle Gujarat Zone. Apply top dressing of Nitrogen in rice crop keeping 5 inch depth of water and apply NPK fertilizers @ 40-40-0 in castor in Bhal and Coastal Zone.
 - Apply remaining half dose i.e. 40 kg Nitrogen by using Ammonium Sulphate in rice in South Gujarat Heavy Rainfall Zone. Carry out hand weeding and inter cultural operation in castor. Clean the orchards and remove weeds.
 - Due to subdued rainfall activity in South Konkan, there may be attack of blue beetle and leaf folder in rice; spray Monocrotophos @ 12 ml or Carbaryl 50 WP @ 20 g per 10 litres of water.
 - Due to continuous cloudy weather there may be attack of leaf eating caterpillar in soybean in Western Maharashtra Scarcity Zone; spray Chlorpyrifos @ 20 ml per 10 litres of water.
 - Cloudy and humid weather, prevailed in Marathwada during last week, is congenial for the attack of jassids and thrips in cotton; spray Thiamethoxam 25% @ 2.5 g or Acetamiprid 20% @ 2 g per 10 litres of water against jassids and spray Fipronil 5% @ 20 ml or Acephate 75% @ 20 g per 10 litres of water to control thrips.



Rice



Groundnut



Cotton



Sugarcane

- Humid weather condition is congenial for incidence of sucking pests in standing vegetables in Bhal and Coastal Zone of Gujarat and in cotton in Middle Gujarat Zone; sprays Emidacloprid or Thiomothoxam @ 4 ml per 10 liter of water.
- Due to cloudy and humid weather in Bhal and Coastal Zone of Gujarat, there is chance of attack of sucking pests in cotton; spray Methyl-O-Demate or Dimethoate @ 10 ml / 10 liters of water.
- Due to warm and humid weather condition in North Saurashtra Zone, there are chances of increase in infestation of sucking pests in vegetable crops; spray Imidacloprid 17.8% SC @ 5 ml / 10 litres of water against white flies and other sucking pests in vegetables.
- Stages of the crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.

• Animal Husbandry

- In Gujarat, spray phenyl in the animal sheds to avoid flies and mosquitoes.

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

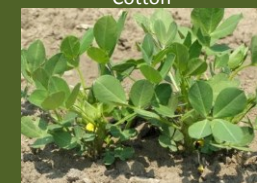
- **Realized rainfall:** Significant rainfall occurred over Guntur and Prakasam districts in Coastal Andhra Pradesh; most of the districts in Rayalaseema except Cuddapah, Mahbubnagar and Warangal in Telangana; most of the districts in Tamil Nadu except Kanyakumari; Nagapattinam, Namakkal, Pudukottai, Ramanathapuram, Thanjavur, Thirunelveli, Thiruppur, Thoothukudi, Trichy and Villupuram, Idukki, Kollam, Pathanamthitta and Wyanad districts in Kerala; Dakshin Kannada district in Coastal Karnataka; Dharwad, Gadag, Gulbarga, Koppal, Raichur and Yadgir districts in North Interior Karnataka and most of the districts in South Interior Karnataka except Davangere, Kodagu, Hassan and Shimoga. No significant rainfall occurred in the remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Coastal Karnataka, Kerala and Andaman & Nicobar Islands, few places over South Interior Karnataka, Lakshadweep and Tamil Nadu, isolated places over Andhra Pradesh during next 24 hours and increase thereafter and isolated places over North Interior Karnataka during next 48 hours and increase thereafter. Weather would be mainly dry over rest parts of the region.
- **Weather Outlook:** Rain/thundershower would occur at many places over Lakshadweep, Andaman & Nicobar Islands, Andhra Pradesh and Karnataka and at a few places over extreme south peninsular India
- **Advisories:**
 - In North Coastal Andhra Pradesh, complete transplanting of rice. Farmers who are undertaking transplanting of rice with aged nursery seedlings, apply 25 % extra nitrogen, follow closer spacing (44 hill/m²) and 3-4 seedlings/hill.
 - In Anantapur district of Rayalaseema, complete sowing of contingency crops like horse gram, green gram, cow pea, cluster bean and fodder jowar. Early and late sown groundnut crop are facing moisture stress due to deficient rainfall during previous weeks. Spray 2% Potassium Nitrate solution in order to recover the crop from stress. Provide supplementary irrigation using micro irrigation methods. Also continue inter cultivation with blade harrow for weed control and creating soil/dust mulch and mulching with groundnut shells to prevent moisture loss from soil. Undertake direct sowing of rice in puddled soil or directly with drum seeder and intercropping fox tail millet(korra) + redgram (1:5) with irrigation in Kurnool district.
 - Excess moisture in soil due to recent rains in the South Coastal Andhra Pradesh during previous weeks may lead to weed problems in cotton and pulses which are in seedling stage, farmers are advised to go for post emergence herbicide viz., Quizalopof ethyl @ 400g/acre or Fenoxapof ethyl @ 250g/acre for grasses and for management of broad leaf weeds, apply Pyriithiobac sodium @ 200-250g/acre.
 - Apply urea 25-30 days after sowing as top dressing in cotton and maize crops and take up



Sugarcane



Cotton



Groundnut



Rice

sowing of suitable castor varieties or hybrids in the Southern Telangana Zone of Andhra Pradesh.

- Continue sowing of short duration pulse crops like black gram, cowpea, field bean and horse gram in the Eastern Dry Zone of Karnataka.
- Complete transplanting of kharif rice and sowing of short duration varieties of ragi in Southern Transition Zone of Karnataka.
- In North East Dry Zone of Karnataka, continue sowing of sunflower, transplanting of chilli, harvesting of green gram and intercultural operations in *kharif* crops like red gram, cotton etc. wherever crops are at 25-60 days.
- In North Interior Karnataka, continue sowing of sunflower and transplanting of chilli, and harvesting of green gram.
- Continue harvesting of green gram and blackgram in the North East Transition Zone of Karnataka.
- Continue sowing of cotton under irrigated conditions in the Hill Zone of Karnataka.
- Apply irrigation in the groundnut crop in the Southern Transition Zone of Karnataka as it is in pod initiation stage.
- In cotton crop to reduce the square/flower bud/flower drop, spray Planofix 0.25 ml per litre of water as it is at square to flowering stage in Central Dry Zone of Karnataka.
- In **Kerala**, continue planting of Nendran banana in the Problem Area Zone and complete transplanting of late sown rice in Wayanad district of High Altitude Zone.
- Undertake harvesting of Nendran banana in the Southern Zone of Kerala.
- Continue nursery sowing of *samba* rice, dry sowing of long duration varieties of rice, prepare late *samba* nursery, continue sowing of rain-fed cotton and maize and provide light irrigation in the evening hours to *samba* nursery (within 2 days after sowing) to avoid the displacement of paddy seeds in the Cauvery Delta Zone of Tamil Nadu. Start transplanting of *samba* rice with 30-35 day old seedlings.
- Continue transplanting of *samba* rice and sowing of irrigated maize and winter irrigated cotton in the Western Zone of Tamil Nadu. Undertake hoeing and ridging of rainfed tomato crop, mulching with coconut leaves and husk to conserve moisture and undertake main field preparation for planting *samba* rice in lower Bhavani project areas (Erode) by utilizing the realized rainfall.
- Undertake land preparation and sowing of maize, cotton and rainfed crops in the Southern Zone of Tamil Nadu.
- Spray Dimethiate 2ml per liter of water or monocrotophos 2ml per liter of water vegetable crops, since there is chance of incidence of sucking pest due to prevailing cloudy weather in the North Eastern Zone of Tamil Nadu.
- Undertake spraying of Carbaryl 85 MS @ 4 g per litre of water for incidence of leaf folder in transplanted rice, remove the rotten parts in coconut, pour Akomin® diluted in water (@ 4ml per litre), soak out the excess Akomin® from the bud portion using cotton after 24 hours, apply Bordeaux paste, protect the wound from rain and destroy the removed rotten parts in fire to control bud root disease in the Northern Zone of Kerala after current spells of rain.
- Prevailing weather conditions are favourable for the incidence of leaf folder and stem borer in rice in the Southern Zone of Kerala. Use of trichocard @5/ha 6 times at 10 days interval. If the attack is severe, apply insecticide fame @1ml/10 litre of water after current spells of rain.
- To protect the rice crop from gall midge and stem borer incidence, apply Carbofuran 3G @ of 10 kg or Phorate @ 4 kg per acre at 15-20 days after transplanting in the in the Southern Telangana Zone of Andhra Pradesh.
- Prevailing conditions are favourable for incidence of gall midge on paddy crop, sucking pest in Bt cotton crop, mealy bugs on cotton crop, tobacco cut worm in castor crop, mite on chilli crop and leaf spot disease on turmeric crop in the Scarce Rainfall Zone of Andhra Pradesh. Undertake plant protection measures.
- Present cloudy weather and rains are congenial for bacterial leaf spot in early sown chillies in the Krishna Godavari Zone of Andhra Pradesh. Spray Streptocyclin @ 1g per

10 liters of water and copper oxichloride @ 2g per litre of water to control it.

- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.

- **Animal Husbandry**

- Prevailing weather condition is favourable for the mastitis in milch animals and before milking udder may be washed with potassium permanganate solution in the Western Zone of Tamil Nadu. Avoid water leaking in poultry sheds, since expected rainfall condition will create damp situation in poultry farms.
- Ensure moisture content of not more than 12 % in feed ingredients including soya bean meal in the North Western Zone of Tamil Nadu.

Annexure I

Stages of Major Crops

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

- Tomato, brinjal, chilli (vegetative / flowering / fruiting), French bean, okra (flowering / fruiting), rice (tillering / panicle initiation), maize (tasseling/cob formation), soybean (vegetative / flowering), peas (flowering / pod formation / pod maturity), cauliflower (nursery sowing), cucurbits *viz.* khira, bitter gourd, tori (vegetative / flowering / fruiting), potato (early tuberization / tuber formation) in Himachal Pradesh.
- Rice (panicle initiation/ flowering / maturity), ginger (vegetative), okra (fruiting / picking), sugarcane (vegetative), cucurbits (flowering / fruiting / picking), vegetables *viz.* tomato, *Capsicum*, chilli, brinjal, cabbage, cauliflower in mid and high hilly area (flowering / fruiting /picking), vegetables *viz.* palak (vegetative/picking), fenugreek, coriander, bhindi, French bean and lobia (flowering / fruiting / picking), maize (cob maturity / harvesting), finger millet, urad, moong, soybean (pod formation/ pod maturity), pigeon pea, cowpea, horse gram, rice bean (vegetative / flowering), sesame in low land area (sowing / early vegetative), pearl millets (early vegetative / vegetative), vegetable pea (sowing / germination), toria (land preparation / sowing) in Uttarakhand.
- Rice (vegetative / flowering), *Kharif* maize (vegetative / flower initiation), fodder maize, bajra, sorghum and other fodder crops(vegetative), Lady finger, chilli and cucurbits crop (flowering / fruiting), brinjal, tomato, chilli, cauliflower and cabbage(vegetative), soybean (flower initiation), radish, spinach and coriander (vegetative), guar, bajra (flowering / grain filling), onion (vegetative), Cucurbitaceous crops (flowering / fruiting) in Delhi.
- Rice (active tillering / panicle initiation / flowering), maize (early sown) (tasselling / silking), maize (normal sown) (vegetative / tasselling), maize (early sown in Valley Temperate Zone) (cob formation / maturity), bajra, pole type beans (vegetative), cowpea (vegetative), sunflower (vegetative / flowering), garlic, cucurbits, okra (vegetative / flowering), radish, spinach (transplanting / early vegetative), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), fruit crops (planting), brinjal, chilli, tomato, (transplanting / early vegetative / vegetative), potato (vegetative / early tuberization), *Kharif* pulses (moong, mash) (vegetative / flowering), beans, moong, rajmash (Valley Temperate Zone) (pod maturity / picking), groundnut (vegetative / active vegetative), radish, carrot, cucurbits (nursery sowing), toria (land preparation / sowing) in Jammu & Kashmir.
- *Kharif* maize and jowar (early vegetative / knee high), rice (tillering / panicle initiation), groundnut, arhar, moong and urad (early vegetative / vegetative), tomato, brinjal (vegetative / flowering), and cucurbitaceous vegetables (flowering / fruiting), spring sugarcane (vegetative), toria (land preparation / sowing) in Uttar Pradesh.
- New sugarcane (tillering / vegetative), cotton (vegetative), cucurbits, cowpea (sowing), rice (booting/ panicle initiation), pearl millet, black gram, green gram, soybean, arhar (vegetative), moong , mash (vegetative) maize (tasseling / cob formation) sesamum (vegetative) in Punjab.
- New sugarcane (vegetative), cotton (vegetative), rice (booting/ panicle initiation) in Haryana.
- Rice (early tillering / tillering), cotton (flowering / boll formation), tomato, brinjal, chilli (nursery sowing / transplanting), shimla mirch (early vegetative / vegetative), groundnut (early vegetative / vegetative), new sugarcane (early vegetative / vegetative), bajra, sorghum, soybean, moong, guar, sesame, moth, maize, cowpea, cluster bean, castor (early vegetative / vegetative), cucurbits (sowing), radish, Deshi carrot –sowing, cabbage and cauliflower (nursery sowing) and fruit crops (ber, aonla, pomegranate, phalsa) (transplanting) in Rajasthan.

CENTRAL INDIA [M.P., CHHATTISGARH]

- *Kharif* rice (early vegetative/tillering), soybean, onion (vegetative), maize, jowar, arhar, sesame, groundnut (vegetative), sugarcane (elongation / grand growth), vegetables (early vegetative/vegetative) in Madhya Pradesh.
- Sugarcane (tillering), *kharif* rice (tillering), maize, groundnut, green gram (early vegetative/vegetative), jowar,

arhar, soybean (vegetative), ragi and kodomillet (germination), ginger, turmeric, papaya (vegetative), onion (vegetative), vegetable crops (early vegetative) in Chhattisgarh.

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

- *Kharif* rice, (transplanting/early vegetative), maize(early vegetative), sugarcane (tillering/grand growth), onion(transplanting), urad (sowing), yam (vegetative) in Bihar.
- *Kharif* rice (tillering), maize, urad, marua (sowing), arhar, groundnut (early vegetative), onion (vegetative), ginger and turmeric (vegetative), *kharif* vegetables *viz.* bhindi, bean, French bean (sowing/vegetative), tomato, cauliflower, cabbage (transplanting/vegetative), niger, potato, green peas, horsegram, sweet potato(sowing) in Jharkhand.
- Rice (transplanting/early tillering), pigeon pea, groundnut, arhar, maize, cotton and *kharif* vegetables (sowing/early vegetative), fruit crops (planting), green gram, black gram, cowpea, sesame, ragi, castor, soybean (sowing), Jute (active vegetative), turmeric, ginger, yam (planting / early vegetative), sugarcane (tillering), banana (planting/vegetative), tomato (fruiting / harvesting), sunflower (maturity/harvesting), marigold(sowing), in Odisha.
- *Aman* rice (transplanting/tillering), *kharif* maize (fruiting stage), ginger, turmeric (vegetative), pigeon pea (early vegetative), *kharif* vegetables (vegetative), brinjal, okra, tomato and chilli (vegetative/fruiting), pointed gourd, banana (planting), jute (maturity/harvesting), tomato (nursery sowing), cowpea (sowing) in West Bengal.
- Ginger (vegetative), large cardamom (secondary flowering), *kharif* vegetables (vegetative) in Sikkim

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

- Sugarcane (active vegetative / elongation), *sali* rice (transplanting / tillering / panicle initiation), *Olitorius* and *Capsularis* jute (seed crop) (vegetative), pigeon pea (vegetative), sesame (sowing / germination), ginger, turmeric (vegetative), early cauliflower, cabbage, knolkhol (nursery sowing / transplanting / early vegetative), cow pea (sowing), green gram and black gram (sowing / germination / vegetative) and radish (sowing) in Assam.
- *Jhum* rice (grain maturity / harvesting), WRC rice (early sown) (milk / dough / maturity), regular WRC rice (tillering / flowering), cucurbits (maturity / harvesting), brinjal, tomato (fruiting / maturity / harvesting), cauliflower and cabbage (nursery preparation) in Arunachal Pradesh.
- *Kharif* rice (tillering / panicle initiation), *kharif* rice (late variety) (tillering), groundnut (vegetative / flowering / pegging), soybean (vegetative / flowering), black gram, rice bean (sowing / early vegetative), Early *rabi* vegetables (nursery preparation), Mango, litchi, guava (planting), cucurbits (fruiting / harvesting), onion (planting) in Manipur.
- *Sali* rice (tillering), turmeric, ginger (rhizome formation / rhizome maturity), cucurbits (vegetative / fruiting), green gram and black gram (sowing) in Meghalaya.
- *Jhum* rice (tillering), groundnut (vegetative), cucurbits, guava (flowering / fruiting), soybean (sowing), ginger and turmeric (vegetative) in Mizoram.
- Upland rice (grain formation), lowland rice (tillering), chilli (vegetative / flowering), okra, brinjal (fruiting / harvesting), ginger (vegetative) and chilli and cucurbits (flowering / fruiting) in Nagaland.
- *Jhum* rice (flowering / grain filling), *aman* rice (active tillering), groundnut (pegging / pod formation), maize (active vegetative / tasselling), banana (vegetative), *kharif* vegetables like okra, cucurbits (active vegetative / flowering), Early cauliflower, brinjal, radish (nursery sowing / sowing) in Tripura.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- *Kharif* rice (panicle initiation / flowering in Konkan and tillering in Kolhapur, Nasik (Ghat), Pune (West) region and East Vidarbha), cotton (vegetative / floral bud initiation in Madhya Maharashtra, Marathwada and Vidarbha), jowar (flag leaf initiation in Madhya Maharashtra, Marathwada and Vidarbha), red gram (primary branching in Madhya Maharashtra, Vidarbha and Marathwada), bajra (grain formation in Madhya Maharashtra and Marathwada), soybean (pod development in Madhya Maharashtra, Marathwada and Vidarbha), groundnut (pod formation / pod development in Madhya Maharashtra, Marathwada and Vidarbha), green gram (pod maturity / plucking in Madhya Maharashtra and Marathwada), black gram (pod maturity / plucking in Madhya Maharashtra and Marathwada), sugarcane (*adsali*, pre-seasonal and *suru*) (active tillering / elongation), Sugarcane (new *adsali*) (early tillering in Marathwada and Madhya Maharashtra) in Maharashtra.
- *Kharif* rice (tillering), castor (sowing / germination / vegetative), pearl millet (tillering / vegetative), sesame

(flowering / capsule formation), groundnut (flowering / pegging / pod development), cotton (flowering / squaring / boll formation), pulses (vegetative / flowering), maize (vegetative), *kharif* vegetables (vegetative), sugarcane (grand growth) in Gujarat.

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

- *Kharif* crops: early sown groundnut (pegging/pod development), maize (vegetative/taselling), Bt.cotton (vegetative/flowering), late sown groundnut (vegetative/flowering), cotton (vegetative/flowering), red gram (seedling/vegetative), sugarcane(Jan-March planted) (formative), rainfed sugarcane (tillering), rice (transplanting/tillering), castor(vegetative/flowering), banana (vegetative), direct sown rice (tillering), onion (nursery/transplanting), pulses (sowing/seedling) and vegetables (vegetative) in Andhra Pradesh.
- *Kharif* crops: sugarcane (grand growth), *kuruvai* rice (flowering), *samba* rice (nursery sowing/planting to transplanting), irrigated rice (active tillering), irrigated maize(vegetative), irrigated green gram (maturity), irrigated cotton (maturity), maize (flowering/maturity), onion (vegetative), sunflower (flowering), black gram (flowering), groundnut (flowering/pod development) and vegetables (vegetative) in Tamil Nadu.
- *Virippu* rice (panicle initiation), direct seeded rice (seedling), arecanut (nut formation), sugarcane (grand growth), Nendran banana (planting/harvesting), Nendran banana (harvesting), rubber (tapping/planting), *Kharif* vegetables (flowering to harvest), pepper (berry development), cardamom (flowering), ginger (vegetative) in Kerala.
- Sugarcane (grand growth), arecanut (nut maturity), new arecanut (planting), *kharif* crops:, sunflower(sowing) sorghum (grain filling), sugarcane(vegetative) ragi (sowing/tillering), maize(silking/cob formation), red gram(vegetative), groundnut (flowering /pegging /pod initiation), green gram, black gram (maturity) and soybean (pod initiation), rice (tillering), cotton (square formation stage/flowering), vegetable crops (transplanting/early vegetative) in Karnataka.

Annexure II Week by Week Rainfall Distribution

State/Districts	17.07.13		24.07.13		31.07.13		07.08.13		14.08.13		21.08.13		28.08.13		04.09.13	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Punjab																
Amritsar	14.0	-71	19.7	-65	21.7	-58	106.9	95	18.2	-67	184.6	367	0.9	-98	4.1	-86
Barnala	0.0	-100	58.5	118	1.0	-97	8.0	-76	0.0	-100	32.5	16	4.3	-81	0.0	-100
Bhatinda	0.0	-100	30.0	5	27.0	13	85.0	97	30.0	26	170.0	514	0.0	-100	0.0	-100
Faridkot	5.0	-83	42.6	33	0.0	-100	41.7	50	13.0	-41	313.5	1079	0.0	-100	0.0	-100
Fatehgarh Sahib	5.5	-91	8.0	-79	1.0	-98	63.0	37	72.0	55	48.0	8	10.0	-60	20.9	-30
Ferozpur	1.0	-97	65.9	97	1.8	-94	37.8	0	0.0	-100	123.7	348	0.0	-100	0.0	-100
Gurdaspur	24.0	-69	154.1	82	93.9	12	197.4	137	155.3	58	193.1	180	37.6	-31	44.8	11
Hoshiarpur	34.7	-45	22.7	-67	27.3	-58	17.4	-75	50.3	-31	60.0	21	11.9	-71	21.7	-29
Jalandhar	2.9	-94	67.8	28	19.6	-53	29.4	-44	2.0	-96	93.1	125	1.4	-96	10.8	-69
Kapurthala	4.3	-89	42.8	-10	17.6	-49	35.6	-4	17.8	-54	88.5	205	2.7	-90	25.1	9
Ludhiana	5.2	-91	17.3	-62	25.2	-42	62.1	36	15.2	-67	64.4	52	14.8	-59	4.1	-84
Mansa	0.0	-100	10.5	-65	14.0	-39	37.4	2	0.0	-100	37.4	23	0.0	-100	0.0	-100
Moga	0.0	-100	51.7	94	3.0	-90	39.7	31	2.0	-95	262.7	661	0.0	-100	0.0	-100
Muktesar	0.0	-100	1.7	-94	45.1	123	75.0	128	1.5	-94	249.0	969	0.0	-100	0.0	-100
Nawashahar	52.0	-33	58.0	-12	0.8	-99	48.0	-33	74.9	19	46.5	-7	11.5	-79	30.6	-23
Patiala	51.0	-20	14.8	-66	7.3	-87	47.3	-16	22.4	-56	78.0	64	12.2	-72	6.0	-81
Ropar	52.8	-23	97.1	50	7.1	-91	46.7	-41	87.7	46	75.2	39	24.7	-49	37.7	11
Sangrur	0.7	-99	9.5	-72	2.3	-94	26.7	-32	1.1	-97	53.2	38	0.2	-99	0.8	-96
Mohali	27.0	-53	22.0	-57	6.0	-89	8.0	-88	94.0	80	55.0	18	18.0	-54	14.0	-51
TarnTaran	0.0	-100	31.1	-10	12.0	-66	40.4	36	4.0	-84	155.1	472	0.0	-100	0.0	-100
Haryana																
Ambala	106.1	42	32.9	-51	14.6	-80	59.1	-19	129.4	36	66.0	-13	21.0	-68	32.9	-22
Bhiwani	3.6	-89	28.3	-15	17.9	-44	18.6	-36	45.9	32	46.1	56	0.0	-100	1.2	-94
Chandigarh	62.5	-6	31.8	-35	46.6	-35	37.8	-56	95.7	27	105.2	52	27.2	-47	18.7	-34
Faridabad	36.5	-42	65.3	54	97.3	92	33.1	-50	34.5	-18	133.6	142	26.9	-53	6.8	-86
Fatehabad	0.8	-97	11.9	-57	4.6	-80	8.9	-70	6.7	-68	70.1	217	2.8	-84	0.0	-100
Gurgaon	6.5	-87	45.4	11	7.8	-79	32.8	-34	11.3	-76	76.3	87	17.5	-55	5.0	-81
Hissar	6.8	-77	21.2	-34	4.2	-85	48.5	68	9.8	-65	64.1	116	0.0	-100	0.0	-100
Jhajar	17.5	-63	25.8	-28	7.1	-82	15.5	-62	2.3	-93	75.2	105	27.1	-19	1.9	-91
Jind	10.8	-76	32.0	5	23.1	-8	45.5	12	31.0	7	84.3	123	14.2	-58	0.0	-100
Katihah	6.9	-83	5.1	-82	18.1	-42	12.5	-62	35.1	0	54.0	55	6.6	-79	4.4	-80
Karnal	43.0	-29	26.7	-23	29.6	-23	72.8	60	43.5	-13	68.5	16	19.2	-69	6.7	-68
Kurukshetra	0.2	-99	7.1	-85	4.0	-90	26.5	-39	40.3	-8	33.7	-42	10.0	-79	3.6	-85
Mahendragarh	3.3	-93	35.8	-19	21.7	-38	48.3	35	50.9	23	71.5	148	0.1	-99	0.0	-100

Mewat	0.0	-100	59.7	49	51.9	29	20.9	-55	16.7	-69	87.7	119	7.0	-83	2.1	-94
Palwal	32.0	-19	6.8	-82	16.3	-58	28.5	-34	23.2	-41	45.6	10	21.8	-47	11.2	-46
Panchkkula	45.2	-40	39.8	-50	22.0	-73	38.1	-57	65.3	-31	80.0	12	21.1	-70	28.1	-46
Panipat	2.3	-96	10.8	-69	16.5	-54	16.5	-66	32.0	-33	64.8	20	23.5	-51	2.1	-89
Rewari	11.9	-71	26.2	-43	29.7	-11	38.0	-28	59.4	17	47.6	31	8.0	-78	0.5	-98
Rohtak	13.2	-77	6.5	-87	15.4	-65	14.0	-70	10.9	-77	72.4	88	10.2	-79	0.4	-99
Sirsa	1.8	-94	6.8	-73	0.0	-100	53.6	215	0.0	-100	55.8	158	0.0	-100	0.0	-100
Sonepat	19.7	-64	42.8	-7	36.3	-26	46.5	-15	13.9	-70	93.2	89	20.5	-59	0.0	-100
Yamunanagar	5.6	-91	84.1	2	24.7	-67	87.3	9	215.5	182	45.7	-40	26.8	-62	43.7	-19
Delhi	26.4	-60	90	57	30.6	-43	32.8	-55	28.8	-54	100.2	85	12.3	-75	7.7	-81
East Madhya Pradesh																
Anuppur	8.3	-91	54.8	-36	72.2	-9	58.7	-40	85.5	-3	102.3	12	45.5	-42	32.1	-54
Balaghat	234.5	94	114.5	10	126.8	15	41.2	-60	71.1	-33	107.2	-12	61.5	-27	19.0	-78
Chhatarpur	56.0	-12	74.6	-8	122.7	57	56.3	-46	140.4	59	110.8	35	136.2	93	103.8	26
Chindwara	92.8	44	51.6	-19	91.5	59	109.8	43	68.0	8	65.4	18	118.3	115	0.0	-100
Damoh	112.4	39	104.8	23	173.2	90	34.7	-72	172.4	111	250.4	179	183.1	163	21.4	-70
Dindori	46.0	-57	94.2	8	140.0	67	43.3	-61	141.4	54	59.0	-42	88.2	21	59.3	-12
Jabalpur	107.4	34	81.1	0	103.3	22	55.0	-50	93.3	1	372.6	303	185.7	132	60.9	-25
Katni	30.3	-65	68.1	-15	169.0	105	56.7	-50	65.7	-23	205.9	137	94.9	23	20.3	-69
Mandla	124.4	19	125.9	37	184.6	83	61.2	-44	103.4	-6	279.3	159	65.4	-14	33.9	-59
Narsingpur	132.2	67	121.0	51	99.0	17	66.6	-32	135.5	66	156.2	54	168.7	186	1.0	-99
Panna	18.3	-77	58.7	-35	196.1	143	73.0	-27	96.5	-2	91.5	8	92.0	17	229.1	216
Rewa	113.5	50	112.6	59	188.6	136	19.8	-76	182.4	122	148.8	95	91.2	41	30.6	-59
Sagar	115.6	40	84.7	-1	307.8	288	48.1	-60	136.5	50	202.4	129	152.2	104	16.5	-76
Satna	61.1	-2	53.2	-27	111.5	39	52.2	-41	109.6	24	148.2	96	111.2	82	65.0	9
Seoni	232.6	168	67.7	-8	90.7	7	61.7	-29	114.7	54	152.0	109	173.3	188	14.9	-76
Shahdol	19.6	-75	74.0	2	44.0	-27	38.6	-61	61.5	-29	72.0	-13	107.0	68	26.0	-65
Sidhi	44.4	-47	84.2	33	244.0	201	19.4	-74	**	**	130.2	58	115.2	85	55.6	-30
Singrauli	41.5	-37	70.1	42	119.0	51	14.2	-79	50.7	-18	34.4	-54	32.4	-28	15.0	-76
Tikamgarh	86.5	38	122.5	69	154.0	131	39.0	-51	80.0	-4	121.0	38	89.0	44	63.5	3
Umaria	68.2	-23	42.0	-45	102.3	36	113.6	12	37.4	-58	37.7	-63	78.3	-6	38.2	-51
West Madhya Pradesh																
Alirajpur	63.2	14	65.8	-4	120.7	74	93.3	37	60.6	25	5.3	-90	98.4	48	5.3	-90
Asoknagar	78.3	26	108.3	6	271.7	310	69.5	-14	143.8	128	67.0	-22	80.5	30	3.3	-94
Badwani	56.0	25	55.7	18	50.0	2	84.5	85	41.6	-1	9.4	-78	91.6	105	9.1	-79
Betul	199.7	227	121.4	77	124.6	69	173.8	110	51.0	-22	118.3	75	299.8	471	1.1	-98
Bhind	24.1	-50	37.0	-37	65.5	24	74.8	27	109.5	49	56.3	-6	77.0	62	111.9	128
Bhopal	40.2	-39	59.2	-20	230.2	157	68.1	-27	34.5	-54	55.2	-37	175.0	172	0.0	-100
Burhanpur	113.4	144	151.2	226	56.2	-17	124.7	92	104.7	110	26.9	-51	94.8	49	4.5	-91
Datia	40.5	-23	57.1	-16	50.3	-11	108.4	36	116.3	63	178.1	143	48.3	1	127.1	110
Dewas	86.0	23	72.2	6	161.8	88	119.0	42	57.0	-16	57.2	-29	227.3	276	3.3	-96
Dhar	73.0	19	52.7	-15	129.8	81	94.9	30	56.7	14	19.1	-65	123.3	136	7.1	-88
Guna	131.0	113	124.6	23	277.5	269	104.8	11	244.2	240	92.1	11	61.2	-25	3.3	-95

Gwalior	44.2	-22	46.3	-31	57.8	-11	80.5	9	58.9	-22	137.8	103	49.7	-3	42.1	-30
Harda	64.7	-17	92.8	17	84.3	-4	163.1	63	70.8	-13	13.0	-87	208.0	219	0.0	-100
Hosangabad	177.3	86	155.5	68	205.1	101	200.7	65	75.1	-25	178.1	58	302.3	246	0.0	-100
Indore	112.5	90	31.6	-47	165.4	121	113.9	70	54.4	-3	13.1	-78	188.8	264	6.3	-90
Jhabua	55.4	7	51.7	-9	177.6	197	105.1	54	34.3	-31	24.9	-47	135.0	164	5.0	-92
Khandwa	85.3	50	50.3	-14	16.3	-78	134.0	82	102.4	62	27.7	-54	142.3	168	6.0	-91
Khargone	35.5	-33	35.8	-31	63.3	2	121.7	89	33.1	-30	14.4	-70	120.1	138	0.0	-100
Mandsaur	160.4	172	91.4	39	175.6	106	74.9	-1	78.1	40	27.9	-60	71.7	57	0.0	-100
Morena	46.0	-2	98.0	40	54.0	-12	123.0	71	115.3	51	136.3	102	73.0	43	62.0	26
Neemuch	133.4	134	137.5	140	137.0	60	59.3	-5	53.3	-4	74.3	9	95.3	88	0.0	-100
Raisen	51.0	-37	133.8	46	195.6	118	81.7	-24	110.3	32	134.1	35	82.9	11	0.6	-99
Rajgarh	123.7	96	136.1	80	166.4	112	119.6	30	85.3	31	171.2	96	111.8	85	0.0	-100
Ratlam	144.1	120	42.9	-37	209.8	134	116.7	45	62.7	6	9.2	-87	123.4	110	1.3	-98
Sehore	68.4	-13	124.1	49	153.5	62	117.5	16	71.3	-9	79.5	-15	204.4	183	3.8	-96
Shajapur	116.8	88	76.0	10	187.0	104	137.3	52	51.0	-17	111.3	34	184.5	274	1.2	-98
Sheopur Kalani	39.0	-42	54.0	-19	168.0	153	84.5	40	161.0	109	184.0	147	112.1	137	0.0	-100
Shivpuri	107.8	108	115.8	44	172.8	165	104.8	41	171.0	146	76.5	24	34.8	-36	51.0	-6
Ujjain	107.2	88	62.2	6	125.4	54	116.0	55	68.8	37	28.6	-61	158.5	185	2.0	-97
Vidisha	144.7	106	115.3	23	288.4	235	99.0	2	164.4	124	94.1	-3	107.1	39	0.0	-100
Chattisgarh																
Bastar	50.0	-34	62.3	-29	97.9	23	65.9	-28	18.1	-80	119.4	54	25.2	-67	11.8	-85
Bijapur	408.2	381	326.3	180	115.2	-7	303.4	140	73.7	-46	247.9	168	48.7	-47	9.7	-89
Bilaspur	53.5	-35	73.0	-11	97.0	24	39.0	-50	87.4	1	102.6	25	72.1	19	126.2	89
Dantewara	100.5	13	151.1	35	69.0	-22	105.1	5	34.1	-66	196.4	179	12.1	-84	28.3	-63
Dhamtari	46.8	-44	70.6	-12	307.6	267	84.4	5	4.4	-94	96.2	18	50.0	-20	56.0	-15
Durg	70.5	2	155.4	132	281.7	305	95.6	17	48.6	-42	126.6	97	55.1	-16	51.2	-13
Janjgir	39.8	-58	99.9	23	98.0	9	47.1	-51	72.8	-35	89.2	-8	56.9	-28	116.4	61
Jashpurnagar	23.5	-75	28.9	-70	128.3	30	15.2	-84	24.1	-78	53.8	-41	55.0	-35	7.5	-91
Kanker	5.8	-93	24.2	-75	107.0	3	40.0	-66	41.4	-56	55.7	-38	46.0	-47	15.4	-80
Korba	60.9	-39	67.7	-17	83.2	-4	45.9	-57	53.1	-53	107.5	-2	115.3	52	84.0	31
Koriya	100.5	2	92.9	7	154.1	94	56.8	-39	144.8	42	163.1	68	143.1	106	57.3	-11
Kawardha	116.0	73	37.0	-38	44.6	-32	31.4	-55	39.0	-38	58.0	-10	32.0	-46	27.0	-58
Mahasumund	67.6	0	179.9	139	197.4	140	70.2	-20	72.7	-3	104.5	22	45.8	-28	91.2	29
Narayanpur	81.3	-4	87.2	-23	82.2	-9	203.5	94	69.2	-39	105.3	26	18.8	-78	4.1	-95
Raigarh	67.0	-24	99.6	24	178.6	123	64.5	-27	20.3	-78	108.6	27	36.6	-39	105.4	47
Raipur	68.6	-21	139.2	95	167.4	121	69.9	-11	49.6	-38	99.3	26	56.8	-6	87.8	32
Rajandgaon	138.5	79	107.9	25	218.1	169	91.6	6	42.9	-46	126.2	82	32.4	-55	11.0	-86
Surguja	42.4	-58	47.9	-50	127.6	53	22.2	-78	76.8	-18	66.9	-18	26.0	-66	51.9	-28
East Uttar Pradesh																
Allahabad	38.9	-46	62.3	8	80.5	24	26.5	-57	93.3	18	115.9	94	49.6	-17	54.6	15
Ambedkar Nagar	3.0	-96	89.8	19	16.0	-80	34.2	-53	91.0	24	79.0	34	36.0	-39	109.4	130
Azamgarh	5.0	-94	24.6	-68	64.0	-3	32.4	-55	71.9	-4	53.7	-5	85.1	33	77.2	49
Bahraich	65.2	-30	63.3	-26	26.8	-66	67.9	2	89.4	24	32.4	-51	37.6	-47	76.5	39

Ballia	22.5	-71	22.7	-67	43.4	-29	22.7	-64	62.3	-7	47.2	-4	32.7	-44	65.8	56
Balrampur	23.1	-79	95.0	-6	7.5	-92	45.6	-28	72.1	-17	102.0	38	58.0	-21	47.1	-35
Banda	68.8	4	94.6	80	115.1	75	60.8	-19	51.4	-44	88.9	25	38.2	-38	67.3	13
Barabanki	44.9	-48	33.9	-55	15.7	-77	18.7	-72	78.4	8	32.6	-51	38.6	-37	38.6	-27
Basti	36.9	-54	47.1	-45	8.5	-88	5.1	-93	141.9	103	44.1	-27	93.4	47	47.7	-14
Chandauli	60.4	-34	0.0	-100	51.4	-23	35.2	-42	10.2	-87	88.2	41	30.2	-47	56.2	11
Deoria	2.0	-98	31.0	-57	5.0	-93	36.5	-39	80.0	2	39.0	-39	5.5	-92	65.0	16
Faizabad	12.3	-88	24.3	-71	4.1	-95	31.7	-59	41.9	-46	39.5	-43	23.4	-65	38.3	-23
Farrukhabad	39.1	-46	68.5	34	78.8	38	4.0	-92	31.9	-65	40.4	-34	59.6	-6	17.9	-53
Fatehpur	70.3	-3	17.0	-66	60.4	-4	3.2	-95	66.3	-24	75.8	26	11.6	-81	56.0	35
Gazipur	24.3	-66	11.3	-82	98.9	77	20.2	-77	102.8	34	71.1	14	28.2	-49	106.1	124
Gonda	7.5	-92	114.3	31	30.8	-57	11.3	-87	57.8	-25	67.1	12	41.0	-45	48.9	-8
Gorakhpur	30.9	-69	21.0	-76	26.9	-68	36.8	-62	94.2	-7	51.6	-40	61.2	-20	90.9	46
Hardoi	38.2	-47	76.6	33	74.3	21	25.1	-54	27.2	-61	58.4	10	52.9	-23	36.3	-28
Jaunpur	32.2	-62	7.3	-88	46.0	-28	13.6	-75	18.3	-74	35.1	-28	39.5	-38	45.9	-5
Kannauj	66.0	-7	74.6	51	101.8	80	3.8	-94	92.0	-1	137.8	114	68.8	-1	20.4	-53
Kanpur City	24.9	-54	90.2	66	97.3	60	66.4	21	32.8	-57	29.7	-52	9.9	-82	67.4	76
Kanpur Dehat	39.6	-29	43.4	-34	50.0	-21	31.5	-54	19.2	-75	24.2	-60	12.6	-80	31.7	-35
Kaushambi	2.1	-97	13.6	-74	42.9	-29	3.3	-94	29.9	-63	81.1	42	24.8	-58	19.9	-54
Kheri	46.5	-35	103.9	40	30.9	-49	136.7	89	18.3	-72	45.9	-35	73.3	3	43.7	-21
Kushi nagar	14.5	-85	2.5	-97	1.5	-98	6.5	-92	28.0	-69	24.0	-72	27.5	-69	31.0	-38
Lucknow	19.3	-73	79.2	54	22.3	-65	27.3	-57	51.7	-23	59.6	7	18.2	-68	45.5	-1
Maharajganj	25.7	-76	20.6	-79	4.0	-96	15.7	-80	46.6	-55	49.2	-45	107.0	28	62.3	13
Mau	16.0	-83	1.0	-99	29.8	-59	3.5	-95	26.5	-67	44.5	-37	31.0	-60	65.5	23
Mirzapur	27.7	-65	26.5	-58	65.0	-2	30.3	-57	66.7	-24	93.5	76	101.3	79	43.4	-21
Pratapgarh	22.0	-71	44.3	-26	62.3	-11	13.3	-77	49.3	-36	138.5	133	44.0	-39	73.7	49
RaiBareilly	18.8	-73	77.3	48	54.4	-11	20.4	-63	29.0	-58	35.2	-38	5.0	-91	45.3	3
Sahuji Maharajnagar	54.3	-13	105.4	61	123.5	118	31.0	-54	76.0	-4	167.5	131	79.8	10	39.3	-37
Sant Kabirnagar	23.0	-76	24.0	-73	24.0	-69	25.0	-68	67.0	-4	37.0	-42	78.0	23	87.0	78
Sant Ravidas Nagar	12.0	-87	8.0	-88	44.0	-34	52.0	-14	43.0	-45	72.0	15	62.0	8	43.0	-15
Shrawasti	85.4	-8	78.2	-8	37.5	-52	51.3	-23	61.5	-14	67.3	1	34.7	-51	90.5	65
Sidharthnagar	50.2	-47	84.5	-5	32.5	-62	35.9	-47	35.9	-55	36.5	-48	202.9	172	84.7	53
Sitapur	44.5	-37	74.9	15	48.5	-25	172.7	230	34.4	-51	69.4	14	19.8	-71	44.0	-28
Sonbhadra	39.8	-47	46.3	-26	137.2	132	52.9	-25	78.8	-3	82.2	35	42.1	-27	51.2	-10
Sultanpur	62.7	-18	92.3	34	29.0	-56	23.8	-58	67.8	0	62.4	2	15.0	-77	44.7	-12
Unnao	23.8	-65	46.5	-19	36.5	-37	27.8	-58	16.3	-80	42.8	-29	27.8	-56	78.8	85
Varanasi	52.3	-43	10.3	-85	74.2	13	34.5	-43	64.8	-6	88.6	49	22.5	-67	114.2	104
West Uttar Pradesh																
Agra	26.3	-52	59.0	4	20.3	-63	37.7	-45	78.4	4	53.5	-14	13.3	-76	98.8	124
Aligarh	25.5	-51	28.6	-42	79.5	43	18.7	-73	65.0		73.6	28	12.4	-80	65.4	86
Auraiya	86.9	53	17.0	-69	36.5	-33	72.0	14	41.0	-45	40.9	-23	94.9	63	65.1	47
Badaun	43.6	-22	42.0	-21	66.7	-7	4.0	-94	43.4	-40	14.0	-74	32.8	-56	23.0	-53
Baghpat	5.5	-90	30.8	-20	23.2	-49	110.8	83	61.8	14	36.6	-20	6.0	-89	2.1	-88
Bareilly	62.9	-9	131.5	112	103.1	27	42.2	-40	25.5	-65	62.5	20	71.1	-8	46.3	-17

Bijnor	20.3	-74	76.9	-8	105.0	10	81.6	-4	116.7	44	32.4	-48	125.6	66	32.1	-21
Bulandsahar	5.8	-89	38.1	-22	39.1	-36	7.4	-87	34.7	-43	24.6	-59	19.0	-71	26.7	-23
Etah	20.3	-59	56.5	27	56.3	20	4.0	-93	67.8	-1	71.0	50	41.3	-29	38.5	17
Etawah	79.5	62	19.5	-66	39.5	-32	53.3	-30	61.0	-24	63.8	-2	24.0	-53	34.8	-23
Firozabad	37.9	-33	56.4	-7	57.8	49	30.1	-49	88.7	29	127.6	130	29.5	-47	62.7	54
GBNagar	7.0	-86	20.0	-57	12.0	-67	6.0	-90	33.0	-44	44.0	-16	33.0	-34	27.0	7
Ghaziabad	19.7	-67	37.0	-18	7.0	-87	11.5	-83	27.0	-53	36.2	-36	15.2	-76	4.3	-88
Hamirpur	29.7	-47	65.3	2	58.2	-6	61.6	-18	80.0	-14	73.1	15	49.1	-19	160.9	235
Jalaun	24.6	-57	90.7	53	52.8	-5	57.0	-27	23.7	-76	46.8	-18	68.0	25	122.6	148
Jhansi	83.2	51	25.9	-61	105.2	68	27.2	-62	79.9	-14	86.1	22	54.1	-5	164.4	183
Jotirba Phule Nagar	2.5	-96	61.5	3	21.5	-70	34.0	-45	102.0	26	30.5	-52	46.0	-40	23.5	-41
Kanshiramnagar	0.0	-100	26.0	-51	44.0	-18	1.0	-98	138.0	90	72.0	34	70.0	-3	51.0	4
Lalitpur	131.0	104	122.4	33	269.5	262	87.5	0	184.5	98	183.0	152	99.0	41	17.0	-77
Mahamaya Nagar	18.5	-69	52.0	10	26.5	-51	11.5	-79	117.0	58	81.5	52	10.0	-80	64.5	109
Mahoba	13.8	-72	23.4	-62	95.2	51	14.6	-81	34.6	-63	12.4	-82	74.2	25	107.6	137
Mainpuri	70.0	31	28.2	-41	57.3	16	18.5	-67	50.9	-32	103.7	92	42.6	-8	26.4	-35
Mathura	24.5	-46	65.7	31	22.2	-54	10.0	-83	22.5	-62	47.8	-16	28.0	-46	50.0	42
Meerut	53.3	-19	49.5	-18	36.7	-44	118.6	63	83.4	11	36.5	-48	40.8	-43	45.7	17
Moradabad	21.5	-65	108.5	66	81.5	2	17.4	-76	82.9	3	60.7	-9	116.8	58	35.3	-17
Muzaffarnagar	12.5	-82	42.5	-22	40.0	-35	103.9	57	138.2	95	40.8	-39	40.1	-29	74.2	126
Pilibhit	22.9	-69	78.7	11	59.1	-33	44.2	-47	63.4	-19	21.6	-70	67.1	-20	18.9	-71
Rampur	28.6	-57	49.9	-29	62.2	-35	33.8	-58	50.9	-34	51.0	-24	77.9	1	16.3	-65
Saharanpur	32.0	-59	207.7	269	83.3	33	122.7	62	219.0	225	11.3	-86	21.3	-65	63.0	79
Shahjahanpur	53.5	-21	133.6	95	50.1	-28	59.8	-14	32.2	-56	78.1	22	57.8	-27	15.3	-68
Bihar																
Araria	116.3	7	132.4	25	42.8	-58	128.2	56	133.8	62	49.5	-35	28.5	-68	34.2	-47
Arwal	8.3	-89	0.0	-100	27.2	-47	9.6	-81	15.2	-77	115.4	113	15.6	-73	144.0	265
Aurangabad	4.8	-94	0.0	-100	34.3	-46	56.2	1	65.3	18	75.0	26	49.6	-16	96.4	71
Banka	19.4	-75	6.4	-87	98.8	71	19.8	-66	35.4	-37	52.6	-13	132.0	165	256.0	493
Begusarai	65.3	-17	0.0	-100	35.2	-52	10.0	-85	27.7	-46	7.6	-82	17.8	-74	41.2	-29
Bhabua	68.7	-23	0.0	-100	63.4	-10	51.9	-33	46.7	-28	58.7	-7	35.2	-52	121.3	103
Bhagalpur	31.8	-54	6.1	-89	32.1	-47	38.8	-43	94.0	8	21.0	-67	66.0	15	146.2	197
Bhojpur	8.3	-91	3.1	-95	4.8	-94	19.7	-69	61.9	8	48.0	-25	36.0	-46	123.2	138
Buxar	1.0	-99	36.0	-42	35.0	-41	20.8	-64	89.6	33	14.4	-73	42.2	-28	39.6	-28
Darbhanga	62.8	-14	1.9	-96	50.0	-34	51.5	-20	28.9	-60	47.0	-21	9.2	-87	92.4	103
East Champaran	74.4	-7	16.6	-81	11.3	-86	15.2	-75	50.4	-28	74.2	18	57.2	-27	90.4	80
Gaya	2.0	-97	0.9	-99	29.8	-54	11.2	-84	51.4	-15	33.8	-46	50.8	-16	91.0	82
Gopalganj	10.3	-87	9.7	-84	7.3	-89	0.0	-100	41.5	-47	43.0	-33	73.7	-7	48.2	3
Jahanabad	8.3	-90	4.1	-91	23.1	-56	5.0	-93	59.4	1	98.9	59	32.4	-31	148.3	227
Jamui	42.4	-47	7.6	-87	35.9	-42	22.4	-65	59.8	6	40.9	-22	74.2	24	101.5	102
Kathihar	29.3	-69	6.5	-90	25.4	-66	55.5	-17	65.5	25	17.9	-72	121.9	100	94.7	103
Khagadia	15.9	-82	0.8	-98	44.0	-23	18.8	-77	49.7	-27	27.8	-54	52.9	-21	75.6	61
Kishanganj	202.1	39	200.2	45	29.2	-74	165.3	77	182.0	50	59.6	-39	56.0	-48	128.9	37

Lakhisarai	2.0	-97	0.0	-100	18.0	-74	46.0	-37	20.0	-63	13.0	-77	30.0	-55	77.0	51
Madhepura	24.2	-76	18.5	-75	42.1	-42	33.4	-52	95.9	34	28.1	-43	29.7	-65	152.1	127
Madhubani	65.0	-15	26.9	-69	20.0	-76	12.4	-79	22.5	-73	7.1	-86	21.2	-75	56.3	2
Monghyar	41.3	-47	0.0	-100	93.8	37	25.9	-64	61.9	15	21.9	-62	29.5	-56	146.0	186
Muzaffarpur	16.9	-79	0.5	-99	16.4	-78	13.3	-79	40.5	-38	27.2	-56	33.2	-58	61.8	36
Nalanda	10.4	-87	3.9	-93	19.8	-69	27.2	-56	83.8	37	95.8	63	58.3	-1	122.0	152
Nawada	3.2	-96	1.4	-98	29.1	-50	4.3	-94	59.9	-7	45.3	-29	57.4	-4	107.8	157
Patna	14.2	-85	0.7	-99	20.9	-71	6.9	-87	13.8	-79	92.3	69	30.3	-58	186.0	357
Purnea	20.7	-84	25.3	-71	46.3	-44	33.7	-60	28.9	-64	96.3	70	54.6	-36	58.4	-12
Rohtas	22.2	-71	6.3	-88	69.0	-1	94.1	36	61.3	0	111.4	84	51.7	-14	102.0	76
Saharsha	9.4	-92	5.6	-94	20.4	-81	17.4	-75	88.5	-23	0.0	-100	45.7	-46	237.1	343
Samstipur	25.0	-74	4.1	-93	19.3	-72	46.5	-31	11.0	-85	11.8	-84	6.8	-89	119.7	149
Saran	7.3	-91	3.7	-94	13.6	-82	33.3	-45	51.7	-26	20.6	-69	20.0	-73	100.4	116
Sheikpura	10.8	-88	0.0	-100	26.1	-56	25.2	-58	20.9	-55	36.3	-31	10.8	-83	39.3	-8
Sheohar	8.0	-89	8.0	-91	19.0	-83	0.0	-100	58.0	-24	30.0	-49	0.0	-100	47.6	9
Sitamarhi	8.8	-87	11.6	-86	11.9	-89	14.4	-76	30.6	-60	56.7	-4	35.9	-62	68.0	55
Siwan	6.8	-92	3.4	-95	8.9	-88	6.1	-90	153.0	114	13.4	-78	92.5	37	146.4	225
Supaul	42.6	-55	96.4	15	25.0	-67	40.4	-21	38.5	-35	59.1	5	18.0	-78	144.7	191
Vaishali	19.3	-81	4.6	-93	12.6	-86	16.1	-74	33.6	-52	10.4	-83	38.9	-47	52.3	31
West Champaran	38.1	-62	31.8	-65	61.3	-51	60.4	-8	45.7	-47	39.5	-41	61.1	-45	80.5	55
East Rajasthan																
Ajmer	12.6	-74	31.9	-31	39.0	0	34.6	2	65.2	74	45.6	7	17.8	-43	0.0	-100
Alwar	33.4	-36	67.7	27	33.7	-30	82.2	55	62.5	12	96.4	96	15.2	-65	1.2	-97
Banswara	76.1	21	66.3	11	142.0	73	62.1	-18	81.7	32	8.7	-88	93.0	57	1.0	-98
Baran	107.2	75	155.7	68	267.5	271	135.6	82	252.5	230	150.5	97	60.3	10	0.3	-99
Bharatpur	45.3	-4	60.9	27	38.2	-15	38.7	-34	77.4	39	82.7	61	27.7	-45	15.8	-62
Bhilwara	35.1	-32	53.0	-3	84.5	64	55.1	16	111.0	118	32.8	-46	34.3	-19	0.0	-100
Bundi	80.4	44	91.5	18	152.8	143	80.6	43	114.0	99	68.5	10	36.7	-13	0.0	-100
Chittorgarh	62.2	11	59.6	0	124.0	75	80.2	38	151.2	167	27.5	-63	55.8	-4	0.0	-100
Dausa	67.9	-2	67.0	-2	79.0	56	65.4	16	146.6	127	88.6	65	8.0	-81	0.0	-100
Dholpur	41.0	-18	111.2	114	38.3	-25	99.8	55	132.5	80	121.7	90	60.3	25	50.8	25
Dungarpur	108.3	104	86.7	103	105.5	78	68.9	20	54.0	27	26.3	-54	40.6	-11	0.4	-99
Jaipur	44.1	-26	41.9	-34	52.2	13	68.9	45	77.3	63	94.6	120	21.4	-51	0.0	-100
Jhalawar	155.2	175	161.1	105	208.4	181	93.9	12	144.1	103	155.0	70	77.2	21	2.0	-97
Jhunjhunu	28.7	-33	59.4	19	26.7	-8	61.2	62	37.9	7	52.1	74	0.9	-97	0.0	-100
Karauli	69.8	26	83.5	20	79.4	48	60.2	-2	137.8	45	111.0	91	33.8	-16	1.8	-96
Kota	60.5	4	128.9	55	217.5	204	109.9	78	144.8	113	101.1	37	25.6	-48	2.1	-96
Pratapgarh	134.6	113	131.4	127	156.4	96	73.2	0	104.8	94	31.4	-60	92.6	72	0.0	-100
Rajsamand	65.6	39	58.9	52	87.3	96	58.7	49	92.7	127	28.4	-37	12.6	-68	0.0	-100
Sawai Madhopur	106.8	79	44.3	-43	81.4	35	52.8	-19	159.1	102	110.0	82	24.3	-48	0.0	-100
Sikar	50.9	18	30.2	-46	61.2	83	71.4	119	41.4	20	53.0	89	7.9	-75	0.0	-100

Sirohi	45.3	-34	79.5	7	130.7	35	61.1	-30	106.9	61	43.7	-43	1.7	-97	0.7	-99
Tonk	55.8	-5	57.9	-13	115.7	133	61.2	22	142.6	178	88.5	58	39.9	3	0.0	-100
Udaipur	53.8	11	87.5	93	98.7	92	66.0	24	58.7	41	21.5	-56	22.2	-49	0.0	-100
West Rajasthan																
Barmer	21.9	-7	0.7	-97	70.6	239	12.4	-52	55.1	212	72.0	226	0.0	-100	0.0	-100
Bikaner	7.3	-67	31.7	16	35.0	117	26.2	41	41.2	161	44.3	146	2.7	-83	0.0	-100
Churu	39.0	20	47.5	25	43.8	75	48.8	84	38.1	57	52.8	155	3.4	-87	0.0	-100
Hanumangarh	9.6	-59	11.4	-59	45.6	110	28.2	26	12.2	-42	88.1	336	0.0	-100	0.0	-100
Jaisalmer	3.3	-79	3.3	-79	31.5	152	17.9	36	15.2	18	87.3	382	0.0	-100	0.0	-100
Jalore	8.9	-77	13.9	-52	96.4	111	32.2	-14	100.9	269	22.6	-37	0.0	-100	0.0	-100
Jodhpur	10.7	-64	45.4	71	63.9	143	14.0	-40	77.9	251	62.2	166	3.1	-85	0.0	-100
Nagaur	15.1	-67	53.7	22	33.5	36	57.5	130	49.9	92	63.3	121	7.1	-76	0.0	-100
Pali	10.8	-76	68.5	65	53.2	21	48.3	26	113.5	220	13.2	-66	3.9	-87	0.0	-100
Sri Ganganagar	12.5	-36	7.8	-69	25.7	81	12.9	-21	13.7	-13	65.0	285	2.1	-81	0.0	-100
Gujarat Region																
Ahmedabad	82.5	68	51.6	13	87.9	82	94.0	96	35.6	-30	25.3	-37	4.3	-87	0.8	-98
Anand	93.9	48	91.9	49	140.5	115	84.8	38	104.9	65	39.8	-32	20.0	-58	1.1	-98
Banaskantha	150.6	220	29.2	-30	109.7	84	46.4	-9	69.9	86	46.2	9	0.0	-99	0.0	-100
Baroda	124.8	68	85.9	17	113.0	43	129.2	71	63.0	-13	16.6	-75	63.8	10	3.7	-94
Broach	168.3	193	62.6	6	59.6	-11	97.0	73	41.6	-20	7.2	-85	7.0	-82	2.3	-95
DNH	556.9	191	396.7	103	195.9	-7	307.7	79	151.3	-10	67.4	-43	40.1	-67	10.9	-94
Dahod	45.3	-25	25.6	-53	90.8	10	74.8	-6	59.5	-1	21.9	-66	75.8	35	4.5	-94
Daman	459.0	140	249.0	28	215.0	2	258.6	51	93.4	-44	24.8	-79	29.2	-76	15.6	-91
Dangs	170.2	5	122.7	-24	119.0	-45	74.8	-54	219.9	64	26.4	-78	73.8	-38	11.1	-92
Gandhinagar	120.8	105	44.9	-28	75.1	23	152.9	102	59.5	29	33.4	-23	6.6	-82	0.0	-100
Kheda	78.4	24	47.6	-25	134.9	89	95.7	47	53.3	-14	23.1	-60	19.3	-59	0.0	-100
Mehsana	169.2	184	62.2	31	104.1	88	68.3	21	45.4	-4	25.0	-41	0.2	-99	0.0	-100
Narmada	66.3	-24	84.7	3	116.1	16	232.0	150	69.3	-20	38.6	-44	24.3	-61	28.3	-63
Navsari	267.3	64	206.7	34	143.9	-14	132.2	-1	123.8	0	36.6	-62	29.8	-66	21.7	-80
Panchmahal	80.8	11	56.3	-10	138.8	64	73.6	-12	83.7	12	32.3	-54	84.0	40	3.1	-96
Patan	88.6	77	24.0	-38	54.4	5	58.1	35	69.5	80	47.7	35	1.0	-97	0.1	-99
Sabarkantha	111.8	65	95.0	66	145.0	95	107.9	51	100.8	67	34.0	-37	19.2	-59	0.0	-100
Surat	206.9	88	163.0	62	162.7	46	149.6	74	118.4	40	28.7	-55	27.5	-55	4.8	-94
Tapi	151.5	24	267.1	141	204.6	30	115.3	-9	133.0	24	31.7	-60	29.6	-66	7.2	-92
Valsad	456.8	152	270.4	58	194.9	13	215.8	49	128.6	-2	38.6	-62	32.5	-66	10.2	-92
S K & Diu region																
Amreli	79.6	73	51.0	14	97.2	156	73.4	150	8.0	-73	14.3	-49	3.1	-88	1.8	-94
Bhavnagar	98.4	156	52.4	35	63.8	55	90.5	179	33.2	8	20.1	-31	5.9	-81	3.8	-88
Diu	50.8	-15	65.1	13	85.1	63	57.0	33	30.6	-23	42.8	65	0.6	-95	2.2	-90
Jamnagar	123.5	156	26.7	-49	40.3	7	60.4	107	29.1	-21	23.8	21	0.0	-100	3.4	-88

Junagarh	86.0	21	91.9	14	146.1	133	49.5	15	27.1	-39	20.8	-42	0.8	-97	5.1	-87
Kutch	41.1	0	3.4	-91	67.0	108	16.6	-38	22.4	-21	46.8	146	0.2	-99	0.7	-97
Porbandar	84.7	23	80.5	15	87.3	93	55.2	45	28.6	-39	52.6	96	0.2	-99	2.4	-94
Rajkot	72.7	41	53.2	2	81.2	60	54.0	41	28.9	-23	30.6	9	0.1	-99	1.4	-95
Surendranagar	39.7	5	39.4	-17	44.1	30	23.2	-38	21.7	-34	21.2	-27	1.2	-96	0.6	-98
Maharashtra																
Konkan & Goa																
Goa	276.6	11	429.3	59	288.2	18	143.0	-30	74.6	-62	235.2	80	61.3	-44	8.2	-91
Mumbai	227.2	32	441.9	157	97.0	-41	93.1	-31	64.8	-50	34.5	-63	42.0	-62	0.4	-99
Raigad	450.6	74	618.4	134	258.6	-7	174.1	-24	111.9	-48	79.3	-56	70.1	-58	24.5	-84
Ratnagiri	354.9	41	633.5	128	207.6	-25	203.5	-16	119.8	-46	159.3	-14	89.9	-43	24.4	-82
Sindhudurg	339.8	43	479.1	82	198.3	-22	151.5	-23	65.7	-64	265.4	94	65.8	-53	9.3	-91
Thane	387.1	61	374.6	84	188.5	-8	182.2	-4	137.4	-25	94.9	-28	55.2	-56	20.0	-84
Madhya Maharashtra																
Ahmednagar	45.4	111	71.8	204	10.9	-53	30.7	55	11.7	-31	5.6	-69	7.9	-68	0.1	-99
Dhule	72.2	92	58.4	49	93.0	145	79.0	92	43.1	68	4.3	-84	40.1	51	0.8	-97
Jalgaon	61.5	46	102.2	147	45.3	-9	79.4	55	55.3	23	11.9	-73	67.1	70	1.7	-96
Kolhapur	158.3	3	302.3	72	202.9	35	168.1	20	46.7	-63	60.6	-41	46.0	-42	7.8	-88
Nandurbar	47.0	-31	67.8	1	198.2	178	91.7	33	109.0	101	23.5	-52	33.2	-30	1.3	-97
Nasik	113.0	61	136.4	95	73.8	-7	84.1	17	81.7	34	35.7	-35	37.4	-23	9.1	-83
Pune	93.5	36	118.7	76	113.1	58	68.6	6	25.2	-58	17.4	-62	14.1	-64	3.7	-91
Sangli	46.5	41	77.4	122	36.9	11	36.3	19	4.2	-85	10.9	-44	3.7	-83	4.3	-78
Satara	70.7	27	96.8	63	72.2	24	74.2	45	17.2	-64	12.9	-62	9.5	-68	3.1	-89
Solapur	54.3	165	61.6	151	1.5	-95	21.5	-5	7.2	-63	10.7	-48	4.0	-85	2.5	-91
Marathwada																
Aurangabad	62.2	88	73.1	100	8.4	-80	52.9	44	26.1	-22	6.0	-81	34.0	-7	0.4	-99
Beed	50.7	99	101.0	186	4.2	-88	42.2	72	22.2	-31	21.0	-31	5.5	-83	2.1	-95
Hingoli	117.2	131	179.9	213	21.2	-65	108.2	83	45.5	-20	25.7	-59	27.3	-49	0.4	-99
Jalna	65.5	97	115.9	203	13.8	-69	72.5	107	32.4	-6	5.5	-84	14.9	-60	0.3	-99
Latur	90.4	132	150.7	194	19.9	-70	44.9	-5	55.0	21	35.9	-32	11.7	-78	9.7	-82
Nanded	115.2	130	171.1	169	47.2	-29	88.0	75	46.5	-18	49.5	-16	14.3	-74	2.2	-96
Usmanabad	68.1	152	97.5	161	8.6	-81	36.6	15	19.9	-32	11.2	-68	9.9	-77	3.6	-91
Parbhani	92.8	123	143.7	193	24.3	-61	61.3	41	61.4	47	15.8	-72	12.0	-79	0.8	-99
Vidarbha																
Akola	110.3	105	89.2	45	72.2	47	103.7	90	84.2	75	13.0	-69	72.1	82	3.0	-93
Amraoti	118.2	93	74.1	21	42.9	-28	101.8	49	33.4	-42	28.2	-48	88.6	107	1.3	-97
Bhandara	153.2	64	153.4	103	174.6	101	260.8	149	113.1	17	99.8	23	69.4	-4	7.0	-91
Buldhana	57.7	40	133.2	191	28.8	-38	89.0	66	34.1	-20	8.0	-81	42.4	3	3.0	-92
Chandrapur	204.8	126	289.8	257	178.1	112	142.0	43	38.8	-55	138.7	83	21.3	-73	7.8	-90
Gadchiroli	193.7	81	295.2	169	251.7	141	207.2	81	73.7	-33	178.2	95	44.9	-50	9.8	-88
Gondia	318.8	223	153.0	70	240.9	160	131.7	24	99.5	0	152.1	67	87.3	-3	11.1	-87
Nagpur	140.3	83	155.9	139	80.9	23	157.9	99	45.2	-21	59.8	-3	67.8	30	9.0	-87
Wardha	205.9	194	180.3	193	48.7	-22	63.5	-13	24.2	-62	44.9	-20	31.6	-41	1.1	-98
Washim	103.4	65	109.5	85	40.9	-19	157.1	135	64.9	-3	6.6	-88	35.4	-23	0.0	-100

Yeotmal	185.0	191	130.6	94	79.1	38	147.6	128	34.5	-45	33.9	-41	25.7	-53	0.3	-99
Odisha																
Angul	116.7	68	75.5	-15	140.3	119	26.8	-69	60.6	-24	111.7	31	4.3	-94	27.0	-65
Balasore	76.0	45	45.4	-48	116.6	66	38.6	-55	47.3	-34	178.6	136	72.3	-1	61.2	3
Bargarh	57.3	-30	88.9	10	182.9	108	33.3	-60	55.8	-36	63.8	-29	20.4	-69	77.5	10
Bhadrak	62.6	-8	66.9	1	86.3	52	25.8	-73	64.8	-15	73.6	-9	29.7	-59	58.7	-5
Bolangir	35.2	-64	143.6	70	176.0	107	44.9	-46	68.9	-17	91.9	8	24.3	-64	33.0	-64
Boudh	33.0	-54	93.0	30	83.8	13	26.5	-70	50.0	-44	80.4	-3	2.7	-97	28.4	-58
Cuttack	97.9	36	115.8	44	78.7	-9	19.9	-74	19.8	-75	52.7	-44	7.0	-91	32.3	-46
Deogarh	137.8	61	97.1	2	123.2	26	81.0	-29	47.1	-61	256.1	115	4.3	-95	55.9	-33
Dhenkanal	102.2	50	102.5	12	151.6	117	24.2	-72	45.4	-49	54.4	-35	14.1	-83	32.9	-51
Gajapati	52.0	-1	85.4	19	28.3	-57	64.7	36	26.9	-57	65.4	-2	5.0	-91	26.6	-55
Ganjam	67.7	26	126.2	145	68.9	13	11.9	-75	70.7	39	42.6	-34	32.2	-40	33.7	-38
Jagatsingpur	65.9	7	81.6	6	56.4	-32	33.6	-68	41.7	-31	39.8	-62	22.5	-67	45.2	-14
Jajpur	36.2	-47	73.5	7	117.1	58	23.7	-73	33.8	-56	89.7	5	12.1	-86	45.2	-29
Jharsuguda	90.5	-7	60.3	-35	213.5	156	42.3	-59	98.6	-9	106.8	11	13.7	-82	50.0	-36
Kalahandi	43.3	-50	93.9	11	147.6	70	52.4	-37	63.9	-35	101.7	13	9.3	-87	29.1	-53
Kandhamal	48.1	-33	132.6	86	123.1	67	41.1	-53	59.9	-32	103.7	26	15.9	-80	21.9	-68
Kendrapara	43.4	-26	91.2	50	101.7	84	57.3	-39	55.2	-32	26.8	-70	46.7	-39	50.3	-20
Keonjhar	65.6	10	67.9	-13	199.8	217	65.6	-26	55.3	-23	101.5	40	38.9	-38	48.5	-28
Khurda	111.5	47	122.2	50	48.9	-32	41.4	-49	36.8	-52	55.8	-35	46.6	-33	35.4	-38
Koraput	135.0	57	84.7	-6	42.9	-53	114.1	17	71.7	-34	103.7	10	20.9	-74	14.3	-81
Malkangiri	116.6	36	126.0	3	57.5	-48	69.5	-31	100.3	-13	139.0	28	6.8	-93	7.0	-91
Mayurbhanj	74.5	7	67.0	-33	277.6	336	26.6	-73	40.6	-53	228.3	171	68.5	-5	44.8	-47
Nawapara	59.8	-22	121.1	55	257.2	243	49.7	-20	94.6	38	105.3	39	12.0	-82	44.3	-30
Nawarangpur	75.3	-4	105.5	-15	113.9	29	135.6	61	56.0	-54	53.7	-45	6.2	-94	69.0	-22
Nayagarh	94.5	26	211.3	180	60.7	-17	31.3	-56	53.7	-29	69.2	-19	29.6	-55	39.4	-40
Puri	80.1	44	112.6	100	44.9	-40	42.8	-37	59.5	-26	33.9	-61	60.6	-5	36.0	-45
Rayagada	77.7	3	79.4	-10	55.1	-29	89.5	68	73.5	21	66.3	-1	7.2	-88	39.7	-35
Sambalpur	97.3	14	127.8	35	194.2	99	53.1	-53	63.8	-48	115.1	-3	2.3	-97	27.1	-68
Sonepur	81.9	3	153.0	85	134.3	37	47.0	-56	93.1	-8	54.4	-49	4.9	-93	57.4	-35
Sundargarh	127.4	42	59.5	-27	231.2	178	50.2	-47	79.4	-4	197.2	112	13.8	-80	47.9	-37
West Bengal																
GWB																
Bankura	19.8	-70	45.9	-33	198.9	198	28.2	-58	76.1	3	153.5	146	52.2	-17	28.8	-54
Birbhum	18.1	-78	38.2	-45	84.1	34	61.4	-20	102.0	33	92.1	49	88.6	54	66.2	21
Burdwan	9.6	-87	46.1	-38	80.4	37	49.4	-40	44.6	-31	121.4	106	68.9	16	77.8	41
East Midnapore	39.6	-19	61.3	-3	162.8	128	63.7	-25	114.1	99	182.7	127	136.7	80	61.3	-28
Hooghly	21.2	-66	37.6	-53	137.2	99	57.4	-20	46.6	-14	193.6	221	28.2	-52	47.4	-34
Howrah	16.7	-77	60.2	-27	103.0	33	20.0	-82	60.5	-4	219.7	189	121.9	162	77.8	2
Kolkata	68.8	-11	99.8	18	151.1	81	73.5	-20	127.9	79	327.3	395	126.3	63	66.7	-4
Murshidabad	7.9	-90	18.6	-74	43.0	-33	18.7	-72	73.8	38	93.0	55	68.8	26	117.0	116
Nadia	21.6	-64	17.0	-75	62.0	22	38.0	-38	56.3	20	134.6	105	116.6	171	43.2	-14
24 Pargana (N)	46.5	-34	61.9	-19	142.8	112	50.6	-43	79.6	36	161.9	120	75.1	19	33.5	-37

Purulia	19.4	-72	44.6	-29	190.4	232	19.3	-77	29.1	-58	183.9	202	50.7	-25	44.8	-39
24 Pargana (S)	74.1	-18	56.4	-47	162.7	45	44.5	-58	162.1	76	312.4	262	137.9	39	102.1	9
West Midnapore	21.8	-68	25.9	-66	366.0	348	29.3	-65	22.8	-67	209.6	197	43.2	-37	88.0	17
SHWB																
Cooch Behar	29.6	-85	14.5	-91	19.3	-88	69.1	-60	147.9	-32	35.2	-72	50.8	-69	119.8	-2
Darjeeling	159.6	-10	138.2	-24	99.5	-45	156.6	10	82.5	-47	141.1	0	82.4	-49	158.2	43
East Sikkim	68.5	-38	69.0	-39	98.2	-24	85.2	-27	46.9	-49	65.6	-31	107.6	6	59.4	-43
Jalpaiguri	154.0	-24	256.3	23	51.9	-69	174.6	23	135.8	-16	129.4	-12	117.5	-27	235.1	84
Malda	27.2	-64	26.8	-62	48.5	-35	55.4	-12	101.0	63	67.1	8	42.6	-42	42.5	-22
North Dinajpur	50.4	-46	4.0	-95	13.0	-81	129.9	134	142.5	82	43.0	-25	14.0	-80	42.5	-57
North Sikkim	86.1	-10	53.3	-54	48.1	-60	67.0	-21	21.6	-76	119.1	11	83.7	-20	109.5	-1
South Dinajpur	28.0	-69	18.2	-76	58.9	-27	35.0	-32	91.1	85	58.5	-9	29.1	-56	43.1	-12
South Sikkim	39.9	-64	65.1	-42	82.1	-37	102.8	-12	44.3	-52	69.1	-27	88.3	-13	63.5	-39
West Sikkim	34.0	-65	96.0	-17	101.0	-16	102.7	22	57.7	-37	102.2	-5	160.0	53	60.0	-46
Karnataka																
Coastal Karnataka																
Dakshin Kannada	267.9	-2	301.5	3	316.0	19	247.4	9	119.8	-43	188.5	-4	91.7	-39	31.1	-69
Udupi	273.7	-11	369.8	8	406.3	45	288.8	23	149.5	-38	293.8	41	108.7	-35	8.9	-92
Uttar Kannada	206.8	-14	398.0	51	374.8	78	218.6	15	86.8	-52	215.7	46	77.6	-29	24.8	-69
N I Karnataka																
Bagalkote	30.5	96	25.9	42	8.6	-58	2.7	-85	2.8	-83	12.3	-11	0.8	-95	14.8	-19
Belgaum	44.7	-1	85.7	84	63.5	56	51.9	31	8.6	-74	19.4	-19	8.9	-57	4.9	-73
Bidar	96.5	135	146.7	192	23.8	-48	39.1	-7	25.1	-39	33.5	-30	7.5	-84	11.7	-74
Bijapur	44.2	154	41.2	102	1.6	-95	9.3	-49	5.4	-73	27.8	49	3.3	-84	24.2	-13
Dharwad	22.0	-38	60.1	85	54.3	79	46.6	61	6.5	-75	13.5	-34	10.1	-45	37.9	135
Gadag	12.6	-27	15.8	-1	17.7	-4	17.2	-7	3.6	-79	15.2	20	7.5	-59	29.7	62
Gulbarga	69.7	128	79.8	95	6.9	-84	18.0	-48	29.8	-17	23.5	-47	7.7	-79	37.3	-7
Haveri	23.2	-43	64.2	67	71.9	123	42.5	32	11.9	-59	17.7	-25	17.8	-7	21.2	43
Koppal	43.9	145	19.1	0	2.7	-89	20.7	14	7.5	-66	32.2	94	7.7	-62	33.1	41
Raichur	63.1	158	36.3	38	2.9	-91	7.6	-70	5.9	-81	66.7	148	6.0	-76	49.0	74
Yadgir	45.8	44	28.8	-31	1.8	-96	7.6	-78	12.6	-65	71.0	72	0.4	-99	37.5	5
S I Karnataka																
Bangalore Rural	27.8	29	37.7	50	0.6	-98	8.1	-66	7.8	-68	51.2	80	8.6	-72	69.5	160
Bangalore Urban	20.7	5	33.8	36	3.2	-87	15.3	-44	8.3	-73	34.2	16	8.3	-72	58.3	111
Bellary	36.1	105	17.6	1	8.1	-65	24.7	27	19.2	-4	20.7	19	9.0	-58	39.9	89
Chamarajnaragar	14.1	10	34.8	80	11.1	-20	12.5	-27	12.0	11	5.4	-66	4.2	-75	74.3	416
Chichballapur	14.8	-31	18.8	-14	8.9	-61	8.5	-64	2.3	-89	31.6	28	1.3	-95	54.8	124
Chickmagalur	130.6	-8	273.4	86	217.1	67	214.2	67	45.3	-59	55.1	-45	47.4	-30	41.0	-9
Chitradurga	14.7	10	31.7	133	18.8	33	20.9	36	9.7	-16	18.5	47	8.4	-39	30.1	126
Davangere	24.1	2	40.5	55	46.4	92	37.3	66	30.6	42	31.5	66	16.6	-9	22.5	65
Hassan	33.1	-26	83.0	79	56.6	38	79.8	112	12.3	-57	9.8	-70	8.7	-63	29.1	51
Kodagu	176.6	-6	389.5	103	247.2	43	326.6	104	59.8	-54	64.4	-52	42.0	-55	22.7	-67
Kolar	29.3	70	20.1	0	1.4	-93	5.1	-74	3.0	-85	25.6	18	6.2	-72	101.7	387
Mandya	4.7	-58	15.4	13	7.5	-35	11.4	-7	10.7	13	2.9	-81	3.0	-81	59.5	277

Coastal Andhra Pradesh																
East Godavari	37.6	-14	13.2	-74	23.3	-50	11.6	-69	18.2	-64	35.9	-12	3.8	-91	23.7	-41
Guntur	70.0	138	54.2	40	1.6	-96	41.5	43	39.3	7	76.2	115	7.8	-79	32.2	-3
Krishna	118.4	189	54.9	0	3.0	-94	17.6	-54	36.6	-31	82.8	103	8.5	-81	19.1	-53
Nellore	38.8	81	39.6	70	10.9	-48	20.1	5	19.7	-8	57.5	128	0.6	-97	25.8	35
Prakasam	53.2	184	45.3	61	4.1	-82	46.4	162	23.0	29	76.0	262	2.2	-92	42.1	67
Sirkakulam	65.7	44	81.4	69	9.7	-77	28.2	-36	21.8	-51	23.6	-50	8.9	-82	17.7	-60
Visakhapatnam	39.8	7	21.2	-57	9.9	-76	27.2	-23	39.4	-7	62.2	55	6.1	-86	15.3	-61
Vizianagram	65.6	85	48.7	1	6.8	-83	36.1	-1	35.4	-16	35.6	-23	4.2	-92	14.1	-68
West Godavari	73.1	43	43.5	-28	6.3	-88	17.7	-61	16.4	-75	58.1	19	8.8	-81	16.6	-64
Telangana																
Adilabad	114.1	66	308.3	275	81.5	6	131.8	99	31.6	-57	66.4	2	24.2	-56	6.9	-90
Hyderabad	124.5	258	74.7	49	11.3	-75	47.1	7	33.4	-27	45.8	-1	8.1	-79	5.7	-83
Karimnagar	91.7	70	302.3	366	46.2	-23	67.9	29	24.5	-57	75.8	42	12.1	-71	20.2	-58
Khammam	150.2	162	231.9	229	36.2	-51	76.3	26	65.7	-8	125.0	156	26.4	-48	9.4	-81
Mehabubnagar	62.9	98	48.8	18	2.7	-94	38.3	11	12.9	-64	100.4	150	2.5	-93	54.5	69
Medak	104.9	117	139.6	123	35.0	-38	41.0	-20	30.5	-37	42.5	-22	3.7	-90	19.0	-57
Nalgonda	81.4	152	65.5	51	3.7	-90	18.6	-35	7.1	-81	167.8	412	2.4	-93	23.2	-30
Nizamabad	158.5	166	224.0	190	57.6	-15	74.5	10	31.5	-57	61.4	-16	4.4	-93	12.7	-77
Rangareddy	96.1	140	90.0	90	4.0	-92	50.9	40	14.2	-65	56.1	15	0.1	-99	28.8	-19
Warangal	124.1	124	218.2	203	27.5	-57	73.3	48	53.8	-14	113.4	141	19.7	-54	31.1	-35
Royalaseema																
Anantapur	10.6	-32	11.9	-21	2.6	-85	12.6	-14	23.6	69	13.8	-26	3.4	-82	85.0	334
Chittoor	38.1	54	25.9	-9	3.8	-81	17.1	-33	32.0	33	36.4	46	1.2	-96	76.7	208
Cuddapah	23.8	1	20.5	-23	3.1	-88	21.3	-6	24.2	-2	45.5	72	1.3	-95	28.6	47
Kurnool	42.7	74	27.8	2	3.4	-90	29.7	17	15.6	-44	58.3	89	8.1	-72	46.6	69

Legends

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

Annexure III
List of Varieties

Delhi

Carrot: Pusa Rudhira and Pusa Kesar.

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

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

Jammu & Kashmir

Radish:Pusa Chetki, cv. Japanese white and Minnowase,

Cabbage : Golden Acre, Pride of India and PusaMukta,

Cauliflower: cv. Giant Snow Ball and Pusa Synthetic.

Knolkhol : cv. White Vienna and Purple Vienna and Kale cv. Local

Carrot : Nantes and turnip : Purple Top White Globe,

Turnip: cv. Purple Top White Globe.

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

Rajasthan

Cucurbits:bottle guard : Pusa Naveen, ArkaBahar, pumpkin - PusaVishwas, ArkaChandan, PusaAlankar, ArkaSuryamukhi, **bitter guard -**ArkaHaritPusaVishesh, Priya and **round gourd-** Arkatinda, Bikaneri green, Punjab-48.

Radish:PusaChetki, Pusa Rasmi.

Deshi carrot. Pusa Keshar

Mid-Season cauliflower:Improved Japanese, Pusa hybrid-2 and Himjoyti

Early cauliflower:Pusa hybrid-2, Improved chinease and PusaHimjyoti.

Ashwaghandha:Ashwaghandha-20 and Ashwaghandha-134

Himachal Pradesh

Finger millet as VL- Mandua-124 and VL-149 and short duration (95 to 100 days) varieties like VL- Mandua-204, Pant Mandua-3, PES-176, PES-110, VLMandua-146.

Cauliflower : Patna snowball and joint snowball.

Uttarakhand

Pea : VL Ageti Mater-7, Vivel Mater-10, Pant Subjee Mater-3, Azad

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

Garlic : VL-Garlic or DARL-52

Uttar Pradesh

Toria- T-9, T-36, Bhawani, Pant-303

Punjab

Toria: PBT 37/ TL 15

Radish: Punjab Pasand & Punjab Safed,

Turnip: L-1 & 4-white

Carrot: PC-34), potato and palak (Punjab Green).

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

Chhattisgarh

Ragi: PR-202, HR-374, VR-708, RU-08, GPU-45, VC-149 etc.

Kodomillet: GPUK-03, RBK-155 etc.

Odisha

Ginger: Suprava, Suruchi, Surabhi.

Turmeric: Roma, Surama, Rang, Rashm.

Maize: Navjot, Shakti, Decan-107, Decan-109.

Yam: Local Yam: Shreekirti, Shreerupa, Hatikhoj, Shreeshilpi.

Small yam: Shreelata, Shreekala.

White Yam: Shreesubhra, Shreepriya, Shreedhanya.

Rice:

Early- Khandagiri, Bandana, Pathara, Parijat, Annada.

Medium-MTU- 1001, MTU-1010, Konark, Gajapati, Surendra, Lalat.

Late- CR-1009, CR-1018, Swarna (MTU-7029), Indravati, Mahanadi, Puja, Ramachandi, Kanchana, Sarala, Lunishree and **Fine-**CR-1014, BPT-5204.

Arhar: Early-duration- Prabhat, Upas-120, ICPL-86012., Medium duration- Asha, Visakha.

Cotton: Tulasi, Sigma, Chiruta, Diana, Bunny

Ragi: Divyasinha, AKP-2, AKP-3, AKP-7, Godavari, Neelachal, Bhairavi, Shubhra, and Chilika.

Groundnut: Smruti, AK12-24, TAG-38, Devi

Castor: Jyoti, Kranti, Aruna, Bhagya, and hybrids like GCH-4, . GCH- 5, GCH-177 and GCH-32.

Soyabean: Ankur, Gourav, P. K. 73-163 and T-49.

Sesame: Prachi, Kalika, Kanak, Vinayak.

Ragi: Divyasingh, AKP-2, AKP-3, AKP-7, Godavari, Neelachal, Bhairavi, Shubhra, and Chilika.

Greengram: K-851, PDM-11, PDM-54, OUM-11-5.

Blackgram: T-9, Pant U-11, Pant U-19, Pant U-30.

Cowpea: Cowpea-, SEB-2, Pusa Barsati.

Marigold: Giant Ball, African Yellow, Giant Ball African orange, Early yellow, Early orange, Serakola, Africut, Sungiant, Crown of gold, Spun gold and Cuprid yellow etc.

Banana: Hampa, Patakpara, Bantal, Robusta and Kabuli etc

West Bengal

Pigeon pea: Sweta, Chumi.

Aman rice : IET-4094, 2233, Ratna, Bikash, Kitish, Sasya-shree, IR-42, Swarna, Mashuri, IET-8002.

Banana : Mortoman, Chapa, Kathali, Singapuri,

Tomato & brinjal : P Avinash-2, 448

Maize : Suwan, Deoki

Jharkhand

Rice(Upland): Birsa Dhan- 108, Birsa Vikas Dhan- 109, 110, Vandana etc.

Rice(Medium land): Anjali, Sahbhagi, Naveen, Lalat, Birsamati, Sugandha, BR-10, Pro-Agro 6444, IR-36, IR-64etc.

Rice(Low land): Swarna (MTU-7029), Rajshree, Sambha Mahsuri (BPT- 5204), Birsa Dhan- 202, Birsamati, Pro-Agro 6444, etc.

Arhar: Birsa Arhar-1, Narendra Arhar-1, Bahar, ICPH-2671.

Maize: Birsa Makka -1, Birsa Makka-2, Suwan-1 etc.

Ginger: Vardhaman, Nadia etc.

Turmeric: Rajendra Sona.

Okra: Pusa A-4, Prabhani Kranti, Arka Anamika, Varsa Uphar, Sonal and Sarika.

Marua: A-404, HR-374, Birsa Marua-1 and Birsa Marua-2.

Urd: Pant urd -19, Birsa urd -1

Til: Kanke Safed and Krishna

Kulthi: Madhu, Birsa kulthi-1.

Niger: Birsa niger-1, Birsa niger-2.

Potato: Kufri Ashok, Kufri Kanchan.

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

Horse Gram: Birsa kulthi-1, G.H.G.-20.

Sweet Potato: Birsa sakarkand-1 and Sri Bhadra.

Bihar

Rice: Rajshree, Rajendra Sweta, Rajendra Mansuri, Swarna, Satyam, Kishori, MTU 7029. Rajendra mehsoori-1, Rajendra bhagwati, MTU-1010, MTU-1001, Hybrid seed-PHB 71, A 6444, PRH 10, Turanta, Prabhat, Saket-4, Richhariya, NDR-97, Pusa 834 and shabhagi

Arhar: Birsa Arhar-1, Narendra Arhar-1, Bahar, ICPH-2671.

Okra: Pusa A-4, Prabhani Kranti, Arka Anamika, Varsa Uphar, Sonal and Sarika.

Marua: A-404, HR-374, Birsa Marua-1 and Birsa Marua-2.

Urad: 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.

Onion: N-53, Agrifound Dark Red and Basant- 780.

Assam

Sali rice:

Medium to short duration varieties: Luit, Kapili, Kolong, Dishang.

Sesame: AST-1, Gauri, Vinayak, Punjab Till No 1, Madhabi, ST – 1683.

Green gram: T-44, Kopergaon, K-851, ML-56, ML-131, SG1 (Pratap), SG21-5.

Black gram: T-9, T-27, Pant U-19, T-122, Saonia Mah (SB123), KU 301, USJD 113.

Early cauliflower: Early Kunwari, Pusa Katki, Pusa Deepali.

Cauliflower: Improved Japanese.

Radish: Pusa Desi, Pusa Himani, Pusa Chetki.

Cabbage: Golden Acre, Pride of India.

Knolkhol: White Vienna.

Gujarat

Castor: GAUCH-1, GCH-5, and GCH-7.

Tamil Nadu

Samba Rice: long duration rice varieties- CR 1009/Savithri/Ponmani and ADT 50, short duration rice varieties-ADT38,ADT46, BPT-5304,CO-43,CO-48,CO-49,CO-50,Improved white ponni, IR 20, Ambai 19, Paiyur1, Trichy 1, Trichy 3

Maize hybrid: Co 6

Groundnut: TMV 13

Castor: YRCH 1

Sorghum: Co-30

Red gram: Co-7

Karnataka

Black gram: (Rashmi)

Cowpea: TVX-944

Field bean: H.A-3, 4

Horse gram: KBH-1 and PHG-9

Cotton: Jayadhar, Suyodhar, Renuka and DDHC-2