

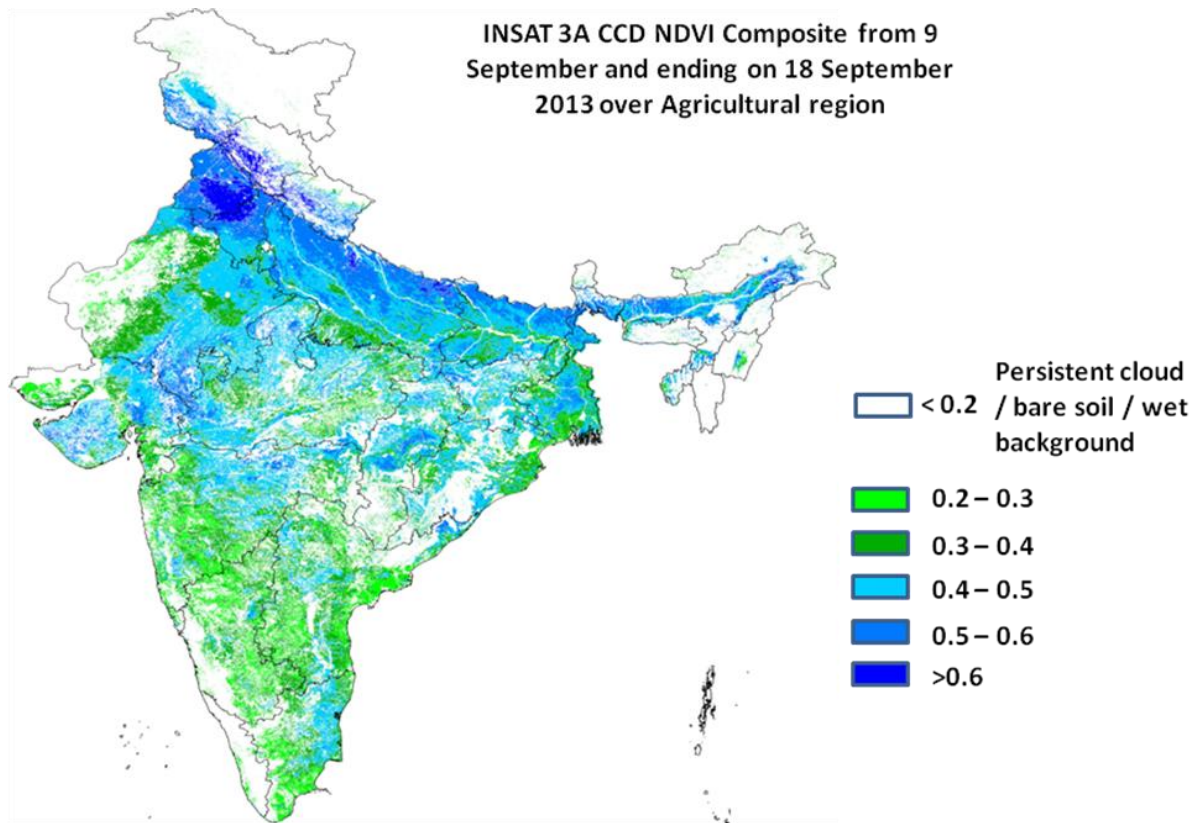
National Agromet Advisory Service Bulletin
Friday 20th September, 2013
(For the period 20th to 23rd September 2013)

Issued by

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



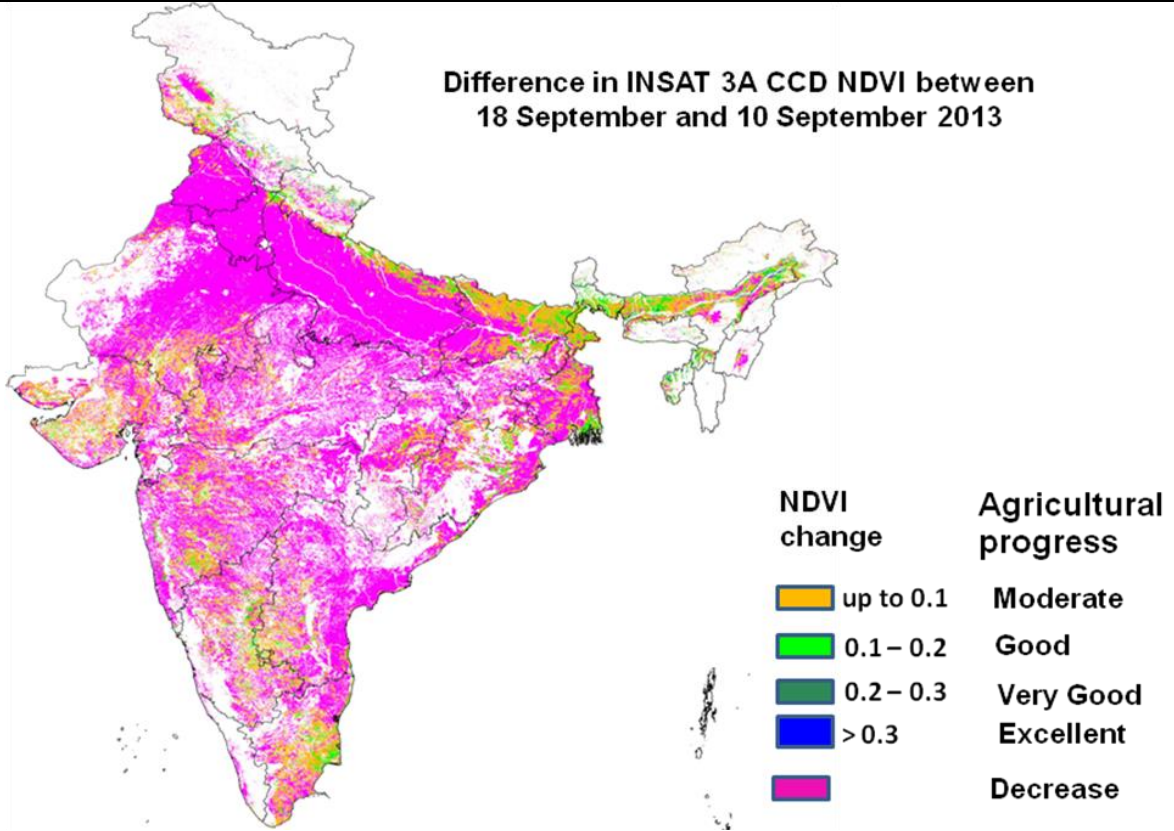
Crop condition based on Rainfall and INSAT 3A CCD NDVI **



Source: SAC, Ahmedabad

Overall Agricultural Situation: Agricultural condition is in general good to very good over Punjab, Haryana, pockets of eastern Rajasthan, UP, part of M.P., eastern part of Maharashtra, central part of West Bengal, majority of Saurashtra and central Gujarat and in coastal Tamil Nadu as NDVI vigour showed the range from 0.4 to 0.6 upto 18th September. The crop conditions are moderate over large part of Rajasthan, south Gujarat, central and southern Bihar, southern part of UP (Bundelkhand region), western Maharashtra, major part of Karnataka, southern part of Andhra Pradesh, southern and eastern part of West Bengal, coastal Orissa.

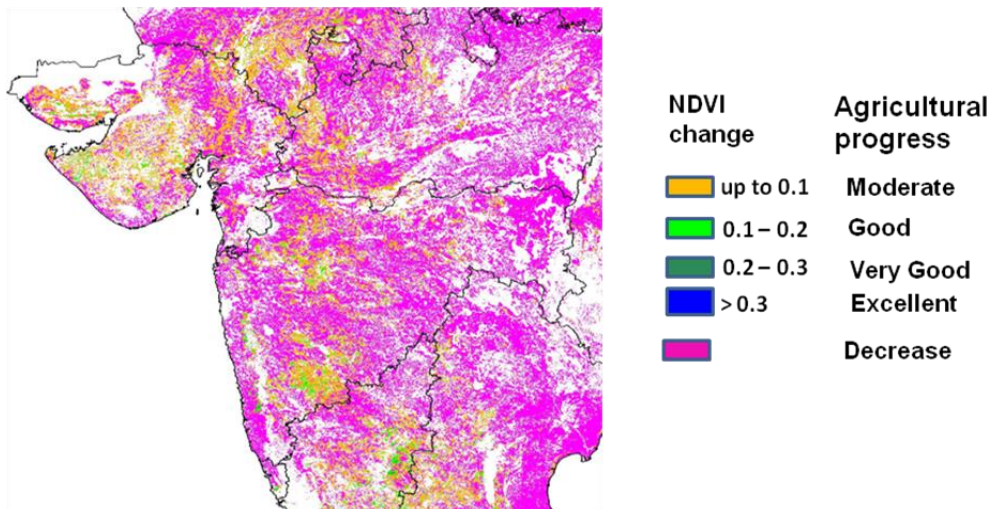
**Difference in INSAT 3A CCD NDVI between
18 September and 10 September 2013**



Source: SAC, Ahmedabad

Progress of crop performance during last week: Agricultural progress between 18th September and 11th September 2013 was found to be moderate over north Bihar, narrow belt of north U.P., Saurashtra, central Gujarat, adjoining Rajasthan and M.P., few pockets of southern Maharashtra and central W. Bengal, eastern Karnataka, and coastal Tamil Nadu. Rest of India shows decrease in NDVI which may be due to start of crop ripening.

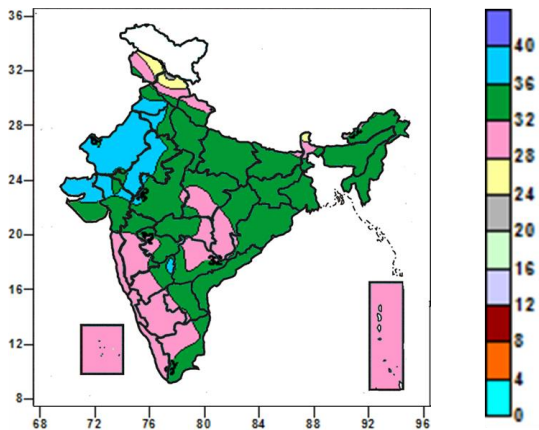
**Difference in INSAT 3A CCD NDVI between
18 September and 10 September 2013**



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

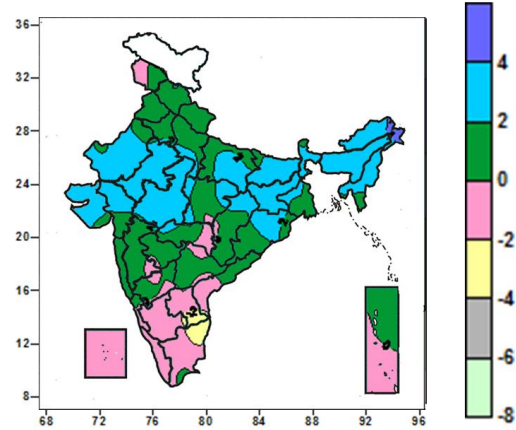
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 18.09.2013

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 18.09.2013



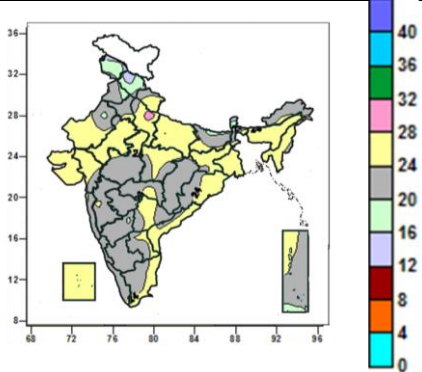
- 36 to 40 $^{\circ}\text{C}$ over many parts of West Rajasthan, Kutch, some parts of Punjab, Haryana, East Rajasthan, Saurashtra, Gujarat, North Interior Karnataka.
- 28 to 36 $^{\circ}\text{C}$ over many parts of the country (except West Rajasthan, Kutch, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, East Rajasthan, Saurashtra, Gujarat, North Interior Karnataka).
- 24 to 28 $^{\circ}\text{C}$ over many parts of Sikkim, some parts of Jammu & Kashmir, Himachal Pradesh.

Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 18.09.2013



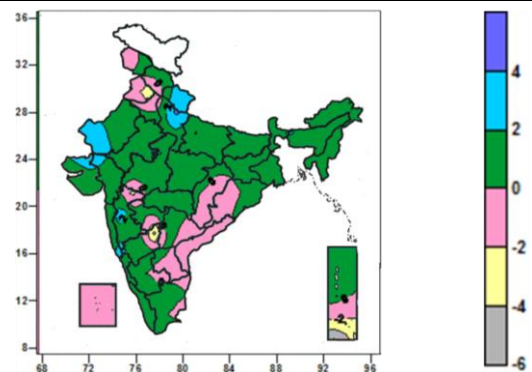
- 2 to 4 $^{\circ}\text{C}$ over many parts of Rajasthan, East Uttar Pradesh, East India except Gangetic West Bengal, North East India, West Madhya Pradesh, Gujarat, Saurashtra & Kutch, some parts of Haryana, East Uttar Pradesh, Gangetic West Bengal, East Madhya Pradesh, Chhattisgarh, Vidarbha.
- -2 to 2 $^{\circ}\text{C}$ over many parts of the country (except many parts of Rajasthan, East Uttar Pradesh, Bihar, Jharkhand, Sub-Himalayan West Bengal, North East India, West Madhya Pradesh, Gujarat, Saurashtra & Kutch, some parts of Haryana, East Uttar Pradesh, Gangetic West Bengal, East Madhya Pradesh, Chhattisgarh, Vidarbha, Rayalaseema, South Interior Karnataka, Tamil Nadu).
- -4 to -2 $^{\circ}\text{C}$ over some parts of Rayalaseema, South Interior Karnataka, Tamil Nadu.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 18.09.2013



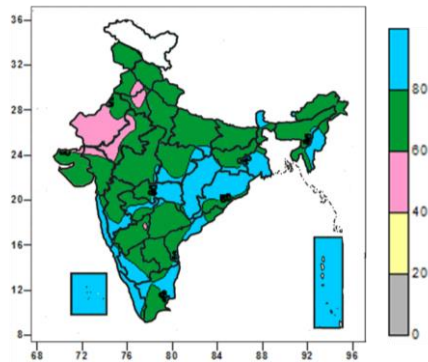
- 20 to 28 $^{\circ}\text{C}$ over many parts of country (except many parts Jammu & Kashmir, Himachal Pradesh, some parts of Punjab, West Rajasthan, Haryana, Bihar and Sub-Himalayan West Bengal & Sikkim).
- 16 to 20 $^{\circ}\text{C}$ over many parts Jammu & Kashmir, Himachal Pradesh, some parts of Punjab, West Rajasthan, Haryana, Bihar and Sub-Himalayan West Bengal & Sikkim.

Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 18.09.2013



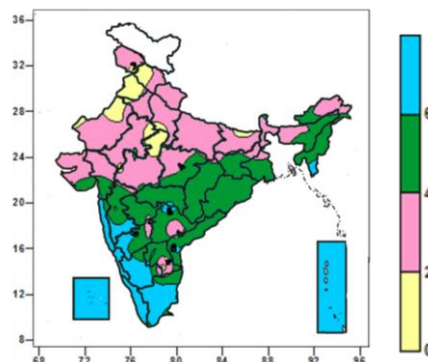
- 2 to 4 $^{\circ}\text{C}$ over many parts of Uttarakhand, some parts of West Uttar Pradesh, West Rajasthan, Saurashtra & Kutch, Gujarat, Goa, Madhya Maharashtra.
- -2 to 2 $^{\circ}\text{C}$ over all the parts of country (except many parts of Uttarakhand, some parts of West Uttar Pradesh, West Rajasthan,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

**Relative Humidity (%) over India for the week ending
18.09.2013**



- 60 to 100% over entire country (except many parts of West Rajasthan, some parts of Punjab, Haryana, East Rajasthan, Saurashtra, Gujrat, North Interior Karnataka).
- 40 to 60% over many parts of West Rajasthan, some parts of Punjab, Haryana, East Rajasthan, Saurashtra, Gujrat, North Interior Karnataka.

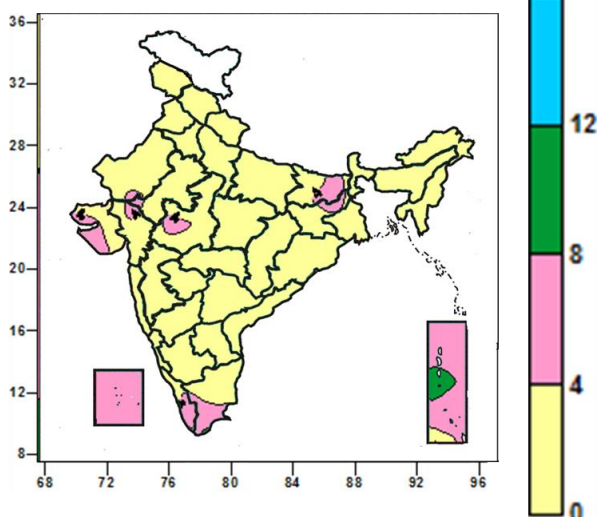
**Cloud amount (okta) over India for the week ending
18.09.2013**



- 4 to 8 okta over many parts of North East India except Arunacha Pradesh, Gnagetic West Bengal, Jharkhand, Orissa, Chattisgarh, Maharashtra, Andhra Pradesh, Lakshadweep, Andaman & Nicobar Islands, some parts of Arunachal Pradesh, Sikkim, Bihar, Madhya Pradesh, Gujarat, Saurashtra & Kutch.
- 0 to 4 okta over many parts of country (except North East India except Arunacha Pradesh, Gnagetic West Bengal, Jharkhand, Orissa, Chattisgarh, Maharashtra, Andhra Pradesh, some parts of Arunachal Pradesh, Sikkim, Bihar, Madhya Pradesh, Gujarat, Saurashtra & Kutch).

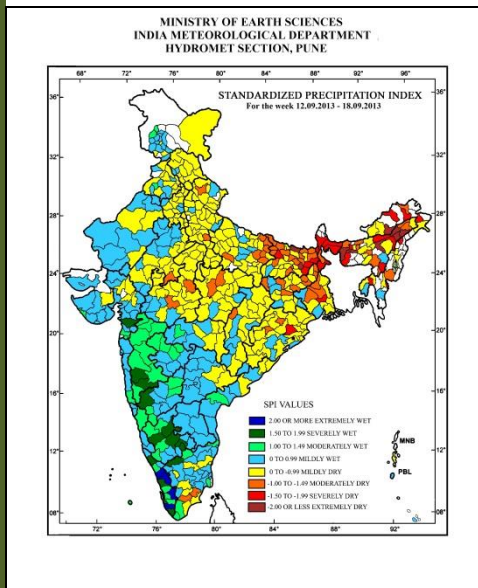
Wind speed (knots) over India for the week ending 18.09.2013

Wind speed (knots) over India for the week ending 18.09.2013

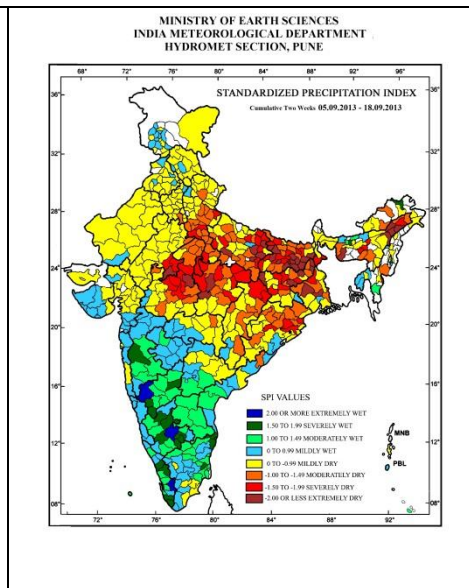


- 4 to 8 knots over many parts of Lakshadweep, Andaman & Nicobar Islands, some parts of Bihar, Jharkhand, Saurashtra & Kutch, Gujarat, West Madhya Pradesh, Kerala, Tamil Nadu.
- 0 to 4 knots over many parts of the country (except Lakshadweep, Andaman & Nicobar Islands, some parts of Bihar, Jharkhand, Saurashtra & Kutch, Gujarat, West Madhya Pradesh, Kerala, Tamil Nadu).

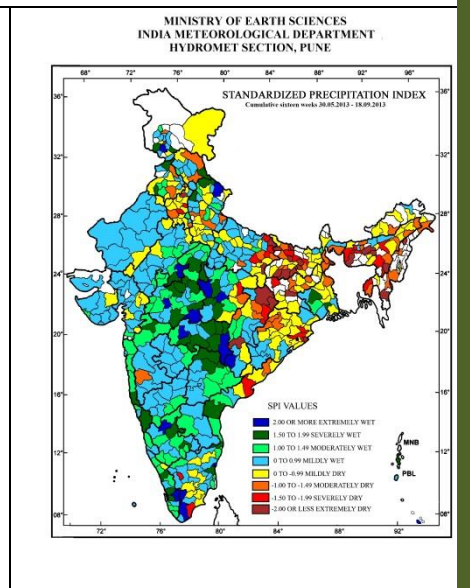
Standard Precipitation Index weekly, fortnightly and seasonal



Weekly SPI values indicate, extremely wet/severely wet conditions over parts of North Interior Karnataka, South Interior Karnataka, Rayalaseema, adjoining parts of Tamilnadu and some parts of Gujarat, Kerala, while extremely dry/ severely dry conditions were observed over most parts of North East India, East India, and some parts of Madhya Pradesh, Chhattisgarh, Orissa.



Cumulative SPI values of the past two weeks indicate extremely wet/severely wet conditions over many parts of Madhya Maharashtra, North & South Interior Karnataka, Kerala and some parts of Tamil Nadu, Assam, Arunachal Pradesh, Bihar, Coastal Andhra Pradesh while extremely dry/severely dry conditions were observed over many parts of entire Madhya Pradesh, Bihar, Jharkhand, Uttar Pradesh, some parts of Uttarakhand, East Rajasthan, Vidarbha, coastal Andhra Pradesh, interior Orissa, Chhattisgarh, West Bengal, Arunachal Pradesh, Assam, Meghalaya, Mizoram.

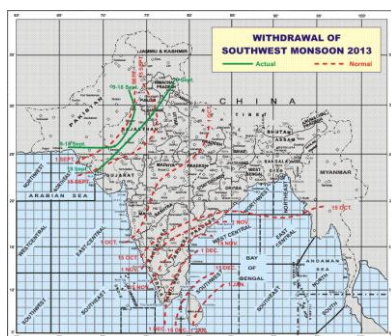


Cumulative SPI values of the past sixteen weeks (i.e. since the beginning of southwest monsoon) indicate extremely wet/severely wet conditions over most parts of West Madhya Pradesh, Vidarbha, Telangana, Coastal Karnataka, some parts of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, West Uttar Pradesh, Gangetic West Bengal, Coastal Andhra Pradesh, South Interior Karnataka, Kerala, Tamil Nadu, while extremely dry/severely dry conditions were observed over parts of Bihar, Jharkhand, Assam & Meghalaya, Haryana, Jharkhand, Chhattisgarh and some parts of Himachal Pradesh, Punjab, Haryana, West Uttar Pradesh, West Bengal, Mizoram, Arunachal Pradesh, Tripura, East Madhya Pradesh, Orissa, Coastal Andhra Pradesh, Madhya Maharashtra.

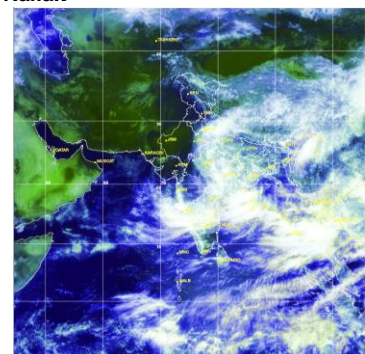
Withdrawal of Southwest Monsoon 2013

Southwest monsoon has further withdrawn from entire Jammu & Kashmir, Himachal Pradesh and Punjab, some parts of Haryana, some more parts of Rajasthan and some parts of Kutch.

- ◆ The withdrawal line of southwest monsoon passes through Kalpa, Hissar, Jodhpur and Nalia..



Withdrawal of Southwest Monsoon 2013



Satellite image dated 20.09.2013, 0530 UTC

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 23rd September, 2013)

- Rain/thundershowers would occur at many places over Maharashtra, Karnataka, Gangetic West Bengal, Jharkhand, Chhattisgarh, Odisha, north Andhra Pradesh, Kerala, Lakshadweep and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at isolated places over Madhya Pradesh during next 24 hours and at many places thereafter.
- Rain/thundershowers would occur at a few places over Bihar, SubHimalayan West Bengal & Sikkim, south Andhra Pradesh and Tamilnadu.
- Rain/thundershowers would occur at isolated places over northeastern states, Uttar Pradesh and south Gujarat.
- Rain/thundershowers would occur at isolated places over Uttarakhand and east Rajasthan from tomorrow onwards.
- Weather would be mainly dry over rest of the country.

Weather Warning during next 3 days

20 September: Heavy rainfall would occur at isolated places over Gangetic West Bengal, Odisha, Jharkhand, Telangana, north coastal Andhra Pradesh, south Madhya Maharashtra, Marathwada, Konkan & Goa, coastal & north interior Karnataka, Kerala and Andaman & Nicobar Islands.

21 September: Heavy rainfall would occur at isolated places over east Madhya Pradesh, Vidarbha, Chhattisgarh, Odisha, Telangana, north coastal Andhra Pradesh, Konkan & Goa, coastal Karnataka, Kerala and Andaman & Nicobar Islands.

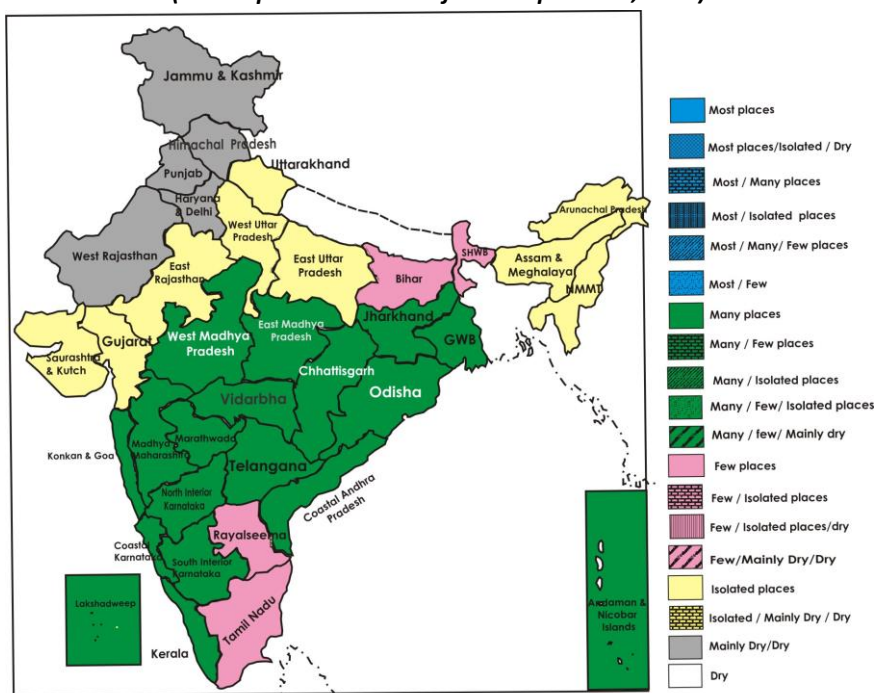
22 September: Heavy rainfall would occur at isolated places over Madhya Pradesh, Vidarbha, Chhattisgarh, Telangana and Andaman & Nicobar Islands.

Weather Outlook for subsequent 4 days from 23rd to 27th September, 2013

- Rain/thundershower would occur at many places over Madhya Pradesh, Gujarat region, north interior Maharashtra, Andaman & Nicobar Islands and Lakshadweep.
- Rain/thundershower would occur at few places over northeastern states and east India. Considerable decrease in rainfall activity over Chhattisgarh, Vidarbha, Andhra Pradesh, Karnataka, Kerala and Tamilnadu.
- Isolated rain/thundershowers would occur over rest parts of the country outside Jammu & Kashmir, Himachal Pradesh, Punjab and west Rajasthan where weather will be mainly dry.

Weather Forecast Map

(Valid upto 0830 hours of 23rd September, 2013)



Salient Advisories

Northeast Region

- In Lower Brahmaputra Valley Zone of Assam, in flood affected districts of Goalpara, Nalbari, Barpeta, Bongaigaon and Kamrup, prepare fields just after recession of flood, puddle the fields and undertake direct seeding of germinated seeds of extra early varieties of *sali* rice such as Luit, Kapilee, Culture-1 and Heera or any short durational local / traditional varieties of *sali* rice. Germinated seeds should be sown in lines 20 cm apart with a seed rate of 75 kg / ha.
- In Lower Brahmaputra Valley Zone of Assam, continue sowing of niger, buckwheat, green gram, black gram. Undertake nursery raising of mid cauliflower, early cabbage and kholkhol.
- In Sub Tropical Hill Zone of Arunachal Pradesh, prepare nursery bed of cauliflower, cabbage and continue sowing of radish. Continue field preparation and sowing of pea, maize and sesame. Undertake field preparation for planting of potato. Continue harvesting of matured *jhum* rice and early WRC rice.
- In Temperate Sub Alpine Zone of Meghalaya, continue sowing of green gram and black gram, where sowing of rice could not be continued due to long dry spell. Also continue nursery raising of early cauliflower and winter vegetables.
- In Mild Tropical Hill Zone of Nagaland, continue nursery raising of cabbage and tomato. Undertake land preparation for sowing of rajma and potato.
- Undertake transplanting of early cauliflower, radish and brinjal in Mid Tropical Plain Zone of Tripura.
- Due to favourable weather conditions, there is chance of attack of leaf folder and rice hispa in *sali* rice in Upper Brahmaputra Valley Zone of Assam and Temperate Sub Alpine Zone of Meghalaya. Farmers are advised to spray Chloropyriphos 20 EC @ 1 ml per liter of water or Monocrotophos 40 EC @ 1.5 ml per liter of water.

South Region

- In Kerala, continue planting of Nendran banana in the Problem Area Zone after spells of heavy rain. Provide adequate drainage in crop fields to remove excess water.
- Continue transplanting of *samba* rice, dry sowing of long duration varieties of rice, prepare late samba/thaladi rice nursery in the Cauvery Delta Zone of Tamil Nadu.
- Undertake land preparation and sowing of maize, cotton and rainfed crops in the Southern Zone of Tamil Nadu.
- 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 in Kurnool district.
- Continue sowing of fodder maize and short duration varieties of pulses like black gram, cowpea, field bean and horse gram in the Eastern Dry Zone of Karnataka after spells of heavy rain.
- Undertake transplanting of vegetables in Southern Transition Zone of Karnataka.

West Region

- In Maharashtra postpone irrigation, intercultural operations, application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in crop fields in Konkan & Goa, south Madhya Maharashtra, Marathwada and Vidarbha to remove excess water.
- Maintain water level upto 8-10 cm in rice fields in Konkan and Madhya Maharashtra.
- In Madhya Maharashtra, undertake the harvesting of already matured bajra and soybean after current spells of rain. Undertake preparatory tillage for sowing of *rabi* jowar and safflower in the harvested fields of green gram and black gram after current spells of rain.
- In Vidarbha, postpone intercultural operation and application of fertilizers in rice, cotton and red gram. Maintain 7-8 cm water level in rice fields in Bhandara, Gondia, Gadchiroli and Chandrapur districts.
- In North Gujarat Zone, undertake harvesting of pulses and pearl millet.
- In Bhal and Coastal Zone, carryout intercultural operations and mulching in castor and pulses to conserve soil moisture. Undertake harvesting of pearl millet.
- In South Gujarat Heavy rainfall Zone, carry out intercultural operations and mulching in castor to conserve soil moisture.

Central Region

- In Malwa Plateau Zone of Madhya Pradesh, undertake transplanting of tomato, chilli, brinjal and cabbage. Provide adequate drainage in the crop fields.
- In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, undertake intercultural operations in rice, maize and jowar and apply remaining dose of urea after current spells of heavy rain.
- In North Hill Plain Zone of Chhattisgarh, present weather is congenial for infestation of rice leaf folder. When the leaf damage reaches 10 per cent then spray either 350 ml of Sutathion 40 EC or 560 ml Monocrotophos 36 SL in 100 litres of water per acre after current spells of rain.

East Region

- In Coastal Saline Zone of West Bengal, continue sowing of pulse (Vadu Kalai) in the upland areas after current spells of heavy rain.
- In Old Alluvial Zone of West Bengal, undertake weeding followed by top dressing of urea in rice crop. Keep 2-3cm stagnant water in the field after transplanting. Undertake nursery preparation for vegetables.
- Complete planting of banana, cashew nut, marigold and sowing of sesame in East and South Eastern Coastal Plain Zone of Odisha after current spells of heavy rain. Undertake sowing of moong, black gram and horse gram in the uplands/medium lands using @ 8-10kg seeds/acre after seed treatment.
- In North West Alluvial Plain Zone of Bihar, continue nursery sowing of cabbage and cauliflower. Apply 30 Kg N/ha in rice crop which is at booting stage.
- In South Bihar Alluvial Zone of Bihar, in fallow land continue sowing of barja, toria and vegetables.
- In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of niger, horse gram and green peas, planting of potato and marigold after current spells of heavy rain. In rice crop, undertake intercultural operations and top dressing of urea after current spells of heavy rain. Undertake nursery sowing of tomato, cabbage and cauliflower after spells of heavy rain.

North Region

- In Intermediate Zone of Jammu & Kashmir, undertake planting of potato, complete sowing of toria. Continue sowing of radish, carrot, garlic, palak, methi, peas and nursery sowing of cauliflower, cabbage, knoll- khol and kale and also continue sowing of radish, transplanting of knol-khol in Intermediate Higher Zone.
- In Mid Hills Sub Humid Zone and Sub-Montane Zone & Low Hills Sub-Tropical Zone of Himachal Pradesh undertake direct sowing of, turnip carrot, fenugreek, sowing of cole crops and transplanting of cauliflower. Also continue land preparation for winter leafy vegetable crops like palak, methi, sarson, carrot, onion, garlic and early varieties of pea. Complete sowing of toria.
- In East Uttar Pradesh, undertake transplanting of cabbage, cauliflower, brinjal and tomato and sowing of toria. Apply top dressing of urea in rice crop. In West Uttar Pradesh, undertake sowing of toria.
- In Bhabar and Tarai Zone of Uttarakhand, complete sowing of pea and toria and nursery sowing of cauliflower. Weather is congenial for planting of tomato seeds in nursery.
- In Delhi, continue transplanting of brinjal, tomato, chilli, cauliflower and cabbage on raised beds if seedlings are ready. Continue sowing of carrot, sarson saag, radish, spinach and coriander on raised beds and sowing of early pea.
- In Eastern zone of Haryana, continue transplanting of the fruit plants. As there is possibility of dry weather, apply irrigation to vegetable crops. Undertake sowing of palak, methi, brinjal, chilli, onion and early cauliflower on ridge.
- In East Rajasthan, complete sowing of radish and nursery raising for mid-season cauliflower and early cauliflower. Continue preparation of seed bed for raising nursery of chilli, brinjal and tomato for rabi season. Start harvesting of fully matured crops like bajra, moong, cluster bean and til.

Detailed Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall occurred in Ambedkar Nagar, Bahraich, Gonda, Pratapgarh, Shahuji Maharajnagar and Sultanpur districts of East Uttar Pradesh, Shahajanpur district of West Uttar Pradesh, in Reasi district of Jammu & Kashmir during the week.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Uttar Pradesh during the period and over Uttarakhand, east Rajasthan from tomorrow onwards.
- **Weather Warning:** Nil.
- **Weather Outlook:** Isolated rain/thundershowers would occur over Uttar Pradesh and isolated rainfall from 21st onwards over Uttarakhand and East Rajasthan and mainly dry over rest parts of the region.
- **Advisory :**
 - In Intermediate Zone of Jammu & Kashmir, undertake planting of potato, complete sowing of toria. Continue sowing of radish, carrot, garlic, palak, methi, peas and nursery sowing of cauliflower, cabbage, knoll- khol and kale and also continue sowing of radish, transplanting of knol-khol in Intermediate Higher Zone.
 - In Cold Arid Zone of Jammu & Kashmir, harvest potato, onion, tomatoes, *capsicum*, chilli and brinjal, cabbage, bottle gourd, cucumber. Start sowing of spinach in green houses and trenches should be done.
 - In Mid Hills Sub Humid Zone and Sub-Montane Zone & Low Hills Sub-Tropical Zone of Himachal Pradesh undertake direct sowing of radish (Japanese white, Chinese pink and mino early white), turnip (PTWG-1), carrot (Pusa kesar), fenugreek (I.C. 74, kasoori), sowing of cole crops and transplanting of cauliflower. Also continue land preparation for winter leafy vegetable crops like palak, methi, sarson, carrot, onion, garlic and early varieties of pea. Complete sowing of toria.
 - In East Uttar Pradesh, undertake transplanting of cabbage, cauliflower, brinjal and tomato and sowing of toria. Apply top dressing of urea in rice crop. In West Uttar Pradesh, undertake sowing of toria.
 - In Bhabar and Tarai Zone of Uttarakhand, complete sowing of pea and toria and nursery sowing of cauliflower. Also continue sowing of garlic under optimum soil moisture conditions. Weather is congenial for planting of tomato seeds in nursery.
 - In Delhi, continue transplanting of brinjal, tomato, chilli, cauliflower and cabbage on raised beds if seedlings are ready. Continue sowing of carrot, sarson saag, radish, spinach and coriander on raised beds and sowing of early pea.
 - In Eastern zone of Haryana, continue transplanting of the fruit plants. As there is possibility of dry weather, apply irrigation to vegetable crops. Undertake sowing of palak, methi, brinjal, chilli, onion and early cauliflower on ridge.
 - In East Rajasthan, complete sowing of radish and nursery raising for mid-season cauliflower and early cauliflower. Continue preparation of seed bed for raising nursery of chilli, brinjal and tomato for rabi season. Start harvesting of fully matured crops like bajra, moong, cluster bean and til.
 - In Transitional Plain Zone of Rajasthan, continue field preparation for sowing of rainfed taramira, toria. Also complete picking of matured pods of pulse crops like green gram, moth bean and cowpea and start harvesting of mature bajra, moth, cowpea.
 - In West Rajasthan, complete sowing of early varieties of radish and nursery sowing of early varieties cabbage and cauliflower. Also continue picking matured pods of pulses viz. green gram, moth bean and cow pea etc. and harvesting of mature bajra. Field preparation may be started for the sowing of rainfed taramira, toria and also continue sowing of radish, carrot.
 - In Sub-Tropical Zone of Jammu & Kashmir and in Intermediate Zone of Jammu & Kashmir weather condition are favourable for bacterial leaf blight in rice crop, drain out whole old water and apply fresh water to the crop after four days and also delay the nitrogen application or Spray the crop with Streptocycline@ 100gm + Copper Oxychloride@ 500gm in 500 litre of water when symptom appears in the crop.



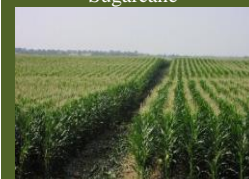
Rice



Groundnut



Sugarcane



Maize

Ensure water in rice crop at flowering stage and milking stage

- In Central Plain Zone of Uttar Pradesh due to high humidity attack of leaf roller in pigeon pea is observed, spray monocrotophos 36 E.C. @ 800ml/ha.
 - In Mid Hills Sub Humid Zone and Sub Montane Low Hills Sub Tropical Zone of Himachal Pradesh, weather is congenial for spread of fruit rot in tomato, chilli and capsicum, for control; apply Dithane M-45 @ 2-3 g per litre of water in 10-15 days interval, fruit and shoot borer attack is seen in brinjal, spray fenbalerate or cypermethrin @0.01 % for control. Weather is also conducive for attack of tomato borer, spray endosulphon@0.07% on clear days.
 - Stages of major crops are mentioned in Annexure I.
 - Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, there are chances of endo and ectoparasite infestation. Deworming of animals should be done in this period. Single dose of Ivermectin tablet @10mg/50kg body weight should be given to the animals and the dose should be repeated after 21 days with same dose rate.
 - In Sub Montane Low Hills Sub Tropical Zone of Himachal Pradesh, vaccinate animals against Foot and Mouth disease.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Significant rainfall occurred in Anuppur, Balaghat, Seoni districts of East Madhya Pradesh, Alirajpur, Burhanpur, Dhar, Indore and Jhabua districts of west Madhya Pradesh and in Bijapur, Bilaspur, Dhantari, Kanker, Koriya, Mahasamund and Narayanpur districts of Chhattisgarh during the week.
- **Weather forecast:** Rain/thundershowers would occur at many places over Chhattisgarh, at isolated places over Madhya Pradesh during next 24 hours and at many places thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over east Madhya Pradesh on 21st and over Chhattisgarh on 21st and 22nd September, over Madhya Pradesh 22nd September.
- **Weather Outlook:** Rainfall/thundershower would occur at many places over Madhya Pradesh and decrease in rainfall activity over Chhattisgarh.
- **Advisories:**
 - In Malwa Plateau Zone of Madhya Pradesh, undertake transplanting of tomato, chilli, brinjal and cabbage. Provide adequate drainage in the crop fields.
 - In Jhabua Hill Zone of Madhya Pradesh, undertake harvesting of green gram, black gram and matured soybean after current spells of heavy rain.
 - In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, undertake intercultural operations in rice, maize and jowar and apply remaining dose of urea after current spells of heavy rain.
 - In Chhattisgarh Plain Zone and North Hill Plain Zone, provide adequate drainage in standing crop fields. Maintain 5 to 7 cm water level in the rice fields.
 - In Bundelkhand Zone of Madhya Pradesh, attack of Bihar hairy caterpillar in sesame crop is noticed. Spray Quinalphos 20 E.C. @ 2ml /lit of water. Also if attack of Girdle beetle in soybean is noticed , spray Trizophos 40 E.C. 2.0 ml per litre of water for control after current spells of rain.
 - In Kymore Plateau and Satpura Hill Zone of Madhya Pradesh, present weather is congenial for tikka disease in groundnut, spray Mancozeb @ 2-3 g/lit. of water after current spells of rain.
 - In Jhabua Hill Zone of Madhya Pradesh, present weather is congenial for attack of sucking pests in cotton, okra and chilli, spray Thiomithaxim / Acetameprid @ 0.3 gm/litre of water for control after current spells of heavy rain.
 - In North Hill Plain Zone of Chhattisgarh, present weather is congenial for infestation of rice leaf folder. When the leaf damage reaches 10 per cent then spray either 350 ml of Sutathion 40 EC or 560 ml Monocrotophos 36 SL in 100 litres of water per acre after current spells of rain.
 - 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 after current spells of rain.
 - Stages of major crops are mentioned in Annexure I.
 - Varieties are mentioned in Annexure III



Rice



Soybean



Sugarcane



Maize

• ANIMAL HUSBANDRY & POULTRY

- In Madhya Pradesh, vaccinate the catles against H.S., B.Q. and FMD diseases and also deworming in cattles and goats.

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

- **Realised Rainfall:** Significant rainfall occurred in all districts of Sikkim; in East Midnapore, Howrah, Kolkata, Murshidabad, Purulia and West Midnapore districts of Gangetic West Bengal; in Gajapati, Jagatsingpur, Kandhamal, Khurda, Koraput, Malkangiri, Sundargarh, Nawarangpur, Nayagarh, Puri and Nawapara districts of Odisha; in Rohtas districts of Bihar and East Singbhum, Giridh, Latehar, Palamau and Simdega districts of Jharkhand.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Gangetic West Bengal, Odisha, at a few places over Bihar, Sub Himalayan West Bengal & Sikkim.
- **Warning:** Heavy rainfall would occur at isolated places over Gangetic West Bengal, Odisha, Jharkhand on 20th September and over Odisha on 21st September.
- **Weather Outlook:** Isolated Rain/thundershower would occur over all parts of the region.
- **Advisories:**
 - In Old Alluvial Zone of West Bengal, undertake weeding followed by top dressing of urea in timely sown rice crop. Keep 2-3cm stagnant water in the field after transplanting. Undertake land preparation for seedbed of vegetables.
 - In Laterite and Red Soil Zone and New Alluvial Zone of West Bengal, apply 14 kg Urea per acre as second top dressing when panicle initiation in *Aman* rice will start and keep 5 cm standing water in the field during the panicle initiation. Undertake sowing seeds of early variety of cabbage and cauliflower @4gm/katha after current spells of heavy rain.
 - In Coastal Saline Zone of West Bengal, continue sowing of pulse (Vadu Kalai) in the upland areas where there is no water stagnation after current spells of heavy rain.
 - Continue sowing of sesame and complete sowing of green gram and black gram in fallow uplands in Western Undulating Zone of Odisha after current spells of heavy rain.
 - Complete planting of banana, cashew nut, marigold and sowing of sesame in East and South Eastern Coastal Plain Zone of Odisha after current spells of heavy rain. Undertake sowing of moong, black gram and horse gram in the uplands/medium lands using @ 8-10kg seeds/acre after seed treatment.
 - In North West Alluvial Plain Zone of Bihar, continue nursery sowing of cabbage and cauliflower. Apply 30 Kg N/ha in rice crop which is at booting stage.
 - In South Bihar Alluvial Zone of Bihar, in fallow land continue sowing of barja, toria and vegetables.
 - In South Bihar Alluvial Zone, continue planting of banana, papaya, chilli and sweet potato. Undertake intercultural operation in kharif vegetables, kharif fodder and apply nitrogenous fertilizer.
 - In Western Plateau Zone of Jharkhand, undertake weeding in transplanted rice crop, continue sowing of toria after spells of heavy rain. Prepare field for early potato and green peas. Undertake sowing of green fodder like maize and lobia after spells of heavy rain.
 - In South Eastern Plateau Zone of Jharkhand, undertake sowing of niger, cow pea, rice bean, lobia and safflower after spells of heavy rain.
 - In Central & North Eastern Plateau Zone of Jharkhand, continue sowing of niger, horse gram and green peas, planting of potato and marigold after current spells of heavy rain. In rice crop, undertake intercultural operations and top dressing of urea after current spells of heavy rain. Undertake nursery sowing of tomato, cabbage and cauliflower after spells of heavy rain.
 - Due to humid weather conditions in 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. Apply plant protection measures after current spells of rain.
 - Present temperature and humidity conditions in New Alluvial Zone, Laterite and Red Soil Zone of West Bengal are congenial for the rapid spread of thrips and mites leading to the leaf curling in chilli and in okra, white fly attack may cause yellow mosaic virus disease, spray Difenthiuron @ 0.75g per litre of water at 7-10 days interval on a non rainy day.
 - Due to high humidity and cloudy sky in Laterite and Red Soil Zone of West Bengal, Fungal and bacterial diseases may be seen in kharif maize. Apply 2.5g Mancozeb for fungal attack and 0.1g Streptocycline per litre of water in case of bacterial rot on a non rainy day.
 - In South Eastern Plateau Zone of Jharkhand, present weather condition is congenial for occurrence of Anthracnose disease in cucurbitaceous crops, spray Blitox 50 @ 3g per liter of water as prophylactic spray. Weather is conducive for the attack of diseases like leaf blight in



Rice



Sugarcane



Maize

tomato and chilli/capsicum, spray Blitox 50 or copper oxychloride @ 3 g per litre of water. Apply plant protection measures after current spells of rain.

- 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 Gandhi bug. To control the insects, dusting of Chlorpyrifos / Quinolphos /Methyl parathion dust @ 10 kg per acre may be done after current spells of rain.
- In Western Undulating Zone in Odhisha, stem borer attack has been noticed in paddy. Apply Fipronil granule @5kg/acre for their control after current spells of rain and repeat one spray with Monocrotophos @2ml/litre water after 15days.
- White ant attack in groundnut has been found in dry areas of East and South Eastern Coastal Plain Zone, undertake soil drenching with 2 ml Chloropyrifos per litre of water thoroughly. Wilt has been found due to high humidity and leaf minor has occurred, spray 2 ml Chloropyrifos /litre water to control leaf miner. Apply plant protection measures after current spells of rain.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.

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

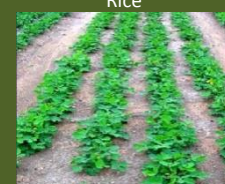
- **Realised Rainfall:** Significant rainfall occurred in Tawang district of Arunachal Pradesh, Karimganj and N.C. Hills districts of Assam, Ribhoi and East Khasi Hills districts of Meghalaya, Aizwal, Lawngtlai, Lunglei, Mamit and Saiha districts of Mizoram, Imphal East, Senapati and Ukhrul districts of Manipur, Kohima and Wokha districts of Nagaland, North Tripura, South Tripura and West Tripura districts of Tripura.
- **Weather Forecast:** Rain / thundershowers would occur at isolated places over the States of the region.
- **Weather Warning:** Nil.
- **Weather Outlook:** Rain / thundershower would occur at a few places over the States of the region.
- **Advisories:**
 - In Hill Zone of Assam, continue transplanting of early cauliflower and nursery raising of winter vegetables.
 - In Lower Bramhaputra Valley Zone of Assam, continue sowing of niger, buckwheat, green gram, black gram. Undertake nursery raising of mid cauliflower, early cabbage and kholkhol.
 - In Lower Bramhaputra Valley Zone of Assam, in flood affected districts of Goalpara, Nalbari, BARPETA, Bongaigaon and Kamrup, prepare fields just after recession of flood, puddle the fields and undertake direct seeding of germinated seeds of extra early varieties of *sali* rice such as Luit, Kapilee, Culture-1 and Heera or any short durational local / traditional varieties of *sali* rice. Germinated seeds should be sown in lines 20 cm apart with a seed rate of 75 kg / ha.
 - In Upper Bramhaputra Valley Zone of Assam, complete sowing of improved varieties of mid cauliflower and pulses.
 - In Barak Valley Zone of Assam, continue transplanting of early varieties of cabbage, cauliflower, knolkhol and brinjal.
 - In Central Bramhaputra Valley Zone of Assam, continue nursery sowing of early cole crops, brinjal and radish.
 - In Sub Tropical Hill Zone of Arunachal Pradesh, prepare nursery bed of cauliflower, cabbage and continue sowing of radish. Continue field preparation and sowing of pea, maize and sesame. Undertake field preparation for planting of potato. Continue harvesting of matured *jhum* rice and early WRC rice.
 - In Temperate Sub Alpine Zone of Meghalaya, continue sowing of green gram and black gram, where sowing of rice could not be continued due to long dry spell. Also continue nursery raising of early cauliflower and winter vegetables.
 - In Mild Tropical Hill Zone of Nagaland, continue nursery raising of cabbage and tomato. Undertake land preparation for sowing of rajma and potato.
 - Undertake transplanting of early cauliflower, radish and brinjal in Mid Tropical Plain Zone of Tripura.



Sugarcane



Rice



Groundnut



Maize

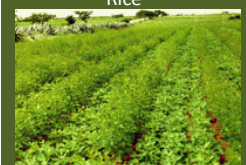
- Due to favourable weather conditions, there is chance of attack of leaf folder and rice hispa in *sali* rice in Upper Brahmaputra Valley Zone of Assam and Temperate Sub Alpine Zone of Meghalaya. Farmers are advised to spray Chloropyriphos 20 EC @ 1 ml per liter of water or Monocrotophos 40 EC @ 1.5 ml per liter of water.
- In Mild Tropical Plain Zone of Tripura, high temperature and humidity is conducive for the attack of stem borer in *aman* rice. Apply Novacron @ 2 ml per liter of water. Prevailing high humidity may also favour the occurrence of Bacterial wilt in banana. Good field sanitation, better drainage and weed free condition are best to avoid this disease. Remove the affected plants and destroy them immediately.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
 - In Mild Tropical Plain Zone of Tripura, prevailing high humidity may cause ammonia fumes which irritate the respiratory tract and eyes in poultry. Provide good ventilation in poultry sheds. Carry out vaccination and deworming to protect the pigs from swine fever and internal parasite disease. Also undertake vaccination against Foot & Mouth Disease (FMD) in cattle.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

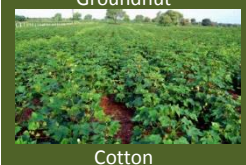
- **Realised Rainfall:** Significant rainfall occurred in Baroda, Narmada, Surat, Tapi, Navsari, Valsad and Dangs districts of Gujarat region, Amreli, Junagadh and Porbandar districts of Saurashtra and Kutch region. All the districts in Maharashtra (except Bhandara, Gondia, Wardha and Chandrapur districts in Vidarbha) received significant rainfall.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Maharashtra and at isolated places in south Gujarat. Weather will be mainly dry over remaining parts of Gujarat State.
- **Weather Warning:** Heavy rainfall would occur at isolated places over south Madhya Maharashtra and Marathwada on 20th September, Konkan & Goa on 20th and 21st September and over Vidarbha on 21st and 22nd September.
- **Weather Outlook:** Rain / thundershower would occur at many places over north interior Maharashtra and Gujarat region. Considerable decrease in rainfall activity is likely over Vidarbha. Isolated rain / thundershowers would occur over rest parts of the region.
- **Advisories:**
 - In Maharashtra postpone irrigation, intercultural operations, application of fertilizers and plant protection measures in standing crops. Provide adequate drainage in crop fields in Konkan & Goa, south Madhya Maharashtra, Marathwada and Vidarbha to remove excess water.
 - Maintain water level upto 8-10 cm in rice fields in Konkan and Madhya Maharashtra.
 - In Madhya Maharashtra, undertake the harvesting of already matured *bajra* and soybean after current spells of rain. Undertake preparatory tillage for sowing of *rabi* jowar and safflower in the harvested fields of green gram and black gram after current spells of rain.
 - In Vidarbha, postpone intercultural operation and application of fertilizers in rice, cotton, red gram. Maintain 7-8 cm water level in rice field in Bhandara, Gondia, Gadchiroli and Chandrapur districts.
 - In North West Zone of Gujarat, carry out intercultural operations and mulching to conserve soil moisture in castor. Undertake harvesting of already matured pulses. Apply supplementary dose of Nitrogen @ 40 kg/ha through urea in cotton and castor.
 - Undertake harvesting of bajra and black gram in North Saurashtra Zone.
 - In South Saurashtra Zone, apply top dressing of N fertilizer @ 40 kg/ha i.e. 88 kg urea /ha at 90 DAS in cotton. Undertake harvesting of sesame in North and South Saurashtra Zone.
 - In North Gujarat Zone, undertake harvesting of pulses and pearl millet.
 - In Bhal and Coastal Zone, of Gujarat carryout intercultural operations and mulching in castor and pulses to conserve soil moisture. Undertake harvesting of pearl millet.
 - In South Gujarat Heavy rainfall Zone, carry out intercultural operations and mulching



Rice



Groundnut



Cotton



Sugarcane

in castor to conserve soil moisture.

- In water logged areas of South Konkan, there may be attack of brown plant hopper in rice; spray Malathion 50% @ 10 ml or Cypermethrin @ 3 ml per 10 litres of water after current spells of heavy rains.
 - Due to humid weather there may be chance of incidence of rust in fig in Marathwada region; spray Dithane M 45 @ 25 g or Carbendazim @ 10 g per 10 litres of water after current spells of rain.
 - High humidity and temperature around 28-30°C, is congenial for attack of leaf folder in rice in Western Ghat region of Maharashtra; spray Chlorpyrifos @ 20 ml per 10 litres of water after current spells of rain.
 - Due to humid weather and frequent rains, there may be incidence of Sigatoka disease of banana in Pune region; spray Dithane M-45 @ 30 g or Carbendazim @ 10 g per 10 liters of water with sticker @ 10 ml per 10 liters of water after current spells of rain.
 - High humidity and cloudy condition in Bhal and Coastal Zone is favourable for outbreak of sucking pests in vegetables; spray Methyl-M-Demate or Dimethoate @ 10 ml per 10 liters of water.
 - Due to favourable weather condition, there is chance of infestation of thrips in cotton in South Gujarat Zone; spray Pofenophos @ 10 ml per 10 liters of water.
 - 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 in most of the districts in Coastal Andhra Pradesh except Vizianagaram and East Godavari; all the districts in Rayalaseema; most of the districts in Telangana except Khammam and Warangal; Ariyalur, Cuddalore, Dharmapuri, Kancheepuram, Kanyakumari, Karaikal, Krishnagiri, Nilgiris, Perambalur, Pudukkotai, Thanjavur, Thiruvallur, Thiruvannamalai, Thiruvarur, Trichy and Vellore in Tamil Nadu; all the districts in Kerala and Karnataka. No significant rainfall occurred in the remaining parts of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at many places over Karnataka, North Andhra Pradesh, Kerala, Lakshadweep and Andaman & Nicobar Islands and few places over South Andhra Pradesh and Tamil Nadu. Weather would be mainly dry over rest of the region.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Telangana, North Coastal Andhra Pradesh, Coastal & North Interior Karnataka, Kerala and Andaman & Nicobar Islands on the 20th, Telangana, North Coastal Andhra Pradesh, Coastal Karnataka, Kerala and Andaman & Nicobar Islands on the 21st and Telangana and Andaman & Nicobar Islands on the 22nd.
- **Weather Outlook:** Rain/thundershower would occur at many places over Andaman & Nicobar Islands and Lakshadweep and isolated over rest parts of the region. Considerable decrease in rainfall activity over Andhra Pradesh, Karnataka, Kerala and Tamil Nadu.
- **Advisories:**
 - 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 with drum seeder in Kurnool district.
 - Continue sowing of fodder maize and short duration varieties of pulses like black gram, cowpea, field bean and horse gram in the Eastern Dry Zone of Karnataka after spells of heavy rain.
 - Continue sowing of cotton in the Hill Zone of Karnataka and continue sowing of sunflower in North Dry Zone of Karnataka after spells of heavy rain.
 - Undertake transplanting of vegetables in Southern Transition Zone of Karnataka.
 - In North East Dry Zone of Karnataka, postpone harvesting of green gram and drain out excess water from the standing crops.
 - In cotton crop to reduce the square/flower bud/flower drop, spray Planofix 0.25 ml per



Sugarcane



Cotton



Groundnut



Rice

litre of water as it is at square to flowering stage in the Central Dry Zone and North Transition Zone of Karnataka after current spells of rain.

- In Kerala, continue planting of Nendran banana in the Problem Area Zone after spells of heavy rain. Provide adequate drainage in crop fields to remove excess water.
- Continue transplanting of samba rice, dry sowing of long duration varieties of rice, prepare late samba/thaladi nursery. Harvest the kuruvai rice at ground level to avoid stem borer infestation in the thaladi season in the Cauvery Delta Zone of Tamil Nadu.
- Undertake land preparation and sowing of maize, cotton and rainfed crops in the Southern Zone of Tamil Nadu.
- Undertake nursery sowing of chilli and adopt soil and moisture conservation practices like broad bed and furrow, compartmental bunding and ridges and furrows for conservation of moisture under rainfed conditions in South Zone of Tamil Nadu. As strong winds are expected in the coming days, undertake propping for sugarcane and support for banana.
- Undertake direct sowing of rice in the North Western Zone of Tamil Nadu utilizing the realized rainfall.
- Apply *Pseudomonas* @ 3 kg per hectare in turmeric crop and provide proper drainage facility to avoid rhizome rot attack in the Western Zone of Tamil Nadu, since rainfall is expected in the coming days. Prevailing cloudy weather condition with frequent drizzling is congenial for attack of leaf folder and bacterial leaf spot in rice. Spray Chlorpyrifos @ 2ml per litre or Dichlorvas @ 2 ml per litre to control leaf folder and Dithane M 45 @ 4 gram per litre of water to prevent bacterial leaf spot on a non rainy day.
- Undertake strict field surveillance to prevent incidences of rice bug in paddy, anthracnose in cowpea and bud rot in coconut and undertake plant protection measures after current spells of heavy rain in the Problem Area Zone of Kerala.
- Prevailing weather conditions are favourable for the incidence of sheath blight and sheath rot in rice in the Southern Zone of Kerala. Spray Tilt (Propiconazol) 150 ml/ 200 litre of water as a control measure after current spells of heavy rain.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- Vaccinate cattle and poultry, since prevailing weather condition is favorable for foot and mouth disease in cattle and Ranikhet disease in poultry in the Western Zone of Tamil Nadu.
- Vaccinate dairy animals for foot and mouth disease before the rainy season and pigs against swine fever or swine cholera to prevent the disease and pig mortality in the North Western Zone of Tamil Nadu. The young ones are more susceptible to the disease than adult animals and hence young ones should be vaccinated immediately after weaning. Subsequent vaccination may be done on yearly basis. Avoid feed ingredient having more than 11 % moisture, since feed and water may be have high *E.coli* load due to rainfall.
-

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 (cob formation/ cob maturity), 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 (flowering / maturity / harvesting), ginger (vegetative), sugarcane (vegetative / active vegetative), vegetables *viz.* tomato, *Capsicum*, chilli, brinjal, cabbage, cauliflower in mid and high hilly area (flowering / fruiting / picking), urad, moong, soybean (pod maturity / harvesting), pigeon pea, cowpea, horse gram, rice bean (flowering / maturity/harvesting), sesame in low land area (early vegetative / vegetative), pearl millet (vegetative / panicle initiation), vegetable pea (sowing / germination), toria (land preparation / sowing) in Uttarakhand.
- Rice (grain maturity/ harvesting), *Kharif* maize (vegetative / flower initiation), fodder maize, bajra, sorghum and other fodder crops(vegetative / cutting), Lady's finger, chilli and cucurbits crop (flowering / fruiting / picking), brinjal, tomato, chilli, cauliflower and cabbage(vegetative / flowering), soybean (flower initiation/maturity), radish, spinach and coriander (vegetative), guar, bajra (flowering / grain filling), onion (vegetative), Cucurbitaceous crops (flowering / fruiting / picking), mustard, pea, carrot(land preparation / sowing) in Delhi.
- Rice (flowering/dough/maturity), maize (cob formation/ maturity/harvesting), pole type beans (vegetative), cowpea (vegetative), sunflower (vegetative / flowering), garlic, cucurbits, okra (fruiting/picking), radish, spinach (transplanting / early vegetative), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), fruit crops (planting), brinjal, chilli, tomato, (vegetative / flowering/picking), *Kharif* pulses (moong, mash) (pod maturity/harvesting), beans, moong, rajmash (Valley Temperate Zone) (pod maturity / picking), groundnut (flowering / pegging initiation), radish, carrot, cucurbits, (nursery sowing), toria (land preparation / sowing /emergence), potato, palak (sowing / planting) in Jammu & Kashmir.
- *Kharif* maize (knee high/tasseling/silking/cob formation), jowar, bajra (early vegetative / vegetative/booting/heading), rice (tillering / panicle initiation/booting/heading/flowering), groundnut, arhar, moong and urad (early vegetative / vegetative/branching), tomato, brinjal (vegetative / flowering/ fruiting/picking), and cucurbitaceous vegetables (flowering / fruiting), spring sugarcane (vegetative/active vegetative/grand growth), 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/pod formation), moong, mash (vegetative) maize (cob formation / cob maturity) sesamum (vegetative), cauliflower (transplanting), potato(land preparation / sowing) in Punjab.
- New sugarcane (vegetative), cotton (vegetative), rice (panicle initiation/flowering/dough formation) in Haryana.
- Rice (tillering/ panicle initiation/flowering), cotton (flowering / boll formation), tomato, brinjal, chilli (nursery sowing / transplanting), shimla mirch (early vegetative / vegetative), groundnut (early vegetative / vegetative), new sugarcane (early vegetative / vegetative), soybean, sesame, maize, castor (vegetative / active vegetative), moong, guar, moth, cowpea, cluster bean(flowering / pod maturity/harvesting), bajra, sorghum (flowering /pod maturity/ harvesting), rainfed taramira, toria and mustard (field preparation / sowing), 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 (tillering), soybean, green gram, black gram (pod formation / pod maturity/harvesting), onion (vegetative), maize (silking/tasseling/cob formation), jowar, arhar, sesame, groundnut (vegetative), sugarcane (grand growth), vegetables (vegetative/flowering/fruiting) in Madhya Pradesh.
- Sugarcane (tillering), *kharif* rice (tillering), maize, jowar, groundnut (vegetative), arhar, soybean, green gram (flowering/pod formation), ragi and kodomillet (early vegetative), ginger, turmeric, papaya (vegetative), onion (vegetative), vegetable crops (early vegetative/ vegetative) in Chhattisgarh.

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

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

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

- Sugarcane (elongation), *sali* rice (panicle initiation / flowering), pigeon pea (vegetative), maize (vegetative), sesame (vegetative / flowering), green gram and black gram (sowing /early vegetative), ginger, turmeric (vegetative), early cauliflower, cabbage, knol-khol (transplanting / early vegetative), mid cauliflower (nursery sowing), winter vegetables (nursery raising), brinjal (nursery sowing), radish, carrot, spinach, beet (sowing / seedling) in Assam.
- *Jhum* rice (harvesting), WRC rice (early sown) (maturity / harvesting), regular WRC rice (flowering / grain formation), cauliflower and cabbage (nursery preparation), radish, spinach (sowing), sesame, maize and pea (sowing) in Arunachal Pradesh.
- *Kharif* rice (panicle initiation / flowering), groundnut (flowering / pegging), soybean (flowering / pod formation), early *rabi* vegetables (nursery preparation), mango, litchi and guava (planting / seedling), black gram and rice bean (vegetative) and tomato (fruiting) in Manipur.
- *Sali* rice (tillering / panicle initiation), turmeric and ginger (rhizome formation / rhizome maturity), cucurbits (flowering / fruiting), green gram and black gram (sowing / germination), early cauliflower and other winter vegetables (nursery sowing) in Meghalaya.
- *Jhum* rice (tillering), cucurbits (flowering / fruiting), ginger and turmeric (vegetative) in Mizoram.
- Upland rice (grain maturity), lowland rice (tillering / panicle initiation), ginger (vegetative), cabbage and tomato (nursery raising) and cucurbits (fruiting / harvesting) in Nagaland.
- *Jhum* rice (grain maturity / harvesting), *aman* rice (long duration) (active tillering / panicle initiation), *aman* rice (short duration) (flowering / grain filling), groundnut (pod maturity / harvesting), maize (cob formation), banana (vegetative), *kharif* vegetables like okra, cucurbits etc. (active vegetative / flowering), early cauliflower, brinjal and radish (transplanting) in Tripura.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- *kharif* rice (grain formation in early maturing variety and panicle initiation / flowering in mid late and late maturing variety in Konkan and panicle initiation / flowering in Kolhapur, Nasik (Ghat), Pune (west) region and East Vidarbha), Cotton (floral bud initiation / flowering / boll formation in Madhya Maharashtra, Marathwada and Vidarbha), jowar (flowering / grain formation in Madhya Maharashtra, Marathwada and Vidarbha), red gram (primary branching / secondary branching in Madhya Maharashtra, Vidarbha and Marathwada) bajra (grain maturity / harvesting in Madhya Maharashtra and Marathwada), soybean (pod development / pod maturity in Madhya Maharashtra, Marathwada and Vidarbha), groundnut (pod development / pod maturity in Madhya Maharashtra, Marathwada and Vidarbha), sugarcane (*adsali* and pre seasonal) (active tillering / elongation), sugarcane (*suru*) (active tillering / elongation), sugarcane (new *adsali*) (early tillering in Marathwada and Madhya Maharashtra) in Maharashtra.
- *Kharif* rice (flowering / milk), castor (vegetative), pearl millet (grain filling / maturity / harvesting), sesame (capsule formation / maturity / harvesting), groundnut (pegging / pod development), cotton (flowering / boll formation), pulses (pod development / maturity / harvesting), vegetables (flowering / fruiting), sugarcane (vegetative) in Gujarat.

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

- *Kharif* crops: early sown groundnut (pegging/pod development), maize (cob development), Bt.cotton (flowering/boll formation), late sown groundnut (flowering/pod development), cotton (flowering/boll formation), red gram (vegetative), sugarcane(Jan-March planted) (formative/grand growth), rainfed sugarcane (tillering), rice (transplanting/tillering), castor(vegetative/flowering), banana (vegetative), direct

sown rice (tillering), onion (vegetative), pulses (sowing to seedling/harvesting), and vegetables (vegetative) in Andhra Pradesh.

- *Kharif* crops: sugarcane (grand growth), kuruvai rice (maturity), samba rice (nursery sowing to transplanting/vegetative), direct sown rice (seedling), rainfed cotton and maize (germination), rice (vegetative), irrigated maize(vegetative), irrigated green gram (maturity), irrigated cotton (maturity), maize (flowering/maturity), onion (vegetative), sunflower (flowering), black gram (flowering), winter cotton (vegetative), groundnut (pod development) and vegetables (vegetative) in Tamil Nadu.
- *Virippu* rice (milking/dough), direct seeded rice (tillering), arecanut (nut formation), sugarcane (grand growth), Nendran banana (planting), Nendran (harvesting in Southern Zone), rubber (tapping/planting), kharif vegetables (fruiting), pepper (berry development), cardamom (harvesting), ginger (vegetative) in Kerala.
- Sugarcane (grand growth), arecanut (nut maturity), new arecanut (planting), kharif crops: sunflower(sowing) sorghum (grain filling), sugarcane(vegetative) ragi (tillering/head emergence), 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	07.08.13		14.08.13		21.08.13		28.08.13		04.09.13		11.09.13		18.09.13	
	Actual	% dep.	Actual	% dep.	Actual	% dep.	Actual	% dep.	Actual	% dep.	Actual	% dep.	Actual	% dep.
Arunachal Pradesh														
Anjaw	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Changlang	75.1	35	72.7	-4	18.5	-79	69.6	30	114.6	151	56.7	-4	28.9	-81
Dibang Valley	11.0	-65	17.0	-44	19.0	-51	14.0	-69	111.0	200	163.0	274	18.0	-82
East Kameng	66.1	35	18.0	-73	20.0	-61	27.1	-59	95.7	55	52.6	-13	22.8	-72
East Siang	113.0	-36	118.4	-10	40.9	-78	21.0	-86	416.9	195	172.0	36	0.0	-100
Kurung Kumey	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Lohit	59.6	-31	38.5	-60	119.3	6	49.7	-49	194.9	139	101.0	44	2.9	-97
Lower Dibang Valley	**	**	**	**	**	**	**	**	259.6	602	166.3	281	4.5	-95
Lower Subansari	36.4	-55	36.6	-8	0.0	-100	24.8	-48	8.0	-81	0.2	-99	**	**
Papumpara	83.6	-27	112.2	-9	17.5	-83	131.6	9	171.4	29	80.2	-34	1.8	-98
Tawang	94.0	-22	61.0	-61	41.0	-71	78.0	-33	52.0	-48	36.0	-68	65.0	-57
Tirap	115.9	12	130.3	24	113.4	-2	142.8	16	50.9	-53	28.5	-74	22.7	-83
Upper Siang	17.0	-77	49.4	-50	22.6	-80	39.2	-59	242.0	163	318.2	99	12.2	-94
Upper Subansari	31.2	15	21.7	-54	0.0	-100	0.0	-100	51.8	30	16.6	-32	0.0	-100
West Kameng	109.7	-9	145.6	-7	14.0	-90	172.3	49	130.4	29	110.5	-2	26.1	-83
West Siang	58.6	0	32.4	-13	4.1	-96	28.1	-70	151.1	151	172.5	200	2.8	-97
Assam														
Baksa	11.9	-87	50.2	-59	18.0	-85	25.0	-83	10.6	-89	192.6	99	2.0	-99
Barpeta	86.4	-2	50.8	-59	28.7	-76	61.4	-59	55.0	-41	370.6	284	5.7	-97
Bongaigaon	97.6	14	50.8	-54	24.4	-75	83.4	-46	59.4	-32	363.0	289	0.0	-100
Cachar	101.8	-4	186.2	56	99.6	-8	91.9	-6	47.1	-51	87.4	-16	24.4	-73
Chirang	45.5	-47	24.1	-78	17.2	-82	78.2	-50	97.3	11	350.9	277	12.5	-89
Darrang	26.0	-59	37.0	-42	24.0	-57	116.0	82	56.0	9	38.0	-31	1.0	-99
Dhemaji	95.0	14	69.0	-49	20.0	-81	74.0	-28	179.0	79	24.0	-77	0.0	-100
Dhubri	52.3	-44	72.1	-9	74.5	-23	67.5	-42	82.7	11	44.6	-26	0.0	-100
Dibrugarh	114.9	26	80.1	-15	108.1	10	82.9	-6	81.6	7	26.2	-72	18.0	-80
Goalpara	84.5	34	32.8	-60	29.7	-53	100.0	1	52.8	-20	93.5	95	0.0	-100
Golghat	144.2	179	63.7	-11	13.6	-75	102.9	62	39.8	-32	12.3	-79	1.5	-97
Hailakandi	191.5	109	92.7	-8	156.5	46	63.3	-7	10.9	-87	113.9	24	20.5	-72
Jorhat	89.9	13	147.5	83	11.1	-86	107.4	42	32.1	-50	6.1	-93	0.0	-100
Kamrup(Rural)	46.8	-12	102.3	67	39.9	-32	86.9	47	33.7	-17	68.9	36	28.2	-41
Kamrup(Metro)	26.4	-51	14.6	-76	20.2	-65	41.0	-31	39.5	-3	17.7	-65	5.5	-89
Karbi Anglong	57.3	-1	40.3	-11	6.8	-87	61.3	30	14.1	-64	59.3	-2	30.0	-29
Karimganj	139.0	49	145.2	26	93.6	11	80.4	-29	74.1	-19	89.9	-20	87.0	-30
Kokrajhar	104.7	-21	69.5	-64	114.5	7	109.3	-37	188.0	45	339.0	227	0.0	-100
Lakhimpur	119.4	43	151.9	13	26.8	-75	113.1	10	189.5	90	46.0	-55	0.2	-99
Morigaon	54.2	-26	154.2	105	78.4	25	16.8	-74	37.8	-38	14.6	-74	14.4	-76
N.C.Hills	99.0	190	46.2	-16	54.7	32	7.3	-87	34.5	-43	51.5	135	56.4	53
Nowgong	36.5	-45	37.8	-40	44.6	-32	16.5	-77	20.2	-66	93.7	48	3.9	-92
Nalbari	35.1	-58	86.8	37	34.8	-47	74.7	-8	36.5	-36	110.0	157	4.5	-94
Sonitpur	83.4	38	91.2	4	16.7	-80	70.2	-17	80.6	44	71.8	24	2.9	-96
Sibsagar	109.8	37	121.6	45	99.0	41	49.5	-34	39.9	-33	11.5	-80	0.0	-100

Tinsukia	69.8	-6	76.8	-25	43.3	-53	83.5	10	133.3	51	27.8	-70	20.7	-76
Udalgiri	90.2	42	61.0	-4	7.6	-86	86.5	36	41.8	-19	139.6	152	18.8	-77
Meghalaya														
East Garo Hills	**	**	**	**	**	**	0.0	-100	**	**	**	**	**	**
East Khasi Hills	245.9	-2	135.8	-32	160.1	-36	100.7	-60	593.8	268	71.8	-50	34.4	-83
Jaintia Hills	90.0	-60	18.0	-92	66.0	-59	51.0	-80	171.0	-6	33.0	-86	11.0	-95
Ribhoi	87.3	5	91.2	-9	114.1	10	89.2	11	25.7	-69	11.3	-82	59.4	-37
South Garo Hills	**	**	**	**	5.0	-95	8.0	-91	140.0	103	154.0	81	1.0	-99
West Garo Hills	37.6	-61	56.2	-25	66.0	-27	46.4	-49	115.4	68	13.8	-84	16.0	-84
West Khasi Hills	11.0	-93	**	**	14.0	-87	80.0	-50	5.0	-96	5.0	-96	25.0	-77
Mizoram														
Aizwal	78.3	-27	93.5	-11	120.9	0	161.3	44	11.7	-88	70.1	-31	57.8	-43
Champhai	7.0	-90	5.0	-94	11.0	-85	44.0	-44	22.0	-67	11.0	-86	9.0	-88
Chhinctuipui	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Lawngtlai	50.0	-50	45.0	-48	140.0	71	49.0	-52	58.0	-28	145.0	61	207.0	139
Lunglei	89.0	-20	40.0	-66	100.0	-10	79.0	-25	33.0	-62	138.0	30	153.0	80
Mamit	14.0	-87	5.0	-95	8.0	-93	11.0	-90	5.0	-95	178.0	75	68.0	-33
Saiha	45.0	-55	70.0	-6	167.0	85	53.0	-52	81.0	-3	172.0	79	268.0	194
Serchhip	37.0	-57	55.0	-49	51.0	-54	69.0	-29	14.0	-83	15.0	-81	20.0	-74
Manipur														
Bishnupur	**	**	**	**	**	**	**	**	**	**	**	**	11.0	-66
Chandel	**	**	**	**	**	**	**	**	**	**	**	**	1.0	-99
Churachandpur	72.0	-8	36.0	-66	56.0	-39	31.0	-57	77.0	1	23.0	-73	10.0	-89
Imphal east	123.6	139	87.4	9	51.0	-15	51.7	-11	18.3	-71	134.7	227	54.0	11
Imphal west	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Senapati	85.0	0	38.0	-55	26.0	-64	30.0	-48	21.0	-68	43.0	-12	49.0	-10
Tamenglong	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Thoubal	40.0	-14	57.0	9	82.0	34	48.0	41	14.0	-65	39.0	68	13.0	-47
Ukhrul	**	**	**	**	**	**	**	**	**	**	**	**	60.0	87
Nagaland														
Dimapur	41.5	-17	35.0	-57	4.0	-93	28.5	-61	23.0	-52	68.0	109	29.9	-42
Kephire	13.0	-83	1.0	-99	25.0	-74	39.0	-45	56.0	-3	32.0	-41	6.0	-92
Kohima	106.3	39	62.4	-37	65.4	-25	30.2	-62	19.3	-74	36.2	-52	33.9	-43
Longleng	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Mokokchung	37.0	-68	25.0	-73	7.0	-88	6.0	-93	23.0	-72	104.0	39	10.0	-86
Mon	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Paren	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Phek	35.0	-54	90.0	-9	13.8	-84	14.9	-81	85.5	14	40.7	-47	16.5	-72
Tuensang	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Wokha	**	**	**	**	**	**	**	**	65.0	-18	43.0	-55	37.0	-54
Zunheboto	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Tripura														
Dhalai	125.0	44	**	**	228.0	180	90.9	38	32.0	-47	91.5	51	3.5	-95
North tripura	74.7	0	92.7	-1	110.0	22	167.6	120	14.0	-81	87.4	26	54.2	-28
South tripura	147.3	53	36.9	-56	78.7	-18	38.1	-57	105.5	65	102.3	69	50.2	-14
West tripura	72.7	-3	47.4	-29	78.4	-3	22.0	-70	29.4	-56	125.2	110	37.7	-41
Himachal Pradesh														
Bilaspur	41.3	-53	82.8	8	109.6	82	8.3	-86	40.7	3	29.2	-44	16.6	-47

Chamba	152.2	20	104.3	-29	115.5	33	8.7	-90	8.4	-90	17.2	-74	10.4	-73
Hamirpur	56.9	-40	87.6	-14	90.6	5	16.7	-81	41.0	-33	40.7	2	17.0	-38
Kangra	311.1	82	167.7	-7	131.8	4	80.3	-28	79.0	-8	67.1	-10	17.9	-62
Kinnaur	5.7	-64	5.0	-77	9.6	-54	0.6	-97	11.8	-33	0.8	-95	3.2	-80
Kullu	39.0	-12	57.2	33	70.1	98	12.0	-64	28.7	21	8.6	-68	10.3	-39
Lahaul and Spiti	5.1	-85	2.7	-93	24.9	-15	0.0	-100	0.7	-98	0.0	-100	5.3	-74
Mandi	122.0	18	77.5	-20	85.3	-1	29.9	-51	27.3	-48	42.7	-13	19.5	-37
Shimla	37.3	-26	29.4	-39	54.9	30	15.2	-60	25.7	-16	14.8	-57	9.7	-58
Sirmaur	115.7	-3	167.1	31	71.3	-34	30.0	-71	52.3	-17	14.2	-77	10.8	-73
Solan	30.6	-66	42.0	-54	50.0	-28	38.9	-38	34.3	-27	42.8	-20	7.3	-78
Una	56.8	-27	81.1	-6	131.2	103	29.9	-51	66.4	47	47.5	10	20.2	-20
Punjab														
Amritsar	106.9	95	18.2	-67	184.6	367	0.9	-98	4.1	-86	7.3	-72	4.4	-60
Barnala	8.0	-76	0.0	-100	32.5	16	4.3	-81	0.0	-100	0.0	-100	1.8	-88
Bhatinda	85.0	97	30.0	26	170.0	514	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Faridkot	41.7	50	13.0	-41	313.5	1079	0.0	-100	0.0	-100	0.0	-100	20.0	144
Fatehgarh Sahib	63.0	37	72.0	55	48.0	8	10.0	-60	20.9	-30	30.0	11	1.0	-94
Ferozpur	37.8	0	0.0	-100	123.7	348	0.0	-100	0.0	-100	0.5	-97	4.7	-56
Gurdaspur	197.4	137	155.3	58	193.1	180	37.6	-31	44.8	11	39.2	2	6.3	-71
Hoshiarpur	17.4	-75	50.3	-31	60.0	21	11.9	-71	21.7	-29	11.6	-69	5.9	-68
Jalandhar	29.4	-44	2.0	-96	93.1	125	1.4	-96	10.8	-69	7.0	-80	2.2	-86
Kapurthala	35.6	-4	17.8	-54	88.5	205	2.7	-90	25.1	9	2.8	-86	3.2	-79
Ludhiana	62.1	36	15.2	-67	64.4	52	14.8	-59	4.1	-84	14.9	-52	2.3	-86
Mansa	37.4	2	0.0	-100	37.4	23	0.0	-100	0.0	-100	0.0	-100	10.2	-32
Moga	39.7	31	2.0	-95	262.7	661	0.0	-100	0.0	-100	0.0	-100	4.5	-64
Muktesar	75.0	128	1.5	-94	249.0	969	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Nawashahar	48.0	-33	74.9	19	46.5	-7	11.5	-79	30.6	-23	55.2	42	6.9	-67
Patiala	47.3	-16	22.4	-56	78.0	64	12.2	-72	6.0	-81	11.7	-60	0.8	-95
Ropar	46.7	-41	87.7	46	75.2	39	24.7	-49	37.7	11	11.2	-69	10.6	-41
Sangrur	26.7	-32	1.1	-97	53.2	38	0.2	-99	0.8	-96	0.4	-99	2.1	-76
Mohali	8.0	-88	94.0	80	55.0	18	18.0	-54	14.0	-51	8.0	-81	0.0	-100
TarnTaran	40.4	36	4.0	-84	155.1	472	0.0	-100	0.0	-100	0.0	-100	4.2	-35
Haryana														
Ambala	59.1	-19	129.4	36	66.0	-13	21.0	-68	32.9	-22	10.7	-80	0.0	-99
Bhiwani	18.6	-36	45.9	32	46.1	56	0.0	-100	1.2	-94	0.0	-100	0.0	-100
Chandigarh	37.8	-56	95.7	27	105.2	52	27.2	-47	18.7	-34	30.6	-34	3.8	-89
Faridabad	33.1	-50	34.5	-18	133.6	142	26.9	-53	6.8	-86	0.0	-100	0.0	-100
Fatehabad	8.9	-70	6.7	-68	70.1	217	2.8	-84	0.0	-100	0.0	-100	3.7	-60
Gurgaon	32.8	-34	11.3	-76	76.3	87	17.5	-55	5.0	-81	1.6	-95	0.0	-100
Hissar	48.5	68	9.8	-65	64.1	116	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Jhajjar	15.5	-62	2.3	-93	75.2	105	27.1	-19	1.9	-91	0.0	-100	0.0	-100
Jind	45.5	12	31.0	7	84.3	123	14.2	-58	0.0	-100	0.0	-100	0.0	-100
Katihah	12.5	-62	35.1	0	54.0	55	6.6	-79	4.4	-80	0.6	-97	0.0	-100
Karnal	72.8	60	43.5	-13	68.5	16	19.2	-69	6.7	-68	3.6	-88	0.0	-100
Kurukshetra	26.5	-39	40.3	-8	33.7	-42	10.0	-79	3.6	-85	0.8	-97	0.0	-100
Mahendragarh	48.3	35	50.9	23	71.5	148	0.1	-99	0.0	-100	0.0	-100	1.8	-86

Mewat	20.9	-55	16.7	-69	87.7	119	7.0	-83	2.1	-94	0.0	-100	0.0	-100
Palwal	28.5	-34	23.2	-41	45.6	10	21.8	-47	11.2	-46	0.0	-100	0.0	-100
Panchkkula	38.1	-57	65.3	-31	80.0	12	21.1	-70	28.1	-46	32.5	-46	11.8	-70
Panipat	16.5	-66	32.0	-33	64.8	20	23.5	-51	2.1	-89	0.4	-99	0.0	-100
Rewari	38.0	-28	59.4	17	47.6	31	8.0	-78	0.5	-98	0.0	-100	0.0	-100
Rohtak	14.0	-70	10.9	-77	72.4	88	10.2	-79	0.4	-99	0.0	-100	0.0	-100
Sirsa	53.6	215	0.0	-100	55.8	158	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Sonepat	46.5	-15	13.9	-70	93.2	89	20.5	-59	0.0	-100	0.1	-99	0.1	-99
Yamunanagar	87.3	9	215.5	182	45.7	-40	26.8	-62	43.7	-19	41.2	-17	4.5	-84
Delhi	32.8	-55	28.8	-54	100.2	85	12.3	-75	7.7	-81	0.7	-98	0.2	-99
Jammu & Kashmir														
Anantnag	7.1	-66	37.2	102	64.6	372	4.5	-65	13.0	-19	2.7	-82	19.2	88
Badgam	9.2	-39	31.9	195	35.0	143	0.0	-100	4.4	-59	4.5	-77	10.5	83
Bandipore	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Baramula	9.5	-63	39.5	84	81.7	438	3.0	-79	7.8	-49	6.3	-54	26.9	175
Doda	44.3	43	49.4	108	232.1	875	6.4	-59	47.2	205	4.4	-82	21.6	143
Ganderwal	0.0	-100	33.1	115	70.6	460	4.5	-60	14.0	51	0.0	-100	20.8	285
Jammu	182.3	105	65.7	-31	207.8	206	65.4	12	34.9	-25	33.7	-22	5.3	-85
Kargil	0.0	-100	2.0	-49	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100
Kathua	156.0	31	205.4	96	215.0	151	15.3	-76	33.0	-54	20.7	-54	1.1	-98
Kistwar	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Kulgam	2.0	-91	42.7	132	51.0	272	3.6	-72	0.7	-96	1.8	-88	4.5	-56
Kupwara	33.8	92	55.9	291	59.5	351	0.0	-100	4.5	-27	0.0	-100	25.6	320
Ladakh(Leh)	0.6	-74	1.5	-65	4.4	61	0.0	-100	0.0	-100	0.0	-100	0.2	-83
Poonch	9.5	-89	0.3	-99	0.0	-100	9.0	-75	11.0	-65	8.0	-85	22.0	-44
Pulwama	0.0	-100	24.6	46	23.1	50	0.0	-100	1.5	-87	2.6	-79	3.8	-37
Rajouri	21.7	-73	155.9	165	40.9	-46	5.5	-88	6.5	-83	19.9	-1	28.9	-17
Ramban	23.3	-25	51.8	118	170.9	618	0.3	-98	4.2	-73	9.2	-63	8.2	-8
Reasi	374.0	128	373.9	200	258.5	207	83.6	0	40.8	-42	41.6	-15	58.7	44
Samba	186.8	110	162.5	71	227.7	235	32.8	-44	3.2	-93	73.7	71	14.5	-59
Shopian	0.0	-100	36.0	113	34.0	121	0.0	-100	3.0	-73	4.0	-67	12.0	100
Srinagar	16.3	-14	74.2	382	25.8	104	0.0	-100	4.2	-55	10.6	21	20.1	273
Udhampur	92.4	-44	59.3	-52	320.3	280	3.1	-96	2.5	-96	16.2	-67	1.5	-96
East Madhya Pradesh														
Anuppur	58.7	-40	85.5	-3	102.3	12	45.5	-42	32.1	-54	6.2	-91	51.1	-26
Balaghat	41.2	-60	71.1	-33	107.2	-12	61.5	-27	19.0	-78	23.1	-64	32.9	-36
Chhatarpur	56.3	-46	140.4	59	110.8	35	136.2	93	103.8	26	0.0	-100	9.6	-82
Chindwara	109.8	43	68.0	8	65.4	18	118.3	115	0.0	-100	1.6	-97	25.7	-43
Damoh	34.7	-72	172.4	111	250.4	179	183.1	163	21.4	-70	0.5	-99	1.0	-98
Dindori	43.3	-61	141.4	54	59.0	-42	88.2	21	59.3	-12	0.9	-98	7.0	-84
Jabalpur	55.0	-50	93.3	1	372.6	303	185.7	132	60.9	-25	6.6	-90	12.3	-77
Katni	56.7	-50	65.7	-23	205.9	137	94.9	23	20.3	-69	1.6	-98	14.7	-73
Mandla	61.2	-44	103.4	-6	279.3	159	65.4	-14	33.9	-59	1.6	-97	23.3	-60
Narsingpur	66.6	-32	135.5	66	156.2	54	168.7	186	1.0	-99	1.4	-98	4.4	-93
Panna	73.0	-27	96.5	-2	91.5	8	92.0	17	229.1	216	0.0	-100	0.0	-100
Rewa	19.8	-76	182.4	122	148.8	95	91.2	41	30.6	-59	0.0	-100	8.2	-85

Sagar	48.1	-60	136.5	50	202.4	129	152.2	104	16.5	-76	0.6	-99	4.3	-93
Satna	52.2	-41	109.6	24	148.2	96	111.2	82	65.0	9	0.1	-99	12.7	-76
Seoni	61.7	-29	114.7	54	152.0	109	173.3	188	14.9	-76	0.6	-99	45.4	-19
Shahdol	38.6	-61	61.5	-29	72.0	-13	107.0	68	26.0	-65	1.1	-98	7.8	-85
Sidhi	19.4	-74	**	**	130.2	58	115.2	85	55.6	-30	0.0	-100	1.0	-98
Singrauli	14.2	-79	50.7	-18	34.4	-54	32.4	-28	15.0	-76	0.0	-100	4.0	-92
Tikamgarh	39.0	-51	80.0	-4	121.0	38	89.0	44	63.5	3	0.0	-100	0.0	-100
Umaria	113.6	12	37.4	-58	37.7	-63	78.3	-6	38.2	-51	35.6	-48	14.3	-77
West Madhya Pradesh														
Alirajpur	93.3	37	60.6	25	5.3	-90	98.4	48	5.3	-90	68.5	33	77.4	155
Asoknagar	69.5	-14	143.8	128	67.0	-22	80.5	30	3.3	-94	0.0	-100	0.0	-100
Badwani	84.5	85	41.6	-1	9.4	-78	91.6	105	9.1	-79	10.7	-71	23.4	-11
Betul	173.8	110	51.0	-22	118.3	75	299.8	471	1.1	-98	8.1	-87	20.3	-66
Bhind	74.8	27	109.5	49	56.3	-6	77.0	62	111.9	128	0.6	-99	2.3	-94
Bhopal	68.1	-27	34.5	-54	55.2	-37	175.0	172	0.0	-100	2.3	-96	0.0	-100
Burhanpur	124.7	92	104.7	110	26.9	-51	94.8	49	4.5	-91	0.3	-99	56.3	49
Datia	108.4	36	116.3	63	178.1	143	48.3	1	127.1	110	0.0	-100	0.0	-100
Dewas	119.0	42	57.0	-16	57.2	-29	227.3	276	3.3	-96	4.7	-91	0.0	-100
Dhar	94.9	30	56.7	14	19.1	-65	123.3	136	7.1	-88	2.9	-94	48.1	29
Guna	104.8	11	244.2	240	92.1	11	61.2	-25	3.3	-95	0.0	-100	0.0	-100
Gwalior	80.5	9	58.9	-22	137.8	103	49.7	-3	42.1	-30	0.0	-100	0.0	-100
Harda	163.1	63	70.8	-13	13.0	-87	208.0	219	0.0	-100	0.0	-100	17.1	-61
Hosangabad	200.7	65	75.1	-25	178.1	58	302.3	246	0.0	-100	0.0	-100	18.5	-75
Indore	113.9	70	54.4	-3	13.1	-78	188.8	264	6.3	-90	1.0	-98	36.4	-9
Jhabua	105.1	54	34.3	-31	24.9	-47	135.0	164	5.0	-92	4.5	-91	40.3	47
Khandwa	134.0	82	102.4	62	27.7	-54	142.3	168	6.0	-91	0.0	-100	28.0	-33
Khargone	121.7	89	33.1	-30	14.4	-70	120.1	138	0.0	-100	0.0	-100	6.0	-79
Mandsaur	74.9	-1	78.1	40	27.9	-60	71.7	57	0.0	-100	0.0	-100	5.9	-79
Morena	123.0	71	115.3	51	136.3	102	73.0	43	62.0	26	0.0	-100	2.5	-94
Neemuch	59.3	-5	53.3	-4	74.3	9	95.3	88	0.0	-100	0.0	-100	1.1	-96
Raisen	81.7	-24	110.3	32	134.1	35	82.9	11	0.6	-99	1.0	-99	12.6	-77
Rajgarh	119.6	30	85.3	31	171.2	96	111.8	85	0.0	-100	0.0	-100	0.5	-98
Ratlam	116.7	45	62.7	6	9.2	-87	123.4	110	1.3	-98	1.0	-98	5.9	-81
Sehore	117.5	16	71.3	-9	79.5	-15	204.4	183	3.8	-96	4.6	-93	1.8	-96
Shajapur	137.3	52	51.0	-17	111.3	34	184.5	274	1.2	-98	0.0	-100	0.0	-100
Sheopur Kalani	84.5	40	161.0	109	184.0	147	112.1	137	0.0	-100	0.0	-100	0.0	-100
Shivpuri	104.8	41	171.0	146	76.5	24	34.8	-36	51.0	-6	0.0	-100	7.0	-83
Ujjain	116.0	55	68.8	37	28.6	-61	158.5	185	2.0	-97	3.2	-93	6.1	-82
Vidisha	99.0	2	164.4	124	94.1	-3	107.1	39	0.0	-100	0.0	-100	1.0	-98
Chattisgarh														
Bastar	65.9	-28	18.1	-80	119.4	54	25.2	-67	11.8	-85	34.5	-47	27.4	-52
Bijapur	303.4	140	73.7	-46	247.9	168	48.7	-47	9.7	-89	35.8	-47	78.4	51
Bilaspur	39.0	-50	87.4	1	102.6	25	72.1	19	126.2	89	42.4	-26	33.9	-38
Dantewara	105.1	5	34.1	-66	196.4	179	12.1	-84	28.3	-63	55.7	-7	24.0	-50

Dhamtari	84.4	5	4.4	-94	96.2	18	50.0	-20	56.0	-15	13.8	-77	33.8	-42
Durg	95.6	17	48.6	-42	126.6	97	55.1	-16	51.2	-13	2.4	-95	44.5	-18
Janjgir	47.1	-51	72.8	-35	89.2	-8	56.9	-28	116.4	61	9.3	-88	23.2	-51
Jashpurnagar	15.2	-84	24.1	-78	53.8	-41	55.0	-35	7.5	-91	13.0	-85	23.5	-63
Kanker	40.0	-66	41.4	-56	55.7	-38	46.0	-47	15.4	-80	3.2	-94	72.3	9
Korba	45.9	-57	53.1	-53	107.5	-2	115.3	52	84.0	31	35.5	-53	9.0	-84
Koriya	56.8	-39	144.8	42	163.1	68	143.1	106	57.3	-11	2.7	-96	62.5	9
Kawardha	31.4	-55	39.0	-38	58.0	-10	32.0	-46	27.0	-58	13.0	-70	3.0	-92
Mahasumund	70.2	-20	72.7	-3	104.5	22	45.8	-28	91.2	29	8.6	-86	44.9	-13
Narayanpur	203.5	94	69.2	-39	105.3	26	18.8	-78	4.1	-95	24.4	-62	91.8	69
Raigarh	64.5	-27	20.3	-78	108.6	27	36.6	-39	105.4	47	21.7	-72	23.4	-60
Raipur	69.9	-11	49.6	-38	99.3	26	56.8	-6	87.8	32	6.5	-88	27.1	-47
Rajandgaon	91.6	6	42.9	-46	126.2	82	32.4	-55	11.0	-86	18.4	-69	22.2	-55
Surguja	22.2	-78	76.8	-18	66.9	-18	26.0	-66	51.9	-28	1.3	-98	23.4	-54
East Uttar Pradesh														
Allahabad	26.5	-57	93.3	18	115.9	94	49.6	-17	54.6	15	0.5	-99	19.2	-66
Ambedkar Nagar	34.2	-53	91.0	24	79.0	34	36.0	-39	109.4	130	45.0	-44	65.4	41
Azamgarh	32.4	-55	71.9	-4	53.7	-5	85.1	33	77.2	49	0.7	-99	0.0	-100
Bahraich	67.9	2	89.4	24	32.4	-51	37.6	-47	76.5	39	24.9	-61	46.5	-13
Ballia	22.7	-64	62.3	-7	47.2	-4	32.7	-44	65.8	56	13.6	-72	19.5	-60
Balrampur	45.6	-28	72.1	-17	102.0	38	58.0	-21	47.1	-35	29.9	-36	3.7	-94
Banda	60.8	-19	51.4	-44	88.9	25	38.2	-38	67.3	13	0.0	-100	12.1	-75
Barabanki	18.7	-72	78.4	8	32.6	-51	38.6	-37	38.6	-27	12.7	-82	2.5	-96
Basti	5.1	-93	141.9	103	44.1	-27	93.4	47	47.7	-14	1.4	-98	2.8	-95
Chandauli	35.2	-42	10.2	-87	88.2	41	30.2	-47	56.2	11	0.0	-100	0.1	-99
Deoria	36.5	-39	80.0	2	39.0	-39	5.5	-92	65.0	16	0.0	-100	0.0	-100
Faizabad	31.7	-59	41.9	-46	39.5	-43	23.4	-65	38.3	-23	4.8	-93	20.4	-64
Farrukhabad	4.0	-92	31.9	-65	40.4	-34	59.6	-6	17.9	-53	5.8	-88	12.8	-71
Fatehpur	3.2	-95	66.3	-24	75.8	26	11.6	-81	56.0	35	0.0	-100	0.0	-100
Gazipur	20.2	-77	102.8	34	71.1	14	28.2	-49	106.1	124	0.6	-99	3.2	-96
Gonda	11.3	-87	57.8	-25	67.1	12	41.0	-45	48.9	-8	14.2	-79	46.9	-28
Gorakhpur	36.8	-62	94.2	-7	51.6	-40	61.2	-20	90.9	46	7.2	-90	4.2	-95
Hardoi	25.1	-54	27.2	-61	58.4	10	52.9	-23	36.3	-28	20.9	-59	2.8	-94
Jaunpur	13.6	-75	18.3	-74	35.1	-28	39.5	-38	45.9	-5	0.9	-99	23.4	-67
Kannauj	3.8	-94	92.0	-1	137.8	114	68.8	-1	20.4	-53	0.0	-100	12.4	-76
Kanpur City	66.4	21	32.8	-57	29.7	-52	9.9	-82	67.4	76	3.2	-92	17.3	-64
Kanpur Dehat	31.5	-54	19.2	-75	24.2	-60	12.6	-80	31.7	-35	4.5	-91	0.8	-98
Kaushambi	3.3	-94	29.9	-63	81.1	42	24.8	-58	19.9	-54	5.1	-89	6.8	-86
Kheri	136.7	89	18.3	-72	45.9	-35	73.3	3	43.7	-21	31.7	-51	7.2	-82
Kushi nagar	6.5	-92	28.0	-69	24.0	-72	27.5	-69	31.0	-38	8.5	-85	0.0	-100
Lucknow	27.3	-57	51.7	-23	59.6	7	18.2	-68	45.5	-1	9.5	-79	2.2	-96
Maharajganj	15.7	-80	46.6	-55	49.2	-45	107.0	28	62.3	13	15.5	-72	2.5	-97
Mau	3.5	-95	26.5	-67	44.5	-37	31.0	-60	65.5	23	5.0	-92	0.0	-100
Mirzapur	30.3	-57	66.7	-24	93.5	76	101.3	79	43.4	-21	0.0	-100	20.5	-73
Pratapgarh	13.3	-77	49.3	-36	138.5	133	44.0	-39	73.7	49	15.7	-74	38.3	-38
RaiBareilly	20.4	-63	29.0	-58	35.2	-38	5.0	-91	45.3	3	8.5	-82	9.7	-82
Sahuji Maharajnagar	31.0	-54	76.0	-4	167.5	131	79.8	10	39.3	-37	2.8	-96	37.8	-44
Sant Kabirnagar	25.0	-68	67.0	-4	37.0	-42	78.0	23	87.0	78	2.0	-97	11.0	-82

Sant Ravidas Nagar	52.0	-14	43.0	-45	72.0	15	62.0	8	43.0	-15	0.0	-100	0.0	-100
Shrawasti	51.3	-23	61.5	-14	67.3	1	34.7	-51	90.5	65	60.3	-6	7.3	-86
Sidharthnagar	35.9	-47	35.9	-55	36.5	-48	202.9	172	84.7	53	27.1	-48	7.9	-88
Sitapur	172.7	230	34.4	-51	69.4	14	19.8	-71	44.0	-28	7.8	-88	4.7	-91
Sonbhadra	52.9	-25	78.8	-3	82.2	35	42.1	-27	51.2	-10	0.0	-100	12.5	-79
Sultanpur	23.8	-58	67.8	0	62.4	2	15.0	-77	44.7	-12	7.2	-86	67.9	24
Unnao	27.8	-58	16.3	-80	42.8	-29	27.8	-56	78.8	85	1.3	-98	0.8	-98
Varanasi	34.5	-43	64.8	-6	88.6	49	22.5	-67	114.2	104	0.5	-99	3.5	-95
West Uttar Pradesh														
Agra	37.7	-45	78.4	4	53.5	-14	13.3	-76	98.8	124	0.0	-100	0.1	-99
Aligarh	18.7	-73	65.0		73.6	28	12.4	-80	65.4	86	0.1	-99	0.0	-100
Auraiya	72.0	14	41.0	-45	40.9	-23	94.9	63	65.1	47	0.0	-100	0.0	-100
Badaun	4.0	-94	43.4	-40	14.0	-74	32.8	-56	23.0	-53	5.0	-88	0.2	-99
Baghpat	110.8	83	61.8	14	36.6	-20	6.0	-89	2.1	-88	2.0	-92	0.0	-100
Bareilly	42.2	-40	25.5	-65	62.5	20	71.1	-8	46.3	-17	1.2	-97	6.1	-87
Bijnor	81.6	-4	116.7	44	32.4	-48	125.6	66	32.1	-21	24.8	-50	4.5	-90
Bulandsahar	7.4	-87	34.7	-43	24.6	-59	19.0	-71	26.7	-23	4.5	-87	0.0	-100
Etah	4.0	-93	67.8	-1	71.0	50	41.3	-29	38.5	17	0.0	-100	0.0	-100
Etawah	53.3	-30	61.0	-24	63.8	-2	24.0	-53	34.8	-23	0.0	-100	9.7	-79
Firozabad	30.1	-49	88.7	29	127.6	130	29.5	-47	62.7	54	0.0	-100	0.0	-100
GBNagar	6.0	-90	33.0	-44	44.0	-16	33.0	-34	27.0	7	0.0	-100	0.0	-100
Ghaziabad	11.5	-83	27.0	-53	36.2	-36	15.2	-76	4.3	-88	0.0	-100	0.0	-100
Hamirpur	61.6	-18	80.0	-14	73.1	15	49.1	-19	160.9	235	0.0	-100	13.9	-75
Jalaun	57.0	-27	23.7	-76	46.8	-18	68.0	25	122.6	148	0.5	-99	7.1	-88
Jhansi	27.2	-62	79.9	-14	86.1	22	54.1	-5	164.4	183	0.0	-100	1.8	-97
Jotirba Phule Nagar	34.0	-45	102.0	26	30.5	-52	46.0	-40	23.5	-41	0.0	-100	6.5	-86
Kanshiramnagar	1.0	-98	138.0	90	72.0	34	70.0	-3	51.0	4	0.0	-100	0.0	-100
Lalitpur	87.5	0	184.5	98	183.0	152	99.0	41	17.0	-77	0.0	-100	0.0	-100
Mahamaya Nagar	11.5	-79	117.0	58	81.5	52	10.0	-80	64.5	109	0.0	-100	0.0	-100
Mahoba	14.6	-81	34.6	-63	12.4	-82	74.2	25	107.6	137	0.0	-100	15.4	-69
Mainpuri	18.5	-67	50.9	-32	103.7	92	42.6	-8	26.4	-35	0.0	-100	0.0	-100
Mathura	10.0	-83	22.5	-62	47.8	-16	28.0	-46	50.0	42	0.0	-100	0.0	-100
Meerut	118.6	63	83.4	11	36.5	-48	40.8	-43	45.7	17	5.8	-87	21.1	-53
Moradabad	17.4	-76	82.9	3	60.7	-9	116.8	58	35.3	-17	5.1	-90	2.1	-95
Muzzaffarnagar	103.9	57	138.2	95	40.8	-39	40.1	-29	74.2	126	4.8	-88	6.2	-84
Pilibhit	44.2	-47	63.4	-19	21.6	-70	67.1	-20	18.9	-71	0.9	-98	2.2	-96
Rampur	33.8	-58	50.9	-34	51.0	-24	77.9	1	16.3	-65	1.5	-96	2.2	-95
Saharanpur	122.7	62	219.0	225	11.3	-86	21.3	-65	63.0	79	43.0	9	6.3	-85
Shahjahanpur	59.8	-14	32.2	-56	78.1	22	57.8	-27	15.3	-68	18.3	-65	36.0	-29
Uttarakhand														
Almora	56.5	-15	76.7	3	85.2	27	14.7	-73	14.3	-63	18.7	-52	10.0	-77
Bageshwar	91.2	38	83.4	12	51.8	-23	30.5	-43	11.6	-70	41.4	6	9.1	-79
Chamoli	173.7	106	137.7	47	50.1	-29	50.6	-16	26.2	-42	10.7	-76	18.6	-37
Champawat	42.5	-54	72.5	-29	28.0	-71	66.5	-21	10.0	-86	25.0	-62	6.0	-90
Dehradun	218.5	18	139.8	-12	133.5	-9	44.1	-69	130.7	50	46.4	-48	23.8	-65

Garhwal Pauri	58.2	-53	107.0	3	48.9	-51	28.8	-68	47.8	-28	8.7	-86	5.7	-89
Garhwal Tehri	38.5	-63	88.6	1	44.9	-44	0.3	-99	40.0	-37	24.3	-54	0.3	-99
Haridwar	225.2	156	57.6	-38	25.6	-71	96.4	19	21.2	-59	22.3	-55	3.2	-91
Nainital	114.0	2	129.3	29	82.0	-24	66.9	-41	76.3	3	24.2	-65	29.1	-60
Pithoragarh	88.8	-35	126.9	-1	69.7	-44	40.1	-62	24.2	-76	57.3	-37	20.9	-70
Rudraprayag	85.5	-46	106.8	-31	53.1	-68	22.4	-81	75.1	-14	28.0	-65	11.4	-81
Udham Sing Nagar	46.6	-43	121.5	45	46.9	-47	58.7	-34	6.7	-88	25.9	-53	3.3	-95
Uttarkashi	159.9	67	138.7	28	93.8	0	35.5	-54	52.7	-26	29.5	-49	26.2	-62
Bihar														
Araria	128.2	56	133.8	62	49.5	-35	28.5	-68	34.2	-47	43.2	-38	8.3	-89
Arwal	9.6	-81	15.2	-77	115.4	113	15.6	-73	144.0	265	0.0	-100	0.0	-100
Aurangabad	56.2	1	65.3	18	75.0	26	49.6	-16	96.4	71	0.8	-99	18.1	-69
Banka	19.8	-66	35.4	-37	52.6	-13	132.0	165	256.0	493	2.2	-95	0.0	-100
Begusarai	10.0	-85	27.7	-46	7.6	-82	17.8	-74	41.2	-29	1.2	-98	1.0	-98
Bhabua	51.9	-33	46.7	-28	58.7	-7	35.2	-52	121.3	103	0.0	-100	8.8	-89
Bhagalpur	38.8	-43	94.0	8	21.0	-67	66.0	15	146.2	197	0.5	-99	0.1	-99
Bhojpur	19.7	-69	61.9	8	48.0	-25	36.0	-46	123.2	138	0.0	-100	0.0	-100
Buxar	20.8	-64	89.6	33	14.4	-73	42.2	-28	39.6	-28	2.4	-96	7.0	-90
Darbhanga	51.5	-20	28.9	-60	47.0	-21	9.2	-87	92.4	103	14.7	-70	10.8	-74
East Champaran	15.2	-75	50.4	-28	74.2	18	57.2	-27	90.4	80	12.4	-78	4.6	-92
Gaya	11.2	-84	51.4	-15	33.8	-46	50.8	-16	91.0	82	0.0	-100	19.4	-55
Gopalganj	0.0	-100	41.5	-47	43.0	-33	73.7	-7	48.2	3	13.4	-79	6.1	-92
Jahanabad	5.0	-93	59.4	1	98.9	59	32.4	-31	148.3	227	0.0	-100	4.0	-93
Jamui	22.4	-65	59.8	6	40.9	-22	74.2	24	101.5	102	6.0	-89	11.7	-76
Kathihar	55.5	-17	65.5	25	17.9	-72	121.9	100	94.7	103	4.7	-93	2.8	-96
Khagadia	18.8	-77	49.7	-27	27.8	-54	52.9	-21	75.6	61	14.3	-77	2.7	-96
Kishanganj	165.3	77	182.0	50	59.6	-39	56.0	-48	128.9	37	124.7	37	4.4	-95
Lakhisarai	46.0	-37	20.0	-63	13.0	-77	30.0	-55	77.0	51	0.0	-100	0.0	-100
Madhepura	33.4	-52	95.9	34	28.1	-43	29.7	-65	152.1	127	2.5	-96	4.9	-93
Madhubani	12.4	-79	22.5	-73	7.1	-86	21.2	-75	56.3	2	26.7	-50	0.6	-99
Monghyar	25.9	-64	61.9	15	21.9	-62	29.5	-56	146.0	186	0.2	-99	0.0	-100
Muzaffarpur	13.3	-79	40.5	-38	27.2	-56	33.2	-58	61.8	36	16.7	-66	4.7	-93
Nalanda	27.2	-56	83.8	37	95.8	63	58.3	-1	122.0	152	0.0	-100	20.3	-62
Nawada	4.3	-94	59.9	-7	45.3	-29	57.4	-4	107.8	157	0.0	-100	2.0	-95
Patna	6.9	-87	13.8	-79	92.3	69	30.3	-58	186.0	357	0.4	-99	15.3	-74
Purnea	33.7	-60	28.9	-64	96.3	70	54.6	-36	58.4	-12	66.5	-13	2.4	-97
Rohtas	94.1	36	61.3	0	111.4	84	51.7	-14	102.0	76	0.0	-100	41.1	-34
Saharsha	17.4	-75	88.5	-23	0.0	-100	45.7	-46	237.1	343	6.2	-92	7.2	-91
Samstipur	46.5	-31	11.0	-85	11.8	-84	6.8	-89	119.7	149	8.7	-84	7.5	-88
Saran	33.3	-45	51.7	-26	20.6	-69	20.0	-73	100.4	116	0.0	-100	0.0	-100
Sheikpura	25.2	-58	20.9	-55	36.3	-31	10.8	-83	39.3	-8	0.0	-100	0.0	-100
Sheohar	0.0	-100	58.0	-24	30.0	-49	0.0	-100	47.6	9	14.8	-69	6.0	-87
Sitamarhi	14.4	-76	30.6	-60	56.7	-4	35.9	-62	68.0	55	31.0	-35	8.4	-82
Siwan	6.1	-90	153.0	114	13.4	-78	92.5	37	146.4	225	3.9	-95	0.9	-99
Supaul	40.4	-21	38.5	-35	59.1	5	18.0	-78	144.7	191	21.2	-57	0.4	-99
Vaishali	16.1	-74	33.6	-52	10.4	-83	38.9	-47	52.3	31	8.4	-87	15.4	-72

West Champaran	60.4	-8	45.7	-47	39.5	-41	61.1	-45	80.5	55	25.5	-54	6.6	-93
Jharkhand														
Bokaro	45.1	-48	51.1	-22	153.6	142	50.7	-21	39.0	-46	5.7	-92	3.3	-94
Chatra	3.4	-95	131.5	57	64.3	-6	61.3	4	32.9	-47	7.9	-87	3.6	-94
Deoghar	17.3	-73	66.6	3	113.6	86	38.6	-36	93.4	110	7.4	-86	2.7	-95
Dhanbad	41.4	-50	69.3	-9	86.7	50	93.1	39	35.6	-46	14.3	-80	20.4	-67
Dumka	32.8	-59	55.3	-15	66.8	-14	38.5	-37	75.7	31	25.0	-63	19.5	-65
East Singbhum	17.5	-81	62.8	-12	152.4	134	147.6	138	37.5	-43	31.7	-50	74.7	62
Garhwa	44.5	-49	25.6	-66	48.8	-20	50.4	-6	29.0	-59	0.0	-100	6.5	-89
Giridih	36.5	-52	49.6	-10	97.3	55	112.6	80	35.8	-37	8.2	-87	36.4	-30
Godda	23.7	-59	97.2	81	71.8	18	102.5	60	161.5	275	16.0	-68	10.5	-83
Gumla	68.3	-22	24.7	-68	60.4	-32	35.0	-46	95.0	40	23.2	-69	15.2	-76
Hazaribagh	18.5	-76	98.5	44	107.8	85	78.3	19	69.2	26	22.6	-66	12.2	-79
Jamtara	48.9	-36	65.3	-27	88.7	21	95.6	26	86.4	24	44.7	-39	6.9	-91
Khunti	57.0	-41	31.8	-60	180.8	123	26.5	-64	75.0	-2	27.0	-69	28.5	-54
Koderna	23.4	-66	24.4	-60	146.2	158	88.0	59	109.4	84	54.5	-13	14.1	-70
Latehar	6.0	-93	100.9	57	128.1	119	76.4	20	57.7	1	11.5	-86	49.8	9
Lohardagga	13.3	-86	114.8	69	88.2	75	80.5	29	55.8	4	24.0	-61	21.2	-63
Pakur	69.9	-11	133.6	74	157.7	91	35.6	-53	141.3	100	3.5	-95	11.1	-86
Palamau	34.7	-55	45.6	-38	96.7	47	57.3	-8	52.3	-13	6.3	-91	42.2	-29
Ramgarh	36.6	-55	93.6	50	103.8	66	47.0	-22	7.2	-89	0.0	-100	28.8	-52
Ranchi	16.2	-82	28.2	-68	73.8	1	67.8	6	22.3	-68	30.3	-58	7.3	-87
Sahebganj	49.0	-19	199.2	162	52.0	-37	25.0	-58	77.4	18	3.0	-96	9.8	-86
Saraikela	19.1	-80	12.5	-81	171.0	157	64.9	-6	35.3	-50	53.2	-27	23.4	-58
Simdega	62.6	-39	45.1	-48	173.8	73	37.4	-52	57.4	-32	30.8	-66	54.2	-25
West Singbhum	24.6	-74	22.2	-72	96.2	31	37.9	-44	82.1	19	75.5	10	16.9	-61
East Rajasthan														
Ajmer	34.6	2	65.2	74	45.6	7	17.8	-43	0.0	-100	0.3	-99	8.3	0
Alwar	82.2	55	62.5	12	96.4	96	15.2	-65	1.2	-97	0.8	-98	11.6	-37
Banswara	62.1	-18	81.7	32	8.7	-88	93.0	57	1.0	-98	0.0	-100	23.5	-10
Baran	135.6	82	252.5	230	150.5	97	60.3	10	0.3	-99	0.0	-100	0.0	-100
Bharatpur	38.7	-34	77.4	39	82.7	61	27.7	-45	15.8	-62	6.1	-83	2.0	-91
Bhilwara	55.1	16	111.0	118	32.8	-46	34.3	-19	0.0	-100	0.0	-100	1.8	-86
Bundi	80.6	43	114.0	99	68.5	10	36.7	-13	0.0	-100	0.0	-100	2.3	-84
Chittorgarh	80.2	38	151.2	167	27.5	-63	55.8	-4	0.0	-100	0.9	-98	3.6	-79
Dausa	65.4	16	146.6	127	88.6	65	8.0	-81	0.0	-100	0.0	-100	21.4	20
Dholpur	99.8	55	132.5	80	121.7	90	60.3	25	50.8	25	0.0	-100	1.8	-95
Dungarpur	68.9	20	54.0	27	26.3	-54	40.6	-11	0.4	-99	0.0	-100	12.8	-36
Jaipur	68.9	45	77.3	63	94.6	120	21.4	-51	0.0	-100	0.0	-100	11.6	-17
Jhalawar	93.9	12	144.1	103	155.0	70	77.2	21	2.0	-97	0.0	-100	0.0	-100
Jhunjhunu	61.2	62	37.9	7	52.1	74	0.9	-97	0.0	-100	0.0	-100	15.6	27
Karauli	60.2	-2	137.8	45	111.0	91	33.8	-16	1.8	-96	0.0	-100	7.8	-65
Kota	109.9	78	144.8	113	101.1	37	25.6	-48	2.1	-96	0.0	-100	0.6	-97
Pratapgarh	73.2	0	104.8	94	31.4	-60	92.6	72	0.0	-100	0.0	-100	10.4	-59
Rajsamand	58.7	49	92.7	127	28.4	-37	12.6	-68	0.0	-100	1.6	-95	8.0	-19
Sawai Madhopur	52.8	-19	159.1	102	110.0	82	24.3	-48	0.0	-100	1.3	-96	7.6	-63

Konkan & Goa														
Goa	143.0	-30	74.6	-62	235.2	80	61.3	-44	8.2	-91	38.7	-47	101.5	82
Mumbai	93.1	-31	64.8	-50	34.5	-63	42.0	-62	0.4	-99	19.2	-72	91.5	70
Raigad	174.1	-24	111.9	-48	79.3	-56	70.1	-58	24.5	-84	72.9	-27	122.2	81
Ratnagiri	203.5	-16	119.8	-46	159.3	-14	89.9	-43	24.4	-82	53.9	-42	79.3	34
Sindhudurg	151.5	-23	65.7	-64	265.4	94	65.8	-53	9.3	-91	44.6	-36	134.7	109
Thane	182.2	-4	137.4	-25	94.9	-28	55.2	-56	20.0	-84	46.3	-48	109.8	97
Madhya Maharashtra														
Ahmednagar	30.7	55	11.7	-31	5.6	-69	7.9	-68	0.1	-99	60.1	133	82.2	176
Dhule	79.0	92	43.1	68	4.3	-84	40.1	51	0.8	-97	17.0	-21	56.2	200
Jalgaon	79.4	55	55.3	23	11.9	-73	67.1	70	1.7	-96	7.7	-74	84.6	240
Kolhapur	168.1	20	46.7	-63	60.6	-41	46.0	-42	7.8	-88	19.7	-51	61.1	94
Nandurbar	91.7	33	109.0	101	23.5	-52	33.2	-30	1.3	-97	28.7	-31	86.2	262
Nasik	84.1	17	81.7	34	35.7	-35	37.4	-23	9.1	-83	38.2	-22	73.7	127
Pune	68.6	6	25.2	-58	17.4	-62	14.1	-64	3.7	-91	78.7	169	89.8	192
Sangli	36.3	19	4.2	-85	10.9	-44	3.7	-83	4.3	-78	28.3	24	91.9	233
Satara	74.2	45	17.2	-64	12.9	-62	9.5	-68	3.1	-89	37.4	47	112.7	324
Solapur	21.5	-5	7.2	-63	10.7	-48	4.0	-85	2.5	-91	51.4	69	116.1	185
Marathwada														
Aurangabad	52.9	44	26.1	-22	6.0	-81	34.0	-7	0.4	-99	26.4	0	95.0	222
Beed	42.2	72	22.2	-31	21.0	-31	5.5	-83	2.1	-95	24.0	-28	77.1	111
Hingoli	108.2	83	45.5	-20	25.7	-59	27.3	-49	0.4	-99	20.3	-43	84.5	214
Jalna	72.5	107	32.4	-6	5.5	-84	14.9	-60	0.3	-99	20.5	-21	93.9	205
Latur	44.9	-5	55.0	21	35.9	-32	11.7	-78	9.7	-82	11.9	-73	67.0	93
Nanded	88.0	75	46.5	-18	49.5	-16	14.3	-74	2.2	-96	44.0	11	40.7	33
Usmanabad	36.6	15	19.9	-32	11.2	-68	9.9	-77	3.6	-91	51.0	38	82.4	78
Parbhani	61.3	41	61.4	47	15.8	-72	12.0	-79	0.8	-99	18.8	-52	93.7	208
Vidarbha														
Akola	103.7	90	84.2	75	13.0	-69	72.1	82	3.0	-93	18.5	-39	92.8	218
Amraoti	101.8	49	33.4	-42	28.2	-48	88.6	107	1.3	-97	11.5	-71	31.8	-4
Bhandara	260.8	149	113.1	17	99.8	23	69.4	-4	7.0	-91	15.6	-75	19.8	-56
Buldhana	89.0	66	34.1	-20	8.0	-81	42.4	3	3.0	-92	13.5	-53	66.4	147
Chandrapur	142.0	43	38.8	-55	138.7	83	21.3	-73	7.8	-90	14.1	-76	18.7	-57
Gadchiroli	207.2	81	73.7	-33	178.2	95	44.9	-50	9.8	-88	40.3	-33	30.2	-22
Gondia	131.7	24	99.5	0	152.1	67	87.3	-3	11.1	-87	13.3	-79	26.1	-49
Nagpur	157.9	99	45.2	-21	59.8	-3	67.8	30	9.0	-87	7.6	-85	43.9	23
Wardha	63.5	-13	24.2	-62	44.9	-20	31.6	-41	1.1	-98	7.0	-85	21.9	-24
Washim	157.1	135	64.9	-3	6.6	-88	35.4	-23	0.0	-100	30.9	-21	49.7	35
Yeotmal	147.6	128	34.5	-45	33.9	-41	25.7	-53	0.3	-99	18.4	-54	43.9	81
Odisha														
Angul	26.8	-69	60.6	-24	111.7	31	4.3	-94	27.0	-65	20.8	-69	25.2	-47
Balasore	38.6	-55	47.3	-34	178.6	136	72.3	-1	61.2	3	61.4	-28	19.3	-70
Bargarh	33.3	-60	55.8	-36	63.8	-29	20.4	-69	77.5	10	29.1	-61	18.8	-66
Bhadrak	25.8	-73	64.8	-15	73.6	-9	29.7	-59	58.7	-5	30.1	-51	15.6	-71
Bolangir	44.9	-46	68.9	-17	91.9	8	24.3	-64	33.0	-64	25.1	-62	19.8	-64
Boudh	26.5	-70	50.0	-44	80.4	-3	2.7	-97	28.4	-58	13.7	-79	15.0	-74
Cuttack	19.9	-74	19.8	-75	52.7	-44	7.0	-91	32.3	-46	25.2	-71	17.4	-66
Deogarh	81.0	-29	47.1	-61	256.1	115	4.3	-95	55.9	-33	28.9	-66	6.3	-88
Dhenkanal	24.2	-72	45.4	-49	54.4	-35	14.1	-83	32.9	-51	38.0	-47	6.1	-86

Dakshin Kannada	247.4	9	119.8	-43	188.5	-4	91.7	-39	31.1	-69	81.4	2	103.5	75
Udupi	288.8	23	149.5	-38	293.8	41	108.7	-35	8.9	-92	106.2	-5	102.9	43
Uttar Kannada	218.6	15	86.8	-52	215.7	46	77.6	-29	24.8	-69	65.9	1	90.1	75
N I Karnataka														
Bagalkote	2.7	-85	2.8	-83	12.3	-11	0.8	-95	14.8	-19	64.7	276	52.3	52
Belgaum	51.9	31	8.6	-74	19.4	-19	8.9	-57	4.9	-73	39.9	168	91.0	264
Bidar	39.1	-7	25.1	-39	33.5	-30	7.5	-84	11.7	-74	40.6	9	85.8	134
Bijapur	9.3	-49	5.4	-73	27.8	49	3.3	-84	24.2	-13	67.0	169	65.5	81
Dharwad	46.6	61	6.5	-75	13.5	-34	10.1	-45	37.9	135	46.6	233	57.6	111
Gadag	17.2	-7	3.6	-79	15.2	20	7.5	-59	29.7	62	76.0	344	53.5	67
Gulbarga	18.0	-48	29.8	-17	23.5	-47	7.7	-79	37.3	-7	60.9	66	98.0	131
Haveri	42.5	32	11.9	-59	17.7	-25	17.8	-7	21.2	43	46.5	365	48.0	93
Koppal	20.7	14	7.5	-66	32.2	94	7.7	-62	33.1	41	78.0	273	52.1	36
Raichur	7.6	-70	5.9	-81	66.7	148	6.0	-76	49.0	74	81.1	216	71.9	124
Yadgir	7.6	-78	12.6	-65	71.0	72	0.4	-99	37.5	5	139.8	316	94.5	151
S I Karnataka														
Bangalore Rural	8.1	-66	7.8	-68	51.2	80	8.6	-72	69.5	160	75.4	140	131.9	220
Bangalore Urban	15.3	-44	8.3	-73	34.2	16	8.3	-72	58.3	111	70.7	114	120.3	177
Bellary	24.7	27	19.2	-4	20.7	19	9.0	-58	39.9	89	55.1	184	36.0	1
Chamarajnaragar	12.5	-27	12.0	11	5.4	-66	4.2	-75	74.3	416	30.0	96	96.8	184
Chichballapur	8.5	-64	2.3	-89	31.6	28	1.3	-95	54.8	124	79.9	227	46.7	21
Chickmagalur	214.2	67	45.3	-59	55.1	-45	47.4	-30	41.0	-9	42.1	46	86.9	166
Chitradurga	20.9	36	9.7	-16	18.5	47	8.4	-39	30.1	126	37.9	307	95.4	270
Davangere	37.3	66	30.6	42	31.5	66	16.6	-9	22.5	65	57.7	385	72.1	133
Hassan	79.8	112	12.3	-57	9.8	-70	8.7	-63	29.1	51	55.2	360	66.0	178
Kodagu	326.6	104	59.8	-54	64.4	-52	42.0	-55	22.7	-67	38.1	-17	81.5	112
Kolar	5.1	-74	3.0	-85	25.6	18	6.2	-72	101.7	387	33.8	26	62.1	60
Mandya	11.4	-7	10.7	13	2.9	-81	3.0	-81	59.5	277	71.8	335	38.0	17
Mysore	30.2	71	14.8	27	3.3	-79	7.3	-50	39.5	188	41.7	239	29.9	15
Ramnagara	29.3	25	37.6	85	33.4	30	1.3	-96	75.0	172	153.4	468	71.5	45
Shimoga	228.6	87	65.1	-36	119.6	27	65.1	-3	12.2	-71	41.9	55	84.0	254
Tumkur	16.2	-18	11.7	-25	29.0	49	3.0	-84	53.0	184	86.5	339	112.4	194
Kerala														
Alappuzha	182.0	109	36.5	-54	18.2	-75	9.0	-89	13.9	-73	63.0	4	168.2	176
Kannur	238.4	48	67.7	-48	77.7	-34	34.7	-66	4.7	-92	71.6	29	160.1	342
Ernakulam	292.4	152	26.8	-73	37.1	-57	18.4	-76	16.8	-67	82.2	23	164.7	163
Idukki	466.1	223	94.3	-24	63.1	-51	28.6	-71	79.3	7	119.1	91	233.3	304
Kasaragod	213.9	16	39.3	-75	131.2	-6	57.2	-50	0.0	-100	97.6	40	89.7	74
Kollam	135.3	112	33.0	-35	24.7	-59	12.2	-81	44.0	8	67.2	61	228.3	421
Kottayam	295.8	194	58.2	-35	36.9	-59	12.7	-85	14.6	-73	77.5	32	149.9	158
Kozhikode	269.8	77	33.8	-72	47.2	-57	32.4	-64	10.8	-82	44.9	-18	146.8	245
Malappuram	254.6	118	30.0	-66	53.0	-41	6.9	-91	28.7	-43	55.7	30	226.1	432
Palakkad	214.1	145	21.5	-73	35.4	-59	5.5	-91	25.6	-41	46.9	37	155.1	394
Pathanamthitta	190.9	113	42.9	-47	34.7	-55	10.5	-87	59.7	21	39.0	-32	134.3	142
Thiruvananthapuram	101.4	179	8.1	-75	3.4	-90	0.2	-99	24.3	15	78.0	141	100.2	242
Thrissur	267.0	113	12.2	-88	46.5	-55	10.9	-86	5.4	-91	52.7	-8	158.7	180
Wyanad	296.3	63	30.3	-77	42.6	-68	32.7	-70	40.3	-49	36.9	-24	87.9	103
Tamil Nadu														
Ariyalur	9.8	-51	53.5	112	47.4	82	9.3	-77	54.7	94	110.3	212	48.7	40

Chennai	27.0	-11	16.5	-39	98.8	155	5.6	-85	73.7	176	118.5	374	25.1	-6
Coimbatore	51.1	494	11.9	68	8.2	-15	5.9	-49	38.0	348	23.8	208	29.8	49
Cuddalore	32.5	42	91.0	242	44.8	65	27.3	-28	39.2	44	76.9	168	41.7	45
Dharmapuri	2.8	-83	9.8	-46	14.9	-35	0.0	-100	66.0	187	83.0	177	68.2	50
Dindigul	4.6	-66	10.2	-16	11.9	-26	1.4	-93	54.0	181	38.6	68	13.2	-62
Erode	4.9	-50	23.5	137	9.0	-27	7.6	-59	57.0	285	36.3	124	22.4	-26
Kanchipuram	7.8	-73	48.2	37	80.6	89	3.6	-91	31.3	-6	83.0	146	54.7	79
Kanyakumari	36.8	93	0.0	-100	0.6	-97	0.0	-100	5.1	-61	15.0	-24	41.6	105
Karikal	27.3	48	28.6	125	26.5	39	0.0	-100	39.0	264	69.2	204	50.0	88
Karur	4.2	-28	27.0	196	6.0	-50	14.7	-22	49.1	207	35.2	101	21.1	-28
Krishnagiri	10.6	-42	10.4	-42	26.7	11	3.3	-88	93.6	288	69.6	171	90.7	102
Madurai	13.3	-8	26.9	58	12.7	-36	22.3	-13	38.1	59	33.6	19	3.4	-90
Nagapattinam	22.3	43	45.7	138	45.5	124	3.0	-89	25.0	40	73.2	190	28.6	42
Namakkal	22.0	20	53.2	139	24.0	17	2.6	-90	26.3	41	26.9	16	28.8	-25
Nilgiris	93.0	102	18.4	-56	22.8	-50	18.2	-49	48.6	40	45.9	92	64.7	84
Perambalur	0.0	-100	65.3	410	48.8	122	20.0	-22	31.3	27	112.0	367	33.5	6
Puducherry	15.7	-37	229.8	798	30.9	-13	8.4	-75	47.4	103	130.2	283	0.0	-100
Pudukottai	6.6	-57	65.8	202	37.4	59	17.2	-51	8.4	-68	61.1	163	33.1	24
Ramanathapuram	15.5	182	15.3	74	6.0	-40	1.3	-88	5.1	-58	9.6	0	2.9	-79
Salem	24.5	22	36.1	45	23.7	-14	6.6	-81	83.0	222	112.1	283	25.1	-44
Sivaganga	23.3	18	45.8	159	38.3	132	4.9	-81	32.5	83	27.0	26	3.5	-85
Thanjavur	25.8	68	36.8	70	49.2	124	13.3	-61	24.1	24	78.2	220	36.9	42
Theni	46.6	522	3.4	-46	5.8	-31	0.6	-92	79.8	768	11.8	48	20.4	20
Tirunelveli	16.3	130	0.0	-100	2.3	-69	0.8	-85	27.1	488	0.2	-95	21.0	147
Tirupur	0.0	-100	0.0	-100	2.0	-74	0.0	-100	20.4	132	13.3	65	0.7	-97
Tiruvallur	11.7	-55	21.8	-25	79.8	148	4.4	-88	75.3	160	86.2	214	71.8	131
Tiruvannamalai	7.9	-71	89.0	231	38.6	18	1.7	-95	49.6	45	47.3	30	49.6	9
Tiruvarur	21.5	43	46.7	133	54.2	141	6.2	-78	33.8	85	35.9	42	68.3	245
Toothukudi	0.0	-100	1.1	-59	1.0	-73	2.0	-62	2.0	-62	4.0	-37	1.3	-84
Trichy	5.0	-55	34.8	179	15.5	-1	8.3	-67	28.5	32	64.0	143	35.3	-11
Vellore	7.9	-70	24.2	-1	41.9	26	0.7	-98	91.1	210	73.1	127	61.2	44
Villupuram	6.4	-71	110.7	410	43.7	35	4.8	-87	23.4	-9	91.8	182	16.8	-61
Virudhunagar	12.9	58	22.3	111	4.1	-63	5.7	-61	94.1	577	29.5	103	0.1	-99
Andhra Pradesh														
Coastal Andhra Pradesh														
East Godavari	11.6	-69	18.2	-64	35.9	-12	3.8	-91	23.7	-41	35.7	-4	16.3	-51
Guntur	41.5	43	39.3	7	76.2	115	7.8	-79	32.2	-3	35.2	9	75.3	171
Krishna	17.6	-54	36.6	-31	82.8	103	8.5	-81	19.1	-53	38.0	8	50.7	70
Nellore	20.1	5	19.7	-8	57.5	128	0.6	-97	25.8	35	30.2	54	38.8	71
Prakasam	46.4	162	23.0	29	76.0	262	2.2	-92	42.1	67	52.5	142	43.7	110
Sirkakulam	28.2	-36	21.8	-51	23.6	-50	8.9	-82	17.7	-60	53.5	1	35.4	-24
Visakhapatnam	27.2	-23	39.4	-7	62.2	55	6.1	-86	15.3	-61	35.4	-15	41.2	0
Vizianagram	36.1	-1	35.4	-16	35.6	-23	4.2	-92	14.1	-68	22.9	-53	19.4	-62
West Godavari	17.7	-61	16.4	-75	58.1	19	8.8	-81	16.6	-64	29.8	-27	47.5	35
Telangana														
Adilabad	131.8	99	31.6	-57	66.4	2	24.2	-56	6.9	-90	25.5	-41	66.3	115
Hyderabad	47.1	7	33.4	-27	45.8	-1	8.1	-79	5.7	-83	61.1	49	33.7	4
Karimnagar	67.9	29	24.5	-57	75.8	42	12.1	-71	20.2	-58	23.7	-42	35.4	15
Khammam	76.3	26	65.7	-8	125.0	156	26.4	-48	9.4	-81	34.2	-24	22.3	-29

Mehabubnagar	38.3	11	12.9	-64	100.4	150	2.5	-93	54.5	69	86.0	189	55.0	80
Medak	41.0	-20	30.5	-37	42.5	-22	3.7	-90	19.0	-57	39.9	11	57.7	55
Nalgonda	18.6	-35	7.1	-81	167.8	412	2.4	-93	23.2	-30	86.5	149	37.9	33
Nizamabad	74.5	10	31.5	-57	61.4	-16	4.4	-93	12.7	-77	23.2	-51	32.7	2
Rangareddy	50.9	40	14.2	-65	56.1	15	0.1	-99	28.8	-19	55.2	33	67.1	74
Warangal	73.3	48	53.8	-14	113.4	141	19.7	-54	31.1	-35	19.7	-47	21.7	-32
Rayalaseema														
Anantapur	12.6	-14	23.6	69	13.8	-26	3.4	-82	85.0	334	75.7	281	60.9	83
Chittoor	17.1	-33	32.0	33	36.4	46	1.2	-96	76.7	208	65.0	141	46.1	33
Cuddapah	21.3	-6	24.2	-2	45.5	72	1.3	-95	28.6	47	54.6	123	50.3	79
Kurnool	29.7	17	15.6	-44	58.3	89	8.1	-72	46.6	69	63.5	141	59.1	111

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

Odisha

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

Sesame: Prachi, Kalika, Kanak, Vinayak.

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

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

Vadu Kalai : Kalindi, Sarada.

Cabbage : Pride of India, Pusa early, Kranti.

Cauliflower : Jawhar moti, Bharat Jyoti, Early banaras.

Jharkhand

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

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

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

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

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.

Sweet potato (Shakarkand): Rajendra Shakarkand 5, Rajendra Shakarkand35, Rajendra Shakarkand 43, Rajendra Shakarkand 47, Kalmegh, shree Bhadra and Rajendra Shakarkand 92.

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

Chilli - K 1

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

Assam

Extra early varieties of *sali* rice: Luit, Kapilee, Culture-1 and Heera.

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, PusaKatki, PusaDeepali.

Mid Cauliflower: Improved Japanese, Pusa Synthetic, Pusa Snowball.

Radish:

Early varieties: Pusa Desi, Pusa Himani, Pusa Chetki.

Late varieties: Japanese White, Jaunpuri, Bombay Red.

Carrot: Nantes, Pusa Kesar and Chantenay.

Spinach: Jobner Green, All Green, S-23, Pusa Jyoti.

Tomato: Punjab Chuhara, S-12, Punjab Kesri, Pusa Early Dwarf, Sioux, Pusa Ruby, VC- 48-1, ArkaAbha (BWR-1), Arka Alok (BWR-5), BT-1, Bilahi-1, Bilahi-2.

Cabbage: Golden Acre, Pride of India.

Knolkhol: White Vienna, Purple Vienna.

Brinjal: Pusa Kranti, Pusa Purple Long, Pusa Purple Cluster, Pusa Purple Round, Longai, Pusa Bhairav, JC-2, BWR-12.

Pumpkin: Arke Suryamukhi, Arka Chandan.

Tripura

Tomato: Trishul, Allrounder, T- 1408, T- 1458, Anup.

Cauliflower: CFL- 4048, Pusa Early Synthetic, Kamaya.

Cabbage: BC- 76, Pusa Drum Head, Pusa Synthetic.

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, Pusa Reshmi & Pusa Himani, Pusa Reshmi Minowase Japanese White

Cabbage : Golden Acre, Pride of India and PusaMukta,

Cauliflower: cv. Giant Snow Ball and Pusa Synthetic.

Knolkhol : cv. White Vienna and Purple Vienna, King of Market and Kale cv. Local, Pusa Kesar, Pusa Yamdagini

Carrot : Nantes and turnip : Purple Top White Globe,

Turnip: cv. Purple Top White Globe.

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

Potato: (Kufri Chandramukhi),

Garlic : (Local Large segmented, Agri- Found Parvati, Yamuna Safed-3),

Palak (All Green), Methi (Pusa Early Bunching, Kasuri Methi)

Mustard :- Pusa Sarson-25, Pusa Sarson-26, Pusa Agrni, Pusa Taraka, Pusa Mahak

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.

Desi carrot. Pusa Keshar

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

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

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.

Pea: Ageta-6 and Arkal Matar.

Raddish: Japanese white, Chinese pink and mino early white

Turnip : PTWG-1

Carrot : Pusa kesar

Fenugreek: I.C. 74, kasoori

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.

MAHARASHTRA

Rabi jowar: Selection-3, Phule Mauli and Phule Anuradha in light soil, Phule Chitra, Phule Mauli, Maldandi 35-1 in medium soil, Phule Vasudha, Phule Yashodha and CSV-22 in black Soil and irrigated soil in Madhya Maharashtra, Maldandi 35-1, Swati, SPV in Marathwada.

Safflower : Bhima, Phule Kusuma, Sharda, Girna, DSH-129 in Madhya Maharashtra, Bbima, Tara, Sharda, Parbhani-12 in Marathwada.