

National Agromet Advisory Service Bulletin

Friday 16th August, 2013

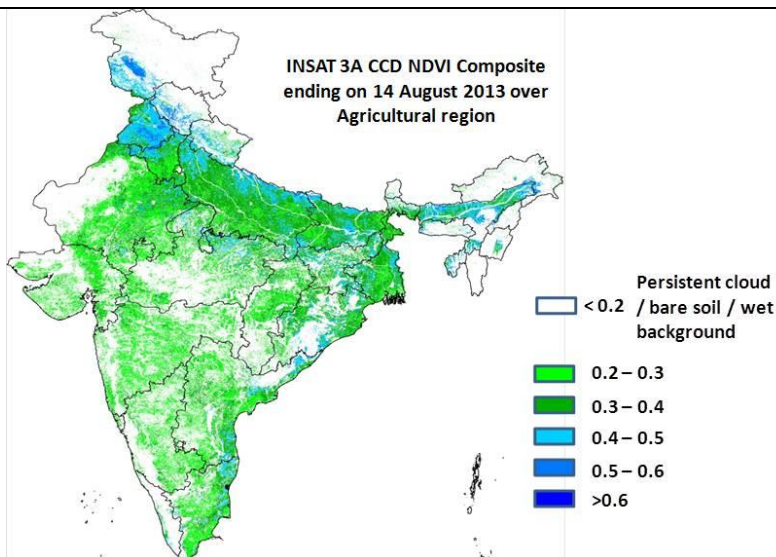
(For the period 16th to 19th August, 2013)

Issued by

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

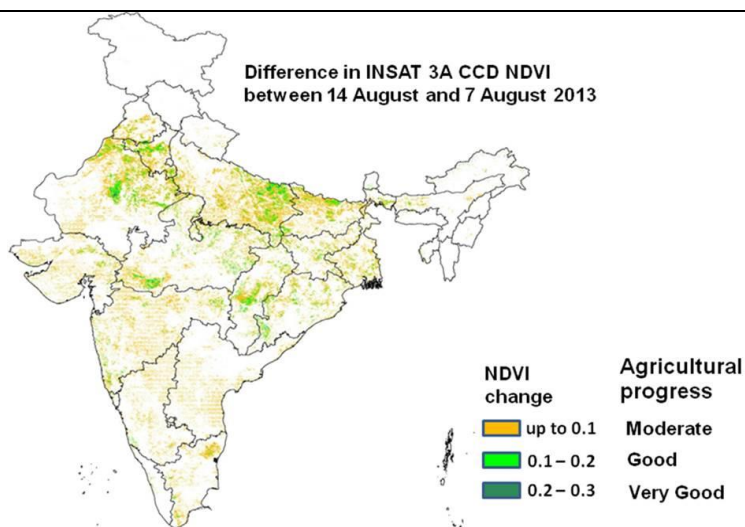


Crop condition based on Rainfall and INSAT 3A CCD NDVI **



Source: SAC, Ahmedabad

Overall Agricultural Situation: Agricultural growth is very good (NDVI greater than 0.4) over Punjab, adjoining Haryana, some parts of eastern and central Rajasthan, western and northern Uttar Pradesh, central and eastern Bihar, and adjoining areas of Jharkhand with some pockets over northwest Bihar, eastern and western parts of West Bengal, north-eastern states, eastern and northern Madhya Pradesh, coastal Andhra Pradesh, Orissa and Tamil Nadu as NDVI vigour showed more than 0.4. Maximum NDVI value was observed over some parts of central and eastern Punjab, Pockets of northern Haryana and eastern Uttar Pradesh. The growth is good over rest parts of Haryana, Uttar Pradesh, Bihar, Madhya Pradesh, eastern Rajasthan, Central and Southern Gujarat, pockets of Saurashtra, Maharashtra, West Bengal, Odisha, interior Andhra Pradesh and Tamil Nadu as NDVI vigour showed the range from 0.3 to 0.4. Rest of the country showed moderate growth (NDVI: 0.2 to 0.3).

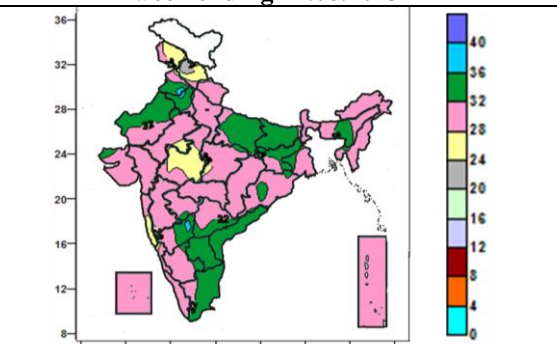
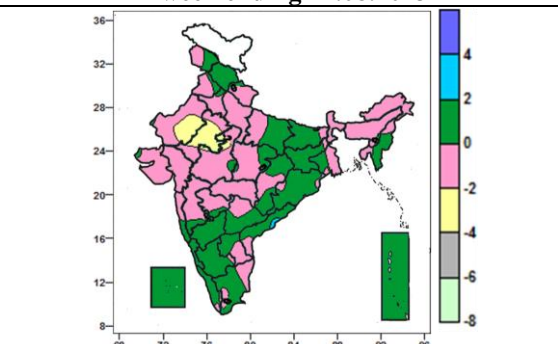
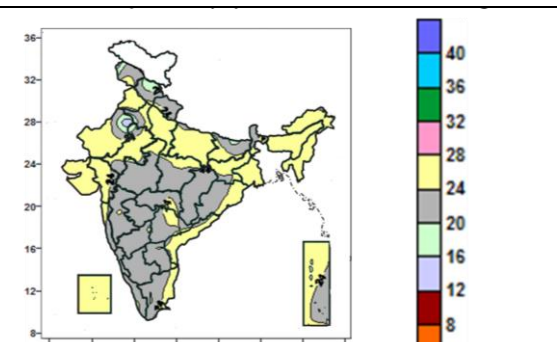
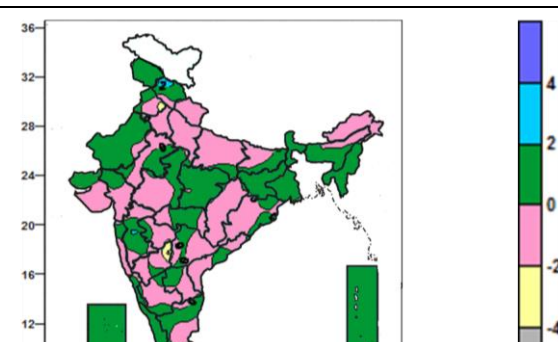
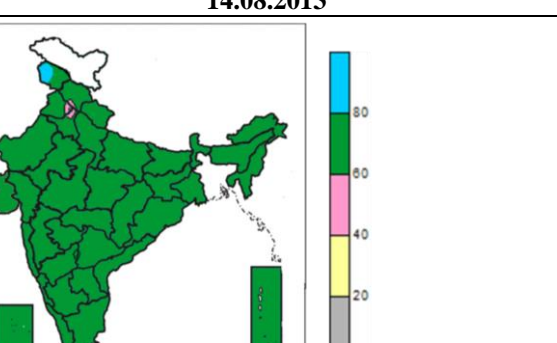
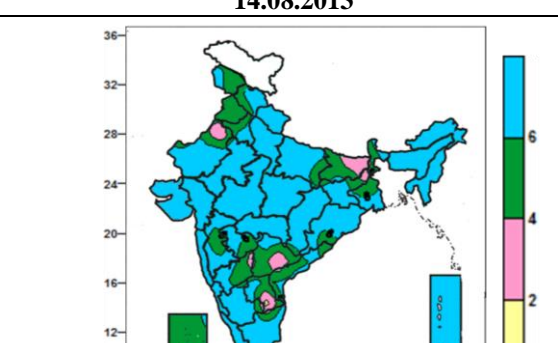


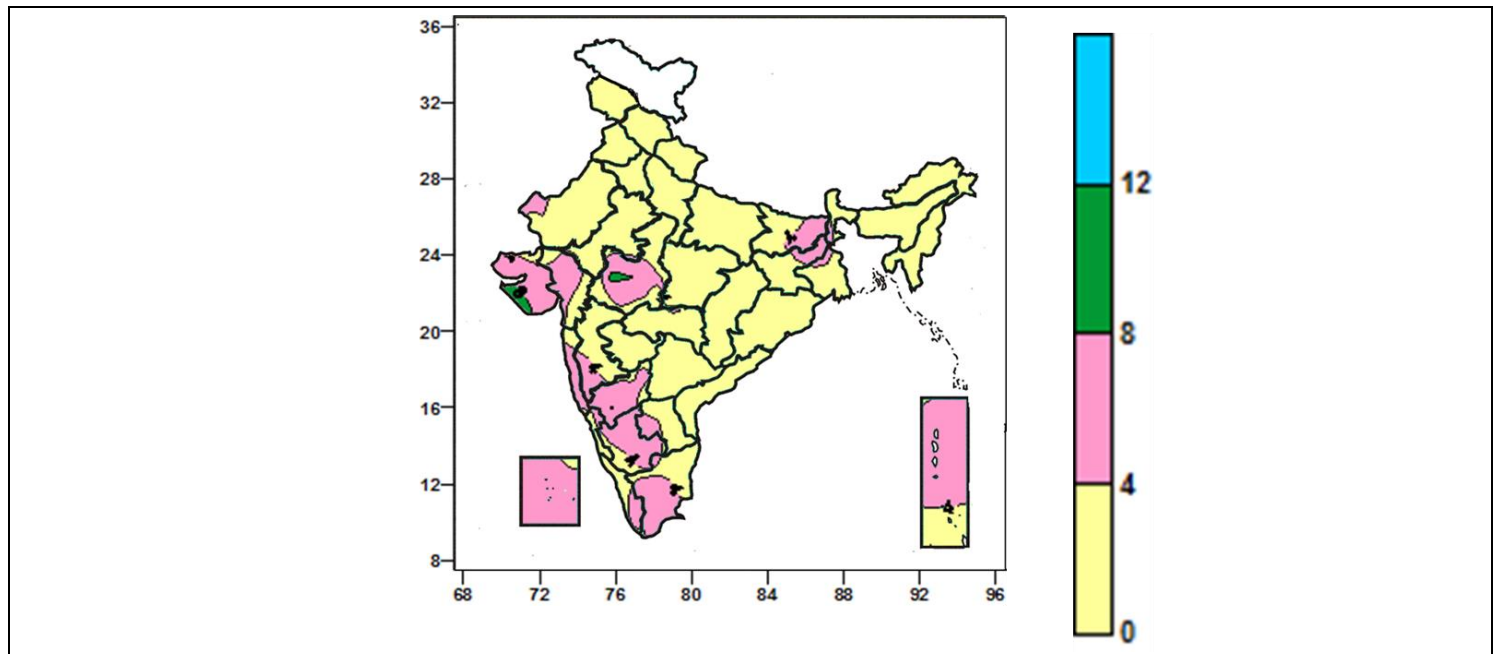
Source: SAC, Ahmedabad

Progress of crop performance during last week: Agricultural progress during last week was found to be very good in central Rajasthan, northern Haryana, south-west Madhya Pradesh and central Chhattisgarh and eastern Uttar Pradesh and north Bihar. There is good progress observed in eastern and central Madhya Pradesh, some pockets of Maharashtra and southern Andhra Pradesh. Rest of India showed moderate progress. This information is in consistence with the good amount of rainfall received in the above mentioned areas (Annexure II).

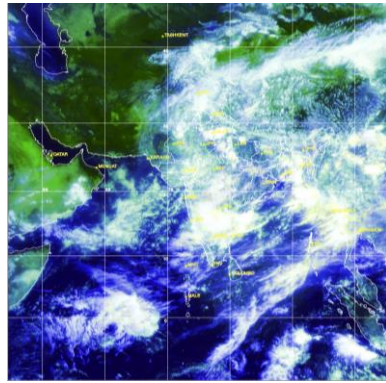
** Prepared jointly by Space Application Centre, Ahmedabad and Agricultural Meteorology Division, India Meteorological Department, Pune

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 16.08.2013

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 14.08.2013	Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 14.08.2013
	
<ul style="list-style-type: none"> • 36 to 40$^{\circ}\text{C}$ over some parts of Punjab, Haryana, North Interior Karnataka. • 28 to 36$^{\circ}\text{C}$ over many parts of the country (except many parts of Jammu & Kashmir, Himachal Pradesh, West Madhya Pradesh, Konkan & Goa, some parts of Punjab, Haryana, North Interior Karnataka, East Madhya Pradesh, East Rajasthan). • 20 to 28$^{\circ}\text{C}$ over many parts of Jammu & Kashmir, Himachal Pradesh, West Madhya Pradesh, Konkan & Goa, some parts of East Madhya Pradesh, East Rajasthan. 	<ul style="list-style-type: none"> • -2 to 2$^{\circ}\text{C}$ over many parts of the country (except Rajasthan). • -4 to -2$^{\circ}\text{C}$ over many parts of Rajasthan.
Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 14.08.2013	Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 14.08.2013
	
<ul style="list-style-type: none"> • 20 to 28$^{\circ}\text{C}$ over entire parts of country (except some parts of Jammu & Kashmir, Himachal Pradesh, West Rajasthan). • 16 to 20$^{\circ}\text{C}$ over some parts of Jammu & Kashmir, Himachal Pradesh, West Rajasthan. 	<ul style="list-style-type: none"> • 2 to 4$^{\circ}\text{C}$ over some parts of Himachal Pradesh, Madhya Maharashtra. • -2 to 2$^{\circ}\text{C}$ over the country (except some parts of Himachal Pradesh, Madhya Maharashtra, Punjab, North Interior Karnataka). • -4 to -2$^{\circ}\text{C}$ over some parts of Punjab, North Interior Karnataka.
Relative Humidity (%) over India for the week ending 14.08.2013	Cloud amount (okta) over India for the week ending 14.08.2013
	
<ul style="list-style-type: none"> • 80% to 100% over some parts of Jammu & Kashmir. • 60 to 80 % over entire parts of the country (except Jammu & Kashmir, Punjab, Haryana, Himachal Pradesh). • 40 to 60% over some parts of Punjab, Haryana, Himachal Pradesh. 	<ul style="list-style-type: none"> • 4 to 8 okta over many parts of the country (except some parts of West Rajasthan, Bihar, Jharkhand, Andhra Pradesh, North Interior Karnataka, Tamil Nadu). • 2 to 4 okta over some parts of West Rajasthan, Bihar, Jharkhand, Andhra Pradesh, North Interior Karnataka, Tamil Nadu. • 0 to 2 okta over some parts of Raylaseema.
Wind speed (knots) over India for the week ending 14.08.2013	



- 8 to 12 knots over some parts of West Madhya Pradesh, Saurashtra.
- 0 to 8 knots over the country except Saurashtra, West Madhya Pradesh.



Satellite image date 16.08.2013, 0530 UTC

Weather Forecast

Weather Forecast for next 3 days (upto 0830 hours IST of 19th August, 2013)

- Rain/thundershowers would occur at most places over Jammu & Kashmir during next 24 hours and at many places thereafter.
- Rain/thundershowers would occur at many places over Himachal Pradesh, Uttarakhand, west coast, Sub-Himalayan West Bengal & Sikkim, northeastern states and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at many places over Uttar Pradesh, Punjab, Haryana, Chandigarh & Delhi, Chhattisgarh, east Madhya Pradesh, Gangetic West Bengal, Bihar, Jharkhand and Odisha.
- Rain/thundershowers would occur at most places over Andhra Pradesh during next 48 hours and at many places thereafter.
- Rain/thundershowers would occur at many places over Rajasthan, West Madhya Pradesh, Gujarat, Tamilnadu and Vidarbha during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at a few places over rest parts of the country outside Marathwada and North Interior Karnataka where it would be isolated.

Weather Warning during next 3 days

16 August: Heavy to very heavy rainfall would occur at isolated places over Jammu & Kashmir. Heavy rainfall would occur at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, West Uttar Pradesh, east Uttar Pradesh, Himachal Pradesh, west Rajasthan, coastal Andhra Pradesh, Telanagana and north Tamilnadu, north Gujarat.

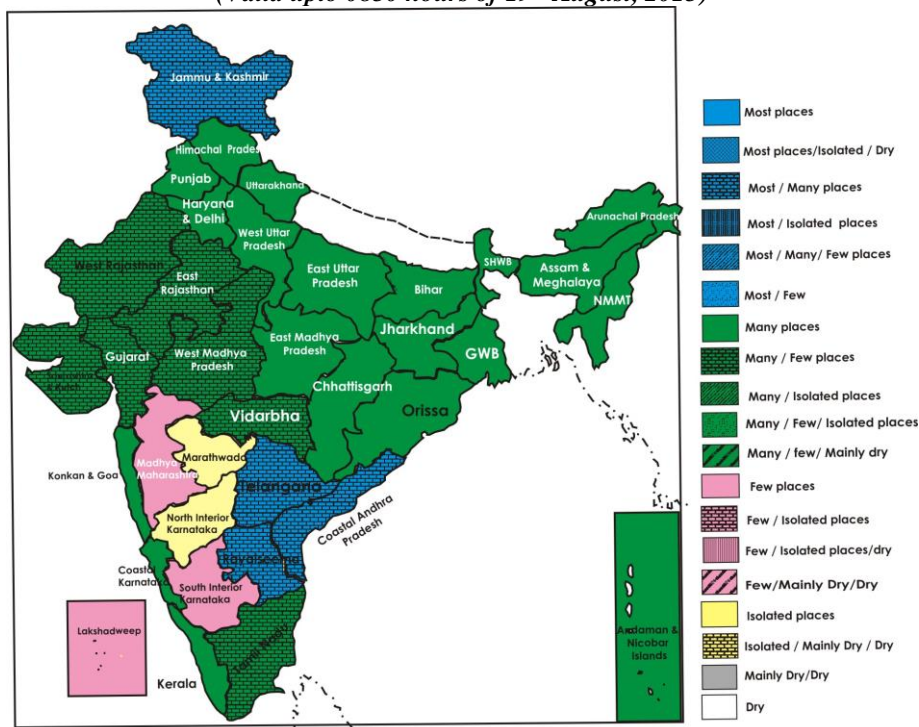
17 August: Heavy rainfall would occur at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Uttarakhand, Himachal Pradesh, Jammu & Kashmir, coastal Andhra Pradesh and Telangana.

18 August: Heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim, Odisha, coastal Andhra Pradesh and Telangana.

Weather Outlook for subsequent 4 days from 19th July to 23rd August, 2013

- Rain/thundershower would occur at many places along west coast and over eastern & northeastern states.
- Rain/thundershower would occur at many places over Western Himalayan region & adjoining northwest India, Chhattisgarh, Odisha and Madhya Pradesh.
- Rain/thundershower would occur at a few places over remaining parts of the country outside west Rajasthan, Gujarat, Marathwada and north interior Karnataka where it would be isolated.

Weather Forecast Map
(Valid upto 0830 hours of 19th August, 2013)



Salient Advisories

Northeast Region

- Farmers are advised to continue transplanting of *sali* rice in Lower Bramhaputra Valley Zone and Upper Bramhaputra Valley Zone of Assam and *jhum* rice in Mizoram.
- In Lower Bramhaputra Valley Zone and Barak Valley Zone of Assam, farmers are advised to continue sowing of *kharif* sesame, black gram, green gram, and nursery sowing of finger millet after current spells of heavy rain.
- Due to deficient rainfall situation in some parts of Darrang and Udalguri districts of North Bank Plain Zone of Assam transplanting of *sali* rice could not be carried out; farmers are advised to undertake wet seeding of sprouted seeds (@ 75-80 kg/ha) of short duration varieties like Disang, Luit (100 days), Kapili, Kolong (120 days) after current spells of heavy rain or late and staggered planting with the old seedlings (50-60 days old seedlings) of the varieties like Profulla and Gitesh.
- In Karimganj, Cachar and Hailakandi districts in Barak Valley Zone of Assam, farmers are unable to transplant *sali* rice in considerable area due to deficit rainfall. In some areas of these districts, where early transplanting has been done, crop growth is not satisfactory due to water stress during late July; however, due to good rainfall in last two weeks transplanting of *Sali* rice in 65 % area has been completed. Where transplanting of *sali* rice could not be done till date, farmers are advised to undertake transplanting of varieties like Prafulla, Gitesh etc. utilizing recent monsoon rain.
- In Mild Tropical Plain Zone of Tripura, farmers are advised to complete transplanting of *aman* rice. However, in upland and medium upland, deficit rain, particularly during the month of July, has affected sowing of *aman* rice; farmers are advised to complete direct sowing of short duration varieties to avoid further delay. In North Tripura and Unokuti districts, in some pockets, where the rice crop could not be taken in upland due to deficit rain during June and July, farmers are advised to undertake pulse crops, namely black gram, green gram, field pea, arhar etc. instead of rice.
- Farmers in the upland areas of Sub Tropical Plain Zone of Manipur are advised to continue sowing of black gram and planting of onion after current spells of heavy rain.

South Region

- Due to continuous rainfall in Kerala, weed problems may arise in the transplanted rice fields. Farmers are advised to control the weeds using Butalachlor EC.
- In **Rayalaseema**, in Anantpur district, farmers are advised to continue sowing of contingency crops like bajra, fox tail millet, green gram, cow pea, field bean and fodder jowar up to second fortnight of August where groundnut sowing could not be undertaken due to subdued rainfall.

- In **Telangana** provide drainage to the already sown crops like soyabean, cotton, maize, groundnut and vegetables as heavy rainfall is expected during the period. In Adilabad, Nizamabad and Karimnagar districts where nurseries of rice are damaged due to recent heavy rains farmers are advised to undertake direct sowing of rice after the spells of heavy rain.
- Farmers in **North Coastal Andhra Pradesh** are advised to continue transplanting of rice. Weather is congenial for incidence of top rot in early planted sugarcane (Jan- March). It is advised to spray Carbandizm @ 1 g/l or Mancozeb @ 3 g/ per litre of water after the spells of heavy rain.
- In **Coastal Karnataka** continue transplanting of *kharif* rice.
- In **Southern Transition Zone of Karnataka**, continue transplanting of *kharif* rice. Onion crop around 50 days old is damaged in Chitradurga and Chikmagalur districts due to excess rainfall. Farmers are advised to drain out excess water from the fields of onion, groundnut, maize and redgram.
- In **North Interior Karnataka** continue sowing of groundnut, castor, red gram and bajra in Raichur, Gulbarga, Yadgir, Koppal and Bellary districts
- Farmers in **Western and Cauvery Delta Zone of Tamilnadu** are advised to continue nursery sowing of *samba* rice. Continue sowing of groundnut, castor, sorghum, and red gram in North Western Zone utilizing the realized rainfall.

West Region

- As rain is likely to occur at many places in Vidarbha during next 24 hours and decrease thereafter, farmers are advised to undertake intercultural operation, application of fertilizers and plant protection measures in rice, cotton, red gram, soybean and pulses after current spells of rain. Due to continuous heavy rain during last few weeks, soybean and cotton crops were damaged in parts of Yavatmal, Washim, Chandrapur, Nagpur, Wardha and Amravati districts. Farmers are advised to undertake sowing of contingent crops like sesamum, red gram, sunflower, bajra and castor using 25 % more seeds.
- As rain would likely to occur at many places in Konkan and Goa, farmers are advised to postpone intercultural operations, application of fertilizers and plant protection measures in finger millet and vegetables and in the orchards of mango, cashew and sapota.
- In Madhya Maharashtra and Marathwada, farmers are advised to complete planting of *adsali* sugarcane.
- As significant rainfall occurred in all the districts of Gujarat region, in Bhavnagar and Diu districts of Saurashtra and Kutch region of Gujarat State and rain is likely to occur at many places over Gujarat state during next 24 hours, farmers are advised to postpone irrigation. As rain is likely to decrease after 24 hours, farmers are advised to undertake intercultural operation and application of fertilizers and plant protection measures in standing crops after current spells of rain. In view of likely occurrence of heavy rain in North Gujarat region, farmers are advised to arrange for adequate drainage to avoid water stagnation in the crop fields.
- Undertake sowing of castor, cluster bean and fodder sorghum and plantation of different horticultural crops in Bhal and Coastal Zone, sowing of castor and transplanting of vegetables in North Gujarat Zone and Middle Gujarat Zone and sowing of castor in South Gujarat Heavy Rainfall Zone and North West Zone of Gujarat after current spells of rain.

Central Region

- Farmers in Kymore Plateau and Satpura Hill Zone, Satpura Plateau Zone of **Madhya Pradesh** are advised to continue sowing of til, groundnut, urad, moong, sorghum and pigeon pea. Continue transplanting of rice.
- Due to continuous rain in Malwa Plateau Zone of **Madhya Pradesh**, maize and sorghum crops have been damaged. If the damage is severe, farmers are advised to undertake resowing of contingent crops like safflower and sunflower.
- In Chhattisgarh, farmers are advised to continue sowing of maize, jowar, arhar, groundnut, sowing of *kharif* vegetables and nursery sowing of tomato, brinjal and chilli.

East Region

- Farmers of **Odisha** are advised to continue sowing of green gram, black gram, cowpea, sesame, ragi, castor and vegetables after current spells of heavy rain. Continue transplanting of rice.
- In **Gangetic West Bengal**, complete transplanting of *aman* rice, sowing of cowpea.
- In North West Alluvial Plain Zone of **Bihar**, farmers are advised to undertake direct sowing of short duration varieties of rice in low and medium land areas and continue transplanting of vegetables. In view of deficient/scanty rainfall situation in Bihar during recent weeks, transplanting of rice in upland areas should be avoided. Farmers are also advised to undertake weed control in the transplanted rice crop under low

rainfall and moisture stress condition. Due to very low rainfall, farmers are advised to sow vegetable crops and yam bean in the upland areas. In the upland areas, where paddy crop could not be transplanted, farmers are advised to undertake sowing of September pigeon pea right after 25th August.

- In Western Plateau Zone of **Jharkhand** in areas, where sufficient rain has not occurred for transplanting of rice and seedlings are overaged, farmers can undertake direct sowing of rice of early duration varieties in medium land. In South Eastern Plateau Zone of **Jharkhand**, areas with fallow land are advised to continue sowing of kulthi. Continue transplanting of rice.

North Region

- In Mild Hills Sub-Humid Zone of **Himachal Pradesh**, farmers are advised to drain out excess water from soybean, maize and vegetable fields. Maintain 5-8 cm water in the rice fields. Complete transplanting of rice.
- In **Uttarakhand**, farmers are advised to continue sowing of groundnut, millets, pigeon pea, horse gram and French bean, sowing of maize in Hill Zone after current spells of heavy rain. Also provide adequate drainage in crop fields and complete transplanting of rice.
- In **East Uttar Pradesh**, farmers are advised to continue sowing of urad, moong, maize after current spells of heavy rain. Also drain out excess water from already sown crop fields. Complete transplanting of rice. In **West Uttar Pradesh**, drain out excess water from already sown crop fields. Also continue transplanting of brinjal, chilli and onion.
- in **Punjab, Haryana** and **Delhi** postpone irrigation, intercultural operation and plant protection measures in standing crops, as rain would occur at many places during the period. Continue sowing of rainy season cucurbits such as bottle gourd, bitter gourd, ash gourd and sponge gourd, sowing nursery of tomato and planting of *kharif* onion in **Punjab**. Continue transplanting of brinjal, tomato, chilli, onion of **Haryana** and sowing of rainy season cucurbits such as bottle gourd, bitter gourd, ash gourd and sponge gourd.
- In Intermediate Zone of **Jammu & Kashmir**, farmers are advised to continue planting of fruit crops viz. pear, plum, peach, apple, almond, walnut, pecan nut etc. after current spells of heavy rain. Farmers in Valley Temperate Zone are advised to continue transplanting of cole crops.
- In East Rajasthan, farmers are advised to undertake sowing of radish, nursery raising for mid-season cauliflower and continue transplanting of brinjal and chilli, transplanting of papaya seedlings, planting of fruit trees after current spells of heavy rainfall. Also carry out weeding and hoeing in 20-30 days old *kharif* crops.
- In West Rajasthan, it is advised to undertake transplanting of tomato, brinjal, chilli, cauliflower, continue planting of amla, ber, anar, falsa, anjeer etc. and transplanting of papaya seedlings after current spells of heavy rain.

Detailed Zonewise Agromet Advisories

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

- **Realised Rainfall:** Significant rainfall has occurred in all the districts of Uttarakhand and East Rajasthan, Bhatinda, Fatehgarh Sahib, Gurdaspur, Hoshiarpur, Nawashahar, Ropar, Mohali districts of Punjab, all the districts of Himachal Pradesh except Kinnaur, Lahaul and Spiti, Shimla districts, all the districts of West Rajasthan except Hanumangarh, Jaisalmer, Sri Ganganagar districts, all the districts of Haryana except Fatehabad, Gurgaon, Hissar, Jhajar, Mewat, Palwal, Rohtak, Sirsa, Sonapat districts, all the districts of Jammu & Kashmir except Kargil, Ladakh(Leh), Poonch, Pulwama districts, all the districts of East Uttar Pradesh except Chandauli, Hardoi, Jaunpur, Kanpur Dehat, Kaushambi, Kheri, Kushi nagar, Mau, RaiBareilly, Unnao districts, all the districts of West Uttar Pradesh except Bareilly, Ghaziabad, Jalaun, Mathura districts.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Jammu & Kashmir during next 24 hours and at many places thereafter, at many places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Punjab, Haryana, Chandigarh & Delhi, at many places over Rajasthan during next 24 hours and decrease thereafter.
- **Weather Warning:** Heavy to very heavy rainfall would occur at isolated places over Jammu & Kashmir on 16th. Heavy rainfall would occur at isolated places over Uttar Pradesh, West Rajasthan on 16th, over Himachal Pradesh, Uttarakhand, Jammu & Kashmir on 17th August.
- **Weather Outlook:** Rain/thundershower would occur at many places over Western Himalayan region & adjoining northwest India. Rain/thundershower would occur at a few places over remaining parts of the country outside Rajasthan where it would be isolated.
- **Advisory :**
 - Rain/thundershowers would occur at most places over Jammu & Kashmir during next 24 hours and at many places thereafter, at many places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Punjab, Haryana, Chandigarh & Delhi, at many places over Rajasthan during next 24 hours and decrease thereafter, farmers are advised to postpone irrigation, intercultural operation and plant protection measures in standing crops during the period.
 - In Mild Hills Sub-Humid Zone of Himachal Pradesh, farmers are advised to drain out excess water from soybean, maize and vegetable fields. Maintain 5-8 cm water in the rice field intermittently for good yields.
 - In Uttarakhand, farmers are advised to continue sowing of groundnut, millets, pigeon pea, horse gram and French bean, sowing of maize in Hill Zone after current spells of heavy rain. Also provide adequate drainage in standing crop fields.
 - In Bhabar & Tarai Zone of Uttarakhand, farmers are advised to maintain proper drainage in all crop fields like soybean, groundnut, maize, pigeon pea, gahat, kutoo, mandua, madira etc. standing crops due to expected rainfall during this week. Also advised that, if the sugarcane crop has attained a height of 4 feet then start tying the plants for better growth of crop and to avoid lodging of crop from high blowing winds,
 - In East Uttar Pradesh, farmers are advised to continue sowing of urad, moong, maize after current spells of heavy rain. Also drain out excess water from already sown crop fields. Complete transplanting of rice.
 - In West Uttar Pradesh, drain out excess water from already sown crop fields. Also continue transplanting of brinjal, chilli and onion.
 - In Intermediate Zone of Jammu & Kashmir, farmers are advised to continue new planting of fruit crops viz. pear, plum and peach, apple, almond, walnut, pecan nut etc. after current spells of heavy rain. Farmers in Valley Temperate Zone are advised to continue transplanting of cole crops.
 - In view of forecasted rain in Delhi, farmers are advised to postpone spraying of pesticides / insecticides in the crop field. Drain out excess water from the crop field. Farmers are advised for sowing of sweet corn (Madhuri, Vin orange) and baby corn (H.M-4) and carrot, radish, spinach, coriander in raised beds. Undertake transplanting of brinjal, tomato, chilli cauliflower and cabbage in raised beds.
 - Farmers in Central Plain Zone in Punjab are advised to postpone spraying of pesticides, as rain is expected at many places during the period. They are also advised to continue sowing of rainy season cucurbits such as bottlegourd, bittergourd, ashgourd and spounge gourd and nursery sowing of rainy season tomato.
 - Farmers in Western Plain Zone in Punjab are advised to drain out excess water from the cotton and sugarcane field and continue transplanting of *khari* onion seedlings. Farmers in undulating Plain Zone in Punjab are advised to undertake sowing of okra of varieties Pb 8 and Pb 7.
 - Farmers in Western Zone in Haryana are advised to transplant the fruit plants where sufficient rainfall is occurred and transplant brinjal, tomato, chilli, onion and early cauliflower on ridge whose seedlings are ready. Proper drainage should be done in the fields.

- In East Rajasthan, farmers are advised to undertake sowing of radish, nursery raising for mid-season cauliflower and continue transplanting of brinjal and chilli, transplanting of papaya seedlings, planting of fruit trees after current spells of heavy rainfall. Also carry out weeding and hoeing in 20-30 days old *kharif* crops.
- In West Rajasthan, it is advised to undertake transplanting of tomato, brinjal, chilli, onion, cauliflower, continue new planting of aonla, ber, anar, falsa, anjeer, neem etc. and transplanting of papaya seedlings.
- Farmers in Western Zone in Haryana are advised to monitor American and desi cotton crops against jassid, whitefly and sucking pests. If the insect population is above ETL then spray the recommended insecticide after current spell of rain.
- In Bhabhar and Tarai Zone of Uttarakhand, weather is congenial for stem borer and leaf folder insects in rice fields, farmers are advised to broadcast 10 kg Phipronil-0.3 G or 8 kg Phipronil-0.4 or 8 kg, Cartop Hydrochloride-4G per acre after current spells of heavy rain.
- In Sub-humid sub-tropical zone of Uttarakhand, weather is congenial for attack of leaf hopper. If Yellow scratches appear on the leaf surface, spray one of these insecticides - Methyl Parathion 50 EC @ 1.0 litre/ha or Phosphomedon 100EC @ 300 ml/ha or Dimethoate 30 EC @ 1.25 l/ha. Ensure proper drainage facility that helps in better aeration in the field.
- In Arid Western Plain Zone of Rajasthan, there is possibility of spreading tikka disease in groundnut due to cloudy weather; farmers are advised to spray Bavistin half gram or Mancozeb 2.0 gm per liter water on a non rainy day.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.

• Animal Husbandry

- In Bhabhar and Tarai zone of Uttarakhand, there are chances of more bacterial infections in poultry farms causing more losses of birds, farmers are advised to maintain cleanliness in and around the poultry shed.
- In Mid Hills Sub-Humid zone of Himachal Pradesh, cattle and buffaloes must be vaccinated against Haemorrhagic septicaemia. There are chances of endo and ectoparasite infestation increases during this period in grazing as well as farm animals which results in severe losses to the farmers. Deworming of animals should be done in this period. Single dose of Ivermectin tablet @ 10mg/50kg body weight must be given to the animals and the dose should be repeated after 21 days with same dose rate.
- In Semi Arid Eastern Plain Zone of Rajasthan, it is advised to protect domestic animals from coming in direct contact with rains. Do not allow water to stagnant in their sheds. Go for vaccination of animals. In case of running nose and fever, consult veterinary doctor.

• Floriculture

- In Flood Prone Eastern Plain Zone of Rajasthan, farmers are advised to continue transplanting of marigold, balsam and xenia after current spell of heavy rain.
- Farmers in Himachal Pradesh are advised to undertake planting of annuals viz. marigold, cosmos, glardia, gomphrina, balsam and zenia after current spell of heavy rain.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Significant rainfall occurred in all districts of Madhya Pradesh and in all the districts of Chhattisgarh except Jashpurnagar, Bastar, Dhamtri and Narayanpur during the week.
- **Weather forecast:** Rain/thundershowers would occur at many places over Chhattisgarh, East Madhya Pradesh during the period, at many places over West Madhya Pradesh during next 24 hours and decrease thereafter.
- **Weather Warning:** nil
- **Weather Outlook:** Rainfall/thundershower would occur at many places over Madhya Pradesh and Chhattisgarh.
- **Advisories:**
 - As rain / thundershowers would occur at many places over the region, farmers are advised to postpone intercultural operations, application of fertilizers and plant protection measures in standing crops.
 - Farmers in Kymore Plateau and Satpura Hill Zone, Satpura Plateau Zone of Madhya Pradesh are advised to continue sowing of til, groundnut, urad, moong, sorghum and pigeon pea. Continue transplanting of rice.
 - In Central Narmada Valley Zone of Madhya Pradesh, farmers are advised to continue transplanting of vegetable crops like chilli, tomato, brinjal and cauliflower.
 - Due to continuous rain in Malwa Plateau Zone of Madhya Pradesh, maize and sorghum crops have been damaged. If the damage is severe, farmers are advised to undertake contingent crops like safflower and sunflower.
 - In Chhattisgarh, farmers are advised to continue sowing of maize, jowar, arhar, groundnut, sowing of *kharif* vegetables and nursery sowing of tomato, brinjal and chilli.

- As significant rainfall occurred during last week in Chhattisgarh Plain Zone and North Hill Plain Zone, farmers are advised to complete transplanting of rice as soon as possible and also maintain water level in the field up to 5 cm.
- Due to humid and cloudy weather, there may be chance of occurrence of yellow mosaic in soybean, urad, moong crops in Bundelkhand Zone of Madhya Pradesh. Farmers are advised to uproot the affected plants and bury them.
- As significant rainfall occurred during last week in Satpura Hills Zone of Madhya Pradesh, there is chance of infestation of stem borer in soybean and maize. Farmers are advised to apply Quinalphos 25 EC 2 ml/lit. of water in soybean and Carbofuron 3g/lit. of water in maize for control of stem borer after current spells of rain.
- In Kymore Plateau of Madhya Pradesh, present weather is congenial for the attack of sucking pest in soybean and attack of stem borer in maize, farmers are advised to spray Trizophos @ 1.5 ml per litre of water for control of sucking pest, Florudon 4 G 2-3 kg/ha for stem borer after current spells of rain.
- Due to heavy rainfall in Central Narmada Zone of Madhya Pradesh, guava plants are infested by stem borer and papaya plants by root rot and stem rot, farmers are advised to spray carbosulfan @ 2 ml/lit of water for control of stem borer and Copper Sulphate or Blitox @ 3 g/lit. of water root rot and stem rot after current spells of rain.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure II
- **ANIMAL HUSBANDRY & POULTRY**
- Farmers of Madhya Pradesh are advised that due to humid weather condition, cattle should be kept in dry and clean places and create smoke in evening to save them from mosquitoes and bees and undertake vaccination to protect the animals from mouth and jahari fever disease.
- Farmers of Madhya Pradesh are advised to provide dry feed along with green feed in (50:50) ratio and 20-30 g mineral mixture and salt for the dairy animal's every day in this humid and rainy weather condition.

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

- **Realised Rainfall:** Significant rainfall occurred in all districts of Sub Himalayan West Bengal; in most districts of Sikkim except North Sikkim; in most districts of Gangetic West Bengal except Purulia and West Midnapore; in all districts of Odisha except Cuttack and Gajapati. Significant rainfall occurred in many districts of Bihar except Arwal, Begusarai, Darbhanga, Lakhisarai, Madhubani, Patna, Purnea, Samastipur and Sheikpura and in many districts of Jharkhand except Garhwa, Gumla, Koderma, Ranchi, Saraikela and West Singhum.
- **Weather Forecast:** Rain/thundershowers would occur at many places over West Bengal & Sikkim, Bihar, Jharkhand and Odisha.
- **Warning:** Heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim, Odisha on 18th August.
- **Weather Outlook:** Rain/thundershower would occur at many places over eastern states.
- **Advisories:**
 - As rain/thundershowers would occur at many places over the region during the period, farmers are advised to postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops.
 - Farmers of Odisha are advised to continue sowing of green gram, black gram, cowpea, sesame, ragi, castor and vegetables after current spells of rain. Continue transplanting of rice.
 - Farmers of East and South Eastern Coastal Plain Zone of Odisha are advised to continue planting of marigold, banana and undertake transplanting of brinjal.
 - The farmers of East and South Eastern Coastal Plain Zone of Odisha are advised to undertake planting of banana, cashewnut and marigold.
 - In North West Alluvial Plain Zone of Bihar, farmers are advised to undertake direct sowing of short duration varieties of rice in low and medium land areas and continue transplanting of vegetables. In view of deficient/scanty rainfall situation in Bihar during recent weeks, transplanting of rice in upland areas should be avoided. Farmers are also advised to take care of weed control in the transplanted rice crop under low rainfall and moisture stress condition. Due to very low rainfall, farmers are advised to sow vegetable crops and yambean in the upland areas. In the upland areas, where paddy crop could not be transplanted, farmers are advised to undertake sowing of September pigeon pea right after 25th August.
 - In South Bihar Alluvial Zone, farmers are advised to continue sowing of maize and small millets, planting of banana, papaya and *kharif* onion. Undertake intercultural operation in *kharif* vegetables, *kharif* fodder and apply nitrogenous fertilizer after current spells of rain.
 - In North East Alluvial Plain Zone of Bihar, farmers are advised to use zinc sulphate @ 25kg/ha to prevent *khaira* diseases of rice before transplanting. Complete sowing of yam and nursery sowing of chilli and onion.

Undertake earthing, weeding, propping and follow fertilizer schedule in both autumn and spring season sugarcane.

- In Western Plateau Zone of Jharkhand, farmers are advised to continue transplanting of rice. Farmers who have completed transplanting of rice in low land, may apply blue green algae @ 4 kg per acre after 15 days of transplanting. Apply urea @ 10-12 kg per acre after weeding in 20-25 days transplanted finger millet crop. Continue transplanting of tomato, cauliflower, cabbage, brinjal, chilli seedlings and avoid stagnation of water near root zone. In fallow land areas farmers may sow the crop like kulthi and niger.
- In Western Plateau Zone of Jharkhand in areas, where sufficient rain has not occurred for transplanting of rice and seedlings are over-aged, farmers can undertake direct sowing of rice of early duration varieties in medium land. Spray the weedicide Butachlor @ 1 kg a.i. per hectare in 600 litre of water after 3 days of sowing after current spells of rain. Farmers are also advised to prepare field for early potato and green peas.
- In South Eastern Plateau Zone of Jharkhand, areas with fallow land are advised to continue sowing of kulthi. Continue transplanting of rice. Staking should be done in cowpea, sponge gourd and bottle gourd.
- In Central & North Eastern Plateau Zone of Jharkhand farmers are advised to continue transplanting of rice and sowing of maize, til and urd. Undertake sowing of horse gram and sweet potato.
- Farmers in Laterite and Red Soil Zone, New Alluvial Zone, Terai Zone and Old Alluvial Zone of West Bengal are advised to complete transplanting of *Aman* rice within this week and drain out stagnant water from the field. Continue transplanting of tomato and complete sowing of cowpea in Laterite and Red soil Zone, harvesting and retting operation of jute in New Alluvial Zone, Terai Zone and Old Alluvial Zone of West Bengal.
- Under present rainfall condition in New Alluvial Zone of West Bengal composite varieties of maize may be sown.
- Due to cloudy weather, high temperature and humid condition fungal and bacterial diseases may be attack in maize in Laterite and Red Soil Zone of West Bengal. For fungal attack spray Mancozeb (2.5g) and in case of bacterial rot spray Streptocycline (0.1g per litre of water) after current spells of rain.
- In South Eastern Plateau Zone of Jharkhand, due to humid weather, there are chances of leaf eating and sucking pests in arhar, spray Monochrotophos @ 1 ml per liter of water by mixing Teepol @ 0.5 ml per liter of water after current spells of rain. Present weather condition is also conducive for the occurrence of pests like hairy caterpillar in groundnut, apply Dichlorvos @ 0.5 ml per liter of water in early stage of caterpillar and for the control of adult caterpillar, provide bamboo perch for birds. Weather is conducive for the attack of pest and diseases like fruit and shoot borer in brinjal and Okra, fruit fly in cucurbitaceous vegetables, leaf blight in tomato and chilli/capsicum, spray of super killer @ 1 ml or Malathion @ 2 ml per liter of water for fruit and shoot borer after current spells of rain. Present weather is conducive for the attack of stem borers in turmeric and ginger, spray Rogar @ 1 ml per liter of water after current spells of rain and also remove the affected parts.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.

• **Animal Husbandry**

- Farmers in South Bihar Alluvial Zone are advised to provide butocus medicine to animal to protect them from parasites and give them food with 50-60 gram minerals.
- Farmers in North West Alluvial Plain Zone of Bihar are advised to provide concentrate feed to milch animals mix with dry and green fodder and ensure for enrich diet having protein, carbohydrate, fat, vitamins etc.
- Farmers in South Eastern Plateau Zone of Jharkhand are advised to protect livestock from H.S., Ranikhet, foot rot and parasitic load by taking proper preventive measures

• **Poultry**

- In North West Alluvial Plain Zone of Bihar, farmers are advised to take care of poultry birds against disease infestation.

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

- **Realised Rainfall:** Significant rainfall occurred in all districts of the States of the region except Dibang Valley, East Kameng and Upper Subansari districts of Arunachal Pradesh, Kamrup (Metro) and Chirang districts of Assam, Jaintia Hills district of Meghalaya, Champhai and Mamit districts of Mizoram and Kephire and Mokokchung districts of Nagaland.
- **Weather Forecast:** Rain / thundershowers would occur at many places over the States of the region.
- **Weather Warning:** Heavy rainfall would occur at isolated places over Assam and Meghalaya and Nagaland, Manipur, Mizoram and Tripura during next 24 hours.
- **Weather Outlook:** Rainfall / thundershower would occur at many places over the States of the region.
- **Advisories:**

- As rain / thundershowers would occur at many places over the States of the region during the period, farmers are advised to postpone irrigation, intercultural operations, application of fertilizers and plant protection measures in standing crops. As heavy rainfall is likely to occur at isolated places over Assam and Meghalaya and Nagaland, Manipur, Mizoram and Tripura during next 24 hours, farmers are advised to arrange for adequate drainage to remove excess from the fields.
- Farmers are advised to continue transplanting of *sali* rice in Lower Brahmaputra Valley Zone and Upper Brahmaputra Valley Zone of Assam and *jhum* rice in Mizoram.
- In Lower Brahmaputra Valley Zone and Barak Valley Zone of Assam, farmers are advised to continue sowing of *kharif* sesame, black gram, green gram, and nursery sowing of finger millet after current spells of heavy rain.
- In Lower Brahmaputra Valley Zone of Assam, in chronically flood affected areas, where flood is expected to recede by the last part of August, transplanting of rice can be carried out with varieties like Andrew Sali, Biraj, Monohar Sali, Kmj-1-19-1, Luit, Kapilee, Dum Sali. In areas where transplanting is not possible before mid September, extra early varieties such as Luit, Kapilee, Culture-1 and Heera should be selected. Community nursery may be raised by the farmers of flood affected areas in non-flood prone or high lands or by other farmers from flood free areas to meet requirement of seedlings of flood affected areas.
- Due to deficient rainfall situation in some parts of Darrang and Udalguri districts of North Bank Plain Zone of Assam transplanting of *sali* rice could not be carried out; farmers are advised to undertake wet seeding of sprouted seeds (@ 75-80 kg/ha) of short duration varieties like Disang, Luit (100 days), Kapili, Kolong (120 days) after current spells of heavy rain or late and staggered planting with the old seedlings (50-60 days old seedlings) of the varieties like Profulla and Gitesh.
- In Karimganj, Cachar and Hailakandi districts in Barak Valley Zone of Assam, farmers are unable to transplant *sali* rice in considerable area due to deficit rainfall. In some areas of these districts, where early transplanting has been done, crop growth is not satisfactory. Where transplanting of *sali* rice could not be done till date, farmers are advised to undertake transplanting of varieties like Prafulla, Gitesh etc. utilizing recent monsoon rain.
- In Dhemaji, Lakhimpur and Sonitpur districts of North Bank Plain Zone of Assam, if there is total damage of seedlings or crops in the main rice field due to flood, farmers are advised to sow short duration cultivars like Luit, Kapilee and Dishang in the nursery bed within the 3rd week of August to undertake transplanting of 20-21 days old seedlings up to mid September. Sprouted seeds of the Luit, Kapilee, Dishang etc. can be sown in the main field after receding the flood water. In partially affected fields, drain out excess water and apply 1/3rd dose of N₂ + half dose of K₂O as top dressing during the tillering stage.
- Farmers in flood affected areas of Upper Brahmaputra Valley Zone of Assam are advised to undertake transplanting of cultivars like Jalashree, Jalkuwari, Plaban etc. which remain alive under water up to 15 days before panicle initiation stage.
- In Mild Tropical Plain Zone of Tripura, farmers are advised to complete transplanting of *aman* rice. However, in upland and medium upland, deficit rain, particularly during the month of July, has affected sowing of *aman* rice; farmers are advised to complete direct sowing of short duration varieties to avoid further delay. In North Tripura and Unokuti districts, in some pockets, where the rice crop could not be taken in upland due to deficit rain during June and July, farmers are advised to undertake pulse crops, namely black gram, green gram, field pea, arhar etc. instead of rice.
- Farmers in the upland areas of Sub Tropical Plain Zone of Manipur are advised to continue sowing of black gram and planting of onion after current spells of heavy rain.
- Due to favourable weather condition in Upper Brahmaputra Valley Zone of Assam, there is chance of attack of leaf folder and rice hispa in seedling and tillering stage of *sali* rice. Farmers are advised to spray Chloropyriphos 20 EC @ 1 ml per liter of water after current spells of rain.
- Due to cloudy and humid weather in Mild Tropical Plain Zone of Tripura, there is a chance of occurrence leaf blight in maize. Farmers are advised to apply Zineb @ 3 g per liter of water to control leaf blight. There is also chance of infestation of sheath blight in *jhum* rice due to humid weather. Spray Surf @ 1g per liter of water. Farmers are advised to apply these plant protection measures after current spell of rain.
- In Sub Tropical Hill Zone of Arunachal Pradesh due to present weather conditions, severe attack of Gundhi bug in *jhum* rice is reported and likely to continue. Undertake dusting of 5% Malathion or Carbaryl @ 25 kg per hectare after current spells of rain.
- Stages of major crops are mentioned in Annexure I.
- Varieties are mentioned in Annexure III.

• Animal Husbandry

- In flood affected areas of Assam, farmers are advised to provide adequate clean drinking water to cattle and poultry. Farmers are also advised to administer proper vaccination schedule to protect their cattle from viral

and bacterial diseases. Farmers are advised to protect the fishes by restricting intrusion of unwanted fishes through flood water by putting nylon net or bamboo net around the unit.

- In view of humid weather in Sub Tropical Plain Zone of Manipur, farmers are advised to replace litter with the dry litter material regularly to prevent bacterial infection in poultry. Protect birds from rain by using curtains of polythene sheets for windows.
- In Mild Tropical Plain Zone of Tripura, weather is favourable for endoparasitic disease in cattle and goat. Farmers are advised to deworm animals against such disease.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Significant rainfall occurred in all the districts of Gujarat region, Bhavnagar and Diu districts of Saurashtra and Kutch region of Gujarat State, all the districts of Konkan & Goa, Madhya Maharashtra (except Ahmednagar, Pune, Sangli, Satara and Solapur districts), Marathwada (except Aurangabad, Beed and Usmanabad districts) and Vidarbha (except Wardha district).
- **Weather Forecast:** Rain / thundershowers would occur at many places over Konkan & Goa, at a few places over Madhya Maharashtra and at isolated places over Marathwada during the period. Rain / thundershowers would occur at many places over Gujarat state and Vidarbha during next 24 hours and decrease thereafter.
- **Weather Warning:** Heavy rainfall would occur at isolated places over north Gujarat.
- **Weather Outlook:** Rain / thundershower would occur at many places over Konkan & Goa, at a few places over Madhya Maharashtra and Vidarbha and at isolated places over Gujarat State and Marathwada.
- **Advisories:**
 - As rain would likely to occur at many places in Konkan and Goa, farmers are advised to postpone intercultural operations, application of fertilizers and plant protection measures in finger millet and vegetables and in the orchards of mango, cashew and sapota. Also maintain water level upto 5 cm in rice fields.
 - In Madhya Maharashtra, farmers are advised to undertake intercultural operations, application of fertilizers and plant protection measures in soybean, cotton, jowar, bajra, groundnut, red gram and black gram on a non rainy day. Also maintain water level of 3-5 cm in rice fields. Complete planting of *adsali* sugarcane.
 - Farmers in Marathwada region are advised to continue intercultural operations, application of fertilizers and plant protection measures in soybean, cotton, red gram and black gram. Complete planting of *adsali* sugarcane.
 - As rain is likely to occur at many places in Vidarbha during next 24 hours and decrease thereafter, farmers are advised to undertake intercultural operation, application of fertilizers and plant protection measures in rice, cotton, red gram, soybean and pulses after current spells of rain. Maintain 3-5 cm water level in rice fields. Due to continuous heavy rain during last few weeks, soybean and cotton crops were damaged in parts of Yavatmal, Washim, Chandrapur, Nagpur, Wardha and Amravati districts. Farmers are advised to undertake sowing of contingent crops like sesamum, red gram, sunflower, bajra and castor using 25 % more seeds.
 - As significant rainfall occurred in all the districts of Gujarat region, in Bhavnagar and Diu districts of Saurashtra and Kutch region of Gujarat State and rain is likely to occur at many places over Gujarat state during next 24 hours, farmers are advised to postpone irrigation. As rain is likely to decrease after 24 hours, farmers are advised to undertake intercultural operation and application of fertilizers and plant protection measures in standing crops after current spells of rain. In view of likely occurrence of heavy rain in North Gujarat region, farmers are advised to arrange for adequate drainage to avoid water stagnation in the crop fields.
 - Undertake sowing of castor, cluster bean and fodder sorghum and plantation of different horticultural crops in Bhal and Coastal Zone, sowing of castor and transplanting of vegetables in North Gujarat Zone and Middle Gujarat Zone and sowing of castor in South Gujarat Heavy Rainfall Zone and North West Zone of Gujarat after current spells of rain.
 - In view of high wind speed in South Gujarat Heavy Rainfall Zone, farmers are advised to undertake earthing up operation in maize after current spells of rain. As papaya is sensitive to water stagnation, undertake earthing up near the trunk.
 - Due to continuous cloudy weather, there may be attack of thrips and aphids on *kharif* cotton in Western Maharashtra Scarcity Zone; farmers are advised to spray Acetamiprid @ 4 g with sticker per 10 litres of water on a non rainy day.
 - Prevailing cloudy weather is congenial for the attack of white woolly aphids on sugarcane in Pune region; release 1000 larvae or eggs of *Dipha aphidivora* per acre or spray Methyl Dematon 25% @ 600 ml or Dimethoate 30 % @ 600 ml per ha in 500 litres of water on a non rainy day.
 - Due to cloudy weather, there is attack of semilooper and tobacco leaf eating caterpillar on soybean in Marathwada; spray Quinalphos @ 20 ml or Emamectin Benzoate 5 % @ 3.5 g per 10 litres of water.

- Due to humid and cloudy condition in North Gujarat Zone there is chance of occurrence of Gujarat hairy caterpillar in pulses; farmers are advised to spray 0.15% Monocrotophos after current spells of rain and at an interval of 15 day to control the pest.
 - Due to cloudy weather in South Gujarat Zone, there are chances of incidences of sucking pests in cotton; farmers are advised to spray Emidacloprid or Thiomothoxam @ 4 ml per 10 liter of water after current spells of rain.
 - Humid weather condition in North Saurashtra Zone is favourable for outbreak of sucking pests in vegetables; farmers are advised to spray Dimethoate (40%) @ 20 ml or Imidacloprid 17.8% @ 5 ml in 10 liters of water after current spells of rain.
 - Stages of the crops are mentioned in Annexure I.
 - Varieties are mentioned in Annexure III.
- **Animal Husbandry**
- In view of forecast of cloudy sky, farmers in Gujarat are advised to make arrangement for artificial light in poultry sheds. Due to chances of rainfall, keep animals indoors during rainfall and keep fodder in safe place to avoid spoilage due to rainfall.

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

- **Realized rainfall:** Significant rainfall occurred in most of the districts in Kerala except Ernakulam, Palakkad, Thiruvananthapuram and Thrissur; Guntur, Krishna, Vishakapatnam and Vizianagaram districts in Coastal Andhra Pradesh; most of the districts in Telangana except Karimnagar, Mahbubnagar, Nalgonda and Rangareddy; all the districts in Coastal Karnataka; Chickmagalur, Davangere, Kodagu, Ramanagara and Shimoga districts in South Interior Karnataka and Ariyalur, Kancheepuram, Nagapattinam, Namakkal, Perambalur, Puducherry, Pudukottai, Salem, Sivaganga, Thanjavur, Thiruvannamalai, Thiruvavur, Trichy and Villupuram districts in Tamil Nadu. No significant rainfall occurred in the remaining parts of the region.
- **Rainfall Forecast for next three days:** Rain/thundershowers would occur at many places along Coastal Karnataka, Kerala and Andaman & Nicobar Islands; at most places over Andhra Pradesh during next 48 hours and many places thereafter; at many places over Tamilnadu during next 24 hours and decrease thereafter. Rain /thundershowers would occur at a few places over rest of the region outside north interior Karnataka where it would be isolated.
- **Warning:** Heavy to very heavy rainfall would occur at isolated places over North Tamil Nadu, coastal Andhra Pradesh and Telangana on 16th; heavy at isolated places over coastal Andhra Pradesh and Telangana on 17th and 18th.
- **Weather Outlook:** Rain/thundershower would occur at many places along Coastal Karnataka, Kerala and at few places over remaining parts of the region outside north interior Karnataka where it would be isolated.
- **Advisories:**
 - Due to continuous rainfall in Kerala, weed problems may arise in the transplanted rice fields. Farmers are advised to control the weeds using suitable weedicides after current spells of rain.
 - Farmers in High altitude zone of Kerala are advised to provide mechanical support in banana crop to avoid damage due to high wind speed.
 - Farmers in the South Telangana zone are advised to apply urea at 25-30 days after sowing as top dressing in cotton and maize crops after the spells of heavy rainfall.
 - In North Telanagana, in Adilabad, Nizamabad and Karimnagar districts where nurseries of rice are damaged due to recent heavy rains farmers are advised to go for direct sowing of rice after the spells of heavy rain. Drain out excess water from crops of cotton, soyabean and pulses as rainfall is likely to occur at most places accompanied with isolated heavy to very heavy on 16th and heavy on 17th and 18th.
 - In Anantpur, farmers are advised to continue sowing of contingency crops like bajra, fox tail millet, green gram, cow pea, field bean and fodder jowar up to second fortnight of August where groundnut sowing could not be undertaken due to subdued rainfall. In Kurnool district farmers are advised to continue transplanting of rice and undertake intercultural operations in cotton, groundnut and other standing crops on non- rainy days..
 - In Coastal Karnataka continue transplanting of *kharif* rice.
 - Farmers in the Eastern Dry Zone of Karnataka are advised to undertake intercultural operation in groundnut and red gram in Bangalore rural and urban districts. Prepare staggered nursery and go for seed hardening of ragi, contour cultivation, small section bunds and undertake dry sowing of ragi with 15-20% higher seed rate due to subdued rainfall activity in some parts of Chickaballapura, Kolar and Ramnagara districts.
 - Farmers in the North East Dry Zone of Karnataka are advised to continue sowing of groundnut, castor, redgram and bajra, continue rice transplanting in river beds and continue sowing of cotton.
 - Farmers in the North East Transition Zone of Karnataka are advised to harvest greengram as on non rainy day.
 - Farmers in the North Dry Zone of Karnataka are advised to continue sowing of maize and planting of sugarcane.

- In Southern Transition Zone of Karnataka, continue transplanting of *kharif* rice. Onion crop around 50 days old was damaged in Chitradurga and Chikmagalur districts due to excess rainfall. Farmers are advised to drain out excess water from onion, groundnut, maize and redgram crop fields.
 - Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to continue sowing of long duration and medium duration varieties of *Samba* rice and sowing of direct dry and wet seeding of rice after current spells of heavy rain.
 - Farmers in the Western Zone of Tamil Nadu are advised to continue nursery sowing of *samba* rice, sowing of irrigated maize in Tiruppur district after current spells of heavy rain.
 - Farmers in the North Western Zone of Tamil Nadu are advised to continue sowing of improved high yielding varieties of groundnut, castor, sorghum, and red gram after current spells of heavy rain.
 - Prevailing weather is conducive for attack of *erwenia* (bacteria) rot disease in banana crop and eriophyte mite incidence in coconut trees in the Western Zone of Tamil Nadu. Farmers are advised to monitor the incidence and undertake trenching with sodium hypochlorite (bleaching powder) @ 20 grams per litre of water as a prophylactic measure to control *erwenia* (bacteria) rot disease and take suitable control measures to control eriophyte mite incidence after the spells of heavy rain.
 - Due to prevailing high relative humidity and continuous rainfall in the Central and Southern Zone of Kerala, there are chances of sheath blight, sheath rot and bacterial leaf blight in rice. Farmers are advised to apply *Pseudomonas fluorescense* (2.5kg per hectare) for the control of fungal and bacterial diseases disease occurrence and tilt (Propiconazole) 150ml/200 per litre of water to control sheath blight and sheath rot after current spells of rain.
 - Weather is congenial for incidence of leaf folder in the transplanted rice in the Northern Zone of Kerala. Farmers are advised to undertake spraying of Carbaryl 85 MS @ 4 g per litre of water after current spells of rain.
 - Weather is congenial for incidence of top rot in early planted sugarcane (Jan- March) in North Coastal Andhra Pradesh. They are advised to spray Carbendazim @ 1 g/l or Mancozeb @ 3 g/ per litre of water after the spells of heavy rain.
 - Stages of major crops are mentioned in Annexure I.
 - Varieties are mentioned in Annexure III.
- **Animal Husbandry:**
- Farmers in the North Eastern Zone of Tamil Nadu are advised to protect lambs, kid and young calves from rain and chillness by providing adequate shelter and gunny bags and administer anti-diarrheal drugs to young animals, since young animals are more prone to enteritis due to grazing of new grown grasses. In case of poultry, farmers are advised to provide clean drinking water to avoid E.coli infection in birds.

Annexure I

Stages of Major Crops

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

- Tomato, brinjal, chilli (transplanting), French bean, okra (flowering/fruiting), rice (tillering/panicle initiation), maize(vegetative/tasseling), soybean (vegetative/ tasseling), peas (flowering/pod maturity), cauliflower (nursery sowing), cucurbits viz. khira, bitter gourd, tori (sowing/ early vegetative), potato (sprouting / vegetative) in Himachal Pradesh.
- Rice (tillering/ panicle initiation), ginger (vegetative), okra (flowering/ fruiting), sugarcane (vegetative), cucurbits (flowering/ fruiting), vegetables viz. tomato, *Capsicum*, chilli, brinjal, cabbage, cauliflower in mid and high hilly area (flowering/ fruiting), vegetables viz. palak, fenugreek, coriander, bhindi, French bean and lobia (flowering/fruiting), maize, finger millet, urad, moong, soybean, groundnut, pigeon pea, cowpea, horse gram, rice bean (early vegetative/vegetative), sorghum, sesame, pearl millets (sowing/ early vegetative) in Uttarakhand.
- Fodder Maize, bajra, sorghum and other fodder crops (vegetative), lady's finger, chilli and cucurbits (flowering & fruiting stage), brinjal, onion, tomato, chilli and cauliflower (transplanting), radish, spinach, coriander (sowing), carrot(sowing) onion (transplanting), in Delhi.
- Rice (transplanting / seedling establishment / tillering), maize (Early sown - vegetative / tassel emergence, Normal sown - Knee high / vegetative), bajra, pole type beans (vegetative), cowpea (vegetative), sunflower (vegetative/ flowering), garlic, cucurbits, okra (vegetative/ flowering), radish, spinach (transplanting / early vegetative), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), fruit crops (planting), brinjal, chilli, tomato, (transplanting / early vegetative / vegetative), potato (early vegetative / vegetative), *kharif* pulses (moong, mash) (early vegetative / vegetative), groundnut (early vegetative / vegetative), radish, carrot, cucurbits (nursery sowing) in Jammu & Kashmir.
- *Kharif* maize, jowar (sowing/ early vegetative/knee high), rice (transplanting / vegetative / tillering), groundnut, arhar, moong and urad (sowing/early vegetative), tomato, brinjal (transplanting/vegetative), and cucurbitaceous vegetables (flowering/ fruiting), spring sugarcane (vegetative), jute (vegetative) in Uttar Pradesh.
- New sugarcane (tillering/vegetative), cotton (early vegetative), cucurbits, cowpea (sowing), rice (transplanting), pearl millet, black & green gram, soybean / arhar (sowing/germination), moong, mash, sesamum (sowing) in Punjab.
- New sugarcane (vegetative), cotton (early vegetative), rice (transplanting) in Haryana.
- Rice (early tillering), cotton (flowering / boll formation), tomato, brinjal, chilli (nursery sowing / transplanting), shimla mirch (germination), moong, early sown groundnut (early vegetative / vegetative), new sugarcane (early vegetative / vegetative), groundnut, bajra, sorghum, soybean, moong, guar, sesame, moth, maize, cowpea, cluster bean, castor (early vegetative), cucurbits (sowing) and fruit crops (ber, aonla, pomegranate, phalsa) (planting / transplanting), kinnu (planting) in Rajasthan.

CENTRAL INDIA [M.P., CHHATTISGARH]

- *Kharif* rice (seedling / transplanting), onion (transplanting / early vegetative), maize, jowar, arhar, soybean, sesame, groundnut (sowing / germination / early vegetative), sugarcane (elongation / grand growth), vegetables (transplanting / early vegetative) in Madhya Pradesh.
- Sugarcane (planting/early vegetative), *kharif* rice (nursery /transplanting), maize, groundnut, green gram (sowing/germination) jowar, arhar, soybean (sowing/germination), ragi and kodomillet (sowing/germination), ginger, turmeric, papaya (vegetative), onion (vegetative), vegetable crops (sowing/ transplanting) in Chhattisgarh.

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

- *Kharif* rice, (transplanting), maize(sowing/germination/tasseling), sugarcane (early vegetative / tillering), onion(transplanting), urad (sowing), yam (vegetative) in Bihar.
- *Kharif* rice (tillering), maize, urad, marua (sowing), arhar, groundnut (early vegetative), onion (vegetative), ginger and turmeric (vegetative), *kharif* vegetables viz. bhindi, bean, French bean (sowing), tomato, cauliflower, cabbage (transplanting/vegetative), niger, potato, green peas, horsegram, sweet potato(sowing) in Jharkhand.
- Rice (transplanting/early tillering), pigeon pea, groundnut, arhar, maize, cotton and *kharif* vegetables (sowing), fruit crops (planting), green gram, black gram, cowpea, sesame, ragi, castor, soybean (sowing), Jute (active vegetative), turmeric, ginger, yam (planting / early vegetative), sugarcane (tillering), banana (planting/vegetative), tomato (fruiting / harvesting), sunflower (maturity/harvesting), marigold(sowing), in Odisha.
- *Aus rice* (flowering), *aman* rice (transplanting/tillering), *kharif* maize (CRI Stage), ginger, turmeric (vegetative), pigeon pea (early vegetative), *kharif* vegetables (vegetative), brinjal, bitter gourd, pointed gourd,

ladies finger (vegetative/fruitle), chilli (vegetative), pointed gourd (flowering/fruitle), banana (planting), jute (harvesting), tomato, cowpea (sowing) in West Bengal.

- Ginger (vegetative), large cardamom (secondary flowering), *kharif* vegetables (vegetative) in Sikkim.

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

- Sugarcane (active vegetative / elongation), *sali* rice (seedling / transplanting / tillering), *Olitorius* and *Capsularis* jute (retting), *Olitorius* and *Capsularis* jute (seed crop) (sowing), pigeon pea (vegetative), sesame (sowing / germination / vegetative), *kharif* vegetables (flowering / fruiting), ginger, turmeric (vegetative), cucurbits (vegetative / flowering / fruiting), early cauliflower, broccoli (nursery sowing), cow pea (sowing), green gram and black gram (sowing / germination / vegetative) and radish (sowing) in Assam.
- *Jhum* rice (grain formation / grain maturity), WRC rice early sown (tillering / panicle initiation / flowering), main WRC rice (early tillering / tillering), cucurbits (maturity / harvesting), brinjal, tomato (fruiting / maturity / harvesting) in Arunachal Pradesh.
- *Kharif* rice (tillering), *kharif* rice (late variety) (nursery sowing), groundnut (vegetative / pegging), soybean (vegetative / flowering), black gram, rice bean (sowing / vegetative), turmeric, ginger (vegetative), cauliflower (early variety) (early vegetative), cauliflower, tomato (midseason variety) (nursery raising), banana (planting), okra (sowing / vegetative), cucurbits (late sown) (vegetative), onion (planting) in Manipur.
- *Kharif* maize (tasselling / cob formation), *sali* rice (tillering), turmeric, ginger (rhizome formation / rhizome maturity), cucurbits (vegetative / fruiting) in Meghalaya.
- Maize (tasseling / silking), *jhum* rice (transplanting), groundnut (sowing / vegetative), cucurbits (flowering / fruiting), ginger and turmeric (vegetative) in Mizoram.
- Upland rice (flowering / grain formation), lowland rice (tillering), chilli (vegetative / flowering), okra, brinjal (fruiting / harvesting), ginger (vegetative) and cucurbits (flowering / fruiting) in Nagaland.
- *Jhum* rice (active tillering / panicle initiation), *aman* rice (transplanting / tillering), groundnut (pegging / pod formation), maize (active vegetative), banana (vegetative), *kharif* vegetables like okra, cucurbits (active vegetative / flowering) in Tripura.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- *kharif* rice (early tillering / tillering in Konkan and early tillering in Kolhapur, Nasik (Ghat), Pune (West region and East Vidarbha), jowar (vegetative in Madhya Maharashtra, Marathwada and Vidarbha), red gram (early vegetative in Madhya Maharashtra, Vidarbha and Marathwada) bajra (vegetative / flag leaf initiation in Madhya Maharashtra and Marathwada), soybean (vegetative / branching / flowering in Madhya Maharashtra, Marathwada and Vidarbha), soybean (vegetative / branching / flowering in Madhya Maharashtra, Marathwada and Vidarbha), groundnut (vegetative / flowering in Madhya Maharashtra, Marathwada and Vidarbha), green gram (pod formation / pod maturity in Madhya Maharashtra and Marathwada), black gram (branching in Madhya Maharashtra and Marathwada), sugarcane (*adsali*, pre-seasonal and *suru*) (active tillering / elongation), Sugarcane (new *adsali*) (planting / sprouting in Marathwada and Madhya Maharashtra) in Maharashtra.
- *Kharif* rice (early tillering / tillering), castor (sowing / germination / vegetative), pearl millet (germination / tillering / vegetative), sesame (early vegetative / vegetative / flowering), groundnut (vegetative / flowering / pegging), cotton (vegetative / flowering), pulses (sowing / germination / vegetative / flowering), maize (vegetative), *kharif* vegetables (seedling / transplanting), sugarcane (grand growth) in Gujarat.

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

- *kharif* crops: early sown groundnut (flowering/pegging), maize (seedling/vegetative), Bt.cotton (vegetative/flowering), late sown groundnut (vegetative/flowering), cotton (seedling/vegetative), red gram (seedling/vegetative), sugarcane(Jan-Feb planted) (grand growth), rice (nursery sowing/transplanting), castor(seedling/vegetative), banana (planting), direct sown rice (germination/seedling), rainfed sugarcane (germination/tillering), pulses (sowing) and vegetables (sowing/ vegetative) in Andhra Pradesh.
- *kharif* crops: sugarcane (grand growth),*kuruvai* rice (panicle initiation), *samba* rice (nursery sowing/transplanting), irrigated rice (seedling), irrigated banana (vegetative), irrigated maize(seedling), irrigated cotton (ripening/maturity), maize (vegetative/flowering), onion (vegetative), sunflower (vegetative), black gram (flowering), rainfed groundnut (vegetative) and vegetables (sowing) in Tamil Nadu.
- *Viruppu* rice (transplanting/maximum tillering to heading), direct seeded rice (seedling), arecanut (nut formation), sugarcane (grand growth), rainfed banana (planting to harvest), new Nendran banana (planting), rubber (tapping/planting), *Kharif* vegetables (flowering/harvest), pepper (berry development), cardamom (flowering), ginger (vegetative) in Kerala.
- Sugarcane (grand growth), arecanut (nut maturity), new arecanut (planting), *kharif* crops: sorghum, bajra, sesame, sunflower, navane, Bt. Cotton, cowpea(sowing), sugarcane(planting) ragi (sowing/transplanting),

and maize, red gram and groundnut (vegetative/flowering), greengram(maturity) black gram and soybean (early vegetative), rice (nursery sowing/transplanting), cotton (vegetative/ square formation stage), vegetable crops (transplanting) in Karnataka.

Annexure II

Week by Week Rainfall Distribution

State/Districts	26.06.13		03.07.13		10.07.13		17.07.13		24.07.13		31.07.13		07.08.13		14.08.13	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh																
Anjaw	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Changlang	96.8	-41	105.9	-8	173.3	67	94.6	-12	31.7	-70	25.1	-71	75.1	35	72.7	-4
Dibang Valley	0.0	-100	121.0	25	54.0	-21	7.0	-86	19.0	-63	14.0	-75	11.0	-65	17.0	-44
East Kameng	35.6	-58	113.4	40	141.7	74	25.5	-74	50.5	-42	14.7	-79	66.1	35	18.0	-73
East Siang	172.9	-9	309.5	46	545.2	167	177.6	-33	258.5	30	94.4	-58	113.0	-36	118.4	-10
Kurung Kumey	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Lohit	70.1	-41	216.0	48	199.3	57	107.1	-28	68.0	-63	66.6	-52	59.6	-31	38.5	-60
Lower Dibang Valley	13.0	-88	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Lower Subansari	7.6	-88	6.6	-86	2.4	-94	1.8	-98	3.6	-93	20.4	-67	36.4	-55	36.6	-8
Papumpara	106.7	-36	147.1	-21	110.5	-35	116.1	-1	134.0	-16	146.8	70	83.6	-27	112.2	-9
Tawang	58.0	-69	88.0	-49	97.0	-44	81.0	-62	125.0	-18	56.0	-59	94.0	-22	61.0	-61
Tirap	124.9	-28	57.2	-69	184.0	10	242.6	21	119.2	-41	38.6	-79	115.9	12	130.3	24
Upper Siang	86.0	-59	256.0	52	153.0	-1	31.2	-77	181.6	37	131.8	-5	17.0	-77	49.4	-50
Upper Subansari	17.6	-72	160.8	77	0.2	-99	96.4	79	24.2	-49	30.0	43	31.2	15	21.7	-54
West Kameng	80.9	-57	121.3	-30	61.3	-64	91.0	-57	46.1	-70	78.2	-43	109.7	-9	145.6	-7
West Siang	81.2	-15	192.1	45	141.1	41	86.4	-46	95.6	-28	31.4	-75	58.6	0	32.4	-13
Assam																
Baksa	66.6	-58	112.1	-42	78.5	-64	56.0	-61	108.6	-34	9.0	-93	11.9	-87	50.2	-59
Barpeta	36.8	-77	111.4	-42	235.1	9	7.9	-95	108.7	-34	87.6	-33	86.4	-2	50.8	-59
Bongaigaon	44.2	-64	83.8	-58	354.8	64	1.0	-99	64.7	-61	48.8	-64	97.6	14	50.8	-54
Cachar	90.9	-32	120.7	-2	84.1	-25	178.9	48	66.0	-48	92.2	-17	101.8	-4	186.2	56
Chirang	60.5	-50	160.9	-20	316.7	46	12.1	-92	68.9	-58	35.0	-74	45.5	-47	24.1	-78
Darrang	2.0	-98	1.0	-99	1.0	-99	0.0	-100	**	**	**	**	26.0	-59	37.0	-42
Dhemaji	59.0	-56	132.0	-12	132.0	-8	130.0	-15	90.0	-19	22.0	-83	95.0	14	69.0	-49
Dhubri	70.5	-48	121.7	2	120.9	1	1.7	-99	10.5	-91	21.6	-84	52.3	-44	72.1	-9
Dibrugarh	122.8	6	86.0	-23	164.4	41	96.4	-20	89.7	-26	78.3	-28	114.9	26	80.1	-15
Goalpara	72.7	-46	121.9	-19	108.6	-12	7.9	-92	8.0	-93	41.7	-59	84.5	34	32.8	-60
Golghat	84.5	44	46.2	-29	32.0	-57	72.0	-7	66.7	-10	80.4	36	144.2	179	63.7	-11
Hailakandi	23.9	-76	66.7	-32	60.4	-28	116.8	27	76.9	-24	125.9	18	191.5	109	92.7	-8
Jorhat	139.5	108	62.9	-26	81.0	-10	120.2	23	83.6	9	170.8	103	89.9	13	147.5	83
Kamrup(Rural)	44.2	-58	47.6	-39	25.2	-72	38.8	-49	108.0	42	18.2	-70	46.8	-12	102.3	67
Kamrup(Metro)	137.0	30	40.7	-48	73.9	-17	30.7	-60	35.5	-53	43.9	-28	26.4	-51	14.6	-76
Karbi Anglong	63.7	10	68.5	60	11.9	-80	118.6	149	38.9	-28	63.0	6	57.3	-1	40.3	-11
Karimganj	143.7	-10	82.9	-44	88.3	-44	98.2	-34	99.1	-25	144.2	15	139.0	49	145.2	26
Kokrajhar	117.1	-37	160.4	-32	481.9	82	26.5	-79	84.8	-59	36.3	-77	104.7	-21	69.5	-64
Lakhimpur	139.0	3	143.6	-4	103.1	-28	171.3	13	175.3	58	122.5	-4	119.4	43	151.9	13
Morigaon	52.0	-37	116.4	32	105.6	15	127.8	47	88.8	28	17.4	-80	54.2	-26	154.2	105
N.C.Hills	81.4	7	49.3	-36	51.2	16	119.4	89	3.4	-94	92.9	60	99.0	190	46.2	-16
Nowgong	33.5	-55	50.0	-22	25.1	-61	117.4	30	43.4	-47	29.0	-54	36.5	-45	37.8	-40
Nalbari	60.0	-58	88.0	-17	90.2	-27	5.1	-96	115.2	25	50.4	-34	35.1	-58	86.8	37
Sonitpur	110.0	30	167.6	71	61.5	-30	127.3	41	161.9	103	60.3	-26	83.4	38	91.2	4
Sibsagar	96.7	41	55.9	-38	68.6	-23	87.2	1	93.6	25	113.9	58	109.8	37	121.6	45
Tinsukia	109.1	8	68.5	-38	192.7	69	93.6	-18	64.6	-44	88.6	-26	69.8	-6	76.8	-25
Udalgiri	133.5	13	106.2	30	72.1	-15	121.5	42	149.1	129	54.0	-20	90.2	42	61.0	-4
Meghalaya																

East Garo Hills	2.0	-98	3.0	-97	4.0	-95	**	**	**	**	**	**	**	**	**	**
East Khasi Hills	278.1	-30	396.3	10	518.5	35	164.1	-58	110.1	-64	154.2	-45	245.9	-2	135.8	-32
Jaintia Hills	116.0	-67	152.0	-50	109.0	-78	70.0	-78	71.0	-76	86.0	-74	90.0	-60	18.0	-92
Ribhoi	155.3	56	77.7	-25	40.4	-59	39.3	-51	82.2	-16	67.0	-36	87.3	5	91.2	-9
South Garo Hills	2.0	-98	1.0	-99	0.0	-100	13.0	-89	22.0	-78	0.0	-100	**	**	**	**
West Garo Hills	46.8	-53	129.0	9	22.4	-78	24.6	-78	45.2	-55	33.1	-69	37.6	-61	56.2	-25
West Khasi Hills	78.0	-55	0.0	-100	37.0	-89	18.0	-86	10.0	-95	25.0	-88	11.0	-93	**	**
Mizoram																
Aizwal	74.7	-31	61.7	-43	22.3	-72	98.9	-12	47.8	-51	160.6	54	78.3	-27	93.5	-11
Champhai	84.0	11	94.0	10	51.0	-29	128.0	64	23.0	-72	54.0	-46	7.0	-90	5.0	-94
Chhimituipui	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Kolasib	6.0	-95	7.0	-92	6.0	-91	3.0	-97	**	**	**	**	**	**	**	**
Lawngtlai	51.0	-50	93.0	-12	78.0	-34	42.0	-65	62.0	-28	128.0	6	50.0	-50	45.0	-48
Lunglei	53.0	-60	30.0	-72	56.0	-61	51.0	-59	37.0	-59	79.0	-30	89.0	-20	40.0	-66
Mamit	5.0	-95	150.0	39	3.0	-96	50.0	-55	45.0	-54	18.0	-83	14.0	-87	5.0	-95
Saiha	73.0	-12	67.0	-39	86.0	-4	115.0	14	78.0	-10	83.0	-24	45.0	-55	70.0	-6
Serchhip	28.0	-72	38.0	-63	27.0	-73	43.0	-58	13.0	-87	37.0	-69	37.0	-57	55.0	-49
Manipur																
Bishnupur	4.0	-95	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Chandel	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Churachandpur	44.0	-50	48.0	-49	11.0	-86	117.0	17	51.0	-42	24.0	-75	72.0	-8	36.0	-66
Imphal east	61.9	-21	54.2	-35	31.9	-62	156.0	98	29.8	-58	38.2	-35	123.6	139	87.4	9
Imphal west	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Senapati	**	**	**	**	**	**	**	**	**	**	140.0	83	85.0	0	38.0	-55
Tamenglong	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Thoubal	25.0	-45	129.0	161	46.0	36	71.0	32	35.0	5	62.0	35	40.0	-14	57.0	9
Ukhrul	22.0	-75	96.0	58	22.0	-69	0.0	-100	0.0	-100	0.0	-100	**	**	**	**
Nagaland																
Dimapur	54.5	80	46.5	50	12.0	-78	191.5	352	29.5	18	44.0	-11	41.5	-17	35.0	-57
Kephire	12.0	-88	51.0	-33	66.0	-34	67.0	-50	20.0	-77	15.0	-84	13.0	-83	1.0	-99
Kohima	43.9	-29	42.5	-47	65.6	-19	118.1	49	99.1	15	76.4	-13	106.3	39	62.4	-37
Longleng	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Mokokchung	94.0	5	29.0	-77	7.0	-96	3.0	-97	3.0	-97	48.0	-23	37.0	-68	25.0	-73
Mon	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Paren	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Phek	31.7	-49	30.8	-62	92.1	14	43.3	-45	89.2	4	28.6	-67	35.0	-54	90.0	-9
Tuensang	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Wokha	1.0	-99	0.0	-100	0.0	-100	0.0	-100	**	**	**	**	**	**	**	**
Zunheboto	65.0	-33	28.0	-63	**	**	**	**	**	**	**	**	**	**	**	**
Tripura																
Dhalai	102.8	15	14.0	-83	13.0	-84	74.0	-2	123.0	50	**	**	125.0	44	**	**
North tripura	158.3	71	22.7	-73	33.7	-62	113.8	20	65.7	-27	109.4	25	74.7	0	92.7	-1
South tripura	142.3	41	100.9	-8	28.9	-77	36.8	-70	16.7	-84	140.0	46	147.3	53	36.9	-56
West tripura	124.4	46	53.0	-37	9.2	-90	24.7	-75	16.8	-81	120.7	41	72.7	-3	47.4	-29
Himachal Pradesh																
Bilaspur	28.2	3	68.0	30	38.3	-42	99.2	44	24.9	-64	38.5	-55	41.3	-53	82.8	8
Chamba	31.1	-32	38.7	-38	36.2	-58	26.4	-81	60.9	-63	47.2	-68	152.2	20	104.3	-29
Hamirpur	80.1	72	61.6	-16	154.6	136	34.5	-61	162.2	70	89.5	-15	56.9	-40	87.6	-14
Kangra	104.2	122	50.3	-37	196.5	93	92.8	-34	249.6	71	84.5	-47	311.1	82	167.7	-7
Kinnaur	0.5	-95	1.2	-89	9.8	-30	0.7	-96	6.2	-69	7.9	-56	5.7	-64	5.0	-77

Kullu	29.1	4	27.3	12	67.4	99	7.0	-84	90.5	77	34.4	-25	39.0	-12	57.2	33
Lahaul and Spiti	0.0	-100	4.9	-77	2.3	-93	1.3	-96	5.0	-88	0.0	-100	5.1	-85	2.7	-93
Mandi	149.8	211	45.2	-32	114.4	51	79.9	-13	154.4	53	71.2	-41	122.0	18	77.5	-20
Shimla	55.1	93	40.1	8	25.1	-41	9.5	-83	53.4	-9	30.0	-45	37.3	-26	29.4	-39
Sirmaur	42.5	-11	40.9	-46	77.8	-27	95.2	-19	191.4	54	35.8	-71	115.7	-3	167.1	31
Solan	37.0	-5	86.9	44	55.6	-27	35.2	-59	31.3	-68	37.2	-54	30.6	-66	42.0	-54
Una	72.6	270	43.1	-23	138.7	93	85.9	15	138.9	65	59.1	-19	56.8	-27	81.1	-6
Punjab																
Amritsar	0.0	-100	10.2	-60	63.0	62	14.0	-71	19.7	-65	21.7	-58	106.9	95	18.2	-67
Barnala	0.0	-100	25.5	34	25.5	-10	0.0	-100	58.5	118	1.0	-97	8.0	-76	0.0	-100
Bhatinda	0.0	-100	0.0	-100	50.0	182	0.0	-100	30.0	5	27.0	13	85.0	97	30.0	26
Faridkot	0.0	-100	6.5	-60	11.0	-43	5.0	-83	42.6	33	0.0	-100	41.7	50	13.0	-41
Fatehgarh Sahib	0.0	-100	40.8	48	61.0	16	5.5	-91	8.0	-79	1.0	-98	63.0	37	72.0	55
Ferozpur	0.0	-100	13.3	-6	26.6	0	1.0	-97	65.9	97	1.8	-94	37.8	0	0.0	-100
Gurdaspur	29.4	57	30.3	-25	93.5	74	24.0	-69	154.1	82	93.9	12	197.4	137	155.3	58
Hoshiarpur	16.9	-24	20.8	-54	19.7	-64	34.7	-45	22.7	-67	27.3	-58	17.4	-75	50.3	-31
Jalandhar	0.0	-100	43.2	54	27.9	-40	2.9	-94	67.8	28	19.6	-53	29.4	-44	2.0	-96
Kapurthala	0.0	-100	84.6	252	58.1	67	4.3	-89	42.8	-10	17.6	-49	35.6	-4	17.8	-54
Ludhiana	0.0	-100	41.3	43	48.7	8	5.2	-91	17.3	-62	25.2	-42	62.1	36	15.2	-67
Mansa	0.0	-100	0.6	-95	10.2	-50	0.0	-100	10.5	-65	14.0	-39	37.4	2	0.0	-100
Moga	0.0	-100	47.3	245	21.0	-18	0.0	-100	51.7	94	3.0	-90	39.7	31	2.0	-95
Muktesar	0.0	-100	26.0	71	0.0	-100	0.0	-100	1.7	-94	45.1	123	75.0	128	1.5	-94
Nawashahar	9.3	-58	42.0	-23	67.4	-11	52.0	-33	58.0	-12	0.8	-99	48.0	-33	74.9	19
Patiala	0.8	-94	17.0	-44	59.6	-1	51.0	-20	14.8	-66	7.3	-87	47.3	-16	22.4	-56
Ropar	38.1	123	46.5	11	63.8	8	52.8	-23	97.1	50	7.1	-91	46.7	-41	87.7	46
Sangrur	0.0	-100	0.2	-99	5.6	-82	0.7	-99	9.5	-72	2.3	-94	26.7	-32	1.1	-97
Mohali	0.0	-100	20.0	-42	48.0	-17	27.0	-53	22.0	-57	6.0	-89	8.0	-88	94.0	80
Tarn Taran	0.0	-100	10.5	-17	48.5	84	0.0	-100	31.1	-10	12.0	-66	40.4	36	4.0	-84
Haryana																
Ambala	22.6	-27	56.4	24	58.8	-20	106.1	42	32.9	-51	14.6	-80	59.1	-19	129.4	36
Bhiwani	0.0	-100	0.8	-94	25.1	12	3.6	-89	28.3	-15	17.9	-44	18.6	-36	45.9	32
Chandigarh	7.5	-77	37.0	-32	39.5	-46	62.5	-6	31.8	-35	46.6	-35	37.8	-56	95.7	27
Faridabad	0.0	-100	4.8	-77	2.3	-93	36.5	-42	65.3	54	97.3	92	33.1	-50	34.5	-18
Fatehabad	0.0	-100	2.8	-85	11.5	-33	0.8	-97	11.9	-57	4.6	-80	8.9	-70	6.7	-68
Gurgaon	0.0	-100	3.3	-85	19.3	-36	6.5	-87	45.4	11	7.8	-79	32.8	-34	11.3	-76
Hissar	0.0	-100	0.0	-100	29.7	52	6.8	-77	21.2	-34	4.2	-85	48.5	68	9.8	-65
Jhajar	0.2	-98	1.7	-93	7.7	-68	17.5	-63	25.8	-28	7.1	-82	15.5	-62	2.3	-93
Jind	0.0	-100	2.0	-93	27.7	14	10.8	-76	32.0	5	23.1	-8	45.5	12	31.0	7
Katihah	0.7	-95	5.0	-59	21.1	-12	6.9	-83	5.1	-82	18.1	-42	12.5	-62	35.1	0
Karnal	3.9	-74	40.5	33	33.1	-33	43.0	-29	26.7	-23	29.6	-23	72.8	60	43.5	-13
Kurukshetra	0.0	-100	22.5	-16	9.0	-81	0.2	-99	7.1	-85	4.0	-90	26.5	-39	40.3	-8
Mahendragarh	1.2	-91	2.2	-89	21.9	8	3.3	-93	35.8	-19	21.7	-38	48.3	35	50.9	23
Mewat	0.0	-100	0.3	-99	12.5	-58	0.0	-100	59.7	49	51.9	29	20.9	-55	16.7	-69
Palwal	0.4	-95	8.3	-60	27.2	-19	32.0	-19	6.8	-82	16.3	-58	28.5	-34	23.2	-41
Panchkkula	3.8	-88	28.9	-48	31.7	-54	45.2	-40	39.8	-50	22.0	-73	38.1	-57	65.3	-31
Panipat	0.0	-100	9.0	-64	7.6	-80	2.3	-96	10.8	-69	16.5	-54	16.5	-66	32.0	-33
Rewari	0.8	-93	0.5	-97	21.5	0	11.9	-71	26.2	-43	29.7	-11	38.0	-28	59.4	17
Rohtak	0.0	-100	15.4	-54	4.8	-83	13.2	-77	6.5	-87	15.4	-65	14.0	-70	10.9	-77
Sirsa	0.0	-100	0.3	-98	21.2	63	1.8	-94	6.8	-73	0.0	-100	53.6	215	0.0	-100
Sonepat	0.0	-100	1.8	-93	29.1	-10	19.7	-64	42.8	-7	36.3	-26	46.5	-15	13.9	-70

Yamunanagar	13.8	-66	34.7	-39	94.6	84	5.6	-91	84.1	2	24.7	-67	87.3	9	215.5	182
Delhi	0.2	-99	6.2	-79	26.9	-41	26.4	-60	90	57	30.6	-43	32.8	-55	28.8	-54
Jammu & Kashmir																
Anantnag	3.9	-62	30.6	110	19.7	20	6.1	-67	12.8	-39	8.0	-64	7.1	-66	37.2	102
Badgam	0.0	-100	24.4	201	13.6	84	3.2	-79	8.7	-31	8.0	-57	9.2	-39	31.9	195
Bandipore	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Baramula	0.0	-100	29.5	125	14.8	-21	3.2	-85	8.4	-61	8.9	-51	9.5	-63	39.5	84
Doda	15.8	74	2.6	-84	21.0	-6	4.2	-86	10.9	-68	53.2	66	44.3	43	49.4	108
Ganderwal	0.0	-100	23.8	213	13.6	25	2.1	-85	16.5	11	2.4	-84	0.0	-100	33.1	115
Jammu	15.8	-14	32.8	2	111.4	103	38.9	-53	117.6	47	61.1	-38	182.3	105	65.7	-31
Kargil	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.0	-100	2.0	-49
Kathua	70.7	368	7.5	-80	154.9	98	78.7	21	145.1	24	109.0	5	156.0	31	205.4	96
Kistwar	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Kulgam	0.0	-100	35.2	141	27.5	68	3.6	-80	0.0	-100	11.3	-49	2.0	-91	42.7	132
Kupwara	0.0	-100	22.1	163	5.9	-63	0.0	-100	6.6	-65	2.1	-90	33.8	92	55.9	291
Ladakh(Leh)	0.0	-100	0.6	-60	0.0	-100	0.0	-100	2.3	-4	2.2	-4	0.6	-74	1.5	-65
Poonch	**	**	**	**	**	**	**	**	**	**	**	**	9.5	-89	0.3	-99
Pulwama	0.8	-86	41.0	477	13.4	5	2.6	-85	3.2	-81	13.2	-22	0.0	-100	24.6	46
Rajouri	20.4	113	43.7	107	69.3	28	11.5	-77	54.5	-31	49.6	-7	21.7	-73	155.9	165
Ramban	13.8	52	12.5	-25	29.5	32	2.8	-91	21.4	-37	17.3	-46	23.3	-25	51.8	118
Reasi	55.2	93	71.2	30	323.7	311	32.7	-71	277.3	108	205.4	37	374.0	128	373.9	200
Samba	8.4	-54	23.3	-28	117.2	114	16.6	-80	165.2	107	92.8	-6	186.8	110	162.5	71
Shopian	0.0	-100	40.0	463	8.0	-38	4.0	-77	4.0	-76	5.0	-71	0.0	-100	36.0	113
Srinagar	0.0	-100	27.9	267	30.2	177	2.9	-79	20.6	38	14.9	-1	16.3	-14	74.2	382
Udhampur	54.5	91	25.2	-54	93.5	19	23.7	-79	54.6	-59	10.5	-93	92.4	-44	59.3	-52
East Madhya Pradesh																
Anuppur	43.9	-34	66.1	-2	47.4	-52	8.3	-91	54.8	-36	72.2	-9	58.7	-40	85.5	-3
Balaghat	68.6	-10	76.3	-6	60.6	-43	234.5	94	114.5	10	126.8	15	41.2	-60	71.1	-33
Chhatarpur	20.9	-36	260.5	340	16.7	-75	56.0	-12	74.6	-8	122.7	57	56.3	-46	140.4	59
Chindwara	76.1	52	103.2	81	60.1	-16	92.8	44	51.6	-19	91.5	59	109.8	43	68.0	8
Damoh	84.9	103	334.4	359	34.1	-51	112.4	39	104.8	23	173.2	90	34.7	-72	172.4	111
Dindori	54.4	-19	66.8	-19	36.2	-66	46.0	-57	94.2	8	140.0	67	43.3	-61	141.4	54
Jabalpur	238.6	440	150.3	150	60.0	-27	107.4	34	81.1	0	103.3	22	55.0	-50	93.3	1
Katni	93.0	120	262.0	316	79.0	6	30.3	-65	68.1	-15	169.0	105	56.7	-50	65.7	-23
Mandla	156.6	164	109.1	41	57.4	-43	124.4	19	125.9	37	184.6	83	61.2	-44	103.4	-6
Narsingpur	186.3	346	247.5	346	18.6	-78	132.2	67	121.0	51	99.0	17	66.6	-32	135.5	66
Panna	1.5	-96	313.6	365	6.0	-92	18.3	-77	58.7	-35	196.1	143	73.0	-27	96.5	-2
Rewa	26.0	-37	134.2	109	22.9	-61	113.5	50	112.6	59	188.6	136	19.8	-76	182.4	122
Sagar	94.1	96	446.1	559	33.0	-53	115.6	40	84.7	-1	307.8	288	48.1	-60	136.5	50
Satna	27.8	-39	168.3	143	42.0	-33	61.1	-2	53.2	-27	111.5	39	52.2	-41	109.6	24
Seoni	114.3	79	86.1	39	72.4	-14	232.6	168	67.7	-8	90.7	7	61.7	-29	114.7	54
Shahdol	59.1	17	55.7	-1	4.0	-95	19.6	-75	74.0	2	44.0	-27	38.6	-61	61.5	-29
Sidhi	46.8	9	190.0	223	6.8	-91	44.4	-47	84.2	33	244.0	201	19.4	-74	**	**
Singrauli	17.0	-61	51.0	-3	130.0	178	41.5	-37	70.1	42	119.0	51	14.2	-79	50.7	-18
Tikamgarh	24.0	-4	204.0	256	23.5	-59	86.5	38	122.5	69	154.0	131	39.0	-51	80.0	-4
Umaria	128.7	166	114.6	99	26.7	-65	68.2	-23	42.0	-45	102.3	36	113.6	12	37.4	-58
West Madhya Pradesh																
Alirajpur	6.3	-79	27.2	-35	148.4	133	63.2	14	65.8	-4	120.7	74	93.3	37	60.6	25
Asoknagar	5.3	-76	135.8	148	29.3	-46	78.3	26	108.3	6	271.7	310	69.5	-14	143.8	128
Badwani	20.5	-28	40.7	15	78.8	81	56.0	25	55.7	18	50.0	2	84.5	85	41.6	-1

Betul	80.0	54	73.3	41	51.3	-22	199.7	227	121.4	77	124.6	69	173.8	110	51.0	-22
Bhind	9.7	-42	134.5	279	53.7	15	24.1	-50	37.0	-37	65.5	24	74.8	27	109.5	49
Bhopal	95.7	189	195.6	214	28.4	-62	40.2	-39	59.2	-20	230.2	157	68.1	-27	34.5	-54
Burhanpur	61.3	9	27.8	-51	71.6	55	113.4	144	151.2	226	56.2	-17	124.7	92	104.7	110
Datia	1.4	-94	135.8	256	20.9	-60	40.5	-23	57.1	-16	50.3	-11	108.4	36	116.3	63
Dewas	97.2	141	58.8	9	137.2	115	86.0	23	72.2	6	161.8	88	119.0	42	57.0	-16
Dhar	21.7	-44	54.3	26	125.6	127	73.0	19	52.7	-15	129.8	81	94.9	30	56.7	14
Guna	38.5	51	140.0	126	68.2	1	131.0	113	124.6	23	277.5	269	104.8	11	244.2	240
Gwalior	43.9	75	60.9	60	42.1	-24	44.2	-22	46.3	-31	57.8	-11	80.5	9	58.9	-22
Harda	66.1	85	54.6	3	268.2	272	64.7	-17	92.8	17	84.3	-4	163.1	63	70.8	-13
Hosangabad	102.1	95	206.8	185	64.7	-30	177.3	86	155.5	68	205.1	101	200.7	65	75.1	-25
Indore	91.9	160	60.6	25	226.0	296	112.5	90	31.6	-47	165.4	121	113.9	70	54.4	-3
Jhabua	16.6	-44	28.5	-31	157.9	174	55.4	7	51.7	-9	177.6	197	105.1	54	34.3	-31
Khandwa	48.9	3	71.8	41	188.3	237	85.3	50	50.3	-14	16.3	-78	134.0	82	102.4	62
Khargone	23.3	-42	36.9	-24	152.6	244	35.5	-33	35.8	-31	63.3	2	121.7	89	33.1	-30
Mandsaur	52.9	94	51.6	31	56.1	9	160.4	172	91.4	39	175.6	106	74.9	-1	78.1	40
Morena	1.6	-92	29.0	-12	45.0	7	46.0	-2	98.0	40	54.0	-12	123.0	71	115.3	51
Neemuch	55.9	105	27.5	-37	64.9	31	133.4	134	137.5	140	137.0	60	59.3	-5	53.3	-4
Raisen	108.8	137	276.1	334	40.3	-50	51.0	-37	133.8	46	195.6	118	81.7	-24	110.3	32
Rajgarh	61.5	86	175.3	311	62.9	-3	123.7	96	136.1	80	166.4	112	119.6	30	85.3	31
Ratlam	45.9	35	73.3	50	129.2	134	144.1	120	42.9	-37	209.8	134	116.7	45	62.7	6
Sehore	165.9	292	104.3	99	59.4	-17	68.4	-13	124.1	49	153.5	62	117.5	16	71.3	-9
Shajapur	64.0	94	88.7	133	36.1	-41	116.8	88	76.0	10	187.0	104	137.3	52	51.0	-17
Sheopur Kalani	0.5	-97	107.0	135	20.0	-64	39.0	-42	54.0	-19	168.0	153	84.5	40	161.0	109
Shivpuri	15.3	-36	101.4	117	29.1	-46	107.8	108	115.8	44	172.8	165	104.8	41	171.0	146
Ujjain	47.3	47	65.1	56	102.6	64	107.2	88	62.2	6	125.4	54	116.0	55	68.8	37
Vidisha	57.1	39	225.8	302	59.0	-24	144.7	106	115.3	23	288.4	235	99.0	2	164.4	124
Chattisgarh																
Bastar	137.8	78	17.6	-76	62.2	-17	50.0	-34	62.3	-29	97.9	23	65.9	-28	18.1	-80
Bijapur	150.4	94	19.2	-72	22.1	-78	408.2	381	326.3	180	115.2	-7	303.4	140	73.7	-46
Bilaspur	71.7	18	44.1	-44	51.6	-36	53.5	-35	73.0	-11	97.0	24	39.0	-50	87.4	1
Dantewara	112.4	57	26.6	-57	37.3	-60	100.5	13	151.1	35	69.0	-22	105.1	5	34.1	-66
Dhamtari	88.2	46	41.4	-45	70.4	-6	46.8	-44	70.6	-12	307.6	267	84.4	5	4.4	-94
Durg	52.5	-21	60.6	-24	38.1	-52	70.5	2	155.4	132	281.7	305	95.6	17	48.6	-42
Janjgir	71.6	32	12.9	-85	62.7	-30	39.8	-58	99.9	23	98.0	9	47.1	-51	72.8	-35
Jashpurnagar	26.9	-66	35.5	-61	60.0	-43	23.5	-75	28.9	-70	128.3	30	15.2	-84	24.1	-78
Kanker	103.8	32	61.8	-27	6.4	-92	5.8	-93	24.2	-75	107.0	3	40.0	-66	41.4	-56
Korba	61.6	0	89.8	-1	10.7	-89	60.9	-39	67.7	-17	83.2	-4	45.9	-57	53.1	-53
Koriya	72.8	35	118.1	44	58.6	-33	100.5	2	92.9	7	154.1	94	56.8	-39	144.8	42
Kawardha	97.0	72	22.0	-59	55.0	-16	116.0	73	37.0	-38	44.6	-32	31.4	-55	39.0	-38
Mahasumund	109.8	73	86.0	43	6.8	-92	67.6	0	179.9	139	197.4	140	70.2	-20	72.7	-3
Narayanpur	107.0	50	20.5	-71	13.8	-83	81.3	-4	87.2	-23	82.2	-9	203.5	94	69.2	-39
Raigarh	30.9	-51	20.9	-71	31.8	-65	67.0	-24	99.6	24	178.6	123	64.5	-27	20.3	-78
Raipur	142.3	135	54.8	-30	16.0	-81	68.6	-21	139.2	95	167.4	121	69.9	-11	49.6	-38
Rajandgaon	117.9	83	60.9	-14	69.9	-9	138.5	79	107.9	25	218.1	169	91.6	6	42.9	-46
Surguja	13.2	-81	29.3	-62	8.3	-90	42.4	-58	47.9	-50	127.6	53	22.2	-78	76.8	-18
East Uttar Pradesh																
Allahabad	12.9	-39	266.2	455	14.6	-73	38.9	-46	62.3	8	80.5	24	26.5	-57	93.3	18
Ambedkar Nagar	0.0	-100	180.2	311	154.2	151	3.0	-96	89.8	19	16.0	-80	34.2	-53	91.0	24
Azamgarh	2.1	-93	147.7	183	21.5	-72	5.0	-94	24.6	-68	64.0	-3	32.4	-55	71.9	-4

Bahraich	30.3	-29	132.5	111	107.9	67	65.2	-30	63.3	-26	26.8	-66	67.9	2	89.4	24
Ballia	34.9	24	75.3	52	46.0	-30	22.5	-71	22.7	-67	43.4	-29	22.7	-64	62.3	-7
Balrampur	1.0	-98	309.3	516	49.3	-26	23.1	-79	95.0	-6	7.5	-92	45.6	-28	72.1	-17
Banda	25.9	-2	342.1	459	13.2	-76	68.8	4	94.6	80	115.1	75	60.8	-19	51.4	-44
Barabanki	12.8	-51	171.6	214	77.0	23	44.9	-48	33.9	-55	15.7	-77	18.7	-72	78.4	8
Basti	46.1	31	390.9	638	64.6	-4	36.9	-54	47.1	-45	8.5	-88	5.1	-93	141.9	103
Chandauli	26.3	14	58.2	46	73.6	23	60.4	-34	0.0	-100	51.4	-23	35.2	-42	10.2	-87
Deoria	36.0	11	82.5	30	69.0	5	2.0	-98	31.0	-57	5.0	-93	36.5	-39	80.0	2
Faizabad	9.8	-73	290.6	405	33.3	-49	12.3	-88	24.3	-71	4.1	-95	31.7	-59	41.9	-46
Farrukhabad	66.2	158	88.4	116	34.9	-31	39.1	-46	68.5	34	78.8	38	4.0	-92	31.9	-65
Fatehpur	0.0	-100	259.4	416	31.6	-45	70.3	-3	17.0	-66	60.4	-4	3.2	-95	66.3	-24
Gazipur	21.0	-29	62.4	55	59.4	0	24.3	-66	11.3	-82	98.9	77	20.2	-77	102.8	34
Gonda	2.0	-96	346.4	525	84.3	32	7.5	-92	114.3	31	30.8	-57	11.3	-87	57.8	-25
Gorakhpur	45.3	-6	451.9	594	83.9	13	30.9	-69	21.0	-76	26.9	-68	36.8	-62	94.2	-7
Hardoi	35.2	31	74.2	45	32.9	-39	38.2	-47	76.6	33	74.3	21	25.1	-54	27.2	-61
Jaunpur	15.4	-28	167.2	202	23.4	-66	32.2	-62	7.3	-88	46.0	-28	13.6	-75	18.3	-74
Kannauj	45.6	185	151.2	279	51.0	2	66.0	-7	74.6	51	101.8	80	3.8	-94	92.0	-1
Kanpur City	18.0	10	218.8	451	19.5	-55	24.9	-54	90.2	66	97.3	60	66.4	21	32.8	-57
Kanpur Dehat	33.6	26	125.7	227	27.3	-30	39.6	-29	43.4	-34	50.0	-21	31.5	-54	19.2	-75
Kaushambi	0.0	-100	236.6	450	15.1	-73	2.1	-97	13.6	-74	42.9	-29	3.3	-94	29.9	-63
Kheri	36.9	-16	104.0	134	59.5	-21	46.5	-35	103.9	40	30.9	-49	136.7	89	18.3	-72
Kushi nagar	4.5	-91	75.5	4	57.3	-25	14.5	-85	2.5	-97	1.5	-98	6.5	-92	28.0	-69
Lucknow	8.3	-70	136.8	208	33.0	-40	19.3	-73	79.2	54	22.3	-65	27.3	-57	51.7	-23
Maharajganj	22.3	-57	115.4	61	58.4	-31	25.7	-76	20.6	-79	4.0	-96	15.7	-80	46.6	-55
Mau	29.0	-9	126.5	136	22.5	-66	16.0	-83	1.0	-99	29.8	-59	3.5	-95	26.5	-67
Mirzapur	15.3	-42	166.8	239	42.9	-31	27.7	-65	26.5	-58	65.0	-2	30.3	-57	66.7	-24
Pratapgarh	28.3	22	281.9	456	34.0	-45	22.0	-71	44.3	-26	62.3	-11	13.3	-77	49.3	-36
RaiBareilly	43.9	134	254.2	537	28.8	-51	18.8	-73	77.3	48	54.4	-11	20.4	-63	29.0	-58
Sahuji Maharajnagar	13.5	-52	294.3	359	31.3	-51	54.3	-13	105.4	61	123.5	118	31.0	-54	76.0	-4
Sant Kabirnagar	0.0	-100	369.0	694	43.0	-41	23.0	-76	24.0	-73	24.0	-69	25.0	-68	67.0	-4
Sant Ravidas Nagar	0.0	-100	163.0	308	69.0	15	12.0	-87	8.0	-88	44.0	-34	52.0	-14	43.0	-45
Shrawasti	26.8	-37	96.5	54	161.4	149	85.4	-8	78.2	-8	37.5	-52	51.3	-23	61.5	-14
Sidharthnagar	13.7	-67	355.5	638	71.3	1	50.2	-47	84.5	-5	32.5	-62	35.9	-47	35.9	-55
Sitapur	23.7	-31	139.0	201	73.3	25	44.5	-37	74.9	15	48.5	-25	172.7	230	34.4	-51
Sonbhadra	16.6	-62	114.0	95	35.9	-45	39.8	-47	46.3	-26	137.2	132	52.9	-25	78.8	-3
Sultanpur	34.7	26	206.5	410	28.5	-62	62.7	-18	92.3	34	29.0	-56	23.8	-58	67.8	0
Unnao	13.4	-43	200.7	342	45.2	-15	23.8	-65	46.5	-19	36.5	-37	27.8	-58	16.3	-80
Varanasi	15.8	-38	116.2	114	64.0	-2	52.3	-43	10.3	-85	74.2	13	34.5	-43	64.8	-6
West Uttar Pradesh																
Agra	5.2	-67	37.1	-6	55.7	26	26.3	-52	59.0	4	20.3	-63	37.7	-45	78.4	4
Aligarh	5.5	-60	39.5	36	30.1	-35	25.5	-51	28.6	-42	79.5	43	18.7	-73	65.0	
Auraiya	20.0	18	96.3	189	49.7	3	86.9	53	17.0	-69	36.5	-33	72.0	14	41.0	-45
Badaun	47.0	104	20.3	-46	32.2	-41	43.6	-22	42.0	-21	66.7	-7	4.0	-94	43.4	-40
Baghpat	0.0	-100	32.4	40	14.6	-67	5.5	-90	30.8	-20	23.2	-49	110.8	83	61.8	14
Bareilly	184.7	507	38.5	-17	122.4	99	62.9	-9	131.5	112	103.1	27	42.2	-40	25.5	-65
Bijnor	0.4	-99	18.3	-59	17.1	-74	20.3	-74	76.9	-8	105.0	10	81.6	-4	116.7	44
Bulandsahar	8.2	-52	57.4	91	17.1	-63	5.8	-89	38.1	-22	39.1	-36	7.4	-87	34.7	-43
Etah	39.0	134	44.8	36	22.7	-52	20.3	-59	56.5	27	56.3	20	4.0	-93	67.8	-1
Etawah	17.5	-3	73.9	117	47.5	7	79.5	62	19.5	-66	39.5	-32	53.3	-30	61.0	-24
Firozabad	15.3	-21	86.5	86	33.6	-17	37.9	-33	56.4	-7	57.8	49	30.1	-49	88.7	29

GBNagar	5.0	-48	4.5	-85	17.0	-52	7.0	-86	20.0	-57	12.0	-67	6.0	-90	33.0	-44
Ghaziabad	8.1	-45	48.4	95	9.5	-79	19.7	-67	37.0	-18	7.0	-87	11.5	-83	27.0	-53
Hamirpur	6.7	-75	198.6	332	2.2	-96	29.7	-47	65.3	2	58.2	-6	61.6	-18	80.0	-14
Jalaun	17.2	-15	115.0	167	8.8	-83	24.6	-57	90.7	53	52.8	-5	57.0	-27	23.7	-76
Jhansi	19.7	-23	174.7	224	33.6	-46	83.2	51	25.9	-61	105.2	68	27.2	-62	79.9	-14
Jotirba Phule Nagar	19.8	-13	26.3	-10	44.5	-38	2.5	-96	61.5	3	21.5	-70	34.0	-45	102.0	26
Kanshiramnagar	69.0	275	102.0	217	11.0	-77	0.0	-100	26.0	-51	44.0	-18	1.0	-98	138.0	90
Lalitpur	13.0	-41	221.5	246	8.5	-86	131.0	104	122.4	33	269.5	262	87.5	0	184.5	98
Mahamaya Nagar	18.0	25	7.0	-78	13.0	-69	18.5	-69	52.0	10	26.5	-51	11.5	-79	117.0	58
Mahoba	0.0	-100	103.4	122	18.2	-64	13.8	-72	23.4	-62	95.2	51	14.6	-81	34.6	-63
Mainpuri	7.6	-64	113.5	180	25.5	-44	70.0	31	28.2	-41	57.3	16	18.5	-67	50.9	-32
Mathura	1.5	-87	34.3	14	23.0	-38	24.5	-46	65.7	31	22.2	-54	10.0	-83	22.5	-62
Meerut	3.8	-82	37.8	13	4.3	-93	53.3	-19	49.5	-18	36.7	-44	118.6	63	83.4	11
Moradabad	51.5	82	17.2	-61	128.1	94	21.5	-65	108.5	66	81.5	2	17.4	-76	82.9	3
Muzzaffarnagar	16.0	-21	67.9	75	0.0	-100	12.5	-82	42.5	-22	40.0	-35	103.9	57	138.2	95
Pilibhit	77.1	114	43.1	-18	52.0	-27	22.9	-69	78.7	11	59.1	-33	44.2	-47	63.4	-19
Rampur	53.0	121	31.5	-27	76.2	-5	28.6	-57	49.9	-29	62.2	-35	33.8	-58	50.9	-34
Saharanpur	20.0	-35	31.3	-39	53.0	-3	32.0	-59	207.7	269	83.3	33	122.7	62	219.0	225
Shahjahanpur	81.2	142	68.5	45	138.4	115	53.5	-21	133.6	95	50.1	-28	59.8	-14	32.2	-56
Uttarakhand																
Almora	53.6	18	64.8	60	72.7	15	48.6	-29	48.6	-31	45.1	-41	56.5	-15	76.7	3
Bageshwar	19.0	-58	131.8	225	143.2	127	37.6	-45	55.2	-22	67.2	-12	91.2	38	83.4	12
Chamoli	68.0	111	62.1	37	158.5	187	128.4	96	153.4	96	97.6	41	173.7	106	137.7	47
Champawat	80.5	13	37.0	-58	85.5	-20	84.5	-27	154.5	50	46.5	-57	42.5	-54	72.5	-29
Dehradun	169.8	183	64.5	-35	135.2	5	143.2	-9	228.2	27	145.4	-14	218.5	18	139.8	-12
Garhwal Pauri	34.1	-22	39.3	-42	36.7	-60	30.5	-73	80.5	-20	47.6	-59	58.2	-53	107.0	3
Garhwal Tehri	69.6	65	30.1	-49	38.7	-42	43.6	-54	94.1	12	16.5	-83	38.5	-63	88.6	1
Haridwar	9.7	-73	41.6	-14	26.9	-63	42.6	-44	94.0	49	138.4	47	225.2	156	57.6	-38
Nainital	109.0	66	78.9	-6	106.9	-3	125.3	-5	131.0	11	85.8	-28	114.0	2	129.3	29
Pithoragarh	50.4	-41	55.6	-50	111.0	-4	173.9	49	116.4	-10	70.6	-51	88.8	-35	126.9	-1
Rudraprayag	128.6	74	56.5	-35	81.4	-21	62.0	-51	168.5	16	57.6	-64	85.5	-46	106.8	-31
Udham Sing Nagar	186.5	329	36.4	-41	69.8	-21	62.3	-40	77.2	-4	104.0	2	46.6	-43	121.5	45
Uttarkashi	52.5	-1	46.7	-12	61.1	-23	77.6	-12	119.0	24	108.7	17	159.9	67	138.7	28
Bihar																
Araria	65.9	-17	162.9	82	285.4	214	116.3	7	132.4	25	42.8	-58	128.2	56	133.8	62
Arwal	8.2	-70	106.2	73	46.4	-9	8.3	-89	0.0	-100	27.2	-47	9.6	-81	15.2	-77
Aurangabad	23.4	-39	55.3	13	25.1	-61	4.8	-94	0.0	-100	34.3	-46	56.2	1	65.3	18
Banka	23.2	-39	42.2	-25	12.8	-79	19.4	-75	6.4	-87	98.8	71	19.8	-66	35.4	-37
Begusarai	4.3	-91	96.0	55	72.0	8	65.3	-17	0.0	-100	35.2	-52	10.0	-85	27.7	-46
Bhabua	6.6	-83	56.2	-9	28.5	-57	68.7	-23	0.0	-100	63.4	-10	51.9	-33	46.7	-28
Bhagalpur	27.0	-58	108.3	49	56.2	-22	31.8	-54	6.1	-89	32.1	-47	38.8	-43	94.0	8
Bhojpur	34.4	18	129.2	110	39.3	-47	8.3	-91	3.1	-95	4.8	-94	19.7	-69	61.9	8
Buxar	17.4	-43	50.7	-1	61.8	1	1.0	-99	36.0	-42	35.0	-41	20.8	-64	89.6	33
Darbhanga	64.3	62	78.2	2	31.1	-49	62.8	-14	1.9	-96	50.0	-34	51.5	-20	28.9	-60
East Champaran	77.2	75	66.4	-6	60.8	-13	74.4	-7	16.6	-81	11.3	-86	15.2	-75	50.4	-28
Gaya	4.0	-89	23.2	-64	53.2	-19	2.0	-97	0.9	-99	29.8	-54	11.2	-84	51.4	-15
Gopalganj	57.6	38	128.5	88	25.7	-65	10.3	-87	9.7	-84	7.3	-89	0.0	-100	41.5	-47
Jahanabad	5.2	-84	25.9	-47	56.2	-6	8.3	-90	4.1	-91	23.1	-56	5.0	-93	59.4	1
Jamui	2.7	-95	88.4	13	41.0	-44	42.4	-47	7.6	-87	35.9	-42	22.4	-65	59.8	6
Kathihar	69.5	28	107.0	25	65.9	-20	29.3	-69	6.5	-90	25.4	-66	55.5	-17	65.5	25

Khagadia	21.2	-64	81.0	12	81.2	8	15.9	-82	0.8	-98	44.0	-23	18.8	-77	49.7	-27
Kishanganj	83.0	-10	140.2	4	580.9	350	202.1	39	200.2	45	29.2	-74	165.3	77	182.0	50
Lakhisarai	3.0	-94	15.0	-78	43.0	-41	2.0	-97	0.0	-100	18.0	-74	46.0	-37	20.0	-63
Madhepura	42.0	-25	194.2	163	55.8	-42	24.2	-76	18.5	-75	42.1	-42	33.4	-52	95.9	34
Madhubani	25.3	-48	107.0	28	17.5	-80	65.0	-15	26.9	-69	20.0	-76	12.4	-79	22.5	-73
Monghyar	8.9	-81	82.6	19	67.0	-8	41.3	-47	0.0	-100	93.8	37	25.9	-64	61.9	15
Muzaffarpur	13.3	-72	96.7	27	30.6	-55	16.9	-79	0.5	-99	16.4	-78	13.3	-79	40.5	-38
Nalanda	12.2	-69	69.7	14	24.3	-60	10.4	-87	3.9	-93	19.8	-69	27.2	-56	83.8	37
Nawada	6.2	-85	22.7	-70	12.9	-82	3.2	-96	1.4	-98	29.1	-50	4.3	-94	59.9	-7
Patna	8.1	-72	90.3	29	21.5	-70	14.2	-85	0.7	-99	20.9	-71	6.9	-87	13.8	-79
Purnea	39.3	-34	142.2	63	122.8	25	20.7	-84	25.3	-71	46.3	-44	33.7	-60	28.9	-64
Rohtas	8.8	-70	55.1	9	82.3	53	22.2	-71	6.3	-88	69.0	-1	94.1	36	61.3	0
Saharsha	**	**	79.3	-42	136.3	19	9.4	-92	5.6	-94	20.4	-81	17.4	-75	88.5	-23
Samstipur	10.9	-82	124.9	67	63.3	9	25.0	-74	4.1	-93	19.3	-72	46.5	-31	11.0	-85
Saran	79.3	151	101.0	39	42.8	-49	7.3	-91	3.7	-94	13.6	-82	33.3	-45	51.7	-26
Sheikpura	2.1	-95	67.8	-13	42.7	-33	10.8	-88	0.0	-100	26.1	-56	25.2	-58	20.9	-55
Sheohar	14.5	-72	81.0	-19	44.0	-46	8.0	-89	8.0	-91	19.0	-83	0.0	-100	58.0	-24
Sitamarhi	6.0	-88	49.7	-50	51.9	-37	8.8	-87	11.6	-86	11.9	-89	14.4	-76	30.6	-60
Siwan	15.6	-57	147.9	94	56.7	-21	6.8	-92	3.4	-95	8.9	-88	6.1	-90	153.0	114
Supaul	21.0	-57	114.3	67	102.2	21	42.6	-55	96.4	15	25.0	-67	40.4	-21	38.5	-35
Vaishali	0.0	-100	84.5	18	17.8	-79	19.3	-81	4.6	-93	12.6	-86	16.1	-74	33.6	-52
West Champaran	59.8	-3	70.2	-29	214.8	134	38.1	-62	31.8	-65	61.3	-51	60.4	-8	45.7	-47
Jharkhand																
Bokaro	36.0	-43	25.0	-58	1.5	-98	74.3	-2	38.5	-47	95.1	36	45.1	-48	51.1	-22
Chatra	5.9	-87	20.3	-71	30.7	-64	6.5	-92	5.8	-92	66.4	-6	3.4	-95	131.5	57
Deoghar	36.8	-23	29.9	-52	9.0	-86	45.5	-35	3.1	-96	52.3	-12	17.3	-73	66.6	3
Dhanbad	62.1	3	39.4	-48	3.3	-96	18.8	-74	48.8	-35	89.9	9	41.4	-50	69.3	-9
Dumka	6.1	-90	31.3	-54	12.5	-83	30.2	-67	3.3	-95	66.7	-1	32.8	-59	55.3	-15
East Singbhum	52.3	-22	35.8	-51	21.5	-67	50.8	-25	27.8	-57	231.9	236	17.5	-81	62.8	-12
Garhwa	35.5	6	43.0	-34	25.0	-52	15.5	-77	3.0	-96	63.0	-14	44.5	-49	25.6	-66
Giridih	73.6	15	37.5	-52	8.2	-89	32.7	-60	17.2	-79	54.0	-30	36.5	-52	49.6	-10
Godda	36.7	-33	90.9	51	66.1	-9	12.7	-83	11.3	-81	27.4	-55	23.7	-59	97.2	81
Gumla	50.9	-29	28.6	-67	37.9	-54	70.9	-15	42.8	-49	214.8	154	68.3	-22	24.7	-68
Hazaribagh	40.5	-6	24.9	-66	23.0	-66	14.5	-81	3.8	-95	73.0	2	18.5	-76	98.5	44
Jamtara	113.7	78	59.8	-21	7.9	-91	27.9	-66	12.8	-83	60.3	-17	48.9	-36	65.3	-27
Khunti	32.0	-61	18.3	-78	0.0	-100	43.8	-47	13.5	-84	165.3	73	57.0	-41	31.8	-60
Koderma	42.1	-17	16.2	-76	33.3	-44	1.2	-98	0.0	-100	17.8	-62	23.4	-66	24.4	-60
Latehar	17.5	-69	23.3	-62	84.1	20	55.6	-25	5.2	-94	117.8	39	6.0	-93	100.9	57
Lohardagga	31.6	-54	20.0	-70	41.1	-31	72.9	17	23.9	-71	125.5	72	13.3	-86	114.8	69
Pakur	79.8	13	68.3	0	54.0	-36	10.8	-89	21.4	-75	39.8	-46	69.9	-11	133.6	74
Palamau	15.7	-64	45.4	-21	82.6	28	24.4	-67	3.3	-96	67.8	0	34.7	-55	45.6	-38
Ramgarh	42.2	-34	22.0	-68	11.6	-83	52.3	-26	31.0	-66	141.3	97	36.6	-55	93.6	50
Ranchi	94.3	31	10.4	-87	16.2	-81	25.2	-69	17.3	-80	125.0	69	16.2	-82	28.2	-68
Sahebganj	35.8	-53	353.2	233	0.0	-100	28.2	-70	25.4	-68	62.6	-23	49.0	-19	199.2	162
Saraikela	4.2	-95	22.0	-70	0.0	-100	11.6	-83	11.8	-86	150.8	109	19.1	-80	12.5	-81
Simdega	58.5	-30	40.5	-55	24.0	-75	108.8	1	28.2	-75	274.1	165	62.6	-39	45.1	-48
West Singbhum	100.7	58	19.8	-72	0.0	-100	35.4	-46	14.3	-79	195.9	185	24.6	-74	22.2	-72
East Rajasthan																
Ajmer	10.0	-26	29.3	13	29.7	14	12.6	-74	31.9	-31	39.0	0	34.6	2	65.2	74
Alwar	1.5	-89	16.6	-35	75.1	142	33.4	-36	67.7	27	33.7	-30	82.2	55	62.5	12

Banswara	2.6	-92	1.8	-96	171.4	176	76.1	21	66.3	11	142.0	73	62.1	-18	81.7	32
Baran	33.3	41	143.5	245	58.7	18	107.2	75	155.7	68	267.5	271	135.6	82	252.5	230
Bharatpur	0.7	-95	17.6	-27	45.7	39	45.3	-4	60.9	27	38.2	-15	38.7	-34	77.4	39
Bhilwara	13.4	-29	14.5	-60	79.4	106	35.1	-32	53.0	-3	84.5	64	55.1	16	111.0	118
Bundi	12.5	-38	53.9	53	77.2	75	80.4	44	91.5	18	152.8	143	80.6	43	114.0	99
Chittorgarh	49.3	103	27.3	-32	92.4	99	62.2	11	59.6	0	124.0	75	80.2	38	151.2	167
Dausa	0.2	-99	65.8	101	56.6	59	67.9	-2	67.0	-2	79.0	56	65.4	16	146.6	127
Dholpur	6.6	-57	15.6	-57	38.5	-8	41.0	-18	111.2	114	38.3	-25	99.8	55	132.5	80
Dungarpur	1.3	-95	0.8	-98	96.9	69	108.3	104	86.7	103	105.5	78	68.9	20	54.0	27
Jaipur	16.1	8	16.8	-40	50.8	86	44.1	-26	41.9	-34	52.2	13	68.9	45	77.3	63
Jhalawar	31.7	22	124.9	160	82.4	55	155.2	175	161.1	105	208.4	181	93.9	12	144.1	103
Jhunjhunu	0.8	-95	16.1	-16	44.1	107	28.7	-33	59.4	19	26.7	-8	61.2	62	37.9	7
Karauli	0.3	-98	61.7	104	61.7	97	69.8	26	83.5	20	79.4	48	60.2	-2	137.8	45
Kota	23.5	6	111.9	168	52.0	23	60.5	4	128.9	55	217.5	204	109.9	78	144.8	113
Pratapgarh	22.6	-34	13.4	-76	130.2	117	134.6	113	131.4	127	156.4	96	73.2	0	104.8	94
Rajsamand	1.6	-93	3.2	-91	50.7	60	65.6	39	58.9	52	87.3	96	58.7	49	92.7	127
Sawai Madhopur	0.8	-94	75.7	116	86.6	120	106.8	79	44.3	-43	81.4	35	52.8	-19	159.1	102
Sikar	5.7	-63	18.2	-17	28.3	19	50.9	18	30.2	-46	61.2	83	71.4	119	41.4	20
Sirohi	0.0	-100	7.6	-79	45.3	-42	45.3	-34	79.5	7	130.7	35	61.1	-30	106.9	61
Tonk	19.1	23	29.6	-9	56.7	70	55.8	-5	57.9	-13	115.7	133	61.2	22	142.6	178
Udaipur	14.3	-38	2.4	-94	42.7	-5	53.8	11	87.5	93	98.7	92	66.0	24	58.7	41
West Rajasthan																
Barmer	0.1	-99	0.0	-100	26.1	42	21.9	-7	0.7	-97	70.6	239	12.4	-52	55.1	212
Bikaner	0.0	-100	0.4	-97	23.8	58	7.3	-67	31.7	16	35.0	117	26.2	41	41.2	161
Churu	0.8	-93	11.9	-23	21.5	-1	39.0	20	47.5	25	43.8	75	48.8	84	38.1	57
Hanumangarh	0.0	-100	14.9	-10	18.3	-1	9.6	-59	11.4	-59	45.6	110	28.2	26	12.2	-42
Jaisalmer	0.0	-100	0.9	-90	4.9	-55	3.3	-79	3.3	-79	31.5	152	17.9	36	15.2	18
Jalore	0.0	-100	2.6	-86	24.4	-35	8.9	-77	13.9	-52	96.4	111	32.2	-14	100.9	269
Jodhpur	0.0	-100	2.4	-82	4.1	-80	10.7	-64	45.4	71	63.9	143	14.0	-40	77.9	251
Nagaur	9.7	-38	4.7	-78	14.7	-24	15.1	-67	53.7	22	33.5	36	57.5	130	49.9	92
Pali	1.0	-93	0.0	-100	15.4	-54	10.8	-76	68.5	65	53.2	21	48.3	26	113.5	220
Sri Ganganagar	0.0	-100	10.4	-17	0.8	-94	12.5	-36	7.8	-69	25.7	81	12.9	-21	13.7	-13
Gujarat Region																
Ahmedabad	4.4	-87	4.4	-89	111.0	101	82.5	68	51.6	13	87.9	82	94.0	96	35.6	-30
Anand	4.1	-90	8.5	-84	151.2	135	93.9	48	91.9	49	140.5	115	84.8	38	104.9	65
Banaskantha	0.0	-100	0.0	-100	24.9	-57	150.6	220	29.2	-30	109.7	84	46.4	-9	69.9	86
Baroda	2.6	-94	7.1	-89	141.0	79	124.8	68	85.9	17	113.0	43	129.2	71	63.0	-13
Broach	10.5	-77	6.0	-89	57.4	-21	168.3	193	62.6	6	59.6	-11	97.0	73	41.6	-20
DNH	181.2	37	93.1	-46	98.6	-50	556.9	191	396.7	103	195.9	-7	307.7	79	151.3	-10
Dahod	1.7	-95	3.1	-94	154.7	135	45.3	-25	25.6	-53	90.8	10	74.8	-6	59.5	-1
Daman	131.8	0	103.6	-40	121.0	-38	459.0	140	249.0	28	215.0	2	258.6	51	93.4	-44
Dangs	28.3	-64	36.7	-67	100.5	-37	170.2	5	122.7	-24	119.0	-45	74.8	-54	219.9	64
Gandhinagar	3.3	-88	0.0	-100	173.3	139	120.8	105	44.9	-28	75.1	23	152.9	102	59.5	29
Kheda	9.6	-76	0.0	-100	149.7	126	78.4	24	47.6	-25	134.9	89	95.7	47	53.3	-14
Mehsana	0.9	-97	0.8	-98	119.6	81	169.2	184	62.2	31	104.1	88	68.3	21	45.4	-4
Narmada	2.9	-95	17.7	-75	111.8	11	66.3	-24	84.7	3	116.1	16	232.0	150	69.3	-20
Navsari	66.2	-45	69.3	-54	92.0	-44	267.3	64	206.7	34	143.9	-14	132.2	-1	123.8	0
Panchmahal	3.7	-90	5.9	-89	173.3	145	80.8	11	56.3	-10	138.8	64	73.6	-12	83.7	12
Patan	0.0	-100	0.0	-100	114.4	139	88.6	77	24.0	-38	54.4	5	58.1	35	69.5	80
Sabarkantha	4.1	-87	1.4	-97	120.4	68	111.8	65	95.0	66	145.0	95	107.9	51	100.8	67

Surat	36.6	-61	41.7	-60	99.4	-17	206.9	88	163.0	62	162.7	46	149.6	74	118.4	40
Tapi	7.6	-90	36.2	-66	96.0	-26	151.5	24	267.1	141	204.6	30	115.3	-9	133.0	24
Valsad	127.0	-8	117.8	-28	145.2	-12	456.8	152	270.4	58	194.9	13	215.8	49	128.6	-2
S K & Diu region																
Amreli	16.8	-61	5.9	-86	12.2	-70	79.6	73	51.0	14	97.2	156	73.4	150	8.0	-73
Bhavnagar	37.5	-9	15.3	-58	40.6	-5	98.4	156	52.4	35	63.8	55	90.5	179	33.2	8
Diu	4.7	-94	47.0	-42	28.0	-65	50.8	-15	65.1	13	85.1	63	57.0	33	30.6	-23
Jamnagar	2.9	-93	1.8	-96	45.9	25	123.5	156	26.7	-49	40.3	7	60.4	107	29.1	-21
Junagarh	11.5	-86	22.1	-77	36.8	-48	86.0	21	91.9	14	146.1	133	49.5	15	27.1	-39
Kutch	0.1	-99	0.2	-99	35.8	26	41.1	0	3.4	-91	67.0	108	16.6	-38	22.4	-21
Porbandar	0.5	-99	14.0	-79	33.2	-48	84.7	23	80.5	15	87.3	93	55.2	45	28.6	-39
Rajkot	4.0	-90	5.4	-87	44.6	4	72.7	41	53.2	2	81.2	60	54.0	41	28.9	-23
Surendranagar	15.4	-65	4.3	-88	49.5	43	39.7	5	39.4	-17	44.1	30	23.2	-38	21.7	-34
Maharashtra																
Konkan & Goa																
Goa	147.3	-40	363.6	28	313.9	43	276.6	11	429.3	59	288.2	18	143.0	-30	74.6	-62
Mumbai	118.7	-31	58.7	-70	105.6	-43	227.2	32	441.9	157	97.0	-41	93.1	-31	64.8	-50
Raigad	186.4	-13	277.8	-4	198.1	-28	450.6	74	618.4	134	258.6	-7	174.1	-24	111.9	-48
Ratnagiri	243.5	-7	300.5	-4	319.6	18	354.9	41	633.5	128	207.6	-25	203.5	-16	119.8	-46
Sindhudurg	167.1	-39	393.9	43	379.2	68	339.8	43	479.1	82	198.3	-22	151.5	-23	65.7	-64
Thane	178.7	13	153.8	-25	145.1	-35	387.1	61	374.6	84	188.5	-8	182.2	-4	137.4	-25
Madhya Maharashtra																
Ahmednagar	40.3	48	3.1	-87	15.0	-33	45.4	111	71.8	204	10.9	-53	30.7	55	11.7	-31
Dhule	18.6	-47	9.4	-76	46.3	17	72.2	92	58.4	49	93.0	145	79.0	92	43.1	68
Jalgaon	46.6	6	11.1	-75	38.6	-7	61.5	46	102.2	147	45.3	-9	79.4	55	55.3	23
Kolhapur	115.3	8	116.3	-29	91.1	-46	158.3	3	302.3	72	202.9	35	168.1	20	46.7	-63
Nandurbar	10.3	-74	23.7	-59	100.4	45	47.0	-31	67.8	1	198.2	178	91.7	33	109.0	101
Nasik	52.0	9	56.7	3	64.6	-8	113.0	61	136.4	95	73.8	-7	84.1	17	81.7	34
Pune	28.2	-38	34.1	-45	56.2	-26	93.5	36	118.7	76	113.1	58	68.6	6	25.2	-58
Sangli	9.0	-65	10.4	-68	19.1	-48	46.5	41	77.4	122	36.9	11	36.3	19	4.2	-85
Satara	24.6	-35	23.2	-57	37.7	-36	70.7	27	96.8	63	72.2	24	74.2	45	17.2	-64
Solapur	24.5	16	8.7	-57	30.3	74	54.3	165	61.6	151	1.5	-95	21.5	-5	7.2	-63
Marathwada																
Aurangabad	47.2	27	5.4	-83	19.2	-37	62.2	88	73.1	100	8.4	-80	52.9	44	26.1	-22
Beed	63.6	103	24.6	-10	25.1	-15	50.7	99	101.0	186	4.2	-88	42.2	72	22.2	-31
Hingoli	89.3	40	31.8	-49	75.0	52	117.2	131	179.9	213	21.2	-65	108.2	83	45.5	-20
Jalna	56.0	38	24.4	-29	27.6	-22	65.5	97	115.9	203	13.8	-69	72.5	107	32.4	-6
Latur	44.3	-2	41.7	7	32.6	-29	90.4	132	150.7	194	19.9	-70	44.9	-5	55.0	21
Nanded	44.2	-7	42.3	-16	81.8	69	115.2	130	171.1	169	47.2	-29	88.0	75	46.5	-18
Usmanabad	39.9	23	16.1	-40	48.6	55	68.1	152	97.5	161	8.6	-81	36.6	15	19.9	-32
Parbhani	45.9	5	48.4	1	65.8	56	92.8	123	143.7	193	24.3	-61	61.3	41	61.4	47
Vidarbha																
Akola	50.6	15	15.1	-68	48.9	11	110.3	105	89.2	45	72.2	47	103.7	90	84.2	75
Amraoti	60.9	30	23.8	-50	66.8	29	118.2	93	74.1	21	42.9	-28	101.8	49	33.4	-42
Bhandara	206.8	232	60.6	-23	80.6	-2	153.2	64	153.4	103	174.6	101	260.8	149	113.1	17
Buldhana	62.4	26	6.8	-85	59.2	51	57.7	40	133.2	191	28.8	-38	89.0	66	34.1	-20
Chandrapur	176.2	176	58.1	-31	50.6	-40	204.8	126	289.8	257	178.1	112	142.0	43	38.8	-55
Gadchiroli	184.8	162	63.3	-29	66.6	-31	193.7	81	295.2	169	251.7	141	207.2	81	73.7	-33
Gondia	134.9	113	84.5	-2	72.7	-27	318.8	223	153.0	70	240.9	160	131.7	24	99.5	0
Nagpur	206.1	246	49.3	-21	58.7	-19	140.3	83	155.9	139	80.9	23	157.9	99	45.2	-21

Wardha	111.9	76	21.4	-60	59.4	5	205.9	194	180.3	193	48.7	-22	63.5	-13	24.2	-62
Washim	83.9	38	13.6	-79	39.1	-19	103.4	65	109.5	85	40.9	-19	157.1	135	64.9	-3
Yeotmal	119.8	109	30.7	-47	54.3	-6	185.0	191	130.6	94	79.1	38	147.6	128	34.5	-45
Orissa																
Angul	88.5	42	27.8	-48	21.7	-71	116.7	68	75.5	-15	140.3	119	26.8	-69	60.6	-24
Balasore	68.4	7	7.2	-90	0.6	-99	76.0	45	45.4	-48	116.6	66	38.6	-55	47.3	-34
Bargarh	88.6	66	50.1	-33	19.6	-76	57.3	-30	88.9	10	182.9	108	33.3	-60	55.8	-36
Bhadrak	66.6	5	48.3	-16	13.4	-75	62.6	-8	66.9	1	86.3	52	25.8	-73	64.8	-15
Bolangir	90.1	20	11.9	-84	99.3	20	35.2	-64	143.6	70	176.0	107	44.9	-46	68.9	-17
Boudh	53.2	-9	14.9	-77	35.2	-54	33.0	-54	93.0	30	83.8	13	26.5	-70	50.0	-44
Cuttack	68.0	0	42.1	-39	11.8	-83	97.9	36	115.8	44	78.7	-9	19.9	-74	19.8	-75
Deogarh	48.6	-43	31.2	-64	19.4	-81	137.8	61	97.1	2	123.2	26	81.0	-29	47.1	-61
Dhenkanal	114.5	56	48.8	-26	50.1	-17	102.2	50	102.5	12	151.6	117	24.2	-72	45.4	-49
Gajapati	105.6	137	3.1	-92	64.5	70	52.0	-1	85.4	19	28.3	-57	64.7	36	26.9	-57
Ganjam	99.5	140	0.6	-99	37.3	17	67.7	26	126.2	145	68.9	13	11.9	-75	70.7	39
Jagatsingpur	53.0	-20	17.3	-70	7.6	-83	65.9	7	81.6	6	56.4	-32	33.6	-68	41.7	-31
Jajpur	44.6	-32	34.4	-47	14.2	-70	36.2	-47	73.5	7	117.1	58	23.7	-73	33.8	-56
Jharsuguda	83.1	3	50.7	-25	11.9	-88	90.5	-7	60.3	-35	213.5	156	42.3	-59	98.6	-9
Kalahandi	241.3	159	8.3	-90	72.4	-6	43.3	-50	93.9	11	147.6	70	52.4	-37	63.9	-35
Kandhamal	65.7	13	14.3	-78	82.7	8	48.1	-33	132.6	86	123.1	67	41.1	-53	59.9	-32
Kendrapara	64.6	20	38.0	-39	22.4	-58	43.4	-26	91.2	50	101.7	84	57.3	-39	55.2	-32
Keonjhar	99.1	59	20.9	-66	22.0	-59	65.6	10	67.9	-13	199.8	217	65.6	-26	55.3	-23
Khurda	88.2	48	6.6	-88	30.9	-45	111.5	47	122.2	50	48.9	-32	41.4	-49	36.8	-52
Koraput	140.5	103	38.4	-45	51.5	-35	135.0	57	84.7	-6	42.9	-53	114.1	17	71.7	-34
Malkangiri	75.3	-9	48.6	-33	91.3	3	116.6	36	126.0	3	57.5	-48	69.5	-31	100.3	-13
Mayurbhanj	59.5	-23	17.2	-78	18.0	-72	74.5	7	67.0	-33	277.6	336	26.6	-73	40.6	-53
Nawapara	8.7	-86	31.8	-56	20.5	-77	59.8	-22	121.1	55	257.2	243	49.7	-20	94.6	38
Nawarangpur	93.5	18	35.2	-55	51.2	-48	75.3	-4	105.5	-15	113.9	29	135.6	61	56.0	-54
Nayagarh	60.8	-12	8.4	-82	40.9	-41	94.5	26	211.3	180	60.7	-17	31.3	-56	53.7	-29
Puri	109.6	117	10.3	-79	6.3	-89	80.1	44	112.6	100	44.9	-40	42.8	-37	59.5	-26
Rayagada	86.7	86	6.6	-86	37.9	-27	77.7	3	79.4	-10	55.1	-29	89.5	68	73.5	21
Sambalpur	104.3	22	37.5	-56	6.5	-94	97.3	14	127.8	35	194.2	99	53.1	-53	63.8	-48
Sonepur	134.9	159	34.3	-57	37.3	-52	81.9	3	153.0	85	134.3	37	47.0	-56	93.1	-8
Sundargarh	44.4	-36	32.7	-56	15.6	-81	127.4	42	59.5	-27	231.2	178	50.2	-47	79.4	-4
West Bengal																
GWB																
Bankura	131.7	112	164.0	131	29.9	-59	19.8	-70	45.9	-33	198.9	198	28.2	-58	76.1	3
Birbhum	74.0	2	61.7	-12	11.8	-83	18.1	-78	38.2	-45	84.1	34	61.4	-20	102.0	33
Burdwan	58.5	-2	55.0	-14	1.6	-97	9.6	-87	46.1	-38	80.4	37	49.4	-40	44.6	-31
East Midnapore	59.8	-11	40.8	-40	4.0	-95	39.6	-19	61.3	-3	162.8	128	63.7	-25	114.1	99
Hooghly	56.7	-27	131.4	75	11.4	-84	21.2	-66	37.6	-53	137.2	99	57.4	-20	46.6	-14
Howrah	45.7	-25	85.0	-1	4.1	-94	16.7	-77	60.2	-27	103.0	33	20.0	-82	60.5	-4
Kolkata	165.3	140	95.3	21	0.0	-100	68.8	-11	99.8	18	151.1	81	73.5	-20	127.9	79
Murshidabad	42.8	-31	97.0	12	15.3	-79	7.9	-90	18.6	-74	43.0	-33	18.7	-72	73.8	38
Nadia	93.4	37	71.6	6	15.7	-76	21.6	-64	17.0	-75	62.0	22	38.0	-38	56.3	20
24 Pargana (N)	91.9	35	124.2	73	30.4	-60	46.5	-34	61.9	-19	142.8	112	50.6	-43	79.6	36
Purulia	91.8	39	57.7	-19	4.2	-95	19.4	-72	44.6	-29	190.4	232	19.3	-77	29.1	-58
24 Pargana (S)	70.3	-19	93.4	-7	14.5	-87	74.1	-18	56.4	-47	162.7	45	44.5	-58	162.1	76
West Midnapore	46.2	-32	51.6	-29	2.0	-97	21.8	-68	25.9	-66	366.0	348	29.3	-65	22.8	-67
SHWB																

Cooch Behar	75.9	-51	130.0	-36	621.2	161	29.6	-85	14.5	-91	19.3	-88	69.1	-60	147.9	-32
Darjeeling	124.5	-16	190.2	17	221.9	50	159.6	-10	138.2	-24	99.5	-45	156.6	10	82.5	-47
East Sikkim	94.6	-30	103.2	-7	139.4	29	68.5	-38	69.0	-39	98.2	-24	85.2	-27	46.9	-49
Jalpaiguri	225.5	42	139.3	-39	608.5	154	154.0	-24	256.3	23	51.9	-69	174.6	23	135.8	-16
Malda	26.6	-60	148.6	102	17.4	-77	27.2	-64	26.8	-62	48.5	-35	55.4	-12	101.0	63
North Dinajpur	16.2	-85	119.9	44	138.1	54	50.4	-46	4.0	-95	13.0	-81	129.9	134	142.5	82
North Sikkim	45.0	-63	90.9	-29	299.8	227	86.1	-10	53.3	-54	48.1	-60	67.0	-21	21.6	-76
South Dinajpur	32.6	-47	116.7	42	16.1	-81	28.0	-69	18.2	-76	58.9	-27	35.0	-32	91.1	85
South Sikkim	48.3	-64	70.4	-37	94.6	-13	39.9	-64	65.1	-42	82.1	-37	102.8	-12	44.3	-52
West Sikkim	70.0	-42	77.0	-40	308.0	236	34.0	-65	96.0	-17	101.0	-16	102.7	22	57.7	-37
Karnataka																
Coastal Karnataka																
Dakshin Kannada	308.5	13	300.8	-1	386.6	47	267.9	-2	301.5	3	316.0	19	247.4	9	119.8	-43
Udupi	293.7	-2	382.1	21	405.8	34	273.7	-11	369.8	8	406.3	45	288.8	23	149.5	-38
Uttar Kannada	204.7	0	338.6	34	279.8	23	206.8	-14	398.0	51	374.8	78	218.6	15	86.8	-52
N I Karnataka																
Bagalkote	12.2	-20	3.8	-72	13.4	-9	30.5	96	25.9	42	8.6	-58	2.7	-85	2.8	-83
Belgaum	25.8	-20	26.7	-49	19.5	-61	44.7	-1	85.7	84	63.5	56	51.9	31	8.6	-74
Bidar	36.2	-5	39.7	10	48.9	27	96.5	135	146.7	192	23.8	-48	39.1	-7	25.1	-39
Bijapur	22.8	23	1.6	-91	32.0	84	44.2	154	41.2	102	1.6	-95	9.3	-49	5.4	-73
Dharwad	12.8	-50	26.3	-29	5.5	-84	22.0	-38	60.1	85	54.3	79	46.6	61	6.5	-75
Gadag	4.4	-72	6.0	-62	2.8	-80	12.6	-27	15.8	-1	17.7	-4	17.2	-7	3.6	-79
Gulbarga	40.6	43	2.9	-90	36.7	26	69.7	128	79.8	95	6.9	-84	18.0	-48	29.8	-17
Haveri	16.6	-38	51.3	17	17.3	-54	23.2	-43	64.2	67	71.9	123	42.5	32	11.9	-59
Koppal	7.5	-48	3.9	-64	24.8	129	43.9	145	19.1	0	2.7	-89	20.7	14	7.5	-66
Raichur	20.7	-6	3.3	-80	35.3	71	63.1	158	36.3	38	2.9	-91	7.6	-70	5.9	-81
Yadgir	24.9	-33	3.0	-87	23.1	-16	45.8	44	28.8	-31	1.8	-96	7.6	-78	12.6	-65
SI Karnataka																
Bangalore Rural	8.5	-21	16.9	94	9.0	-42	27.8	29	37.7	50	0.6	-98	8.1	-66	7.8	-68
Bangalore Urban	11.2	11	12.9	34	17.5	-5	20.7	5	33.8	36	3.2	-87	15.3	-44	8.3	-73
Bellary	7.0	-50	7.5	-45	14.6	8	36.1	105	17.6	1	8.1	-65	24.7	27	19.2	-4
Chamarajnar	17.6	67	3.1	-76	15.2	-10	14.1	10	34.8	80	11.1	-20	12.5	-27	12.0	11
Chichballapur	3.8	-65	22.8	117	8.3	-52	14.8	-31	18.8	-14	8.9	-61	8.5	-64	2.3	-89
Chickmagalur	134.2	21	130.1	-24	207.5	25	130.6	-8	273.4	86	217.1	67	214.2	67	45.3	-59
Chitradurga	9.7	19	12.2	36	8.4	-25	14.7	10	31.7	133	18.8	33	20.9	36	9.7	-16
Davangere	22.6	46	33.4	57	23.1	14	24.1	2	40.5	55	46.4	92	37.3	66	30.6	42
Hassan	31.0	0	28.7	-38	50.4	0	33.1	-26	83.0	79	56.6	38	79.8	112	12.3	-57
Kodagu	226.4	52	145.1	-39	260.4	20	176.6	-6	389.5	103	247.2	43	326.6	104	59.8	-54
Kolar	0.8	-92	8.4	0	3.4	-77	29.3	70	20.1	0	1.4	-93	5.1	-74	3.0	-85
Mandya	7.8	-3	4.6	-11	4.5	-57	4.7	-58	15.4	13	7.5	-35	11.4	-7	10.7	13
Mysore	28.7	69	10.0	-51	16.4	-28	29.6	53	49.4	120	30.3	77	30.2	71	14.8	27
Ramnagara	10.4	-13	6.3	-18	28.1	58	3.2	-80	14.9	-41	1.5	-93	29.3	25	37.6	85
Shimoga	166.8	68	247.4	62	232.5	62	149.5	7	343.4	136	323.3	166	228.6	87	65.1	-36
Tumkur	2.9	-68	8.4	-8	5.5	-60	8.5	-48	16.6	-9	7.8	-55	16.2	-18	11.7	-25
Kerala																
Alappuzha	255.1	109	132.1	-9	161.4	14	139.0	16	157.2	36	83.0	-13	182.0	109	36.5	-54
Kannur	382.4	79	253.6	-11	230.9	-14	243.4	6	264.5	15	299.2	49	238.4	48	67.7	-48
Ernakulam	358.8	140	208.3	10	268.2	67	158.8	2	215.2	45	84.1	-33	292.4	152	26.8	-73
Idukki	417.5	151	159.1	-25	272.5	44	173.6	4	346.8	116	131.8	-25	466.1	223	94.3	-24
Kasaragod	306.8	16	272.3	-1	124.3	-51	206.2	-19	250.4	-6	288.9	37	213.9	16	39.3	-75

Kollam	223.9	118	105.5	2	108.5	6	96.2	12	103.1	18	58.2	-25	135.3	112	33.0	-35
Kottayam	330.9	131	200.6	21	278.7	86	143.0	3	166.4	33	74.7	-30	295.8	194	58.2	-35
Kozhikode	398.3	96	193.7	-26	257.6	14	232.8	7	259.2	27	250.9	27	269.8	77	33.8	-72
Malappuram	326.5	112	186.8	-13	278.6	43	141.0	-21	202.0	18	160.1	2	254.6	118	30.0	-66
Palakkad	246.4	113	121.0	-25	213.0	50	129.1	-3	211.2	69	168.9	37	214.1	145	21.5	-73
Pathanamthitta	253.8	107	103.4	-28	179.8	35	92.5	-28	199.4	81	64.5	-38	190.9	113	42.9	-47
Thiruvananthapuram	127.4	117	26.2	-64	63.1	10	47.4	-7	74.8	58	42.0	-3	101.4	179	8.1	-75
Thrissur	286.4	71	118.7	-43	195.2	-2	152.4	-11	231.1	40	148.5	-1	267.0	113	12.2	-88
Wyanad	430.5	129	174.1	-43	269.5	-2	150.1	-35	258.8	13	209.4	-9	296.3	63	30.3	-77
Tamil Nadu																
Ariyalur	0.0	-100	0.0	-100	6.3	-52	0.0	-100	1.3	-95	0.0	-100	9.8	-51	53.5	112
Chennai	0.0	-100	22.8	37	44.4	128	48.0	64	52.8	131	8.9	-67	27.0	-11	16.5	-39
Coimbatore	124.5	1629	42.6	353	46.4	296	22.8	132	41.1	277	26.0	157	51.1	494	11.9	68
Cuddalore	4.2	-50	25.3	167	14.6	3	2.6	-83	8.4	-64	1.6	-91	32.5	42	91.0	242
Dharmapuri	2.1	-73	1.9	-72	5.2	-71	4.8	-73	7.7	-63	0.3	-99	2.8	-83	9.8	-46
Dindigul	2.0	-74	7.6	18	1.7	-88	2.6	-78	3.8	-75	0.4	-97	4.6	-66	10.2	-16
Erode	2.9	-7	9.3	150	0.3	-97	0.8	-91	4.1	-63	1.3	-85	4.9	-50	23.5	137
Kanchipuram	1.0	-95	30.2	108	22.4	24	57.3	105	43.8	62	4.8	-83	7.8	-73	48.2	37
Kanyakumari	59.4	62	9.3	-75	22.7	-26	9.3	-60	46.9	104	28.2	46	36.8	93	0.0	-100
Karikal	0.0	-100	4.6	24	33.1	285	0.0	-100	0.0	-100	0.0	-100	27.3	48	28.6	125
Karur	0.0	-100	0.0	-100	0.0	-100	0.0	-100	0.1	-99	0.0	-100	4.2	-28	27.0	196
Krishnagiri	8.1	4	3.8	-37	6.6	-63	5.7	-67	7.0	-65	2.1	-88	10.6	-42	10.4	-42
Madurai	0.3	-97	6.4	-31	3.9	-71	0.1	-99	0.3	-98	0.0	-100	13.3	-8	26.9	58
Nagapattinam	1.7	-71	24.8	235	14.7	34	0.0	-100	10.9	-36	1.9	-87	22.3	43	45.7	138
Namakkal	8.6	16	13.6	156	8.0	-47	3.6	-74	4.1	-80	0.0	-100	22.0	20	53.2	139
Nilgiris	133.8	191	40.5	-36	55.9	-12	45.0	-16	113.4	86	83.1	58	93.0	102	18.4	-56
Perambalur	4.3	-6	2.5	-31	0.5	-94	0.0	-100	4.3	-72	0.8	-95	0.0	-100	65.3	410
Puducherry	0.8	-92	44.7	645	27.4	117	2.0	-81	8.2	-72	0.0	-100	15.7	-37	229.8	798
Pudukottai	3.3	-62	4.8	-41	2.0	-89	6.7	-70	6.7	-64	2.5	-85	6.6	-57	65.8	202
Ramanathapuram	0.0	-100	3.8	37	6.3	51	0.4	-93	0.0	-99	0.0	-100	15.5	182	15.3	74
Salem	7.6	-36	19.4	40	4.4	-80	13.7	-38	23.2	-6	2.3	-89	24.5	22	36.1	45
Sivaganga	1.4	-84	20.3	183	18.1	6	0.7	-95	1.6	-91	0.0	-100	23.3	18	45.8	159
Thanjavur	0.4	-94	2.5	-41	8.8	-50	1.8	-86	0.6	-97	0.2	-99	25.8	68	36.8	70
Theni	38.9	871	14.3	155	15.4	93	20.2	236	28.6	201	19.1	198	46.6	522	3.4	-46
Tirunelveli	32.4	260	6.1	-43	9.4	-12	8.2	-1	16.4	86	13.0	78	16.3	130	0.0	-100
Tirupur	0.0	-100	0.0	-100	0.0	-100	0.5	-91	0.2	-97	0.0	-100	0.0	-100	0.0	-100
Tiruvallur	0.3	-99	27.3	53	16.4	-17	54.5	97	54.4	104	2.4	-90	11.7	-55	21.8	-25
Tiruvannamalai	1.9	-88	10.6	9	15.8	-10	14.6	-36	18.0	-40	3.6	-82	7.9	-71	89.0	231
Tiruvarur	0.0	-100	0.0	-100	20.5	44	0.0	-100	0.0	-100	0.0	-100	21.5	43	46.7	133
Toothukudi	0.4	-70	0.0	-100	0.0	-100	0.0	-100	0.4	-91	0.0	-100	0.0	-100	1.1	-59
Trichy	0.0	-100	1.4	-55	1.3	-91	0.0	-100	0.0	-100	0.0	-100	5.0	-55	34.8	179
Vellore	1.3	-91	13.2	13	16.7	-20	19.2	-18	14.5	-55	1.2	-95	7.9	-70	24.2	-1
Villupuram	0.0	-100	12.8	15	18.0	37	18.8	15	9.5	-63	0.7	-97	6.4	-71	110.7	410
Virudhunagar	8.1	146	5.8	164	0.0	-100	0.5	-94	0.0	-100	0.0	-100	12.9	58	22.3	111
Andhra Pradesh																
Coastal Andhra Pradesh																
East Godavari	45.7	22	13.1	-70	89.1	97	37.6	-14	13.2	-74	23.3	-50	11.6	-69	18.2	-64
Guntur	18.5	-17	4.8	-82	25.4	-22	70.0	138	54.2	40	1.6	-96	41.5	43	39.3	7
Krishna	26.3	-21	7.3	-84	72.5	49	118.4	189	54.9	0	3.0	-94	17.6	-54	36.6	-31
Nellore	6.4	-57	1.1	-93	50.0	203	38.8	81	39.6	70	10.9	-48	20.1	5	19.7	-8

Prakasam	16.5	17	7.0	-61	25.8	25	53.2	184	45.3	61	4.1	-82	46.4	162	23.0	29
Sirkakulam	57.4	48	7.6	-83	16.4	-48	65.7	44	81.4	69	9.7	-77	28.2	-36	21.8	-51
Visakhapatnam	16.0	-54	11.4	-69	27.5	-16	39.8	7	21.2	-57	9.9	-76	27.2	-23	39.4	-7
Vizianagram	30.6	-14	2.2	-95	37.3	5	65.6	85	48.7	1	6.8	-83	36.1	-1	35.4	-16
West Godavari	43.4	18	13.3	-72	94.9	77	73.1	43	43.5	-28	6.3	-88	17.7	-61	16.4	-75
Telangana																
Adilabad	67.7	16	18.4	-68	72.4	10	114.1	66	308.3	275	81.5	6	131.8	99	31.6	-57
Hyderabad	36.6	9	5.0	-86	12.8	-63	124.5	258	74.7	49	11.3	-75	47.1	7	33.4	-27
Karimnagar	37.6	-7	16.5	-69	43.1	-23	91.7	70	302.3	366	46.2	-23	67.9	29	24.5	-57
Khammam	79.7	68	21.0	-57	74.1	23	150.2	162	231.9	229	36.2	-51	76.3	26	65.7	-8
Mehabubnagar	22.3	-4	7.8	-72	27.7	-14	62.9	98	48.8	18	2.7	-94	38.3	11	12.9	-64
Medak	33.7	-18	31.5	-27	43.7	-4	104.9	117	139.6	123	35.0	-38	41.0	-20	30.5	-37
Nalgonda	20.7	-23	2.7	-91	26.4	-11	81.4	152	65.5	51	3.7	-90	18.6	-35	7.1	-81
Nizamabad	52.9	22	51.7	-11	66.5	12	158.5	166	224.0	190	57.6	-15	74.5	10	31.5	-57
Rangareddy	17.8	-44	9.8	-71	24.2	-40	96.1	140	90.0	90	4.0	-92	50.9	40	14.2	-65
Warangal	28.8	-35	23.5	-53	94.8	64	124.1	124	218.2	203	27.5	-57	73.3	48	53.8	-14
Rayalaseema																
Anantapur	5.1	-42	2.3	-72	10.8	-20	10.6	-32	11.9	-21	2.6	-85	12.6	-14	23.6	69
Chittoor	1.1	-92	8.1	-32	11.9	-37	38.1	54	25.9	-9	3.8	-81	17.1	-33	32.0	33
Cuddapah	12.6	-15	1.1	-92	41.4	126	23.8	1	20.5	-23	3.1	-88	21.3	-6	24.2	-2
Kurnool	17.6	-5	4.0	-77	52.7	117	42.7	74	27.8	2	3.4	-90	29.7	17	15.6	-44

Legends

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

Annexure III
List of Varieties

Delhi

Radish: Versa ki rani, summer long, long chetaki Pusa chetaki;

Coriander: pant Haritama or hybrids.

Spinach: Pusa Bharti.

Sweet corn:Madhuri, Vin orange.

Baby corn : H.M-4.

Sarson saag: Pusa saag-1;

Jammu & Kashmir

Maize : GS-2, Mansar, Trikuta, C-5 and C-8, Super Composite (Mansar), C-6, Vijay, Him-123 and Local Tall

Rice : in Intermediate lower zone Basmati-370, Ranbir Basmati and Local Basmati

Punjab

Rice: PR-121, PR-122, PR-118, PR-116, PR-114, PR-111, PR-113, PR-115 in Western Plain Zone, Basmati 3, Pusa Basmati 1121, Punjab Basmati 2 & Punjab Mehak 1.

Moong: PAU 911, SL 818 and Mash 338 , Mash 114.

Sesamum: Pb Til 1, T C 289, RT 346.

Tomato: Varksha Bahar-1 and Varksha Bahar-2.

Rajasthan

Cucurbits: bottle guard : Pusa Naveen, Arka Bahar, pumpkin - Pusa Vishwas, Arka Chandan, Pusa Alankar, Arka Suryamukhi, **bitter guard** - Arka Harit Pusa Vishesh, Priya and **round gourd-** Arka tinda, Bikaneri green, Punjab-48.

Fruit crops : Guava: Allahabad safeda and Lucknow 49

Pomegranate: Ganesh, Jhalore and Seedless

Orange: Nagpur, Kinnoo and Kurg khasi

Lime: Kagzi, Baramasi, Pramalini and Pant lemon-1

Aonla: Banarshi, Krishana, NA9, NA10 and Chakaiya

Ber: Sonor, Thornless, Katha Alwar, Gola and Seb

short duration varieties of **Moong** – RMG-268, 344, 492, **Cow pea**– RC-19, 101, **Moth** – RMO-40, 225,

Radish: Pusa Chetki

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

Papaya: Red lady 786, Taiwan, Kurg Honey Dew are improved varieties.

Himachal Pradesh

Rice: Pant Dhan-10, Govind, Pant Dhan-12, Ratna, UPR-71-12, Pant Sankar Dhan-1, Narendra Sankar Dhan-2.

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

Cauliflower : Patna snowball and joint snowball.

Uttarakhand

Maize: Hima-129, Navin, Sartaj, VL16, Surya, Him, Ganga Makka-9, 11.

Cow pea- PRA-1, 2, 3 and VL-44.

Grain sorghum : CSH-13 or CSH-15

Pearl millets: MH-179, HHB-60, HHB-67 or composite varieties like HC-4, ICMB-8440, WCC-75.

Uttar Pradesh

Jowar: Mauta-1, Mauta-2, Varsha, C.S.B.-15 and C.S.H.-5, C.S.H-9, C.S.H.-14, C.S.H.-16.

Late sown varieties of rice: Sambha Masoori, Swarna sub-1, Jal-Lahari, Jal-Priya

Medium Late sown varieties of rice: Narendra- 359, Malviya-36, Pant Dhan-4, 10 Narendra Dhan-3112 , Narendra Dhan-2064, Swarna, Suraj-52, Pusa Basmati-1, Haryana Basmati

Early sown varieties of rice: Manhar Pant Dhan- 12, I.R- 50, Narendra- 118, Narendra Dhan- 2026.

Arhar: Paras, U.P.A.S-120, Pusa- 992

Groundnut- Moongfali-1, 13, Girnar-2, Ta-64, Kaushal guchedar, Chandra, Ta- 28

Til- Haryana Til-1, Punjab Til-2

Moong- Pusa Baishakhi

Urad- T-9.

Cabbage- Patgobhi-3, Early Kuwari, Pusa early synthetic, pusa deepali

Bhindi- Varsha Uphar, Arka Anamika, V.R.O-5, R.O-6

Tomato- pusa early, pusa ruby, H.S. 101

Kharif onion- N.- 53, agrifound darkred

Madhya Pradesh

Rice:

a. Medium: IR-36, IR-64, Pusa sugandha-5, MTU-1001

b. Late: Mahsuri, Safari-17, Syamla, Swarna

Maize:

a. Medium: navjot, Arun, H-216, Jm-13, Sartaj, Daccan 107

b. Late: Ganga-11, Prabhat, Trisulta, Daccan 103, Daccan 105

Jowar: JJ-741, JJ-938, JJ-1022, JJ-1041 and CSV-15

Arhar: Laxmi, Pragti, Asha, Jagrati, JKM-7 and JKM-189

Soybean: JS-95-60, JS-93-95, JS-97-52, JS-80-21, JS-335, NRC-37

Onion: Nashik 53, Agrifound dark red, Pusa kalyani

Chhattisgarh

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

Kodomillet: GPUK-03, RBK-155 etc.

Odisha

Ginger: Suprava, Suruchi, Surabhi.

Turmeric: Roma, Surama, Rang, Rashm.

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

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

Small yam: Shreelata, Shreekala.

White Yam: Shreesubhra, Shreepriya, Shreedhanya.

Rice:

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

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

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

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

Cotton: Tulasi, Sigma, Chiruta, Diana, Bunny

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

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

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

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

Sesame: Prachi, Kalika, Kanak, Vinayak.

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

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

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

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

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

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

West Bengal

Pigeon pea: Sweta, Chumi.

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

Banana : Mortoman, Chapa, Kathali, Singapuri,

Tomato & brinjal : P Avinash-2, 448

Maize : Suwan, Deoki

Jharkhand

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

Rice(Medium land): Anjali, Sahbhagi, Naveen, Lalat, Birsamati, Sugandha, BR-10, Pro-Agro 6444, IR-36, IR-64etc.
Rice(Low land): Swarna (MTU-7029), Rajshree, Sambha Mahsuri (BPT- 5204), Birsa Dhan- 202, Birsamati, Pro-Agro 6444, etc.
Arhar: Birsa Arhar-1, Narendra Arhar-1, Bahar, ICPH-2671.
Maize: Birsa Makka -1, Birsa Makka-2, Suwan-1 etc.
Ginger: Vardhaman, Nadia etc.
Turmeric: Rajendra Sona.
Okra: Pusa A-4, Prabhani Kranti, Arka Anamika, Varsa Uphar, Sonal and Sarika.
Marua: A-404, HR-374, Birsa Marua-1 and Birsa Marua-2.
Urd: Pant urd -19, Birsa urd -1
Til: Kanke Safed and Krishna
Kulthi: Madhu, Birsa kulthi-1.
Niger: Birsa niger-1, Birsa niger-2.
Potato: Kufri Ashok, Kufri Kanchan.
Green Peas: Arkel, Kashi Nandini, P.E.-6, Birsa Matar.
Horse Gram: Birsa kulthi-1, G.H.G.-20.
Sweet Potato: Birsa sakarkand-1 and Sri Bhadra.

Bihar

Rice: Rajshree, Rajendra Sweta, Rajendra Mansuri, Swarna, Satyam, Kishori, MTU 7029. Rajendra mehsoori-1, Rajendra bhagwati, MTU-1010, MTU-1001, Hybrid seed-PHB 71, A 6444, PRH 10, Turanta, Prabhat, Saket-4, Richhariya, NDR-97, Pusa 834 and shabhagi
Maize: Deok, Shaktiman 1, Shaktiman 2, Sunkar Makka 3 and Ganga 11
Arhar: Birsa Arhar-1, Narendra Arhar-1, Bahar, ICPH-2671.
Ginger: Vardhaman, Nadia etc.
Turmeric: Rajendra Sona.
Okra: Pusa A-4, Prabhani Kranti, Arka Anamika, Varsa Uphar, Sonal and Sarika.
Marua: A-404, HR-374, Birsa Marua-1 and Birsa Marua-2.
Urad: T-9, Pant U-19, Pant Urd 31, PDU-1.
Radish: Pusa Chetki, Pusa Himani, Pusa Rashmi, Japani Saphed.
Pointed Gourd: Rajendra Parwal-1, Rajendra parwal-2, FPI and 3.
Onion: N-53, Agrifound Dark Red and Basant- 780.

Assam

Sali rice:

Medium to short duration varieties: Satya, Basundhara, Mahsuri, Luit, Pioli, Moniram, Luit, Kapili, Kolong, Dishang.

Flood tolerant varieties: Jalashri, Jalkuwari (for chronically low lying flood affected areas).

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

Pigeon pea: T-21.

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

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

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

Radish: Pusa Desi, Pusa Himani, Pusa Chetki.

Cow pea: RC 19 and TVX 644-02.

Tripura

Aman rice: Gomati, Ranjeet, Swarna, Samba Masuri.

Maharashtra

Adsali Sugarcane: CO-86032 (Neera), Phule-0265, CO-740, COM-88121 and COM-7714.

Gujarat

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

Fodder Sorghum: GJ-39, GJ-40 GJ-41 and GFS-4, GFS-5.

Cluster bean: G.Guar-2 or SG-74.

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 and CO-50

Maize hybrid- Co 6

Groundnut- TMV 13

Castor- YRCH 1

Sorghum- Co-30

Red gram- Co-7