



National Agromet Advisory Service Bulletin



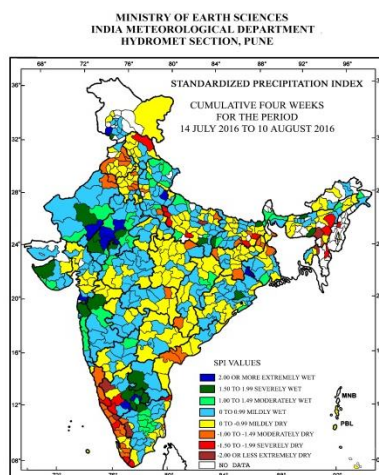
Friday 12th August 2016
(For the period 12th to 16th August 2016)



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

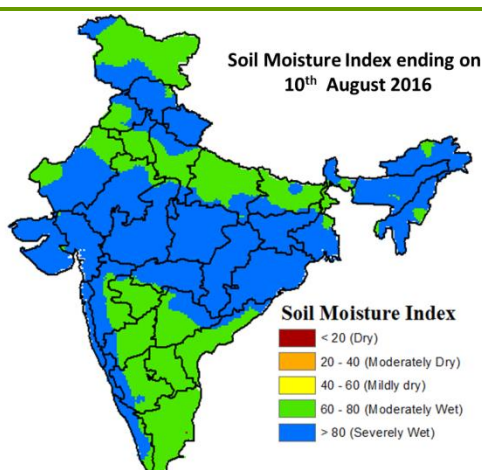
Weblink For
District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Standardised Precipitation Index Four Weekly for the Period 14th July to 10th August 2016



- Extremely/severely wet conditions experienced in few districts of Rajasthan; Baksa district of Assam; East Khasi Hills district of Meghalaya; South 24 Parganas district of West Bengal; Dhenkanal district of Odisha; East Singhbhum district of Jharkhand; Araria, Bhabua districts of Bihar; Mirzapur, Bareilly districts of Uttar Pradesh; Faridabad district of Haryana; Jammu, Rajouri districts of Jammu & Kashmir; Neemuch district of Madhya Pradesh; Valsad, Dadara & Nagar Haveli districts of Gujarat Region; Jamnagar district of Saurashtra & Kutch; Thane district of Konkan & Goa; Nashik district of Maharashtra; Anantapur district of Andhra Pradesh; Krishnagiri district of Tamil Nadu; Bangalore Rural, Kolar, Mandya, Tumkur, Ramanagara, Chickballapur districts of Karnataka.
- Extremely/Severely dry conditions experienced in N. C. Hills, Karbi Anglong districts of Assam; Jaintia Hills district of Meghalaya; Aizwal district of Mizoram, Kohima district of Nagaland; North Tripura district of Tripura; Bhagalpur, Jamui districts of Bihar; Ambedkar Nagar, Farrukhabad, Kannauj, Kanpur Dehat, Kaushambi districts of Uttar Pradesh; Lahaul & Spiti district of Himachal Pradesh; Coimbatore, Kanyakumari, Tiruvallur districts of Tamil Nadu; Hassan, Kodagu, Shimoga districts of Karnataka; Malappuram, Trivandrum, Wynad districts of Kerala.
- Moderately dry conditions experienced in few districts of Punjab, Kerala; Hailakandi districts of Assam; South Dinajpur, Murshidabad districts of West Bengal; Garhwa, Godda, Pakur, West Singhbhum districts of Jharkhand; Khagaria, Nawada, Sheikhpura districts of Bihar; Kushi Nagar, Ghaziabad, Mainpuri districts of Uttar Pradesh; Rohtak, Kurukshetra, Sirsa, Sonapat, Panipat districts of Haryana; Hanumangarh district of Rajasthan; Rewa district of Madhya Pradesh; Bhandara district of Maharashtra; Bijapur district of Chhattisgarh; Guntur, Krishna districts of Andhra Pradesh; Nagapattinam, Nilgiri, Puducherry districts of Tamil Nadu & Puducherry; Uttar Kannada, Udupi districts of Karnataka.
- Rest of the country experienced moderately wet mildly dry/mildly wet conditions.

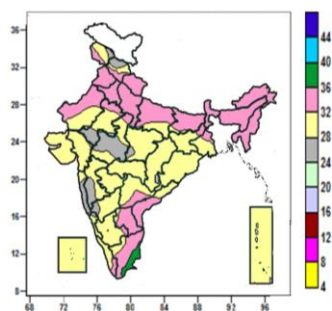
Soil Moisture Index for the week ending on 10th August 2016



- Soil Moisture Index indicates moderately wet condition in Tamil Nadu and Rayalaseema, many parts of Jammu & Kashmir, Punjab, Haryana & Delhi, Uttar Pradesh, Bihar, Marathwada, Interior Karnataka, Telangana, Coastal Andhra Pradesh, some parts of Rajasthan, West Bengal, Madhya Maharashtra and patches of North-East Region and Kerala. Rest of the country shows severely wet condition.

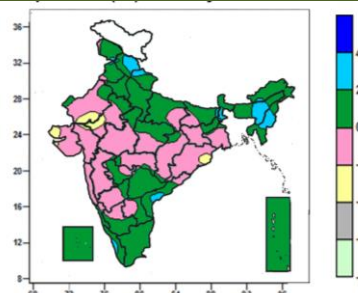
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 10.08.2016

Actual Mean Maximum Temperature (°C) in India for the week ending 10.08.2016



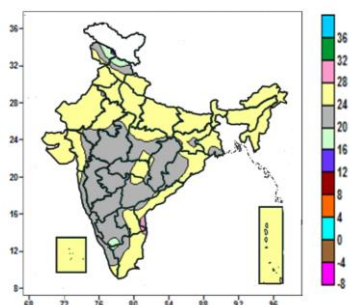
- Mean maximum temperature was between 36 to 40°C over some parts of Tamil Nadu.
- Mean maximum temperature was between 28 to 36°C over rest of the country except over many parts of Konkan & Goa, West Madhya Pradesh, some parts of Himachal Pradesh, East Rajasthan, Madhya Maharashtra and isolated pockets of Jammu & Kashmir, West Rajasthan, East Madhya Pradesh, Chhattisgarh, Coastal Karnataka and North Interior Karnataka, where it was between 24 to 28°C.

Mean Maximum Temperature (°C) Anomaly in India for the week ending 10.08.2016



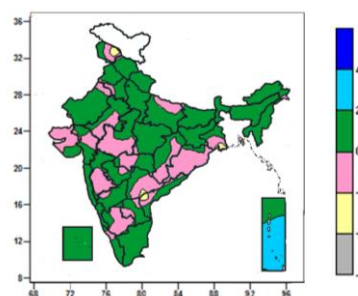
- Mean maximum temperature was above normal by 2 to 4°C over Manipur, many parts of Himachal Pradesh, some parts of Uttarakhand, Assam & Meghalaya, Sub-Himalayan west Bengal and isolated pockets of Jammu & Kashmir, Punjab, Bihar, Arunachal Pradesh, Mizoram, Coastal Andhra Pradesh and Kerala.
- It was normal to near normal over rest of the country except some parts of Rajasthan and isolated pockets of Gujarat and Odisha where it was below normal by 2 to 4°C.

Actual Mean Minimum Temperature (°C) in India for the week ending 10.08.2016



- Mean minimum temperature was between 12 to 20°C over some parts of Jammu & Kashmir, Himachal Pradesh and isolated pockets of South Interior Karnataka, Kerala and Tamil Nadu.
- Mean minimum temperature was between 20 to 28°C over rest of the country except isolated pockets of Coastal Andhra Pradesh, Rayalaseema and Tamil Nadu where it was below normal by 28 to 32°C.

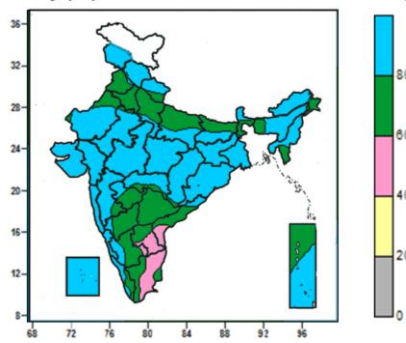
Mean Minimum Temperature (°C) Anomaly in India for the week ending 10.08.2016



- Mean minimum temperature was above normal by 2 to 4°C over many parts of Andaman & Nicobar islands.
- Mean minimum temperature was normal to near normal over rest of the country except some parts of Jammu & Kashmir and isolated pockets of Gangetic West Bengal, Telangana and Coastal Andhra Pradesh where it was below normal by 2 to 4°C.

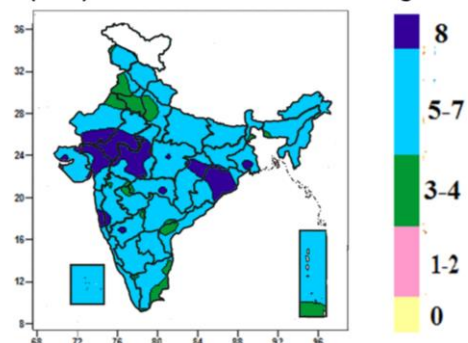
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 10.08.2016

Relative Humidity (%) over India for the week ending 10.08.2016



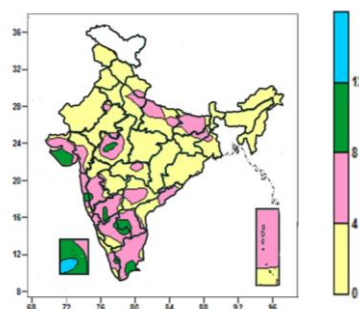
- Mean Relative Humidity was above 80% over the country except Telangana, Haryana & Delhi, Rayalaseema, Tamil Nadu, many parts of Punjab, Uttar Pradesh, Sub Himalayan West Bengal, Mizoram, Marathwada, Interior Karnataka, Coastal Andhra Pradesh, some parts of Uttarakhand, West Rajasthan, Bihar, Assam, Arunachal Pradesh, Madhya Maharashtra, Vidarbha, Kerala and Andaman & Nicobar Islands and isolated pockets of East Rajasthan, Chhattisgarh, Odisha where it was between 40 to 80%.

Cloud amount (okta) over India for the week ending 10.08.2016



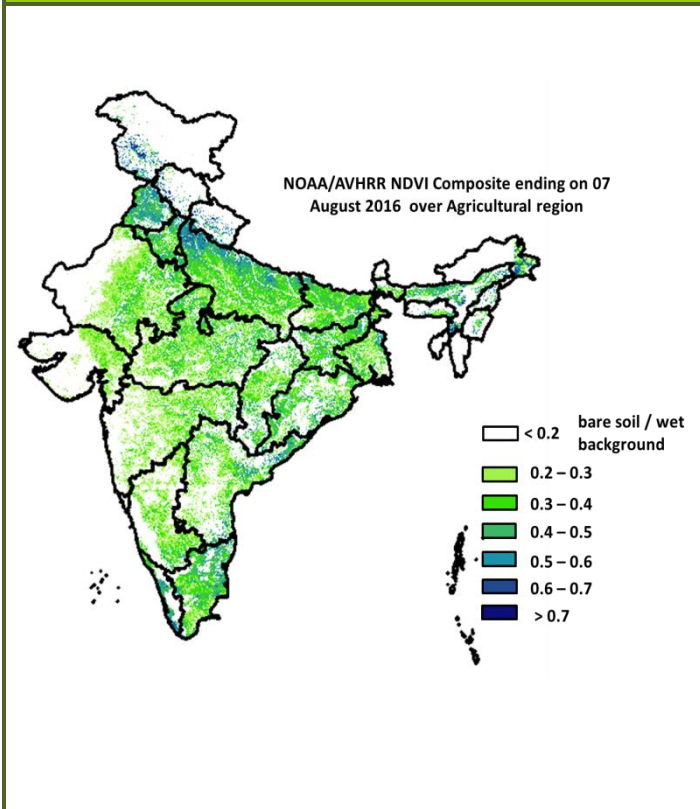
- Sky remained overcast (8 okta) over many parts of East Rajasthan, West Madhya Pradesh, Gujarat Region, Odisha, some parts of West Rajasthan, Chhattisgarh, Konkan and isolated pockets of Saurashtra & Kutch, East Madhya Pradesh, Gangetic West Bengal, Vidarbha, Madhya Maharashtra and North Interior Karnataka.
- Sky remained generally cloudy (5-7okta) over rest of the country except many parts of Punjab, Haryana & Delhi, some parts of West Rajasthan, West Uttar Pradesh, Coastal Andhra Pradesh, Tamil Nadu, Andaman & Nicobar Islands and isolated pockets of Jammu & Kashmir, Sub-Himalayan West Bengal, Assam, Madhya Maharashtra, Vidarbha, Marathwada, North Interior Karnataka and Telangana where it was partly cloudy (3-4 okta).

Wind speed (knots) over India for the week ending 10.08.2016



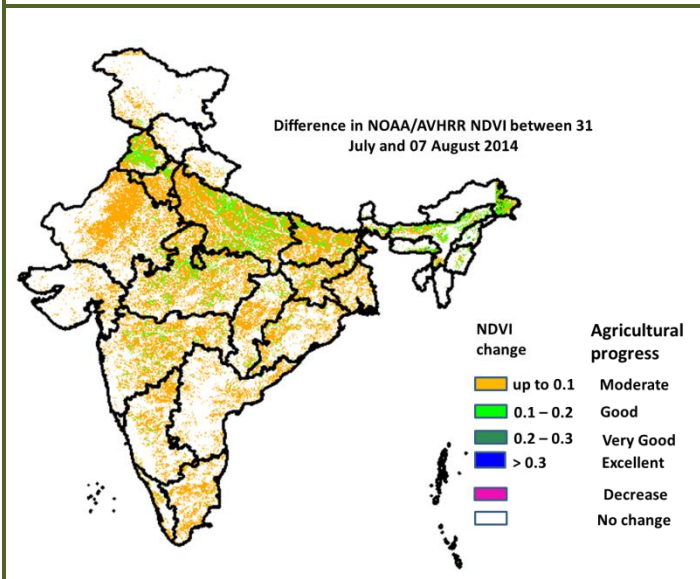
- Mean wind speed was between 12 to 16 knots over some parts of Lakshadweep.
- Mean wind speed was between 8 to 12 knots over many parts of Lakshadweep, Saurashtra, some parts of Rayalaseema, Tamil Nadu and isolated pockets of West Madhya Pradesh, Konkan, Madhya Maharashtra, Interior Karnataka, Kerala.
- Mean wind speed was between 0 to 4 knots over rest of the country except many parts of Bihar, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, Interior Karnataka, Rayalaseema, Tamil Nadu, Andaman & Nicobar Islands, some parts of Uttarakhand, Uttar Pradesh, Jharkhand, West Madhya Pradesh, Gujarat Region, Vidarbha, Coastal Karnataka, Telangana, Coastal Andhra Pradesh, Kerala, Lakshadweep and isolated pockets of East Rajasthan, Odisha, Gangetic West Bengal, Marathwada where it was between 4 to 8 knots.

NOAA/AVHRR NDVI COMPOSITE ENDING ON 7th AUGUST 2016 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is good in most parts of Kerala, North Tamil Nadu, Coastal Andhra Pradesh, some patches in northwest Uttar Pradesh and Punjab, where NDVI varies from 0.5 to 0.7. NDVI is moderate in Bihar, Haryana, Gujarat, parts of West and East Uttar Pradesh, East Rajasthan, East Madhya Pradesh, Telangana, Andhra Pradesh, Tamil Nadu, Odisha, West Bengal and Jharkhand (NDVI 0.3 to 0.5). Agricultural growth was below moderate (< 0.3) over some patches of west Rajasthan, central Madhya Pradesh, North Interior Karnataka and some patches in Maharashtra.

DIFFERENCE IN NOAA/AVHRR NDVI BETWEEN 31st JULY AND 7th AUGUST 2016



- Good progress was observed in Punjab, North Haryana, patches in Uttar Pradesh, Madhya Pradesh and North east region where, NDVI change ranges from 0.1-0.2. Moderate progress in NDVI was observed in Rajasthan, Haryana, Uttar Pradesh, Bihar and patches in west Bengal, Odisha, Andhra Pradesh, Tamil Nadu, Maharashtra and Gujarat.

- INSAT 3A CCD NDVI composite maps for the week ending on 10th August 2016 for different States are given in Annexure II.

Monsoon Watch

- Yesterday, southwest monsoon was vigorous over West Rajasthan and Gangetic West Bengal and active over Haryana, Chandigarh & Delhi, Himachal Pradesh, Odisha and East Rajasthan.

Weather Forecast for next 5 days valid upto 0830 hours of 17th August 2016

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.

5 Day Rainfall Forecast (MID DAY) 12th August 2016

Met Sub-divisions	12 Aug	13 Aug	14 Aug	15 Aug	16 Aug
1. Andaman & Nicobar Islands	FWS	FWS	FWS	FWS	WS
2. Arunachal Pradesh	SCT	FWS	WS	FWS	FWS
3. Assam & Meghalaya	SCT	FWS	WS	WS	FWS
4. N.M.M. & T.	SCT	SCT	FWS	FWS	FWS
5. S.H. West Bengal & Sikkim	FWS	WS	WS	WS	FWS
6. Gangetic West Bengal	FWS	SCT	FWS	WS	WS
7. Odisha	FWS	FWS	FWS	WS	FWS
8. Jharkhand	WS	SCT	SCT	FWS	WS
9. Bihar	FWS	SCT	SCT	FWS	WS
10. East Uttar Pradesh	WS	WS	WS	WS	WS
11. West Uttar Pradesh	WS	WS	WS	FWS	FWS
12. Uttarakhand	WS	WS	WS	WS	WS
13. Haryana, Chd & Delhi	FWS	FWS	FWS	FWS	SCT
14. Punjab	SCT	SCT	SCT	SCT	ISOL
15. Himachal Pradesh	WS	FWS	FWS	FWS	SCT
16. Jammu & Kashmir	SCT	SCT	SCT	SCT	ISOL
17. West Rajasthan	SCT	ISOL	ISOL	ISOL	ISOL
18. East Rajasthan	FWS	FWS	FWS	SCT	ISOL
19. West Madhya Pradesh	FWS	FWS	FWS	SCT	SCT
20. East Madhya Pradesh	WS	WS	FWS	FWS	FWS
21. Gujarat Region	SCT	SCT	ISOL	ISOL	ISOL
22. Saurashtra & Kutch	ISOL	ISOL	ISOL	ISOL	ISOL
23. Konkan & Goa	WS	FWS	FWS	FWS	FWS
24. Madhya Maharashtra	SCT	SCT	ISOL	ISOL	ISOL
25. Marathwada	ISOL	ISOL	ISOL	ISOL	ISOL
26. Vidarbha	SCT	SCT	ISOL	ISOL	ISOL
27. Chhattisgarh	WS	WS	FWS	SCT	FWS
28. Coastal Andhra Pradesh	ISOL	ISOL	ISOL	SCT	SCT
29. Telangana	ISOL	ISOL	ISOL	ISOL	ISOL
30. Rayalaseema	ISOL	ISOL	ISOL	ISOL	ISOL
31. Tamil Nadu & Puducherry	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	WS	WS	WS	WS	WS
33. North Interior Karnataka	ISOL	ISOL	ISOL	ISOL	ISOL
34. South Interior Karnataka	FWS	FWS	SCT	SCT	SCT
35. Kerala	FWS	FWS	WS	WS	WS
36. Lakshadweep	SCT	SCT	SCT	SCT	FWS

% Station Reporting Rainfall

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

Weather Warning during next 5 days

- 12 August (Day 1):** Heavy to very heavy rain at a few places over north Chhattisgarh and East Madhya Pradesh; heavy at a few places with heavy to very heavy at isolated places over East Uttar Pradesh; heavy to very heavy rain very likely at isolated places over Jharkhand and heavy at isolated places over Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Rajasthan, northwest Madhya Pradesh, south Chhattisgarh and Bihar.
- 13 August (Day 2):** Heavy to very heavy rain at isolated places over East Madhya Pradesh and north Chhattisgarh; heavy at a few places with heavy to very heavy at isolated places over East Uttar Pradesh;

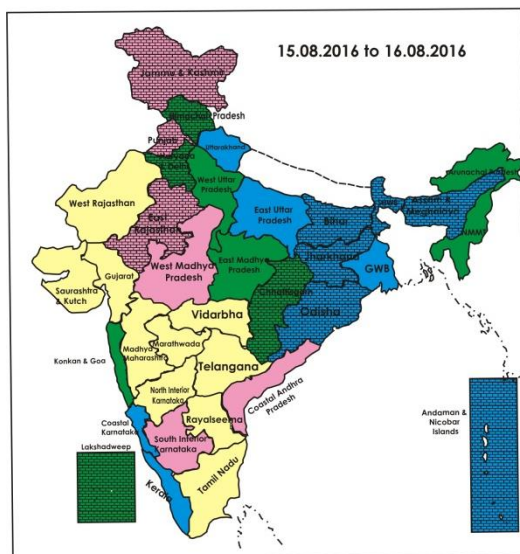
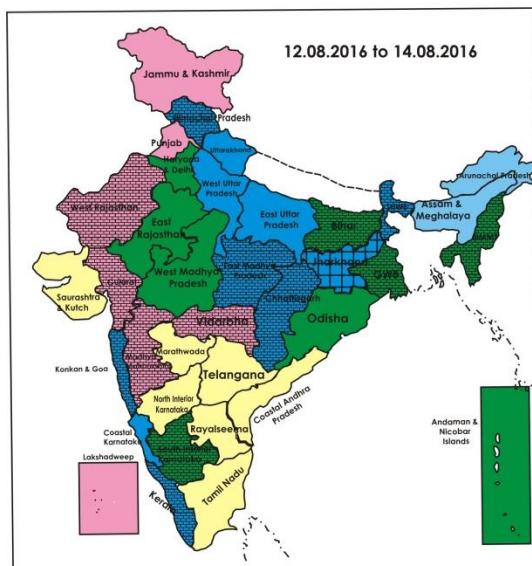
heavy at isolated places over Uttarakhand, Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Rajasthan, northwest Madhya Pradesh, south Chhattisgarh and Assam & Meghalaya.

- **14 August (Day 3):** Heavy to very heavy at isolated places over Uttarakhand and Uttar Pradesh; heavy at isolated places over northwest Madhya Pradesh, East Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya and Coastal Karnataka.
- **15 August (Day 4):** Heavy rain very likely at isolated places over Uttarakhand, Uttar Pradesh, West Bengal & Sikkim, Odisha, Assam & Meghalaya, Coastal Karnataka and Kerala.
- **16 August (Day 5):** Heavy rain very likely at isolated places over Uttarakhand, East Uttar Pradesh, Chhattisgarh, Gangetic West Bengal, Coastal Karnataka and Kerala.

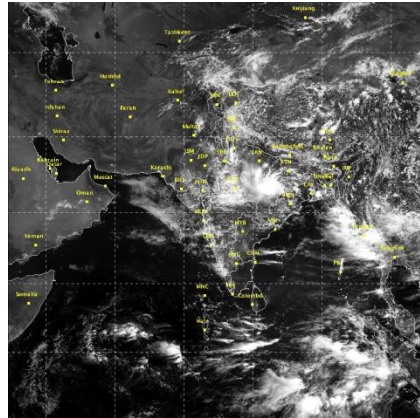
Weather Outlook for subsequent 2 days from 17th to 19th August 2016

- Rain at most places very likely over northeastern states and east India.
- Rain at many places very likely over northwest India, along west coast and Andaman & Nicobar Islands and at a few places over central & West India.
- Rain at isolated places very likely over remaining parts of the country.

Weather Forecast Map (valid upto 0830 hours of 17th August, 2016)



Satellite image dated, 12.08.2016 0600 UTC



Salient Advisories

- In **Madhya Pradesh**, drain out excess water from vegetables, maize and soybean crop fields in East Madhya Pradesh and drain out excess water from soybean, red gram and vegetable fields in Neemuch, Ratlam, Vidisha and Hoshangabad districts in West Madhya Pradesh.
- Due to heavy rain in **Rajasthan** during last 3-4 days, there may be water logging in standing kharif crops, drain out excess water from pearl millet, maize, sorghum, maize, moong, urd, cotton, cluster bean, moth bean, sesame and groundnut crop fields. In East Rajasthan, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone, continue sowing of short duration varieties of kharif crops along with intercropping like Maize-Urd (2:2), Maize-Moong/Cowpea (1:1) or Maize-Cluster bean (2:2) and nursery sowing of brinjal, tomato, rainy onion, cauliflower and chilli after current spells of heavy rain. In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts, complete sowing of sorghum, pearl millet, guar, sesame, mung, urad, maize. For late sowing prefer early maturing varieties of green gram, moth bean and urad after current spells of heavy rain.
- In Lower Brahmaputra and Central Brahmaputra Valley Zone of **Assam**, continue transplanting of Sali rice. For flood affected areas farmers are advised the following contingency measures:
 - Raising of community nursery for late planting with old seedlings of the varieties like Profulla and Gitesh (If more than 50% damaged).
 - Direct seeding with photo insensitive short duration variety /Wet seeding of sprouted seeds @ 75-80 kg/ha of short to medium duration varieties like Disang, Luit, (100 days) Kapili, Kalong (120 days) up to mid of September.
 - Late and staggered planting with the old seedlings (50-60 days old seedlings) of the varieties like Profulla and Gitesh (If the field is heavily damaged) up to mid of September.
 - Adoption of submergence tolerance varieties like Jalashree, Jalkuwari, and Swarna Sub 1 for repeat flood prone areas.
 - In partially affected fields, drain excess water and apply 1/3rd N₂ + 50% K₂O as top dressing during the tillering stage.
- In **Vidarbha**, maintain 2-3 cm water level in already transplanted rice fields in Nagpur, Bhandara, Gondia, Chandrapur and Gadchiroli districts. Bunding of rice field should be done and remove all weeds on the bund. Farmers are advised to undertake intercultural operations, application of fertilizers and plant protection measures in soybean, cotton, red gram and green gram on a non rainy day. In unsown/delayed sowing areas, undertake sowing of pigeon pea (C-11, Asha, PKV- Tara and BSMR-736 with closer 60x20 spacing). Alternative crops include

sunflower, Pearl millet, Sesame, Castor or intercropping systems pearl millet + pigeon pea (4:2), sunflower + pigeon pea (2:1) or sesame + pigeon pea (4:1) intercropping systems till 2nd week of August.

- As rain/thundershowers very likely at most/many places over **East Madhya Pradesh** during the period and over Chhattisgarh from 12th to 14th & 16th, at many places over West Madhya Pradesh from 12th to 14th August, it is advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
- As heavy to very heavy rain very likely at a few/isolated places over **north Chhattisgarh** and **East Madhya Pradesh** on 12th & 13th and heavy rain at isolated places over south Chhattisgarh on 12th, over Chhattisgarh on 16th, over north west Madhya Pradesh on 12th to 14th & over East Madhya Pradesh on 14th August, provide adequate drainage in standing crop fields.
- As rain is very likely at most places over **East Uttar Pradesh** and **Uttarakhand**, most/many places over **west Uttar Pradesh** during the period, over **Himachal Pradesh** and **Haryana, Chandigarh & Delhi** from 12th to 15th and over **East Rajasthan** from 12th to 14th August, it is advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
- As heavy/heavy to very heavy rain very likely at isolated places over **East Uttar Pradesh** from 12th to 16th, and heavy rain likely at isolated places over **Uttarakhand** on 12th & 16th, over **Himachal Pradesh** on 12th, west Uttar Pradesh from 12th to 15th, over East Rajasthan on 12th & 13th, over Haryana, Chandigarh & Delhi on 12th & 13th August, provide adequate drainage in standing crop fields to avoid water stagnation.
- In Palakkad, Ernakulam and Thrissur districts of Central Zone of **Kerala**, paddy is in panicle initiation stage. There is a chance for Sheath blight disease during rainy season. Apply Propiconazole 25 EC @ 500 ml per 1 hectare to control sheath blight.
- Normal agricultural activities is continued in rest part of the country utilising the realised and expected rainfall.

Detailed Zonewise Agromet Advisories

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



Banana



Rice



Sugarcane



Red gram

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala except Kollam and Thiruvananthapuram, all districts of Coastal Karnataka, Belagavi and Dharwad districts of North Interior Karnataka, Chikkamagaluru, Kodagu and Shivamogga districts of South Interior Karnataka, in Adilabad, Karimnagar, Khammam and Warangal districts of Telangana. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers likely at most places over Coastal Karnataka and at most/many places over Kerala during the period, at many places over South Interior Karnataka on 12th & 13th August, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Undertake rain water harvesting.
 - As heavy rain is very likely at isolated places over Coastal Karnataka on 14th to 16th and over Kerala on 15th & 16th August, provide adequate drainage in standing crop fields to avoid water stagnation.
 - **Kerala:**
 - In Kerala, undertake harvesting of Nendran bananas and tapping of rubber in Thiruvananthapuram district and continue planting of rubber seedlings in Pathanamthitta district. Remove suckers immediately after harvesting of Nendran bananas to reduce incidence of rhizome weevil.
 - In Kannur, Kasaragod, Malappuram and Kozhikode districts, undertake nursery sowing vegetables and land preparation for upland cultivation of vegetables. Continue planting of banana cultivars like Poovan, Palayankodan, Robusta etc.

- In Palakkad, Ernakulam and Thrissur districts of Central Zone of Kerala, paddy is in panicle initiation stage. There is a chance for Sheath blight disease during rainy season. Apply Propiconazole 25 EC @ 500 ml per 1 hectare to control sheath blight.
- In Alappuzha district, present weather condition is congenial for sheath blight incidence in rice fields where the plant population is high. To control, remove the severely affected plants in order to provide air circulation into the crop canopy and drain the water completely from the field for reducing the spread of the disease to the nearby plants after current spells of rain.
- In Kannur, Kasaragod, Malappuram and Kozhikode districts, for effective management of phytophthora foot rot in pepper, drench pepper vines with 0.2 per cent Copper Oxychloride @ 5-10 litres per vine over a radius 45-50cm, after current spells of rain.
- In Palakkad, Ernakulam and Thrissur districts, prevailing weather conditions are congenial for incidence of pollu beetle in pepper. To control, apply Quinalphos @ 2 ml/litre of water after current spells of rain.
- In Kerala, during rainy season, there is a chance for fruit rot disease in nutmeg and splitting of fruit before ripening due to the deficiency of Potassium and Boron. To control this, apply 1% Bordeaux mixture.
- **Karnataka:**
 - Maintain 2-3 cm water level in transplanted rice in Karnataka.
 - Continue transplanting of rice in Uttar Kannada district with realised rainfall. Complete transplanting of rice and ragi in Chikkamagaluru and Shivamogga districts of Southern Transition Zone with realised rainfall. Carry out intercultural operations in red gram crop.
 - Complete sowing of ragi in Chikaballapura and Kolar districts, continue sowing of short duration crops like ragi and maize in Bengaluru Rural, Bengaluru Urban, Ramnagara districts of Eastern Dry Zone under sufficient moisture condition. Carry out intercultural operations in earlier sown maize, groundnut and red gram crops to control the weeds and to increase the moisture availability to crops. Undertake residue mulching in red gram and maize by using the residues of weeds, gliricidia and other green manure crops grown on the bunds, borders and along the drainage lines. If wilt disease is noticed in red gram field, drenching with Carbendazim 50 WP @ 2 g/litre of water on a non rainy day is advised .
 - Continue transplanting of rice and ragi in Kodagu, Chamrajnagar, Mandya, Mysuru and districts of Southern Dry Zone. Drain out excess water from transplanted rice fields in Kodagu district.
 - Carry out intercultural operations in maize, cotton, groundnut and sugarcane crops in Dharwad, Belagavi and Haveri districts of North Transition Zone. Take up Foliar Spray of 0.5 % Ferrous Sulphate / 0.5 % Zinc Sulphate to correct Iron / Zinc deficiency respectively in groundnut crop.
 - Continue transplanting of rice in Ballari, Kalaburgi, Koppal, Raichur and Yadgir districts of North East Dry Zone under optimum moisture condition.
 - Undertake harvesting of matured green gram in clear weather. Continue sowing of minor millet in Vijayapura, Gadag and Bagalkote districts of North Dry Zone under sufficient moisture condition. Carry out weeding/intercultural operations in standing crops like bajra, sunflower, cotton, groundnut etc.
 - Complete transplanting of rice in Bidar district of North East Transition Zone under optimum moisture condition. Carry out intercultural operations in soybean and pigeon pea to conserve moisture.
 - Drench Copper Oxychloride 50 WP @ 3g and Streptocycline @ 0.5g /litre of water for effective control of stem rot in ginger in Bidar district.
 - Infestation of leaf webber was found in red gram in North East Dry Zone; for control, spray Profenophos 2 ml /litre of water Due to cloudy weather there is chance of blast infestation in paddy nursery in Southern Dry Zone; to manage, spray Carbendazim @ 1g/litre or Tricyclozole @ 0.6 g/litre of water. If the paddy nursery gets infected by blast avoid applying urea as top dress on non-rainy day.
- **Andhra Pradesh:**
 - In Srikakulam, Vizianagaram and Vishakapatnam districts, continue nursery sowing and direct sowing of rice. Continue pre-emergence spraying of Pretilachlor with safener @ 400 ml/acre within three days of sowing to control weed problem in direct sown rice.
 - In East Godavari district, maintain shallow depth of water (2-3 cm) during tillering phase of rice crop, avoid top dressing of Phosphorus or Phosphorus containing complex fertilizers and drain out excess water from groundnut fields.
 - In West Godavari, Krishna, Prakasam, Guntur and Krishna districts, continue nursery sowing of rice, sowing of millets, maize, red gram, black gram, green gram and cotton.
 - In Rayalaseema, as the cut-off date for sowing of groundnut is 31st July and there will be a considerable reduction in yield under delayed sowings during August month, continue sowing of the following contingency crops- sorghum(CSH-9,CSH-13,CSH-14,PSV-15,PSV-19), bajra(ICTP 8203,PBH 3), Korra(Prasad, Krishnadevaraya, Narashimharaya, Srilakshmi, Surya nandi), cowpea(C 152 GC3 C0-4 CO-5), sunflower(NDSH1 KBSH1 KBSH 44 DRSH 1), green gram(LGG 407 LGG 450 LGG 460 MGG 295 ML 267) and field bean(TFB-1 TFB-5). In Chittoor district, continue transplanting of rice.
 - In Kadapa and Nellore districts, prevailing weather condition (partially cloudy with light rains) is congenial for incidence of sucking pests (jassids and mealy bugs) in cotton.To control, To control, spray Prophenophos or Diphenthiuron @ 1.25 g/litre of water.
 - In Srikakulam, Vizianagaram and Vishakapatnam districts, prevailing weather conditions(high humidity and heavy

rains) are congenial for incidence of alternaria leaf spot and stem blight in sesamum. To control, drench with Copper Oxy Chloride @ 3 g/litre of water, when noticed.

- In Kurnool district, sucking pest incidence was noticed in cotton. To control, spray Monocrotophos @ 1.6ml/litre of water.
- In Coastal Andhra Pradesh, yellow mosaic virus incidence is observed in Greengram and Blackgram crops in Guntur, West Godavari and Nellore districts. Farmers are advised to pull out the infested plants and take control measures for whitefly by spraying Acetamiprid @ 0.6gm/litre or acephate @ 1.5g/lit of water. They can keep yellow sticky traps in the field to monitor and trap whiteflies.
- In Rayalaseema, sucking pest incidence (thrips, jassids) observed in groundnut. Spraying of Monochrotophos @ 1.6g/l or Dimethoate 2ml/l or Imidacloprid @ 0.3 ml/litre or Thiomethaxam 0.2g/litre of water can be taken up for control.

▪ **Telangana:**

- In Karimnagar, Nizamabad and Khammam districts (North Telangana Zone), continue nursery sowing of extra short duration varieties of rice (Prathyumna, Varalu, Anjana) up to first fortnight of August.
- In Mahabubnagar, Nalgonda, Medak, Rangareddy, Khammam and Warangal districts (South Telangana Zone), undertake transplanting of rice and drain out excess water from the fields of rainfed crops where heavy rainfall has been received. To prevent seed borne diseases, treat the seeds with fungicides before sowing and drench vegetable nursery bed with Copper-Oxy-Chloride @ 3 g/litre of water.
- In Mahabubnagar, Nalgonda, Medak, Rangareddy, Khammam and Warangal districts (South Telangana Zone), incidence of sucking pests is noticed in cotton. To control, apply Monocrotophos and water in 1:4 ratio with soft brush on tender part of the stem at 20, 40 and 60 days after sowing.
- In Karimnagar, Nizamabad and Khammam districts (North Telangana Zone), gall midge incidence was noticed in rice. To control, apply Carbofuran 3G granules @ 10 kg or Cartap hydrochloride @ 8 kg/acre in 1– 2 inches of standing water.

▪ **Tamil Nadu:**

- In Ariyalur, Nagapattinam, Perambalur, Thanjavur, Thiruvarur and Trichy districts, continue land preparation and sowing of Samba rice (varieties CR 1009 and ADT 50) after seed treatment with Pseudomonas Fluorescence 10g/kg of seed before sowing .
- In Coimbatore, Tiruppur, Erode districts, provide dust mulching to conserve subsurface soil moisture to tackle soil moisture stress in groundnut sown in drylands in Pollachi taluka of Coimbatore district. Continue land preparation and sowing for irrigated winter Combodia cotton.
- In Tuticorin, Virudhunagar and Toothukudi districts, due to high prevailing high wind speed, provide irrigation to garden land crops to prevent plant desiccation and moisture stress. Continue giving support to banana by using casuarina poles for preventing damage to the crops due to high wind speed.
- In Nammakal, Salem, Dharmapuri and Krishnagiri districts, prevailing weather conditions are congenial for rhizome rot incidence in turmeric crop at two leaves stage. To control, spray Pseudomonas and T. viride @ 2g/litre of water or Propiconozal @ 2g/litre of water.
- In Nilgiris district, dissolve one kg of shell lime in one litre of water and paint on the tree bark to prevent lichen growth on fruit trees.
- In Kanyakumari district, provide newly planted banana trees, since there is no significant rainfall during the coming five days.
- In Tuticorin, Virudhunagar and Toothukudi districts, stem borer incidence is observed in rice. To control spray. Phosalone 35 EC @ 1500 ml/ha or Chlorpyrifos 20% EC @ 1.25 litre of water /ha.
- Suitable varieties for sowing are given in Annexure III.

❖ **Animal Husbandry**

- In the Western Zone of Tamil Nadu, since the anticipated temperature is more than 32°C, provide enough drinking water to both dairy and work animals and as well as to poultry birds.
- In the Southern Zone of Tamil Nadu, avoid feeding wet fodders to the animals to prevent detrimental effect caused by aflatoxin and other micotoxin.

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



Banana



Rice



Groundnut



Jute

- **Realised Rainfall:** Rainfall occurred in Changlang, East Kameng, Lohit, Lower Dibang Valley, Papumpara, Tawang, Tirap and West Kameng districts of Arunachal Pradesh, in Baksa, Barpeta, Bongaigaon, Cachar, Chirang, Dibrugarh, Goalpara, Golghat, Hailakandi, Jorhat, Kamrup(Rural), Kamrup(Metro), Karimganj, Lakhimpur, Nowgaon, Nalbari, Sonitpur, Sibsagar and Tinsukia districts of Assam, in East Khasi Hills district of Meghalaya, in Aizwal, Saiha and Serchhip districts of Mizoram, in Imphal West district of Manipur, in Dimapur, Kohima and Phek districts of Nagaland and Dhalai district of Tripura. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers likely at most/many places over Arunachal Pradesh and Assam & Meghalaya from 13th to 16th and over Nagaland, Manipur, Mizoram and Tripura from 14th to 16th August, it is advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
 - As heavy rain very likely at isolated places over Arunachal Pradesh on 14th and over Assam & Meghalaya from 13th to 16th August, provide adequate drainage in standing crop fields.
 - **Assam, Meghalaya & Arunachal Pradesh:**
 - In Dibrugarh, Golghat, Jorhat, Sivsagar and Tinsukia districts of Upper Brahmaputra Valley Zone, in flood affected areas farmers are advised to select local varieties like Monoharsali, Andreusali, Prasadbhog etc for seedling raising. Sow the seeds of these varieties in the nursery beds at the earliest. In transplanted rice fields, some hills of rice crop may be damaged due to flood or any other reason. Fill those gaps by splitting healthy hills or by same seedlings if available in the nursery. Continue transplanting of *sali* rice seedlings in non-flood affected areas. Continue land preparation and sowing of sesame.
 - In Nagaon and Marigaon districts of Central Brahmaputra Valley Zone of Assam, continue land preparation and sowing of green gram and black gram, arhar and sesame at optimum soil moisture conditions. Continue harvesting of early and timely sown olitorius jute.
 - In Lower Brahmaputra and Central Brahmaputra Valley Valley Zone of Assam, continue transplanting of Sali rice. For flood affected areas farmers are advised the following contingency measures:
 - Raising of community nursery for late planting with old seedlings of the varieties like Profulla and Gitesh (If more than 50% damaged).
 - Direct seeding with photo insensitive short duration variety /Wet seeding of sprouted seeds (@75-80 kg/ha) of short to medium duration varieties like Disang, Luit, (100 days) Kapili, Kalong (120 days) up to mid of September.
 - Late and staggered planting with the old seedlings (50-60 days old seedlings) of the varieties like Profulla and Gitesh (If the field is heavily damaged) up to mid of September.
 - Adoption of submergence tolerance varieties like Jalashree, Jalkuwari, and Swarna Sub 1 for repeat flood prone areas.
 - In partially affected fields, drain excess water and apply 1/3rd N₂ + 50% K₂O as top dressing during the tillering stage.
 - In Karimganj, Hailakandi and Cachar districts of Barak valley Zone of Assam, complete transplanting of Sali rice. If the Sali rice field get affected by the flood water those farmers are advised to sowing of early pulse crop like black gram and green gram in the field. Continue planting of banana sucker. Undertake transplanting of the seedling of cauliflower in the main field.
 - In Karbi Anglong and NC Hills districts of Hill Zone of Assam, continue sowing of arhar, sesame, radish and nursery sowing of early cauliflower. Complete transplanting of Sali rice at the earliest. Replanting of dead hills or gap filling with seedlings of similar age should be done within 7-10 days of transplanting. To avoid damping off of seedlings of cauliflower, the seed beds should be drenched with 0.01% Captan or 4% Formalin solution before sowing. Seed treatment with Captaf or Brassicol @ 3g/kg of seed should be done.
 - In Dhemaji, Darrang, Lakhimpur and Sonitpur districts of North Blank Plain Zone of Assam, continue land preparation for sowing of green gram and black gram. Undertake gap filling within 7-10 days after transplanting with seedling of same age. Undertake nursery sowing of early cauliflower.
 - In East Garo Hills, East Khasi Hills, Jaintia Hills, Ri-Bhoi, South Garo Hills, West Garo Hills and West Khasi Hills districts of Meghalaya, continue transplanting of Sali/kharif rice. Undertake replanting of dead hills or gap filling with seedlings of similar age within 7-10 days of transplanting.
 - In Arunachal Pradesh, undertake weeding in WRC in order to enhance tillering and growth for higher yield. Undertake sowing of black gram and green gram.
 - In Arunachal Pradesh, for management of soft rot in ginger, undertake drenching of Metalaxyl-8% + Mancozeb 64% WP @ 2.5 g per litre of water. Also spray Carbendazim/Mancozeb @ 1-2 ml/litre of water against leaf spot/tikka disease in groundnut at pegging stage. Go for manual picking of Blister beetle in pulses without delay because the incidence of the pest during flowering stage cause huge lose in harvest. Undertake plant protection measures after current spells of rain
 - In Hill Zone of Assam, apply Bordeaux mixture @ 0.5-1% as soil drench and spray at 30 and 15 days interval respectively to control Phytophthora leaf rot and foot rot in Betelvine.
 - In Lower Brahmaputra Valley Zone of Assam, apply recommended doses of Phosphamidon, Fenitrothion, Endosulfan, Monocrotophos to control stem borer in sugarcane at vegetative stage. Burying or burning of infested canes can also checked spreading of the disease. Also apply Chloropyriphos 20EC (0.02%), Quinolphos 25EC

(0.025%), Monocrotophos 40EC (0.04%), Phosphamidon 100EC (0.025%), Phosalone-35EC (0.025%), Dichlorvos 100EC (0.035%), Carbofuran 3G (0.05%) against hispa in Sali rice.

- In Barak valley Zone of Assam, due to high relative humidity, there is chance of mosaic and leaf curl in papaya. Rouge out the affected plant or spray of Rogar @ 0.1%.
- In Meghalaya, spray Phosphamidon 100 EC @ 0.5 ml/litre of water against aphid/ leaf miner in groundnut. For management of pests like hairy caterpillar, semilooper, leaf roller and flea beetle in soybean, spray Dichlorvos 100 EC @ 0.5 ml/litre or Chlorpyrifos 20 EC @ 1 ml/litre. Undertake plant protection measures after current spells of rain.

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

- In Dimapur, Kephire, Kohima, Longleng, Mokokchung, Mon, Paren, Phek, Tuensang, Wokha and Zunheboto districts of Nagaland, timely field sanitation should be done for all the crops. Always use freshly prepared neem seed kernel extract as pesticide. Apply pesticides only when required and not more than the recommended dose. Undertake harvesting of maize in clear weather.
- In Bishnupur, Chandel, Churachandpur, Imphal East, Imphal West, Senapati, Tamenglong, Thoubal and Ukhrul districts of Manipur, continue nursery raising of early cauliflower. Undertake harvesting of matured cobs of maize.
- In Aizwal, Champhai, Chhimituipui, Kolasib, Lawngtlai, Lunglei, Mamit, Saiha and Serchhip districts of Mizoram, continue planting of khasi mandarin/acid lime. Continue harvesting of pre-kharif maize in clear weather.
- In Dhalai, North Tripura, South Tripura and West Tripura districts of Tripura, undertake harvesting of *Aus* rice. In SRI field of *Aman* rice maintain aerobic condition through proper drainage.
- In Mizoram, weather is conducive for attack of rice yellow stem borer in pre-kharif rice. Apply insecticide like Imidacloprid @ 0.5 ml or Phosolone @ 1.5 ml or Dimethoate 2 ml/litre of water. Apply insecticide like Imidacloprid 0.5 ml or Phosolone 1.5 ml or Acephate 1.0 g or Dimethoate 2 ml/litre of water against aphid and bug in kharif pulses like green gram, black gram and rajma. Undertake plant protection measures after current spells of rain.
- In Manipur, there is chance of red hairy caterpillars in soybean and tikka disease in groundnut. For control of red hairy caterpillars in soybean at vegetative stage, dust 5% Malathion @ 20 kg/ha or spray Dichlorvos 76 EC 0.05% (0.6ml/ litre of water. Spray Carbendazim @ 0.5g/litre of water to control tikka disease in groundnut. Also spray Redomil MZ 72 W.P. @ 2 g/litre of water to prevent rhizome rot in turmeric/ginger. Undertake plant protection measures after current spells of rain.
- In Tripura, due to cloudy and humid weather, cloudy and humid weather is conducive for the attack of leaf roller in summer brinjal, chilly etc. To manage the attacks apply Imidachloprid @ 2ml per litre of water after current spells of rain.

➤ Suitable varieties for sowing are given in Annexure III.

❖ **Animal Husbandry**

- In Northeastern states, carried out immunizations against FMD, HS and BQ in cattle & buffaloes and swine fever in pigs during monsoon season.
- In Hill Zone of Assam, carry out vaccination (RDF1) against Ranikhet disease in one week old chicks and Gamboro disease in two weeks old chicks.
- In Upper Brahmaputra Valley Zone, avoid feeding rotten grasses after flood to the livestock. Instead, feed the animals with concentrate and green grasses along with vitamins and mineral supplements. After recession of flood, domestic animals are infected by worms. To reduce the problem, it is advised to give appropriate medicine at recommended dose in consultation with local veterinary doctor.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Maize



Groundnut



Rice



Red gram

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa, all districts of Madhya Maharashtra except Ahmednagar and Solapur, all districts of Vidarbha except Buldhana, all districts of Gujarat Region, all districts of Saurashtra & Kutch except Botad.

• **Advisories:**

▪ **Maharashtra:**

- As rain/thundershowers likely at most/many places over Konkan & Goa during the period, postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
- In Konkan, undertake application of second dose of fertilizers i.e. 870 gm of Urea/Are (100 m²) for one month

completed transplanted rice and weeding operation and removal water before application of fertilizers. After application of fertilizers restore water in the field. Undertake spraying of herbicide Gramoxzone @ 3 ml per litre of water to control the weeds on the rice bunds after current spells of rain. Undertake earthing up operation in 35 to 40 days old groundnut crop after current spells of rain.

- In Madhya Maharashtra, farmers are advised to maintain water level of 3-5 cm in already transplanted rice fields. Undertake top dressing @ 50 kg N/ha in one month old rice crop after first weeding. Complete planting of *adsali* sugarcane (Recommended varieties: CO-86032 or CO.M. 265) in Dhule, Nandurbar, Ahmednagar districts. Complete the new planting of fruit crops like mango, coconut and cashew in Kolhapur region. Farmers are advised to undertake intercultural operations, application of fertilizers and plant protection measures in soybean, cotton, red gram and green gram on a non rainy day in Kolhapur, Sangli, Satara, Ahmednagar and Jalgaon districts. Undertake intercultural operations like weeding in Nasik, Dhule and Nandurbar districts.
- In Marathwada, complete planting of *adsali* sugarcane in Aurangabad and Nanded districts. Continue plantation of fodder crops like Maize, Bajra and Napier grass upto end of August. Farmers are advised to undertake intercultural operations, application of fertilizers and plant protection measures in soybean, cotton, red gram and green gram.
- In Vidarbha, maintain 2-3 cm water level in already transplanted rice fields in Nagpur, Bhandara, Gondia, Chandrapur and Gadchiroli districts. Bunding of rice field should be done and remove all weeds on the bund. Apply give 2nd dose of Nitrogen 40 kg/ha, if the crop has completed one month after transplanting on a non rainy day. Farmers are advised to undertake intercultural operations, application of fertilizers and plant protection measures in soybean, cotton, red gram and green gram on a non rainy day. In unsown/delayed sowing areas, undertake sowing of pigeon pea (C-11, Asha, PKV- Tara and BSMR-736 with closer 60x20 spacing). Alternative crops include sunflower, Pearl millet, Sesame, Castor or intercropping systems pearl millet + pigeon pea (4:2), sunflower + pigeon pea (2:1) or sesame + pigeon pea (4:1) intercropping systems till 2nd week of August.
- Due to subdued rainfall in Sindhudurg, there may be incidence of army worm on rice crop; spray 0.07 percent Cypermethrin @ 3 ml per 10 litres of water after current spell of rain.
- Due to cloudy and humid weather conditions and in Madhya Maharashtra, Marathwada and Vidarbha region, there is possibility of attack of sap sucking pest in cotton; spray 5% Neemark or Metarhizium @ 50 g per 10 litres of water on a non rainy day.
- Due to cloudy and humid weather conditions and in Madhya Maharashtra, Marathwada and Vidarbha region, there is possibility of attack of leaf eating caterpillar in soyabean; spray SLNPV @ 10 ml per 10 litres of water on a non rainy day.

▪ Gujarat:

- Drain out excess water from rice pulses and sugarcane fields in Navasari, Dangs and Valsad districts of South Gujarat Heavy Rainfall Zone.
- Drain out excess water from papaya plants in Surat and Tapi districts. Complete sowing of castor up to 15th August in Surat, Narmada, Tapi and Bharuch districts.
- Complete sowing of castor and fodder sorghum (S-1049, GFS-4 and GFS-5), transplanting of fennel and planting of fruit crops in Banaskantha, Mehsana, Gandhinagar, Patan and Sabarkantha districts. Carry out weeding and other intercultural operations in pearl millet, sesame, early sown pulses and vegetable crops on a non-rainy day.
- Complete sowing of castor upto 15th August to avoid semi looper in castor in Dahod, Panchmahals, Kheda, Vadodara and Anand districts. Carry out intercultural operations in pigeon pea and rice on a non-rainy day.
- Complete sowing of castor, carry out intercultural operations in sesame crop in Kachchh district of North West Zone. Complete sowing of castor and pigeon pea in Amreli, Rajkot, Surendranagar and Jamnagar districts of North Saurashtra Zone with realised rainfall. Carry out intercultural operations in pulses and pearl millet on non-rainy day. In Junagadh and Porbandar districts, carry out intercultural operations in groundnut and cotton.
- Complete transplanting of rice and sowing of fodder sorghum in Bhavnagar and Ahmedabad districts with realised rainfall. Carry out weeding and other intercultural operations in sesame, pearl millet, maize and early sown pulses on a non-rainy day.
- For the control of stem rot in groundnut in South Saurashtra Zone, furrow application of 2.5 kg/ha Tricodermmaviridi, 500 kg castor cake or vermicomposting is advised.
- Due to prevailing weather condition there is chance of infestation of leaf spot disease in groundnut in North Saurashtra Zone; spray Hexaconazole @ 10 ml or Tebuconazole @ 7 ml in 10 litres of water.
- Infestation of pink bollworm in cotton is observed in North Gujarat Zone; for control, spray Quinolphose @ 20 ml in 10 litres of water and install 8-10 pheromone traps per ha in North Gujarat Zone. At the initiation of the root rot disease in cotton in North Gujarat Zone, drench Copper Oxychloride (50% WP) 0.2 % solution (40g/ 10 litres of water) around stem of the plants on a non-rainy day.
- Suitable varieties for sowing are given in Annexure III.

❖ Animal Husbandry

- Provide 30-35 g minerals mixture in daily diet of animals. Care should be taken for cattle on rainy days, keep fodder in safe place to avoid spoilage due to rainfall in Gujarat. Make arrangement for artificial light to birds to maintain egg production.

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



Red gram



Okra



Maize



Rice

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands except South Andaman, all districts of Sub-Himalayan West Bengal & Sikkim except North Dinajpur, South Dinajpur, Malda and Jalpaiguri, all districts of Gangetic West Bengal except Murshidabad, all districts of Odisha, in Arwal, Aurangabad, Banka, Bhabua, Gaya, Jahanabad, Jamui, Madhepura, Nawada, Rohtas, Saran and Sheikhpura districts of Bihar, all districts of Jharkhand except Garhwa, Godda and Pakur. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers likely at most/many places over Andaman & Nicobar Islands, Sub Himalayan West Bengal & Sikkim and Odisha during the period, over Gangetic West Bengal on 12th, 14th to 16th, over Bihar and Jharkhand on 12th, 15th & 16th August, it is advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
 - As heavy to very heavy rain very likely at isolated places over Jharkhand and Bihar on 12th, Gangetic West Bengal on 15th & 16th and, ver Sub-Himalayan West Bengal & Sikkim from 14th & 15th and over Odisha on 15th August, provide adequate drainage in standing crop fields.
 - **Odisha:**
 - In East and South Eastern Coastal Plain Zone, continue transplanting of rice and beushaning of direct seeded rice in medium and low land if past 21 days stage. Continue sowing of green gram, black gram, cow pea and sesame in uplands after current spells of heavy rain. Undertake planting of banana.
 - In Koraput and Nawarangpur districts, continue sowing of maize and other non paddy crops in upland condition.
 - In Mayurbhanj and Keonjhar districts, complete sowing of arhar, maize, green gram, black gram and sesame and planting ginger and turmeric in uplands areas. Continue sowing of ragi. Continue sowing of rainy season vegetables like Bhindi (Lady's finger), Bean, French bean, and nursery raising of Tomato, Cauliflower, Cabbage etc.
 - Continue transplanting of medium duration rice varieties in medium land and medium late duration varieties in low land in Naupara and Kalahandi districts. Continue transplanting kharif rice in Malkangiri , Balasore, Bhadrak and Jajpur districts.
 - In Western Undulating Zone, there may be attack of early shoot borer in sugarcane crop at tillering stage. Spray Triazophos/Profenophos @ 2ml/litre of water after current spells of rain.
 - In Kalahandi and Nuapara districts of Western Undulating Zone, sucking pests like aphids, jassids may infest the cotton crop at two to four week stage. At initial stage of infestation, spray neem oil 600ml/acre @ 3ml/litre of water after current spells of rain.
 - In Kalahandi and Nuapara districts of Western Undulating Zone, stem borer attack occurs at 3-4 week stage of Maize crop. If damage is noticed, spray Traizophos 400ml in 200 litre water per acre after current spells of rain.
 - In Kalahandi and Nuapara districts of Western Undulating Zone, sucking pests like aphids, jassids may infest the cotton crop at vegetative growth stage. At initial infestation spray neem oil 600ml/acre @3ml/lit of water after current spells of rain.
 - In Kalahandi and Nuapara districts of Western Undulating Zone and East and South Eastern Coastal Plain Zone, white ant attack has been found on Groundnut crop. Go for soil drenching with 2 ml Chloropyriphos in each litre water thoroughly after current spells of rain.
 - In Angul and Dhenkanal districts of Mid Central Table Land Zone, to minimize infestation of Early shoot borer on sugarcane crop, spray Triazophos 40 EC @ 2ml/litre of water after current spells of rain.
 - **West Bengal:**
 - In South Dinajpur and Malda districts of Old Alluvial Zone in Sub-Himalayan West Bengal, continue transplanting of Aman rice in the main fields. Undertake earthing of early cauliflower, cabbage, Broccoli etc. with recommended dose of fertilizer after current spells of heavy rain. Start retting of Jute and after completion of retting it dry it in the sun. In Darjeeling district of Hill Zone, maintain adequate drainage channel in ginger, turmeric and large cardamom fields and care should be taken to prevent water stagnation in the field as moderate rainfall has been forecasted for next five days.
 - In Purba Medinipur and South 24 Parganas of Coastal Saline Zone, continue transplanting of Aman rice. Farmers are requested to keep preparation of re-transplanting in case of over flood affected fields. Arrange drainage channel for avoiding flood condition.
 - In Burdwan, Hooghly, Howrah, Murshidabad, Nadia, North 24 Parganas of New Alluvial Zone, continue

transplanting of *Aman* rice. Keep one inch stagnant water in the field. After harvesting of jute, if aman rice is not yet sown, then sow short duration varieties.

- In New Alluvial Zone due to cloudy weather and high humid condition, attack of leaf and collar rot are prevalent in betelvine. Spray Blitox 4 gram per litre of water. In this weather condition, combined attack of Downy mildew and Mosaic may be seen. Apply Redomil “MZ” @ 2 g per litre to control the attack. Undertake plant protection measures after current spells of rain.
- In Old Alluvial Zone, To control leaf curl & flower drop spray Neem oil @3ml/liter & 5 days later Buprofezin @1ml/liter along with sticker or spray Imidachloropid @ 0.2 ml/litre of water or Acetamiprid @ 0.2 g/litre of water. at morning or evening hour after current spells of rain. To control downy mildew in cucurbits, spray Metalaxyl + Mencozeb @ 2.5g/litre of water at 10-15 days intervals Undertake plant protection measures after current spells of rain.
- **Andaman and Nicobar Islands:**
- In North, south and Middle Andaman, Undertake weeding in 20 to 22 days transplanted rice main field and apply basal dose of urea 30-35 kg/ha and line sowing of beans in the beds of Broad Bed and Furrow system after applying Farm Yard Manure @ 2 kg/m².
- In Nicobar, Remove the unwanted fallen nuts or leaves from the coconut plantation to avoid breeding of rhinoceros beetle.
- **Bihar:**
- In South Bihar Alluvial Zone, continue transplanting of brinjal, tomato, chilli, cauliflower and cabbage. Farmers who want to establish new orchard are advised to plant the mango, litchi and guava plants in already opened pits. This is suitable time to all crops and vegetables for hoeing & weeding after that split dose of nitrogen should be broadcast for optimum growth.
- In Araria, Katihar, Khagaria, Kishanganj, Madhepura, Purnea, Saharsa and Supaul districts in North East Alluvial Zone, continue transplanting *kharif* rice, transplanting of chilli, brinjal and cauliflower in raised bed. Prepare drainage channel to remove excess water from the field of *kharif* maize, pulses, jute and oilseed. Continue planting of horticulture crops like mango, litchi, guava and papaya.
- In Begusarai, Darbhanga, East Champaran, Gopalganj, Samastipur, West Champaran districts of North West Alluvial Plain Zone, continue planting of pointed gourd. Continue transplanting of *kharif* onion and chilli, undertake land preparation for nursery sowing of sweet potato, redish and pigeon pea.
- In North East Alluvial Zone, In the present weather situation, attack of caterpillar may be enhanced in jute. For caterpillar management, spray DDVP @ 2.5 ml/L of water. To control cutworm or white grub in *kharif* maize, apply 10 kg Phorate 10G/ha. Undertake plant protection measures after current spells of rain.
- In South Bihar Alluvial Zone, there is chance of stem borer in maize. Spray of Carbrayl @ 2 g/litre of water after current spells of rain if infestation is above ETL.
- **Jharkhand:**
- In Saraikela, East & West Singhbhum districts in South Eastern Plateau Zone of Jharkhand, complete transplanting of rice in low and medium lands. In fallow uplands, undertake sowing of low water requiring crops *viz.* maize, pigeon pea, pulses, oilseeds and in slopy land, undertake sowing of niger, lobia, rice bean, urd bean, moong bean, guar, sesame, linseed and castor upto 2nd week of August.
- In Western Plateau Zone, complete transplanting of rice in low and medium lands by second week of August. Undertake Inter-culture operation to control weeds in different *kharif* crops like Rice, Urd, Groundnut, Arhar, Maize, Mung etc. in uplands after current spells of rain. After weeding, broadcast urea as per the requirement of the crops.
- In Central and North Eastern parts of Jharkhand, continue transplanting of rice and complete sowing urad, sesame and undertake cultivation of improved varieties of sweet potato Birsa sakarkand-1 and Sri Bhadra with ridge and furrow method. Continue transplanting of marua and plantation of new trees. Repair the broken bunds of the fields to conserve rain water and incorporate, daincha or sunhemp in soil for green manuring in the standing crop.
- In North Eastern parts of Jharkhand, farmers are advised to complete transplanting of rice, marua and planting of sweet potato, sowing of black gram and til, horse gram, plantation of new trees with realized and expected rainfall.
- In South Eastern Plateau Zone, in cucurbitaceous crops, if attack of red pumpkin beetle is found, spraying of Diclorvos 76 EC (DDVP) @ 1 ml/litre of water is advised after current spells of rain.
- In South Eastern Plateau Zone, presently weather is conducive for the occurrence of pests like hairy caterpillar on groundnut crop. So, in early stage of caterpillar, apply Dichlorvos @ 0.5 ml per litre of water after current spells of rain. For control of adult caterpillar, provide bamboo perch in the fields for predatory birds.
- Suitable varieties for sowing are given in Annexure III.
- ❖ **Animal Husbandry**
- In Coastal Saline Zone of West Bengal, there may be attack of foot and mouth disease in Cattle due to rainy weather. Wash the wound with Potassium per Manganate solution. Eso” is a very harmful disease spread heavily during monsoon so follow proper vaccination for “Eso” at 2 month age of calf at 6 months interval, for swelling at throat at 3 month age of calf at 6 months interval and for black quarter at 4 month age at 1 year interval.
- In North East Alluvial Zone of Bihar, provide vaccination against Anthrax, Black Quarter and Galghontu disease to animals.

CENTRAL INDIA [M.P., CHHATTISGARH]



Maize



Rice



Soybean



Red gram

- **Realised Rainfall:** Rainfall occurred in all districts of East Madhya Pradesh except Chhindwara, all districts of West Madhya Pradesh except Barwani and Morena, all districts of Chhattisgarh.
- **Advisories:**
 - As rain/thundershowers very likely at most/many places over East Madhya Pradesh during the period and over Chhattisgarh from 12th to 14th & 16th, at many places over West Madhya Pradesh from 12th to 14th August, it is advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
 - As heavy to very heavy rain very likely at a few/isolated places over north Chhattisgarh and East Madhya Pradesh on 12th & 13th and heavy rain at isolated places over south Chhattisgarh on 12th, over Chhattisgarh on 16th, over north west Madhya Pradesh on 12th to 14th & over East Madhya Pradesh on 14th August, provide adequate drainage in standing crop fields.
 - **Madhya Pradesh:**
 - In East Madhya Pradesh, drain out excess water from vegetables, maize and soybean crop fields. Undertake intercultural operations in standing crops after current spells of rain.
 - In Neemuch, Ratlam and Vidisha districts, drain out excess water from crop fields. Undertake intercultural operations after current spells of rain.
 - In Indore and Ujjain districts, undertake nursery preparation for cauliflower and transplanting of onion. Undertake intercultural operations in soybean and maize after current spells of rain.
 - In Hoshangabad and Narsinghpur districts, drain out excess water from crop fields. Undertake intercultural operations in rice, soybean, red gram and vegetable fields after current spells of rain. Undertake top dressing of nitrogen and potash fertilizer in maize after current spells of rain.
 - In Tikamgarh district, undertake weeding in paddy crop and apply the recommended nitrogen fertilizer after current spells of rain.
 - In Jhabua, Alirajpur and Dhar districts, provide adequate drainage in crop fields. Undertake earthing up in maize after current spells of rain.
 - In Vindhya Plateau Zone, due to cloudy weather there are chances of attack of sucking pests in brinjal, tomato and chilli, spray Thiamethoxam @ 0.35 g/litre of water after current spells of rain.
 - In Jhabua Hill Zone due to cloudy weather, there are chances of stem rot disease in ginger and turmeric, spray Blitox 50 @ 2.5g/litre of water after current spells of rain.
 - In Bundelkhand Zone, due to humid weather there are chances of attack of semi lopper in soybean crop, spray Triazophos 40 E.C. @ 1.5 ml/litre of water after current spells of rain.
 - **Chhattisgarh:**
 - In North Chhattisgarh, drain out excess water from maize, pulses and vegetable fields, continue planting of orchard crops like Papaya, Guava, Mango, Litchi and Pomegranate. Continue nursery sowing of brinjal, tomato, chilli and onion in upland areas after current spells of heavy rain. Undertake intercultural operations in *kharif* crops after current spells of rain.
 - In Central Chhattisgarh, maintain 5 cm water in rice fields. Undertake intercultural operations in rice, sugarcane and vegetables after current spells of rain. Continue planting of orchard crops like papaya, mango, guava etc.
 - In South Chhattisgarh, complete transplanting of rice. Undertake intercultural operations in standing crops after current spells of rain.
 - In South Chhattisgarh, due to humid weather there are chances of attack of sucking pests in vegetables like tomato, brinjal, cabbage etc. spray Dimethoate 40 EC @ 1.5ml/litre of water after current spells of rain.
 - In Central Chhattisgarh due to cloudy weather there are chances of attack of leaf caterpillar in soybean, spray Triazophos @ 2ml/acre after current spells of rain.
 - Suitable varieties for sowing are given in Annexure III.
 - ❖ **Animal Husbandry**
 - In Madhya Pradesh, vaccinate cattle for control of FMD and HS disease.
 - In Chhattisgarh, farmers are advised to carry out vaccination of their animals against Black Quarter, HS and Anthrax disease.

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



Groundnut

Maize

Rice

Okra

- **Realised Rainfall:** Rainfall occurred in Anantnag, Doda, Jammu, Kathua, Rajouri, Ramban, Reasi, Samba and Udhampur districts of Jammu & Kashmir, all districts of Himachal Pradesh except Kinnaur and Lahaul & Spiti, all districts of Uttarakhand except Udham Singh Nagar, in Barnala, Faridkot, Fatehgarh Sahib, Gurdaspur, Hoshiarpur, Nawashahar, Patiala, Ropar, Sangrur and Mohali districts of Punjab, in Ambala, Chandigarh, Kathial, Karnal, Panchkula and Yamunanagar districts of Haryana, in Banda, Chandauli, Mirzapur, Sant Kabirnagar, Sant Ravidas Nagar and Varanasi districts of East Uttar Pradesh, in Bareilly, Bijnor, Hamirpur, Jalaun, Jhansi, Jyotiba Phule Nagar, Lalitpur, Mahoba, Moradabad, Rampur and Saharanpur districts of West Uttar Pradesh, all districts of East Rajasthan except Alwar, Bharatpur, Dholpur, Jhunjhunu and Sikar, all districts of West Rajasthan except Churu, Hanumangarh, Jaisalmer and Sriganganagar. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - As rain is very likely at most places over East Uttar Pradesh and Uttarakhand, most/many places over west Uttar Pradesh during the period, over Himachal Pradesh and Haryana, Chandigarh & Delhi from 12th to 15th and over East Rajasthan from 12th to 14th August, it is advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
 - As heavy/heavy to very heavy rain very likely at isolated places over East Uttar Pradesh from 12th to 16th, and heavy rain likely at isolated places over Uttarakhand on 12th & 16th, over Himachal Pradesh on 12th, over west Uttar Pradesh from 12th to 15th, over East Rajasthan on 12th & 13th, over Haryana, Chandigarh & Delhi on 12th & 13th August, provide adequate drainage in standing crop fields to avoid water stagnation.
 - **Rajasthan:**
 - Due to heavy rain in Rajasthan during last 3-4 days, there may be water logging in standing kharif crops, drain out excess water from pearl millet, maize, sorghum, maize, moong, urd, cotton, cluster bean, moth bean, sesame and groundnut crop fields.
 - In East Rajasthan, Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone, continue sowing of short duration varieties of kharif crops along with intercropping like Maize-Urd (2:2), Maize-Moong/Cowpea (1:1) or Maize-Cluster bean (2:2) and nursery sowing of brinjal, tomato, rainy onion, cauliflower and chilli after current spells of heavy rain.
 - In Alwar, Bharatpur, Dholpur, Karauli, Sawaimadhapur districts of Flood Prone Eastern Plain Zone, complete sowing of sorghum, pearl millet, guar, sesame, mung, urad, maize. For late sowing prefer early maturing varieties of green gram, moth bean and urad after current spells of heavy rain.
 - In Jhalawar, Kota, Bundi, Baran districts of Southeastern Humid Plain Zone, continue transplanting of paddy. Continue sowing of soybean, maize, urad, mung after current spells of heavy rain.
 - In Arid Western Plain Zone, in Jaisalmer and Bikaner districts, undertake nursery sowing of vegetables like cauliflower, cabbage chili and brinjal vegetables. In Arid Western Plain Zone, in Barmer, Churu, Jalore, Jodhpur, Pali districts, continue sowing of short duration bajra variety and moth, moong, sesame and groundnut.
 - In Irrigated North Western Plain Zone, complete transplanting of rice. Continue sowing of guar, bajra, sesame, mung, moth, and castor in Hanumangarh district.
 - In Dungarpur and Banswara districts of Southern Humid Plain Zone, prevailing weather condition is congenial for attack of stem fly/Semiloopers /girdle beetle in soybean and jassids in cotton for control of stem fly/Semiloopers /girdle beetle in soybean spray Triazophos 40 EC or Profenophos 50 EC @ 1.25 litres per hectare or Dimethoate 30 EC @ 1 litre per hectare and spray Emidachloprid 17.8 SL @ 200 ml per hectre for control of jassids in cotton after current spells of rain.
 - In Arid Western Plain Zone, in Jaisalmer and Bikaner districts, prevailing weather condition is congenial for attack of sucking pests as jassids and thrips in early sown cluster bean, for control spray Emidachloprid 17.8 SL @ 300 ml per hectre after current spells of rain.
 - In Arid Western Plain Zone, in Barmer, Churu, Jalore, Jodhpur, Pali districts, prevailing weather condition is congenial for attack of termite in groundnut, for after current spells of rain on a non rainy day.
 - In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, prevailing weather condition is congenial for attack of yellow mosaic in okra, for control spray Malathion 50 EC @ 1 ml per litre of water before & after flowering on a non rainy day.
 - In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, prevailing weather condition is

congenial for attack of fruit borer in bitter gourd, tinda, cucumber, brinjal & tomato, for control pluck affected fruits and bury them deep in soil & spray Malathion 50 EC @ 1 ml per litre of water after current spells of rain.

- In Irrigated North Western Plain Zone, prevailing weather condition is congenial for attack of thrips and white fly in Narma cotton, for control of thrips, spray Acephate 75 SP @ 2 gm. or Thiamethoxam 25 WG @ 0.5 ml. per litre of water and for white fly, spray mixture of Nimbesidin + Taral soap 5 ml @ 1 ml per litre of water or Triazophos 40 EC @ 2.5 ml per litre of water after current spells of rain.

▪ **Jammu & Kashmir:**

- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, strengthen and raise the height of field bunds of already transplanted paddy to retain optimum water level. Drain out excess water from the maize, mash, fodder and vegetable fields. Apply 2nd dose of nitrogenous fertilizer as top dressing to normally transplanted rice crop after 25-30 days and to maize after 30-40 days of sowing. Drain out excess water in the turmeric crop field and followed by sufficient earthing up operation.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, apply first dose of Urea to paddy at mid tillering stage and to maize after 30-45 days. Drain out excess water in maize field as maize crop is very sensitive to water logging. Do weeding at regular intervals in the field of maize crop at least up to 40 days after sowing to avoid yield loss due to excessive weed growth.
- In Srinagar, Badgam, Kupwara and Baramulla districts of Valley Temperate Zone, open drainage channels to avoid water stagnation in maize, pulses and saffron and vegetable fields.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, weather is congenial for attack of blast on paddy crop. To control, spray Trycycloazole (beam) @ 0.06% on a non rainy day.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, there may be chances of early & late blight and leaf curl on tomato, jassid and white fly attack on brinjal and attack of Jassids on okra crop as these crops are in fruiting stage in the region. Monitor the crops and take plant protection measures if incidence is noticed on a non rainy day.

▪ **Uttarakhand:**

- In Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone, make drainage channel in maize, rice, sugarcane and vegetable fields. Avoid stagnation of water in pulse crops.
- In Udhm Singh Nagar district of Bhabar and Tarai Zone, complete late sowing of maize, sowing of *Kharif* fodder crops like jowar, lobia, maize, bajra, cluster bean (Guar). Continue sowing of urad, moong, raddish and cucurbits during the week. Undertake transplanting of seedlings of brinjal and chilli in the main field. Mid variety of cabbage can be sown in this month and weeding and hoeing should be done in the early variety of Cabbage. Proper drainage should be arranged in the vegetable fields.
- In Nainital district of Bhabar and Tarai Zone, continue sowing of French bean and early varieties of pea in mid hills, urad and moong in the regions which are free from water logging. Drain out excess water from the vegetable fields. Complete transplanting of cabbage and knoll-khol and sowing of radish and turnip in hilly regions.
- In TehriGarhwal, Chamoli, Champawat, Pithoragarh, Rudraprayag and Uttarkashi districts of Hill Zone, drain out excess water from vegetable crops. Maintain water level in paddy crop field by making broad and elevated bunds. Undertake sowing of radish, spinach & coriander as early as possible. Undertake sowing of fodder sorghum specially Pusa chari9, Pusachari 6 varieties.
- In Nainital district of Bhabar and Tarai Zone, if blight disease in tomato is not controlled by the use of Copper-oxichloride then spray the mixture of 8% Mancozeb and 64% Cymoxanil @ 2g/litre in clear weather. Avoid spraying of this chemical on regular basis.
- In Udhm Singh Nagar district of Bhabar and Tarai Zone, in some areas, incidence of yellow shoot borer and leaf folder insect being observed in the paddy. If central shoot of plants are affected by more than 5% plants of paddy crop, then granulated powder of 0.4G Chlorantraniliprole @ 10Kg/Ha or 0.3Gr Fipronil @ 25 Kg/hectare or 4Gr Cartap @ 19Kg/ha should be applied in the field. While using these granulated powders, field should be filled with water up to the height of 2-3 inch.
- In TehriGarhwal, Chamoli, Champawat, Pithoragarh, Rudraprayag and Uttarkashi districts of Hill Zone, farmers are advised for constant monitoring of finger millet crops against blast disease, if the population is above ETL then spray Tilt 2.0 ml/litre of water after current spells of rain.
- In Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone, there is possibility of stem borer in maize and paddy crop. Apply carbofuran 3% granules @ 20 kg/ha to maize and quinalphos 25 EC 20 ml in 10 litres of water to paddy crop to prevent the infestation of stem borer after current spells of rain. Apply top dressing of Nitrogen with Zinc Sulphate @ 25kg/ha for the prevention of Khaira disease in paddy crop.

▪ **Himachal Pradesh:**

- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, complete transplanting of paddy. Continue sowing of *kharif* pulses mung, mash, soybean, cowpeas and kulthi. In mid hill areas, undertake nursery sowing of Chinese cabbage and direct sowing of radish, carrot, broccoli, lettuce. Continue sowing of cucurbits such as cucumber, bitter gourd, bottle gourd and summer squash, ageti okra, French bean and radish. Complete planting of ginger, turmeric. Undertake nursery transplanting of cabbage, cauliflower.
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, in Bilaspur, Solan, Shimla and Sirmaur districts, complete sowing of bhindi, cucurbits, French bean, moong and mash and nursery raising and transplanting of tomato, chilli, capsicum and brinjal. Continue sowing of fodder crops like maize, cowpea and soybean.

- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul&Spiti, continue sowing of oat. Continue nursery sowing of vegetables.
- In Kullu and Mandi districts of Mild Hills Sub-Humid Zone, weather is conducive for attack of bacterial blight in apple, for control spray Copper-Oxychloride @ 500 g + Streptocycline @ 6 g in 200 litres of water after current spells of rain.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, weather is conducive for attack of mite and jassids in okra, chilli and cucurbitaceous, for control spray Phosmite @ 1.5 to 2 ml per litre of water for control mite and spray Dimethoate 30 EC @ 2 ml per litre of water for control of jassids after current spells of rain.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, weather is conducive for attack of blast and brown spot in paddy crop, for control spray Carbendazim @ 2.0 g per litre of water after current spells of rain.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of rice hispa and leaf folder in paddy crop, for control rice hispa clear the grasses from bunds or spray Cypermethrin 10 EC @ 1ml per litre of water or Chlorpyrifos 20 EC @ 2.5ml per litre of water and spray Chlorpyrifos 20 EC @ 2.5 ml per litre of water for leaf folder on a non rainy day.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of stalk rot in maize crops, for control drench maize fields with bleaching powder @ 16 kg per hectare a week before tasseling, after current spells of rain.
- **Punjab, Haryana and Delhi:**
- In Punjab, in Fazilka, Ferozepur and Faridkot districts, complete the transplanting of short duration varieties of rice and sowing of cotton. Continue sowing of okra, maize and planting of sugarcane. Continue transplanting of chilli and cucurbits on the ridges. Complete the sowing of moong.
- In Western Zone of Punjab, continue transplanting of chilli, tomato, bell pepper. Continue sowing of cucurbits, round gourd, sponge gourd, okra, and cluster bean. Complete sowing of cotton, transplanting of paddy and undertake sowing of fodder crops.
- In Central Plain Zone of Punjab, complete the transplanting of basmati varieties and undertake sowing of fodder crops. Undertake planting of fruit crops like citrus, mango, litchi, guava etc.
- In Gurdaspur district of Punjab, complete transplanting of rice and continue sowing of maize. Drain out excess water from field of maize, sugarcane, pulses and vegetables. Undertake planting of ever green fruit crops like citrus, mango, litchi, guava, etc.
- In Ajitgarh, Rupnagar and SBS Nagar, drain out excess water from field of maize and continue sowing of mash, okra, cucurbits, cowpea, sesame and nursery raising of early varieties of cauliflower, brinjal and tomato.
- In Western Zone of Haryana, continue transplanting of rice, sowing of arhar, green gram and black gram. Complete the sowing of guar/bajra and sowing of leafy vegetables, bottle gourd, cucumber, ridge gourd summer radish. Undertake intercultural/hoeing operations in cotton crops for conserving the moisture and removing the weeds on a non rainy day. Undertake planting the fruits crops.
- In Eastern Zone of Haryana, continue transplanting of rice and continue sowing of fodder crops such as guar, maize and bajra.
- In Western Semi-Arid Zone of Delhi, complete the sowing of maize. Continue sowing of sweet corn, baby corn and fodder crops such as sorghum, bajra and cluster bean. Undertake transplanting of early cauliflower, tomato, chilli and brinjal on raised bed and sowing of radish, spinach, carrot and coriander. Undertake transplanting of onion seedling in the prepared fields.
- Due to heavy rainfall followed by bright sunny days, can result in parawilt incidence in cotton in Western Plain Zone of Punjab. To control, spray Cobalt Chloride (10 mg per litre of water) on affected plants within 24 hours of appearance of symptoms in clear weather.
- In Central Plain Zone and Western Zone of Punjab, sheath blight may be noticed in rice. Check by spraying Amistar Top 325 SC @ 200 ml or Nativo 75 WG @ 80 g or Lustr 37.5 SE @ 320 ml or Folicure/Orius 25 EC @ 200 ml or Bavistin 50 WP @ 200 g or Tilt/Bumper 25 EC or Monceren 250 SC 200 ml in 200 litres of water on a non rainy day.
- In Undulating Plain Zone of Punjab, as weather is congenial for the infection sheath blight in rice, keep the water channels & ridges free from weeds to prevent initial infection, spray Tilt @ 0.1% on a non rainy day and repeat after 15 days if required.
- Due to variable weather and high moisture level in the environment, monitor the insect/pest and disease in the crop. For control of leafhopper infestation, spray 600 gram Carbaryl or 600 ml Quinalphas 25 E.C. or 800 ml Linden (Kenoden) 20 E.C. with 150-175 litre water per acre, on a non-rainy day.
- In Western Semi-Arid Zone of Delhi, monitor the cucurbitaceous crops against attack of fruit fly, use 'Methyl Eugenol trap, if symptoms seen, spray Rogor @ 2 ml + 10 g sugar or jaggery/litre water at 50 litres/ha on a non rainy day.
- **Uttar Pradesh:**
- In Central Plain Zone of East Uttar Pradesh, continue transplanting of paddy. Complete sowing of sorghum, maize, arhar, urad, mung, moth, soybean, sesame, groundnut, *kharif* sunflower. Continue sowing of bhindi, lobia and cucurbits and transplanting of early maturing varieties of brinjal, chilli, cauliflower. Continue sowing of spinach,

lobia, louki, torai and tinda. Undertake weeding operation in standing crops of sorghum, maize, arhar, urad, mung, moth, soybean, sesame after current spells of rain.

- In Eastern Plain Zone of East Uttar Pradesh, complete transplanting of scented paddy. Complete sowing of arhar, jowar, bajra, urad, mung, maize.
- In North Eastern Plain Zone of East Uttar Pradesh, complete transplanting of paddy and complete sowing of kharif maize, pigeon pea, urad, mung, sesame, groundnut, jowar and cowpea.
- In Western Plain Zone of West Uttar Pradesh, continue transplanting of paddy and sowing of pigeon pea, maize. Continue transplanting of tomato, chilli and sowing of bhindi, cucurbits and sowing of sunflower, urad, mung. Undertake sowing of sweet corn and baby corn in raised bed.
- In Bundelkhand Zone of West Uttar Pradesh, complete sowing of long duration varieties of groundnut, soybean, jowar, arhar, maize, urad, bajra, mung and sesame. Continue nursery sowing of early maturing varieties of tomato, cabbage, brinjal, chilli, cauli flower and transplanting of brinjal, chilli, tomato, cabbage, cauli flower. Complete transplanting of paddy in irrigated areas.
- In Bundelkhand Zone of West Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of yellow mosaic in urad, mung and groundnut, for control spray Monocrotophos @ 1.5 litres in one hectare after current spells of rain.
- In Bundelkhand Zone of West Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of khaira in paddy, for control spray Zinc Sulphate @ 20 kg per hectare on a after current spells of rain.
- In Central and Eastern Plain Zone of East Uttar Pradesh due to prevailing weather condition, there may be chances of attack of khaira in paddy, for control, spray Zinc Sulphate @ 5 kg or Urea @ 20 kg in 800 to 1000 litres of water per hectre after current spells of rain.
- In Central Plain Zone of East Uttar Pradesh due to moisture or humid weather condition, there may be chances of attack of stem borer in maize, for control, spray Dimethoate 30 EC @ 1 litre or Quinalphos 25 EC @ 1.5 litres in 700 to 800 litres of water per hectare after current spells of rain.
- Suitable varieties for sowing are given in Annexure III.

❖ **Horticulture:**

- In Central and Eastern Plain Zone of East Uttar Pradesh and Bundelkhand Zone of West Uttar Pradesh continue planting of new orchard of mango, guava, ber, lichi, aonla, lemon, ber, papaya.
- In Alwar, Bharatpur, Dhaulpur, Karauli, Sawaimadhopur districts of Flood Prone Eastern Plain Zone, undertake preparation of pits by applying manure and fertilizers for planting of guava, pomegranate, lime, aonla, ber, papaya.
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, prevailing weather condition is congenial for attack of leaf rot or mosaic in papaya, for control uproot affected plants and spray Dimethoate 25 EC @ 1.0 ml per litre water after current spells of rain.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, undertake plantation of mango, litchi, guava, citrus, laquat and amla.
- In Una, Hamirpur, Kangra and Chamba districts of Himachal Pradesh, weather is conducive for citrus canker on citrus plants, for control spray Malathion @ 10 ml or Metasystox @ 10 ml per 10 litres of water after current spells of rain.
- In Tarai Zone of Uttarakhand, in the Polyhouse, continue planting of fruit plants like mango, guava, lemon, papaya during the month. Hail proof net should be removed from apple trees in mid hilly regions. Undertake picking of early varieties of apple in mid hilly regions. Spray NAA @ 1g/100 litre or Planofix @ 25ml/100 litre of water to avoid rotting in high hilly regions.

❖ **Animal Husbandry**

- In Tarai Zone of Uttarakhand, to save the poultry birds from Ranikhet disease, vaccination (R B 2) should be done when they attained the age of 6-8 weeks. Deworming doses should be given to the poultry birds on the recommendation of veterinarian because worms in the poultry birds lessen the production capacity of eggs. If there is an infestation of lice in animals, 1% Sumithione should be sprayed.
- In Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone, there is possibility of foot and mouth diseases and lagria in cow and buffaloes. Give vaccination to the animals to protect the animals from these diseases.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, there may be attack of ticks and mites on animals, for control spray Botox @ 2.0 ml per litre of water.

❖ **Apiculture:**

- In Himachal Pradesh, to control mites attack on honeybees, dust Sulphur on sealed brood in the colony and not on larvae. Also insert empty frame /combs for egg laying to the queen as the population starts builds up.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, kill wasps with a wooden flap and dusting or spraying with insecticides. Keep colonies in stand to give protection against ants. Check ants by placing legs of bee hive stand in water in water pots.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, for the protection of honey bee colonies from ants, farmers are advised to put the legs of apiary into water so that ants could not attack apiary. Farmers are advised to not open the honey bee colonies during rainy day/cloudy weather conditions. Check the insect pest attack particularly mite and brood infestation.

❖ **Floriculture**

- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, transplant rooted cuttings of

Chayrysanthemum and raise seedlings of Marigold in raised beds.

- In Himachal Pradesh, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of blue beetle in balsam, zinnia, cleome and rose, for control spray Cypermethrin @ 20 ml in 10 litres of water. In poly house there may be attack of thrips and beetle, for control spray Rogor @ 20 ml in 10 litres of water for thrips and for beetle spray Dicofol @ 20 ml in 10 litres of water. To control thrips in tagetes spray Rogor @ 20 ml in 10 litres of water after current spells of rain.

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

Annexure I

Week by week Rainfall Distribution

Sub-Divisions	27.07.16		03.08.16		10.08.16	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	199.0	83	35.4	-39	40.5	-21
Dibang Valley	**	**	**	**	**	**
East Kameng	72.8	-17	26.7	-59	40.6	-15
East Siang	611.5	173	5.3	-97	24.1	-84
Kurung Kumey	**	**	**	**	**	**
Lohit	318.4	86	16.6	-85	50.3	-41
Lower Dibang Valley	903.3	1531	58.8	28	119.1	457
Lower Subansari	**	**	**	**	**	**
Papumpare	171.0	64	19.0	-82	123.1	2
Tawang	111.2	-28	88.0	-33	106.0	-25
Tirap	189.4	-10	15.6	-89	83.4	-5
Upper Siang	197.8	42	49.0	-61	21.2	-56
Upper Subansari	61.2	58	26.0	-13	10.0	-66
West Kameng	43.6	-72	14.4	-89	30.4	-79
West Siang	115.4	-24	16.3	-78	20.4	-60
Assam&Meghalaya						
Assam						
Baksa	229.2	51	19.8	-83	67.4	-10
Barpeta	253.1	67	8.1	-93	53.6	-28
Bongaigaon	262.6	60	27.0	-73	35.8	-53
Cachar	77.9	-34	66.3	-36	115.6	-11
Chirang	551.6	236	39.8	-59	103.4	36
Darrang	**	**	**	**	**	**
Dhemaji	**	**	**	**	**	**
Dhubri	132.0	-11	95.4	-3	20.1	-77
Dibrugarh	154.3	35	32.2	-65	67.9	-33
Goalpara	183.3	73	28.4	-68	57.2	25
Golaghat	42.1	-39	68.0	38	107.4	71
Hailakandi	66.5	-33	57.8	-44	42.7	-55
Jorhat	49.6	-28	66.0	-23	70.1	-19
Kamrup(Rural)	103.5	87	35.7	-42	46.6	-3
Kamrup(Metro)	38.9	-30	8.2	-87	53.5	11
Karbi Anglong	48.6	-22	8.9	-84	26.3	-51
Karimganj	133.6	-4	77.3	-29	189.6	86

Kokrajhar	210.0	14	62.6	-58	11.1	-91
Lakhimpur	162.3	36	95.1	-10	65.3	-43
Morigaon	127.8	68	0.0	-100	22.6	-69
N.C.Hills	29.6	-58	3.1	-91	3.2	-93
Nagaon	80.5	8	8.5	-87	42.3	-30
Nalbari	230.6	157	22.4	-70	101.8	36
Sonitpur	80.1	6	18.4	-74	76.7	14
Sibsagar	99.1	24	13.4	-83	125.5	52
Tinsukia	212.9	74	14.8	-83	91.1	6
Udalgiri	116.6	102	62.2	-9	19.9	-68
Meghalaya						
East Garo Hills	447.8	350	81.8	-22	0.0	-100
East Khasi Hills	921.7	199	45.9	-82	107.9	-48
Jaintia Hills	11.0	-97	4.0	-99	6.0	-96
Ribhoi	107.2	37	33.8	-68	25.0	-70
South Garo Hills	6.0	-95	6.0	-94	24.0	-75
West Garo Hills	82.2	-27	114.0	23	6.0	-94
West Khasi Hills	109.0	-58	13.0	-91	2.0	-99
NMMT						
Mizoram						
Aizwal	90.2	-13	39.2	-64	66.0	-35
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	47.0	-54	118.0	17	84.0	0
Serchhip	96.5	-9	0.3	-99	40.3	-49
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	**	**	**	**	**	**
Churachandpur	**	**	**	**	**	**
Imphal east	64.5	-14	34.9	-33	20.8	-68
Imphal west	105.0	94	0.0	-100	123.9	150
Senapati	**	**	**	**	**	**
Tamenglong	**	**	**	**	**	**
Thoubal	**	**	**	**	**	**
Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	35.7	40	10.5	-77	105.4	14
Kephire	**	**	**	**	**	**
Kohima	37.1	-58	23.6	-72	36.5	-57
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	59.0	-33	6.0	-93	50.0	-41
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**

Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	44.6	-43	67.4	-33	30.1	-57
NorthTripura	33.9	-63	30.5	-61	14.0	-83
SouthTripura	46.4	-55	80.4	-23	21.2	-73
West Tripura	36.9	-58	78.4	-3	19.2	-71
Himachal Pradesh						
Bilaspur	44.7	-45	55.1	-28	138.3	54
Chamba	41.5	-74	90.2	-34	130.1	-8
Hamirpur	39.9	-59	96.2	-3	159.7	78
Kangra	139.3	-9	179.9	7	229.6	37
Kinnaur	1.3	-93	8.4	-51	16.0	-13
Kullu	20.7	-56	65.6	39	66.5	63
Lahaul and Spiti	8.0	-82	4.7	-88	10.8	-67
Mandi	70.3	-37	106.7	-6	131.8	35
Shimla	41.8	-29	85.7	58	69.6	54
Sirmaur	84.3	-36	181.0	52	45.6	-60
Solan	52.3	-41	97.9	15	100.8	19
Una	57.8	-21	38.8	-50	90.3	10
Punjab						
Amritsar	39.4	-26	9.6	-84	20.6	-59
Barnala	0.0	-100	0.0	-100	47.0	55
Bhatinda	0.0	-100	4.5	-83	27.5	-31
Faridkot	8.6	-66	0.0	-100	53.2	127
Fatehgarh Saheb	28.8	-36	15.7	-72	45.3	-1
Ferozpur	7.3	-77	0.0	-100	0.7	-98
Gurdaspur	102.0	26	88.5	3	167.3	84
Hoshiarpur	18.4	-65	14.9	-81	87.7	20
Jalandhar	13.0	-73	5.1	-90	9.4	-82
Kapurthala	65.7	46	4.5	-88	0.0	-100
Ludhiana	32.0	-21	9.4	-81	2.7	-94
Mansa	0.0	-100	0.0	-100	17.0	-53
Moga	52.8	102	0.0	-100	2.8	-92
Muktesar	0.0	-100	11.4	-50	0.0	-100
Nawashahar	21.2	-65	11.3	-86	39.9	-40
Patiala	25.2	-51	15.2	-74	47.5	-14
Ropar	64.9	4	53.5	-36	47.8	-34
Sangrur	24.3	-37	18.2	-53	41.6	7
Mohali	124.0	144	33.0	-52	74.0	24
TarnTaran	37.0	7	36.0	-6	0.0	-100
Haryana,Chd,Delhi						
Haryana						
Ambala	82.7	10	15.1	-79	66.9	-22
Bhiwani	0.8	-98	33.5	11	4.7	-85
Chandigarh	65.1	3	33.5	-53	39.3	-54
Faridabad	9.0	-84	187.5	281	18.3	-68
Fatehabad	0.0	-100	20.3	-20	0.0	-100
Gurgaon	14.4	-64	51.5	37	4.3	-91
Hissar	2.9	-92	28.2	14	3.6	-88

Jhajar	0.1	-99	41.3	15	6.1	-84
Jind	4.5	-85	25.0	-16	4.2	-88
Katihah	14.0	-57	16.8	-44	39.8	13
Karnal	4.0	-89	71.0	65	30.4	-30
Kurukshetra	23.7	-42	14.8	-69	24.5	-39
Mahendragarh	7.2	-84	29.5	-5	12.3	-66
Mewat	23.5	-46	32.4	-11	2.8	-95
Palwal	12.3	-70	45.7	31	9.8	-78
Panchkkula	68.5	-15	42.9	-51	72.8	-11
Panipat	30.0	-23	30.9	-27	3.4	-92
Rewari	3.4	-92	42.4	8	5.9	-88
Rohtak	4.2	-91	13.7	-67	8.4	-82
Sirsa	0.0	-100	0.0	-100	9.5	-27
Sonepat	2.8	-94	44.0	-16	1.0	-98
Yamunanagar	58.3	-30	65.0	-19	32.8	-57
Delhi						
Central Delhi	16.0	-72	99.0	77	21.0	-70
East Delhi	0.0	-100	0.0	-100	12.0	-83
New Delhi	3.2	-94	69.1	23	1.8	-97
North Delhi	14.3	-75	106.3	90	3.7	-95
North East Delhi	59.0	4	100.0	79	11.0	-84
North West Delhi	0.0	-100	30.0	-46	0.5	-99
South Delhi	15.6	-73	148.8	166	17.5	-75
South West Delhi	4.6	-92	174.9	212	25.6	-63
West Delhi	5.0	-91	96.0	71	2.0	-97
Jammu & Kashmir						
Anantnag	14.8	-37	32.0	66	37.3	55
Badgam	11.8	-41	28.6	82	2.0	-86
Bandipore	**	**	**	**	**	**
Baramula	0.0	-100	27.6	31	24.6	-8
Doda	24.0	-25	62.6	82	35.8	30
Ganderbal	4.6	-74	14.5	-6	13.2	-29
Jammu	190.5	101	206.7	121	179.0	86
Kargil	**	**	**	**	**	**
Kathua	148.5	21	47.1	-58	180.5	61
Kistwar	**	**	**	**	**	**
Kulgam	41.6	76	36.6	90	18.6	-23
Kupwara	22.2	-8	20.8	39	0.6	-97
Ladakh(Leh)	0.9	-55	0.0	-100	1.8	-36
Poonch	**	**	**	**	**	**
Pulwama	10.8	-46	43.2	135	28.6	31
Rajouri	63.2	-15	54.2	-29	66.6	25
Ramban	14.7	-54	48.0	40	54.3	97
Reasi	158.4	8	139.0	-16	320.2	133
Samba	83.6	-12	136.9	46	62.4	-35
Shopian	**	**	**	**	**	**
Srinagar	11.4	-35	43.3	181	6.8	-63
Udhampur	77.0	-48	143.8	-13	249.5	82

East Madhya Pradesh						
Anuppur	68.8	-12	80.9	-3	94.3	-9
Balaghat	78.8	-21	71.6	-35	158.8	47
Chhatarpur	59.0	-22	72.3	-13	86.8	-21
Chindwara	71.2	17	92.0	32	27.8	-58
Damoh	33.3	-59	50.3	-55	125.0	12
Dindori	59.6	-29	123.3	37	226.5	92
Jabalpur	88.6	13	62.4	-38	200.4	85
Katni	115.4	59	46.6	-56	137.5	31
Mandla	51.5	-48	79.4	-18	152.9	33
Narsingpur	105.8	37	68.0	-29	79.0	-16
Panna	127.0	68	22.9	-75	77.1	-30
Rewa	54.3	-19	28.2	-66	37.7	-58
Sagar	86.6	13	51.5	-49	127.6	12
Satna	49.3	-28	46.6	-47	72.1	-22
Seoni	101.1	29	70.9	-13	83.2	1
Shahdol	102.0	53	44.2	-38	139.0	37
Sidhi	72.2	16	70.8	-12	35.8	-55
Singrauli	91.2	48	122.0	78	71.6	10
Tikamgarh	64.5	0	51.5	-26	52.5	-40
Umaria	31.0	-54	96.8	3	128.5	31
West Madhya Pradesh						
Agar	88.9	-33	194.2	44	146.2	11
Alirajpur	32.7	-57	133.7	111	127.3	101
Asoknagar	76.3	-13	70.0	12	135.3	64
Badwani	30.6	-39	50.9	16	23.2	-56
Betul	66.0	-13	118.7	66	57.1	-31
Bhind	25.6	-55	78.4	61	36.9	-47
Bhopal	152.4	74	106.7	30	144.5	54
Burhanpur	98.7	75	96.7	60	43.7	-36
Datia	52.9	-18	96.9	64	62.3	-25
Dewas	52.7	-32	89.7	9	119.7	43
Dhar	52.3	-24	71.2	5	74.7	7
Guna	119.7	21	26.2	-66	178.4	97
Gwalior	59.4	-11	104.8	78	54.5	-35
Harda	73.4	-17	121.4	44	161.9	64
Hosangabad	87.4	-5	217.8	91	204.1	72
Indore	67.9	-4	55.0	-13	95.9	29
Jhabua	90.9	54	154.1	167	139.4	103
Khandwa	85.3	29	75.9	13	114.7	40
Khargone	46.1	-19	35.6	-41	56.6	-13
Mandsaur	48.6	-35	163.9	117	157.1	104
Morena	32.4	-56	68.8	17	17.6	-77
Neemuch	50.8	-28	156.2	134	261.2	301
Raisen	91.2	-5	84.9	-7	158.1	47
Rajgarh	47.4	-45	69.5	-8	229.9	143
Ratlam	66.3	-21	112.8	31	295.1	303
Sehore	114.3	28	144.2	47	146.4	50

Shajapur	98.3	17	49.7	-44	101.0	13
Sheopur Kalani	5.0	-94	109.5	133	82.3	18
Shivpuri	68.7	-9	101.0	51	81.0	3
Ujjain	21.4	-72	167.1	140	149.8	99
Vidisha	68.6	-24	109.5	25	228.4	146
Chhattisgarh						
Bastar	33.0	-64	54.5	-36	173.3	103
Bijapur	61.3	-50	44.9	-63	120.0	-12
Bilaspur	62.5	-15	44.1	-48	96.6	8
Dantewara	29.8	-74	56.6	-43	101.0	-12
Dhamtari	32.4	-55	44.4	-53	109.6	55
Durg	51.0	-25	11.8	-85	217.6	165
Janjgir	95.1	16	46.0	-52	206.9	97
Jashpurnagar	78.2	-13	9.8	-90	104.1	2
Kanker	109.0	33	240.3	124	225.9	138
Korba	91.8	-8	92.4	-11	130.0	19
Koriya	25.3	-67	72.9	-12	68.4	-34
Kawardha	**	**	**	**	**	**
Mahasumund	142.9	92	51.1	-46	91.7	18
Narayanpur	84.3	-19	92.0	-6	248.3	118
Raigarh	75.8	3	108.3	18	178.4	100
Raipur	98.0	47	32.5	-60	122.5	51
Rajnandgaon	60.3	-25	60.5	-23	116.3	37
Surguja	63.3	-30	158.6	60	100.6	-2
East Uttar Pradesh						
Allahabad	16.7	-66	87.5	27	23.0	-69
Ambedkar Nagar	4.0	-94	48.0	-40	1.0	-99
Azamgarh	34.4	-49	70.4	7	18.0	-75
Bahraich	97.1	26	75.3	-8	7.9	-85
Ballia	31.4	-45	35.4	-49	20.7	-63
Balrampur	74.6	-16	42.4	-49	13.2	-80
Banda	43.4	-14	86.0	19	52.0	-36
Barabanki	76.0	6	62.9	-16	9.0	-85
Basti	44.3	-47	16.1	-79	8.7	-84
Chandauli	39.0	-41	63.0	5	112.0	55
Deoria	18.5	-74	17.1	-76	3.5	-93
Faizabad	121.7	57	151.0	76	11.1	-82
Farrukhabad	23.7	-57	43.6	-20	2.1	-97
Fatehpur	21.5	-58	89.8	37	28.8	-63
Gazipur	103.5	71	82.3	16	13.8	-83
Gonda	112.4	32	129.1	53	4.5	-94
Gorakhpur	67.7	-14	65.1	-34	14.5	-83
Hardoi	53.8	4	96.6	55	11.8	-80
Jaunpur	13.8	-75	40.8	-31	14.5	-78
Kannauj	12.4	-77	15.5	-75	0.0	-100
Kanpur City	8.7	-84	85.2	47	7.1	-90
Kanpur Dehat	0.4	-99	50.8	-12	0.5	-99
Kaushambi	5.2	-89	28.8	-55	15.4	-78
Kheri	129.2	77	150.4	116	10.4	-83

Kushi nagar	11.0	-85	17.0	-81	5.5	-91
Lucknow	37.7	-31	77.6	17	12.6	-78
Maharajganj	56.0	-39	82.5	-16	10.8	-84
Mau	12.0	-85	60.5	-20	5.6	-91
Mirzapur	17.5	-66	105.1	49	53.0	-37
Pratapgarh	10.3	-83	93.3	33	19.3	-72
RaiBareilly	11.9	-76	49.3	-29	16.7	-72
Sahuji Maharajnagar	9.5	-83	94.0	44	9.5	-86
Sant Kabirnagar	28.7	-62	22.0	-76	38.0	-34
Sant Ravidas Nagar	37.0	-44	84.0	40	45.0	-38
Shrawasti	101.8	32	60.1	-27	17.5	-68
Sidharthnagar	71.8	-13	40.1	-52	15.1	-76
Sitapur	40.7	-35	99.8	73	25.0	-57
Sonbhadra	90.6	48	68.6	15	25.1	-69
Sultanpur	47.9	-26	127.3	93	15.8	-75
Unnao	35.5	-29	68.6	10	5.2	-93
Varanasi	42.2	-26	107.0	72	121.0	72
West Uttar Pradesh						
Agra	19.9	-67	119.4	124	19.8	-73
Aligarh	14.5	-73	95.7	51	15.2	-75
Auraiya	63.6	9	27.8	-50	4.0	-94
Badaun	45.0	-18	110.0	46	24.6	-65
Baghpat	54.9	28	37.9	-24	5.5	-90
Bareilly	200.4	195	181.8	147	44.8	-39
Bijnor	153.1	59	111.6	28	66.8	-12
Bulandsahar	20.1	-62	67.8	4	16.1	-69
Etah	20.1	-58	86.2	79	5.7	-91
Etawah	12.7	-78	56.7	-6	10.7	-88
Firozabad	0.0	-100	44.6	-4	18.0	-70
GBNagar	0.0	-100	21.0	-55	0.0	-100
Ghaziabad	6.2	-88	29.3	-50	5.6	-91
Hamirpur	53.7	-19	123.0	105	47.0	-45
Jalaun	89.7	53	79.0	38	43.3	-55
Jhansi	62.4	-5	70.1	6	37.5	-54
Jotiba Phule Nagar	111.5	61	112.5	61	43.0	-25
Kanshiramnagar	14.0	-76	30.0	-44	14.0	-77
Lalitpur	58.0	-37	41.5	-40	73.2	-32
Mahamaya Nagar	65.5	19	109.5	108	7.3	-88
Mahoba	67.6	10	69.2	2	34.2	-59
Mainpuri	0.0	-100	25.0	-46	7.1	-89
Mathura	0.0	-100	44.5	1	0.0	-100
Meerut	38.8	-40	72.7	4	11.9	-84
Moradabad	153.6	128	61.8	-22	92.5	24
Muzaffarnagar	18.0	-71	90.5	39	18.8	-71
Pilibhit	55.6	-31	90.7	9	14.5	-81
Rampur	128.7	67	79.3	-6	34.5	-58
Saharanpur	32.3	-44	34.0	-54	82.0	9
Shahjahanpur	61.8	-2	79.9	20	28.1	-62

Uttarakhand						
Almora	35.9	-54	59.7	-16	84.0	27
Bageshwar	137.0	75	71.2	1	98.2	49
Chamoli	60.8	-23	67.0	-15	146.7	82
Champawat	192.5	64	123.3	26	103.8	8
Dehradun	118.2	-33	111.1	-32	96.0	-44
Garhwal Pauri	166.3	51	119.6	1	72.6	-39
Garhwal Tehri	164.1	88	62.0	-41	104.5	9
Haridwar	125.6	69	30.5	-69	62.8	-30
Nainital	70.2	-41	122.2	-5	69.6	-26
Pithorgarh	109.6	-21	101.6	-28	127.7	-3
Rudraprayag	194.8	26	146.3	-11	181.8	26
Udham Sing Nagar	129.3	45	54.2	-46	18.9	-74
Uttarkashi	113.3	23	101.7	8	111.4	18
Bihar						
Araria	250.5	146	95.2	1	22.6	-70
Arwal	27.3	-50	64.5	37	36.1	-32
Aurangabad	31.8	-48	37.0	-35	33.7	-44
Banka	25.6	-52	22.9	-64	30.3	-39
Begusarai	48.9	9	36.5	-58	11.5	-76
Bhabua	76.3	14	25.5	-59	121.7	50
Bhagalpur	22.3	-64	6.1	-91	18.7	-64
Bhojpur	40.7	-40	81.2	10	10.6	-81
Buxar	81.4	38	63.8	12	25.8	-53
Darbhanga	59.6	0	48.6	-36	18.9	-65
East Champaran	31.7	-63	70.2	-14	16.8	-67
Gaya	36.4	-42	13.1	-79	78.9	19
Gopalganj	57.0	-9	31.1	-55	15.7	-68
Jahanabad	20.3	-60	91.8	62	34.5	-44
Jamui	12.6	-80	32.1	-46	43.6	-29
Kathihar	40.8	-42	10.5	-86	22.9	-55
Khagadia	36.8	-33	9.4	-87	12.9	-81
Kishanganj	327.7	149	94.2	-12	6.7	-92
Lakhisarai	17.9	-71	50.8	-30	19.6	-66
Madhepura	85.1	19	44.3	-43	32.9	-44
Madhubani	40.9	-49	96.9	28	5.9	-88
Monghyar	20.0	-68	11.4	-84	0.0	-100
Muzaffarpur	21.4	-65	26.5	-65	15.4	-72
Nalanda	44.0	-21	46.5	-28	15.5	-76
Nawada	19.6	-60	21.7	-68	46.4	-36
Patna	19.3	-65	41.0	-46	16.0	-70
Purnea	71.9	-14	64.9	-28	18.3	-71
Rohtas	94.7	68	58.7	-8	55.5	-18
Saharsha	32.8	-68	0.0	-100	15.9	-79
Samstipur	96.3	55	47.9	-26	6.5	-90
Saran	48.3	-24	51.3	-32	39.1	-24
Sheikpura	0.0	-100	22.5	-65	45.8	-12
Sheohar	4.2	-96	56.8	-34	7.6	-85
Sitamarhi	30.6	-67	44.5	-49	10.4	-80

Siwan	22.6	-69	139.6	97	13.7	-75
Supaul	105.1	31	29.1	-60	16.1	-62
Vaishali	25.1	-68	40.5	-50	27.3	-52
West Champaran	127.7	14	146.1	45	10.0	-82
Jharkhand						
Bokaro	27.9	-61	37.0	-51	66.3	-18
Chatra	47.3	-31	26.8	-60	91.1	11
Deoghar	34.8	-50	48.5	-25	44.5	-27
Dhanbad	41.3	-42	51.1	-42	92.3	22
Dumka	51.0	-27	47.1	-36	56.6	-20
East Singbhum	104.1	82	69.7	-15	323.1	288
Garhwa	33.0	-54	27.0	-66	26.5	-67
Giridih	21.5	-71	26.3	-66	88.0	28
Godda	23.1	-66	50.2	-13	24.8	-45
Gumla	72.3	-15	63.4	-23	50.4	-42
Hazaribagh	47.6	-34	37.1	-49	54.0	-32
Jamtara	122.3	72	52.3	-34	86.3	14
Khunti	35.7	-57	51.0	-44	76.2	-24
Koderrna	16.8	-70	12.1	-79	53.3	-24
Latehar	52.3	-35	31.5	-61	54.1	-38
Lohardagga	57.7	-13	89.6	8	69.2	-22
Pakur	59.1	-28	25.7	-66	21.2	-70
Palamau	41.4	-43	55.7	-21	51.9	-33
Ramgarh	18.6	-75	65.0	-14	98.0	28
Ranchi	30.5	-59	58.3	-26	55.2	-44
Sahebganj	117.8	24	21.4	-69	34.4	-38
Saraikela	57.5	-25	77.4	-9	102.0	20
Simdega	70.5	-39	63.7	-32	85.2	-18
West Singbhum	34.6	-47	45.4	-43	45.5	-50
East Rajasthan						
Ajmer	20.7	-54	117.1	296	122.7	230
Alwar	21.3	-63	62.7	50	24.4	-56
Banswara	65.1	-10	95.8	35	201.8	164
Baran	66.8	-33	94.8	58	201.4	140
Bharatpur	12.5	-76	85.3	91	17.9	-67
Bhilwara	50.7	-13	154.0	256	235.1	370
Bundi	27.1	-67	152.8	184	176.8	216
Chittorgarh	71.5	8	155.6	159	341.2	453
Dausa	30.2	-52	74.8	80	90.0	38
Dholpur	24.2	-57	114.0	129	18.3	-74
Dungarpur	39.4	-24	101.3	95	165.8	220
Jaipur	20.2	-65	114.5	206	48.5	-3
Jhalawar	68.5	-20	125.8	80	177.8	101
Jhunjhunu	8.0	-80	45.0	42	13.5	-61
Karauli	29.3	-59	73.7	73	47.8	-40
Kota	35.2	-63	91.6	63	238.0	235
Pratapgarh	75.2	9	182.8	137	188.8	190
Rajsamand	43.4	2	67.1	83	165.6	290
Sawai Madhopur	18.7	-76	113.8	136	95.3	24

Sikar	11.0	-76	67.5	126	15.9	-53
Sirohi	30.0	-61	151.4	76	230.7	190
Tonk	30.3	-53	140.1	246	133.3	150
Udaipur	81.0	72	121.5	137	157.1	228
West Rajasthan						
Barmer	13.0	-30	8.0	-52	96.7	287
Bikaner	5.3	-77	21.9	39	52.2	209
Churu	10.5	-71	44.5	83	8.4	-67
Hanumangarh	2.1	-92	1.4	-93	4.3	-82
Jaisalmer	8.0	-44	11.9	7	27.0	112
Jalore	18.6	-45	25.1	-26	195.3	433
Jodhpur	8.3	-69	67.2	247	148.4	551
Nagaur	11.0	-71	110.0	482	84.7	211
Pali	23.8	-44	179.1	427	268.5	556
Sri Ganganagar	0.7	-97	29.3	102	23.7	46
Gujarat Region						
Ahmedabad	6.4	-86	35.3	-25	88.1	68
Anand	4.2	-93	64.5	2	123.2	94
Banaskantha	23.9	-46	36.6	-34	63.2	47
Baroda	13.0	-82	91.3	37	77.4	-1
Broach	12.6	-79	42.1	-32	54.4	-8
DNH	103.3	-44	629.7	226	480.6	167
Dahod	36.9	-44	110.1	45	101.0	28
Daman	93.4	-49	589.2	205	304.5	69
Dangs	37.6	-81	258.3	43	421.0	161
Gandhinagar	5.3	-90	67.0	10	155.6	141
Kheda	8.3	-87	42.6	-39	103.4	52
Mehsana	7.5	-83	50.0	-14	89.3	70
Narmada	12.6	-85	126.5	29	83.1	-12
Navsari	69.8	-57	245.1	75	223.4	70
Panchmahal	52.7	-28	106.5	38	122.0	35
Patan	22.3	-39	20.6	-59	86.0	140
Sabarkantha	30.8	-44	38.2	-48	128.4	107
Surat	45.8	-56	142.6	46	124.4	37
Tapi	27.0	-80	103.8	-23	160.0	21
Valsad	99.0	-44	563.8	223	426.1	209
S K & Diu region						
Amreli	10.6	-71	50.1	59	85.0	184
Bhavnagar	20.7	-42	83.3	147	59.0	85
Diu	2.2	-95	176.4	231	160.5	342
Jamnagar	6.2	-84	102.0	182	314.3	686
Junagarh	5.8	-92	119.7	151	139.2	181
Kutch	0.8	-98	10.2	-61	126.6	359
Porbandar	1.9	-96	65.9	142	165.2	274
Rajkot	1.5	-97	91.6	94	128.4	182
Surendranagar	10.3	-73	11.2	-67	35.6	-13
Maharashtra						
Konkan & Goa						
Mumbai City	73.2	-45	310.5	108	105.2	-2

Mumbai Suburban	118.2	-29	407.0	136	202.2	59
North Goa	252.8	-9	195.3	-23	174.1	-15
Raigad	176.6	-30	547.1	99	276.1	39
Ratnagiri	313.5	16	483.0	73	305.1	42
Sindhudurg	329.8	21	247.1	8	172.4	-6
South Goa	293.1	17	151.1	-31	107.7	-40
Thane	105.4	-47	465.6	133	190.6	14
Madhya Maharashtra						
Ahmednagar	50.1	118	64.6	199	15.5	-17
Dhule	11.0	-73	17.2	-54	46.2	25
Jalgaon	38.0	-13	52.2	6	41.9	-24
Kolhapur	61.2	-63	150.6	3	283.1	114
Nandurbar	18.6	-73	59.9	-12	100.5	52
Nasik	32.6	-54	236.5	203	151.7	126
Pune	16.8	-74	140.3	94	183.1	210
Sangli	33.2	7	45.8	36	63.3	131
Satara	22.0	-59	161.1	168	162.8	265
Solapur	92.9	267	38.8	48	3.3	-84
Marathwada						
Aurangabad	39.5	1	63.1	51	20.5	-43
Beed	80.0	127	34.9	2	6.0	-76
Hingoli	95.8	68	79.5	17	9.8	-82
Jalna	108.2	158	56.2	31	11.5	-67
Latur	106.0	71	158.2	154	11.0	-74
Nanded	98.2	48	103.2	53	14.8	-69
Osmanabad	87.6	122	57.9	40	14.3	-51
Parbhani	82.6	42	81.3	36	8.0	-79
Vidarbha						
Akola	86.1	52	75.7	55	38.8	-37
Amraoti	121.4	108	72.0	13	48.9	-30
Bhandara	58.5	-27	68.9	-23	78.1	-32
Buldhana	106.3	135	78.7	58	24.0	-57
Chandrapur	101.8	19	79.9	-14	50.0	-48
Gadchiroli	81.7	-23	74.3	-36	92.2	-14
Gondia	50.7	-44	85.0	-13	148.8	37
Nagpur	107.4	68	72.0	2	40.5	-46
Wardha	93.7	50	103.2	54	37.9	-48
Washim	120.9	113	90.4	50	31.4	-56
Yeotmal	79.5	29	82.4	29	39.0	-42
Odisha						
Angul	64.6	-12	92.6	28	153.7	77
Balasore	99.2	49	42.5	-49	93.3	13
Bargarh	60.0	-30	60.6	-30	140.7	60
Bhadrak	70.0	15	70.2	-4	82.4	-5
Bolangir	37.4	-53	32.0	-64	158.4	98
Boudh	17.4	-73	30.9	-60	171.2	93
Cuttack	83.4	-1	72.9	-13	133.1	58
Deogarh	86.2	2	86.1	-22	57.0	-64

Dhenkanal	99.0	22	76.8	-2	124.3	42
Gajapati	53.6	-17	63.5	7	57.9	6
Ganjam	40.6	-24	41.0	-31	58.2	20
Jagatsingpur	76.6	-3	103.1	15	124.1	39
Jajpur	77.2	24	82.8	-7	111.8	36
Jharsuguda	76.6	-2	85.4	-2	176.2	49
Kalahandi	49.6	-35	32.2	-66	162.1	116
Kandhamal	55.9	-12	42.8	-44	141.1	59
Kendrapara	47.2	-24	89.0	47	166.0	78
Keonjhar	103.9	47	96.6	43	66.8	-22
Khurda	73.5	-3	67.4	-18	105.1	37
Koraput	101.5	4	142.9	45	104.4	2
Malkangiri	27.0	-76	90.0	-17	125.4	23
Mayurbhanj	98.0	20	80.2	10	98.5	2
Nawapara	68.5	-8	61.0	-17	95.6	57
Nawarangpur	122.8	25	74.7	-22	108.6	14
Nayagarh	65.2	-14	56.6	-26	78.7	14
Puri	92.5	52	106.4	29	167.0	127
Rayagada	80.1	1	56.1	-23	110.2	100
Sambalpur	84.6	0	101.6	-8	249.2	103
Sonepur	31.6	-58	74.3	-32	204.6	99
Sundargarh	55.2	-32	70.9	-18	84.1	-5
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	53.6	-29	16.5	-73	74.5	18
North & Middle Andaman	29.8	-72	186.2	75	58.8	-43
South Andaman	41.5	-56	166.5	77	16.2	-83
GWB						
Bankura	87.6	25	78.7	13	112.2	80
Birbhum	71.8	6	37.9	-47	47.4	-37
Burdwan	48.3	-26	57.2	-21	64.4	-5
East Midnapore	140.5	109	106.0	27	199.0	165
Hooghly	67.5	-5	39.1	-46	44.3	-28
Howrah	114.7	65	18.6	-80	95.3	-4
Kolkata	132.7	70	54.5	-43	158.6	92
Murshidabad	43.9	-45	18.5	-69	18.1	-65
Nadia	76.4	12	62.4	18	40.6	-21
24 Pargana (N)	128.2	75	88.9	12	92.5	32
Purulia	66.3	30	70.1	-2	133.1	73
24 Pargana (S)	123.8	16	199.4	64	188.8	111
West Midnapore	120.7	64	90.1	7	75.1	-1
SHWB & Sikkim						
Cooch Behar	421.2	142	158.7	5	34.5	-80
Darjeeling	529.2	226	66.8	-61	32.3	-78
East Sikkim	165.1	36	40.8	-68	57.0	-53
Jalpaiguri	614.9	211	85.9	-44	22.8	-84
Malda	54.0	-33	23.3	-66	9.5	-83
North Dinajpur	41.5	-55	**	**	0.6	-99

North Sikkim	159.1	41	136.5	21	82.1	3
South Dinajpur	31.5	-67	0.0	-100	8.5	-83
South Sikkim	165.4	37	79.1	-38	35.5	-71
West Sikkim	**	**	0.0	-100	**	**
Karnataka						
Coastal Karnataka						
Dakshina Kannada	182.5	-69	105.0	-60	129.4	-33
Udupi	178.0	-47	99.5	-62	213.2	-4
Uttara Kannada	151.8	-37	76.9	-64	166.6	-6
NI Karnataka						
Bagalkote	23.0	26	21.0	2	9.7	-41
Belagavi	29.8	-31	53.2	37	73.4	97
Bidar	99.8	87	90.9	110	18.7	-54
Dharwad	26.4	-13	29.9	-3	32.7	20
Gadag	20.3	20	27.7	44	8.8	-50
Haveri	44.3	33	23.8	-30	24.3	-21
Kalaburgi	137.6	253	72.2	55	9.2	-70
Koppal	31.3	37	24.5	19	0.0	-99
Raichur	49.6	64	51.2	65	2.2	-92
Vijayapura	50.5	108	52.4	98	8.5	-49
Yadgir	76.4	70	62.5	54	1.3	-96
SI Karnataka						
Ballari	24.0	12	33.2	57	1.3	-93
Bangalore Rural	134.2	422	51.4	93	13.2	-39
Bangalore Urban	70.9	203	85.4	225	2.0	-93
Chamarajanagar	27.4	53	21.1	66	1.0	-94
Chikaballapur	83.2	243	68.5	197	8.7	-60
Chikkamagaluru	34.8	-75	76.6	-44	111.1	-6
Chitradurga	41.2	184	17.0	23	2.4	-84
Davangere	51.8	109	34.7	41	8.3	-61
Hassan	18.7	-57	45.0	9	23.1	-31
Kodagu	66.4	-65	79.9	-52	115.8	-21
Kolar	84.3	307	64.4	239	0.0	-100
Mandya	47.5	252	65.3	478	1.4	-87
Mysuru	24.9	14	34.2	103	2.0	-87
Ramanagara	42.5	82	96.1	353	0.0	-100
Shivamogga	88.0	-31	79.8	-39	174.0	62
Tumakuru	58.9	208	61.7	246	0.4	-98
Kerala						
Alappuzha	68.9	-37	38.1	-60	57.0	-30
Kannur	62.1	-73	52.3	-72	127.8	-6
Ernakulam	121.6	-20	62.9	-45	62.3	-42
Idukki	93.7	-46	84.4	-48	72.6	-44
Kasaragod	85.8	-67	116.7	-44	86.5	-44
Kollam	62.9	-28	23.9	-68	25.5	-54
Kottayam	74.3	-38	33.6	-69	63.0	-30
Kozhikode	90.2	-58	24.1	-86	122.3	-7
Malappuram	45.9	-73	22.3	-84	78.5	-19
Palakkad	51.8	-61	35.0	-67	50.8	-38

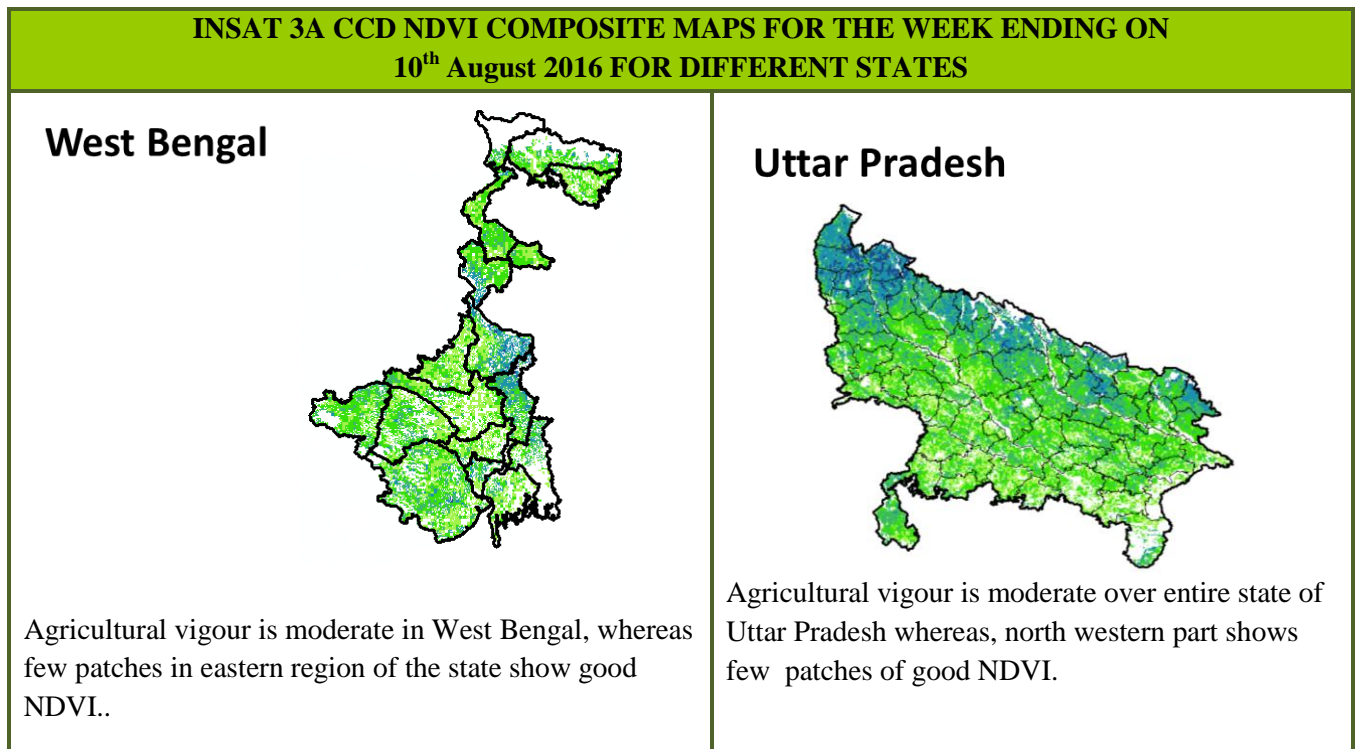
Pathanamthitta	63.7	-42	46.5	-53	48.9	-43
Thiruvananthapuram	34.1	-28	4.0	-91	13.8	-56
Thrissur	85.8	-50	23.6	-82	68.1	-37
Wyand	49.8	-79	55.3	-73	83.0	-49
Tamil Nadu						
Ariyalur	28.5	13	46.6	195	0.0	-100
Chennai	5.4	-80	14.4	-47	14.0	-54
Coimbatore	19.0	56	16.1	109	11.5	34
Cuddalore	24.5	4	21.4	36	1.6	-94
Dharmapuri	63.7	169	41.5	163	0.8	-95
Dindigul	19.0	11	8.2	-26	1.0	-92
Erode	38.5	237	14.5	110	0.0	-100
Kanchipuram	7.0	-77	16.2	-36	3.1	-90
Kanyakumari	13.2	-36	0.5	-97	3.6	-80
Karikal	1.0	-96	9.5	-16	0.0	-100
Karur	39.3	309	22.9	295	0.0	-100
Krishnagiri	80.6	307	65.7	301	0.0	-100
Madurai	56.6	235	14.1	1	0.0	-100
Nagapattinam	9.9	-45	3.0	-78	7.2	-58
Namakkal	76.2	268	21.7	55	1.5	-92
Nilgiris	42.1	-29	35.9	-28	8.8	-80
Perambalur	15.3	-4	65.5	536	0.0	-100
Puducherry	16.1	-45	0.2	-99	0.7	-98
Pudukottai	24.8	21	10.1	-6	5.0	-75
Ramanathapuram	10.2	5	6.8	-5	1.3	-78
Salem	64.6	146	50.2	195	1.0	-96
Sivaganga	46.1	114	5.7	-59	7.7	-63
Thanjavur	20.0	0	16.6	21	1.0	-93
Theni	24.8	167	8.8	46	2.2	-66
Tirunelveli	5.8	-31	8.2	19	0.2	-97
Tirupur	9.0	27	3.2	-25	0.2	-97
Tiruvallur	11.0	-59	9.9	-58	3.9	-85
Tiruvannamalai	45.6	74	42.3	102	0.0	-100
Tiruvarur	15.6	-26	13.4	6	0.0	-100
Toothukudi	1.8	-55	9.8	151	0.0	-100
Trichy	37.8	162	32.5	277	0.1	-99
Vellore	60.3	93	47.6	108	0.3	-99
Villupuram	72.5	205	17.6	-23	2.1	-90
Virudhunagar	23.8	123	18.4	254	0.0	-100
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	75.9	50	68.8	65	26.3	-42
Guntur	7.4	-81	35.9	2	2.8	-90
Krishna	24.7	-57	34.7	-29	4.3	-89
Nellore	19.2	-27	12.6	-29	0.0	-100
Prakasam	11.2	-59	15.8	-30	1.4	-91
Sirkakulam	55.3	15	43.7	0	21.6	-51
Visakhapatnam	82.1	79	49.1	24	25.1	-32

Vizianagram	75.5	68	24.8	-41	21.1	-40
West Godavari	82.4	31	52.6	7	14.6	-74
Rayalaseema						
Anantapur	39.2	124	47.0	205	0.7	-95
Chittoor	38.4	35	66.1	244	0.5	-98
Cuddapah	42.8	47	73.5	217	0.4	-98
Kurnool	60.6	94	49.1	66	3.8	-85
Telangana						
Adilabad	117.7	47	68.1	-10	37.7	-44
Hyderabad	68.4	31	56.7	19	12.7	-69
Karimnagar	102.5	60	77.9	29	39.8	-28
Khammam	44.5	-39	48.2	-35	37.0	-37
Mehabubnagar	53.6	26	47.8	11	5.6	-82
Medak	58.5	-4	68.3	14	12.5	-73
Nalgonda	67.5	57	39.0	8	3.8	-86
Nizamabad	83.6	10	115.6	54	24.1	-63
Rangareddy	54.8	8	75.9	62	13.5	-60
Warangal	117.0	63	52.3	-13	32.1	-39

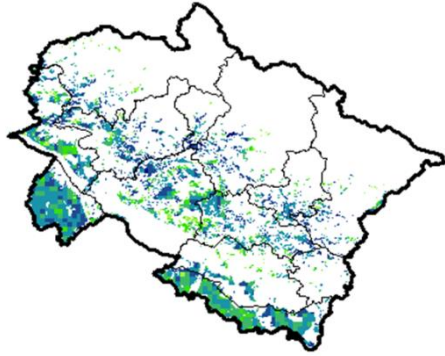
Legends

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

Annexure II

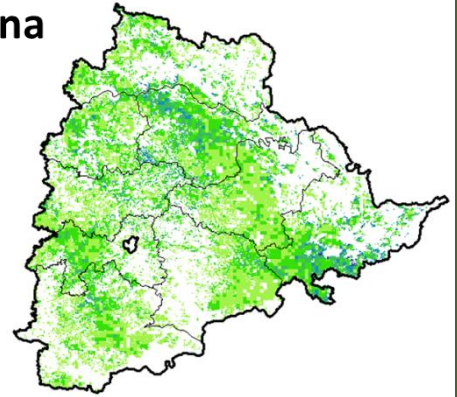


Uttarakhand



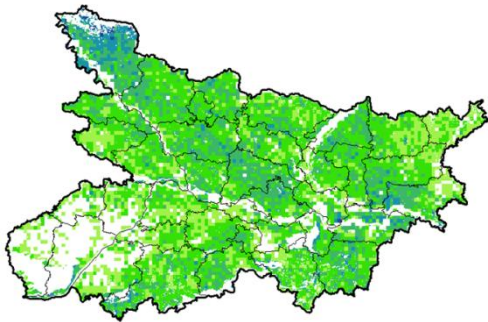
Agricultural vigour is good in state of Uttarakhand.

Telangana



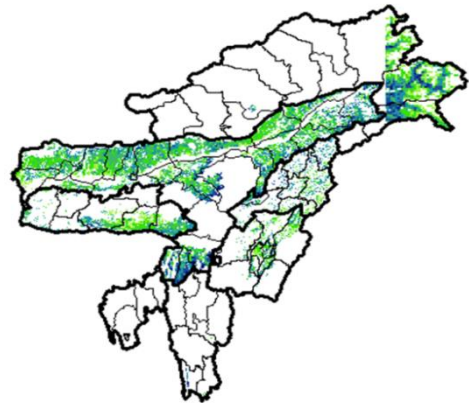
Agriculture vigour is moderate over entire state of Telangana.

Bihar



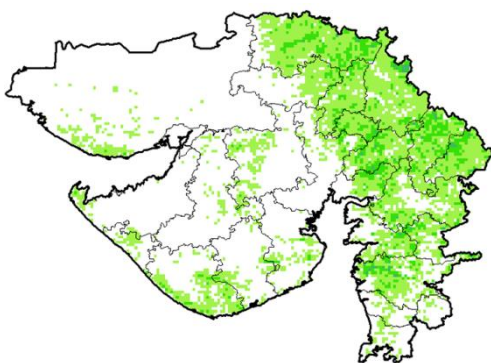
Agriculture vigour is moderate over major parts of Bihar whereas north-western part shows good NDVI values.

North East Region



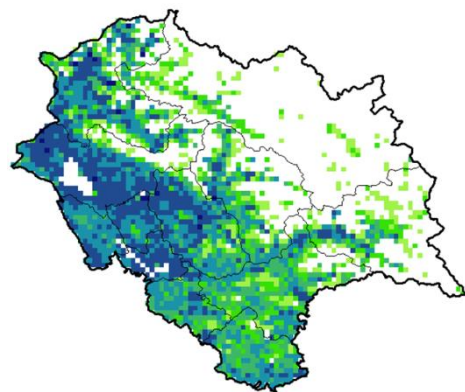
Agriculture vigour is good over north-east states of country

Gujarat



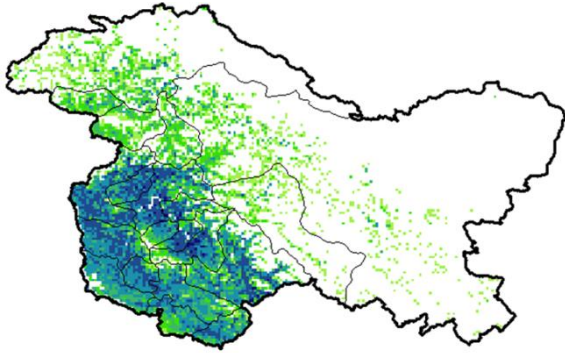
Moderate NDVI values are observed in Kutch, Saurashtra and Gujrat region.

Himachal Pradesh



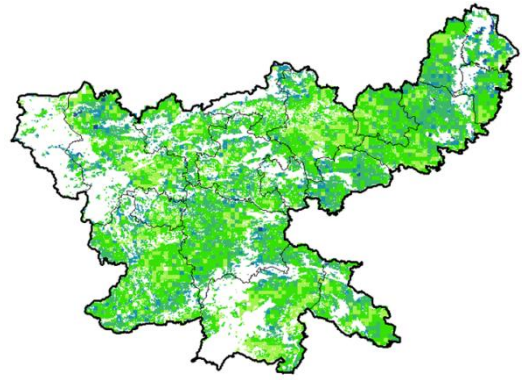
Agriculture vigour is good over entire state of Himachal Pradesh.

Jammu & Kashmir



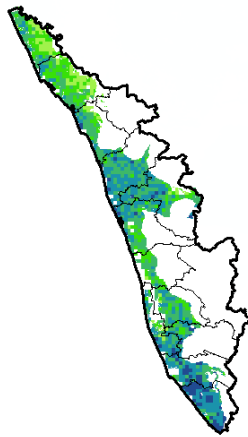
Agriculture vigour is good over central part of Jammu & Kashmir, whereas the remaining region shows moderate NDVI.

Jharkhand



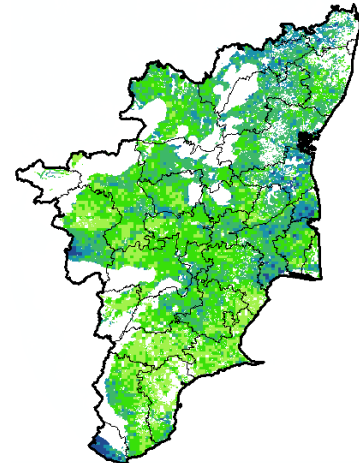
Agriculture vigour is moderate over entire state of Jharkhand.

Kerala



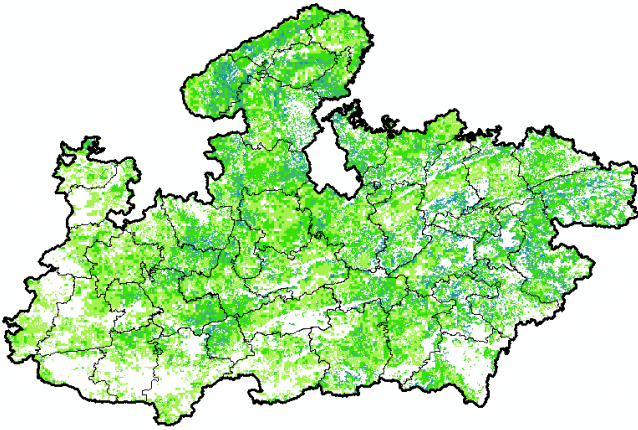
Agriculture vigour is good over entire state of Kerala except northern part shows moderate NDVI values.

Tamil Nadu



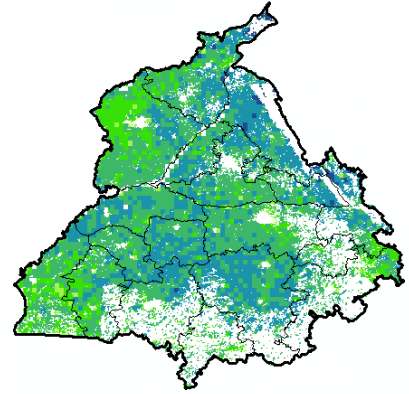
Agricultural vigour is good in patches of northern and central part of Tamil Nadu, whereas rest of the part shows moderate NDVI.

Madhya Pradesh



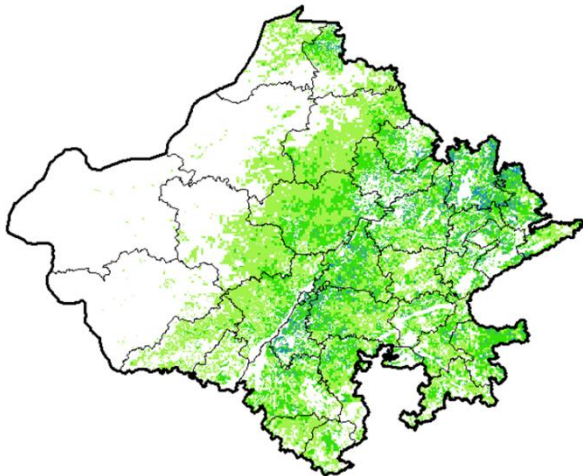
Agriculture vigour shows moderate values of NDVI over entire state of Madhya Pradesh.

Punjab



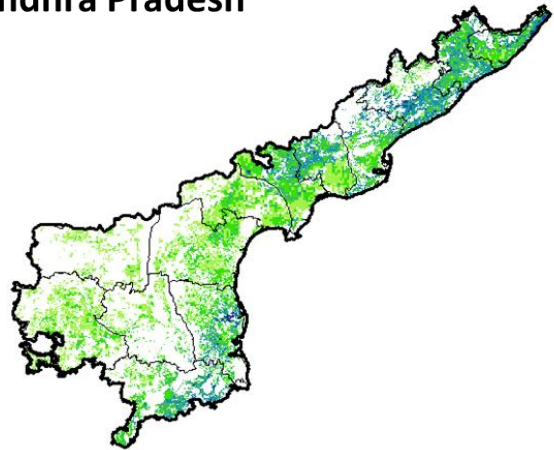
Agricultural vigour is good over the entire state of Punjab whereas northern region shows patches of moderate NDVI.

Rajasthan



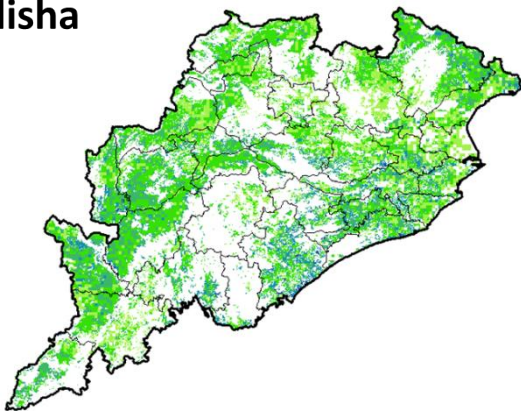
Agriculture vigour is moderate over the entire state of Rajasthan.

Andhra Pradesh



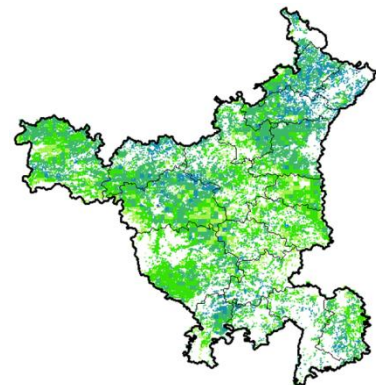
Agriculture vigour is moderate over central part whereas north eastern parts shows good NDVI in the state of Andhra Pradesh.

Odisha



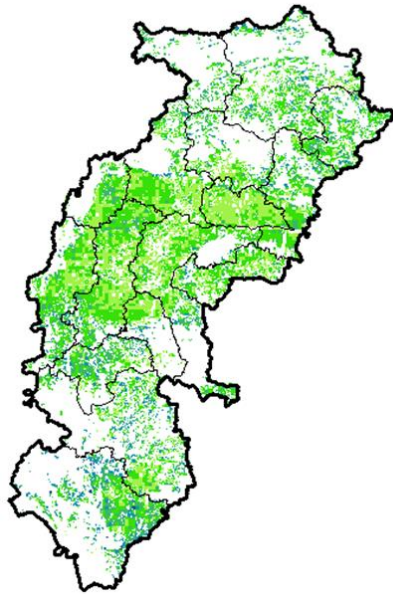
Agricultural vigour is moderate over entire state of Odisha.

Haryana



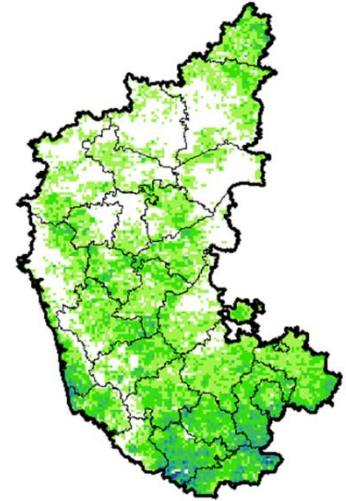
Agriculture vigour is moderate over entire state of Haryana.

Chhattisgarh



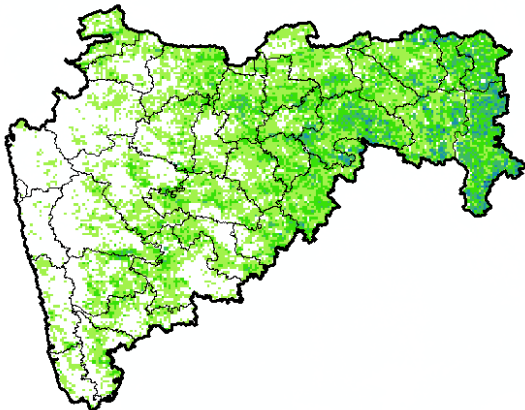
Agriculture vigour is moderate in the state of Chhattisgarh.

Karnataka



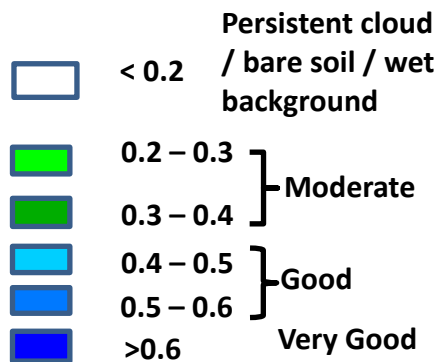
Agriculture vigour is moderate over entire state of Karnataka.

Maharashtra



Agricultural vigour is moderate over entire state of Maharashtra

For Delhi NDVI Map is not available due to some problem in data set.



Annexure III

Assam

Sali rice: Ranjit, Bahadur, Satyaranjan, Basundhara, Kushal, Mahsuri, Bhogali, Rangilee, Ketekijoha. Satyaranjan and Basundhara (in double cropping areas having crop duration of 130-135 days). Jalashree, Jalkunwari, Plawan (for flood affected areas).
Ranjit, Gitesh, Bahadur, Kushal, Piolee (long duration).
Satyaranjan, Bosundhora, T.T.B.-404, Mulagabharu, Kanaklata, Joymoti, IR-36, IR-64 etc and Disang, Luit, Kapilee, Dikhow (medium duration).
Capsularis jute: JRC 321 and UPC 94.
Olitorious jute: Navin (JRO 524), Basudev(JRO 7835), Baisakhtissa(JRO 632), Bahagi (sel-2) and Tarun.
Okra: Pusa Sawani, Arka Anamika, Parbhdani Kranti.
Ridge gourd: Pusa Nashdar or other local varieties like AAU-1, AAU-2, AAU-3 etc.
Sponge gourd: Pusa Chikni or other local varieties.
Banana: Dwarf Cavendish, Jahaji (Dwarf Cultivar), Cheni Champa, Malbhog, Chenichampa, Malbhog , Barjahaji (Medium Tall cultivars).
Papaya: Washington, Haflong, Rasi, Korg Honey Dew, Co-1, Co-2, Pusa Delicious, Pusa Majesty.
Guava: Alahabad Safeda, Lucknow-49, Chittidar, Seedless.
Fodder crops : Hybrid Napier, Setaria and Guinea.

Meghalaya

Sali/ kharif rice: Shahsarang -1, Lampnah, IR 64, Ranjit, RCPL 1-412, RCPL 1-410, RCPL 1- 411 & local varieties like Mendri, Manipuri.
Groundnut: ICGS 76, JL 24.
Soybean: JS 335, Bragg, Ankur, Pusa Soubean-1, Local JS 2.

Nagaland

Low land rice: CAU R1, CAU R3, RCM-9 and RCM-11 (Short to medium duration), Gitesh (short duration variety).

Tripura

Groundnut: TAG 24, TG 37A, ICGS 76.
Maize : DMH- 849, 117, HQPM 1, BQPM 9.

West Bengal

Coconut: Eastcoastal, Hazari
Banana : Mortoman, Chapa, Kathali, Singapuri,
Mustard: Varuna, Sita and Bhagirathi.
Jute : Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali etc.
Aman rice: Medium duration MTU-7029, MTU1001, Pratiksha, and for long duration CR1017, CR1018, Cr1019, Sabita.
Paddy : IET-4094, 2233, Ratna, Bikash, Kitish, Sasya-shree, IR-42, Swarna, Mashuri, IET-8002.

Odisha

Maize: Navjot, Shakti, Decan-107, Decan-109,
Hybrid: Megan-G, Megan, MM-1107, Highshell, Prabal, Proagro 4643, Bio9681, Pinnacle, DMH-7705,
Rice: *Early:* Jogesh, Siddant, Hazaridhan, Mandakini, Jyotirmayee, Virendra
Medium: Pratikshya, Manaswini, Tapaswini MAS, Konark, Surendra, Kharavela, Naveen, Abhisek
Late: Barsadhan, Ranidhan, Pooja, Mrinalini, RGL-2837, Moti, Ketakijoha, Padmini, Kanchana, Mahanadi, Jagabandhu
Hybrid varieties: CR Dhan 701, NK 5251, JKRH 401, Ajay, Rajalaxmi, Arize 6444G
Cotton: Suraj, Supriya, B.S.-30, B.S.-279, Surabhi, Sujata
Hybrid: Bunny, Diana, Bhaskra, Namaskara, Tulasi, Sigma, Chiruta, Takat
Mango: Grow Baiganpalli, Totapuri, Bombay green, Suvarnarekha, Neelam, Himsagar., Langra, Dusheri, Amrapalli, Mallika, Ratna, Ramkella, Rummani, Sindhu, Alphanso and Keshar, etc.
Ragi: Divyasingh, AKP-2, AKP-3, AKP-7, Godavari, Neelachal, Bhairavi, Shubhra, and Chilika.
Banana: Hampa, Patakpara, Bantal, Robusta and Kabuli etc.

Bihar

Kharif onion: Agri Found Dark Red (ADR), N-53, Bhima super, Arka kalia.
Turmeric: Rajendra Sonia and Rajendra Sonali.
Ginger : Maran and Nadia.
Kharif Paddy: Seeta, Santosh, Saroj, Rajshri, Prabhat, Rajendra suvasni, Rajendra kasturi and Rajendra bhagwati.
Jute : JRO 8432, JRO 66, JRO 128 JRO 204 and JRO 66.
Bottle gourd: Pusa Naveen, Pusa Samridhi,
Bitter gourd: Pusa Visesh, Pusa-2 mosumi, Pumpkin- Pusa Visvash, Pusa Vikash,
Ridge gourd: Pusa Chikni,
Cucumber: Pusa Uday, Pusa Barkha

Jharkhand

Rice: Birsa Dhan 108, Birsa Vikash Dhan 109, 110, 111, Sahbhagi and Vandana, IR 36, 64, Lalat, Naveen,

Sahbhagi, BR 10, Kanak, Rajendra Dhan 202, Sughanda, Birsa Vikash Sugandh Dhan 2, Birsa Vikash Dhan 203.
Maize: Suwan Composite 1(100 days) and hybrid variety- HQPM 1 (100 days), Composite variety- Birsa Makka 1 (80-85 days) and hybrid variety- Kanchan (80-85 days), Birsa vikash Makka 2(70-80 Days).
Red gram: Birsa Arhar (210 days), Bahar (240 Days) and ICPH 2671 (210 days).
Groundnut: AK 12-24, Birsa moongfali 1, 2, 3 and bold type – Birsa bold (BAU 13).
Urad: T 9, Pant U 19, 30, 35 and Birsa urd 1.
Moong: Pusa Vishal, S M L 668, K 885, P S 16 , Pant Moong 2 and P D M 11.
Sweet potato: Birsa sakarkand-1 and Sri Bhadra.

Jammu & Kashmir

Paddy (Sub Tropical Zone): Basmati370, Ranbir Basmati, China-1039,K-39,K-343,Giza-1.

Maize: Vivek-25,Vivek QOM-9 HM-5 and HQPM-1.

Uttarakhand

Sugarcane: Pant 84211, Co-238, Co-241, Co Pant 3220, COS-8436, COS-88230 etc. and medium to late sown varieties like Co Pant 90223, Co Pant-96219, COS-97222, COS-767, COS-1148, COS-96268 etc.

Okra(Bhabar and Tarai Zone): Uphar, Punjab Padmini, Punjab-1, Punjab-7, Arka, Anamika, Abhay, Parbhani Kranti

Paddy: Sharbati,Pusa1121,Pusa1,Pusa44,NDR 359.

Groundnut: TA-64, Chandras, Kaushal, Prakash, Ambar.

Dwarfs variety of paddy: Narendra-118, Narendra-97, Pant Sankar Dhan-1 and Pant Sankar Dhan-10.

Pigeon pea: Pant Arhar-3, Pant Arhar-291, UPAS-120, Pusa-992.

Maize: Tarun, Navin, Kiran, Navjot, Pratap maize-1, Pusa sankul-3& 4 Kg seed of chilly crop.

Soyabean: P.S.-1042, P.S.-1241, P.S.-1347, P.S.-1225, P.S.-19.

Groundnut: TA-64, Chandras, Kaushal, Prakash, Ambar.

Okra: Uphar, Punjab Padmini, Punjab-1, Punjab-7, Arka, Anamika, Abhay, Parbhani Kranti.

Radish: PushaChetki.

Himachal Pradesh

Cauliflower: snowball and Giant snowball.

Radish: Japanese white, Chinese pink and mino early white

Turnip: PTWG-1

Carrot: Pusakesar

Fenugreek : I.C. 74, kasoori.

Peas : Mater ageta-6 (early variety).

Cabbage: Pride of India, golden achor and hybrid

East Uttar Pradesh

Kharif Maize: ganga-11, sartaj, H.Q.P.M.-5, H.Q.P.M.-8, Pro-316, Bio-9681, Wai-1402 K, Prabhat, hybrid varieties G-1, 5 and selective varieties of Tarun, Navin, Kanchan, Sweta and Jaunpuri for early sowing.

Rice: Narendra-359, Malvia dhan-36, Narendra dhan-2026, Narendra dhan-2064, Narendra dhan-2065, Narendra dhan-3112, Sarju-52, Pant dhan-4, seeta, Jalamagna, jalanidhi, jalparia, chakia 59.

Hybrid varieties : Pro. Agro-6444(2001) Eraese, P.H.B.-71, Narendra sankar dhan-2,3, K.R.H.-2, P.R.H.-10, U.S.-312, R.H.-312, V.S.R.-202, R.H.-1531,

Scented varieties: Type-3, Pusa basmati-1, Malvia sugandh-105, Malvia sugandh-4-3, Narendra sugandh or Narendra usar dhan-1, Narendra usar dhan-2,C.L.R.-10, or Narendra usar dhan-2008

Turmeric: Kasturi, Paspu, Amlapuram, Madhukar, Sugna, Rajendra

Ginger -suprabha, suruchi, surbhi and Himgiri

Urad Bean: Pant U-19, Azad URD-1, KU 91-2, Shekhar-1, KU-301

Arahar: Bahar, Amar, Narendra Arahar-1,2, pusa-2001, pusa-991, pusa-992, paras manak, UPAS 120.

Moong: Type-27, 56

West Uttar Pradesh

Ladies finger: VRO-6, VRO-5.

Sugarcane: ko.sha 88230, ko.sha 8436, ko 0238, ko.sha 07250 or U.P. 0512.

Barseem: V.L.1,V.L.10, maskavi, jai,K-8027, K-9565, Mandakini.

Onion: pusa red, pusa white.

Sugarcane: The mid and late maturing varieties of sugarcane: CO Pant 211, Co Sa 687 and Co Sa 8436.

The varieties recommended in areas with poor water drainage: B.O.54 and B.O.91.

Baby corn: M.H.-4.

Punjab

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89,CO118, COJ85, COJ64.

Rice: Pusa-44, T.R-112 and T.R-113.

Onion: Punjab Naroya, Punjab White and PRO 6.

Radish: Punjab Pasand and Japanese white.

Turnip: L-1.

Carrot: Punjab Black Beauty, Punjab Carrot Red and PC-34.

Tomato: TH-1,PunjabRatta, Punjab NR 7, Punjab Chuhara, Punjab Upma, Castle Rock.

Rice:Hybrid varieties: K. R. H 2, PHB 71, Pant hybrid Dhan1, Narendra hybrid dhan 1, P R H 10

High yielding varieties: Pusa 44, Pant Dhan-4, Pant Dhan-10, Pusa-834, Pusa basmati-1, Pusa basmati-1509, Pusa improved basmati, Pusa sugandha-5, Pusa sugandha-4 (Pusa 1121), Ranvir basmati and Taravadi basmati.

Pigeon pea: Pusa 2001, Pusa 992, Paras, Manak.

Maize: PMH1, Parbhat, PMH2

Paddy : PR-124, PR-123, PR-121, PR-122, PR-114, PR 113, PR-126, PR-115.

Okra: Punjab-8 and Punjab-7

Delhi

Oat : J.H.O-822, O.L.-9, Pusa oat-5.

Barseem: Vardan, Buland Barseem-1, Masakavi, J.B-3;

Radish: Japani White, Hill queen, French Radish;

Spinach: PusaBharti.

Amaranths: PusalalChaulai, PusaKiran.

Ladyfinger: Pusa A-4.

Radish: Japani White, Hill queen, French Radish.

Spinach: All Green, PusaBharti;

Fenugreek: PusaKasuri;

Coriander: PantHaritama, Hybrids.

Turnip: Pusa Swati, Local Red variety.

Bottle Gourd- Pusa Naveen, PusaSamridhi

Bitter Gourd- PusaVisesh, Pusa-2 mosumi

Pumpkin- PusaVisvash, PusaVikash

Ridge Gourd- PusaChikni

Cucumber- PusaUday, PusaBarkha

East Rajasthan:

pearl millet: HHB 67, HHB 60, Raj 171, ICMH 356 and ICTP 8201(improved varieties)

Raj-171, ICTP-8203, RHB-173, RHB-177, RHB-121, HHB-67(improved varieties)

Sorghum: CSH-6, CSH-9, CSV-10, CSV-15.

TG37-A, DH-86, Pratap Mungfali-1.

Rice: P.R. 106, B.K.190, Mahisugandha(Basmati)

kharif onion: N-53 & Agrifound dark red

Maize: Aravali Makka-1, Pratap Makka-1, Pratap Makka-5, Pratap Hybrid Maize-1, Pratap Hybrid Maize-2 and bio-9637.

Hybrid varieties are-Mahi Dhawal, PEHM- 2, Pratap Hybrid Maize-1, Pratap Makka-3, Pratap Makka-5, Bio-9637, Bio-9681, Pratap

HQPM-1, Pratap Hybrid Maize-3, Pratap Makka-9

Ageti-76, Bassi Selected, Mahi Kanchan

Greengram: RMG-62, RMG-268. RMG-492 & RMG-344, IPM-02-3.

Cowpea: FS-68, RC-19 and RC-101.

Moth: RMO-40, IPCMO-912, RMO-257, RMO-225, RMO-435 (Vikash) (improved varieties)

West Rajasthan

Green fodder: Jwar/Bajra mixed with guar. popular varieties for Jwar are Raj Chari-1, Raj Chari -2, MP Chari, SSG 59-3, MSFH-3, MSFH-4 and Hara Sona; for Bajra: Raj Bajra Chari-2, Co -8, AvikaBajra Chari-19 and Giant bajra; for Guar: RGC-986, Bundel guar-1, Bundel Guar-2 and Bundel Guar-3.

Pearl millet: R.H.B.-177, ICTP-8203, RHB-121, RHB-173, RHB-154, GHB-538, HHB-67(improved varieties)

Bhindi: Ark Anamika, varshauphar, Parbhanikranti, pusamakhmali.

Groundnut: HNG-123, HNG-69, ICHG-00440, HNG-10, TG-37 A, Girnar-2, R.G.-425, GG-20, TG-39.

Sorghum: Girnar-2, RG-425, HNG-10, GG-20, TG-37-A, TG-39.

Narma cotton: R.S.T.-9, R.S.-810, R.S.-2013, Bikanerinarma, R.S.875, MaruVikas(Raj. H.H.16)

BT Narma cotton: M.R.C.H.6304, M.R.C.H.6025, R.C.H.650, Bioseed-6588, Bioseed-6488, R.C.H.-314, J.K.C.H. 1947, M.R.C.-7017 (BG-II) or N.E.C.H.6.

Gujarat

Pigeonpea: BDN-2, Vaishali, GTH-1, GT-100.

Sunflower: EC-68414, Modern GS-1, 2 & 3.

Sesame: Gujarat sesame -1, 2, 3 & 4.

Castor: GAUCH-1, GCH-2, GCH-4, 5, 6 & GCH-7.

Sorghum (fodder): CSH-6, GFS-4, GFS-5, GAFS-11.

Chhattisgarh

Tomato: Pusa early dwarf, Sweet 72, Pusa rubi, Pusa Gurab, Mangala, Naveen, Laxmi 5005 & NS 815.

Brinjal: Punjab Shadabahr, K S 331, P H 5, P H 6, KS224, A R B H -543.

Karnataka

Ragi: Indaf-5, Indaf-9, and GPU-28.MR-01, MR-06 & ML-365.

Maize: Hybrids -DMH-2, Arjun and Private hybrids, GH-0727, Renuka (G-25).

Andhra Pradesh

Sorghum: CSH-9, CSH-13, CSH-14, PSV-15, PSV-19

Bajra:ICTP 8203,PBH 3
Korra:Prasad, Krishnadevaraya, Narashimharaya, Srilakshmi, Surya nandi
Cowpea: C 152 GC3 C0-4 CO-5
Sunflower:NDSH1 KBSH1 KBSH 44 DRSH 1
Green gram:LGG 407 LGG 450 LGG 460 MGG 295 ML 267
Field bean:TFB-1 TFB-5

Tamil Nadu

Samba rice:CR 1009 and ADT 50.

Telangana

Cotton:American Cotton varieties,Desi Cotton varieties (G. arboreum. L and G. herbaceum. L, Intra/Inter – specific Cotton hybrids, Bt. cotton.