



National Agromet Advisory Service Bulletin



Friday 31st July 2015
(For the period 31st July to 4th August 2015)



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

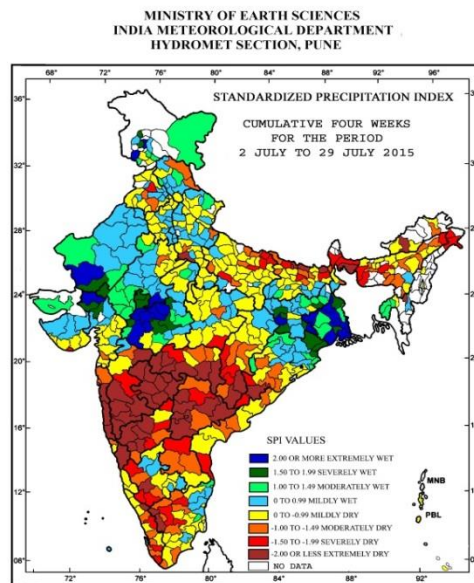
Cyclonic Storm, 'KOMEN' over northeast Bay of Bengal and adjoining coastal areas of Bangladesh

- The cyclonic storm 'Komen' over northeast Bay of Bengal moved northwestwards and weakened into a Deep Depression. The Deep depression over Bangladesh remained practically stationary and lay centred at 0830 hour IST of today 31st July over Bangladesh near Lat. 23.1°N and Long. 90.0 °E about 85 km eastsoutheast of Jessore (Bangladesh). It would move westnorthwestwards and weaken gradually.

Monsoon Watch

- The southwest monsoon has been vigorous over West Rajasthan and active over Gangetic West Bengal, Nagaland, Manipur, Mizoram & Tripura and Jharkhand during past 24 hours ending at 0830 hours IST of today.

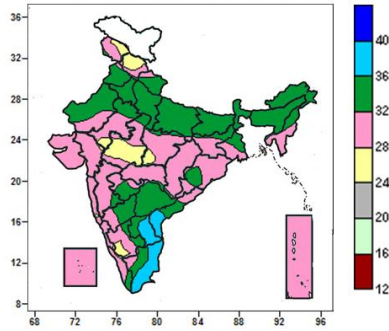
Standardised Precipitation Index Four Weekly for the Period 2nd to 29th July 2015



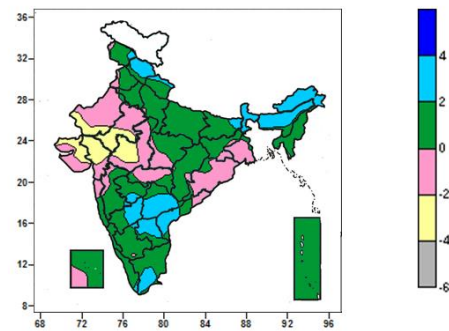
- Extremely/severely wet conditions experienced in many districts of West Bengal; few districts of Jharkhand, Jammu & Kashmir and Madhya Pradesh; Balasore, Bhadrak, Mayurbhanj districts of Odisha; Barmer, Jalore, Jhalawar, Sirohi districts of Rajasthan; Banaskantha, Mehsana, Patan districts of Gujarat Region.
- Extremely/Severely dry conditions experienced in most districts of Telangana; many districts of Konkan & Goa and Maharashtra; few districts of Arunachal Pradesh, Chhattisgarh and Karnataka; Kamrup, Dhubri, Tinsukia districts of Assam; West Garo Hills district of Meghalaya; Cooch Behar, Darjeeling, Jalpaiguri districts of West Bengal; Koraput, Malkangiri, Nawarangpur districts of Odisha; Araria, East Champaran, Madhubani, Purnea, Samastipur, Sitamarhi, Sheohar districts of Bihar; Fatehpur, Gorakhpur, Kushi Nagar, Maharajganj, Agra districts of Uttar Pradesh; Jalandhar district of Punjab; Balaghat district of Madhya Pradesh; Nellore district of Andhra Pradesh; Coimbatore, Dharmapuri, Erode, Karur, Nilgiri districts of TamilNadu; Palakkad, Trivandrum, Pathanamthitta, Wynad districts of Kerala.
- Moderately dry conditions experienced in most districts of Meghalaya; few districts of Assam; Konkan & Goa and Andhra Pradesh; East Siang district of Arunachal Pradesh; South Dinajpur district of West Bengal; Gajapati, Kandhamal, Rayagada districts of Odisha; Begusarai, West Champaran, Darbhanga, Kishanganj, Saharsa, Siwan districts of Bihar; Balrampur, Faizabad, Kanpur Dehat, Kaushambi, Siddharth Nagar, Mahamaya Nagar, Pilibhit districts of Uttar Pradesh; Moga, Barnala districts of Punjab; Kinnaur, Lahaul & Spiti districts of Himachal Pradesh; Dausa district of Rajasthan; Katni district of Madhya Pradesh; Navsari district of Gujarat Region; Dhule, Bhandara, Nagpur, districts of Maharashtra; Durg, Raipur, Bijapur districts of Chhattisgarh; Adilabad, Nalgonda districts of Telangana; Haveri, Raichur, Chamarajanagar, Chikmagalur, Mandya districts of Karnataka; Alapuzha, Ernakulam, Kottayam, Malappuram, Kollam districts of Kerala.
- Rest of the country experienced moderately wet/mildly dry/wet conditions.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 29.07.2015

Actual Mean Maximum Temperature (°C) in India for the week ending 29.07.2015



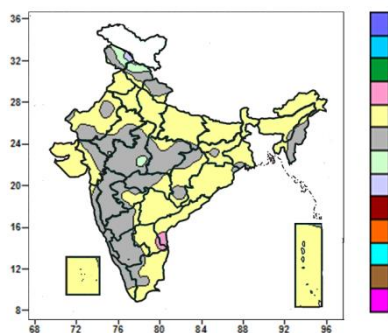
Mean Maximum Temperature (°C) Anomaly in India for the week ending 29.07.2015



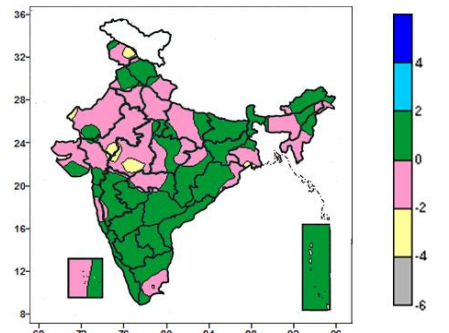
- Mean maximum temperature were between 36 to 40°C over many parts of Rayalaseema and Tamil Nadu, some parts of Coastal Andhra Pradesh.
- Mean maximum temperature were between 32 to 36°C over Haryana & Delhi, West Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Bihar, Arunachal Pradesh, Assam & Meghalaya and Nagaland, many parts of Uttarakhand, Punjab, West Rajasthan, East Uttar Pradesh, North Interior Karnataka, Telangana and Marathwada, some parts of Odisha, Tamil Nadu, Rayalaseema, Gangetic West Bengal, Jharkhand and isolated pockets of Madhya Pradesh, Madhya Maharashtra, South Interior Karnataka and Kerala.
- It was below 32°C over remaining parts of the country.

- Mean maximum temperature were above normal by 2 to 4°C over Arunachal Pradesh, Sub-Himalayan West Bengal & Sikkim, many parts of Himachal Pradesh, Assam & Meghalaya, North Interior Karnataka, Telangana, Coastal Andhra Pradesh, Rayalaseema, some parts of Tamil Nadu and isolated pockets of Jammu & Kashmir, Bihar, Marathwada, Madhya Maharashtra, South Interior Karnataka and Kerala.
- Mean maximum temperature were below normal by 2 to 4°C over many parts of Gujarat, some parts of Rajasthan and West Madhya Pradesh.
- It was normal to near normal in remaining parts of the country.

Actual Mean Minimum Temperature (°C) in India for the week ending 29.07.2015



Mean Minimum Temperature (°C) Anomaly in India for the week ending 29.07.2015

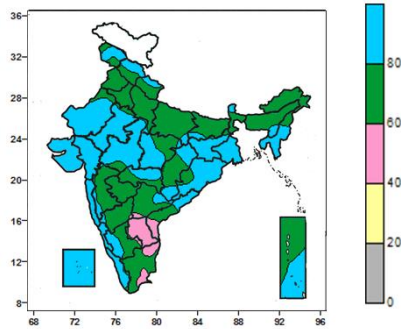


- Mean minimum temperature was 12 to 16°C over isolated pockets of Jammu & Kashmir.
- Mean minimum temperature was 16 to 20°C over some parts of Jammu & Kashmir, Himachal Pradesh and isolated pockets West Madhya Pradesh.
- It was above 20°C over rest of the country.

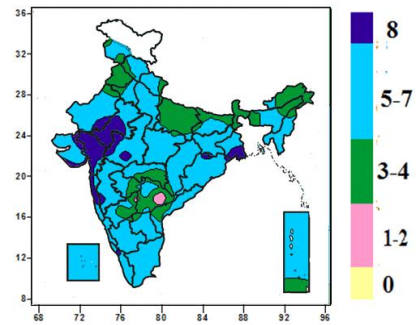
- Mean minimum temperature was below normal by 2 to 4°C over isolated pockets of Jammu & Kashmir, Rajasthan and West Madhya Pradesh.
- It was normal to near normal in remaining parts of the country.

Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 29.07.2015

Relative Humidity (%) over India for the week ending 29.07.2015



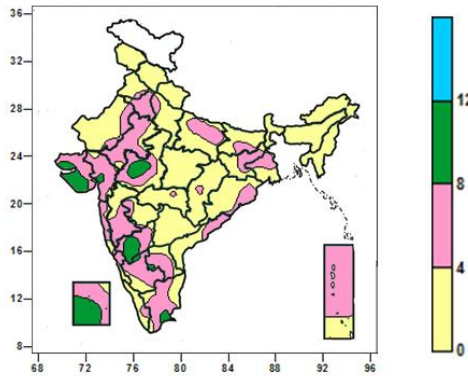
Cloud amount (okta) over India for the week ending 29.07.2015



- Mean Relative humidity was above 80% over Gangetic West Bengal, Sikkim, Mizoram, Tripura, Gujarat, Konkan & Goa, Coastal Karnataka, Lakshadweep, many parts of Jammu & Kashmir, Rajasthan, Madhya Pradesh, Jharkhand, Manipur, Odisha and Kerala, some parts of Himachal Pradesh, Uttarakhand, Chhattisgarh, Vidarbha, South Interior Karnataka, Coastal Andhra Pradesh, Andaman & Nicobar Islands and isolated pockets of East Uttar Pradesh, Bihar, Assam, Madhya Maharashtra, North Interior Karnataka and Telangana.
- Mean Relative humidity was 60 to 80% over rest of the country except Rayalaseema and isolated pockets of Coastal Andhra Pradesh, Telangana and Tamil Nadu where it was 40 to 60 %.

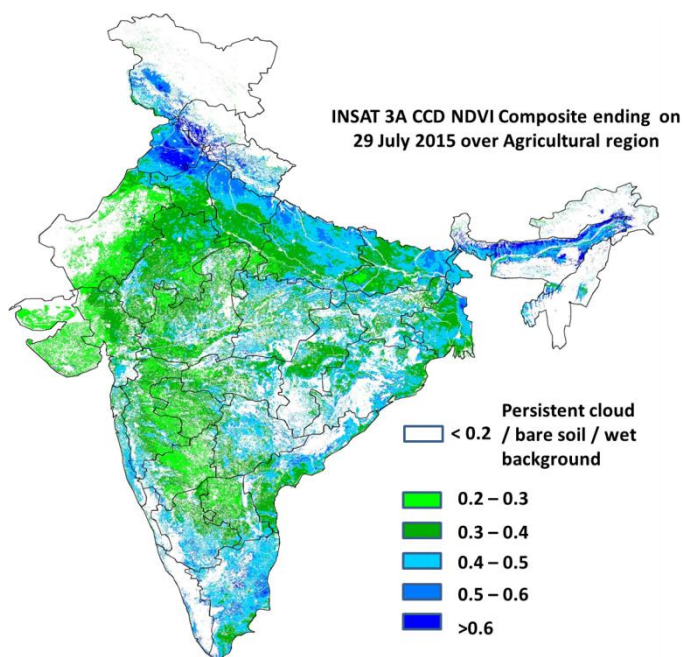
- Sky remained cloudy (8 okta) over many parts of Gujarat Region, some parts of Rajasthan, West Madhya Pradesh, Gangetic West Bengal, Konkan and isolated pockets of Jharkhand and Kerala.
- Sky remained generally cloudy (5 to 7 okta) over rest of the country except Punjab, many parts of East Uttar Pradesh, Arunachal Pradesh, Vidarbha, Telangana, some parts of Bihar, Assam & Meghalaya, Nagaland, Marathwada, North Interior Karnataka, isolated pockets of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, West Rajasthan, East Madhya Pradesh, Rayalaseema, Coastal Andhra Pradesh and Andaman & Nicobar Islands, where it was partly cloudy / mainly clear (3 to 4/ 1 to 2 okta).

Wind speed (knots) over India for the week ending 29.07.2015



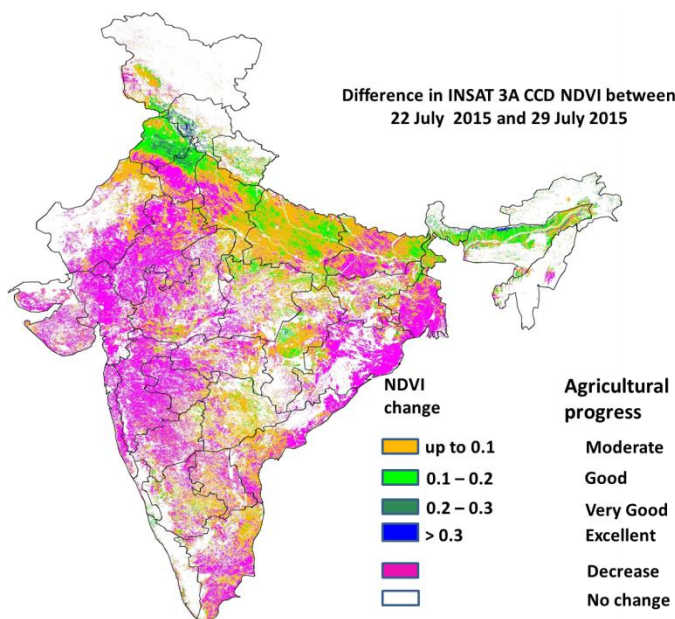
- Mean wind speed was 8 to 12 knots over many parts of Saurashtra & Kutch, Lakshadweep, some parts West Madhya Pradesh, North Interior Karnataka and isolated pockets of Gujarat Region, South Interior Karnataka and Tamil Nadu.
- It was less than 8 knots over rest of the country.

INSAT 3A CCD NDVI COMPOSITE ENDING ON 29th July 2015 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is very good in most parts of West Bengal, Punjab, some pockets of East Bihar, Haryana and South Interior Karnataka, Coastal Kerala, Northern parts of West and East Uttar Pradesh, East Rajasthan, East Madhya Pradesh, Gujarat, Telangana, Coastal Andhra Pradesh, Jharkhand where NDVI varies from 0.4 to 0.6. Agricultural growth was good over most parts of Uttar Pradesh and Bihar and some parts of Gujarat, Punjab and Haryana, Central Maharashtra, Coastal Odisha (NDVI: 0.3-0.4). NDVI remains within the range of 0.2 to 0.3 over most parts of rest of India.

Difference in INSAT 3A CCD NDVI between 22nd and 29th July 2015



- Good change in NDVI (0.1 - 0.2) was observed in some patches of Punjab, Haryana and patches of East Uttar Pradesh and Madhya Pradesh. Moderate progress (up to 0.1) in NDVI was observed over some patches of Haryana, in some patches of East Madhya Pradesh, East Uttar Pradesh and West Rajasthan. Decrease in NDVI was observed in Maharashtra, Gujarat, Coastal Andhra Pradesh, Odisha, West Bengal, Bihar, North Interior Karnataka, Tamil Nadu, Rajasthan and North East.

- INSAT 3A CCD NDVI composite maps for the week ending on 29th July 2015 for different States are given below in Annexure II.

Weather Forecast for next 5 days valid upto 0830 hours of 5th August 2015

5 Day Rainfall Forecast (MORNING) 31st July 2015

Met Sub-divisions	31 July	01 Aug	02 Aug	03 Aug	04 Aug
1. Andaman & Nicobar Islands	FWS	FWS	FWS	WS	WS
2. Arunachal Pradesh	SCT	SCT	SCT	FWS	FWS
3. Assam & Meghalaya	WS	WS	FWS	FWS	FWS
4. N. M. M. & T.	WS	WS	FWS	FWS	FWS
5. S.H. West Bengal & Sikkim	FWS	FWS	FWS	FWS	FWS
6. Gangetic West Bengal	WS	WS	FWS	FWS	SCT
7. Orissa	WS	WS	WS	FWS	FWS
8. Jharkhand	WS	WS	WS	FWS	FWS
9. Bihar	WS	WS	FWS	FWS	FWS
10. East Uttar Pradesh	WS	WS	WS	FWS	FWS
11. West Uttar Pradesh	FWS	WS	WS	FWS	FWS
12. Uttarakhand	WS	WS	WS	WS	WS
13. Haryana, Chd & Delhi	FWS	WS	WS	FWS	FWS
14. Punjab	FWS	WS	WS	FWS	FWS
15. Himachal Pradesh	WS	WS	WS	WS	WS
16. Jammu & Kashmir	WS	WS	WS	WS	WS
17. West Rajasthan	FWS	SCT	ISOL	SCT	SCT
18. East Rajasthan	FWS	SCT	SCT	FWS	FWS
19. West Madhya Pradesh	FWS	SCT	FWS	WS	WS
20. East Madhya Pradesh	FWS	FWS	WS	WS	FWS
21. Gujrat Region	FWS	SCT	SCT	FWS	FWS
22. Saurashtra & Kutch	SCT	SCT	SCT	SCT	SCT
23. Konkan & Goa	WS	WS	WS	WS	WS
24. Madhya Maharashtra	FWS	FWS	FWS	FWS	FWS
25. Marathwada	ISOL	SCT	FWS	FWS	FWS
26. Vidharbha	FWS	FWS	WS	WS	FWS
27. Chhattisgarh	FWS	WS	WS	WS	FWS
28. Coastal Andhra Pradesh	SCT	SCT	SCT	SCT	SCT
29. Telangana	ISOL	SCT	FWS	FWS	FWS
30. Rayalaseema	SCT	SCT	SCT	SCT	SCT
31. Tamilnadu & Puducherry	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	WS	WS	WS	WS	WS
33. North Interior Karnataka	SCT	SCT	SCT	SCT	SCT
34. South Interior Karnataka	FWS	FWS	FWS	FWS	FWS
35. Kerala	SCT	SCT	FWS	FWS	FWS
36. Lakshadweep	ISOL	SCT	SCT	FWS	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

- 31 July (Day 1):** Heavy to very heavy rainfall would occur at a few places with isolated extremely heavy falls over Gangetic West Bengal and north Odisha, Heavy to very heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal, south Odisha, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and north Coastal Andhra Pradesh. Heavy rainfall would occur at isolated places over Himachal Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, West Rajasthan, Chhattisgarh and Konkan & Goa. Wind speed reaching 45-55 kmph gusting to 65 kmph would prevail along and off West Bengal & north Odisha Coasts. Sea conditions would be rough to very rough over north Bay of Bengal. Fishermen are advised not to venture into the sea along and off West Bengal and north Odisha coasts. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail over Gangetic West Bengal and Mizoram & Tripura.
- 01 August (Day 2):** Heavy to very heavy rainfall would occur at a few places with isolated extremely heavy falls over Odisha, Heavy to very heavy rainfall would occur at a few places over Gangetic West Bengal and Jharkhand; at isolated places over Chhattisgarh and north Coastal Andhra Pradesh. Heavy rainfall would occur at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab,

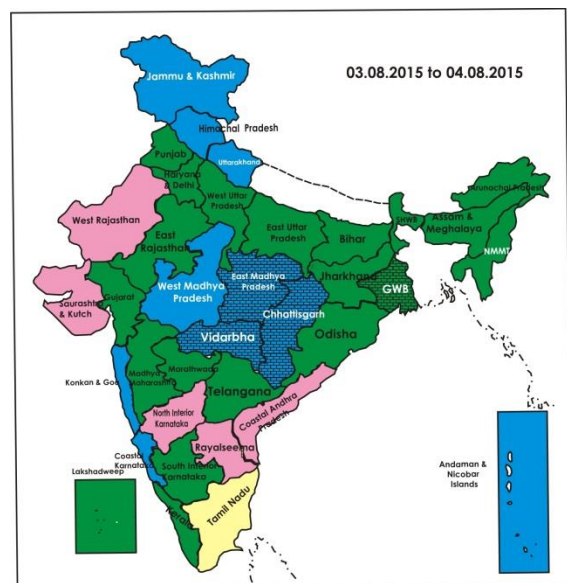
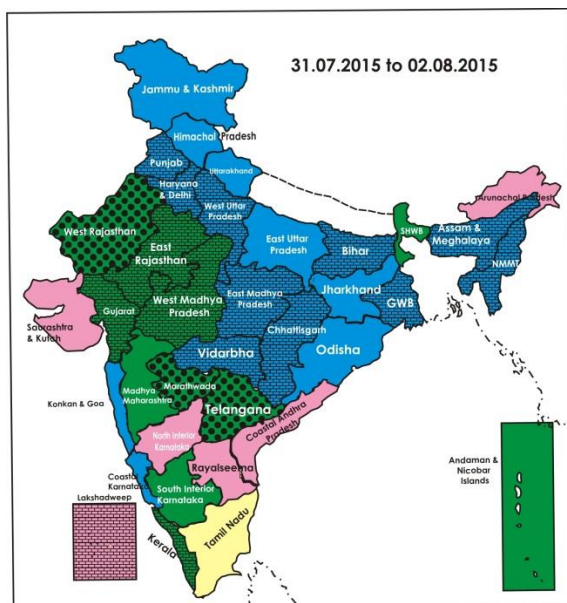
Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Madhya Pradesh, Bihar, Konkan & Goa and Coastal Karnataka.

- **02 August (Day 3):** Heavy to very heavy rainfall would occur at a few places over Jharkhand, Odisha and Chhattisgarh; at isolated places over East Madhya Pradesh, Gangetic West Bengal and Konkan & Goa. Heavy rainfall would occur at isolated places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Vidarbha, South Interior Karnataka and Coastal Karnataka.
- **03 August (Day 4):** Heavy to very heavy rainfall would occur at a few places over Chhattisgarh; at isolated places over Madhya Pradesh, Vidarbha, Odisha and Konkan & Goa. Heavy rainfall would occur at isolated places over Jharkhand, Gangetic West Bengal, Madhya Maharashtra, South Interior Karnataka, Coastal Karnataka and Andaman & Nicobar Islands.
- **04 August (Day 5):** Heavy to very heavy rainfall would occur at a few places over Chhattisgarh; at isolated places over East Madhya Pradesh, Vidarbha and Konkan & Goa. Heavy rainfall would occur at isolated places over Madhya Maharashtra, Coastal Karnataka and Andaman & Nicobar Islands.

Weather Outlook for subsequent 2 days from 5th to 7th August 2015

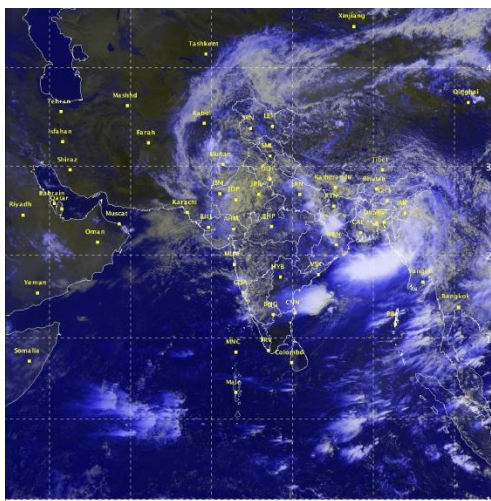
- Rain/thundershowers would occur at most places along west coast and over central India.
- Rain/thundershowers would occur at many places over western Himalayan region, northeast India and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at a few places over northern plains, east and peninsular India.

Weather Forecast Map (Valid upto 0830 hours of 5th August, 2015)



- Most places
- Most places/few places
- Most / Many places
- Most/many places/ isolated places
- Most / Isolated places
- Most / Many/ Few places
- Most / Few places/ isolated places
- Most / Few
- Many places
- Many / Few places
- Many / Isolated places
- Many / Few/ Isolated places
- Many / few/ Mainly dry
- Many / Isolated/ Mainly dry
- Few places
- Few / Isolated places
- Few / Isolated places/dry
- Few/Mainly Dry/Dry
- Isolated places
- Isolated / Mainly Dry / Dry
- Mainly Dry/Dry
- Dry

Satellite image dated, 31.07.2015 0500 UTC



Salient Advisories

- In **Gujarat State**, due to heavy rain during the week, there is water logging in cotton, green gram, sesame and groundnut crop fields in Banaskantha, Mehsana, Patan, Gandhi Nagar, Kutch (Bhuj), Jamnagar and Surendranagar districts of Gujarat State, farmers are advised to drain out excess water from crop fields. If crop damage is more than 60% undertake resowing of short duration varieties at optimum soil moisture condition.
- In **West Rajasthan**, there is water logging in standing crop fields in Jalore, Pali and Barmer districts due to heavy rain. Farmers are advised to drain out excess water from these crop fields.
- In Sub Humid Southern Plain and Aravalli Hill Zone and Transitional Plain Zone of **East Rajasthan**, due to heavy rain there is water logging in cotton, green gram, black gram and maize crop fields. Farmers are advised to drain out excess water from these crop fields.
- In **Odisha**, as heavy to very heavy rainfall would occur at a few places with isolated extremely heavy falls over Odisha from 31st July to 2nd August, postpone intercultural operations and application of fertilisers and plant protection measures in standing crops. Provide adequate drainage in rice and vegetable nurseries and standing crop fields to avoid water stagnation.
- In **Gangetic West Bengal**, as heavy to very heavy rainfall would occur at a few places with isolated extremely heavy falls, postpone intercultural operations and application of fertilisers and plant protection measures in standing crops. Provide adequate drainage in rice and vegetable nurseries and standing crop fields crop to avoid water stagnation.
- In **Gangetic West Bengal**, in Coastal Saline Zone, heavy damage is reported in transplanted *Aman* rice fields due to flooding, it is advised to save rice nurseries and undertake transplanting after recession of flood water.
- In **Jharkhand**, continue transplanting of long (140-150 days) and medium (120-125) duration of rice varieties, continue nursery sowing of rice for low land after current spells of heavy rain. Continue transplanting of finger millet and complete sowing of maize, arhar green gram, black gram, urad, groundnut, soybean, sesame and rainy season vegetables after current spells of heavy rain. Provide adequate drainage in standing crops to avoid water stagnation. Preserve some rice nursery for future transplanting if crop damage occurs in transplanted fields.
- In **West Madhya Pradesh**, drain out excess water from soybean and maize crop fields and vegetable nurseries in Malwa Plateau Zone and Jhabua Hill Zone.
- In **North Interior Karnataka**, continue the following contingency measures to mitigate the deficient rainfall conditions:
 - In early sown long duration crops, thin out excess and weak seedlings by removing alternate rows where moisture stress is severe. Keep the crop fields free from weeds.
 - Apply mulch with crop residue to conserve the soil moisture.
 - Keep the crops free from weeds.
 - Apply light irrigation wherever moisture stress is prevailing.
 - Take up spraying of Potassium Nitrate 1 % to already sown crops where slight soil moisture is available so as to induce drought resistance in the crops and to prevent wilting of crops.
 - In areas where sowing is yet to be done, fodder crops should be given preference and select short duration, drought resistant crops and variety.

- In **Rayalaseema**, continue sowing of contingency crops like foxtail millet, pearl millet, jowar, green gram, red gram, castor, cluster bean and cowpea upto 15th August after receipt of sufficient rainfall. After 15th August, undertake sowing of horsegram, fodder jowar and bajra. To avoid moisture stress in groundnut, provide supplementary irrigation from farm pond with sprinklers @ 20 mm (2 hrs) and undertake spraying of 2% urea solution.
- In **Telangana**, in view of the subdued rainfall activity during last week, the following remedial measures are suggested:
 - Intercultural operation and mulching in already sown crops for conservation of soil moisture.
 - Light hoeing and weeding in early sown jowar, soybean, green gram and black gram.
 - Undertake sowing of contingency crops like sole red gram with varieties like Maruti, Lakshmi, PRG 158 etc., sunflower, castor with revival of rains.
 - Application of irrigation in sugarcane at frequent intervals.
 - Foliar spray of 2% KNO₃ during dry spells to prevent wilting of crops.
 - Provide supplementary irrigation by using micro-irrigation (sprinkler).
- In **Madhya Maharashtra**, utilizing realized and expected rainfall, in Kolhapur, Sangli, Pune, Nashik, Dhule, Nandurbar and Jalgaon districts, undertake sowing of contingent crops like bajra, sunflower, red gram (Vipula or BDN 711), moth bean and maize by selecting short or medium duration varieties.
- In **Marathwada**, undertake light hoeing or mulching with crop residue to conserve soil moisture in long duration crop like cotton and red gram. Continue weeding in black gram, cotton, soybean and red gram. Undertake planting of sugarcane. Apply protective irrigation (drip or sprinkler method) to crops like sugarcane, sunflower, soybean, cotton, red gram and jowar in view of prevailing moisture stress condition. Farmers are advised to spray 2% Muriate of Potash in sugarcane under water stress condition.
- In **Vidarbha**, complete transplanting of rice in East Vidarbha utilizing the realized rainfall. Undertake weeding in crops like soybean, jowar, bajra, green gram, black gram and cotton in Central Vidarbha. Farmers are advised to undertake sowing of contingency crops like sunflower (TAS 82, PKV SF-9, PKVSH-27, KBSH 1, castor (AKC-1, GCH-4, 5, 6, DCH-117, 32) and KBSH 44), pearl millet (PKV Raj, Shradha and Saburi), sesame (AKT-64 and JLT-7) and pearl millet + pigeon pea (2:1 or 4:2), sunflower + pigeon pea (2:1), sesame + pigeon pea (4:1) intercropping systems in west Vidarbha (except Buldana and Washim).

Detailed Zonewise Agromet Advisories

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



Sowing



Sugarcane



Chilli



Rice transplanting

- **Realised Rainfall:** Rainfall occurred in all districts of Coastal Karnataka; all districts of Kerala except Alappuzha, Pathanamthitta and Thiruvananthapuram; Chikaballapura, Chikkamagaluru, Kodagu and Shivamogga districts of South Interior Karnataka; Srikakulam and Vishakapatnam districts of Coastal Andhra Pradesh; Adilabad, Karimnagar, Khammam and Warangal districts of Telangana; Chennai, Cuddalore, Kancheepuram, Pudukkottai, Sivaganga, Thanjavur, Tiruvallur, Tiruvannamalai, Vellore and Villupuram districts of Tamil Nadu. Weather remained mainly dry over rest of the region.

- **Advisories:**

- **Andhra Pradesh:**

- In North Coastal Zone, continue nursery sowing of rice (late variety) and sowing of groundnut.
- Continue sowing of irrigated dry rice (MTU-1006) with gorru, maize and pulses (black gram, red gram and green gram) in the Krishna Godavari Zone.
- In Scarce Rainfall Zone, continue sowing of contingency crops like foxtail millet, pearl millet, jowar, green gram, red gram, castor, cluster bean and cowpea upto 15th August after receipt of sufficient rainfall. After 15th August, undertake sowing of horsegram, fodder jowar and bajra. To avoid moisture stress in groundnut, provide supplementary irrigation from farm pond with sprinklers @ 20 mm (2 hrs) and undertake spraying of 2% urea solution.
- In High Altitude Tribal Zone, complete sowing finger millet.
- In the Southern Zone, continue sowing of red gram and in view of the prevailing dry spell, apply protective irrigation

- to groundnut (vegetative/ flowering stage) wherever possible and spray 2% urea solution on the crops to prevent wilting of the crop.
- Present weather conditions are congenial for incidence of root rot in maize seedlings in the Krishna Godavari Zone. To manage root rot, undertake spraying with Carbadizam @ 1gr. or Copper Ooxichloride @ 3 gr/litre of water during morning or evening time.
 - **Telangana:**
 - In view of the subdued rainfall activity during past weeks, continue the following remedial measures:
 - Intercultural operation and mulching in already sown crops for conservation of soil moisture.
 - Light hoeing and weeding in early sown jowar, soybean and green gram and black gram.
 - Undertake sowing of contingency crops like sole red gram with varieties like Maruti, Lakshmi, PRG 158 etc., sunflower, castor with revival of rains.
 - Application of irrigation in sugarcane at frequent intervals.
 - Foliar spray of 2% KNO₃ during dry spells to prevent wilting of crops.
 - Provide supplementary irrigation by using micro-irrigation (sprinkler).
 - Complete raising of rice nurseries of medium and long duration varieties and continue sowing of sunhemp and dhaincha as in-situ green manure crop preceding to rice in regions under command areas and tanks.
 - Continue land preparation for transplanting of rice under irrigation in the Northern Telangana Zone.
 - In the Southern Telangana Zone, prevailing weather conditions are congenial for incidence of Rhizoctonia root rot disease in cotton. To control, soil drench with Carbendazim @ 1g per litre of water around the root zone of young seedlings 2-3 times at 7-10 days interval to avoid further spread of the root rot.
 - **Karnataka:**
 - Complete transplanting of rice in Coastal Karnataka and undertake transplanting in Southern Transition Zone utilising the realised and expected rainfall.
 - In the Eastern Dry Zone, undertake intercultural operation and thinning in long duration red gram and castor as well as short duration pulse crops like cowpea, green gram, black gram to conserve soil moisture and overcome dry spell. In areas where sowing is yet to be done, undertake sowing of medium duration varieties, of Groundnut (JL-24), Finger millet (Indaf-5, 8, MR-6, GPU-28,48), Maize (Ganga, Deccan, Vijaya composite and Composite NAC), Sunflower (KBSH-42 and KBSH-44).
 - In the North East Transition Zone, apply protective irrigation to sugarcane, soybean, greengram and blackgram and continue the following contingency measures in laterite red soil and shallow to medium black soils:
 - Undertake sowing of red gram/sesamum/horse gram/foxtail millet/Bajra
 - Use 25% higher seed rate in dry sowing of redgram or
 - Transplant 25-30 days old redgram seedlings of BSMR-736 and Asha varieties.
 - Go for sowing of short duration red gram varieties (Pragathi).
 - Adopt intercropping of redgram + foxtail millet (1:5)/ redgram + bajra (1:5)
 - Continue nursery sowing for planting of low land rice using medium duration varieties and upland paddy using amrut or prasanna variety in the Hill Zone.
 - In Dry regions of North Interior Karnataka, continue the following contingency measures to mitigate the deficient rainfall conditions:
 - In early sown long duration crops, thin out excess and weak seedlings by removing alternate rows where moisture stress is severe. Keep the crop fields free from weeds.
 - Apply mulch with crop residue to conserve the soil moisture.
 - Keep the crops free from weeds.
 - Apply light irrigation wherever moisture stress is prevailing.
 - Take up spraying of Potassium Nitrate 1% to already sown crops where slight soil moisture is available so as to induce drought resistance in the crops and to prevent wilting of crops.
 - In areas where sowing is yet to be done, fodder crops should be given preference and select short duration, drought resistant crops and variety.
 - Take up sowing of crops in wider rows to overcome moisture stress.
 - In the North East Dry Zone, following contingency measures may be continued:
 - Select medium duration red gram varieties for sowing.
 - Follow dry sowing practice in redgram with ridges and furrows at 90 cm apart.
 - Use 25% higher seed rate in redgram with 90 x 20 cm spacing.
 - Transplant the 25-30 days old red gram seedlings of BMSR-736 variety.
 - Sow sunflower and castor at 90 x 20 cm.
 - Undertake nursery sowing of ragi, sowing of groundnut, redgram and greengram after proper seed treatment and sowing of Jower-CHS-5, Jower+Redgram(2:1), Groundnut+Red gram(4:1 or 8:2) by using seed drill in the Southern Dry Zone after receipt of sufficient rainfall.
 - Incidences of aphid and thrips were noticed in blackgram and green gram in the North East Transition Zone. To control, spray Methyl parathion 50 EC @ 1 ml or Dimethoate 30 EC @ 1.7 ml per liter of water on a non rainy day.
 - Incidences of aphids is noticed in short duration pulse crops (cow pea and green gram) in the Eastern Dry Zone. To

control ,spray Dimethoate-30 EC @ 1.7 ml or Phosphomidon 100 EC @0.5 ml/litre of water after current spells of rain.

▪ **Kerala:**

- Continue planting of rooted cuttings of pepper in the Problem Area Zone.
- Prevailing high humid weather is congenial for sheath blight in rice in the Central and Southern Zone. Apply Propiconazole 25 EC @ 500 ml /1 hectare to control sheath blight after current spells of rain.If the incidence is very severe, spray Bavistin (200g/acre) or Carbendazim 50 WP 500 g/ha.
- Prevailing weather is congenial for incidence of poolu diseases and quick wilt in pepper in the Problem Area Zone. Spray 1% Bordeaux mixture or Samarth 2ml/litre of water to control poolu disease, apply Bordeaux mixture and drench Copper Oxychloride to control quick wilt after current spells of rain.

▪ **Tamil Nadu:**

- Undertake land preparation for nursery sowing of *Samba* rice varieties (CR 1009 and ADT 50) in the Samba season in Cauvery delta zone.
- Continue cultivation of dry crops like ragi, thenai, samai, panivaragu and sesame in areas where additional irrigation facilities are available in Karaikal.
- Continue planting of rubber and basin preparation for planting of pepper, clove, nutmeg and cinnamon in the High Rainfall Zone.
- In the Western Zone, continue transplanting of short duration rice and sowing irrigated maize.
- In the Cauvery Delta Zone, leaf mite incidence is noticed in *Kuruvai* rice fields and likely to spread in the prevailing weather condition. To manage, spray Dicofol @ 500 ml/acre or Wettable Sulphur @ 400 g/acre with 200 litres of water.
- Prevailing weather conditions are congenial for incidence of *Alternaria* leaf spot diseases in chillies in the Southern Zone. To control, undertake spraying with Mancozeb @2.5 g/lit or Azoxystrobin @1g/litre.
- Moderate cloud cover and moderate humidity expected during the coming days are conducive for the incidence of pod borer in greengram in the South Zone. For controlling this pest, spray Indoxacarb 15.8% SC 333 ml/ ha.
- Suitable varieties for sowing are given in Annexure III.

• **Animal Husbandry**

- Prevailing weather conditions are congenial for Enterotoxaemia in livestock in Northern Telangana and sheep pox in sheep in Southern Telangana. To prevent the diseases, vaccinate the animals.

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



Sowing

Banana

Okra

Rice transplanting

- **Realised Rainfall:** Rainfall occurred in Changlang, East Siang, Lohit, Lower Dibang Valley, Papumpara, Tawang, Tirap and West Siang districts of Arunachal Pradesh; all districts of Assam except Bongaigaon, Darrang, Dhubri, Hailakandi, Karbi Anglong and Sonitpur; all districts of Meghalaya; Aizwal, Kolasib, Saiha and Serchhip districts of Mizoram; Imphal East and Tamenglong districts of Manipur; Kohima and Mokochung districts of Nagaland and all districts of Tripura. Weather remained mainly dry over rest of the region.

• **Advisories:**

▪ **Assam & Meghalaya, Arunachal Pradesh:**

- In North Bank Plain Zone of Assam, complete sowing of medium and short duration rice varieties like - IR-36, Jaya, Pankaj, Lakhimi, Salpona, Prasadbhog, Gobind bhog etc.
- In Hill Zone, continue transplanting of rice and replanting of dead hills or gap filling with seedlings of similar age of *Sali* rice should be done within 7-10 days of transplanting. Continue sowing of sesame.
- In Upper Bramhaputra Valley Zone, continue transplanting 25 days old seedlings of dwarf and semi-dwarf cultivars of *Sali* rice. For tall cultivars, 30-35 days aged seedlings are suitable for transplanting. Transplanting of 2-3 seedlings per hill at 4 to 5 cm depth. Continue nursery raising for early cauliflower.
- In Lower Bramhaputra Valley Zone of Assam, continue normal transplanting of *Sali* rice (July-August) with 2-3 seedlings per hill for all varieties.
- In Barak Valley Zone of Assam, complete the transplanting of *sali* rice at the earliest. Farmers are also advised to keep some extra seedlings for gap filling.
- In Central Bramhaputra Valley Zone and North Bank Plain Zone of Assam, continue sowing of jute (for seed purpose), arhar and sesame. Continue harvesting and retting of *Capsularis* jute at pre-flowering stage (120 days after

sowing).

- In Arunachal Pradesh, continue transplanting of *kharif* rice.
- In Meghalaya, complete transplanting of *kharif* rice at the earliest. Continue sowing of red gram, black gram (urd bean), green gram (moong bean/ moong). In water stressed upland fields, instead of rice, farmers are advised to grow tuber crops like sweet potato, colocassia, tapioca, etc. for better land utilization and risk minimization.
- In Hill Zone of Assam, there is chance of attack of rice hispa in *Sali* rice due to cloudy weather. Spray Quinalphos @ 2 teaspoon /5 litre of water after current spells of rain.
- In Lower Brahmaputra Valley Zone of Assam, due to cloudy and humid weather, there is chance of attack of hispa and whorl maggot in transplanted *Sali* rice. For control, spray Chlorpyrifose 20 EC @ 0.02% and Quinalphos 25EC@ 0.025% after current spells of rain.
- In Upper Brahmaputra Valley Zone of Assam, due to cloudy and humid weather, there is chance of attack of phytophthora leaf spot disease in ginger, apply 1% Bordeaux mixture or Thiram 0.02% after current spells of rain.
- In Barak Valley Zone of Assam, due to high relative humidity, there is chance of attack of fungal disease like brown spot and blast in the nursery bed of *sali* rice. Maintain proper sanitation in the rice nursery and remove stagnant water. Also spray Carbendazim + Mancozeb @ 2.5 g per litre of water. Also there is chance of attack of panama disease or panama wilt in the banana. Drench with Bavistin @ 1 gm per litre of water to control the disease after current spells of rain.
- In Arunachal Pradesh, due to humid and cloudy weather, there is chance of attack of stem borer and blast in *Jhum* and WRC rice. Spray foliar spray of Tricyclazole 75WP @ 0.6g/litre or Propiconazole 25 EC @ 1ml/litre after current spells of rain.
- **Manipur, Mizoram, Nagaland and Tripura:**
 - In Manipur, maintain water level of 5-8 cm in the field of *kharif* rice. Continue nursery raising for cauliflower. Maintain proper drainage system to avoid water logging in groundnut and soybean.
 - In Nagaland, continue transplanting of rice. If transplanting is delayed, higher number of seedling per hill should be done.
 - In Mizoram, if sowing of rice is delayed, undertake sowing of short duration varieties of rice.
 - In Manipur, due to humid and cloudy weather, there is chance of attack of stem borer in *kharif* rice and tikka disease in groundnut. Spray Chlorantraniliprol 23.5% @ 40 ml/ha for stem borer. And spray Carbendazim @ 0.5g / litre of water to control tikka disease in groundnut after current spells of rain.
 - In Tripura, continue transplanting of *Aman* rice and complete sowing of *kharif* vegetables like ladies finger, cucurbits etc. Avoid flooding or excess moisture in SRI fields. Undertake direct sowing of rice where seedling has not yet been raised.
 - In Tripura, cloudy and humid weather is favourable for attack of Leaf Curl disease in brinjal, chilli etc. To manage the attack, apply Imidachloprid @ 2ml per litre of water after current spells of rain.
 - Suitable varieties are given in Annexure III.
- **Animal Husbandry**
 - In Tripura, monsoon weather could lead to gastrointestinal parasites infection. It is advised to maintain good sanitary conditions in piggery and poultry sheds.
 - In Assam and Mizoram, present weather is congenial for development of diseases like Coccidiosis in poultry, so as a preventive measure gives Amprolium @ 25-65 mg/kg feed once a day.
 - In Meghalaya, due to prevailing high humidity and warm temperature, there is chance for growth of molds (especially *Aspergillus* sps.) producing aflatoxins. So always keep the animal feeds in a dry and clean place and avoid direct contact with ground/soil.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Banana



Sugarcane



Rice transplanting



Sowing

- **Realised Rainfall:** Rainfall occurred in all districts of Konkan & Goa; all districts of Madhya Maharashtra except Ahmednagar, Sangli, Satara and Sholapur; all districts of Vidarbha except Buldhana and Washim; all districts of Gujarat State except Diu. Weather remained mainly dry in Marathwada.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, continue transplanting of *kharif* rice seedlings in main field after current spells of heavy rain. Maintain 2-3

cm water level in transplanted rice fields after draining out excess water. Complete the sowing of *kharif* groundnut in uplands after current spell of heavy rain. Continue sowing of vegetable crops like okra, cucumber, snake gourd and ridge gourd with improved varieties on raised beds after current spell of heavy rain. Provide mechanical support to cucurbitaceous crops. Drain out excess water from mango, cashew and sapota garden, vegetable crops and rice nursery.

- In Madhya Maharashtra, utilizing realized and expected rainfall, in Kolhapur, Sangli, Pune, Nashik, Dhule, Nandurbar and Jalgaon districts, undertake sowing of contingent crops like bajra, sunflower, red gram (Vipula or BDN 711), moth bean and maize by selecting short or medium duration varieties. Undertake intercropping of bajra + red gram (2:1), sunflower + red gram (2:1). Also undertake sowing of coriander and french bean. Maintain 2-3 cm water level in rice field in Western ghat, Kolhapur region and Pune (western parts). Undertake sowing of fodder crops like jowar (Ruchira, Phule Amruta, Phule Godhan), maize (African Tall, Karveer, Rajshree) and bajra (Nutrifeed). Undertake planting of adsali sugarcane.
- In Marathwada, undertake light hoeing or mulching with crop residue to conserve soil moisture in long duration crop like cotton and red gram. Continue weeding in black gram, cotton, soybean and red gram. Undertake planting of sugarcane. Apply protective irrigation (drip or sprinkler method) to crops like sugarcane, sunflower, soybean, cotton, red gram and jowar in view of prevailing moisture stress condition. Farmers are advised to spray 2% Muriate of Potash in sugarcane under water stress condition.
- In Vidarbha, complete transplanting of rice in East Vidarbha utilizing the realized rainfall. Undertake weeding in crops like soybean, jowar, bajra, green gram, black gram and cotton in Central Vidarbha. Farmers are advised to undertake sowing of contingency crops like sunflower (TAS 82, PKV SF-9, PKVSH-27, KBSH 1, castor (AKC-1, GCH-4, 5, 6, DCH-117, 32) and KBSH 44), pearl millet (PKV Raj, Shradha and Saburi), sesame (AKT-64 and JLT-7) and pearl millet + pigeon pea (2:1 or 4:2), sunflower + pigeon pea (2:1), sesame + pigeon pea (4:1) intercropping systems in west Vidarbha (except Buldana and Washim).
- Due to high humid and cloudy weather conditions in South Konkan, there may be incidence of blast disease in rice and nagli; spray Carbendazim @ 10 g or Copper Oxychloride @ 25 g per 10 litres of water after current spells of rain.
- Due to cloudy weather in Marathwada, there may be attack of *Helicoverpa Armigra* in red gram; install 10-12 pheromone traps per hectare after current spells of rain.

■ Gujarat:

- Due to heavy rain during the week, there is water logging in cotton, green gram, sesame and groundnut crop fields in Banaskantha, Mehsana, Patan, Gandhi Nagar, Kutch (Bhuj), Jamnagar and Surendranagar districts of Gujarat State, farmers are advised to drain out excess water from crop fields. If crop damage is more than 60% undertake resowing of short duration varieties at optimum soil moisture condition.
- In North Saurashtra Zone, resume sowing of short duration crops like groundnut bunch type (GG-2, GG-5, GG-9, TAG-24, TG-37 A), green gram (K-851, G.Mong-4), black gram (T-9, G.U.-1), sesame (G.Til-2, G.Til-3) and cotton (BG-II (Guj Hy. Cotton-8) and transplanting of brinjal, chilli and early cauliflower.
- In Middle Gujarat Zone, complete transplanting of *kharif* rice by 31st July, postpone / complete sowing of alternate crops like bajra (short duration: GHB 538, GHB 732, GHB 719, GHB-577), maize (GM-4, 6, Narmada Moti) and cotton (G.Cot-13, 21 and ADC-1) with intercropping of green gram, pigeon pea and guar in bajra; postpone sowing of other alternate crops like green gram, forage sorghum, guar (cluster bean), sesame (semi *kharif*), vegetable crops (chilli, brinjal, okra, cluster bean).
- In Bhal and Coastal Zone, postpone / continue sowing of short duration crops like bajra (moderate duration variety GHB-744), short duration varieties GHB-558, GHB-538, GHB-719), green gram (Guj. Mungbean-4, K-851), sesame (Purva-1), sorghum (GFS-4 & GFS-5), castor (GAU-CH-1, GCH-6), pigeon pea (BDN-2), cotton (G-cot 13, G-cot 15, G-cot 21).
- In South Gujarat Heavy Rainfall Zone, postpone / complete transplanting of *kharif* rice. Provide support to fruit crops like banana to reduce the probable damage due to high wind speed in South Gujarat Heavy Rainfall Zone and in papaya and banana in South Gujarat Zone. Postpone / continue sowing of maize, bajra, tur, ornamental and horticultural crops in South Gujarat Zone.
- In North Gujarat and North West Zone, postpone / continue sowing of moderate duration variety of Bajra (GHB-744) and short duration varieties (GHB-558, GHB-538, GHB-719), castor (GCH-7), maize (Guj. Maize-2 and Guj. Maize-4 and 6), green gram (K-581 and Gujarat Mung-4), black gram (Guj. Black Gram-1 and T-9), sesame (G.til-1 and G.til-2) and cow pea (Guj. cowpea-3 & 4 and Pusha Falguni).
- Due to continuous rain / moist weather in North Saurashtra Zone, there is chance of outbreak of Phytophthora blight disease in sesame; spray Ridomil @ 20 g or Copper Oxychloride @ 40 g in 10 litres of water to prevent the disease on a non rainy day.
- **Animal Husbandry**
 - In Gujarat, keep fodder in safe place to avoid spoilage due to rain; keep animals under sheds and keep sheds hygienic and clean to avoid flies and mosquitoes. In South Gujarat Heavy Rainfall Zone, in view of cloudy weather forecast, make arrangement for artificial light in poultry house to maintain egg production.

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



Groundnut

Cotton

Sowing

Onion

- **Realised Rainfall:** Rainfall occurred in all districts of West Bengal & Sikkim except North Dinajpur; Rainfall occurred in Arwal, Aurangabad, Banka, Bhabua, Bhagalpur, Bhojpur, Buxar, Jahanabad, Jamui, Kishanganj, Lakhisarai, Patna, Rohatas and Sheikpura districts of Bihar; all districts of Jharkhand except Ranchi; all districts of Odisha except Koraput and Nawarangpur. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - **West Bengal:**
 - In Gangetic West Bengal, as heavy to very heavy rainfall would occur at a few places with isolated extremely heavy falls, postpone intercultural operations and application of fertilisers and plant protection measures in standing crops. Provide adequate drainage in rice and vegetable nurseries and standing crop fields crop to avoid water stagnation.
 - In Coastal Saline Zone, heavy damage is reported in transplanted *Aman* rice fields, it is advised to save rice nurseries and undertake transplanting after recession of flood water.
 - In New Alluvial Zone and Laterite and Red soil Zone, continue transplanting of rice after current spells of heavy rain. Use 21-25 days old seedlings for transplanting. Incorporate FYM or compost manure at the time of first ploughing. At the time of final puddling, apply 8.5 kg Urea, 25kg SSP and 6.7 kg MOP/bigha as basal application.
 - In Old Alluvial Zone and Terai Zone, continue transplanting of *kharif* rice after current spells of heavy rain.
 - In Hill Zone, continue transplanting of *Aman* rice and continue sowing of soybean after current spells of heavy rain. Provide adequate drainage in early sown crop fields in view of likely occurrence of heavy to very heavy rainfall.
 - In Hill Zone, collar rot may occur in soybean at seedlings stage due to high humid weather. Soil drenching with Copper Oxichloride @ 3 g/litre of water is advised after current spells of rain to manage the disease.
 - In New Alluvial Zone, due to cloudy weather condition and high temperature fungal and bacterial diseases are prevalent in Maize. For fungal attack spray Mancozeb @ 2.5 gm/litre of water and in case of bacterial rot, spray Streptocycline @ 0.1 gm/litre of water after current spells of rain.
 - **Andaman and Nicobar Islands:**
 - In Nicobar, North and Middle and South Andaman, undertake sowing of leafy vegetables in between coconut and arecanut plantations.
 - In North and Middle and South Andaman, undertake nursery sowing of brinjal and chilli and treat the seeds with *Pseudomonas* and *Trichoderma* before sowing.
 - **Odisha:**
 - As heavy to very heavy rainfall would occur at a few places with isolated extremely heavy falls over Odisha from 31st July to 2nd August, postpone intercultural operations and application of fertilisers and plant protection measures in standing crops. Provide adequate drainage in rice and vegetable nurseries and standing crop fields to avoid water stagnation.
 - In Coastal Odisha, in view of the expected high wind, undertake propping in sugarcane and provide mechanical support to young fruit plants and vegetables.
 - In East and South Eastern Coastal Plain Zone, continue direct seeding of rice in medium and deep low lands, dry bed and wet bed nurseries of rice in low lands after current spells of heavy rain . In uplands, complete sowing of cotton, groundnut, castor, arhar and sesame and planting of mango and cashewnut after current spells of heavy rain.
 - In Western Undulating Zone, continue line sowing of rice, sowing of maize, cotton and arhar and sowing of *kharif* pulses in upland areas after current spells of heavy rain.
 - In North Eastern Plateau Zone, continue nursery sowing of rice, direct sowing of rice in medium and uplands and continue sowing of groundnut, maize and arhar in uplands after current spells of heavy rain.
 - In North Eastern Ghat Zone, undertake sowing of groundnut, sesame and ragi after current spells of heavy rain.
 - In North Eastern Coastal Plain Zone, current weather favours attack of swarming caterpillar in rice nurseries. In case of attack, spray Chloropyriphos or Cholopyriphos + Cypermethrin @ 2ml/litre of water after current spells of rain.
 - In North Eastern Coastal Plain Zone and Mid Central Table Land Zone, due to irregular sporadic rain, weed problems are aggravated in nursery areas. To control weeds, spray Bispyribac Sodium @ 80ml/acre at 2 to 3 leaf stage of the weeds after current spells of rain.
 - In East and South Eastern Coastal Plain Zone, fruit and shoot borer has been noticed in brinjal. For control install Pheromone traps and spray Malathion @ 2 ml in 1 litre water after current spells of rain.

▪ **Bihar:**

- In North East Alluvial Plain Zone, complete sowing of *kharif* maize and continue plantation of horticulture crops like mango, lichi, guava & papaya and continue transplanting of chilli, tomato and cauliflower in raised bed.
- In North West Alluvial Plain Zone, continue transplanting of 22-25 days old paddy seedling, undertake nursery sowing of brinjal, tomato, chilli and onion, sowing of cluster bean, bitter guord and radish. Continue sowing of sesame, sunflower, pigeon pea in the upland areas.
- In South Bihar Alluvial Zone, continue transplanting of *kharif* onion and long/medium duration rice varieties which are 21-25 days old. Complete nursery sowing of early brinjal, chilli, and cauliflower, continue planting of mango, litchi, guava and papaya plants in already made pits and continue sowing of para grass in low land and hybrid napier grass in upper land.
- In North East Alluvial Plain Zone, present weather condition is favourable for attack of fruit & shoot borer in brinjal and fruit borer in tomato, for control, apply Emamectin Benzoate @ 1g/3 litres of water after current spells of rain.

▪ **Jharkhand:**

- In South Eastern Plateau Zone, continue transplanting of long (140-150 days) and medium (120-125) duration of rice varieties, continue nursery sowing of low land rice after current spells of heavy rain. Continue transplanting of finger millet and complete sowing of maize, arhar green gram, black gram, urad, groundnut, soybean, sesame and rainy season vegetables after current spells of heavy rain. Provide adequate drainage in standing crops to avoid water stagnation. Preserve some rice nursery for future transplanting if crop damage occurs in transplanted fields.
- In North Eastern Plateau Zone, continue transplanting of medium and low land rice, sowing of urad, til & sweet potato and nursery raising of tomato, cabbage and cauliflower after current spells of heavy rain.
- In Western Plateau Zone, continue nursery raising of upland rice, transplanting of rice of medium duration, sowing of arhar, urad and mung and complete transplanting of finger millet after current spells of heavy rain.
- In South Eastern Plateau Zone, present weather is conducive for the attack of fruit and shoot borer in brinjal and okra and fruit fly in cucurbitaceous vegetables. For control, spray Malathion @ 2 ml per litre of water after current spells of rain.
- In Western Plateau Zone, prevailing weather is conducive for the attack of leaf spot/Tikka disease in groundnut crops, to control, spray Endofil M-45 (5 gm) + Bavistin (1 gm) in 4 litre of water after current spells of rain.
- Suitable varieties for sowing are given in Annexure III.

• **Animal Husbandry**

- In Sub-Himalayan West Bengal, keep cattle/goats indoor during heavy rainfall period& keep the animal sheds dry and clean.

CENTRAL INDIA [M.P., CHHATTISGARH]



Rice transplanting

Sowing

Okra

Soybean

- **Realised Rainfall:** Rainfall occurred in all districts of East Madhya Pradesh except Chhatarpur, Damoh, Katni, Panna, Rewa, Singrauli and Umaria; all districts of West Madhya Pradesh except Bhind, Datia and Morena; all districts of Chhattisgarh except Bastar, Dhamtari, Durg, Kanker, Koriya, Kowardha and Narayanpur.

• **Advisories:**

▪ **Madhya Pradesh:**

- Complete transplanting of rice and sowing of soybean, sorghum, maize, sesame and red gram in Kymore Plateau and Satpura Hill Zone after current spells of heavy rain.
- In Malwa Plateau Zone and Jhabua Hill Zone, drain out excess water from soybean and maize crop fields and vegetable nurseries.
- As rain/thundershowers would occur at most/many places over Madhya Pradesh during the period along with heavy to very heavy rainfall at isolated places on 2nd and 3rd August, postpone intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crops to avoid stagnation.
- Due to cloudy weather there are chances of attack of sucking pest in vegetables in Vindhya Plateau Zone, Spray Thiamethoxam @ 0.35 gram per litre of water after current spells of heavy rain.

▪ **Chhattisgarh:**

- In Chhattisgarh, as rain/thundershowers would occur at many/most places during the period along with heavy to very heavy rainfall at isolated places on from 31st July to 3rd August, postpone intercultural operations and application of

plant protection measures and fertilizers to the standing crops. Provide adequate drainage in rice and vegetable nurseries to avoid water stagnation.

- Continue transplanting of vegetables, line sowing of rice and planting horticultural crops like papaya, mango, guava etc in North Hill Zone and Plain Zone of Chhattisgarh after current spells heavy of rain. Complete transplanting of rice and maintain water level upto 5cm in transplanted rice field.
- Suitable varieties are given in Annexure III.
- **Animal Husbandry**
- Provide balanced food and fresh water two times in a day to milch animals in Madhya Pradesh. Keep animals indoor during heavy rainfall period in Madhya Pradesh and Chhattisgarh.

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



Cotton

Rice transplanting

Sowing

Cabbage

- **Realised Rainfall:** Rainfall occurred in all districts of Uttarakhand except Almora, Garhwal Pauri, Haridwar and Udham Singh Nagar; all districts of Himachal Pradesh except Kinnaur and Laul & Spiti; all districts of Jammu & Kashmir except Anantnag, Kulgam, Ladakh (Leh) and Udhampur; Gurdaspur, Kapurthala and Ropar districts of Punjab; Chandigarh district of Haryana; all districts of East Rajasthan except Alwar, Bharatpur, Dausa, Dholpur, Jhunjhunu and Karauli; all districts of West Rajasthan except Churu and Hanumangarh; Pratapgarh, Siddharth Nagar, Sonbhadra and Varanasi districts of East Uttar Pradesh and Hamirpur, Lalitpur and Mahoba districts of West Uttar Pradesh. Weather remained mainly dry over rest of the region.

- **Advisories:**

- **Jammu & Kashmir:**

- In Sub-humid Sub-tropic Zone, continue sowing of maize crop at optimum soil moisture conditions.
 - In Intermediate Zone and Valley temperate Zone, undertake weed control at 30-35 days after transplanting of rice. Apply Bispyrebac @ 1.5gm/kanal in 25 litre of water as post emergence herbicide.
 - In Cold Arid Zone of Jammu & Kashmir, continue sowing of fodder crops viz. legumes, pea intercropping with maize and millets. Also undertake hoeing and weeding in vegetables crops after current spells of rain.
 - In Intermediate Zone, due to cloudy weather condition, there may be chances of early & late blight in tomato and potato. Remove the infected plants and bury them under the soil and spray alternatively Ridomil MZ and Mancozeb @ 2.5 gm/litre of water after current spells of rain.

- **Uttarakhand:**

- In Sub-humid Sub-tropic Zone, continue transplanting of rice. Provide adequate drainage in rice and vegetable nurseries and already sown crop fields in view of likely occurrence of heavy rainfall.
 - In Hill Zone, complete transplanting of rice. Continue sowing of til, soybean, urad, rajma and continue sowing of maize crops var. maize-9, Kanchan, Navin, Bhavetha, V.L. maize 16 and V.L maize 88.
 - In Hill Zone of Uttarakhand, due to high humidity, there may be attack of fruit borer in brinjal and tomato crops. To control, spray Neem oil @ 20 -25ml in 5 litres of water after current spells of rain.
 - In Bhabar and Tarai Zone of Uttarakhand, due to high humidity, there may be attack of blight disease in tomato and capsicum, to control spray Indophil M-45 @ 2.5 g dissolved in one litre of water after current spells of rain.

- **Himachal Pradesh:**

- In Sub-Montane and Low Hills Sub-Tropical Zone, continue nursery sowing of mid season cauliflower and cabbage in poly house in mid hill and lower region and transplanting of ageti cauliflower and cabbage in fields. Continue transplanting of rice, tomato, brinjal, capsicum, chilli and direct sowing of okra and sowing of radish and turnip and hybrid chari in lower rainfed areas. Provide adequate drainage in maize and maize + pulses fields in view of likely occurrence of isolated heavy rainfall.
 - In Mild Hills sub-Humid Zone, undertake transplanting the cole crops to the field at a distance of 60x45cm. Make arrangements for effective drainage of water in apple orchards to avoid water stagnation in view of likely occurrence of isolated heavy rainfall.
 - Under humid weather condition, there are chances of incidence of blast in rice in mid hills region of Sub-Montane and Low Hills Sub-Tropical Zone. For control, spray Bavistin @ 0.01or Beam 75 WP @ 0.06% after current spells of rain and repeat at 10-15 days interval.
 - Under humid weather condition, there are chances of incidence of leaf spot and fruit rot diseases in tomato, brinjal, capsicum and chilli in Sub-Montane and Low Hills Sub-Tropical Zone. Spray Ridomil MZ or Indofil M-45 @ 2.5 g

per litre of water after current spells of rain.

- Under cloudy and humid weather condition, there are chances of attack of bean bug in vegetables in Mid Hills Sub Humid Zone. Spray Metasystox @ 1ml per litre of water after current spells of rain.
- Under cloudy and humid weather condition, there is chance of attack of stem and fruit borer in brinjal in Mid Hills Sub Humid Zone. Spray Ripcard @ 0.5ml per litre of water after current spells of rain.
- Under cloudy and humid weather condition, there are chances of attack of Phytophagous mites on apple in Mild Hills Sub-Humid Zone. Spray Oberon @ 60 ml or Maiden @ 200 ml per 200 litre of water after current spells of rain. Repeat the spray after 15 days with Majister/Majistic @ 60 ml per 200 litres of water for effective control.

▪ **Rajasthan:**

- In West Rajasthan, there is water logging in standing crop fields in Jalore, Pali and Barmer districts due to heavy rain. Farmers are advised to drain out excess water from these crop fields.
- In Sub Humid Southern Plain and Aravalli Hill Zone and Transitional Plain Zone, due to heavy rain, there is water logging in cotton, green gram, black gram and maize crop fields. Farmers are advised to drain out excess water from these crop fields.
- Continue sowing of guar, pearl millet, sesamum, moong, moth, castor and continue transplanting of rice in Irrigated Northwestern Plain Zone after current spells of heavy rain.
- In Arid Western Plain Zone, undertake sowing of short duration and drought tolerant varieties of pulses, pearl millet, moth bean and cluster bean at optimum soil moisture conditions. Use improved short duration varieties of bajra, moong, moth, til and guar for sowing and pearl millet and sorghum for fodder purpose.
- In Semi Arid Eastern Plain Zone, continue nursery raising of mid season cauliflower, continue sowing of cucurbits like khira, bottle gourd, ridge gourd, bitter gourd and cucumber; complete sowing of *kharif* crops like pearl millet, sorghum, maize, green gram, urad bean, moth bean, cowpea & cluster bean utilising the realised and expected rainfall.
- In Southeastern Humid Plain Zone, continue transplanting of rice and continue sowing of soybean, maize, sorghum, moong and black gram and in Transitional Plain Zone of Inland Drainage, continue sowing of improved varieties of guar, green gram, cowpea, moth, sesame and pearl millet at optimum soil moisture conditions..
- In Southern Humid Plain Zone, in the prevailing cloudy and humid weather, there is chance of attack of stem borer in maize and semi looper in soybean. Apply Forate granules 10 G @ 5-7.5 kg/ha in the soil for stem borer and spray Triazophos 40 EC or Profenophos 50 EC @ 1.25 litre per ha for semilooper in soybean after current spells of rain.
- In Southern Humid Plain Zone, in the prevailing cloudy and humid weather, there is chance of incidence of jassids in cotton. Spray Imidacloprid 17.8 SL@ 200ml/ha after current spells of rain.

▪ **Punjab, Haryana and Delhi:**

- In Punjab, continue transplanting of rice in Undulating Plain Zone, Central Plain Zones and Western Zone of Punjab. Also continue sowing of maize and planting of papaya in Central Plain Zone.
- In Western Zone of Punjab, continue sowing of okra, sponge gourd, bottle gourd, cluster bean and undertake transplanting of brinjal in raised nursery beds.
- In Western Plain Zone of Punjab, complete transplanting of rice and undertake transplanting of early varieties of cauliflower.
- In Central Plain Zone of Punjab, complete the sowing of moong.
- In Central Plain, Western Plain and Undulating Plain Zone of Punjab, continue planting of fruit plants viz citrus, mango, litchi, guava, loquat, ber, amla and papaya.
- In Western Zone of Haryana, drain out excess water from the field and continue sowing of desi cotton, bajra and pigeon pea and continue transplanting of tomato and chilli and transplanting of rice utilising the realised and expected rainfall.
- In Western Semi-Arid Zone of Delhi, continue transplanting of rice and undertake transplanting of *kharif* onion, chilli, brinjal, tomato and early cauliflower on ridges. Continue sowing of ladies finger, pigeon-pea and cotton. Continue sowing of maize, bajra, soybean, guar, radish, cluster bean, beans, spinach and amaranths.
- In Western Plain Zone of Punjab, due to warm and humid conditions, bacterial blight may occur in cotton, spray Blitox 50 (WP) @ 500 g along with 3.0 g Streptomycin per acre after current spells of rain.

▪ **Uttar Pradesh:**

- In Central Plain Zone, continue transplanting of rice, sowing of jowar, moong, urad, bajra, sesame, soybean, arhar, barley, maize, okra, brinjal, chill, ridge gourd, bitter gourd, torai, tinda, direct sowing of rice and planting of banana. Undertake sowing of cowpea and sowing of bajra, jowar, maize intercropped with lobia at 2:1 ratio for fodder purpose.
- In Bundelkhand Zone, undertake transplanting of rice, sowing of short duration varieties of bajra(hybrid), pigeon pea, black gram, green gram and sesame. Continue nursery sowing, early cauliflower, tomato, chilli and brinjal. Complete sowing of fodder crops like bajra, chari and guar.
- In Eastern Plain Zone, continue transplanting of scented Basmati rice, sowing of short duration varieties of urad and moong where normal sowing was not done earlier. Also continue sowing of long duration varieties of pigeon pea (planting distance of 60-75cm) and planting of banana, mango, amla, guava, ber and papaya. Complete sowing of early cauliflower, brinjal and tomato.
- In Western Plain Zone, continue transplanting of 25-30 days old seedlings of basmati rice and undertake planting of mango, amla, guava, ber, litchi and papaya. Provide drainage in standing crops like maize, sorghum, pearl millet,

- sugarcane, cotton and vegetables like gourd, bitter gourd, torai, brinjal, tomato and chilli.
- In Central Plain Zone, due to cloudy and humid weather condition, there are chances of attack of aphids in anola orchard, spray Moncrotophos @ 0.04%.
 - Due to cloudy and humid weather condition, there is chance of attack of top borer in sugarcane in North Eastern Plain Zone. Spray Corazine @ 150 g in 200 litres of water per acre after current spells of rain.
 - Due to cloudy and humid weather condition, there is chance of incidence of root rot in jute in North Eastern Plain Zone. Spray of Ridomil MZ @ 0.2% + coperoxylorid @ 1.0% after current spells of rain.
 - Suitable varieties for sowing are given in Annexure III.
- **Horticulture**
 - In Sub-Montane and Low Hills Sub-Tropical zone of Himachal Pradesh, continue planting of citrus, mango, guava, amla, papaya and litchi and guava can multiplied through air layering also.
 - In Mid Hills Sub-Humid Zone and Mild Hills Sub-Humid Zone of Himachal Pradesh, due to humid weather condition, there is chance of incidence of scab in apple orchards. Spray Myclobutanil @ 80g per 200 litres of water after current spells of rain.
 - In Sub-Montane and Low Hills Sub-Tropical zone of Himachal Pradesh, due to humid weather condition there is chance of occurrence of blight in gladiolus. Spray Dithane M45 (Mancozeb) @ 25 g per 10 liters of water after current spells of heavy rain. For control of Mite in carnation, spray Omite or Pyromite @1ml per litre of water orDicofol @ 2ml per litre of water after current spells of rain.
 - **Animal Husbandry**
 - In Sub-Montane and Low Hills Sub Humid Zone of Himachal Pradesh, undertake deworming in livestock for ecto- and endo-parasites and vaccination against H.S. and BQ disease.
 - Keep the cattle under shed during heavy rainfall periods in Himachal Pradesh and Uttarakhand.

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

Annexure I

Week by week Rainfall Distribution

Sub-Divisions	15.07.15		22.07.15		29.07.15	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	71.2	-33	8.0	-92	44.1	-59
Dibang Valley	**	**	**	**	**	**
East Kameng	11.6	-87	20.0	-75	26.4	-68
East Siang	202.2	-18	24.6	-88	127.4	-41
Kurung Kumey	**	**	**	**	**	**
Lohit	86.3	-37	20.2	-88	84.7	-50
Lower Dibang Valley	184.1	483	28.6	-53	126.2	105
Lower Subansari	**	**	**	**	**	**
Papumpara	228.7	65	45.4	-69	60.1	-46
Tawang	92.0	-56	84.0	-47	41.0	-71
Tirap	84.2	-56	94.6	-50	85.6	-60
Upper Siang	97.6	-30	76.2	-45	0.0	-100
Upper Subansari	38.2	-32	53.2	11	25.6	-40
West Kameng	145.0	-30	46.0	-71	8.4	-94
West Siang	131.0	-14	48.0	-63	30.0	-80
Assam&Meghalaya						
Assam						
Baksa	19.7	-86	32.4	-80	75.4	-50
Barpeta	87.0	-39	93.4	-41	56.1	-60
Bongaigaon	85.2	-47	126.0	-28	9.2	-90
Cachar	153.5	29	159.5	23	70.2	-40
Chirang	82.6	-48	102.8	-41	88.4	-40
Darrang	**	**	**	**	**	**
Dhemaji	68.0	-56	50.0	-57	125.0	0
Dhubri	68.3	-51	48.8	-58	22.6	-80
Dibrugarh	63.7	-51	63.5	-45	115.4	0
Goalpara	79.8	-30	56.5	-42	62.5	-40
Golghat	23.3	-70	76.5	-1	80.4	20
Hailakandi	63.3	-36	164.5	67	17.5	-80
Jorhat	63.6	-32	70.5	-20	122.4	50
Kamrup(Rural)	5.0	-94	51.9	-35	78.6	30
Kamrup(Metro)	73.8	-15	65.7	-18	39.1	-30
Karbi Anglong	39.2	-28	52.4	21	22.2	-70
Karimganj	88.6	-48	123.2	0	112.4	-30
Kokrajhar	182.8	13	23.1	-87	82.7	-50
Lakhimpur	100.6	-34	55.0	-53	75.1	-40
Morigaon	76.2	-19	80.0	17	78.4	-10
N.C.Hills	60.8	-4	157.3	199	46.8	-30
Nowgong	30.5	-66	31.0	-60	37.3	-50
Nalbari	46.4	-59	34.9	-61	102.0	0
Sonitpur	111.1	20	83.6	2	26.1	-70
Sibsagar	52.6	-39	83.3	34	146.2	60

Tinsukia	96.8	-27	54.2	-49	96.1	-20
Udalgiri	83.7	-6	59.4	-21	36.0	-40
Meghalaya						
East Garo Hills	56.6	-41	106.4	-9	58.0	-51
East Khasi Hills	159.4	-61	132.9	-58	228.0	-25
Jaintia Hills	99.0	-77	64.0	-75	56.0	-84
Ribhoi	21.7	-77	34.5	-66	31.8	66
South Garo Hills	200.0	86	95.0	-8	104.0	-9
West Garo Hills	26.0	-76	63.1	-39	58.6	-49
West Khasi Hills	41.0	-79	106.0	-37	70.0	-72
NMMT						
Mizoram						
Aizwal	33.7	-70	242.7	142	70.2	-30
Champhai	**	**	**	**	**	**
Kolasib	8.0	-91	53.0	-53	41.0	-60
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	117.0	17	96.0	3	69.0	-39
Serchhip	72.2	-29	84.0	-18	148.2	20
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	**	**	**	**	**	**
Churachandpur	**	**	**	**	**	**
Imphal east	36.7	-56	153.2	129	53.5	-22
Imphal west	230.8	308	194.9	295	8.4	-84
Senapati	**	**	**	**	**	**
Tamenglong	**	**	**	**	49.0	13
Thoubal	73.0	45	85.0	119	**	**
Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	51.4	-19	100.5	339	22.1	-54
Kephire	**	**	**	**	**	**
Kohima	31.4	-63	140.0	77	47.6	-49
Longleng	**	**	**	**	**	**
Mokokchung	**	**	115.0	14	33.0	-50
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	**	**	**	**	**	**
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	70.3	-12	252.3	212	30.4	-62
North Tripura	72.0	-31	123.4	37	45.2	-49
South Tripura	102.3	-13	170.5	50	285.2	192
West Tripura	82.5	-13	247.2	175	104.0	18
Himachal Pradesh						
Bilaspur	58.4	-14	134.4	78	46.7	-41
Chamba	77.4	-39	92.3	-42	69.0	-56
Hamirpur	89.5	16	127.3	26	71.7	-31

Kangra	116.4	-15	179.0	24	156.4	-3
Kinnaur	15.1	-1	10.8	-49	1.1	-94
Kullu	80.0	97	56.3	5	60.8	42
Lahaul and Spiti	16.8	-52	6.9	-83	3.9	-91
Mandi	95.7	10	100.8	-2	133.0	15
Shimla	96.6	83	81.4	30	82.1	50
Sirmaur	106.8	-10	111.3	-11	49.1	-61
Solan	102.0	10	211.7	120	49.2	-40
Una	76.5	-8	137.1	67	115.5	64
Punjab						
Amritsar	38.5	-16	94.8	83	11.4	-79
Barnala	37.1	21	0.0	-100	1.0	-97
Bhatinda	31.0	36	12.7	-56	19.3	-35
Faridkot	14.0	-42	17.0	-50	23.5	0
Fatehgarh Saheb	177.8	166	81.3	105	1.0	-98
Ferozpur	8.2	-76	9.1	-73	4.2	-86
Gurdaspur	75.5	-3	91.0	14	83.0	0
Hoshiarpur	56.1	-8	54.3	-19	22.8	-62
Jalandhar	24.2	-56	26.8	-37	12.8	-75
Kapurthala	79.0	117	46.3	1	38.6	5
Ludhiana	135.1	125	48.7	11	2.5	-94
Mansa	23.5	-15	15.8	-47	0.0	-100
Moga	29.0	-12	0.0	-100	0.0	-100
Muktesar	6.5	-78	1.0	-97	27.5	17
Nawashahar	178.3	95	151.6	169	3.4	-95
Patiala	99.4	46	37.6	-26	1.1	-98
Ropar	77.4	-5	105.1	67	33.0	-52
Sangrur	87.3	99	4.6	-86	0.0	-100
Mohali	129.3	73	64.5	37	19.3	-68
TarnTaran	8.0	-67	16.5	-51	28.3	-21
Haryana,Chd,Delhi						
Haryana						
Ambala	92.7	7	48.8	-27	9.3	-87
Bhiwani	31.8	1	0.3	-99	0.5	-99
Chandigarh	80.6	6	78.0	37	34.0	-48
Faridabad	133.6	139	54.0	14	1.3	-97
Fatehabad	32.6	24	9.8	-60	0.0	-100
Gurgaon	122.2	146	33.5	-21	1.0	-97
Hissar	13.1	-54	10.0	-68	0.5	-98
Jhajar	95.8	123	22.8	-42	1.7	-96
Jind	68.9	50	7.7	-76	0.0	-100
Katihai	53.2	30	17.9	-45	0.4	-99
Karnal	166.7	138	70.0	88	0.0	-100
Kurukshetra	100.6	65	7.4	-85	0.0	-100
Mahendragarh	25.2	-39	18.8	-51	0.0	-100
Mewat	138.2	193	36.0	-13	0.0	-100
Palwal	113.3	167	49.0	17	0.0	-100
Panchkkula	74.3	-8	56.1	-28	15.2	-81
Panipat	120.0	90	54.2	33	3.4	-90
Rewari	75.8	87	15.6	-67	1.3	-96
Rohtak	59.5	16	6.4	-88	0.5	-99

Sirsa	11.9	-41	20.2	-29	27.0	9
Sonepat	145.2	154	26.9	-43	0.8	-98
Yamunanagar	127.6	93	41.8	-41	12.1	-85
Delhi						
Central Delhi	174.0	187	8.0	-85	7.0	-87
East Delhi	33.0	-46	31.0	-42	0.0	-100
New Delhi	175.3	189	9.6	-82	12.1	-77
North Delhi	164.8	172	21.3	-60	0.0	-100
North East Delhi	126.0	108	6.0	-89	4.0	-92
North West Delhi	184.0	204	23.0	-57	12.5	-76
South Delhi	185.0	205	11.0	-79	22.5	-57
South West Delhi	173.3	186	62.4	17	3.3	-94
West Delhi	235.0	288	23.0	-57	4.0	-92
Jammu & Kashmir						
Anantnag	82.0	429	24.8	10	15.5	-33
Badgam	37.2	195	46.6	230	51.7	153
Bandipore	**	**	**	**	**	**
Baramula	43.1	124	38.7	88	41.1	104
Doda	81.6	194	58.8	56	45.2	47
Ganderbal	29.7	150	31.1	109	18.9	15
Jammu	172.1	131	102.3	35	119.3	24
Kargil	**	**	**	**	**	**
Kathua	83.4	-1	101.3	8	141.7	22
Kistwar	**	**	**	**	**	**
Kulgam	50.3	225	2.5	-89	8.8	-62
Kupwara	97.9	850	14.3	-12	54.6	144
Ladakh(Leh)	9.5	172	10.7	198	4.5	97
Poonch	**	**	**	**	**	**
Pulwama	65.7	417	42.1	106	32.8	75
Rajouri	164.5	218	36.4	-48	154.6	122
Ramban	147.0	429	20.8	-45	45.3	47
Reasi	165.6	66	61.7	-51	75.7	-48
Samba	119.4	60	48.5	-36	103.8	7
Shopian	**	**	**	**	**	**
Srinagar	53.9	353	72.5	386	35.5	116
Udhampur	100.7	1	35.2	-72	26.8	-82
East Madhya Pradesh						
Anuppur	84.6	-6	39.0	-58	44.2	-45
Balaghat	96.1	-15	38.6	-67	34.9	-68
Chhatarpur	65.3	4	64.5	-18	25.2	-66
Chindwara	80.5	26	62.6	-5	67.7	17
Damoh	90.5	20	61.5	-31	22.5	-73
Dindori	71.4	-33	44.7	-55	79.5	-2
Jabalpur	203.0	164	40.2	-48	80.2	1
Katni	61.4	-32	53.1	-32	8.7	-88
Mandla	142.3	39	78.1	-18	47.5	-53
Narsingpur	219.4	177	40.0	-50	56.7	-32
Panna	85.6	17	87.8	-8	25.5	-66
Rewa	95.1	49	85.5	11	19.2	-75
Sagar	79.6	0	93.1	12	63.4	-14
Satna	161.1	179	46.6	-39	34.6	-52

Seoni	106.0	27	54.5	-33	49.3	-40
Shahdol	152.0	107	49.0	-37	48.8	-23
Sidhi	95.0	31	16.3	-77	46.2	-37
Singrauli	116.5	101	61.2	17	22.8	-69
Tikamgarh	61.0	1	87.0	18	43.0	-32
Umariya	83.3	14	132.8	44	23.6	-64
West Madhya Pradesh						
Agar	18.4	-84	239.9	107	550.0	250
Alirajpur	0.0	-100	93.8	38	343.0	417
Asoknagar	105.0	79	180.0	99	75.3	4
Badwani	0.0	-100	75.1	51	75.1	62
Betul	3.4	-95	126.4	91	79.7	13
Bhind	85.0	58	64.6	16	11.3	-79
Bhopal	72.7	16	207.4	192	193.1	101
Burhanpur	3.7	-92	89.3	86	60.3	-6
Datia	103.9	91	92.8	41	25.4	-54
Dewas	0.0	-100	267.7	294	198.8	132
Dhar	0.0	-100	271.7	323	228.3	226
Guna	118.6	82	206.6	146	121.6	43
Gwalior	203.7	247	111.1	67	42.6	-33
Harda	0.0	-100	127.0	58	133.6	51
Hosangabad	87.0	-9	224.7	153	121.9	27
Indore	0.0	-100	377.2	555	213.8	187
Jhabua	0.0	-100	117.0	89	335.5	495
Khandwa	0.0	-100	243.6	316	92.8	45
Khargone	0.0	-100	97.9	92	81.2	39
Mandsaur	31.9	-42	152.1	144	338.7	335
Morena	100.0	92	19.5	-69	10.1	-85
Neemuch	5.9	-89	154.5	166	299.1	286
Raisen	154.7	103	147.8	72	159.7	60
Rajgarh	176.8	160	354.4	468	365.5	349
Ratlam	0.0	-100	176.2	169	614.4	605
Sehore	14.8	-81	388.0	404	147.7	56
Shajapur	12.0	-80	328.5	427	299.0	240
Sheopur Kalani	31.8	-56	46.0	-28	88.5	22
Shivpuri	80.9	43	72.1	-1	48.1	-29
Ujjain	0.0	-100	454.5	756	410.1	411
Vidisha	61.1	-15	152.2	83	161.4	79
Chhattisgarh						
Bastar	94.1	30	33.5	-61	16.1	-80
Bijapur	20.2	-77	43.8	-59	140.2	14
Bilaspur	84.7	6	29.6	-65	67.7	-14
Dantewara	19.2	-79	80.5	-27	32.2	-64
Dhamtari	98.9	36	33.2	-60	25.7	-69
Durg	77.8	24	30.7	-57	28.2	-59
Janjgir	114.9	27	54.9	-39	86.0	2
Jashpurnagar	84.1	-1	46.3	-55	92.3	-12
Kanker	86.3	10	32.9	-64	29.5	-69
Korba	102.5	12	63.9	-35	80.1	0
Koriya	154.3	63	26.0	-71	27.6	-66
Kawardha	121.3	97	20.8	-66	20.7	-69

Mahasumund	102.2	53	47.7	-34	48.8	-41
Narayanpur	32.8	-61	49.3	-54	22.2	-77
Raigarh	146.8	83	45.3	-50	63.1	-18
Raipur	75.3	-5	27.8	-66	58.9	-21
Rajandgaon	73.5	-8	42.4	-44	34.7	-60
Surguja	133.7	42	72.1	-25	31.1	-66
East Uttar Pradesh						
Allahabad	61.8	-11	24.2	-62	19.8	-67
Ambedkar Nagar	18.0	-76	2.0	-98	4.0	-95
Azamgarh	74.6	-9	112.1	20	11.4	-83
Bahraich	53.4	-36	35.6	-64	27.6	-64
Ballia	24.6	-70	60.3	-22	10.2	-83
Balrampur	15.4	-84	24.0	-79	0.6	-99
Banda	40.1	-36	66.4	12	28.8	-51
Barabanki	85.3	-2	11.7	-86	14.0	-79
Basti	45.9	-34	31.4	-68	2.8	-96
Chandauli	25.4	-68	159.2	103	1.4	-98
Deoria	25.5	-69	113.3	52	11.5	-85
Faizabad	36.9	-61	25.7	-74	3.0	-96
Farrukhabad	60.1	-16	3.3	-94	2.5	-96
Fatehpur	30.3	-60	12.1	-78	5.9	-90
Gazipur	64.1	-6	85.7	30	17.8	-70
Gonda	41.3	-52	33.0	-67	4.8	-94
Gorakhpur	31.8	-67	45.1	-51	7.1	-92
Hardoi	134.8	87	26.2	-58	19.8	-67
Jaunpur	72.4	-14	64.4	-18	15.5	-73
Kannauj	118.0	70	0.5	-99	18.9	-70
Kanpur City	27.4	-48	18.9	-66	4.9	-92
Kanpur Dehat	52.0	-3	3.2	-95	5.8	-92
Kaushambi	32.5	-58	8.4	-84	15.6	-72
Kheri	65.6	-13	59.6	-12	11.1	-84
Kushi nagar	8.5	-92	58.0	-26	1.0	-99
Lucknow	95.9	29	12.9	-78	16.4	-74
Maharajganj	12.8	-88	58.3	-43	29.0	-69
Mau	91.2	7	44.9	-54	1.0	-99
Mirzapur	49.0	-34	133.5	84	21.0	-67
Pratapgarh	66.0	-1	71.3	-3	33.7	-47
RaiBareilly	50.6	-29	32.3	-45	6.6	-88
Sahuji Maharajnagar	44.0	-24	62.8	-7	12.0	-78
Sant Kabirnagar	31.0	-68	39.0	-61	3.0	-96
Sant Ravidas Nagar	103.0	28	82.0	5	5.0	-93
Shrawasti	21.2	-75	79.0	-20	0.3	-99
Sidharthnagar	23.3	-76	41.7	-54	36.3	-57
Sitapur	101.9	48	18.6	-72	15.5	-77
Sonbhadra	84.3	20	47.4	-33	32.8	-47
Sultanpur	96.9	12	67.5	-8	19.3	-69
Unnao	101.3	53	12.7	-80	21.3	-63
Varanasi	99.3	22	113.9	29	64.3	2
West Uttar Pradesh						
Agra	37.8	-28	4.4	-93	2.6	-95
Aligarh	44.9	-14	29.9	-41	5.9	-89

Auraiya	58.2	-4	28.1	-45	15.9	-74
Badaun	164.0	161	20.2	-59	2.2	-97
Baghpat	96.5	63	11.0	-75	0.0	-100
Bareilly	163.2	116	10.3	-83	5.6	-93
Bijnor	120.9	45	42.9	-43	1.7	-98
Bulandsahar	131.6	141	23.5	-55	5.6	-89
Etah	59.0	12	9.5	-79	22.7	-52
Etawah	97.4	87	19.6	-62	8.7	-85
Firozabad	80.1	44	82.6	36	23.1	-47
GBNagar	85.0	77	11.0	-77	0.0	-100
Ghaziabad	123.7	117	32.5	-33	0.0	-100
Hamirpur	76.5	41	46.5	-25	31.5	-53
Jalaun	90.7	70	59.9	-1	17.1	-70
Jhansi	88.4	39	66.9	16	22.7	-66
Jotiba Phule Nagar	142.0	84	46.6	-12	3.5	-95
Kanshiramnagar	116.0	104	5.0	-91	1.0	-98
Lalitpur	41.3	-34	30.0	-62	34.0	-61
Mahamaya Nagar	48.0	-21	5.0	-90	17.0	-69
Mahoba	81.8	72	35.4	-46	81.4	41
Mainpuri	71.1	24	31.7	-34	6.5	-88
Mathura	132.1	196	9.3	-82	1.0	-98
Meerut	83.4	18	9.2	-83	0.2	-99
Moradabad	151.1	120	22.6	-62	0.7	-99
Muzzaffarnagar	85.9	6	44.3	-6	0.0	-100
Pilibhit	80.9	4	6.7	-90	7.2	-92
Rampur	89.1	11	38.4	-44	0.7	-99
Saharanpur	164.3	89	44.2	-14	0.0	-100
Shahjahanpur	144.5	110	1.7	-97	3.7	-95
Uttarakhand						
Almora	91.1	32	48.2	-23	17.6	-79
Bageshwar	74.3	8	55.8	-11	81.6	-2
Chamoli	81.1	30	115.2	54	66.0	-4
Champawat	56.5	-52	47.0	-58	58.5	-48
Dehradun	154.8	1	98.7	-44	101.3	-40
Garhwal Pauri	88.4	-25	46.5	-52	21.0	-81
Garhwal Tehri	105.7	21	18.0	-80	53.2	-41
Haridwar	89.6	2	29.2	-52	23.8	-72
Nainital	135.7	5	56.7	-52	37.3	-69
Pithorgarh	86.5	-23	50.3	-60	50.0	-66
Rudraprayag	130.3	14	105.2	-27	136.6	-12
Udham Sing Nagar	73.4	-35	47.6	-41	10.3	-90
Uttarkashi	108.3	25	115.7	19	124.4	38
Bihar						
Araria	77.5	-27	25.7	-78	26.5	-74
Arwal	32.5	-53	81.5	64	33.7	-39
Aurangabad	15.5	-80	102.0	43	52.6	-22
Banka	93.6	22	59.9	2	59.8	13
Begusarai	75.7	-12	45.2	-18	5.3	-90
Bhabua	79.6	-4	175.2	121	34.9	-51
Bhagalpur	73.0	-6	95.8	60	38.0	-35
Bhojpur	23.9	-74	29.3	-61	65.4	-12

Buxar	57.8	-34	107.2	58	52.6	-7
Darbhanga	33.5	-54	18.2	-71	5.0	-93
East Champaran	38.7	-47	44.7	-50	3.5	-96
Gaya	29.5	-63	69.3	1	26.5	-62
Gopalganj	48.3	-42	87.8	29	7.2	-89
Jahanabad	20.9	-75	32.6	-38	34.9	-33
Jamui	49.2	-41	69.6	10	38.9	-38
Kathihar	49.7	-47	66.9	-14	21.8	-69
Khagadia	55.2	-39	52.6	-15	18.1	-66
Kishanganj	115.1	-22	27.8	-81	37.9	-66
Lakhisarai	34.1	-58	107.5	86	40.3	-41
Madhepura	33.2	-68	14.2	-83	10.7	-86
Madhubani	28.9	-63	16.6	-81	7.4	-91
Monghyar	68.2	-15	44.8	-23	0.0	-100
Muzaffarpur	44.9	-42	60.7	-23	1.2	-98
Nalanda	24.7	-68	26.5	-57	7.4	-89
Nawada	15.6	-80	75.6	9	22.3	-59
Patna	33.9	-62	35.4	-55	64.1	-6
Purnea	25.9	-80	9.0	-91	18.8	-77
Rohtas	59.1	-23	90.1	52	59.5	-15
Saharsha	34.6	-70	27.2	-72	22.1	-79
Samstipur	47.3	-46	22.2	-70	10.1	-85
Saran	62.0	-31	76.4	10	23.2	-68
Sheikpura	15.3	-83	98.4	70	67.3	22
Sheohar	27.6	-58	27.0	-70	0.0	-100
Sitamarhi	32.6	-50	8.7	-90	13.7	-87
Siwan	48.5	-42	55.2	-23	12.9	-84
Supaul	69.3	-25	20.0	-78	8.4	-89
Vaishali	49.0	-48	71.0	-22	2.1	-98
West Champaran	37.1	66	92.3	-3	22.0	-82
Jharkhand						
Bokaro	72.4	10	69.2	-15	95.9	30
Chatra	6.7	-92	150.9	79	32.4	-55
Deoghar	132.0	84	104.5	46	96.0	45
Dhanbad	27.1	-60	69.7	-13	129.3	60
Dumka	132.2	60	74.4	-3	178.2	139
East Singbhum	33.7	-52	76.4	5	353.9	458
Garhwa	82.2	45	159.0	104	30.8	-60
Giridih	61.2	-22	111.5	30	141.9	68
Godda	76.8	-7	120.1	87	77.3	23
Gumla	165.5	101	145.1	82	154.0	65
Hazaribagh	68.3	-8	152.7	90	32.0	-58
Jamtara	134.7	65	120.6	58	159.9	112
Khunti	125.0	54	114.4	33	47.9	-47
Koderna	47.0	-27	150.9	101	39.1	-16
Latehar	33.6	-55	231.3	174	45.9	-54
Lohardagga	52.8	-23	224.3	182	98.1	23
Pakur	150.2	40	67.4	-17	93.1	15
Palamau	60.6	-20	206.6	165	45.6	-39
Ramgarh	48.0	-33	157.0	82	82.4	6
Ranchi	108.6	26	98.3	10	19.7	-75

Sahebganj	63.2	-40	**	**	43.2	-51
Saraikela	62.1	-9	62.8	-23	193.4	171
Simdega	249.1	141	85.3	-24	104.8	-6
West Singbhum	45.6	-33	66.6	-10	81.4	18
East Rajasthan						
Ajmer	15.4	-61	73.4	42	100.9	146
Alwar	60.0	27	9.8	-82	8.2	-84
Banswara	0.0	-100	78.6	35	314.6	322
Baran	83.9	37	104.8	27	197.3	147
Bharatpur	76.2	63	30.6	-39	7.5	-84
Bhilwara	25.1	-49	41.1	-24	202.9	316
Bundi	68.2	22	67.3	4	136.0	87
Chittorgarh	32.1	-42	105.0	82	215.5	239
Dausa	29.8	-52	28.8	-60	29.0	-47
Dholpur	67.2	30	16.5	-69	10.3	-79
Dungarpur	0.0	-100	62.2	33	287.9	445
Jaipur	69.2	38	46.7	-30	52.1	2
Jhalawar	136.3	151	118.5	72	368.8	392
Jhunjhunu	50.6	35	20.0	-61	6.5	-80
Karauli	39.0	-25	22.8	-66	22.6	-64
Kota	84.4	57	80.5	7	175.1	131
Pratapgarh	0.0	-100	55.4	-1	360.0	403
Rajsamand	35.7	-12	38.3	-11	209.0	402
Sawai Madhopur	18.5	-66	26.7	-64	35.3	-49
Sikar	142.6	295	38.3	-30	55.7	43
Sirohi	4.0	-94	38.5	-52	655.0	650
Tonk	63.2	24	52.0	-21	96.1	74
Udaipur	1.6	-97	55.3	13	284.4	522
West Rajasthan						
Barmer	13.1	-25	11.5	-51	241.5	1126
Bikaner	19.9	7	15.7	-39	64.3	199
Churu	65.8	106	37.4	-1	29.0	3
Hanumangarh	15.1	-38	15.0	-44	18.1	-25
Jaisalmer	12.7	-16	16.1	7	72.2	451
Jalore	0.9	-97	18.9	-53	420.3	935
Jodhpur	29.3	26	21.7	-31	116.3	344
Nagaur	55.6	81	51.7	-2	74.4	153
Pali	24.1	-27	43.0	-12	248.0	492
Sri Ganganagar	26.5	54	12.6	-44	33.1	88
Gujarat Region						
Ahmedabad	0.6	-99	4.1	-92	195.3	310
Anand	0.0	-100	1.0	-99	219.2	228
Banaskantha	0.5	-99	15.1	-69	649.7	1108
Baroda	0.7	-99	20.8	-75	204.3	157
Broach	2.7	-95	4.5	-93	158.3	135
DNH	9.5	-95	325.1	48	318.4	66
Dahod	0.0	-100	60.2	-2	157.0	115
Daman	6.6	-96	36.8	-83	256.8	34
Dangs	3.7	-98	117.0	-23	280.0	29
Gandhinagar	0.7	-99	12.0	-83	447.4	673
Kheda	0.0	-100	32.2	-50	242.8	249

Mehsana	0.0	-100	16.4	-71	460.7	793
Narmada	2.1	-98	28.0	-68	321.2	234
Navsari	2.5	-98	68.1	-59	267.0	59
Panchmahal	0.0	-100	50.3	-27	201.1	150
Patan	0.0	-100	16.6	-65	499.1	949
Sabarkantha	0.0	-100	21.3	-67	328.7	378
Surat	6.2	-94	21.6	-81	275.7	149
Tapi	8.2	-93	50.2	-57	381.8	143
Valsad	4.7	-97	190.4	3	350.4	110
S K & Diu region						
Amreli	0.0	-100	2.6	-95	108.3	178
Bhavnagar	1.9	-95	5.4	-87	97.0	132
Diu	0.1	-99	23.1	-67	29.0	-39
Jamnagar	0.4	-99	3.0	-95	171.0	332
Junagarh	0.2	-99	11.9	-87	135.2	109
Kutch	0.0	-100	16.2	-60	360.9	965
Porbandar	0.6	-99	2.5	-97	122.9	164
Rajkot	0.0	-100	8.2	-86	192.1	304
Surendranagar	0.0	-100	30.5	-36	204.0	427
Maharashtra & Goa						
Konkan & Goa						
Mumbai City	5.8	-96	67.6	-65	175.7	15
Mumbai Suburban	11.1	-93	123.6	-36	188.4	23
North Goa	165.2	-34	219.6	-22	257.0	-6
Raigad	42.1	-83	175.7	-37	211.3	-21
Ratnagiri	45.0	-82	84.2	-69	169.0	-39
Sindhudurg	77.1	-65	94.9	-63	199.6	-25
South Goa	158.3	-28	171.4	-31	309.4	27
Thane	12.1	-95	322.2	43	271.5	33
Madhya Maharashtra						
Ahmednagar	0.0	-99	16.4	-30	14.9	-38
Dhule	0.0	-100	3.8	-90	89.2	126
Jalgaon	0.2	-99	12.5	-70	31.4	-31
Kolhapur	21.7	-86	57.0	-67	73.5	-54
Nandurbar	4.6	-94	22.0	-69	254.5	269
Nasik	4.1	-95	86.8	20	142.2	91
Pune	7.5	-90	49.9	-27	59.1	-14
Sangli	3.7	-89	7.6	-80	16.5	-49
Satara	4.9	-91	26.1	-58	26.4	-51
Solapur	0.1	-99	1.3	-94	1.2	-96
Marathwada						
Aurangabad	0.0	-100	13.9	-61	7.2	-83
Beed	0.7	-98	2.8	-91	2.1	-94
Hingoli	0.5	-99	19.8	-62	15.5	-74
Jalna	0.0	-100	5.8	-84	5.4	-88
Latur	7.7	-78	10.4	-78	3.3	-95
Nanded	1.3	-97	14.6	-73	28.3	-56
Usmanabad	2.5	-90	6.3	-81	2.3	-95
Parbhani	1.7	-96	7.4	-83	9.0	-85
Vidarbha						
Akola	0.0	-100	14.8	-76	49.5	-2

Amraoti	1.6	-97	33.9	-43	84.9	52
Bhandara	56.9	-35	42.1	-50	132.5	60
Buldhana	0.0	-100	21.4	-53	20.4	-54
Chandrapur	15.3	-83	33.9	-56	89.0	5
Gadchiroli	36.6	-66	49.3	-52	53.9	-49
Gondia	81.3	-16	48.6	-49	118.1	30
Nagpur	24.6	-68	34.0	-52	98.1	55
Wardha	8.6	-88	21.6	-63	131.3	121
Washim	0.0	-100	22.7	-63	12.3	-74
Yeotmal	0.4	-99	23.5	-64	39.9	-27
Odisha						
Angul	77.3	-1	53.1	-40	150.7	126
Balasore	99.8	90	129.2	51	150.2	110
Bargarh	126.4	71	75.1	-15	37.2	-59
Bhadrak	106.4	83	82.9	12	220.4	301
Bolangir	107.9	22	76.7	-19	33.5	-60
Boudh	106.6	56	51.5	-39	87.6	34
Cuttack	50.1	-25	70.7	-13	151.1	82
Deogarh	114.0	30	51.6	-51	162.6	87
Dhenkanal	68.1	6	55.8	-41	167.0	137
Gajapati	10.3	-80	52.1	-26	41.1	-36
Ganjam	27.2	-42	63.8	13	41.2	-29
Jagatsingpur	65.4	10	45.8	-43	278.2	307
Jajpur	59.3	-1	54.8	-28	263.6	295
Jharsuguda	194.4	122	61.2	-42	127.9	63
Kalahandi	99.1	28	95.9	3	46.1	-43
Kandhamal	58.2	-15	36.9	-57	58.6	-10
Kendrapara	26.7	-52	79.0	16	202.0	292
Keonjhar	64.7	17	32.5	-58	180.7	168
Khurda	68.1	3	52.0	-40	70.9	0
Koraput	36.1	-55	31.6	-66	22.0	-76
Malkangiri	41.4	-53	64.6	-50	34.4	-66
Mayurbhanj	63.4	-19	117.5	29	242.4	226
Nawapara	128.8	64	82.4	5	230.9	217
Nawarangpur	60.1	-15	61.0	-49	22.6	-77
Nayagarh	28.5	-49	49.5	-48	73.9	3
Puri	38.1	-28	46.7	-22	108.1	56
Rayagada	35.1	-44	46.1	-50	33.4	-57
Sambalpur	170.0	94	75.6	-28	143.8	66
Sonepur	98.4	41	38.8	-58	39.2	-53
Sundargarh	197.7	125	25.9	-71	181.6	124
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	38.9	-38	134.7	86	13.9	-80
North & Middle Andaman	236.2	126	74.8	-26	18.6	-83
South Andaman	97.9	7	112.8	9	41.0	-58
GWB						
Bankura	124.4	90	98.1	44	134.8	88
Birbhum	185.8	119	128.8	92	238.4	255
Burdwan	180.6	149	104.6	41	140.1	126

East Midnapore	146.9	193	161.8	133	255.9	313
Hooghly	214.4	216	86.3	7	222.7	226
Howrah	155.8	130	172.8	108	396.3	426
Kolkata	185.9	132	181.3	116	125.2	54
Murshidabad	152.6	98	101.3	42	184.2	145
Nadia	135.7	98	117.3	78	124.3	124
24 Pargana (N)	276.1	262	135.6	85	97.1	32
Purulia	98.8	39	76.9	9	235.3	303
24 Pargana (S)	154.6	51	265.1	146	173.2	73
West Midnapore	129.7	90	131.3	69	135.2	70
SHWB & Sikkim						
Cooch Behar	54.1	-76	22.8	-87	50.0	-69
Darjeeling	157.5	-9	110.2	-43	53.1	-69
East Sikkim	154.5	32	94.0	-14	109.5	-11
Jalpaiguri	141.1	-34	47.8	-77	48.6	-73
Malda	132.3	69	96.1	47	108.8	38
North Dinajpur	130.4	22	25.9	-65	27.9	-67
North Sikkim	133.6	44	48.6	-56	32.7	-71
South Dinajpur	43.0	-50	28.8	-63	67.6	-22
South Sikkim	176.6	51	121.6	12	90.8	-26
West Sikkim	106.0	14	50.5	-54	61.0	-45
Karnataka						
Coastal Karnataka						
Dakshina Kannada	366.9	35	371.1	33	156.7	-45
Udupi	473.6	58	465.5	45	222.5	-30
Uttara Kannada	117.4	-49	149.1	-44	125.3	-43
NI Karnataka						
Bagalkote	10.6	-34	3.0	-82	2.7	-87
Belagavi	9.7	-80	17.3	-64	18.2	-55
Bidar	32.6	-7	19.3	-59	1.5	-97
Dharwad	18.5	-50	3.9	-89	8.1	-72
Gadag	1.5	-91	2.6	-83	1.8	-90
Haveri	8.3	-80	40.8	-1	10.0	-68
Kalaburgi	48.8	69	12.8	-66	2.4	-94
Koppal	8.1	-46	5.2	-72	0.6	-98
Raichur	16.6	-25	3.3	-86	4.4	-87
Vijayapura	2.9	-84	4.2	-79	0.8	-97
Yadgir	30.5	10	1.5	-96	3.0	-94
SI Karnataka						
Ballari	33.8	106	10.5	-38	0.2	-99
Bangalore Rural	6.1	-68	28.4	12	19.1	-20
Bangalore Urban	10.6	-43	47.2	93	13.4	-40
Chamarajanagar	2.0	-85	9.7	-32	4.4	-76
Chikaballapur	4.4	-75	29.0	29	35.7	50
Chikkamagaluru	54.0	-64	155.5	9	42.8	-69
Chitradurga	6.0	-49	26.7	99	7.6	-48
Davangere	11.8	-46	54.2	105	17.7	-28
Hassan	8.8	-80	18.2	-59	9.6	-78
Kodagu	98.2	-49	207.8	14	80.2	-57

Kolar	4.5	-73	50.6	184	4.0	-80
Mandya	0.8	-92	5.2	-54	7.5	-44
Mysuru	3.4	-83	16.4	-8	8.8	-59
Ramanagara	3.8	-75	14.2	-38	10.1	-54
Shivamogga	111.3	-21	222.9	53	59.4	-52
Tumakuru	2.4	-83	23.0	32	6.9	-61
Kerala						
Alappuzha	73.2	-39	90.6	-23	26.7	-74
Kannur	211.1	-13	330.1	49	193.9	-11
Ernakulam	96.9	-37	163.4	14	40.3	-72
Idukki	89.4	-46	227.1	45	72.9	-60
Kasaragod	225.2	-16	335.0	35	204.7	-13
Kollam	49.0	-45	74.3	-10	43.6	-49
Kottayam	86.8	-38	122.7	-2	45.1	-62
Kozhikode	140.0	-37	377.1	92	187.3	-10
Malappuram	96.6	-47	194.2	20	74.1	-57
Palakkad	68.1	-48	143.5	18	50.2	-62
Pathanamthitta	43.7	-65	106.4	-7	20.3	-81
Thiruvananthapuram	13.4	-73	33.0	-33	8.6	-82
Thrissur	103.2	-41	221.8	37	65.2	-60
Wynad	60.4	-74	143.5	-35	69.0	-72
Tamil Nadu						
Ariyalur	10.8	-20	90.5	357	19.2	-15
Chennai	22.0	-20	52.8	140	74.1	145
Coimbatore	8.2	-19	31.9	294	10.7	-21
Cuddalore	3.2	-79	15.7	-8	58.6	147
Dharmapuri	0.7	-96	4.1	-78	2.4	-89
Dindigul	0.1	-99	5.6	-56	11.8	-24
Erode	0.3	-97	0.6	-93	3.2	-70
Kanchipuram	18.0	-29	34.6	26	48.1	68
Kanyakumari	9.5	-57	21.7	-13	6.0	-71
Karikal	0.7	-93	20.7	31	0.0	-100
Karur	0.0	-100	0.0	-100	0.0	-100
Krishnagiri	0.0	-100	7.1	-60	9.1	-53
Madurai	0.0	-100	5.0	-69	10.5	-42
Nagapattinam	3.1	-75	8.5	-40	12.9	-29
Namakkal	0.7	-96	10.8	-29	11.8	-39
Nilgiris	13.4	-74	44.8	-17	29.2	-51
Perambalur	0.0	-100	3.7	-67	25.1	41
Puducherry	22.8	80	10.2	-39	19.2	-51
Pudukottai	0.0	-100	10.1	-35	43.9	114
Ramanathapuram	2.2	-58	11.8	34	4.1	-62
Salem	0.1	-99	12.3	-43	17.6	-31
Sivaganga	2.0	-87	30.9	86	41.4	83
Thanjavur	0.3	-98	8.5	-46	32.2	76
Theni	2.4	-60	15.0	85	11.5	22
Tirunelveli	3.8	-47	6.7	-22	3.7	-59
Tirupur	0.0	-100	1.8	-64	1.3	-82
Tiruvallur	18.0	-23	24.8	-5	102.1	284

Tiruvannamalai	5.6	-73	20.4	-21	66.1	161
Tiruvarur	0.8	-94	36.1	135	10.7	-46
Toothukudi	0.0	-100	0.3	-93	0.3	-95
Trichy	0.1	-99	0.4	-97	11.9	-16
Vellore	7.2	-66	10.7	-61	37.2	32
Villupuram	3.2	-76	17.9	-18	55.7	107
Virudhunagar	0.0	-100	5.3	-46	11.5	12
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	12.6	-71	94.3	119	26.2	-50
Guntur	30.6	20	50.6	41	5.1	-86
Krishna	26.4	-35	42.3	-12	22.6	-60
Nellore	12.0	-27	8.2	-63	8.5	-66
Prakasam	32.4	112	10.4	-61	8.6	-67
Sirkakulam	19.9	-52	53.2	14	34.5	-24
Visakhapatnam	27.4	-23	44.5	0	43.1	0
Vizianagram	21.1	-40	43.3	2	22.7	-47
West Godavari	6.5	-87	82.7	58	23.1	-62
Rayalaseema						
Anantapur	5.2	-61	9.8	-41	2.8	-84
Chittoor	9.9	-53	16.0	-39	17.0	-32
Cuddapah	21.6	16	8.9	-66	7.3	-74
Kurnool	24.1	2	6.7	-74	10.0	-71
Telangana						
Adilabad	9.0	-87	57.5	-22	62.6	-18
Hyderabad	28.6	-14	7.4	-83	2.8	-94
Karimnagar	4.0	-93	34.2	-36	40.2	-37
Khammam	10.8	-81	33.4	-46	34.4	-55
Mehabubnagar	20.0	-33	4.8	-88	6.5	-85
Medak	17.3	-62	14.3	-73	2.4	-96
Nalgonda	21.6	-20	21.7	-48	8.7	-79
Nizamabad	9.0	-84	27.6	-57	16.4	-78
Rangareddy	24.6	-36	13.2	-70	3.0	-94
Warangal	12.9	-77	17.1	-73	43.6	-35

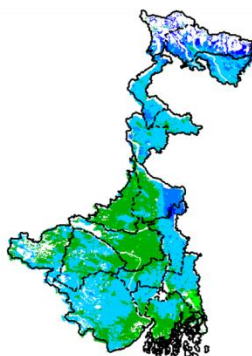
Legends

	(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

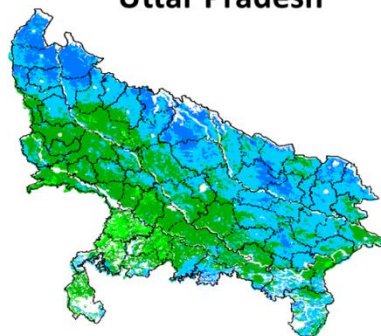
INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 29th July 2015 FOR DIFFERENT STATES

West Bengal



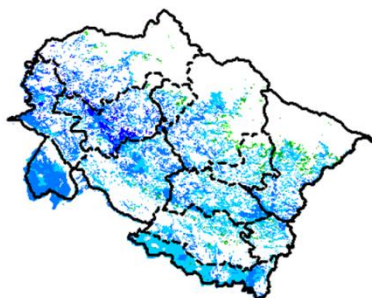
Agricultural vigour is very good over the parts of West Bengal, whereas an eastern part of West Bengal shows dominantly higher values of NDVI varying from 0.4-0.6. NDVI values are normal over remaining part of state.

Uttar Pradesh



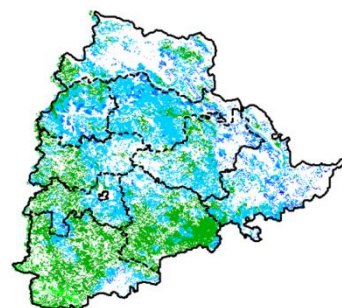
Agricultural vigour is good over the entire state of Uttar Pradesh where NDVI value varies from 0.4 - 0.5. In southern part normal NDVI values (0.2-0.4) are observed.

Uttarakhand



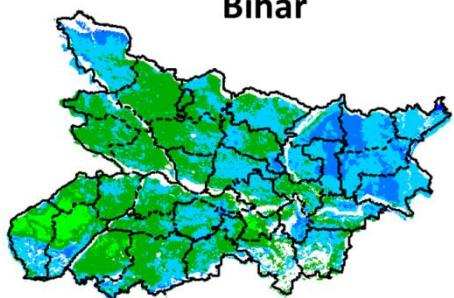
Agriculture vigour is very good over central parts of Uttarakhand with NDVI value varying between 0.4-0.5, whereas isolated patches with normal value of NDVI are observed over remaining parts of the state.

Telangana



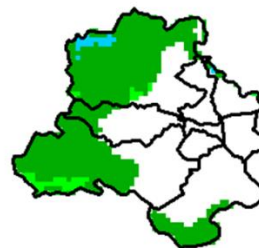
NDVI values vary from 0.2 - 0.4 over Telangana. Higher (> 0.4) values are seen in some patches over eastern and central parts of Telangana.

Bihar



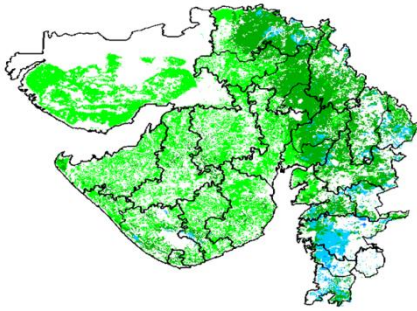
Eastern part of Bihar shows comparatively a high value (0.4 -0.5) of NDVI, whereas normal value of NDVI is observed over the remaining parts of the state.

Delhi



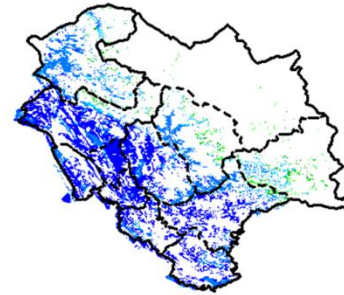
Agriculture vigour is normal all over Delhi where NDVI value lies between 0.2-0.3.

Gujarat



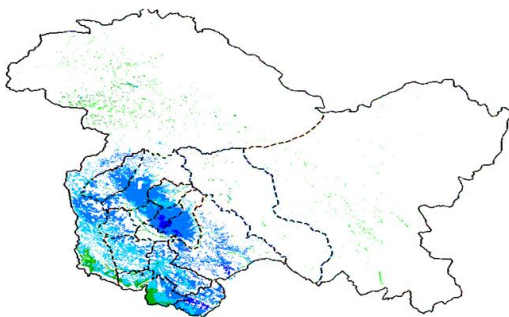
Agriculture vigour is normal (NDVI 0.2-0.4) over entire Gujarat, except few patches in south Gujarat which show higher NDVI values.

Himachal Pradesh



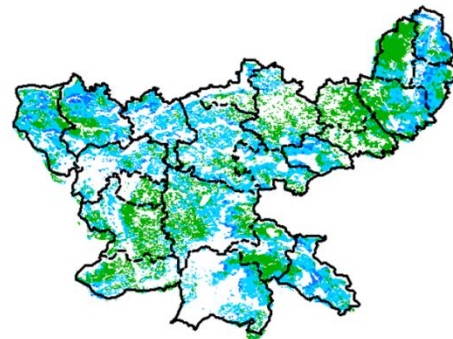
Agriculture vigour is very good over south and south western parts of Himachal Pradesh with NDVI value varying between 0.5-0.6, whereas isolated patches of normal NDVI are observed over remaining parts of the state.

Jammu & Kashmir



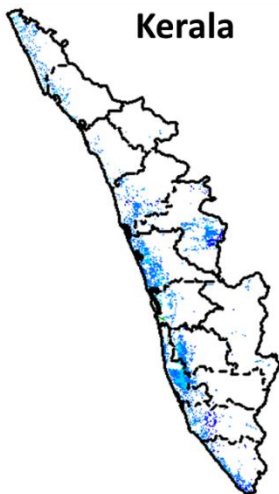
Agriculture vigour is good all over Jammu and Kashmir. NDVI value varies in between 0.4-0.6 in south western parts.

Jharkhand



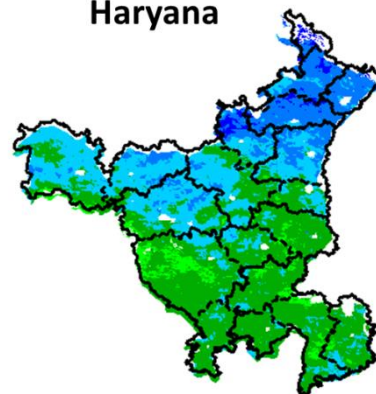
NDVI values vary from 0.4 - 0.5 over Jharkhand. Normal NDVI values are seen in some patches over eastern and southern parts of Jharkhand.

Kerala



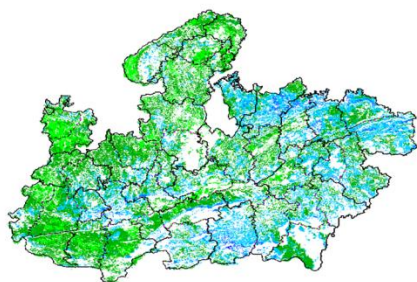
Central and coastal regions of Kerala shows increased NDVI values varying from 0.4 to 0.5, whereas rest of agricultural vigour of Kerala shows good values of NDVI.

Haryana



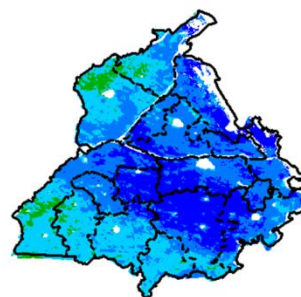
Agriculture vigour is normal over the state of Haryana. NDVI values varies between 0.2- 0.3 over the state. Except few patches in northern and western region where NDVI values in between 0.4-0.6.

Madhya Pradesh



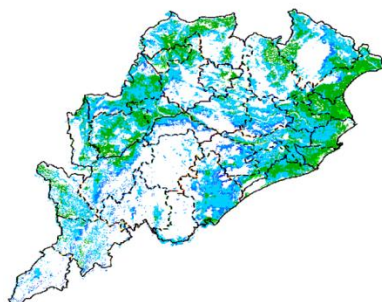
Agriculture vigour is normal (0.2-0.3) over entire state Madhya Pradesh. Higher (> 0.4) values are seen in some patches over southern and eastern part of Madhya Pradesh.

Punjab



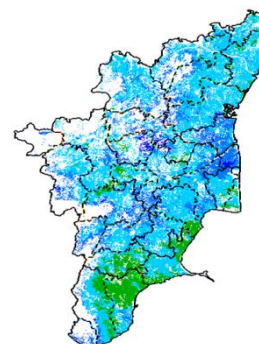
Agricultural vigour is good over entire state of Punjab, showing NDVI value ranges from 0.4-0.6. The central part shows increase in NDVI (> 0.6).

Odisha



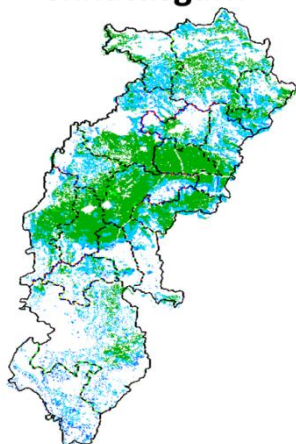
Agricultural vigour is good in over entire state of Odisha with NDVI value ranging between 0.4 - 0.6. The remaining part shows normal NDVI values. .

Tamil Nadu



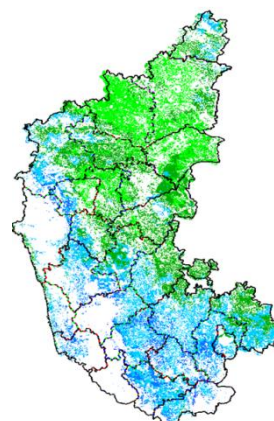
Agricultural vigour is good over Tamil Nadu with NDVI values varying from 0.4 - 0.6. Except South Eastern part, showing normal NDVI value ranges from 0.3-0.4.

Chhattisgarh



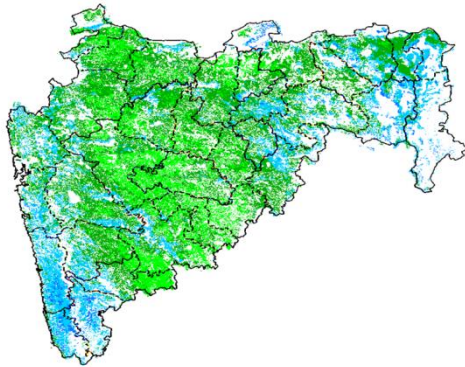
Agriculture vigour is Normal in central part of Chhattisgarh where NDVI value lies in between 0.2-0.3. South and north-eastern part of state shows increased NDVI values in some pockets.

Karnataka



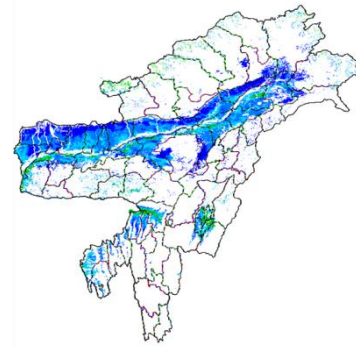
Agricultural vigour is good over south interior part of Karnataka between 0.4-0.6. Rest of the parts shows normal NDVI values from 0.2-0.3

Maharashtra



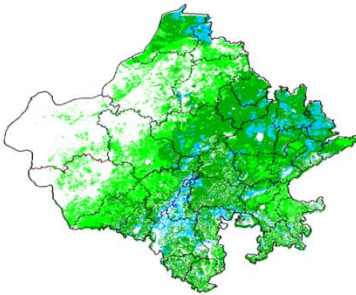
Agricultural vigour is good over south west part and few patches from Vidarbha with NDVI values from 0.4 - 0.5, whereas NDVI is normal over parts of Marathwada, Vidarbha and Madhya Maharashtra region .

North East Region



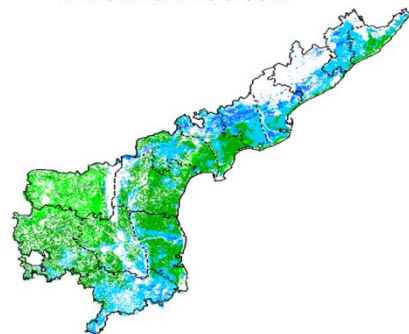
Agriculture vigour is very good in valleys of North-East states which cover parts of Assam. NDVI values vary from 0.4-0.6. Normal NDVI conditions are observed all over NE region.

Rajasthan



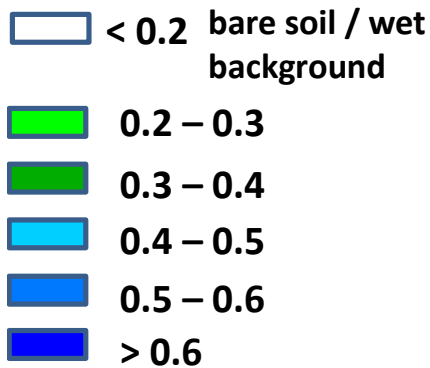
Agriculture vigour is normal (0.2-0.3) over entire state Rajasthan, except for few patches in eastern Rajasthan where NDVI shows slightly higher values (0.3-0.4).

Andhra Pradesh



Agriculture vigour vary from 0.3 - 0.5 over coastal and southern parts of Andhra Pradesh. The NDVI is normal over remaining parts of the state.

Persistent cloud /



Annexure III

List of varieties

North Inerior Karnataka

Groundnut: Bunch type of varieties, JL-24 and TMV-2, S-230, Mardur local

Paddy: short duration varieties Amrut, MGD-101, MTU-1001 in low lands, BR-2655, Tunga.

Sesame: E8,DS1, DSH9.

Maize: Arjun, 900 M.

Pearl millet: ICTP 8203 and ICMV 221

Pigeon pea: Maruti, TS 3 R.

Red gram: BRG-1, BRG2, TTB-7

Tamil Nadu

Banana:poovan, rasthali, monthan, karpooravalli and neypoovan.

Kuruvai rice:ADT 36, ADT 43, ADT 45 and CO 51.

Andhra Pradesh

Rice: MTU-1010, Nellore masuri, Dharani, Shwetha.Sannalu, Swarna, Vasundhara, Suraksha, Vijetha.

Varieties for Early Kharif Rice Plantings - Pushkala, Rasi, IR64.

Groundnut: Kadiri-6, Kadiri-9, Narayani and dharani.

Castor: PCH-111, PCH-222, Kranti, GCH-4, Haritha.

Assam

Sali/ kharif rice: Long duration high yielding varieties: Ranjit, Bahadur, Peoli, Moniram, Pankaj, Kushal , Swarna sub-1, Gitesh, Pankaj, Mashuri (for growing in typical lowland paddy area).

Medium duration paddy varieties : Satya and Basundhara (in medium lowland area).

Bau rice: Maguri, Panikekua, Amona, Negheri, Kekua, Pani Kekua, Padmapani.

Capsularis Jute: JRC 212, JRC 321(Sonali), JRC 7447 (Shyamali) and UPC 94(Reshma).

Olitorius Jute: JRO 524 (Navin), JRO 785 (Basudev), JRO 632(Baisakhtissa), Set-2 (Bahagi) and Tarun.

Papaya : Ranchi, Washington, Halflong, Coorg Honeydew.

Mesta : HC 583 and AMC 108.

Summer bottle gourd : Pusa Summer Prolofie long, Pusa Summer Profile round, Pusa Meghdoot and Pusa Manjiri.

Cowpea: Yard long bean & Pusa Barsati.

Manipur

Soybean: JS-335.

Groundnut: ICGS-76.

Meghalaya

Sali/KharifRice: High Yielding Varieties : Shahsarang -1, Lampnah, IR 64, Ranjit, RCPL 1-412, RCPL 1-410, RCPL 1-411.

Local varieties: Mendri, Manipuri.

Groundnut: ICGS 76, JL 24.

Soybean: JS 335, Bragg, Ankur, Pusa Soubean-1, Local JS 2.

Nagaland

Lowland rice:Short to medium duration HYV rice : CAU R1, CAU R3, RCM-9 and RCM-11.

Maize : DA 61A, RCM-75, RCM-76 and HQPM-1.

Tripura

Groundnut: TAG 24, TG 37A, ICGS 76.

Maize: DMH- 849, 117, HQPM 1, BQPM 9.

West Bengal

Dry Seeded rice: Sabita Foundation, Swarna sub-1 certified, IR-64, Hira T.L.

Mango: Himsagar, Mallicka, Langra.

Guava: Safeda, L-49.

Coconut: Eastcoastal, Hazari

Banana: Mortoman, Chapa, Kathali, Singapuri,.

Odisha

Sunflower: Morden, Sunrise, Surya and Hybrid varieties like KBSH-1, KBSH-3 and MSFH.

Onion: Nasik Red, Patna Red, Pune Red, Bellary Red, Pusa Ratnar, Pusa Madhavi, Arka Niketan ,Arka Pragati.

Ragi:HYVs. like Subhra, Vairabi, Dibyasingh, Nilachala, Subhra, Godavari and Chilka.

Sesame:Uma, Kalika, Kanak, Nirmala, Prachi, Usha.T.

Turmeric: Roma, Surama, Rang, Rashmi.

Jute:JRO-524(Naveen).

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

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.

Bihar

Moong: Pusa Vishal, Samrat, SML-668, Sona varieties are recommended for moong.

Urad: Pant U-19 and Pant U-31,Ultra and Type-9 for Urad.

Maize: Suwan, Deevki, Ganga-11, Shaktiman-1 and Shaktiman-2.

Turmeric: Improved Varieties- Rajendran,Sonia, Rajender Sonali.

Ginger: Improved varieties - Maran ,Nadia

Rice: Low land:Rajshree, Satyam, Rajendra ,Mehsooril MTU 7029(Swarna) ,Swarna sub-1

Medium land:Sita, Kanak,IR 36,Rajendra,Shweta,Santosh,Shahbhagi.

Medium duration(Hybrid): P.H.B.71,Pusa R.H.10,K.R.H 2,P.A.644,Pant Sankardhan.

Til: Krishna., Kaakee safed,Kalika,Kalika,Pragati

Jharkhand

Green gram:mung S.M.L. 668.

Sugarcane: BO 147.

Rice:Upland Rice: Birsa Dhan 108, Birsa Vikash Dhan109.110,111 & Vandana.

Medium land:Anjali,Sahbhagi,Naveen,Birsamati,Sugandha,BR-10,IR-36.

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

Finger Millet: Birsa marua 2,A-404,GPU 45,47.

Urd Bean: T9, Pant U19,30,35 & Birsa Urd 1.

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

Groundnut:A.K-12-24,Birsa Bold.

Sweet Potato:Birsa Sakarkandi & Shreebhadra.

Jammu & Kashmir

Onion: Agrifound Parvati, Pusa red, N-53.

Rice : IET-1410, K-39, Ratna, PC-19, Jaya, China-1039and Giza-14.

Maize: Vijay, Mansar, Him - 123, C 6 & C 8.

Uttarakhand

Tomato: VL Tomato-3, Pant T-3, Him Sona, Him Shikhar.

Capsicum:California Vander, Pus Dipti, Anupam. Heera, Indira, Supriya & Bharat.

Potato:Kufri- Jyoti, Ashok, Anand.

Moong: Pant Moong-2, Pant Moong-4, Pant Moong-5, Pant Moong-6, Narendra Moong-1.

Rice:long duration varieties like Pusa-44, Jaya, NDR-359, Sarju-52, PR-113, PR-114, Pant Dhan-18 or Pant Dhan-19.

late varieties VL-Dhan-154, Vivek Dhan-62, Vivek Dhan-65, VL Dhan-81, Vivek Dhan-82 or VL-Dhan-85.

Finger millets: VL-Mandua-124 and VL-149. However, its short duration (i.e. 95 to 100 days) varieties like VL- Mandua-204, Pant Mandua-3, PES-176, PES-110, VL- Mandua-146.

Bajra:PBN-83,YESHWANT (PBN-9), Pusa Composite 443, MP443.

Maize: Naveen, Sweta, Kanchan, Surya, Amar, Gaurav.

Lobia: Pant Lobia-1 or Pant Lobia-2, UPC-5286, UPC-622, UPC-625 etc.

Cotton: ANKUR-651,JAWAHAR TAPTI,SRUTHI,ANKUR-09 (WHH-09).

Himachal Pradesh

Cauliflower:Patna snowball and joint snowball.

Radish:Japanese white, Chinese pink and mino early white.

Capsicum: solan hyb-1,california wonder,yolo wonder ,vl shimla mirch-2.

Brinjal:plr-1,azad (hybrid), Arka Nidhi, Arka Keshav, Hisar Shaymal, PPC, F1 Chhaya, F1 Sandhya.

Tomato: solan gola, Palam Pink, Palam Pride, F1 Avtar, F1 Rakshita.

Chilli: Surajmukhi.

Sunflower:EC-68415.

Moong: Pusa Baishakhi.

Mash:UG-218.

Garden pea:PalamPriya, Azad P-1,PB-89, PalamSamool and Lincoln.

Carrot:Nantes and Chantenay.

Palak:PusaHarit, Pusa Bharti.

East Uttar Pradesh

Rice: sarayu-52, narendra-359, pant dhan-4, indrasan, NDR-9, pant dhan-12, narendra-80, ratna or pusa-35, mahsuri, swarna, mahsuri, jal lahri, type-9, type-100, narendra-359, malviy dhan-36, narendra dhan-2026, narendra dhan-2064, narendra dhan-3112, sarju-52, pant dhan-4, Swarna, Pant-10, T-3, Poosa Basmati and Haryana Basmati.

Hybrid rice varieties: eraes-6444,6201,J.K.R.H.-401,PHB-71,narendra sankar dhan-2,3, KRH-2,PRH-10,US-312, RH-312,VSR-202,RH-1531. Narendra-8002, NarendraMayank (2008) Narendra-97.

Scented rice: Type-3,pusa basmati-1,basmati-370,malviya sugandh-105, malviya sugandh-4-3, narendra sugandh,Narendra usar dhan-1,3,CLR-10, or narendra usardhan-2008.

Moong:Narendra moong-1, Pant moong-1,3,4,PDM-11, Samrat, Malveey - Jyoti, Janchetana, Jagruti, Janpriya,Jankalyani, Asha, Shweta, Neha, TM-9937, MH-215.

Urad: Narendra urd-1, Pant U-35, 31, Azad urd-2,3, Shekhar-1,2,3.

Sugarcane: coj-64, cos-96268, cos-98231, cos-767, cos-84, cos-32, copant-84212, Ko.Sha.-88230, 95255, Ko.Sha.-95436, 01235.

Maize: pusa, agatishanker, makka-2, azad, uttam, sweta, Prakash,G-1, 5(hybrid varieties) and Tarun, Navin, Kanchan, Sweta and Jaunpuri (varieties for early sowing).

Tomato: pusa early, pusa ruby, HS 101.

Cauliflower: pusa dipali.

Pearl Millet: Raj WCC-75, ICMB-155, Pusa-322,23, ICMH-451.

Seasame: T-4,78, Shekhar, Pragati, Tarun.

Pigeon Pea:Bahar, Narendra Arhar-1, Azad, Pusa-9.

Lobia:UPL-5287, UPC-4200, Ta-5269, Ta-2.

Jute: Jute Reshma, NDC (2007), NDC-2028, NDC-9102.

Okra: PusaSawani, VarsaUphar, Azad kranti.

Brinjal: Pant Samrat, Pant Rituraj, Pusa hybrid-6.

Guava:Sardar(Lucknow-49).

West Uttar Pradesh

Ladies finger:VRO-6, VRO-5.

Rice:PRH 10, PB1, Pusa 1509, Sugandha5.

Pigeon pea:T-21, UPAS 120.

Cotton: H777, Dhanalakshami, HD107.

For fodder Jowar: JS 120, Lobia 88.

Punjab

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

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

Delhi

Cotton: H-777, H-974, H-1098.

Pigeonpea: Pusa 2001, Pusa991, Pusa992, Paras manak, UPAS 120.

Bajra: Hybrid Bajra Pusa-605, Hybrid Bajra Pusa-415, Composite Bajra Pusa-383, HSV-67.

Maize:AH-421, AH-58 or Composites: Pusa composite-3, Pusa composite-4.

Guar: PusaNavbahar, DurgaBahar.

Radish:PusaChetki.

Cluster bean:PusaKomal.

Beans: PusaSem 2, PusaSem 3.

Spinach: PusaBharti.

Amaranths: PusalalChaulai, PusaKiran.

Ladyfinger: Pusa A-4.

East Rajasthan

Sugarcane: (late sown): COL8001.

Groundnut: RG 425, RG382, HNG10, GG20, TG37, TG39, M-13.

Kharif Onion N-53 , Agrifound Dark Red.

Okra: Ark abhay, Parbhani kranti, Pusa makhmali.

Guar: RGC-936,986,1002,1017,HG -365,563,Hg2-20. RGC-1003, RGC-1066.

Green gram RMG-62, RMG-268, K-851, G.M-4, RMG-492 & RMG-344 (improved varieties).

Cowpea:FS-68, RC-19 and RC-101 (improved varieties).

Moth bean-R.M.O-40, R.M.O-257, R.M.O-225 and CAZRI moth-2. RMO-40 and RMO-225(Maruwardan).

Sorghum: CSH-6 (90-100 days), CSV-10 (100-110 days), CSV-15 (105-140 days).

Sesame : RT-125, RT- 127, RT- 346, RT -351.

Pearl millet : RHB-121, HHB-67.

Black gram: Krishna, T 9, Pant U-19.

West Rajasthan

Pearl millet: HHB 67, RHB 121.

Cluster bean: RGC 936, RGC 1002, RGC 1017 and RGC 1066.

Cowpea: RC-101, RC19 and RCp 27.

Moong: RMG 62, RMG 268, SML 668 and GM-4.

Moth bean: RMO-40, RMO 435, RMO 257 and CZM-2.

Madhya Pradesh:

Soybean: JS 95-60 (early), JS 93 -05 (Medium), JS 335 (Late).

Redgram: TJT 501, ICPL 87 (early) and JKM 189 (Medium).

Groundnut: TG 22, TG 26, JGN 3.

Rice: JR 345, JR-201, Poornima (short duration).

IR-64, IR-54, Madhuri, Kanti, Mahamaya, Pusa basmatai (medium duration).

Black gram: JU 86, JU 3, T 9.

Maize: JVM 421, JM 12, JM 216.

Green gram: TJM 3, JM 721, HUM 1.

Sugarcane: KO Jawahar-86141, 86572.

Guar: HG 365, HG 565.

Chhattisgarh:

Rice: Purnima, Danteswari, Shabagi, MTU 1010, MTU 1001, Suwarna.

Brinjal: Punjab Shadabahr, KS 331, PH 5, PH 6, KS 224, ARBH 543.

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

Soybean: J.S. 335, Indira Soya-9, J.S. 80-21, J.S. 93-05.

Groundnut: SB -11 (J 11), ICGS-37, ICGS-44, T.A.G- 24, T.A.G-28.

Sesame: T.K.G-21, T.K.G-22, T.K.G-55, T.K.G-8.