

National Agromet Advisory Service Bulletin

Friday 22nd May 2015

(For the period 22nd to 26th May 2015)

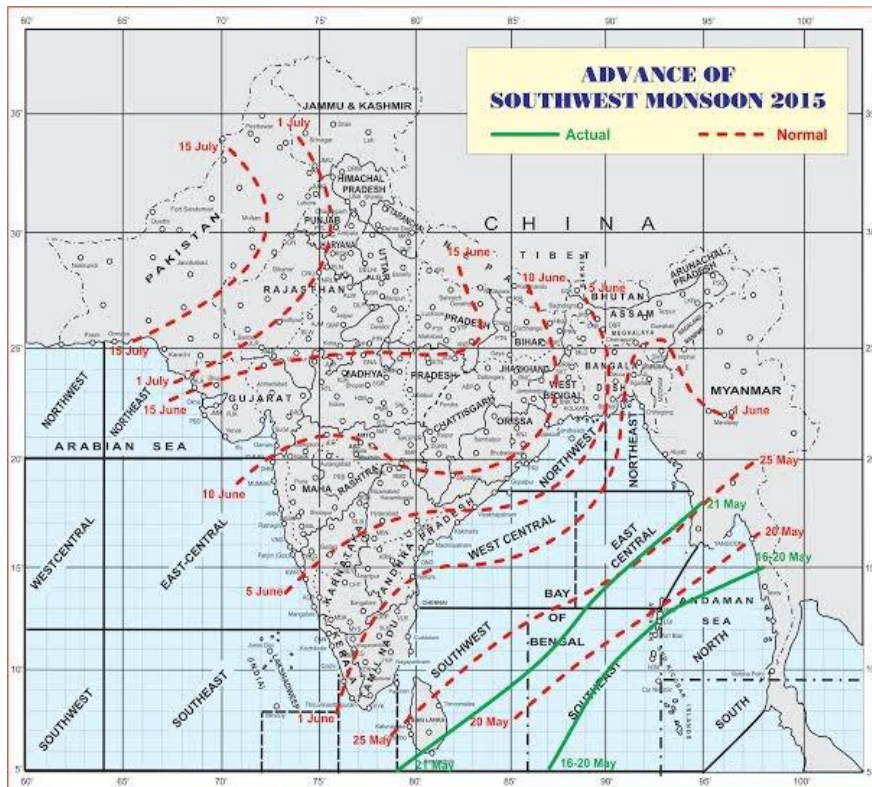


Issued by

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



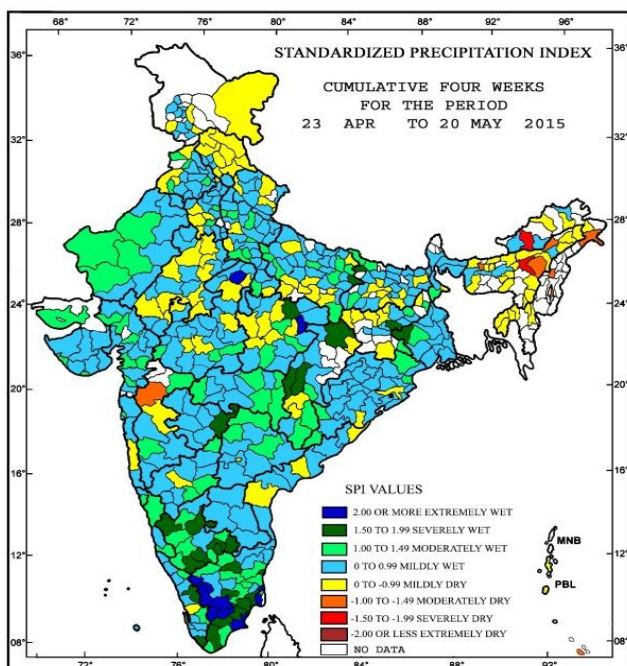
Monsoon Watch



- The Northern Limit of Monsoon (NLM) continue to pass through Lat 05.0°N/ Long. 79.0°E, Hambantota (Srilanka), Lat. 10.0°N/ Long. 86.0°E, Lat. 13.0°N / Long. 89.0°E and Lat. 18.0°N / Long. 95.0°E.

Standardised Precipitation Index Four Weekly for the Period 23rd April to 20th May 2015

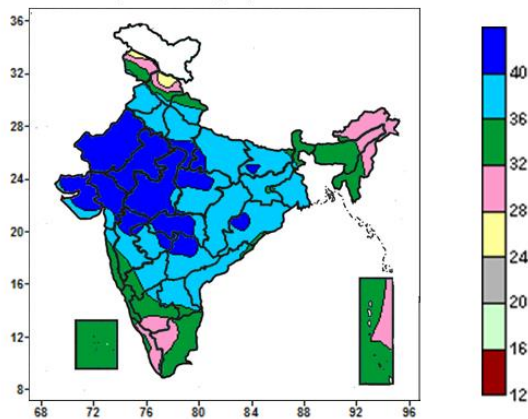
MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE



- Extremely/severely wet conditions experienced in many districts of Tamil Nadu & Puducherry and Karnataka; Purulia district of West Bengal; Bokaro district of Jharkhand; Gopalganj district of Bihar; Ballia district of Uttar Pradesh; Gwalior, Satna, Shahdol districts of Madhya Pradesh; Nanded district of Maharashtra; Durg, Rajnandgaon, Surguja districts of Chhattisgarh; Palakkad, Thiruvananthapuram districts of Kerala.
- Severely/moderately dry conditions experienced in Nicobar district of Andaman & Nicobar Islands; Nagaon, Karbi Anglong, Bongaigaon, Lakhimpur districts of Assam; Changlang, East Kameng districts of Arunachal Pradesh; Imphal East district of Manipur; Kohima district of Nagaland; Nasik district of Maharashtra.
- Rest of the country experienced moderately wet/mildly dry/wet conditions.

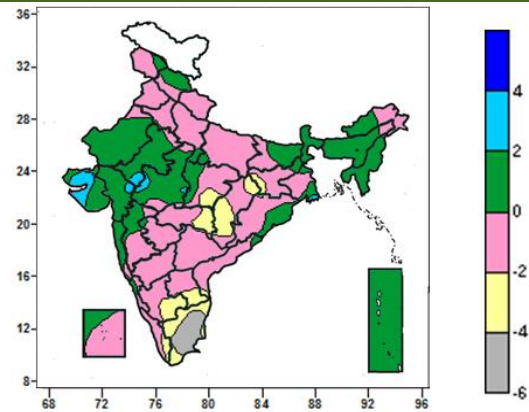
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 20.05.2015

Actual Mean Maximum Temperature (°C) in India for the week ending 20.05.2015



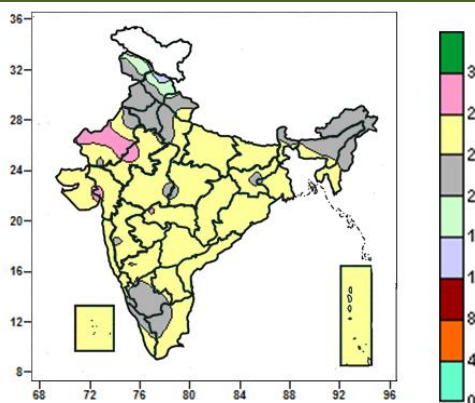
- Mean maximum temperature was above 40°C over Rajasthan, many parts of Gujarat, West Madhya Pradesh, Vidarbha, some parts of Uttar Pradesh, East Madhya Pradesh, Madhya Maharashtra, Marathwada, Telangana and isolated pockets of Bihar, Jharkhand and Odisha.
- Mean maximum temperature ranged between 36 to 40°C over Punjab, Gangetic West Bengal, Chhattisgarh, Coastal Andhra Pradesh, many parts of Uttarakhand, Haryana, Delhi, Uttar Pradesh, Bihar, Jharkhand, Odisha, East Madhya Pradesh, Madhya Maharashtra, Marathwada, Telangana, Rayalaseema, North Interior Karnataka, some parts of Uttarakhand, Konkan, South Interior Karnataka and isolated pockets of Himachal Pradesh, Gujarat and Vidarbha.
- It was below 36°C over remaining parts of the country, Lakshadweep and Andaman & Nicobar Islands.

Mean Maximum Temperature (°C) Anomaly in India for the week ending 20.05.2015



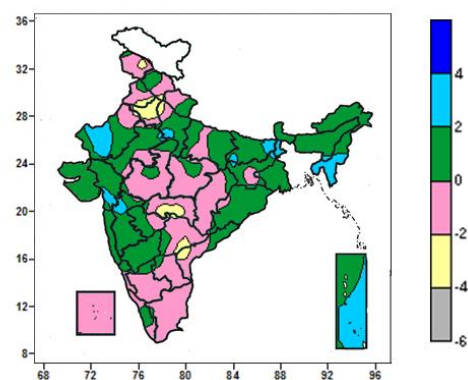
- Mean maximum temperature were below normal by 2 to 6°C over Tamil Nadu, many parts of Chhattisgarh, some parts of East Madhya Pradesh, Vidarbha, Rayalaseema, South Interior Karnataka and isolated pockets of Coastal Andhra Pradesh and Kerala.
- Mean maximum temperature were above normal by 2 to 4°C over some parts of Saurashtra & Kutch and isolated pockets of East Rajasthan, Gujrat region and West Madhya Pradesh.
- It was normal to near normal in remaining parts of the country, Lakshadweep and Andaman & Nicobar Islands.

Actual Mean Minimum Temperature (°C) in India for the week ending 20.05.2015



- Mean minimum temperature was 12 to 16°C over isolated pockets of Himachal Pradesh.
- Mean minimum temperature was 16 to 20°C over some parts of Jammu & Kashmir, Himachal Pradesh.
- Mean minimum temperature was 20 to 24°C over Punjab, Haryana, Delhi, Arunachal Pradesh, Nagaland, Manipur, Sikkim, many parts of Uttarakhand, West Uttar Pradesh, Assam & Meghalaya, Coastal & South Interior Karnataka, some parts of Sub-Himalayan West Bengal, Jammu & Kashmir, Himachal Pradesh, West Rajasthan, Tamil Nadu, Kerala and isolated pockets of Jharkhand and Madhya Pradesh.
- Mean minimum temperature was above 24°C over rest of the country, Lakshadweep and Andaman & Nicobar Islands.

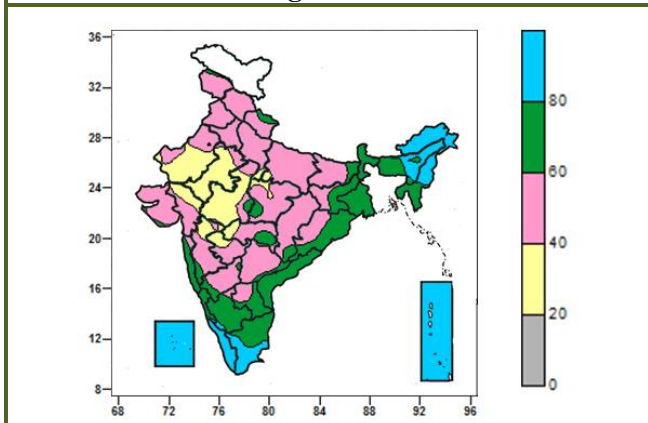
Mean Minimum Temperature (°C) Anomaly in India for the week ending 20.05.2015



- Mean minimum temperature was 2 to 4°C above normal over Mizoram and Tripura, many parts of Andaman & Nicobar Islands, some parts of West Rajasthan, and isolated pockets of Bihar, Sub-Himalayan West Bengal, Gujarat region, Madhya Maharashtra and West Uttar Pradesh.
- Mean minimum temperature was 2 to 4°C below normal over many parts of Haryana & Delhi, some parts of Vidarbha and isolated pockets of Jammu & Kashmir, Himachal Pradesh, Punjab, West Uttar Pradesh, Coastal Andhra Pradesh and Telangana.
- It was normal to near normal in remaining parts of the country and Lakshadweep.

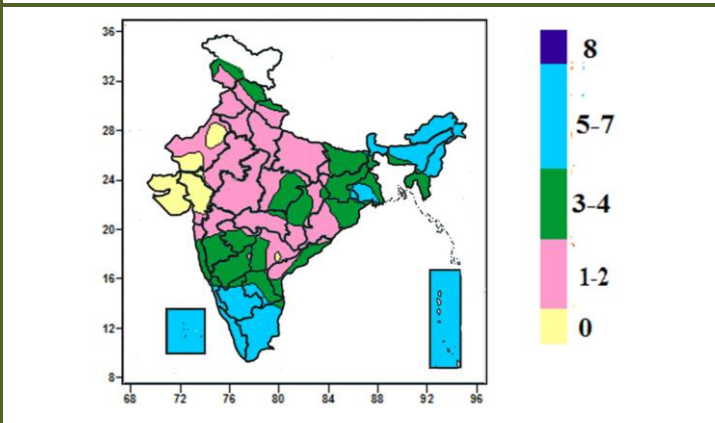
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 20.05.2015

Relative Humidity (%) over India for the week ending 20.05.2015



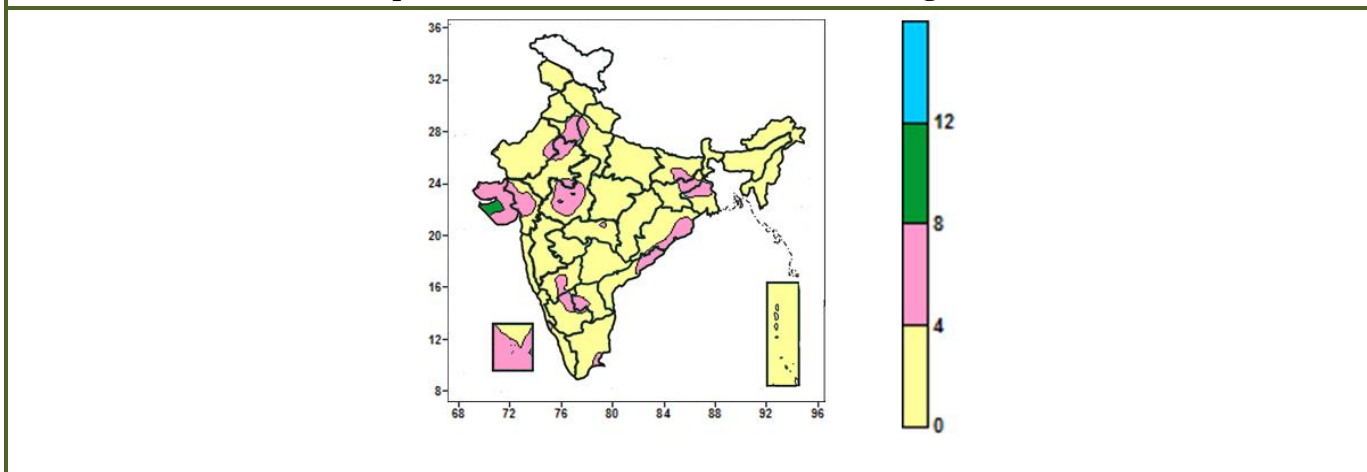
- Mean Relative humidity was above 80% over Arunachal Pradesh, Nagaland, Manipur, Kerala, Lakshadweep and Andaman & Nicobar Islands, many parts of Assam & Meghalaya and Tamil Nadu, isolated pockets of South Interior Karnataka.
- Mean Relative humidity was 60 to 80% over West Bengal & Sikkim, Tripura, Mizoram, Coastal Andhra Pradesh, Coastal Karnataka, many parts of Jharkhand, Odisha, Konkan & Goa, Rayalaseema, South Interior Karnataka, Tamil Nadu, some parts of Assam & Meghalaya, Vidarbha, North Interior Karnataka and isolated pockets of Uttarakhand, Bihar, Central India and Madhya Maharashtra.
- 20 to 60% over rest of the country.

Cloud amount (okta) over India for the week ending 20.05.2015



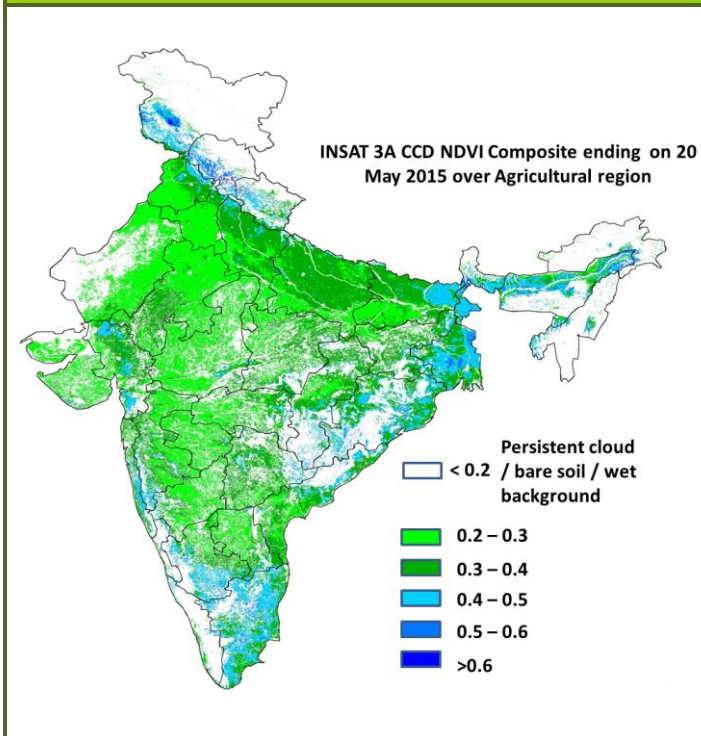
- Sky remained generally cloudy (5-7 okta) over Sikkim, Arunachal Pradesh, Assam, Nagaland, Manipur, Kerala, Lakshadweep, Andaman & Nicobar Islands, many parts of West Bengal, Meghalaya, Coastal & South Interior Karnataka, Tamil Nadu, some parts of Rayalaseema and isolated pockets of Jharkhand.
- Sky remained partly cloudy (3 to 4 okta) over Goa, North Interior Karnataka, Tripura and Mizoram, many parts of Himachal Pradesh, Bihar, Jharkhand, East Madhya Pradesh, Chhattisgarh, Konkan, Coastal Andhra Pradesh, Rayalaseema, Madhya Maharashtra, Marathwada, some parts of Jammu & Kashmir, Odisha, Coastal Andhra Pradesh, Telangana and isolated pockets of Uttarakhand and Tamil Nadu.
- Sky remained mainly clear/clear (1 to 2 & 0 okta) over rest of the country.

Wind speed (knots) over India for the week ending 20.05.2015



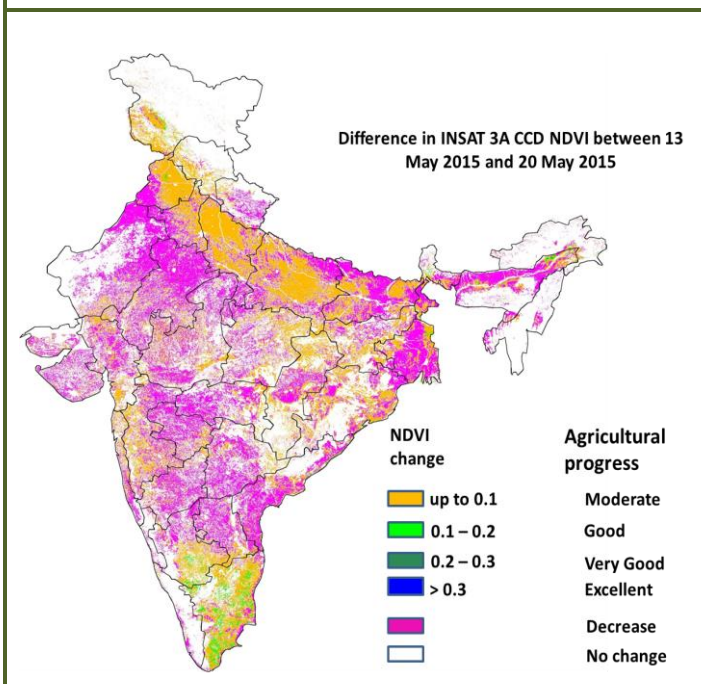
- Mean wind speed was 8 to 12 knots over some parts of Saurashtra & Kutch.
- Mean wind speed was 4 to 8 knots over many parts of Haryana & Delhi, Gujarat, West Madhya Pradesh, Lakshadweep, some parts of Rajasthan, West Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, Coastal Andhra Pradesh, Coastal Odisha, Rayalaseema, Interior Karnataka, Tamil Nadu and isolated pockets of Vidarbha and Tamil Nadu.
- It was less than 4 knots over rest of the country and Andaman & Nicobar Islands.

INSAT 3A CCD NDVI COMPOSITE ENDING ON 20th May 2015 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is very good in some parts of West Bengal, some pockets of east Bihar, Konkan & Goa, and south interior Karnataka, 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 east Rajasthan, Punjab and Haryana (NDVI: 0.3-0.4). NDVI remains within the range of 0.2 to 0.3 over most parts of reast of India.

Difference in INSAT 3A CCD NDVI between 13th May 2015 and 20th May 2015



- Decrease in NDVI was observed over southern Punjab, south Haryana, Rajasthan, Madhya Pradesh, Maharashtra, north interior Karnataka, Andhra Pradesh, Telangana, Rayalaseema and Gujarat States, West Bengal and some parts of Chhattisgarh and Odisha. Moderate progress (up to 0.1) in NDVI was observed in UP, Punjab, Haryana and parts of Bihar and south interior Karnataka.

- INSAT 3A CCD NDVI composite maps for the week ending on 20th May 2015 for different States are given below in Annexure II.

Weather Forecast for next 5 days valid upto 0830 hours of 27th May 2015

- Day temperatures would rise by 1-2°C over plains of northwest & adjoining west and central India during next 2-3 days.

5 Day Rainfall Forecast (MORNING) 22 May 2015

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

% Stations	Category	% Stations	Category
76-100	Widespread (W/ Many 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

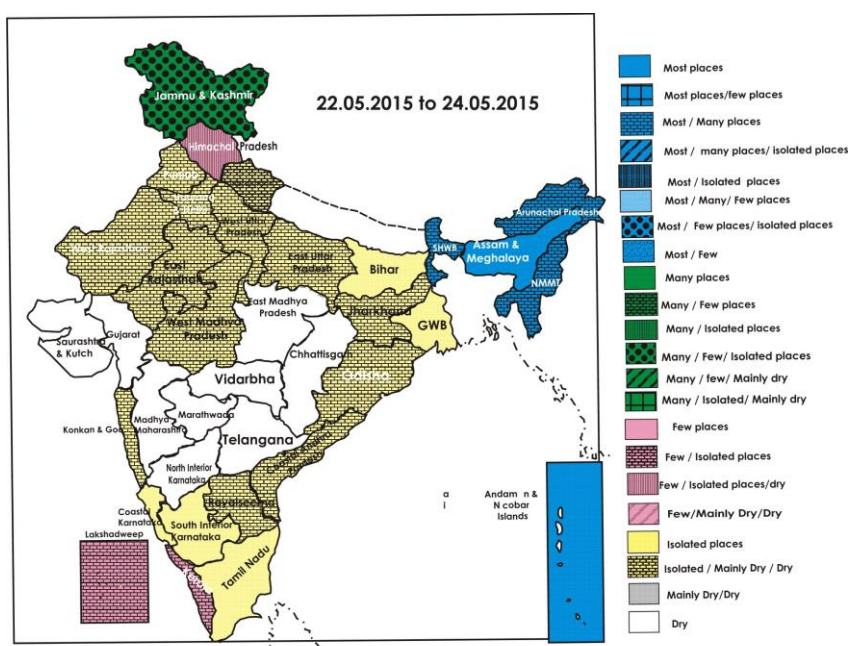
- 22 May (Day 1):** Heat wave to severe heat wave conditions would prevail at many places over Vidarbha and at a few places over West Madhya Pradesh, Coastal Andhra Pradesh and Telangana. Heat wave conditions would prevail at isolated places over East Madhya Pradesh, Chhattisgarh, Odisha, Madhya Maharashtra, Marathawada and North Interior Karnataka. Thunderstorm accompanied with squall would occur at isolated places over West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and interior Tamilnadu. Heavy rainfall would occur at isolated places over Andaman & Nicobar Islands.
- 23 May (Day 2):** Heat wave to severe heat wave conditions would prevail at many places over Vidarbha and at a few places over Rajasthan, West Madhya Pradesh, Coastal Andhra Pradesh and Telangana. Heat wave conditions would prevail at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, Odisha, Madhya Maharashtra, Marathawada and North Interior Karnataka. Thunderstorm/squall would occur at isolated places over West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura. and interior Tamilnadu. Heavy to very heavy rainfall would occur at isolated places over Andaman & Nicobar Islands.

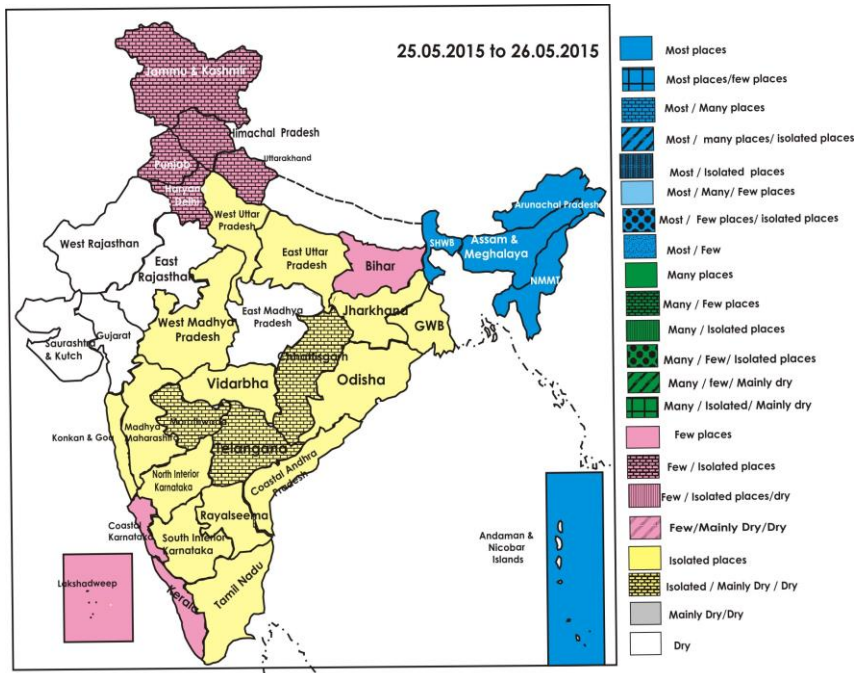
- **24 May (Day 3):** Heat wave to severe heat wave conditions would prevail at many places over Vidarbha and at isolated places over Rajasthan, West Madhya Pradesh, Coastal Andhra Pradesh and Telangana. Heat wave conditions would prevail at isolated places over East Madhya Pradesh, Chhattisgarh and Marathwada. Heavy to very heavy rainfall would occur at isolated places over Andaman & Nicobar Islands and heavy at isolated places over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya. Dust/thunderstorm accompanied with squall would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and Rajasthan. Dust/thunderstorm would occur at isolated places over West Madhya Pradesh.
- **25 May (Day 4):** Heavy to very heavy rainfall would occur at isolated places over Andaman & Nicobar Islands and Assam & Meghalaya and heavy at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura. Thunderstorm accompanied with squall would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh, Rajasthan, Bihar, Jharkhand, West Madhya Pradesh, Gangetic West Bengal and Odisha.
- **26 May (Day 5):** Heavy to very heavy rainfall would occur at isolated places over Andaman & Nicobar Islands and Assam & Meghalaya and heavy at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura. Thunderstorm accompanied with squall would occur at isolated places over Gangetic West Bengal, Bihar, Jharkhand and Odisha. Dust/thunderstorm would occur at isolated places over West Madhya Pradesh.

Weather Outlook for subsequent 2 days From 27th May 2015 to 29th May 2015

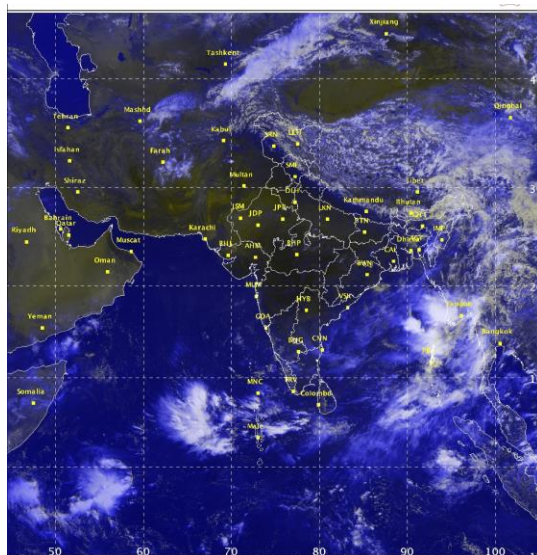
- Rain/thundershowers would occur at many places over northeastern states, Sub-Himalayan West Bengal & Sikkim and Andaman & Nicobar Islands.
- Rain/thundershowers would occur at a few places over south peninsular India and Bihar and at isolated places over Jammu & Kashmir.

Weather Forecast Map (Valid upto 0830 hours of 27th May, 2015)





Satellite image dated, 22.05.2015 0600 UTC



Salient Advisories

Advisories for Heat wave

- As heat wave to severe heat wave conditions would prevail at a few places over **Rajasthan** on 23rd and 24th May, over west **Madhya Pradesh** from 22nd to 24th May, over **Telangana** and **Coastal Andhra Pradesh** on 22nd and 23rd May and at isolated places on 24th May and heat wave conditions would prevail at isolated places over **Punjab, Haryana & Delhi** on 23rd and 24th May, over **east Madhya Pradesh** and **Chhattisgarh** from 22nd to 24th May, over **North Interior Karnataka** on 22nd and 23rd May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Undertake soil mulching / mulching with straw / polythene in crop fields to conserve soil moisture.
- As heat wave to severe heat wave conditions would prevail at many places over **Vidarbha** and heat wave conditions would prevail at isolated places over **Marathwada** from 22nd to 24th May and over **Madhya Maharashtra** on 22nd and 23rd May, apply light and frequent irrigation to water melon, musk melon, sweet lime, banana, pomegranate and summer groundnut in **Marathwada** and to water melon, musk melon, summer vegetables, summer groundnut and summer green gram in **Vidarbha** to cope up with the excess evaporative demand due to heat wave. Undertake soil mulching/mulching with straw/polythene in crop fields to conserve soil moisture.

Other Salient Advisoires

- As duststorm/thunderstorm accompanied with squall would occur at isolated places over **Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh** and **North Rajasthan** on 24th and 25th May, provide mechanical support to young fruit plants and vegetables and undertake propping in sugarcane to prevent the crops from lodging due to strong winds.
- As rain/thundershowers would occur at most/many places over **Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura** and at most places over **Assam & Meghalaya** during the period, along with heavy to very heavy rainfall at isolated places over **Assam & Meghalaya**, heavy rainfall at isolated places over **Arunachal Pradesh** and **Nagaland, Manipur, Mizoram & Tripura** from 24th to 26th May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of crops and keep already harvested produce at safer places. Provide adequate drainage in standing crops to avoid water stagnation in the fields.
- As thunderstorms accompanied with squall would occur at isolated places over **Assam & Meghalaya** and **Nagaland, Manipur, Mizoram & Tripura** and **West Bengal & Sikkim** on 22nd and 23rd May, and over **Bihar, Jharkhand, Gangetic West Bengal** and **Odisha** on 25th and 26th May, provide mechanical support to banana, vegetables and young fruit plants to prevent the crops from lodging due to strong winds. Also undertake propping in sugarcane in **Bihar, Jharkhand** and **Odisha**.
- As rain/thundershowers would occur at most/many places over **Sub-Himalayan West Bengal & Sikkim** during the period along with heavy rainfall at isolated places from 24th to 26th May, over **Andaman & Nicobar islands** during the period along with heavy/ heavy to very heavy rainfall at isolated places, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crops to avoid water stagnation in the crop fields.
- As thunderstorms accompanied with squall would occur at isolated places over **interior Tamil Nadu** on 22nd and 23rd May, provide mechanical support to young fruit plants, banana and vegetables and undertake propping in sugarcane to prevent the crops from lodging due to strong winds.

Detailed Zonewise Agromet Advisories

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



Moong

Sugarcane

Banana

Cabbage

- **Realised Rainfall:** Rainfall occurred in Kapurthala, Muktesar districts of Punjab; Anantnag, Badgam, Baramula, Kupwara, Pulwama, Ramban and Srinagar districts of Jammu & Kashmir; Ballia and Sonbhadra districts of East Uttar Pradesh; Bageshwar, Pithoragarh, Rudraprayag and Uttarkashi districts of Uttarakhand; Panipat district of Haryana, Taran Taran district of Punjab and West Delhi district of Delhi. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at many places over Jammu & Kashmir on 24th; at a few places over Uttarakhand, Haryana & Delhi and Punjab on 25th, over Himachal Pradesh on 24th and 25th, over Jammu & Kashmir on 23rd and 25th; at isolated places over East Uttar Pradesh from 24th to 26th; over Uttarakhand, Haryana & Delhi and Punjab on 23rd, 24th and 26th, over Himachal Pradesh on 23rd and 26th, over Jammu & Kashmir on 22nd and 26th, over Rajasthan on 23rd and 24th. Dry weather would prevail over the region except Jammu & Kashmir during rest of the period. Day temperatures would rise by 1-2°C over plains of northwest India during next 2-3 days.
- **Weather Warning:** Heat wave to severe heat wave conditions would prevail at a few places over Rajasthan on 23rd May and at isolated places on 24th May. Heat wave conditions would prevail at isolated places over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh on 23rd May. Dust/thunderstorm accompanied with squall would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi and West Uttar Pradesh on 24th May. Thunderstorm accompanied with squall would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and Rajasthan on 25th May.
- **Weather Outlook:** Rain/thundershowers would occur at isolated places over Jammu & Kashmir.

• **Advisories:**

- As duststorm/thunderstorm accompanied with squall would occur at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and north Rajasthan on 24th and 25th May, provide mechanical support to young fruit plants and vegetables and undertake propping in sugarcane to prevent the crops from lodging due to strong winds.
- As heat wave to severe heat wave conditions would prevail at a few places over Rajasthan and heat wave conditions would prevail at isolated places over Punjab, Haryana & Delhi on 23rd and 24th May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Undertake soil mulching/mulching with straw/polythene in crop fields to conserve soil moisture.
- **Jammu & Kashmir:**
 - In Sub Tropical Zone, undertake field preparation for sowing of *Kharif* maize and paddy nurseries.
 - In Valley Temperate Zone, undertake land preparation for nursery sowing of rice and direct sowing of cucurbits, kale, knolkhol, bhindi and beans, transplanting of chilli on raised beds or on ridges may be continued.
 - In Cold Arid Zone, undertake transplanting of cruciferous crops, vegetables like celery, parsley, leek, tomato, capsicum and chilli and onion in the main field in middle belts. Also undertake direct sowing of spinach, carrot, beet root, coriander and fenugreek in middle and high belts.
 - In Sub Tropical Zone of Jammu & Kashmir, due to cloudy weather condition, there may be possibility of attack of fruit fly in bottle gourd and downy mildew and leaf spots in cucurbits. To control fruit fly, spray Malathion @ 1.5ml/litre of water and to control downy mildew and leaf spots, spray Mancozeb @ 0.2% or Copper Oxychloride @ 0.3% on a non rainy day.
 - In Intermediate Zone of Jammu & Kashmir, due to cloudy weather condition, there may be attack of cut worm in early sown maize crop, to control, apply Carbofuron 3G @ 20 kg/ ha on a non rainy day.
- **Uttarakhand:**
 - Continue nursery sowing of rice and sowing of maize in Bhabar and Tarai Zone of Uttarakhand utilising the premonsoon showers.
 - In Hill Zone of Uttarakhand, continue planting of potato, ginger, sowing of millet, lobia, French bean, and transplanting of vegetables like tomato, capsicum and brinjal.
 - In Sub-humid Sub-tropic Zone, apply irrigation in green gram, cowpea, bitter guard, ridge guard, water melon, musk melon, cucumber and bhindi,
 - In Sub-humid sub-tropic Zone of Uttarakhand, due to increase in temperature there may be attack of mango hopper (*Amritodusatkinsoni*), to control spray the Dimethoate @ 2 ml /litre of water or Imidacloprid @ 0.3 ml/ litre of water.
- **Himachal Pradesh:**
 - Undertake nursery sowing of rice and sowing of maize in Sub-Montane and Low Hills Sub-Humid Tropical Zone utilising realized rainfall. Continue harvesting of wheat and potato in clear weather.
 - In High hills regions of Sub-Montane and Low Hills Sub-Humid Tropical Zone, continue sowing of improved varieties of garden pea, radish, carrot, turnip and palak and transplanting of cabbage, cauliflower, broccoli and lettuce. Also undertake sowing of red and white clover, peas, fodder maize and fodder maize + legume.
 - In mid hill areas of Sub-Montane and Low Hills Sub-Humid Tropical Zone, continue transplanting of tomato, brinjal, capsicum, chilli and sowing of cucurbits like cucumber, bitter gourd, bottle gourd and summer squash.
 - In low hill areas of Sub-Montane and Low Hills Sub-Humid Tropical Zone, continue sowing of French bean, okra, moong and mash in irrigated lower areas. Undertake sowing of peas in High Hill Temperate Dry Zone.
 - In the present temperature condition in Sub-Montane and Low Hills Sub-Humid Tropical Zone, there is chance of attack of red pumpkin beetle in cucurbitaceous vegetables. For control, spray Malathion 50 EC @ 1 ml per litre of water or Sevin @ 2g/litre of water on a non-rainy day.
- **Rajasthan:**
 - Under prevailing heat wave conditions, provide light and frequent irrigation in summer vegetables, *zaid* fodder crops and small fruit plants in Arid Western Plain Zone, Semi Arid Eastern Plain Zone, Sub Humid Southern Plain and Aravali Hill Zone.
 - Continue sowing of American cotton and Bt cotton in Irrigated Northwestern Plain Zone, undertake sowing of groundnut in Semi Arid Eastern Plain Zone and undertake nursery for Papaya in Sub Humid Southern Plain and Aravali Hill Zone with assured irrigation.
 - Apply drip irrigation in *kinnow* orchards and also irrigate sugarcane in Irrigated Northwestern Plain Zone. To prevent dropping of *kinnow* fruits, spray 2,4-D (horticultural grade) @ 2g/100 litres of water or Propineb 70 WP @ 2 g /litre + 20 mg Gibberlic acid /litre of water.
 - In Flood Prone Eastern Plain Zone, cover the fruit saplings with thatching material to protect against heat waves. Heat waves may cause damage to horticultural crop. Apply light and frequent irrigations.
 - In Sub Humid Southern Plain and Aravali Hill Zone, due to rise in temperature, there may be attack of stem and fruit borer in okra. To control, spray Malathion @ 2ml/litre water.
 - Due to high temperature and low relative humidity, there is chance of viral diseases in papaya, chilly, okra, brinjal, & tomato crops in Semi Arid Eastern Plain Zone, spray Dimethoate 30EC @ 1.0 ml per litre of water to control the vector.
 - In Flood Prone Eastern Plain Zone, due to rise in temperature, there is a chance of mealy bug in okra, spray

Acephate 70 SP @ 1 g or Profenophos @ 3 ml per litre of water for control.

▪ **Punjab, Haryana and Delhi:**

- In Western Semi-Arid Zone of Delhi, continue sowing of ladies finger, cucurbitaceous crops and nursery sowing of vegetables like chilli, tomato and brinjal. Continue sowing of pigeon-pea and cotton. Undertake sowing/transplanting of crops under assured irrigation.
- Due to increase in temperature, apply light and frequent irrigation to all vegetables and fodder crops in Western Semi-Arid Zone of Delhi.
- In Western Zone of Punjab, continue transplanting of summer vegetables viz. chilli, tomato and bell pepper and sowing of cucumber, bottle gourd, pumpkin, muskmelon, watermelon, bitter gourd. Complete sowing of cotton. Apply light and frequent irrigation to vegetable crops.
- In Western Plain Zone of Punjab, continue transplanting of chilli, planting of turmeric and complete sowing of cotton.
- In Central Plain Zone and Western Plain Zone of Punjab, continue field preparation for nursery sowing of rice. Apply light and frequent irrigation to vegetable crops.
- In Western Zone of Haryana, continue transplanting of tomato and chilli and continue sowing of desi cotton. Complete sowing of bajra, lobia, sudan and napier grass for summer fodder. Undertake sowing / planting of crops in this region with assured irrigation.
- Protect the orchards of young fruit plants and nursery from high temperature with the help of sarkande leaves around the plants in Undulating Plain Zone of Punjab.
- In Central Plain Zone of Punjab, summer moong is severely attacked by the thrips, spray the crop Rogor 30 EC @ 100 ml or Malathion 50 EC @ 120 ml in 80-100 litres of water per acre at flower bud initiation stage.
- In the prevailing temperature, there is possibility of attack of mite, jassid and hopper in okra in Western Semi-Arid Zone of Delhi. Monitor the crop and spray Phosmite @ 1.5 - 2 ml/litre of water.

▪ **Uttar Pradesh:**

- In Central Plain Zone, undertake land preparation for sowing of maize and nursery of rice.
- In Western Plain Zone, start nursery preparation of rice and sowing of cotton and continue sowing of pigeon pea and for fodder crops like jowar and lobia.
- In Eastern Plain Zone, continue planting of sugarcane and kharif onion, complete sowing of urad, moong and vegetables.
- In view of the prevailing temperature condition, apply light and frequent irrigation in bitter gourd, radish and water melon in Central Plain Zone.
- In Central Plain Zone, due to dry weather condition, there are chances of attack of stem borer on maize, to control, spray Quinalphos @ 2 litre or Dimethoate 30% EC @ 1 litre in 500-600 litre of water per hectore.
- In the prevailing temperature condition, there are chances of attack of thrips or white fly on urad / moong in Eastern Plain Zone, to control, spray Dimethoate 30 EC @ 1 ml/1 litre in 400 - 500 litre of water per hectore.
- In North Eastern Plain Zone, due to dry weather condition, there are chances of incidence of sucking insects in urad / moong, to control, spray Quinalphos @ 0.2%. Also there are chances of incidence of yellow vein mosaic in okra, to control spray Carbendazim @ 1.0%.
- Suitable varieties for sowing are given in Annexure III.

• **Floriculture**

- Undertake earthing up operation in gladiolus on a non rainy day in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. In the present weather, there is chance of attack of mites in carnation in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. For control, spray Omite @ 1ml/litre of water or Diclofol @ 2ml/litre on a non rainy day and repeat spray after 15 days interval.

➤ **Animal Husbandry**

- In Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and Rajasthan, keep cattle/goats indoor during duststorm/thunderstorm period.
- In Punjab, Haryana and Rajasthan, in view of the prevailing heat wave conditions, grazing /feeding of cattle/goats may be done during morning/evening hours. Keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Tie curtains on north-west side of poultry house to reduce the effect of hot winds.

• **Poultry**

- As there is rise in temperature, ensure proper ventilation in poultry houses in Sub-Montane and Low Hills Sub-Humid Tropical Zone of Himachal Pradesh. Replace the poultry houses with fresh litter and keep the houses clean and provide plenty of drinking water to the birds. Reduce feeding and increase the protein content in the feeds.

CENTRAL INDIA [M.P., CHHATTISGARH]



Sugarcane

Moong

Okra

Onion

- **Realised Rainfall:** Rainfall occurred in Satna and Shahdol districts of East Madhya Pradesh; Rajnandgaon district of Chhattisgarh. Mainly dry weather prevailed over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over West Madhya Pradesh from 24th to 26th and over Chhattisgarh on 26th and dry weather would prevail over these regions during rest of the period. Dry weather would prevail over East Madhya Pradesh during the period. Day temperatures would rise by 1-2°C over central India adjoining to northwest India during next 2-3 days.
- **Weather Warning:** Heat wave to severe heat wave conditions would prevail at a few places over West Madhya Pradesh on 22nd and 23rd May and at isolated places on 24th May. Heat wave conditions would prevail at isolated places over East Madhya Pradesh and Chhattisgarh on 22nd, 23rd and 24th May. Dust/thunderstorm would occur at isolated places over West Madhya Pradesh on 24th and 26th May. Thunderstorm accompanied with squall would occur at isolated places over West Madhya Pradesh on 25th May.
- **Advisories:**
 - As heat wave to severe heat wave conditions would prevail at a few places over west Madhya Pradesh and heat wave conditions would prevail at isolated places over east Madhya Pradesh and Chhattisgarh from 22nd to 24th May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Undertake soil mulching/mulching with straw/polythene in crop fields to conserve soil moisture.
 - **Madhya Pradesh:**
 - In Nimar Valley Zone, due to rise in temperature, apply light and frequent irrigation to summer moong and groundnut.
 - Continue seed bed preparation for sowing of *kharif* onion and picking of matured okra in Bundelkhand Zone.
 - Continue picking of matured mango fruits and preparation of nursery for *kharif* vegetables in Malwa Plateau Zone. Apply irrigation to mango trees by ring method or through drip irrigation method and apply light and frequent irrigation in vegetables.
 - Due to partly cloudy weather, there are chances of sucking pest infestation in groundnut in Nimar Valley Zone, spray Dimethoate-30 @ 200 ml / 100 litre of water per acre.
 - In the prevailing temperature, there are chances of attack of red pumpkin beetle in cucurbits in Madhya Pradesh, spray Quinalphos 25 EC @ 1 litre/ha or Propenophos 50 EC @ 800-1000 ml/ha.
 - **Chhattisgarh:**
 - In Chhattisgarh Plain Zone, under prevailing dry weather, continue harvesting of matured moong. Undertake intercultural operations in sugarcane and maize at knee height stage.
 - Continue sowing of tuber crops and undertake top dressing of urea in sugarcane in Bastar Plateau Zone under irrigation.
 - In the prevailing weather, there are chances of attack of sucking pests in vegetables in Bastar Plateau Zone, spray Dimethoate 40 EC @ 1.5ml/litre of water.
- **Animal Husbandry**
 - In view of prevailing heat wave conditions in Madhya Pradesh and Chhattisgarh, grazing /feeding of cattle/goats may be done during morning/ evening hours. Keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Banana

Sugarcane

Groundnut

Mango

- **Realised Rainfall:** Rainfall occurred in North Goa district of Konkan & Goa. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at isolated places over Madhya Maharashtra and Vidarbha on 25th and 26th, over Konkan & Goa from 23rd to 26th and over Marathwada on 26th; dry weather would prevail over these regions during rest of the period. Dry weather would prevail over Gujarat during the period. Day temperature would rise by 1-2°C over West India adjoining to northwest India during next 2-3 days.
- **Weather Warning:** Heat wave to severe heat wave conditions would prevail at many places over Vidarbha from 22nd to 24th May. Heat wave conditions would prevail at isolated places over Madhya Maharashtra on 22nd and 23rd May and over Marathwada from 22nd to 24th May.
- **Advisories:**
 - As heat wave to severe heat wave conditions would prevail at many places over Vidarbha and heat wave conditions would prevail at isolated places over Marathwada from 22nd to 24th May and over Madhya Maharashtra on 22nd and 23rd, apply light and frequent irrigation to water melon, musk melon, sweet lime, banana, pomegranate and summer groundnut in Marathwada and to water melon, musk melon, summer vegetables, summer groundnut and summer green gram in Vidarbha to cope up with the excess evaporative demand due to heat wave. Undertake soil mulching/mulching with straw/polythene in crop fields to conserve soil moisture.
 - **Maharashtra:**
 - In Konkan, continue harvesting of summer rice and finger millet. Continue land preparation for *kharif* rice & finger millet nursery in the harvested field of vegetables and pulses. Continue plucking of matured mango in early morning and late evening hours. Keep the harvested fruits in shade to prevent the spongy tissue disease due to heat.
 - In Madhya Maharashtra, apply irrigation to orchards like banana, water melon, musk melon and vegetable crops like tomato and okra. Irrigate the sugarcane crop by drip irrigation or using alternate furrow method or apply mulch of sugarcane trash for conservation of soil moisture. Continue land preparation of *kharif* rice nursery in Kolhapur region. Continue harvesting of matured summer groundnut in Pune region and start harvesting in other regions. Protect the newly planted fruit crops from sunburn by providing shade.
 - In Marathwada, continue harvesting of matured vegetable crops like chilli, cabbage and cauliflower during morning hours. Continue plucking of matured mango (*keshar*) in early morning and late evening hours. Transport plucked fruits during night hours.
 - In Vidarbha, maintain 10 cm water level in rice field at grain filling stage in East Vidarbha.
 - Due to warm and humid climate in East Vidarbha, there may be attack of brown hopper in rice; spray Fipronil 5 SC @ 20 ml per 10 litres of water.
 - **Gujarat:**
 - In Bhal and Coastal Zone, in view of prevailing high temperature, apply irrigation in green gram, pearl millet (reproductive stage), fodder and vegetable crops at regular intervals; cover papaya fruits using gunny bags and provide support to heavy fruiting plants. Taking advantage of dry weather complete harvesting of summer rice. Carryout harvesting of matured onion and keep bulbs at well aerated place.
 - In North Saurashtra Zone, complete harvesting of sesame and green gram to prevent shattering of capsules and pods. Due to the dry weather and high temperature forecast, apply light and frequent irrigation in groundnut, mango, vegetable and fodder crops.
 - In North Gujarat Zone and North West Zone, continue land preparation for sowing of irrigated hybrid cotton (variety: G. cot. 6, 8, 10) and B.T. cotton (Variety: Gujarat Talod Hirsutam Hybrid -49 (Bolegaurd-2) or Govt. approved varieties). Continue preparing pits of appropriate sizes for plantation of horticultural crops. Continue picking of matured pods of green gram and cowpea. Under prevailing high temperature conditions, apply irrigation to green gram (pod formation/development stage), cluster bean and mango orchards.
 - In North Gujarat Zone, Bhal and Coastal Zone, Middle Gujarat Zone and South Gujarat Heavy Rainfall Zone, North West Zone, continue deep ploughing in harvested fields for destruction of soil pests and fungus in high intensity of solar radiation. Carry out levelling of plots to increase soil moisture holding capacity. Construct the bund in advance to reduce soil erosion in fields and plan for farm ponds to collect runoff water during monsoon season.
 - In Middle Gujarat Zone, continue sowing (in Panchmahal and Godhra districts) of early season sweet corn (variety: American Hybrid-1) and pigeon pea (green pod type variety) with assured irrigation.
 - In South Gujarat Heavy Rainfall Zone, considering the high prevailing temperature, apply light and frequent irrigation to vegetable crops, floriculture crops and guava orchards. Complete harvesting and threshing of early varieties of summer rice and undertake harvesting of matured green gram pods.
 - Due to increase in temperature prevailed during last week in South Gujarat Heavy Rainfall Zone, there are chances of sucking pest infestation in vegetables and floriculture crops; spray Dimethoate 30EC @ 10 ml/10 litres of water to manage the pest.
 - Due to prevailing high temperature in North Gujarat Zone, there is possibility of occurrence of thrips in chilli; for control, spray 40 EC 10 ml Triazophos or 75 EC @ 10 g Acephate or Imidachloprid 17.8% SL @ 3 ml mixed with 10 litres of water at 10 to 12 days interval.
- **Animal Husbandry**
 - In Maharashtra, under prevailing heat wave / high temperature conditions, keep animals under shade/shed during

noon hours and provide plenty of water mixed with minerals for drinking at least thrice a day. Cover the roof of shed with paddy straw. Put curtains on west side of poultry house and sprinkle water on curtains during noon time.

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



Rice



Banana



Okra



Cabbage

- **Realised Rainfall:** Rainfall occurred in all districts of Arunachal Pradesh except Dibang Valley, East Kameng, Kurung Kumey, Lower subansiri and Upper subansiri; all districts of Assam except Darrang, Karbi Anglong, Morigaon and Nagaon; all districts of Meghalaya except South Garo Hills; Kolasib, Aizwal and Saiha district of Mizoram; Imphal West district of Manipur; all districts of Tripura. Mainly Dry Weather prevailed over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Assam & Meghalaya during the period. Rain/thundershowers would occur at most places over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura from 24th to 26th and at many places during rest of the period.
- **Weather Warning:** Thunderstorm accompanied with squall would occur at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 22nd and 23rd May. Heavy rainfall would occur at isolated places over Assam & Meghalaya on 24th May and heavy to very heavy rainfall at isolated places on 25th and 26th May. Heavy rainfall would occur at isolated places over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura on 25th and 26th May.
- **Weather Outlook:** Rain/thundershowers would occur at many places over northeastern states.
- **Advisories:**
 - As rain/thundershowers would occur at most/many places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura and at most places over Assam & Meghalaya during the period, along with heavy to very heavy rainfall at isolated places over Assam & Meghalaya, heavy rainfall at isolated places over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura from 24th to 26th May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of crops and keep already harvested produce at safer places. Provide adequate drainage in standing crops to avoid water stagnation in the fields.
 - As thunderstorms accompanied with squall would occur at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 22nd and 23rd May, provide mechanical support to banana, vegetables and young fruit plants to prevent the crops from lodging due to strong winds.
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - In Hill Zone of Assam, continue transplanting of normal *ahu* rice and undertake planting of banana and tapioca after current spells of heavy rain.
 - In Lower Brahmaputra Valley Zone of Assam, continue sowing of *bao* rice and sowing of *olitorious* jute, mesta and ridge gourd after current spells of heavy rain.
 - In Upper Brahmaputra Valley Zone of Assam, continue planting of banana and papaya after current spells of heavy rain.
 - In Barak Valley Zone of Assam, continue sowing of *ahu* rice and undertake planting of lemon and in Central Brahmaputra Valley Zone of Assam, continue sowing of *olitorius* jute, planting of papaya and sugarcane after current spells of heavy rain.
 - In Arunachal Pradesh, complete transplanting of early sown WRC rice after current spells of heavy rain.
 - In Meghalaya, continue planting of ginger/turmeric and complete sowing of *jhum* rice after current spells of heavy rain.
 - In Barak Valley Zone of Assam, due to humid weather, there is chance of attack of ghandi bug in *boro* rice at milk/grain filling stage. Apply Malathion @ 1.5 ml/ litre of water after current spells of rain.
 - In Hill Zone and North Bank Plain Zone of Assam, due to increase in humidity and temperature, there is chance of incidence of blast disease in *ahu* rice. To control blast, spray Carbendazim @ 1g/ litre of water after current spells of rain.
 - In Lower Brahmaputra Valley Zone of Assam, due to humid weather, there is chance of attack of fruit and shoot borer in summer vegetable. To control apply Deltamethin (Decis 2.8 EC) @ 0.5 ml/litre or Dichlorvos 100EC @ 0.5 ml/litre or Malathion 50 EC @ 2 ml/litre of water after current spells of rain.
 - In Central Brahmaputra Valley Zone of Assam, due to humid weather, there is chance of attack of pod borer and pod bug infestation in summer black gram and green gram and incidence of blast disease in *ahu* rice. Farmers are advised to spray Quinalphos @ 2.5 ml/litre against pod borer and Dimethoate @ 2ml/litre of water against pod bug and spray Bavistin @ 1 gm/ litre of water against blast after current spells of rain.

- In Arunachal Pradesh, in the humid weather condition, there is chance of attack of aphids and Red pumpkin beetle in ladies finger and cucurbits. Spraying of Imidacloprid 17.5 SL @ 1ml/ 10 litres of water for control aphids and spraying of Deltamethrin@ 4ml/10 litre of water for management of Red pumpkin beetle is advised after current spells of rain.
- In Meghalaya, high relative humidity is favourable for development of blast disease in *jhum* rice; if blast spot are seen, apply Mancozeb@ 2g/litre of water after current spells of rain.
- **Manipur, Mizoram, Nagaland and Tripura:**
- In Manipur, continue nursery bed preparation for *kharif* rice and sowing of soybean, groundnut and black gram after current spells of heavy rain. Undertake nursery raising of cauliflower after current spells of heavy rain.
- In Mizoram, continue land preparation for planting of ginger and turmeric and nursery preparation for khasi mandarin and sowing of rice, maize and okra and transplanting of brinjal and tomato after current spells of heavy rain.
- In Tripura, undertake land preparation for sowing of groundnut in upland and medium upland and harvesting of matured cowpea after current spells of rain. Also, occasional high wind may break the fruit bearing branches of mango trees; provide support to the branches to prevent breakage and wastage of fruit.
- In Tripura, due to cloudy and humid weather, there is chance of attack of gandhi bug in *boro* rice and fruit & shoot borer in summer brinjal and tomato. To control gandhi bug, spray Imidacloprid @ 2 ml/litre of water and spray Cypermethrin @ 1.5ml or Flubendamid @ 0.5 ml/ litre of water for control fruit & shoot borer after current spells of rain.
- Suitable varieties are given in Annexure III.
- **Animal Husbandry:**
- In Arunachal Pradesh, Assam & Meghalaya, keep animals indoor during heavy rainfall period. Also keep animal sheds dry and avoid dampness during rainy days.
- In Meghalaya, due to humid weather, keep the poultry house well ventilated during day time and provide clean and fresh drinking water every day. Rainy and cloudy weather is congenial for development of diseases like Coccidiosis in poultry. As a preventive measures give Amprolium @ 25-65 mg/kg of feed once a day.
- **Fisheries**
- In Assam, new fish ponds may be made or old ones may be renovated / cleaned before start of monsoon rain for large scale fish culture. Care must be taken for new ponds by liming for stocking fish fries/ fingerlings or yearlings.

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



Sugarcane



Jute



Rice



Onion

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands; all districts of West Bengal & Sikkim; except East Midnapore and South Dinajpur; Araria, Kishanganj, Rohtas, Supaul and West Champaran districts of Bihar; Bokaro, Deoghar, East Singbhum, Gumla and Pakur districts of Jharkhand: Bhadrak, Deogarh, Dhenkanal, Jajpur, Kalahandi, Kendrapara, Koraput, Malkangiri and Mayurbhanj districts of Odisha. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at most places over Andaman & Nicobar Islands during the period, over Sub-Himalayan West Bengal & Sikkim from 24th to 26th; at many places over Sub-Himalayan West Bengal & Sikkim on 22nd and 23rd; at a few places over Bihar on 25th and 26th; at isolated places over Gangetic West Bengal during the period, over Odisha from 24th to 26th, over Jharkhand from 23rd to 26th and over Bihar from 22nd to 24th. Dry weather would prevail over Odisha on 22nd and 23rd, over Jharkhand on 22nd.
- **Weather Warning:** Heat wave conditions would prevail at isolated places over Odisha on 22nd and 23rd May. Thunderstorm accompanied with squall would occur at isolated places over West Bengal & Sikkim on 22nd and 23rd May, over Bihar, Jharkhand, Gangetic West Bengal and Odisha on 25th and 26th May. Heavy to very heavy rainfall would occur at isolated places over Andaman & Nicobar Islands from 23rd to 26th May. Heavy rainfall would occur at isolated places over Sub-Himalayan West Bengal & Sikkim on 24th, 25th and 26th May and over Andaman & Nicobar Islands on 22nd May.
- **Weather Outlook:** Rain/thundershowers would occur at many places over Sub-Himalayan West Bengal & Sikkim and Andaman & Nicobar Islands. Rain/thundershowers would occur at a few places over Bihar.

• **Advisories:**

- As thunderstorm accompanied with squall would occur at isolated places over West Bengal & Sikkim on 22nd and 23rd and over Bihar, Jharkhand, Gangetic West Bengal and Odisha on 25th and 26th May, provide mechanical support to vegetables and young fruit plants to prevent the crops from lodging due to strong winds. Also undertake propping in sugarcane in Bihar, Jharkhand and Odisha.

▪ **West Bengal:**

- As rain/thundershowers would occur at most/many places over Sub Himalayan West Bengal & Sikkim during the period along with heavy rainfall at isolated places from 24th to 26th May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crops to avoid water stagnation in the fields.
- In Coastal Saline Zone, continue harvesting of matured rice and deep summer ploughing may be done in harvested *boro* rice fields to destroy eggs and pupa of insects.
- In Laterite and Red soil Zone of West Bengal, continue harvesting of matured groundnut and sesamum.
- In New Alluvial Zone of West Bengal, complete the harvesting of matured *boro* rice and sesame. Undertake intercultural operations (weeding & thinning) and top dressing in jute. Apply 6 to 7 Kg Urea per bigha as first top dressing at 21 days after sowing and same amount of fertilizer as second top dressing at 6 week after sowing.
- In Old Alluvial Zone of West Bengal, in the prevailing weather condition, there may be fruit and shoot borer attack in brinjal at fruiting stage. To control, spray Cartap Hydrochloride @ 1 g or Neem oil @ 2 ml per litre of water after current spells of rain.
- In Hill Zone of West Bengal, due to high humidity, there may be attack of trunk borer in mandarin orange. Collect and destroy the adult beetle. Inject Dichlorvos 76% EC @ 5 ml/ hole after current spells of rain and plug the hole with mud.
- In Terai Zone of West Bengal, due to high humidity there may be may root rot in vegetable crops and stem rot in jute. Apply Carbendazim and Mancozeb mixture @ 2g/litre of water after current spells of rain.

▪ **Andaman and Nicobar Islands:**

- As rain/thundershowers would occur at most places over Andaman & Nicobar islands during the period along with heavy/ heavy to very heavy rainfall at isolated places, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crops to avoid water stagnation in the fields.
- In South, North & Middle Andaman, undertake land preparation of nursery sowing of rice after current spells of heavy rain. Provide support to fruit bearing banana trees to prevent lodging from high wind and provide shelter to vegetable nurseries from heavy rain.

▪ **Odisha:**

- In East and South Eastern Coastal Plain Zone, continue sowing of jute and planting of turmeric.
- In West Central Table Land Zone, continue harvesting of the summer rice and bring the harvested paddy to the threshing floor or to safer places.
- In North Eastern Plateau Zone, undertake planting of ginger and turmeric.
- In East and South Eastern Coastal Plain Zone, thrips in chilli has been found and likely to increase in the present weather. Spray Ethion @ 300 ml or Chloropyriphos @ 400 ml in 200 litre water/acre.
- In East and South Eastern Coastal Plain Zone, Mid Central Table Land Zone and West Central Table Land Zone of Odisha, high temperature is favorable for fruit and shoot borer in brinjal, spray Spinosad 48EC @ 1ml in 4 litres of water for control. Also install 10 Pheromone traps per acre for effective control of the insects.
- In East and South Eastern Coastal Plain Zone of Odisha, white ant and white grub attack has been found on summer groundnut and likely to increase in the present temperature. Thorough soil drenching with Chloropyriphos @ 2ml/litre of water is advised.

▪ **Bihar:**

- In North West Alluvial Plain Zone, continue sowing of fodder crops such as guar, bajra, maize, sorghum & cowpea.
- In North West Alluvial Plain Zone, undertake harvesting of matured green gram.
- In North West Alluvial Plain Zone, continue intercultural operations in summer vegetable crops like bhindi, sponge guard, bitter gourd etc. and apply irrigation at regular intervals.
- In South Bihar Alluvial Zone, due to high temperature, farmers are advised to apply irrigation at regular intervals in sugarcane, summer moong, maize and summer vegetables.
- In South Bihar Alluvial Zone, undertake nursery preparation for sowing of *kharif* onion and continue summer ploughing in the fallow fields to control weeds, pests and diseases.
- In North East Alluvial Zone of Bihar, continue thinning in early sown jute crop and undertake planting of yam and turmeric.
- In North West Alluvial Plain Zone, mainly dry weather and high temperature is congenial for infestation of mite in lady finger, monitor the crops. If mite population is more, spray Ethion @ 1.5-2 ml/litre of water on a non rainy day.
- In North West Alluvial Plain Zone, present weather is congenial for infestation of pod borer/leaf feeder in mung/urd, to control, spray Trizophos @ 1ml/litre of water on a non rainy day.
- In South Bihar Alluvial Zone, present weather is congenial for infestation of shoot and fruit borer in brinjal ; for

control, destroy the infested fruits and shoots. If pest population is high, spray Spinosad 48 EC @ 1 ml / 4 litres of water on a non rainy day.

- In North East Alluvial Zone of Bihar, present weather is congenial for infestation of early shoot borer and top borer in sugarcane & stem borer in maize, control by applying Fipronil 0.3% GR @ 33 Kg/ha on a non rainy day

▪ **Jharkhand:**

- In South Eastern Plateau Zone, undertake harvesting of matured summer moong and summer rice.
- In South Eastern Plateau, as no significant rainfall is expected, apply irrigation in summer okra which is at fruit developing stage.
- In Western Plateau and South Eastern Plateau Zone, continue planting of ginger and turmeric and undertake mulching with straw / leaves etc. to control weeds and to conserve soil moisture.
- In Western Plateau Zone, present weather is congenial for infestation of thrips in summer mung , to control, spray Trizophos @ 1 ml per liter of water.
- In South Eastern Plateau Zone, present weather is congenial for infestation of fruit borer in summer okra, tomato and chilli, to control, spray Trizophos or Prophenphos @ 1ml per litre of water.
- In North Eastern Plateau Zone, prevailing temperature and humidity is congenial for incidence of shoot borer in summer rice, for control, apply Carbofuran-3G @ 12kg or Forate -10G @ 4 kg/acre.
- Suitable varieties for sowing are given in Annexure III.

• **Animal Husbandry**

- In West Bengal & Sikkim, Bihar, Jharkhand and Odisha, keep cattle/goats indoor during thunderstorm / squall period. Give lots of clean water to the animals and keep them in the shaded place during noon hours. Special attention should be given to milch animals with regard to feed.

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



Sorghum



Sugarcane



Chilli



Rice

- **Realised Rainfall:** Rainfall occurred in all districts of Tamil Nadu except Chennai; all districts of Coastal Karnataka; Haveri district of North Interior Karnataka; all districts of South Interior Karnataka except Ballari; all districts of Kerala; East Godavari, Krishna, Vizianagaram and West Godavari districts of Coastal Andhra Pradesh; Anantapur and Chittoor districts of Rayalaseema; Khammam and Nizamabad districts of Telangana. Weather remained mainly dry over rest of the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Kerala from 24th to 26th and over Coastal Karnataka on 25th to 26th; isolated places over Tamil Nadu & Puducherry and South Interior Karnataka during the period, over Coastal Andhra Pradesh on 22nd, 25th and 26th, Over Telangana on 26th, over Rayalaseema from 24th to 26th, Coastal Karnataka from 22nd to 24th, over North Interior Karnataka on 25th and 26th, over Kerala on 22nd and 23rd. Dry weather would prevail over Rayalaseema on 22nd and 23rd, over Coastal Andhra Pradesh on 23rd and 24th, over Telangana from 22nd to 25th and over North Interior Karnataka from 22nd to 24th.
- **Weather Warning:** Heat wave to severe heat wave conditions would prevail at a few places over Coastal Andhra Pradesh and Telangana on 22nd and 23rd May and at isolated places on 24th May. Heat wave conditions would prevail at isolated places over North Interior Karnataka on 22nd and 23rd May. Thunderstorm accompanied with squall would occur at isolated places over interior Tamilnadu on 22nd and 23rd May.
- **Weather Outlook:** Rain/thundershowers would occur at a few places over south peninsular India.
- **Advisories:**
 - As heat wave to severe heat wave conditions would prevail at a few places over Telangana and Coastal Andhra Pradesh on 22nd and 23rd May and at isolated places on 24th May, heat wave conditions would prevail at isolated places over North Interior Karnataka on 22nd and 23rd May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Undertake soil mulching/mulching with straw/polythene in crop fields to conserve soil moisture.
 - As thunderstorms accompanied with squall would occur at isolated places over interior Tamil Nadu on 22nd and 23rd May, provide mechanical support to young fruit plants, banana and vegetables and undertake propping in sugarcane to prevent the crops from lodging due to strong winds.
- **Andhra Pradesh:**
 - In the North Coastal Zone, continue summer ploughings for planting of rain-fed sugarcane, land preparation for sowing of pre-*khari*f sesame and harvesting of sesame and rice.
 - In the High Altitude Tribal Zone, undertake land preparation for sowing of maize and finger millet and land preparation for nursery sowing of rice. Continue summer ploughing and sowing of green manure crops like sunhemp and daincha to improve soil fertility and to reduce insect pests in the *khari*f season.

- Due to prevailing dry weather, incidence of smut in ratoon sugarcane has been noticed and likely to continue in North Coastal Andhra Pradesh. Spray Propiconazole @ 1 ml per litre of water twice at the time of ratooning and 30 days after ratooning.
- Prevailing high temperature conditions are highly congenial for attack of fruit borer and sucking pests in vegetable crops in the Southern Zone. To control sucking pests, spray Acephate @ 1g or Metasistaox @ 2 ml. or Dimethioate @ 2 ml/litre of water. To control fruit borer, discard diseased twigs and branches and spray Monocrotophos @ 1.6 ml/litre of water at 15 days interval.
- **Telangana:**
 - Undertake summer ploughing to control weeds, hibernating pests and disease spores that may damage *khari* crops and undertake digging of pits for planting new orchards in the Northern and Southern Telangana Zone.
 - Prevailing high temperatures may lead to fruit drop in mango in Northern Telangana zone. For the control spraying of 2-4-D @ 1g/ 100 litres of water in early morning is recommended. Apply irrigation at regular interval to prevent the fruit drop. Also spraying of Multi-K (13-0-45) @ 10 g/litre is recommended to increase the fruit size.
- **Karnataka:**
 - Continue nursery preparation for sowing of ragi the Eastern Dry Zone. Continue summer ploughings to control of weeds, soil borne pest and disease and land preparation for the next sowing season in the Eastern Dry Zone, North East Transition Zone, North East Dry Zone and Coastal Zone.
 - In view of the prevailing high temperature along with dry conditions in the North East Dry Zone, following methods may be adopted to protect sugarcane crop from moisture stress:
 - Apply 50kg potash fertilizer per hectare with last irrigation.
 - Adopt alternate furrow irrigation method where irrigation water is scarce.
 - Weed control through herbicide may be taken in late planted cane (2, 4-D @3.3 kg/ha)
 - Mulching by dry leaves and grasses or hoeing in inter row spacing may be undertaken to create dust mulch may be done to conserve soil moisture.
 - The hoeing in inter row spacing may be undertaken to create dust mulch to break soil capillaries for checking surface moisture loss.
 - Continue sowing of crops like pulses viz., cowpea, green gram, black gram, sesame, sorghum and cotton in the Southern Dry Zone utilising the realised rainfall.
- **Kerala:**
 - Continue land preparation for wet seeding of rice (Uma variety) and planting of coconut seedlings in the Problem Area Zone.
 - Continue nursery sowing of *virippu* rice in prepared fields in the Southern Zone. Continue planting of turmeric and planting of banana. Continue planting of bananas in the Northern Zone.
 - Prevailing humid weather condition is congenial for the spread of leaf eating caterpillars in coconut in the coastal areas of the Northern Zone. It may be controlled by releasing *Trichospilus Pupivora* Parasites.
 - Prevailing high relative humidity and rainfall is congenial for incidence of case worm in rice in the Central Zone. To control, drain off water from the fields and if the infestation is severe, apply Carbaryl dust on a non rainy day.
- **Tamil Nadu:**
 - Continue sowing of green manure crops like daincha, sunhemp and kolangi in the Cauvery Delta Zone.
 - Undertake de-trashing and propping in early season sugarcane and support to 5 months old banana against lodging due to high wind in the Western Zone. By utilizing the realized rainfall, continue planting of turmeric rhizomes with proper drainage and rhizome treatment with *P. fluorescens* @ 10 g/kg and *Trichoderma Viride* @ 4 g/ Kg.
 - Prevailing cloud cover and light to moderate rain is congenial for incidence of root rot disease in cotton in the Southern Zone and Karaikal and Puducherry. To control, drench the soil with Carbendazim @ 1g or Trifloxystrobin + Tebuconazole @ 0.75 g per litre of water at the base of the diseased plants as well as around the healthy plants so as to wet 10-15cm depth of soil.
 - Suitable varieties for sowing are given in Annexure III.
 - **Animal Husbandry**
 - Prevailing high temperatures may cause sun stroke in livestock in the Scarce Rainfall Zone of Andhra Pradesh and Northern Telangana Zone. Keep the animals under shade during noon hours and provide more water to livestock for drinking
 - Due to high day temperature, there is a possibility of drop in feed intake in poultry, optimum temperature should be maintained in poultry house by applying 4-6 inch thick hay thatch as a roofing material in the North East Dry Zone of Karnataka.

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

Annexure I
Week by week Rainfall Distribution

Sub-Divisions	06.05.15		13.05.15		20.05.15	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	28.8	-72	6.0	-91	34.0	-58
Dibang Valley	1.0	-98	**	**	**	**
East Kameng	6.6	-83	2.4	-96	19.1	-66
East Siang	33.8	-51	1.2	-98	88.5	12
Kurung Kumey	**	**	**	**	**	**
Lohit	63.4	-23	30.1	-47	84.4	20
Lower Dibang Valley	49.6	-14	8.2	-82	67.5	9
Lower Subansari	**	**	**	**	**	**
Papumpara	69.7	-22	1.5	-99	167.8	116
Tawang	52.0	-16	11.0	-83	58.0	-24
Tirap	34.4	-56	13.2	-77	52.8	-31
Upper Siang	95.6	12	17.4	-70	133.4	24
Upper Subansari	22.0	-31	48.8	153	16.8	-48
West Kameng	62.8	1	42.3	-33	75.8	0
West Siang	46.0	-25	5.0	-84	28.0	-62
Assam&Meghalaya						
Assam						
Baksa	40.0	-48	27.7	-61	93.1	9
Barpeta	76.4	-2	29.1	-59	68.0	-20
Bongaigaon	37.4	-63	24.0	-72	58.4	-31
Cachar	102.4	21	22.0	-75	87.4	-3
Chirang	149.0	48	60.6	-30	328.0	286
Darrang	**	**	**	**	**	**
Dhemaji	73.0	8	0.0	-100	98.0	26
Dhubri	82.7	3	33.9	-56	95.6	11
Dibrugarh	56.6	-20	9.6	-85	102.9	77
Goalpara	111.3	25	30.2	-57	130.9	45
Golghat	25.7	-61	40.3	-19	37.3	-35
Hailakandi	146.2	60	38.4	-53	33.6	-63
Jorhat	17.9	-73	69.7	17	96.7	54
Kamrup(Rural)	66.8	-4	32.6	-45	160.3	134
Kamrup(Metro)	63.0	-10	11.1	-81	76.4	12
Karbi Anglong	12.7	-59	8.1	-62	12.2	-64
Karimganj	110.4	-14	61.6	-60	105.1	-20
Kokrajhar	72.3	-26	44.2	-42	162.5	91
Lakhimpur	37.0	-45	2.0	-97	78.5	1
Morigaon	34.4	-23	52.0	62	12.2	-66
N.C.Hills	11.5	-80	10.3	-86	60.5	-25
Nowgong	16.7	-64	19.4	-53	6.1	-79
Nalbari	62.4	-45	18.1	-77	112.0	59
Sonitpur	58.7	-12	12.6	-77	71.9	19
Sibsagar	64.2	-4	16.8	-70	86.6	55
Tinsukia	27.1	-57	15.8	-74	73.4	25

Udalgiri	65.4	-22	19.3	-72	47.7	-29
Meghalaya						
East Garo Hills	85.9	-6	81.0	-8	73.9	1
East Khasi Hills	108.2	-31	28.5	-82	97.7	-41
Jaintia Hills	25.0	-83	**	**	37.0	-70
Ribhoi	67.0	26	49.9	-22	35.6	-43
South Garo Hills	**	**	**	**	**	**
West Garo Hills	19.4	-74	36.6	-52	105.0	24
West Khasi Hills	31.0	-59	20.0	-67	46.0	-46
NMMT						
Mizoram						
Aizwal	58.1	76	9.8	-85	86.4	5
Champhai	**	**	**	**	**	**
Kolasib	20.0	72	22.0	-65	29.0	-60
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	2.0	-97	**	**	**	**
Saiha	17.0	-62	1.0	-99	21.0	-79
Serchhip	39.8	-12	**	**	6.2	-92
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	**	**	**	**	**	**
Churachandpur	**	**	**	**	**	**
Imphal east	6.9	-85	1.9	-96	12.4	-72
Imphal west	50.5	26	24.2	-30	79.2	212
Senapati	**	**	**	**	**	**
Tamenglong	**	**	**	**	**	**
Thoubal	6.0	-72	14.0	-72	14.0	-44
Ukhrul	**	**	**	**	**	**
Nagaland						
Dimapur	18.9	-51	17.9	-50	8.9	-77
Kephire	**	**	**	**	**	**
Kohima	21.1	-41	0.0	-100	3.4	-92
Longleng	**	**	**	**	**	**
Mokokchung	**	**	**	**	**	**
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	**	**	**	**	**	**
Tuensang	**	**	**	**	**	**
Wokha	**	**	**	**	**	**
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	124.7	32	53.0	-48	75.5	-26
North Tripura	110.9	18	78.6	-24	111.9	23
South Tripura	61.4	-13	64.1	-20	42.1	-46
West Tripura	26.0	-66	69.9	-18	37.8	-54
Himachal Pradesh						
Bilaspur	4.8	12	17.2	38	3.5	-49
Chamba	8.2	4	11.2	-45	6.8	-46
Hamirpur	5.1	-18	19.4	70	3.4	-63
Kangra	4.0	-60	19.6	62	4.8	-52

Kinnaur	16.1	-13	2.3	-88	5.9	-63
Kullu	7.0	-56	7.2	-62	16.9	-2
Lahaul and Spiti	13.0	-41	2.5	-90	10.0	-58
Mandi	7.4	-12	13.0	-30	12.7	-15
Shimla	5.0	-57	7.3	-63	13.9	3
Sirmaur	3.6	-37	15.2	90	10.8	77
Solan	3.3	-50	7.6	-50	10.1	-5
Una	6.9	-8	18.3	191	0.0	-100
Punjab						
Amritsar	0.6	-86	14.2	154	5.4	49
Barnala	0.0	-100	0.0	-100	11.0	424
Bhatinda	0.0	-100	4.5	80	8.5	286
Faridkot	0.0	-100	2.0	-51	0.0	-100
Fatehgarh Sahib	2.5	32	6.0	30	19.0	604
Ferozpur	0.0	-100	2.7	-52	0.3	-93
Gurdaspur	0.0	-100	7.2	10	3.6	-3
Hoshiarpur	0.0	-100	11.6	71	2.0	-37
Jalandhar	0.0	-100	16.6	163	7.4	71
Kapurthala	0.3	-92	27.6	475	16.3	410
Ludhiana	0.0	-100	8.9	82	9.2	208
Mansa	0.5	-67	0.0	-100	2.5	-7
Moga	0.0	-100	3.0	-25	13.7	154
Muktesar	0.0	-100	27.3	1263	0.0	-100
Nawashahar	0.3	-91	17.8	126	2.8	-14
Patiala	3.5	5	2.5	-48	7.4	186
Ropar	3.8	6	10.1	31	8.3	21
Sangrur	0.0	-100	2.9	-50	15.4	296
Mohali	3.7	-22	4.0	-52	5.3	24
TarnTaran	0.0	-100	8.0	45	32.7	717
Haryana,Chd,Delhi						
Haryana						
Ambala	12.4	312	5.4	-17	2.4	-56
Bhiwani	0.6	-57	0.1	-97	1.2	-63
Chandigarh	2.6	19	8.6	-12	5.0	-17
Faridabad	3.8	14	2.2	-65	5.0	56
Fatehabad	0.0	-100	1.5	-68	2.3	56
Gurgaon	1.7	-17	0.2	-95	5.0	72
Hissar	0.0	-100	0.7	-88	1.8	-42
Jhajar	0.6	-71	0.0	-100	14.3	1333
Jind	0.0	-100	0.9	-83	6.4	138
Katihah	0.0	-100	0.0	-100	5.8	625
Karnal	0.2	-90	0.3	-93	4.5	150
Kurukshetra	2.0	82	0.0	-100	3.3	117
Mahendragarh	0.0	-100	0.0	-100	0.3	-94
Mewat	0.0	-100	0.0	-100	3.0	25
Palwal	0.0	-100	0.0	-100	1.3	-4
Panchkkula	0.8	-81	1.5	-82	2.2	-58
Panipat	2.3	67	0.0	-100	23.8	2544
Rewari	1.6	60	0.0	-100	2.8	-7
Rohtak	1.6	-45	0.0	-100	4.4	83
Sirsa	0.3	-83	1.5	-59	10.0	335

Sonepat	2.6	-6	0.0	-100	18.7	790
Yamunanagar	12.8	104	13.0	49	1.4	-68
Delhi						
Central Delhi	0.0	-100	0.0	-100	0.0	-100
East Delhi	0.0	-100	0.0	-100	2.0	-37
New Delhi	0.1	-97	0.0	-100	4.6	42
North Delhi	1.4	-62	0.0	-100	1.5	-53
North East Delhi	0.0	-100	0.0	-100	**	**
North West Delhi	0.0	-100	0.0	-100	4.0	25
South Delhi	13.0	251	0.9	-89	9.9	208
South West Delhi	3.4	-8	0.2	-97	8.6	169
West Delhi	2.0	-46	0.0	-100	29.0	806
Jammu & Kashmir						
Anantnag	15.8	-13	15.2	-46	24.5	11
Badgam	6.4	-44	15.7	-17	25.3	21
Bandipore	**	**	**	**	**	**
Baramula	7.5	-72	35.4	-10	25.6	17
Doda	50.8	144	6.6	-71	8.7	-47
Ganderbal	8.6	-43	4.6	-75	12.8	-24
Jammu	13.8	274	7.6	-8	10.9	147
Kargil	**	**	**	**	**	**
Kathua	2.4	-4	3.2	-16	3.9	-13
Kistwar	**	**	**	**	**	**
Kulgam	12.0	-34	14.5	-48	11.2	-50
Kupwara	15.7	-31	36.2	46	41.3	80
Ladakh(Leh)	0.0	-100	0.2	-85	0.0	-100
Poonch	**	**	**	**	**	**
Pulwama	6.9	-52	15.6	-27	22.3	3
Rajouri	7.4	1	19.3	197	16.6	141
Ramban	23.4	12	17.8	-22	21.9	35
Reasi	21.2	123	23.6	22	7.9	5
Samba	8.3	124	9.3	13	19.1	333
Shopian	**	**	**	**	**	**
Srinagar	8.1	-46	23.6	30	22.0	31
Udhampur	18.7	97	12.9	-34	9.8	30
East Madhya Pradesh						
Anuppur	0.0	-100	0.0	-100	0.0	-100
Balaghat	1.1	-36	1.5	18	0.1	-94
Chhatarpur	0.0	-100	0.0	-100	1.0	-25
Chindwara	1.1	-44	3.9	544	5.7	617
Damoh	0.0	-100	0.0	-100	0.5	-44
Dindori	0.0	-100	0.0	-100	8.2	382
Jabalpur	0.0	-100	0.3	200	0.2	-71
Katni	0.0	-100	0.0	-100	0.0	-100
Mandla	0.0	-100	0.0	-100	3.6	71
Narsingpur	0.0	-100	0.0	-100	0.0	-100
Panna	0.0	-100	0.0	-100	0.0	-100
Rewa	0.0	-100	0.0	-100	1.7	24
Sagar	0.0	-100	0.0	-100	0.9	-32
Satna	0.0	-100	0.0	-100	22.5	1152
Seoni	0.0	-100	2.1	48	12.9	378

Shahdol	0.0	-100	0.0	-100	40.0	1233
Sidhi	0.0	-100	0.0	-100	1.4	-30
Singrauli	0.0	-100	0.0	-100	3.0	58
Tikamgarh	0.0	-100	0.0	-100	0.0	-100
Umaria	0.0	-100	0.0	-100	0.8	-50
West Madhya Pradesh						
Agar	0.0	-100	0.0	-100	0.0	-100
Alirajpur	0.0	-100	0.0	-100	6.4	156
Asoknagar	0.0	-100	0.0	-100	0.0	-100
Badwani	0.0	-100	0.0	-100	0.0	-100
Betul	0.0	-100	0.2	-53	2.0	40
Bhind	0.0	-100	0.0	-100	3.0	58
Bhopal	0.0	-100	2.0	122	0.7	-63
Burhanpur	0.0	-100	0.0	-100	5.3	778
Datia	0.0	-100	0.0	-100	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	0.0	-100	0.0	-100	0.0	-100
Guna	0.0	-100	0.0	-100	1.7	21
Gwalior	0.0	-100	17.8	1269	8.8	386
Harda	0.0	-100	2.3	1050	0.0	-100
Hosangabad	2.0	300	2.2	450	1.8	64
Indore	0.0	-100	0.0	-100	0.2	-67
Jhabua	0.0	-100	0.0	-100	0.0	-100
Khandwa	0.0	-100	1.3	233	0.0	-100
Khargone	0.0	-100	0.0	-100	1.2	-12
Mandsaur	0.0	-100	0.0	-100	0.0	-100
Morena	0.0	-100	2.6	82	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	0.0	-100	2.8	77
Rajgarh	0.0	-100	0.4	-60	0.0	-100
Ratlam	0.0	-100	0.0	-100	0.0	-100
Sehore	0.0	-100	0.0	-100	0.2	-80
Shajapur	0.0	-100	0.0	-100	1.0	-9
Sheopur Kalani	0.0	-100	0.0	-100	0.0	-100
Shivpuri	0.0	-100	0.0	-100	0.4	-78
Ujjain	0.0	-100	0.0	-100	1.4	133
Vidisha	0.0	-100	0.0	-100	0.0	-100
Chhattisgarh						
Bastar	43.2	374	2.4	-70	3.6	-67
Bijapur	0.0	-100	0.0	-100	15.9	413
Bilaspur	0.6	-88	2.0	-46	0.8	-84
Dantewara	0.0	-100	0.0	-100	16.7	188
Dhamtari	17.4	270	0.1	-95	7.6	29
Durg	2.1	-21	0.0	-100	3.6	100
Janjgir	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	7.1	39
Korba	0.0	-100	0.0	-100	0.0	-100
Koriya	0.0	-100	0.0	-100	0.9	-42
Kawardha	0.0	-100	0.0	-100	19.0	304
Mahasumund	0.0	-100	0.0	-100	11.2	229

Narayanpur	0.0	-100	0.0	-100	0.0	-100
Raigarh	0.0	-100	0.0	-100	0.0	-100
Raipur	2.2	-48	0.2	-94	14.5	254
Rajandgaon	0.6	-79	0.0	-100	37.0	900
Surguja	3.2	0	0.1	-98	1.7	-44
East Uttar Pradesh						
Allahabad	0.0	-100	0.0	-100	0.0	-100
Ambedkar Nagar	0.0	-100	2.5	-4	0.0	-100
Azamgarh	0.0	-100	1.0	-60	0.0	-100
Bahraich	0.0	-100	22.2	122	0.7	-89
Ballia	0.0	-100	0.0	-100	35.1	737
Balrampur	0.0	-100	9.0	32	0.0	-100
Banda	0.6	-50	0.0	-100	0.0	-100
Barabanki	0.0	-100	1.3	-70	1.5	-62
Basti	0.0	-100	14.6	161	5.6	56
Chandauli	0.0	-100	1.9	-42	0.0	-100
Deoria	0.0	-100	4.0	-18	11.0	124
Faizabad	0.0	-100	3.3	4	0.3	-91
Farrukhabad	2.5	39	0.5	-85	1.3	-71
Fatehpur	0.0	-100	0.0	-100	0.0	-100
Gazipur	0.0	-100	0.8	-76	1.3	-42
Gonda	0.0	-100	7.0	56	8.3	103
Gorakhpur	0.0	-100	19.1	145	10.8	89
Hardoi	0.0	-100	4.1	-11	1.1	-77
Jaunpur	0.0	-100	0.4	-81	0.0	-100
Kannauj	0.0	-100	24.0	471	5.0	-18
Kanpur City	0.0	-100	2.3	1	10.8	622
Kanpur Dehat	0.0	-100	3.2	146	1.4	-7
Kaushambi	0.0	-100	0.0	-100	0.0	-100
Kheri	2.4	-50	0.0	-100	4.2	-41
Kushi nagar	0.0	-100	2.0	-79	0.0	-100
Lucknow	0.0	-100	0.0	-100	1.4	-25
Maharajganj	0.0	-100	19.8	127	0.0	-100
Mau	0.0	-100	0.0	-100	0.0	-100
Mirzapur	0.0	-100	0.0	-100	0.7	-81
Pratapgarh	0.0	-100	0.0	-100	0.0	-100
RaiBareilly	0.0	-100	0.0	-100	4.2	183
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnnagar	0.0	-100	14.0	324	0.0	-100
Sant Ravidas Nagar	0.0	-100	2.0	-39	0.0	-100
Shrawasti	0.0	-100	**	**	0.0	-100
Sidharthnagar	0.0	-100	3.0	-27	0.0	-100
Sitapur	0.0	-100	0.0	-100	0.0	-100
Sonbhadra	0.0	-100	0.0	-100	20.5	688
Sultanpur	0.0	-100	0.0	-100	0.0	-100
Unnao	0.0	-100	4.4	63	6.5	400
Varanasi	0.0	-100	0.0	-100	0.0	-100
West Uttar Pradesh						
Agra	0.0	-100	0.3	-89	14.4	932
Aligarh	0.5	-81	0.0	-100	3.7	46
Auraiya	0.0	-100	0.0	-100	2.0	-23

Badaun	0.1	-92	1.0	-76	6.0	71
Baghpat	4.4	83	0.0	-100	14.4	205
Bareilly	0.3	-84	2.8	-44	0.9	-83
Bijnor	3.2	47	0.7	-84	7.8	85
Bulandsahar	0.7	-73	0.0	-100	0.8	-75
Etah	1.0	-50	0.8	-83	2.3	18
Etawah	0.0	-100	2.3	-17	0.0	-100
Firozabad	0.0	-100	1.5	-46	11.1	383
GBNagar	0.0	-100	0.0	-100	2.0	122
Ghaziabad	0.7	-69	0.0	-100	4.9	95
Hamirpur	0.0	-100	0.0	-100	1.3	-5
Jalaun	0.0	-100	1.7	52	1.5	-38
Jhansi	0.0	-100	0.0	-100	10.6	486
Jotiba Phule Nagar	1.0	-58	0.3	-92	6.0	71
Kanshiramnagar	0.0	-100	6.0	107	0.0	-100
Lalitpur	0.0	-100	0.0	-100	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	4.0	167
Mahoba	0.0	-100	0.0	-100	0.0	-100
Mainpuri	0.0	-100	0.0	-100	10.1	288
Mathura	0.0	-100	0.0	-100	1.0	0
Meerut	6.8	258	0.0	-100	18.2	405
Moradabad	0.6	-69	20.4	373	0.8	-82
Muzaffarnagar	0.0	-100	0.0	-100	13.7	211
Pilibhit	0.0	-100	3.2	-43	0.0	-100
Rampur	0.0	-100	5.7	26	0.0	-100
Saharanpur	0.0	-100	4.3	-31	3.0	-32
Shahjahanpur	0.0	-100	0.0	-100	8.3	30
Uttarakhand						
Almora	4.8	-40	1.5	-87	5.2	-45
Bageshwar	20.3	153	0.0	-100	20.5	118
Chamoli	7.3	-37	2.3	-90	7.3	-57
Champawat	15.5	128	2.5	-79	1.5	-91
Dehradun	10.1	60	2.1	-84	0.5	-96
Garhwal Pauri	11.7	113	10.3	-3	9.4	57
Garhwal Tehri	12.8	129	21.7	41	6.7	-45
Haridwar	11.9	240	1.2	-84	2.4	-41
Nainital	14.8	125	14.0	-3	13.6	16
Pithorgarh	17.8	40	7.0	-68	35.1	42
Rudraprayag	16.8	-8	16.9	-28	23.9	4
Udham Sing Nagar	11.9	222	4.8	-27	0.9	-85
Uttarkashi	7.4	-33	12.5	-54	26.3	17
Bihar						
Araria	15.0	-22	5.9	-72	50.9	97
Arwal	0.0	-100	0.0	-100	0.6	-54
Aurangabad	0.0	-100	0.0	-100	14.0	241
Banka	0.0	-100	12.0	27	7.0	-23
Begusarai	0.0	-100	9.6	-20	7.3	-25
Bhabua	0.0	-100	0.0	-100	8.9	-12
Bhagalpur	0.0	-100	37.5	196	2.6	-84
Bhojpur	0.0	-100	0.0	-100	16.0	176
Buxar	0.0	-100	0.0	-100	**	**

Darbhanga	0.4	-97	14.4	29	10.9	-1
East Champaran	2.9	-68	23.1	138	18.2	102
Gaya	0.0	-100	0.0	-100	13.0	183
Gopalganj	3.1	-12	13.8	229	11.8	76
Jahanabad	0.0	-100	0.0	-100	4.6	-22
Jamui	0.0	-100	0.6	-92	1.5	-76
Kathihar	5.3	-67	51.6	125	0.0	-100
Khagadia	0.8	-87	19.5	56	0.0	-100
Kishanganj	3.2	-90	16.1	-33	85.9	203
Lakhisarai	0.0	-100	4.8	-60	17.2	98
Madhepura	0.0	-100	28.7	52	0.7	-96
Madhubani	1.1	-91	12.3	-26	0.0	-100
Monghyar	2.6	-66	0.0	-100	0.0	-100
Muzaffarpur	4.6	-48	16.6	37	5.8	-54
Nalanda	0.0	-100	0.0	-100	2.6	-47
Nawada	0.0	-100	0.0	-100	0.0	-100
Patna	0.0	-100	0.0	-100	1.4	-74
Purnea	4.2	-80	20.8	-10	0.0	-100
Rohtas	0.0	-100	0.0	-100	33.3	658
Saharsha	0.0	-100	11.0	-41	0.0	-100
Samstipur	0.0	-100	13.9	53	12.3	71
Saran	0.0	-100	0.0	-100	1.1	-82
Sheikpura	0.0	-100	10.1	58	0.0	-100
Sheohar	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	**	**	15.2	-2	12.3	-14
Siwan	**	**	12.3	208	0.0	-100
Supaul	0.0	-100	16.4	-20	24.3	16
Vaishali	0.0	-100	0.0	-100	1.7	-70
West Champaran	9.8	7	13.2	31	36.0	210
Jharkhand						
Bokaro	12.7	35	0.0	-100	49.5	526
Chatra	0.0	-100	0.0	-100	2.5	-29
Deoghar	0.0	-100	2.5	-71	44.6	479
Dhanbad	6.1	-28	0.2	-99	11.9	11
Dumka	**	**	0.0	-100	17.0	21
East Singbhum	36.8	254	0.0	-100	35.3	142
Garhwa	0.0	-100	0.0	-100	0.0	-100
Giridih	4.6	-34	0.3	-97	12.7	50
Godda	7.2	-31	21.7	112	1.5	-88
Gumla	**	**	0.1	-99	25.2	145
Hazaribagh	2.2	-58	0.0	-100	0.1	-99
Jamtara	11.7	16	0.0	-100	19.4	76
Khunti	**	**	1.5	-83	4.9	-64
Koderrna	0.0	-100	0.0	-100	3.1	210
Latehar	0.0	-100	0.0	-100	1.0	-79
Lohardagga	1.6	-75	0.0	-100	12.1	61
Pakur	39.2	184	11.1	-40	33.7	93
Palamau	0.0	-100	0.1	-97	3.2	52
Ramgarh	6.8	19	0.0	-100	10.8	-20
Ranchi	1.7	-72	22.1	127	7.9	-36
Sahebganj	**	**	75.4	346	0.0	-100

Saraikelela	**	**	0.8	-94	8.7	-27
Simdega	**	**	**	**	**	**
West Singbhum	0.0	-100	0.0	-100	0.0	-100
East Rajasthan						
Ajmer	0.0	-100	0.1	-90	0.0	-100
Alwar	0.7	-63	0.2	-96	3.5	-12
Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	0.1	-79	1.3	56
Bharatpur	0.0	-100	0.0	-100	11.9	376
Bhilwara	0.0	-100	4.3	261	0.0	-100
Bundi	0.0	-100	0.0	-100	2.3	94
Chittorgarh	0.0	-100	0.0	-100	0.9	-24
Dausa	0.0	-100	0.0	-100	0.6	-78
Dholpur	0.0	-100	0.0	-100	2.0	43
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.0	-100	0.1	-96	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	2.9	-56	10.9	126
Karauli	0.0	-100	2.5	-4	0.0	-100
Kota	0.0	-100	0.0	-100	0.1	-96
Pratapgarh	0.0	-100	0.0	-100	0.0	-100
Rajsamand	0.0	-100	3.4	63	1.6	21
Sawai Madhopur	0.0	-100	0.5	-78	0.0	-100
Sikar	0.0	-100	3.0	-44	11.6	146
Sirohi	0.0	-100	0.6	-71	0.2	-57
Tonk	0.0	-100	5.4	107	1.9	-9
Udaipur	0.0	-100	0.0	-100	0.0	-100
West Rajasthan						
Barmer	0.0	-100	6.2	467	6.8	466
Bikaner	0.0	-100	11.1	281	6.5	124
Churu	0.0	-100	2.7	-43	13.2	256
Hanumangarh	0.0	-100	0.0	-100	5.4	81
Jaisalmer	0.0	-100	7.8	763	0.0	-100
Jalore	0.0	-100	0.0	-100	0.5	400
Jodhpur	0.0	-100	15.7	684	0.0	-100
Nagaur	0.0	-100	7.5	103	1.9	-34
Pali	0.0	-100	1.0	-41	0.0	-100
Sri Ganganagar	0.0	-100	2.0	-47	2.6	-6
Gujarat Region						
Ahmedabad	0.0	-100	0.0	-100	2.0	309
Anand	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.9	782
Broach	0.0	-100	0.0	-100	1.3	63
DNH	**	**	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100
Daman	0.0	-100	0.0	-100	0.0	-100
Dangs	0.0	-100	0.0	-100	2.0	-55
Gandhinagar	0.0	-100	0.0	-100	3.4	127
Kheda	0.0	-100	0.0	-100	5.4	5300
Mehsana	0.0	-100	0.4	-43	2.2	200

Narmada	0.0	-100	0.0	-100	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	1.0	0	0.1	43
Sabarkantha	0.0	-100	0.0	-100	0.8	293
Surat	0.0	-100	0.0	-100	0.0	-100
Tapi	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100
S K & Diu region						
Amreli	0.0	-100	0.0	-100	3.3	271
Bhavnagar	0.0	-100	0.0	-100	1.2	200
Diu	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-100	1.2	131	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.4	-43	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.0	-100
Maharashtra & Goa						
Konkan & Goa						
Mumbai City	2.4	500	0.0	-100	0.0	-100
Mumbai Suburban	0.0	-100	0.0	-100	0.0	-100
North Goa	16.0	14	6.8	144	21.7	24
Raigad	3.0	67	0.0	-100	8.5	137
Ratnagiri	0.0	-100	3.2	252	0.2	-97
Sindhudurg	0.0	-100	20.2	622	2.9	-62
South Goa	25.7	112	9.7	149	19.2	43
Thane	0.0	-100	0.0	-100	0.0	-100
Madhya Maharashtra						
Ahmednagar	0.0	-100	0.5	-72	0.1	-97
Dhule	**	**	**	**	**	**
Jalgaon	0.0	-100	0.1	-86	7.1	792
Kolhapur	10.8	7	19.0	188	8.2	-46
Nandurbar	**	**	**	**	**	**
Nasik	0.0	-100	0.0	-96	0.0	-100
Pune	2.1	-58	2.3	-8	18.3	221
Sangli	8.4	-26	15.7	208	4.1	-64
Satara	10.8	64	18.6	377	12.8	74
Solapur	6.8	61	0.6	-78	2.8	-53
Marathwada						
Aurangabad	0.0	-100	1.3	43	3.7	70
Beed	1.4	-38	0.5	-75	3.1	-13
Hingoli	1.5	-27	5.2	333	1.2	-59
Jalna	0.0	-99	1.2	52	0.0	-100
Latur	7.3	159	7.3	567	2.4	-58
Nanded	9.7	343	11.6	382	6.2	123
Usmanabad	8.3	167	0.3	-92	5.8	22
Parbhani	6.5	172	1.5	22	0.0	-100
Vidarbha						
Akola	0.0	-100	1.7	136	0.0	-100
Amraoti	0.8	-6	1.2	46	0.5	-38

Bhandara	8.4	250	4.6	60	1.5	-41
Buldhana	0.0	-100	4.9	512	4.7	370
Chandrapur	12.5	466	5.4	51	16.3	715
Gadchiroli	6.0	72	0.0	-100	12.3	232
Gondia	3.8	168	9.4	309	4.2	112
Nagpur	4.2	100	0.8	-40	8.9	424
Wardha	4.0	54	0.4	-77	1.5	-74
Washim	0.0	-100	0.0	-100	2.0	25
Yeotmal	5.2	224	0.0	-99	4.0	54
Odisha						
Angul	14.2	69	1.8	-89	14.4	22
Balasore	11.5	-46	1.4	-95	5.0	-79
Bargarh	0.0	-100	0.0	-100	0.0	-100
Bhadrak	7.1	-63	23.0	-21	43.5	83
Bolangir	0.6	-89	1.7	-82	7.8	-20
Boudh	0.0	-100	3.7	-83	15.2	-15
Cuttack	0.7	-96	7.7	-63	1.0	-92
Deogarh	13.2	83	0.0	-100	24.7	263
Dhenkanal	8.9	-51	0.0	-100	33.1	136
Gajapati	25.3	-3	9.2	-81	13.2	-57
Ganjam	5.5	-50	0.1	-99	1.7	-91
Jagatsingpur	2.4	-85	9.9	-69	11.7	-51
Jajpur	13.0	-28	2.2	-92	45.1	169
Jharsuguda	0.3	-96	0.0	-100	7.3	-18
Kalahandi	8.9	20	0.0	-100	22.5	106
Kandhamal	4.7	-61	8.2	-62	8.9	-50
Kendrapara	7.8	-60	2.7	-84	20.3	4
Keonjhar	19.7	-2	1.4	-94	19.0	-22
Khurda	6.5	-31	5.2	-73	0.2	-99
Koraput	20.8	5	9.9	-64	22.9	32
Malkangiri	2.2	-81	0.0	-100	48.0	281
Mayurbhanj	24.5	37	3.3	-85	25.4	-19
Nawapara	5.0	-43	5.0	-32	12.4	77
Nawarangpur	27.6	46	15.3	-2	9.4	-70
Nayagarh	17.2	60	1.2	-88	18.1	97
Puri	0.1	-99	2.4	-86	0.4	-98
Rayagada	24.9	45	8.7	-75	14.1	-19
Sambalpur	1.6	-77	0.0	-100	2.5	-63
Sonepur	0.0	-100	0.0	-100	3.3	-48
Sundargarh	9.5	40	0.0	-100	13.1	48
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	22.5	-63	37.5	-47	33.2	-60
North & Middle Andaman	15.2	-71	28.3	-41	86.7	5
South Andaman	10.1	-81	30.4	-51	103.4	15
GWB						
Bankura	33.5	148	0.0	-100	24.0	78
Birbhum	15.2	19	0.6	-97	32.6	92
Burdwan	2.6	-82	0.3	-98	53.9	213
East Midnapore	21.0	-15	0.1	-99	4.5	-73

Hooghly	17.8	-11	0.0	-100	35.1	35
Howrah	7.8	-55	0.0	-100	60.5	105
Kolkata	23.5	18	0.0	-100	47.8	106
Murshidabad	8.0	-45	37.0	130	38.0	133
Nadia	1.2	-94	1.4	-92	52.9	202
24 Pargana (N)	5.4	-81	0.7	-96	26.1	50
Purulia	31.7	211	0.0	-100	52.4	264
24 Pargana (S)	11.6	-42	0.0	-100	22.6	-30
West Midnapore	8.2	-56	0.0	-100	44.0	120
SHWB & Sikkim						
Cooch Behar	77.1	21	26.6	-57	173.7	178
Darjeeling	40.2	-17	52.1	-1	103.7	77
East Sikkim	77.4	37	41.1	-42	92.6	31
Jalpaiguri	45.6	-29	34.6	-41	150.1	123
Malda	4.0	-81	64.8	221	59.4	200
North Dinajpur	1.0	-97	35.0	25	92.5	118
North Sikkim	53.8	-33	40.0	-43	76.4	4
South Dinajpur	0.5	-98	29.5	-15	0.0	-100
South Sikkim	37.6	-33	40.6	-43	72.8	3
West Sikkim	31.0	-61	66.0	-7	56.5	-23
Karnataka						
Coastal Karnataka						
Dakshina Kannada	32.7	44	67.4	270	87.5	119
Udupi	8.6	-58	15.4	0	69.0	53
Uttara Kannada	14.6	0	32.2	236	39.5	50
NI Karnataka						
Bagalkote	1.9	-77	5.5	-14	5.6	-58
Belagavi	8.2	-46	41.6	338	18.2	-3
Bidar	16.0	196	1.9	-57	8.3	13
Dharwad	18.2	2	27.1	105	18.9	-3
Gadag	12.6	-9	8.4	-11	12.4	-36
Haveri	27.7	45	24.8	94	33.5	68
Kalaburgi	3.0	-35	2.8	-55	2.1	-72
Koppal	4.5	-22	0.1	-98	14.0	-9
Raichur	5.1	41	2.3	-67	14.0	32
Vijayapura	3.5	-37	9.6	84	3.1	-68
Yadgir	4.8	19	11.2	81	7.0	-15
SI Karnataka						
Ballari	7.6	-14	8.3	-8	14.2	0
Bangalore Rural	50.9	151	4.3	-70	79.0	224
Bangalore Urban	29.9	58	3.9	-80	69.1	148
Chamarajanagar	23.5	-15	38.1	51	63.9	76
Chikaballapur	14.2	6	8.0	-20	61.2	182
Chikkamagaluru	27.8	28	34.2	152	61.5	90
Chitradurga	32.1	209	12.7	26	40.1	112
Davangere	32.8	128	19.5	46	46.9	129
Hassan	32.0	38	32.2	69	55.3	93
Kodagu	42.4	38	40.9	51	88.6	129
Kolar	16.9	74	6.5	-53	87.3	299
Mandya	30.5	45	33.0	79	84.6	195

Mysuru	23.8	-2	31.7	21	85.5	157
Ramanagara	34.7	34	28.8	35	50.2	80
Shivamogga	21.4	30	37.1	264	54.6	142
Tumakuru	16.0	0	12.1	-10	31.1	17
Kerala						
Alappuzha	7.1	-85	49.0	-6	93.0	26
Kannur	42.0	60	70.9	130	38.5	-40
Ernakulam	24.4	-43	61.1	46	22.7	-71
Idukki	27.7	-25	49.0	20	66.8	21
Kasaragod	3.7	-79	50.7	117	56.2	-8
Kollam	6.1	-87	31.7	-36	135.2	135
Kottayam	21.9	-48	100.3	109	65.3	-3
Kozhikode	6.3	-78	69.7	101	77.1	11
Malappuram	27.9	-26	45.6	9	96.5	72
Palakkad	18.7	-43	73.5	197	114.2	189
Pathanamthitta	30.1	-49	52.2	-12	81.1	22
Thiruvananthapuram	1.2	-97	55.5	49	225.8	287
Thrissur	9.1	-75	100.0	117	48.3	-38
Wynad	48.6	101	64.7	153	82.0	77
Tamil Nadu						
Ariyalur	0.0	-100	9.3	-46	27.3	62
Chennai	0.0	-100	0.6	-94	5.8	-46
Coimbatore	14.7	-33	46.9	191	119.7	425
Cuddalore	2.0	-81	12.3	-3	47.1	254
Dharmapuri	22.5	30	38.7	133	66.9	125
Dindigul	8.5	-57	31.6	63	142.2	622
Erode	6.2	-65	18.5	6	43.7	88
Kanchipuram	6.5	-9	0.9	-93	37.8	247
Kanyakumari	5.8	-82	43.0	52	181.9	410
Karikal	0.0	-100	23.0	297	57.0	438
Karur	2.1	-86	18.5	52	67.0	289
Krishnagiri	26.6	54	18.1	-6	63.6	127
Madurai	16.0	31	49.5	159	59.6	277
Nagapattinam	1.3	-86	13.6	61	88.7	744
Namakkal	6.0	-68	18.7	4	31.8	32
Nilgiris	31.3	39	75.8	229	100.9	211
Perambalur	0.0	-100	23.0	80	35.9	71
Puducherry	0.0	-100	16.2	-7	110.6	974
Pudukottai	2.9	-72	37.9	261	64.7	453
Ramanathapuram	2.2	-75	48.5	294	56.7	430
Salem	1.2	-94	27.3	45	59.3	102
Sivaganga	5.6	-49	26.8	58	67.3	426
Thanjavur	2.6	-77	41.6	197	33.3	178
Theni	20.3	-5	79.3	530	73.3	486
Tirunelveli	14.4	-13	28.4	112	51.4	385
Tirupur	4.5	-75	40.6	188	108.0	388
Tiruvallur	10.4	79	0.2	-98	24.2	105
Tiruvannamalai	0.0	-100	0.4	-98	42.7	105
Tiruvarur	14.7	47	39.1	221	71.6	575

Toothukudi	2.6	-74	38.3	321	27.4	256
Trichy	6.6	-50	16.4	25	44.2	182
Vellore	5.2	-51	0.7	-96	28.6	43
Villupuram	0.0	-100	7.2	-41	42.0	149
Virudhunagar	6.3	-63	50.8	199	52.3	219
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	10.6	17	0.0	-100	23.7	72
Guntur	1.0	-80	0.0	-100	14.6	11
Krishna	1.0	-84	0.0	-100	20.4	39
Nellore	16.1	103	0.0	-100	9.1	-15
Prakasam	10.4	44	0.0	-100	7.6	-27
Sirkakulam	12.8	19	4.9	-78	3.0	-78
Visakhapatnam	9.0	-48	10.2	-70	15.3	-26
Vizianagram	23.6	60	8.9	-72	22.8	25
West Godavari	1.6	-69	0.4	-98	21.8	54
Rayalaseema						
Anantapur	4.3	-57	0.8	-90	29.7	109
Chittoor	22.4	92	3.2	-76	27.5	49
Cuddapah	13.3	90	0.0	-100	10.9	-6
Kurnool	7.2	0	0.6	-94	15.3	39
Telangana						
Adilabad	8.8	203	6.2	48	17.9	347
Hyderabad	0.0	-100	0.1	-98	3.6	-55
Karimnagar	1.5	-64	1.9	-73	12.8	151
Khammam	1.8	-75	8.6	-38	20.3	36
Mehabubnagar	1.1	-72	0.7	-90	10.5	10
Medak	1.5	-52	0.0	-100	16.1	133
Nalgonda	3.0	-29	0.0	-100	14.8	95
Nizamabad	1.6	-51	0.3	-96	22.2	326
Rangareddy	7.3	11	0.1	-98	10.4	9
Warangal	0.3	-93	1.3	-79	14.5	63

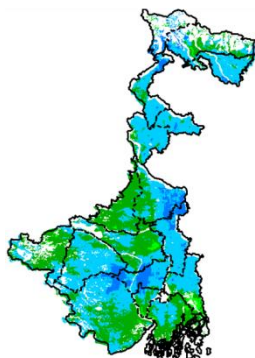
Legends

	(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

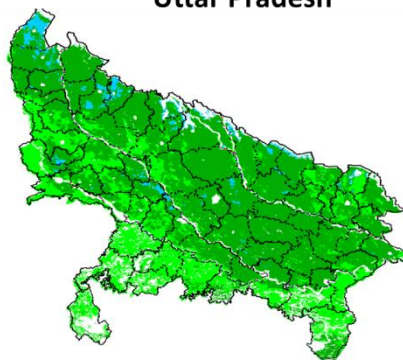
INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON 20th May 2015 FOR DIFFERENT STATES

West Bengal



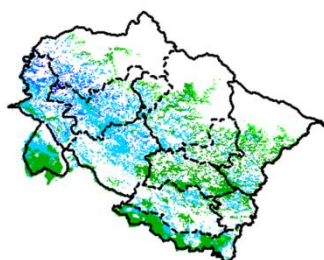
Agricultural vigour is good over the parts of West Bengal, whereas central part of West Bengal shows dominantly higher values of NDVI varying from 0.4-0.6. NDVI values are normal over south western part of state.

Uttar Pradesh



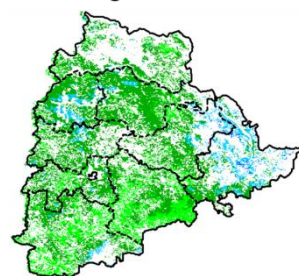
Agricultural vigour is normal over the entire state of Uttar Pradesh where NDVI value varies from 0.2 -0.4.

Uttarakhand



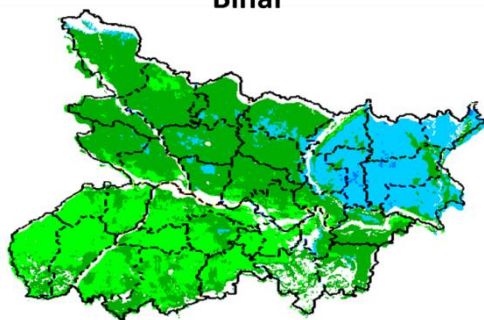
Agriculture vigour is good over central parts of Uttarakhand with NDVI value varying between 0.4-0.5, whereas isolated patches with normal value of NDVI are observed over remaining parts of the state.

Telangana



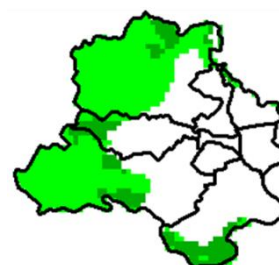
NDVI values vary from 0.2 - 0.5 over Telangana. Higher (> 0.4) values are seen over central and western parts of Telangana

Bihar



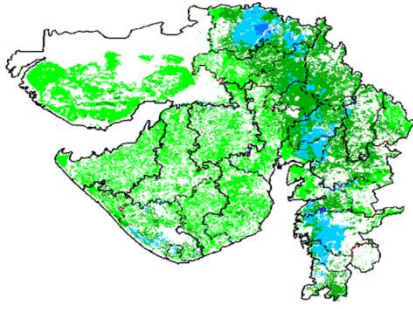
Eastern part of Bihar shows comparatively a high value (0.4-0.6) of NDVI, whereas normal value of NDVI is observed over the remaining parts of the state.

Delhi



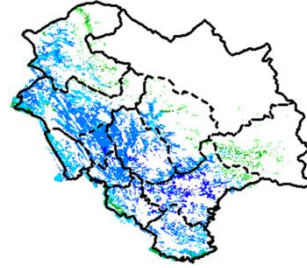
Agriculture vigour is normal all over Delhi where NDVI value lies between 0.2-0.3.

Gujarat



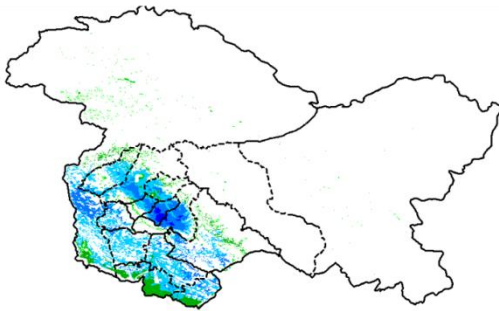
Agriculture vigour is good over central part of Gujarat where NDVI value lies between 0.4-0.6, whereas normal NDVI is observed in Kutch and Saurashtra.

Himachal Pradesh



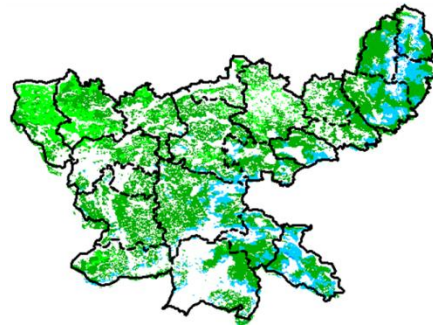
Agriculture vigour is good over southern and south western parts of Himachal Pradesh with NDVI value varying between 0.5-0.6, whereas isolated patches of normal NDVI are observed over remaining parts of the state.

Jammu & Kashmir



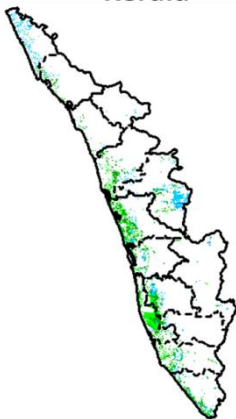
Agriculture vigour is normal all over Jammu and Kashmir. NDVI value varies in between 0.4-0.6 in south western parts.

Jharkhand



Agriculture vigour is normal (0.2-0.3) over entire state of Jharkhand except the south east and north east districts that show increased NDVI value from 0.4-0.5.

Kerala



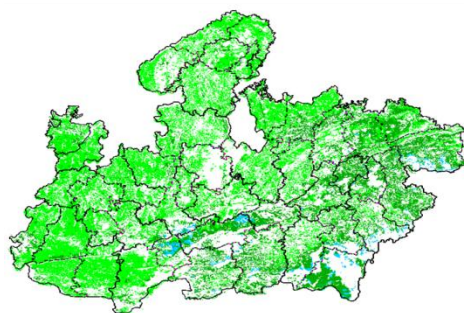
Central and coastal regions of Kerala show NDVI value varying from 0.3 to 0.5, whereas rest of agricultural vigour of Kerala shows good values of NDVI.

Haryana



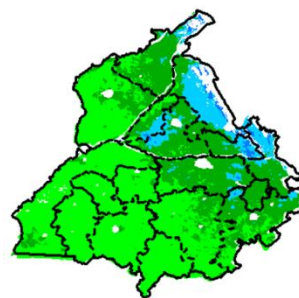
Agriculture vigour is normal over the state of Haryana. NDVI value varies between 0.2-0.3 over the state. Except in few patches in northern region with NDVI values between 0.4-0.5.

Madhya Pradesh



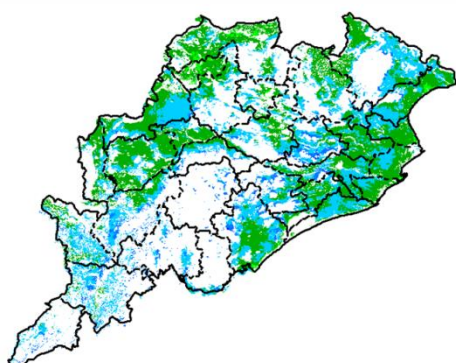
Agriculture vigour is normal (0.2-0.3) over entire state Madhya Pradesh.

Punjab



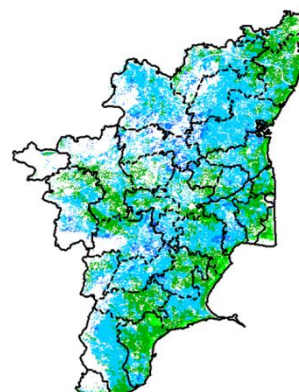
Agricultural vigour is normal over entire state of Punjab except North Eastern part, showing comparatively high NDVI value ranges from 0.4-0.6.

Odisha



Agricultural vigour is good in eastern coastal and few pockets in western parts of Odisha with NDVI value ranging between 0.4 - 0.6. The remaining parts show normal NDVI values.

Tamil Nadu



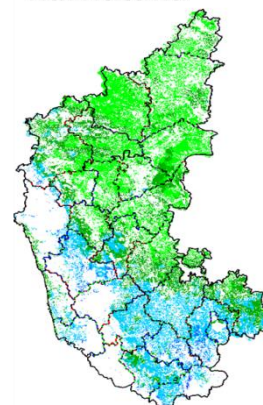
Agricultural vigour is normal over Tamil Nadu with NDVI values varying from 0.3 - 0.5. In western parts of Tamil Nadu NDVI show comparatively high values varying between 0.4-0.5 in some patches.

Chhattisgarh



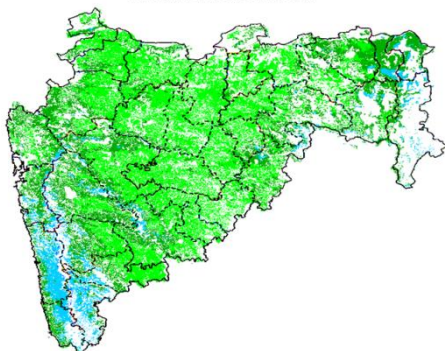
Agriculture vigour is good in central part of Chhattisgarh where NDVI value lies in between 0.4-0.5. NDVI values are normal over rest parts of the state.

Karnataka



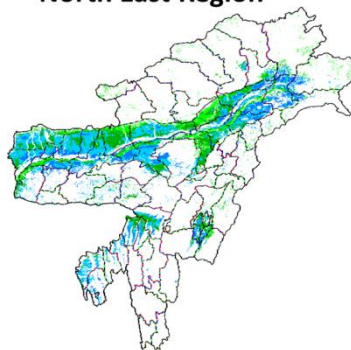
Agriculture vigour is good over some pockets of south interior of Karnataka between 0.4-0.6. Rest of the parts shows normal NDVI values up to 0.2-0.3.

Maharashtra



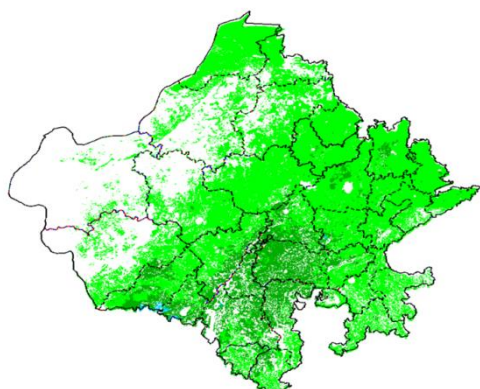
Agricultural vigour is good over south west part with NDVI values from 0.4 - 0.5, whereas NDVI is moderate over parts of Marathwada, Vidarbha and Madhya Maharashtra region.

North East Region



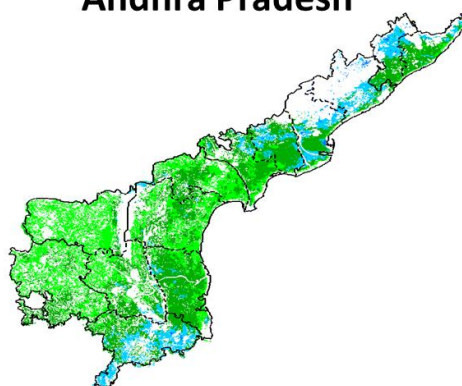
Agriculture vigour is good in valleys of North-East states which cover parts of Assam. NDVI values vary from 0.4-0.5. Normal NDVI conditions are observed all over NE region.

Rajasthan



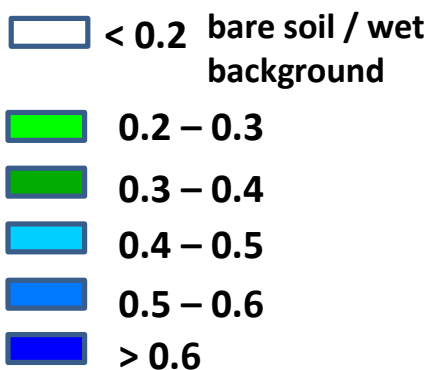
Agriculture vigour is normal (0.2-0.3) over entire state of Rajasthan.

Andhra Pradesh



Agriculture vigour vary from 0.3 - 0.4 over central and coastal parts of Andhra Pradesh. The NDVI is normal over rest parts of the state.

Persistent cloud /



Annexure III List of varieties

Karnataka

Ragi: GPU- 28,MR -01, 02 and 06, KMR-301.

Redgram: TTB -7, BRG -01, BRG- 02,HYD -3C.

Tamil Nadu:

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

Andhra Pradesh:

Rice: MTU-1010, Nellore masuri, Dharani, Shwetha.

Assam

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

Summer green gram: T-44, AAU-34, AAU-39, Pratap, Kopergaon, K-85, ML-55.

Summer black gram : T-9, Pant U-19, JU-78.

Okra : Pusa Sawani, Arka Anamika, Parbhdani Kranti.

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.

Kharif Maize : Hybrid variety : Ganga 5, Hi starch.

Composite variety like NLD, Dhawal, Naviot, Diara.

Normal hybrids : Ganga 11, Deccan 107, Deccan 109, Vivek 9.

Quality Protein Hybrid : HQPM-1.

Normal Composite variety : NLD, Parbhat, Novjot, Pusa Comp 1 & 2.

Quality Protein composite : Shakti-1.

Cucumber: Pusa Sanyog, Chinese Green etc.

Ridge Gourd : Pusa Nasdar and selected local varieties.

Sugarcane : Kolong, Luhit, Dhansiri, Co 1148, Co 6315, Co 997, 80/77 (Co BLN 9104), 43/83 (Co BLN 9605).

Summer sesame : TC 25, Vinayak.

Ginger : Rio-de-Generio, Nadia, Moran, Jorhat, Karkai, Chaina.

Summer sesame : TC 25 and Vinayak.

Turmeric : Shillong Type, Tall clone, CL-24, PTS-38, PCT-13, PCT-13, VK-145.

Banana : Dwarf Cavendish (Dwarf Cultivar), Cheni Champa, Malbhog (Medium Tall cultivars).

Sword sucker of dwarf variety : Jahaji.

Medium tall variety : Chenichampa, Malbhog, Barjahaji.

Papaya : Ranchi, Washington, Halflong, Coorg Honeydew.

Mesta : HC 583 and AMC 108.

Arunachal Pradesh

Jhum rice: Bhalum1,2,3 & 4.

Manipur

Okra: Pusa Sawani, Arka Anamika.

Turmeric: Megha turmeric.

Ginger: Nadia.

Soybean: JS-335.

Groundnut: ICGS-76.

Tripura:

Urad: T-9, PanthUrd 35.

Green Gram: PDM 139 (Samrat), TMV 37.

Cowpea: Maharaja, Kasi Kanchan .

Jhum rice : Garo Malati, Binnietc.

Meghalaya

Jhum rice : Bhalum 1, 2, 3; IRAT 109, IR 50.

Ginger :Nadia, Poona, Riodegenerio.

Turmeric : Lakadong, RCT-1.

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)

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.

Jharkhand:

Summer rice: IR-36, IR-64, Naveen, lalat, Parijat (80-85 days).
Summer maize: Birsa Makka-1, Birsa Makka-2, Suwan-1(Hybrid), HQPM (Hybrid).
Green gram: mung S.M.L.- 668.
Sugarcane: BO 147.

Jammu & Kashmir

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

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

Himachal Pradesh

Late variety of Cauliflower: broccoli.
Cauliflower: Pusa-snowwall.
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

Moong: samrat,hum-2, hum-12, malviyajanchetana, malviyajoyti, neredra moong-1.
Urad: T-9, azad urd-1, azadurd-2, shekher-2.
Sugar cane: coj-64, cos-96268, cos-98231, cos-767, cos-84, cos-32, copant-84212 ,etc.
Maize: pusa, agatishanker, makka-2, azad, uttam, sweta, Prakash.

Punjab

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

Rajasthan

Sugarcane (late sown): COL8001.