



National Agromet Advisory Service Bulletin



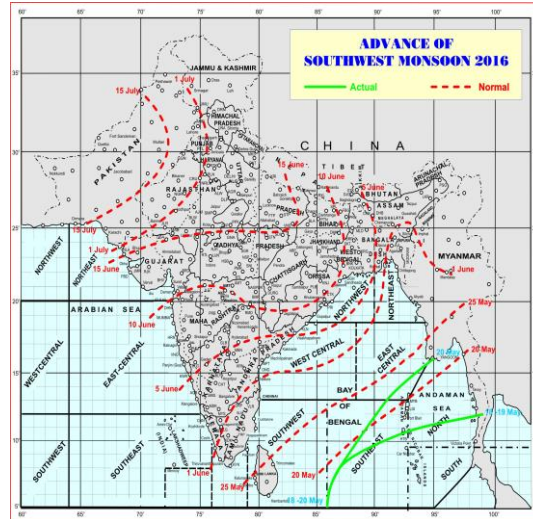
Friday 20th May 2016
(For the period 20th to 24th May 2016)



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

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

Monsoon Watch



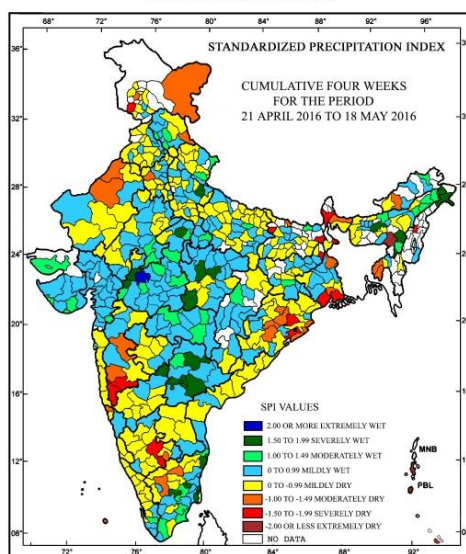
- The southwest monsoon has further advanced into some parts of southeast Bay of Bengal, remaining parts of Andaman Sea and Andaman Islands.
- The Northern Limit of Monsoon (NLM) passes through Lat. 5.0°N/ Long.86.0°E, Lat. 8.0°N/ Long. 87.0°E, Hut Bay, Lat. 13.0°N / Long. 91.0°E. and Lat. 16.0°N / Long. 95.0°E. Conditions are favourable for further advance of southwest monsoon into some more parts of south Bay of Bengal, Andaman Islands and remaining parts of north Andaman Sea during next 48 hours.

Cyclonic Storm 'ROANU'

- The Cyclonic Storm '**ROANU**' over westcentral Bay of Bengal moved northeastwards at a speed of 25 kmph during past 6 hours and lay centred at 0830 hours IST of today, the 20th May 2016, near Lat. 18.0°N and Long. 84.2°E over westcentral & adjoining northwest Bay of Bengal, about 40 km southsoutheast of Kalingapatnam(Andhra Pradesh), 360 km southsouthwest of Paradip (Odisha) and 920 km southwest of Chittagong (Bangladesh). The system is likely to move northeastwards along & off north Andhra Pradesh and Odisha coasts and further intensify in to severe cyclonic storm during next 24 hours. Thereafter, the system is likely to move eastnortheastwards and cross south Bangladesh coast between Khepupara and Cox's Bazar close to Chittagong in the night of 21st May as a cyclonic storm.

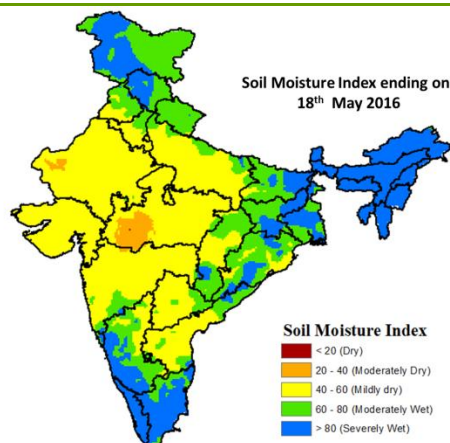
Standardised Precipitation Index Four Weekly for the Period 21st April to 18th May 2016

MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE



- Extremely/severely wet conditions experienced in few districts of Arunachal Pradesh; Telangana; Kamrup, N. C. Hills, Hailakandi districts of Assam; Bareilly district of Uttar Pradesh; Gwalior, Jhabua, Ratlam, Ujjain, Chhindwara, Damoh, Katni districts of Madhya Pradesh; Chennai, Kanchipuram, Karur, Nagapattinam, Perambalur, Tiruvarur, Karaikal districts of TamilNadu & Puducherry; Bidar district of Karnataka.
- Extremely/Severely dry conditions experienced in most districts of Andaman & Nicobar Islands; few districts of West Bengal; Jaintia Hills district of Meghalaya; Kohima district of Nagaland; Dhenkanal, Khurda districts of Odisha; Pakur district of Jharkhand; Katihar, Siwan districts of Bihar; Rajouri district of Jammu & Kashmir; Kolhapur, Sangli districts of Maharashtra; Tumkur, Ramanagara districts of Karnataka.
- Moderately dry conditions experienced in many districts of Tripura; few districts of West Bengal; Delhi; East Kameng district of Arunachal Pradesh; Angul, Boudhgarh, Deogarh, Jagatsinghpur, Kendrapara, Kandhamal, Puri districts of Odisha; Sitamarhi district of Bihar; Hisar district of Haryana; Kinnaur district of Himachal Pradesh; Ladakh (Leh), Badgam districts of Jammu & Kashmir; Bikaner, Sri Ganganagar districts of Rajasthan; North Goa district of Konkan & Goa; Ahmednagar, Satara districts of Maharashtra; Dharmapuri, Erode districts of TamilNadu; Bangalore Urban district of Karnataka; Lakshadweep district of Lakshadweep.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

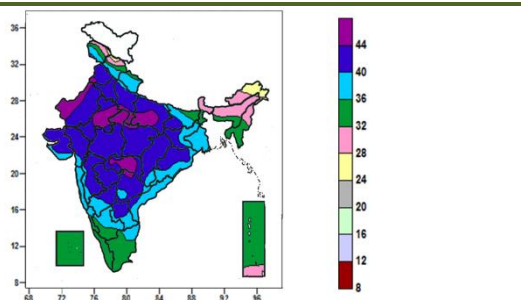
Soil Moisture Index ending on 18th May 2016



- Soil Moisture Index indicates extremely wet condition in South Karnataka, North-East Region, West Bengal, Tamil Nadu, few districts in Himachal Pradesh, Jammu & Kashmir, Bihar and Jharkhand. Moderate wet condition in Andhra Pradesh, Chhattisgarh, Odisha, Uttarakhand and few districts in Uttar Pradesh and Bihar. The remaining regions of the country show Mild Dry condition.

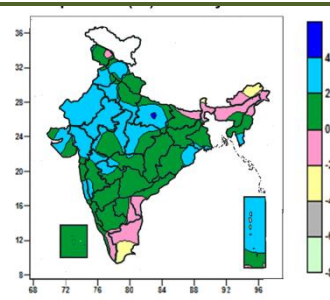
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 18.05.2016

Actual Mean Maximum Temperature (°C) in India for the week ending 18.05.2016



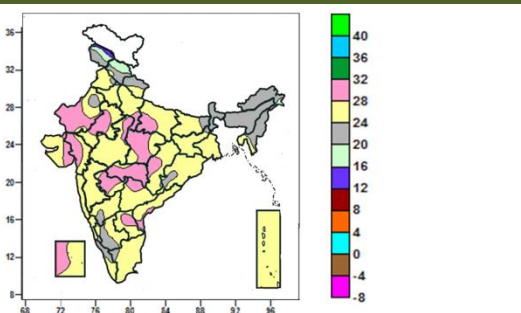
- Mean maximum temperature was between 44 to 48°C over many parts of Vidarbha, some parts of Uttar Pradesh, Rajasthan, West Madhya Pradesh, and isolated pockets of Punjab, East Madhya Pradesh and Telangana.
- Mean maximum temperature was between 40 to 44°C over many parts of Punjab, Haryana & Delhi, Uttar Pradesh, Jharkhand, Rajasthan, Madhya Pradesh, Chhattisgarh, Gujarat, Madhya Maharashtra, Marathwada, North Interior Karnataka, Telangana, some parts of Bihar, Vidarbha, Odisha, Coastal Andhra Pradesh and Rayalaseema.
- Mean maximum temperature was between 36 to 40°C over rest of the country except Sub- Himalayan west Bengal and Sikkim, North East India, Lakshadweep, Kerala, Andaman & Nicobar Islands, many parts of Jammu & Kashmir, Himachal Pradesh, Coastal Karnataka, Tamil Nadu, some parts of Uttarakhand, Bihar and South Interior Karnataka, where it was between 24 to 36°C.

Mean Maximum Temperature (°C) Anomaly in India for the week ending 18.05.2016



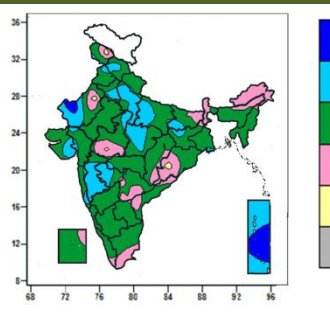
- Mean maximum temperature was above normal by 4 to 6°C over isolated pockets of East Uttar Pradesh.
- Mean maximum temperature was above normal by 2 to 4°C over West Rajasthan, many parts of Himachal Pradesh, Punjab, Haryana & Delhi, East Rajasthan, East Uttar Pradesh, Mizoram, Madhya Pradesh, Gujarat, Andaman & Nicobar Islands, some parts of West Uttar Pradesh, Odisha, Maharashtra, isolated pockets of Jammu & Kashmir, Uttarakhand, Gangetic West Bengal.
- It was normal to near normal over rest of the country except some parts of Sikkim, Arunachal Pradesh and Tamil Nadu, where it was below normal by 2 to 4°C.

Actual Mean Minimum Temperature (°C) in India for the week ending 18.05.2016



- Mean minimum temperature was between 12 to 16°C over isolated pockets of Jammu and Kashmir.
- Mean minimum temperature was between 16 to 20°C over some parts of Jammu & Kashmir and Himachal Pradesh.
- Mean minimum temperature was between 20 to 28°C over rest of the country except many parts of West Rajasthan, Gujarat region, East Madhya Pradesh, Vidarbha, Marathwada, some parts of East Rajasthan, Uttar Pradesh, Chhattisgarh, Telangana, Rayalaseema, Lakshadweep, isolated pockets of West Madhya Pradesh and Coastal Andhra Pradesh where it was between 28 to 32°C.

Mean Minimum Temperature (°C) Anomaly in India for the week ending 18.05.2016

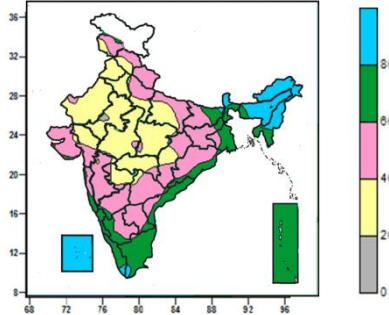


- Mean minimum temperature was above normal by 4 to 6°C over some parts of Andaman & Nicobar Island and isolated pocket of West Rajasthan.
- Mean minimum temperature was above normal by 2 to 4°C over many parts of West Uttar Pradesh, Madhya Maharashtra, Marathwada, Andaman & Nicobar Islands, some parts of Himachal Pradesh, Haryana & Delhi, Bihar, Madhya Pradesh, East Uttar Pradesh, West Rajasthan, Saurashtra & Kutch. and isolated pockets of Jammu & Kashmir, Uttarakhand, Punjab, Jharkhand, Gangetic West Bengal, Vidarbha, Gujarat region and Konkan & Goa.
- Mean minimum temperature was normal to near normal over rest of the country except isolated pockets

of Jammu & Kashmir, West Rajasthan, West Madhya Pradesh and Odisha where it was below normal by 2 to 4°C.

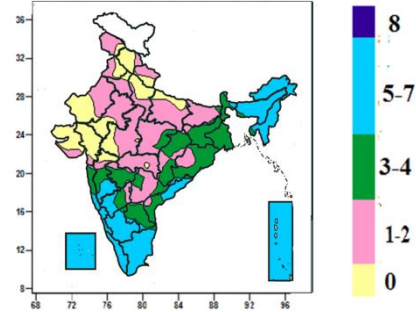
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 18.5.2016

Relative Humidity (%) over India for the week ending 18.05.2016



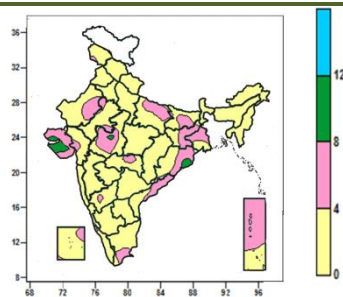
- Mean Relative humidity was above 80% over Arunachal Pradesh, Sikkim, Nagaland, Manipur Lakshadweep, many parts of Assam & Meghalaya, isolated pockets of Bihar, Sub-Himalayan West Bengal, Mizoram, Tripura, Tamil Nadu and Kerala.
- Mean Relative humidity was between 60 to 80% over Coastal Karnataka, Andaman & Nicobar Islands, many parts of Mizoram, Tripura, Sub-Himalayan West Bengal, Gangetic West Bengal, Kerala, Coastal Andhra Pradesh, Tamil Nadu, Kerala, some parts of Bihar, Odisha, South Interior Karnataka, Konkan & Goa and isolated pockets of Jammu & Kashmir, Jharkhand, Assam & Meghalaya, Saurashtra & Kutch, Chhattisgarh, Telangana, North Interior Karnataka, Rayalaseema.
- Mean Relative humidity was between 20 to 60% over rest of the country except, isolated pocket of East Rajasthan, where it was below 20%.

Cloud amount (okta) over India for the week ending 18.05.2016



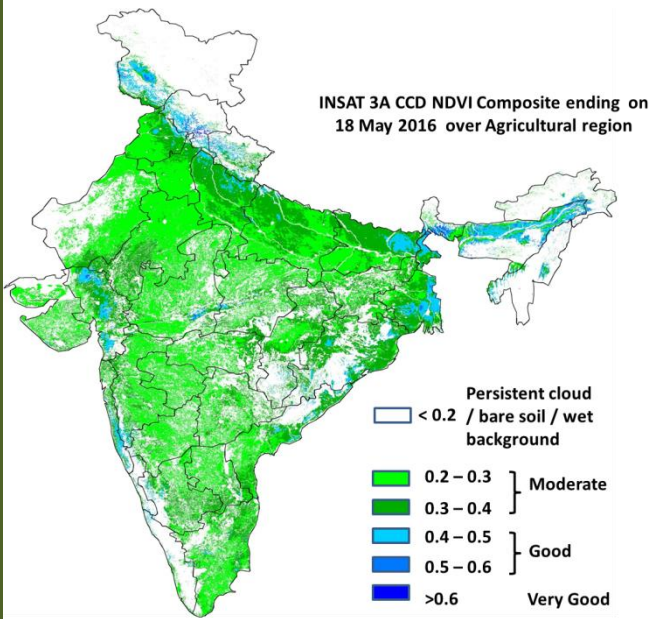
- Sky remained generally cloudy (5-7 okta) over Arunachal Pradesh, Nagaland, Manipur, Mizoram, Coastal Karnataka, Kerala, Andaman & Nicobar Islands, Lakshadweep, many parts of Assam & Meghalaya, Tripura, South Interior Karnataka, Tamil Nadu, some parts of Madhya Maharashtra, North Interior Karnataka, Konkan & Goa, Coastal Andhra Pradesh and isolated pockets of Sub-Himalayan West Bengal & Sikkim, Odisha, Rayalaseema.
- Sky remained partly cloudy/mainly clear (3-4 okta/1 to 2) over rest of the country except many parts of Himachal Pradesh, West Uttar Pradesh, Punjab, Gujarat, some parts of Haryana & Delhi, Uttarakhand, East Uttar Pradesh, Rajasthan, West Madhya Pradesh, Madhya Maharashtra, isolated pockets of Jammu & Kashmir and Vidarbha, where it was clear sky (0 okta).

Wind speed (knots) over India for the week ending 18.05.2016



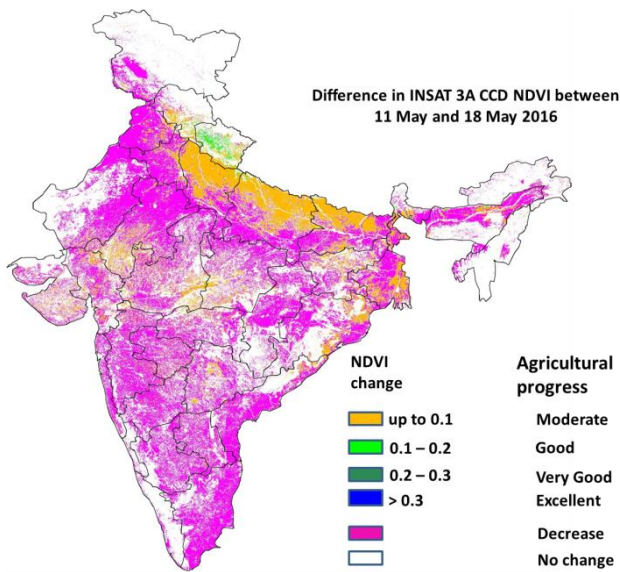
- Mean wind speed was 8 to 12 knots over some parts of Saurashtra & Kutch and isolated pockets of West Madhya Pradesh and Odisha.
- Mean wind speed was 4 to 8 knots over many parts of Jharkhand, Gangetic West Bengal, Saurashtra & Kutch, Andaman & Nicobar Islands, some parts of Rajasthan, East Uttar Pradesh,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

INSAT 3A CCD NDVI COMPOSITE ENDING ON 18th MAY 2016 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is good over Gujarat, patches in East Bihar, Coastal Andhra Pradesh, West Bengal, Assam, Coastal Maharashtra, patches in Uttar Pradesh and Himachal Pradesh where NDVI varies from 0.4 to 0.6. Agricultural growth was moderate 0.2 to 0.4 over most parts of Punjab, Haryana, remaining parts of Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Gujarat, Telangana, Maharashtra, Karnataka and Odisha.

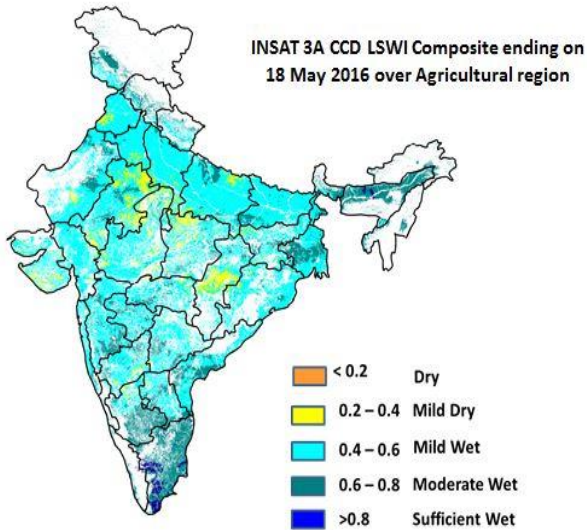
Difference in INSAT 3A CCD NDVI between 11th and 18th May 2016



- Moderate progress in NDVI is observed in northern regions of Uttar Pradesh, Bihar, Uttarakhand, patches in West Bengal, Odisha, East Rajasthan, central parts of Madhya Pradesh and few patches in Telangana and Himachal Pradesh. Decrease in NDVI is observed over the rest of the regions of country.

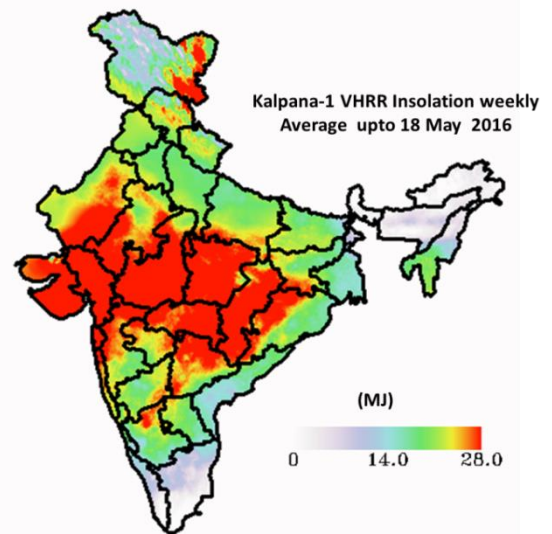
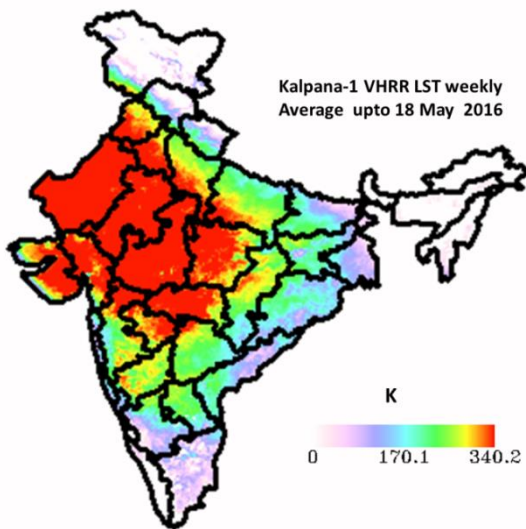
- INSAT 3A CCD NDVI composite maps for the week ending on 18th May 2016 for different States are given in Annexure II.

INSAT 3A CCD LSWI COMPOSITE ENDING ON 18th MAY OVER AGRICULTURAL REGION OF INDIA



- Mild Dry conditions are observed in Karnataka, Telangana, Andhra Pradesh, patches in eastern Rajasthan, Northern Madhya Pradesh, southern part of Haryana and Saurashtra region. Moderate wet conditions are observed in east Uttar Pradesh, patches in Rajasthan, Jammu & Kashmir and North East region. The remaining regions of India show mild wet conditions. Also, patches of sufficient wet conditions are observed in Tamilnadu.

OTHER SAT MET PRODUCTS



Weather Forecast for next 5 days valid upto 0830 hours of 25th May 2016

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- No significant change in maximum temperatures over west and adjoining central and northeast India during next 2-3 days.
- Maximum temperatures likely to fall by 2-3°C over Indo-gangetic plains.

5 Day Rainfall Forecast (MID DAY) 20th May 2016

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

% Station Reporting Rainfall

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

Weather Warning during next 5 days

- **20 May (Day1):** Heat wave to severe heat wave conditions very likely at a few places over Rajasthan, West Madhya Pradesh and Gujarat; Heat wave conditions very likely at a few places over East Madhya Pradesh and at isolated places over Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Vidarbha and Madhya Maharashtra. Heavy to very heavy rain very likely at a few places with isolated extremely falls over Odisha; Heavy to very heavy rainfall very likely at a few places over Coastal Andhra Pradesh and at isolated places over Gangetic West Bengal; Heavy rain at isolated places very likely over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamilnadu and Kerala. Thunderstorm accompanied with squall likely at isolated places over Bihar, Jharkhand and Coastal Andhra Pradesh. Wind speeds reaching 75-85 kmph gusting to 95 kmph is very likely to prevail along & off north Odisha coast; 60-70 kmph gusting to 80 very likely to prevail along & off Coastal Andhra Pradesh coast and 55-65kmph

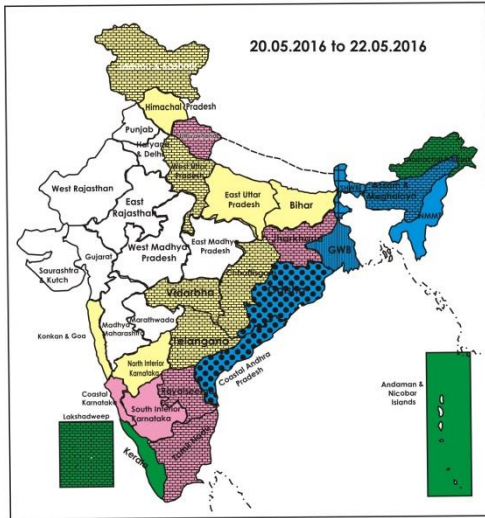
gusting to 75 kmph very likely to prevail along & off Gangetic West Bengal coast. Fishermen are advised not to venture along & off Coastal Andhra Pradesh, Odisha and West Bengal coasts.

- **21 May (Day 2):** Heat wave to severe heat wave conditions very likely at a few places over West Rajasthan, West Madhya Pradesh and Gujarat; Heat wave conditions very likely at a few places over East Rajasthan and at isolated places over Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, East Madhya Pradesh, Vidarbha. Heavy to very heavy rain very likely at a few places with isolated extremely falls over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura; Heavy to very heavy rainfall very likely at a few isolated places over north Coastal Andhra Pradesh and Heavy rain at isolated places very likely over gangetic West Bengal, north Odisha. Fishermen are advised not to venture along & off Gangetic West Bengal and Odisha coasts.
- **22 May (Day 3):** Heat wave conditions very likely at a few places over Rajasthan, West Madhya Pradesh and Gujarat; Heat wave conditions very likely at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and Vidarbha. Heavy to very at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Heavy at isolated places over Sub-Himalayan West Bengal & Sikkim. Thunderstorm accompanied with squall likely at isolated places over Uttar Pradesh.
- **23 May (Day 4):** Heat wave conditions very likely at a few places over Rajasthan; Heat wave conditions very likely at isolated places over West Madhya Pradesh and Gujarat. Heavy to very heavy rainfall very likely at isolated places over Kerala and heavy at isolated places over Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura and Lakshadweep. Thunderstorm accompanied with squall likely at isolated places over Uttar Pradesh, Bihar and Jharkhand.
- **24 May (Day 5):** Heat wave conditions very likely at isolated places over Rajasthan. Heavy to very heavy rainfall likely at a few places over Kerala and at isolated places over Coastal Karnataka. Heavy rainfall likely at isolated places over Sub-Himalayan West Bengal & Sikkim and Lakshadweep. Thunderstorm accompanied with squall likely at isolated places over Uttar Pradesh, Bihar and Jharkhand. Dust/thunderstorm accompanied with squall likely at isolated places over Punjab and Haryana, Chandigarh & Delhi.

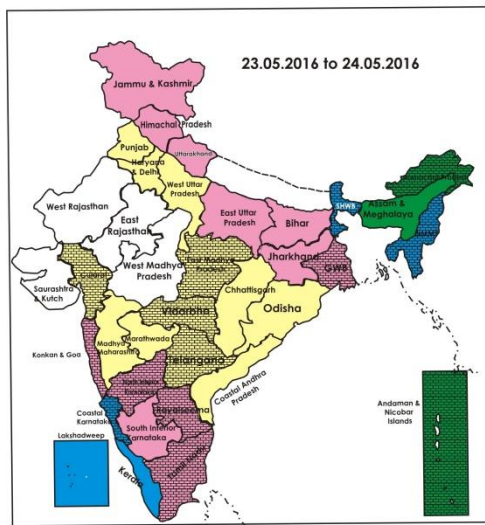
Weather Outlook for subsequent 2 days from 25th to 27th May 2016

- Rain/thunderstorms likely at many places over northeastern states and at a few places over Sub-Himalayan West Bengal & Sikkim and south Peninsular India and at isolated places over east India.
- Rain/snow likely at isolated places over western Himalayan region.

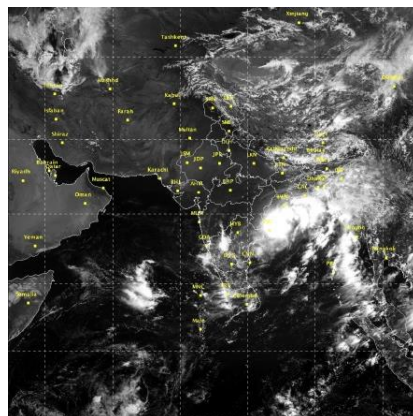
Weather Forecast Map (Valid upto 0830 hours of 25th May, 2016)



- Most places
- Most/Few places/Dry
- Most/ Few places
- Most / Many places
- Most/Many / Isolated places
- Most / Isolated places
- Most / Many/ Few places
- Most / Few / Isolated places
- Most/Many places/ Dry
- Most / Isolated places/ Dry
- Many places
- Many / Few places
- Many / Isolated places
- Many / Few / Isolated places
- Many / Few places/ Dry
- Many / Isolated places/Dry
- Many places/ Dry
- Few places
- Few / Isolated places
- Few/ Isolated places/Dry
- Few places/Dry
- Isolated places
- Isolated places/ Dry
- Dry



Satellite image dated, 20.05.2016 0600 UTC



Salient Advisories

- In Association with the cyclonic storm 'ROANU' over westcentral & adjoining northwest Bay of Bengal, rain/thundershowers is very likely at most places along with heavy to very heavy rain very likely at a few places with isolated extreme falls over **Odisha** and heavy to very heavy rain very likely at a few places over **Coastal Andhra Pradesh** on 20th, heavy to very heavy rain very likely at a few isolated places over **north Coastal Andhra Pradesh** on 21st May, at isolated places over **Gangetic West Bengal** on 20th and over **north Odisha** on 21st May and wind speeds reaching 75-85 kmph gusting to 95 kmph is very likely to prevail along and off north Odisha Coast, 60-70 kmph gusting to 80 kmph very likely to prevail along and off Coastal Andhra Pradesh Coast and 55-65 kmph gusting to 75 kmph very likely to prevail along and off Gangetic West Bengal Coast on 20th May. In view of the above the following advisories are suggested:
 - **In Coastal Andhra Pradesh;**
 - Arrange mechanical support to banana, young fruit plants, staking of vegetables and propping for sugarcane to prevent the crops from lodging due to strong winds. Provide adequate drainage to avoid water stagnation in the standing crop fields. Postpone sowing of sesamum.
 - **In Odisha;**
 - Harvest matured pods of pulses before rain if possible or immediately after rain to avoid viviparous germination of seeds in the pods itself. Dry the pods. Harvest the matured groundnut to avoid viviparous germination of kernels and rotting may occur if not harvested immediately after rain stops. Make bundles of the harvested plants and dry them in such a way that the pods should be in the up side and plants in down side. Do not keep harvested produce in the field and place them in safe storage structures.
 - Arrange adequate drainage channels in standing crop fields.
 - Arrange for adequate drainage to remove excess water from rice fields and maintain 8-10 cm of water.
 - Arrange for propping in sugarcane and banana crops to prevent lodging due to high winds.
 - Keep animals indoor during the period.
 - **In Gangetic West Bengal;**
 - Provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Harvest matured rice immediately after rain. Keep already harvested produce at safer places. Prepare strong fencing for protect the betel vine crop from strong wind.
- As rain/thundershowers likely at most/many places over **Kerala** during the period and over **Coastal Karnataka** on 23rd & 24th May along with heavy to very heavy rain very likely at a few/isolated places over Kerala on 23rd and 24th May, at isolated places over Coastal Karnataka on 24th May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. arrange for adequate drainage to avoid water stagnation in the crop fields. Undertake rain water harvesting for carrying out future agricultural activities.
- **In Kerala**, undertake nursery preparation/nursery sowing of rice and in the Problem Area Zone and North Zone , continue land preparation for direct sowing of rice after current spells of heavy rain .
- **In Coastal Karanataka**, continue land preparation for nursery sowing of rice and in **South Interior Karnataka**, continue land preparation and keep the seeds ready for pre-monsoon sowing of *kharif* ragi (Indaf -9), sesame (Navile-1, T-7), cowpea (TVX-944, KBC-1), green gram (PS-16, PDM-84,178) and black gram (Karagao-3, T-9, Rashmi (LBG-625). Strengthen the bunds to facilitate conservation of rainwater due to pre-monsoon showers.
- **In Assam**, continue nursery raising of *Salirice* and sowing of *Olitorius*jute after current spells of heavy rain.
- As rain/thundershowers likely at many places over **Arunachal Pradesh** on 22 & 23rd, at most/many places over **Assam & Meghalaya** and **Nagaland, Manipur, Mizoram & Tripura** during the period, over **Sub-Himalayan West Bengal & Sikkim** from 22nd to 24th and over **Gangetic West Bengal** on 20th and 21st and at many places over **Andaman & Nicobar Islands** from 20th to 22nd May along with heavy to very heavy rain likely at a few places with isolated extreme falls over Assam & Meghalaya on 21st and heavy to very heavy rain likely at isolated places on 20th & 22nd , heavy to very heavy rain at isolated places over Nagaland, Manipur, Mizoram & Tripura from 20th to 23rd May, over Gangetic West Bengal from 20th to 23rd and heavy rain likely at isolated places over Sub-Himalayan West Bengal & Sikkim from 22nd to 24th May, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Undertake rain water harvesting.

- As thunderstorm accompanied with squall likely at isolated places over **Bihar and Jharkhand** on 20th, 23 & 24th, over **Uttar Pradesh** from 22nd to 24th May and over Coastal Andhra Pradesh on 20th May, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep already harvested produce at safer places.
- As dust/thunderstorm accompanied with squall likely at isolated places over **Punjab and Haryana, Chandigarh & Delhi** on 24th May, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane and keep harvested produce at safer places.
- As heat wave/severe heat wave conditions likely to prevail at a few places over **Rajasthan** during the period and and over **West Madhya Pradesh** on 20th to 22nd and at a few/isolated places over Gujarat from 20th to 23rd, heat wave conditions likely to prevail at a few/isolated places over **East Madhya Pradesh** on 20th & 21st, at isolated places over **Vidarbha** from 20th to 22nd, over **Madhya Maharashtra** on 20th, over **Uttar Pradesh, Punjab, Haryana, Chandigarh & Delhi** from 20th to 22nd May and over **west Uttar Pradesh** on 22nd May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Also undertake mulching with straw/polythene to conserve soil moisture.

Detailed Zonewise Agromet Advisories

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



Banana



Groundnut



Sugarcane



Cotton

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala; all districts of Coastal Karnataka; all districts of Tamil Nadu except Dharmapuri, Erode and Krishnagiri; Belagavi, Dharwad, Gadag and Haveri districts of North Interior Karnataka; Chamarajnagar, Chikkamagaluru, Davangere, Hassan, Kodagu, Mysuru and Shivamogga districts of South Interior Karnataka; Nellore and Vizianagaram districts of Coastal Andhra Pradesh and Chittoor district of Rayalaseema; Weather remained mainly dry over rest of the region.
- **Advisories:**
 - In Association with the cyclonic storm 'Roanu' over westcentral Bay of Bengal, rain/thundershowers at most places along with heavy to very heavy rain very likely at few places over Coastal Andhra Pradesh on 20th; heavy to very heavy rainfall very likely at a few isolated places over north Coastal Andhra Pradesh on 21st May and wind speeds reaching 60-70 kmph gusting to 80 kmph is very likely to prevail along and off Coastal Andhra Pradesh on 20th May. In view of the above the following advisories are suggested: farmers are in these areas are advised to arrange mechanical support to banana, young fruit plants, staking of vegetables and propping for sugarcane to prevent the crops from lodging due to strong winds. Provide adequate drainage to avoid water stagnation in the standing crop fields. Postpone sowing of sesamum.
 - As rain/thundershowers likely at most/many places over Kerala during the period and over Coastal Karnataka on 23rd & 24th May along with heavy to very heavy rain very likely at a few/isolated places over Kerala on 23rd and 24th May, at isolated places over Coastal Karnataka on 24th May, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. arrange for adequate drainage to avoid water stagnation in the crop fields. Undertake rain water harvesting for carrying out future agricultural activities.
 - **Kerala:**
 - In Kerala, continue nursery preparation/nursery sowing of *Viruppu* rice after current spells of heavy rain.
 - In the Problem Area Zone, undertake planting of coconut seedlings and continue land preparation for direct sowing of rice after current spells of heavy rain.
 - In the Northern Zone, due to high wind speed, provide support to bananas and continue harvesting of rice and land preparation for direct sowing of rice after current spells of heavy rain.
 - In the Southern Zone, continue planting of pepper in Pathanamthitta district, coconut, bananas and cucurbits like pumpkin, cucumber, bottlegourd in Kollam district and planting of coconut seedlings in Thiruvananthapuram district after current spells of heavy rain.

- In the High Altitude Zone, continue planting of coconut, arecanut, pepper and cardamom after current spells of heavy rain.
- In the Problem Area Zone, prevailing weather conditions (humid conditions and heavy rain) are congenial for quick wilt disease in pepper. If noticed, as a prophylactic measure, spray 1% Bordeaux mixture against fungal diseases.
- In the Northern Zone, prevailing weather conditions are congenial for the spread of leaf eating caterpillars in coastal areas. This can be effectively controlled by releasing *Trichospilus pupivora* parasites.
- In the Central Zone, prevailing weather conditions (humid conditions and heavy rain) are congenial for incidence of Epilachna beetle in vegetables. Spray Quinalphose 2 ml @ in 1 litre of water after current spells of rain, if noticed.
- In the Southern Zone, prevailing humid conditions are congenial for root wilt disease in coconut which will be more pronounced along with leaf rot. To control, remove the rotten parts of leaves in the affected palms and apply Copper oxychloride /Dithane M 45 @ 4g/litre of water on the affected palms after current spells of rain.

▪ **Karnataka:**

- In Southern Dry Zone, undertake sowing of pulses like green gram, black gram, horse gram, cowpea, field bean etc. and green manure crops.
- In Eastern Dry Zone of Karnataka, continue land preparation for sowing of *kharif* crops. Keep the seeds ready for sowing of (medium to long duration varieties) *kharif* crops ragi (Indaf - 9, ML-365), sesame (Navile-1, T-7), groundnut (TMV-2, JL-24, KCG-6), redgram (TTB-7, BRG-1, 2, 4, 5), cowpea (TVX-944, KBC-1), green gram (PS-16, PDM-84, 178) and black gram (Karagao-3, T-9, Rashmi (LBG-625). Strengthen the bunds which will facilitate conservation of rainwater due to pre-monsoon showers. Ploughing across the slope and land leveling (which helps in conserving more rain water in the soil) is recommended. Undertake harvesting of mango without dropping of fruit on the soil to avoid the damage in clear weather.
- In Central Dry Zone, apply irrigation in arecanut and coconut either in furrows or by drip irrigation method. In the areas which rainfall received; undertake ploughing of fields across the slope.
- In Southern Transition Zone, undertake land preparation for *kharif* sowing, continue planting of ginger/turmeric utilizing the realised and expected rainfall. Raised bed with adequate drainage is necessary for sowing of ginger.
- In North Dry Zone, continue land preparation for *kharif* sowing utilizing the realized rainfall; keep the seeds and other inputs ready for *kharif* sowing.
- In Hill Zone of Karnataka, some parts of the district received rain during last week. This is the best time for the raising and multiplication of seedlings of black pepper. Continue sowing of green manure crops utilizing the realised rainfall.
- In Southern Dry Zone, North East Transition Zone, North Transition Zone, North East Dry Zone and North Dry Zone, continue summer deep ploughing across the slope utilizing the realised and expected rainfall to improve infiltration and conservation of more rain water; continue land preparation and keep inputs ready for *kharif* sowing.
- Continue harvesting of fully matured fruits of mango to avoid the damage due to rain in North Transition Zone.
- In North Transition Zone and North East Transition Zone, apply irrigation in sugarcane either in alternate rows or by drip irrigation method. Continue mulching in sugarcane with dry leaves and grass to conserve soil moisture.

▪ **Andhra Pradesh:**

- As thunderstorm accompanied with squall likely at isolated places over Coastal Andhra Pradesh on 20th May, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep already harvested produce at safer places.
- In the Krishna Godavari Zone, continue summer ploughings and land preparation for sowing of pulses (red and green gram) and cotton after current spells of heavy rain.
- In the North Coastal Zone, continue sowing of sesamum, summer ploughings for planting rainfed sugarcane, intercultivation ratoon crops of sugarcane in between rows and land preparation for sowing pre *kharif* crops viz. sesamum, bajra etc. and green manure crops after current spells of heavy rain.
- In the Scarce Rainfall Zone, continue deep summer ploughing in areas which have received rainfall.
- In the High Altitude Tribal Zone, continue summer ploughings by using summer showers and land preparation for sowing of rice (early *kharif* plantings: Pushkala, Rasi, IR64), maize (medium duration hybrids/varieties (90-100 days): DHM 111, DHM 117, DHM-119, KH 510, Bio 9637, KH 9541, MCH 2, Kohinoor, Prabhal and Bisco 855) and groundnut (Kadiri-7 Bold, Kadiri-8, Bold, kadiri-6 Kadiri-9, Kadiri Harithandra, Kadiri Anantha).
- In the Southern Zone, continue nursery sowing of rice (MTU 1010, Nellore masuri) and in Nellore district, inter cropping with crops like maize, jowar etc., in areas where rice sowing has not been taken up after proper seed treatment) and continue deep summer ploughings utilizing the summer showers.
- In the Southern Zone, prevailing weather conditions are congenial for incidence of phyllody in late sown sesamum crop. To control, spray Immidachlopid @ 0.3ml/litre of water after current spells of rain.

▪ **Telangana:**

- In the Northern Telangana Zone, dig the pits for planting new orchards, continue summer ploughings in the areas which have received sufficient rainfall and undertake harvesting of matured vegetables.
- In the Southern Telangana Zone, continue summer ploughing to control weeds, hibernating pests and disease spores that may damage *kharif* crops and dig pits for planting new orchards utilizing the realized and expected

rainfall. In view of the isolated rainfall forecast, protect the produce of harvested crop under roof and cover the produce transported to market with tarpaulin.

- In the Southern Telangana Zone, incidence of thrips is noticed in Chillies. To control, spray Fipronil @ 2 ml or Spinosad @ 0.3 ml per litre of water on a non rainy day.

▪ **Tamil Nadu:**

- In the Cauvery Delta Zone drain the excess rainwater present in the rice, black gram, sesame, sugarcane and cotton fields to improve better aeration in the root zone. Raise green manure crops like daincha, sunnhemp and kolunji to utilize the summer rainfall.
- In the North Eastern Zone, drain out excess water from standing crop fields.
- In the Western Zone, drain out excess water from crop fields of maize, cumbu, sorghum and recently planted turmeric rhizome to avoid rhizome rot. Since increased wind speed is expected, undertake propping in 5 months old banana and sugarcane.
- In the South Zone, drain out excess water from standing crop fields as winds with more speed are expected in the coming days, provide staking for banana and undertake propping for sugarcane to prevent the crops from damage.
- In Karaikal, drain out excess water from standing crop fields and undertake summer ploughing to control weeds, pest and diseases utilizing the summer showers.
- In the North Western Zone, undertake land preparation for groundnut cultivation(Semi spreading variety, Co-6)
- In the High Altitude Hilly Zone, continue pruning in tea plantation in 1/3 of their land and planting of potato (new disease resistant potato varieties Kufri Gridhari and Kufri Swarna).
- Suitable varieties for sowing are given in Annexure III.

❖ **Animal Husbandry**

- In the North Eastern Zone of Tamil Nadu, protect the feed ingredients from rainfall to avoid development of aflatoxin.
- In the North Western Zone of Tamil Nadu, prevailing cloudy sky and moderate rains, do not stock raw materials or finished feeds in the open as they would absorb moisture and end up forming aflatoxins. However, addition of toxin binders and liver conditioners is recommended till the rainy days are over.
- In North Interior Karnataka, leave the buffaloes in ponds during afternoon hours or sprinkle cold water 2-3 times a day on the body of the animal to overcome the heat. Maintain optimum temperature by thick hay thatch as a roofing material in poultry sheds.

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



Banana



Rice



Okra



Cabbage

- **Realised Rainfall:** Rainfall occurred in Changlang, East Siang, Lohit, Lower Dibang Valley, Papumpara, Tawang, Tirap, Upper Siang, Upper Subansari, West Kameng districts of Arunachal Pradesh; all districts of Assam except Dhemaji; East Garo Hills, East Khasi Hills, Ri-Bhoi and West Garo Hills districts of Meghalaya; Aizwal and Saiha districts of Mizoram; Chandel, Imphal East, Imphal West and Thoubal districts of Manipur; Dimapur, Kohima and Phek districts of Nagaland and all districts of Tripura. Weather remained mainly dry over rest of the region.

• **Advisories:**

- As rain/thundershowers likely at many places over Arunachal Pradesh on 22nd & 23rd, at most/many places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during the period, along with heavy to very heavy rain likely at a few places with isolated extreme falls over Assam & Meghalaya on 21st and heavy to very heavy rain likely at isolated places on 20th & 22nd, heavy to very heavy rain at isolated places over Nagaland, Manipur, Mizoram & Tripura from 20th to 23rd May, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Arrange for adequate drainage to avoid water stagnation in the crop fields. Undertake rain water harvesting.

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

- In Assam, continue nursery raising of *Sali* rice and sowing of *Olitorius* jute after current spells of heavy rain.
- In Hill Zone of Assam, apply second mulching with any suitable materials at 40 days after planting of ginger. Before mulching earthing up along with weeding should be done.
- In Lower Bramhapurtra Valley Zone of Assam, continue nursery bed preparation and sowing of Sali rice of varieties Ranjit and Bahadur in LBV Zone and sowing of Olitorious jute and mesta after current spells of heavy rain.
- In Upper Bramhaputra Valley Zone of Assam, provide small drains at required interval in fields of cucurbitaceous

vegetables, maize, pulse to drain out the excess water. Undertake planting of layered seedlings of guava in the orchard during this time.

- In Barak Valley Zone and Central Brahmaputra Valley Zone of Assam, undertake harvesting of *boro* rice at the earliest.
- In Central Brahmaputra Valley Zone of Assam, continue planting of ginger, turmeric after current spells of heavy rain. Undertake propping up in sugarcane crop as thunder squalls are expected. Continuous showers during last couple of days may result in complete wash out of seeds/seedlings of jute. Farmers are advised for re-sowing of Oiltorius varieties if already sown and emerged seedlings are washed away after current spells of heavy rain.
- In North Bank Plain Zone of Assam, continue planting of sucker and crown of pine apple after current spells of heavy rain.
- In Meghalaya, continue land preparation and planting of ginger/turmeric after current spells of heavy rain.
- In Arunachal Pradesh, continue nursery sowing and transplanting of rice, sowing/transplanting of summer vegetables like cucumber, sponge gourd, bottle gourd and ladies finger, summer pulses, planting of ginger after current spells of heavy rain. Avoid water stagnation in the newly sown vegetable field. Continue planting of saplings of fruits/fodder and timber trees.
- In Arunachal Pradesh, spray Triazophos 40 EC @ 4 ml/litre against stem borer in rice nursery as well as in main fields. Spray Carbandazim/Mancozab @ 2 g/litre to control fungal diseases in summer vegetables. Undertake plant protection measures after current spells of rain.
- In Hill Zone of Assam, there is chance of attack of stem borer in transplanted normal *ahu* rice and blast in transplanted early *ahu* rice due to the prevailing weather conditions. Spray Carbofuran 3G@ 30 kg/ha or Phorate 10G @ 10kg/ha to control stem borer in rice and spray Carbendazim @ 1g/ litre against blast in transplanted early *ahu* rice. Undertake plant protection measures after current spells of rain.
- In Lower Brahmaputra Valley Zone of Assam, in the prevailing weather, there is chance of attack of gall midge in normal *ahu* rice. To control gall midge attack, apply Chlorpyrifos 20Ec @ 0.02% and Carbofuran3G @4kg and Phorate 10G @ 1.3kg per bigha after current spells of rain.
- In Upper Brahmaputra Valley Zone of Assam, prevailing weather is favourable for early shoot borer infestation in sugarcane crop. Shoot borer infestation may be checked by burying or burning the infested canes. Proper earthing up will reduce the early shoot borer infestation.
- In Central Brahmaputra Valley Zone and North Bank Plain Zone of Assam, there is chance of bunchy top disease in banana, the aphid vector should be controlled by spraying Rogor or Dimacron @ 1ml /litre of water after current spells of rain.
- In North Bank Plain Zone of Assam, spray Quinalphos 2.5 ml/10 litre of water to control leaf folder, stem borer, case worm in *ahu* rice after current spells of rain.
- **Nagaland, Manipur, Mizoram and Tripura:**
- In Nagaland, rain water harvesting ponds should be dug at low land to collect the rain water. Avoid water stagnation in the field of maize. Continue planting of ginger after current spells of heavy rain.
- In Manipur, continue sowing of soybean, groundnut, black gram and pit preparation for fruit plants like banana, lime, lemon, orange, kiwi after current spells of heavy rain. Continue land preparation for sowing of *kharif* rice.
- In Mizoram, continue nursery sowing of rice and sowing of khasi mandarin/acid lime, passion fruit, okra, cow pea, maize, transplanting of brinjal and land preparation ginger/ turmeric after current spells of heavy rain.
- In Manipur, spray Mirador (Azoxystrobin 23%) @ 1ml/ litre of water or Bayleton (Triademeton 25WP) @ 0.7 g/ litre of water against powdery mildew or downey mildew specially in damped or moist area in cucurbits like water-melon, pumpkin, sponge gourd, etc.
- In Tripura, undertake harvesting of *rabi* maize, urd, green gram, summer brinjal and tomato.
- In Tripura, there is chance of attack Gundhi bug in *boro* rice. To manage the attacks apply Imidacloprid @ 2 ml per litre of water after current spells of rain. In case of attack of shoot borer in mango, find the hole and put kerosene in the hole and plug the hole with mud. Weather is also conducive for fruit & shoot borer in summer brinjal and tomato. To manage the attack, spray Cypermethrin @ 1.5ml or Flubendamid 0.5 ml per litre of water after current spells of rain.
- Suitable varieties for sowing are given in Annexure III.
- ❖ **Animal Husbandry**
- In Northeastern states, farmers are advised to keep animals in sheds during thunder squall period. Do not allow the animals for grazing during the rainy /thunderstorm period.
- In Barak Valley Zone of Assam, during heavy rain, farmers are advised to keep the animals in sheds. Vaccination is mandatory for the cattle prior to monsoon to protect from disease like Anthrax, Foot Mouth Disease. Changing weather could lead to viral diseases in the poultry. So farmers may provide sufficient water with 1% salt and mineral mixture. Farmers are also advised to maintain proper sanitary condition of poultry. Provide balanced feed & fresh water.
- In Tripura, piglets are susceptible for swine fever due to change in weather and feed. The disease may be managed by Furazolidone, streptomycin etc. Taking advice of Vet. practitioner before providing of medicine is compulsory for confirmation and dosages.
- ❖ **Fishery**
- In Assam, release the new batches of fishes in ponds. Select healthy, diseases free right variety of fishes, before

release fingerling should be treated with Potassium per Manganate @3-5%. Apply soil in the embankment for control of entry of predatory fishes during floods.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Green gram



Sugarcane



Groundnut



Banana

- **Realised Rainfall:** Weather remained mainly dry/dry over the region.
- **Advisories:**
 - As heat wave to severe heat wave conditions likely at a few/isolated places over Gujarat from 20th to 23rd; heat wave conditions likely to prevail at a few/isolated places over Vidarbha from 20th to 22nd and at isolated places over Madhya Maharashtra on 20th May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Also undertake mulching with straw/polythene to conserve soil moisture.
 - **Maharashtra:**
 - In Marathwada, undertake land preparation for plantation of fodder crops. Undertake tillage operations like ploughing, harrowing and mixing of FYM for *Kharif* vegetables. As temperature is prevailing above 42^oC, erect temporary shed to protect the newly planted fruit saplings from sunburn. Apply mulch of farm waste, dry grass, leaves and twigs in orchards and vegetable crops to avoid loss of water due to evapotranspiration.
 - In Madhya Maharashtra, continue preparatory tillage operations such as ploughing, harrowing, land leveling and bunding in fallow lands for *kharif* crops. Continue to prepare nursery for cultivation of vegetable crops like tomato, chilli and bitter gourd in *kharif* season. Continue planting of turmeric and ginger with irrigation facilities in Sangli and Satara districts. As temperature is prevailing above 40^oC, erect temporary shed to protect the newly planted fruit saplings from sunburn. Apply mulch of farm waste, dry grass, leaves and twigs in orchards and vegetable crops to avoid loss of water due to evapotranspiration.
 - In Vidarbha, continue harvesting of matured rice. Drain out water from rice field 8-10 days before harvesting. Continue preparation of raised nursery bed in fallow lands for *kharif* vegetables. As temperature is prevailing above 44^oC, erect temporary shed to protect the newly planted fruit saplings from sunburn. Undertake cultivation of summer vegetables like bitter gourd, tinda, ridge gourd, smooth gourd, bottle gourd, cowpea, clusterbean and coriander. Undertake harvesting of matured green gram.
 - In Konkan, undertake stone grafting programme in mango, procure fresh mango stones (seed) and sow them on beds. Before sowing they should be thoroughly washed with water and dip in carbendazim solution @ 1g per litre of water to control wilt. Undertake land preparation for new plantations of mango, cashew, coconut and arecanut. Undertake land preparation for planting of biennial forage crops like paragrass, napier and gajraj. Continue preparatory tillage in fallow lands for preparation of nursery sowing of *kharif* crops like rice and finger millet. Harvest the matured mango fruits before 10 a.m in the morning and after 4 p.m in the evening.
 - Due to prevailing weather conditions in Marathwada region, there may be attack of leaf miner in groundnut; spray Dimethoate @ 20 ml per 10 litres of water.
 - Due to prevailing weather conditions in Madhya Maharashtra region, there may be incidence of powdery mildew in vegetables; spray water soluble 80% sulphur 20 gm per 10 litres of water. On cucurbitaceous crops instead of sulphur spray deenocap 10 ml or tridemorph 10 gm per 10 litres of water.
 - **Gujarat:**
 - In North Saurashtra Zone, in view of prevailing high temperatures, apply light and frequent irrigation to vegetable crops, groundnut and fodder crops in the morning or evening hours. Undertake mulching with straw/polythene to conserve soil moisture. Continue deep ploughing of fields after harvesting of *rabi* crops to destroy eggs and pupa stages of insects and to destroy weed seeds. Procure good quality seeds for *kharif* crop sowing. Undertake harvesting of summer groundnut; continue harvesting of matured green gram and black gram in time to avoid shattering.
 - In Bhal and Coastal Zone, as increase in temperature is likely in the coming days (max. temp. 42-44 degree C) apply irrigation to vegetable and floriculture crops. Continue deep ploughing in the harvested fields; carry out levelling of plots to increase soil moisture holding capacity. Construct the bunds in advance to reduce soil erosion in field and plan for Farm ponds to collect runoff water. Undertake mulching in mango orchards. Provide support to tall marigold plants. Continue harvesting of fruits of papaya, sapota, citrus and pomegranate etc.
 - In Middle Gujarat Zone, continue deep ploughing in harvested fields for destruction soil pest and fungal spores. Carry out levelling of plots to increase soil moisture holding capacity. Continue land preparation for sowing of irrigated hybrid cotton (G. cot. 6, 8, 10) and approved varieties of B.T. cotton for sowing. As there is chance of

increase in temperature apply light irrigation in groundnut; protect banana bunch with plastic sheet; provide light irrigation to groundnut. Staking may be provided in banana to counteract the effect of wind speed. Complete harvesting and threshing of early varieties of rice.

- In South Gujarat Zone, continue deep ploughing of fields. In view of prevailing high temperatures, provide irrigation to fruit crops for 1/2 to 3/2 hours by drip irrigation; if drip irrigation is not available provide 12 to 15 litres of water for every graft; protect banana bunch with plastic sheet.
- In North Gujarat Zone and North West Zone of Gujarat, continue deep ploughing in harvested fields. Continue levelling of plots to increase water holding capacity. Construct the bund in advance to reduce soil erosion in field and plan for farm ponds to collect runoff water. Under high wind velocity forecast, if possible, avoid irrigation in pearl millet (grain development stage); provide support to tall marigold plants. As high temperatures are prevailing (max. temp. 42-43 degree C), apply irrigation in groundnut (pod development), cowpea, green gram (pod formation), cluster bean, vegetable crops and floriculture crops at regular intervals. Undertake mulching with straw/polythene to conserve soil moisture. Continue harvesting of matured fruits of citrus, papaya, sapota and pomegranate etc.
- In South Gujarat Heavy Rainfall Zone, continue land preparation for *kharif* rice and nursery sowing of ragi with irrigation. Apply irrigation in cluster bean (at 10-12 days interval), sugarcane, green gram, groundnut, cucurbits. Apply light irrigation in mango to reduce fruit drop.
- In South Saurashtra Zone, apply irrigation to groundnut (at 6 to 7 days interval) black gram, green gram and vegetable crops. Keep the vegetable crops weed free and continue harvesting of matured fruits of vegetables.
- Installation of pheromone trap @ 2-3 traps per acre is advised for monitoring of borers in brinjal and tomato in North Saurashtra Zone; if pest population is high, spray Spinosad 48 EC @ 1 ml /4 litres of water.
- ❖ **Animal Husbandry**
- In Gujarat, take special care of animals in hot weather during noon in North Saurashtra Zone, Bhal and Coastal Zone, North Gujarat Zone and North West Zone. Keep animals under shade, cover roof with paddy straw, provide cool drinking water 4-5 times a day.

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



Rice



Okra



Maize



Green gram

- **Realised Rainfall:** Rainfall occurred in all districts of Sub-Himalayan West Bengal & Sikkim except South Dinajpur; Bankura, Birbhum, Burdwan, Hooghly, Nadia and North 24 Parganas districts of Gangetic West Bengal; Araria, Darbhanga, Madhubani, Purnea, Saharsa and Supaul districts of Bihar; Gajapati, Keonjhar, Koraput, Nayagarh and Rayagada districts of Odisha; Deogarh, Dhanbad, Dumka, Garhwa, Giridih, Gumla, Jamtara, Khunti, West Singhbhum and Seraikela districts of Jharkhand. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - As rain/thundershowers likely at most/many places over Sub-Himalayan West Bengal & Sikkim from 22nd to 24th and over Gangetic West Bengal on 20th and 21st and at many places over Andaman & Nicobar Islands from 20th to 22nd May and heavy to very heavy rain likely at isolated places over Gangetic West Bengal on 20th to 23rd, over Sub-Himalayan West Bengal & Sikkim from 22nd to 24th May, farmers are advised to postpone irrigation, inter-cultural operations and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields. Farmers are advised to undertake rain water harvesting for agricultural activities.
 - As thunderstorm accompanied with squall likely at isolated places over Bihar and Jharkhand on 20th, 23 & 24th May, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep already harvested produce at safer places.
 - As squally wind speeds reaching 55-65 kmph gusting to 75 kmph very likely to prevail along and off Gangetic West Bengal Coast on 20th May, provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Keep already harvested produce at safer places. Prepare strong fencing for protect the betel vine crop from strong wind.
 - **Odisha:**
 - In Association with the cyclonic storm 'Roanu' over westcentral Bay of Bengal, rain/thundershowers is very likely at most places along with heavy to very heavy rain very likely at a few places with isolated extreme falls over Odisha on 20th May and heavy rain at isolated places over north Odisha on 21st May and strong winds

reaching 75-85 kmph gusting to 95 kmph very likely to prevail along and off North Odisha coast is expected on 20th May. In view of the above the following advisories are suggested:

- Harvest matured pods of pulses before rain if possible or immediately after rain to avoid viviparous germination of seeds in the pods itself. Dry the pods. Harvest the matured groundnut to avoid viviparous germination of kernels and rotting may occur if not harvested immediately after rain stops. Make bundles of the harvested plants and dry them in such a way that the pods should be in the up side and plants in down side. Do not keep harvested produce in the field and place them in safe storage structures.
 - Arrange adequate drainage channels in standing crop fields.
 - Arrange for adequate drainage to remove excess water from rice fields and maintain 8-10 cm of water.
 - Arrange for propping in sugarcane and banana crops to prevent lodging due to high winds.
 - Keep animals indoor during the period.
- In Western Undulating Zone, early shoot borer attacks the sugarcane crop at tillering stage. Spray Triazophos/ Profenophos @ 2ml/litre of water after current spells of rain.
- In North Eastern Ghat Zone, increased temperature may favour thrips infestation in summer groundnut. Spray Dimethoate @ 400 ml or Imidachloprid @ 50 ml in 200 litre water per acre after current spells of rain.
- In North Eastern Ghat Zone, to manage fruit fly in Cucurbits, prepare poison bait by mixing 20gm gur in 1 liter of water and 2ml Malathion after current spells of rain.
- In South Eastern Ghat Zone, there may be chances of infestation of Gundhi bug and Ear cutting caterpillar in summer rice. To control Gundhi bug, spray Ethofenoprox 10% EC @ 1 ml/litre of water or Lamda Cyhalothrin 5% EC @ 0.5 ml/litre of water (200 litre water for one acre) uniformly during morning hours when there is no or minimum wind. To control Ear cutting caterpillar, spray Quinolphos 25% EC @ 2 ml/litre or Chloropyriphos 20% EC @ 2.5 ml/litre of water (200 litre water for one acre) after current spells of rain.
- **West Bengal:**
- In New Alluvial Zone, postpone harvesting of rice and keep harvested produce at safe places.
- In Coastal Saline Zone, continue sowing of green manuring crop like cluster bean, daincha etc. after harvesting of boro paddy in order to fertilize the field and conserve moisture in soil .Prepare strong fencing for protect the betel vine crop from strong wind. For better leaf development apply mustard cake and Tasko-5.
- In Hill Zone, drain out excess water from vegetable crop fields. Complete transplanting of round chilli after current spells of heavy rain. Proper drainage system should be maintained in the fields to prevent water stagnation during rain.
- In Laterite and Red Soil zone, continue transplanting of *Aus*-rice. In case of timely sown crop (direct sown), at 15 to 20 DAS, apply first top dressing. Undertake harvesting of sesame after current spells of rain.
- In Coastal Saline Zone, due to hot and humid weather there may be attack of fruit rot in brinjal. If infestation found high then Spray amixture of Metalaxyl and Mancozeb @ 2g per litre of water after current spells of rain.
- In Laterite and Red soil zone, in this weather condition fruit and shoot borer attack may be dominant in brinjal. To control the attack, Spray Neem Seed Kernal Extract solution @ 50ml/litre of water after current spells of rain.
- In Terai and Old Alluvial Zone, weather is congenial for attack of gundhi bug in rice and aphid, hoppers and white fly in chilli. For gundhi bug spray Fipronil 5 EC @ 1ml/litre of water and For Aphid, hoppers, white fly apply Imidachloropid @ 1ml/5litre of water after current spells of rain.
- In Old Alluvial Zone, in the prevailing weather condition, fruit rot in chilli may be occur. To control, fruit rot in chili, spray Carbendazim (Bavistin) @ 1g/litre of water and to control Okra fruit borer, spray Bt. @ 1.5 gram/ liter water at evening hour after current spells of rain.
- **Andaman and Nicobar Islands:**
- In North, Middle and South Andaman, undertake land preparation for rising nursery of vegetable like Chilli and brinjal in the upland area.
- In North, Middle and South Andaman Nicobar, clean the crown of coconut tree and apply 50 kg FYM along with the N, P₂O₅ and K₂O @ 170 gm, 100 gm and 450 gm/palm respectively, around the base of coconut tree, after making circular basin.
- **Bihar:**
- In North East Alluvial Zone, continue nursery preparation of kharif paddy continue land preparation for sowing of jute. Maintain minimum water (2-3 inch) in the fields of *boro* rice. Intercultural operation is advised in summer vegetable crops such as lady's finger, pumpkin, cucumber, sponge gourd etc.
- In North East Alluvial Zone, undertake nursery preparation of *kharif* paddy for long duration variety (Aaghani paddy). Start sowing of Ginger and Turmeric as sole crop and also intercrop with Mango, Litchi, Banana and Guava orchard.
- In North West Alluvial Plain Zone, undertake nursery preparation of *kharif* paddy and sowing of ginger, turmeric and green manuring crops like dhaincha, moong (green gram), senai and fodder crops such as sorghum, maize and bajra.
- In North West Alluvial Plain Zone, in prevailing weather condition fruit borer may be found in tomato. If population of fruit borer exceeds economic threshold level, Spraying of Spinosad 48EC @ 1ml/4 litres of water on a non rainy day.
- In south Bihar Alluvial Zone, prevailing weather condition thrips and white fly may attack in chilli. To protect spray 400 ml malathion 50 E.C. with 250 litre water per acre.

- In North East Alluvial Zone, due to frequent rainfall, Collar rot may appear in Cucurbitaceous crop. To control them expose the surrounding soil to sun-light for 1-2 days followed by drenching with Copper Oxychloride 50% WP @ 3 g/litre of water on no-rainy day.
- **Jharkhand:**
- In Western Plateau Zone, continue sowing of vegetables like sponge gourd, bottle gourd, pumpkin, water melon, musk melon etc. Continue sowing of green gram and broadcasting of urea in standing vegetable crops. To conserve the moisture, undertake intercultural operations in vegetables.
- In Central and North Eastern Plateau Zone, farmers are advised for summer ploughing. Undertake sowing of maize, okra, elephant foot yam, ginger and turmeric after receipt of sufficient rain and mulch it with leaves and straw to conserve moisture and weed control.
- In Western Plateau Zone, as mainly dry weather is prevailing, irrigate the fruit bearing trees at regular interval. Spray Planofix @ 5 ml per 10 litre of water to check dropping of tiny fruits. Spray Sulfex @ 2 g per litre of water against Powdery mildew disease.
- In South Eastern Plateau Zone, summer moong is at flowering to pod setting stage, hence for proper pod development apply light irrigation to maintain optimum moisture. If the flowers drop then this might be due to the attack of thrips. For controlling them, spray insecticides like Acetamiprid SP 0.5 g or Trizophos or Prophenphos 1 ml during evening/dusk time.
- In South Eastern Plateau Zone, Gandhi Bug infestation is more likely to be pronounced in rice at milking stage. Hence, dusting of Quinalphos 1.5 per cent dust @ 10 kg per acre during evening time is recommended. High day and night temperature also favours production of more number of eggs in case of Leaf folders or Hispa and their infestation are also being seen. Spray Monocrotophos @ 1 ml per litre of water for control. Maintain water level upto 3-4 cms.
- In South Eastern Plateau Zone, spraying of Malathion 50 percent @ 2 ml along with Carbendazim and Sulfex @ 2-3 gram per liter of water is suggested to control the insects attack and anthracnose disease in mango. To increase the size as well as for controlling against falling of fruits, it is advisable to spray, Planofix or Acimone or Trasel or Multiplex @ 5-10 ml per liter of water. In litchi to protect from mites and bug attack on leaves spray Dicofol 2 ml for mites and Monocrotophos 1ml for bug per liter of water. In Jack fruit, spray Carbendazim 0.5 g first and afterward Imidachloprid 0.5-1 ml per liter of water (Jack fruit- Anthracnose).
- Suitable varieties for sowing are given in Annexure III.
- **Animal Husbandry**
- In Coastal Saline Zone of West Bengal, vaccinate for Black quarter at 4 month aged cattle and for grazing cattle feed them Albomer or Albozen tablet @ 1tablet/150kg body wt at 4 month interval for preventing worm infection.
- In South, North and Middle Andaman, Provide clean drinking water to poultry birds to overcome the gastrointestinal problem and for deworming consult with the local veterinary doctor.

CENTRAL INDIA [M.P., CHHATTISGARH]



Cauliflower



Green gram



Okra



Sugarcane

- **Realised Rainfall:** Rainfall occurred in Bilaspur district of Chhattisgarh. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - As heat wave/severe heat wave conditions likely to prevail at a few places over West Madhya Pradesh from 20th to 22nd; heat wave conditions likely to prevail at a few/isolated places over East Madhya Pradesh on 20th and 21st May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Also undertake mulching with straw/polythene to conserve soil moisture.
 - In Satpura Plateau Zone, continue field preparation for sowing of cotton.
 - In Malwa Plateau Zone, apply irrigation in moong, urad, vegetables, mango, orange and pomegranate orchards. Continue picking up of matured okra and cucurbit crops. Continue nursery preparation for *kharif* vegetables. Continue deep ploughing of fields and keep inputs ready for sowing of *kharif* crops.
 - In Kymore Plateau and Satpura Hill Zone, as dry weather is prevailing, apply irrigation in orchards, sugarcane, cucurbit crops, vegetables, moong and urad. Also undertake mulching to conserve soil moisture.
 - Continue deep ploughing of fields in Grid Zone and Nimar Valley Zone.
 - In Vindya Plateau Zone, keep inputs ready for sowing of *kharif* crops like soybean, red gram and undertake

- nursery preparation of rice. Undertake harvesting of matured moong and urad.
- In Bundelkhand Zone, apply irrigation in vegetables and orchard crops. Continue seed bed preparation for sowing of *kharif* onion. Continue digging of pits for planting of new orchards.
- In Jhabua Hill Zone, apply irrigation in moong, tomato, chilli, brinjal, okra, onion crops. Continue field preparation for sowing of turmeric and ginger. Continue harvesting of matured moong.
- In Satpura Plateau Zone, due to prevailing hot weather, there may be chances of attack of sucking pest in moong, spray Thiomethoxam @ 0.35 g/litre of water.
- In Bundelkhand Zone, due to prevailing hot weather, there are chances of attack of fruit borer in brinjal and tomato, spray Malathion 50E.C. @ 1ml/litre of water.
- Suitable varieties for sowing are given in Annexure III.
- **Chhattisgarh:**
- In Chhattisgarh, continue deep ploughing of fields and keep inputs ready for sowing of *kharif* crops.
- In North Hill Zone, in view of the prevailing high temperature, apply irrigation in summer rice, moong, sugarcane, orchards and vegetables. Undertake digging of pits for planting new orchards.
- In Bastar Plateau Zone, continue nursery preparation of *kharif* vegetables and harvesting of matured rice, moong and maize.
- In Chhattisgarh Plain Zone, apply irrigation in summer rice, vegetables and orchards.
- In Bastar Plateau Zone, there may be attack of mango hopper in mango. Spray Dimethoate @ 1.5ml/litre of water.
- In Chhattisgarh Plain Zone, due to prevailing weather there may be chances of attack of aphids in summer rice, apply Imidacloprid @ 150 ml dissolved in 500 litre of water.
- ❖ **Animal Husbandry**
- In Madhya Pradesh, in view of the prevailing heat wave conditions, special attention should be given to milch animals, provide adequate water and green fodder to animals and keep them in shade. Cover poultry house with mat and keep it wet to maintain normal temperature.

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



Green gram



Sugarcane



Cauliflower



Okra

- **Realised Rainfall:** Rainfall occurred in Chamba district of Himachal Pradesh; Anantnag, Baramula, Doda, Kupwara and Ramban districts of Jammu & Kashmir; Bageshwar, Chamoli, Pithoragarh and Rudraprayag districts of Uttarakhand. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As heat wave to severe heat wave conditions very likely at a few places over Rajasthan during the period and heat wave conditions very likely at isolated places over Uttar Pradesh, Punjab, Haryana, Chandigarh & Delhi from 20th to 22nd May and over west Uttar Pradesh on 22nd May, apply light and frequent irrigation to the standing crops to cope up with the excess evaporative demand due to heat wave. Also undertake mulching with straw/polythene to conserve soil moisture. Young saplings may be protected by erecting temporary shade.
 - **Jammu & Kashmir:**
 - In Sub Tropical Zone, continue land preparation for nursery raising of early transplanted paddy. Due to dry spell and high evaporation rate, give irrigation to summer pulses (moong and mash) and summer fodder. Harvest the ripened tomato during clear weather to avoid fruit rotting.
 - In Intermediate Zone, continue transplanting of tomato, chilli, capsicum and cucurbits. Continue sowing of okra in lower to mid hill regions. Prepare field for sowing of paddy nursery for timely transplanting of seedlings.
 - In Valley Temperate Zone continue preparation of the field for sowing of paddy nursery. Continue transplanting of cole, solanaceous and cucurbits crops in the main field. Continue harvesting of Berseem crop.
 - In Cold Arid Zone of Jammu and Kashmir, undertake sowing of barley at proper spacing and at adequate moisture conditions. Continue transplantation of vegetable crops like onion, cabbage, cauliflower, tomato, capsicum and chilli. Undertake direct sowing of radish, carrot, beet root, coriander and fenugreek in the field.
 - In Intermediate Zone, there are chances of attack of mealy bug on fruit plants. To control spray Chloropyriphos 20EC or Dichlorbos(Nuvan 30 EC) @ 2ml/litre of water and repeat at fifteen days interval.
 - In Sub Tropical Zone, tomato crop is at flowering and fruiting stage. At this stages, there may be chances of attack of leaf curl on crop. To control it remove already infected plants and spray Imidacloprid @ 0.5ml/lit of water to avoid spread of secondary infection on a non rainy day.

▪ **Uttarakhand:**

- In Bhabar and Tarai Zone, continue harvesting of gram and pea in clear weather.
- In Hill Zone, undertake nursery raising of paddy after proper seed treatment. Continue nursery sowing of tomato crop, sowing of French bean and okra. Continue sowing of potato in high altitude areas (7000-8000ft A.M.S.L) of Hill Zone. Avoid water stagnation in onion and garlic field due to rain.

▪ **Himachal Pradesh:**

- In Sub-Montane and Low Hills Sub-Tropical Zone, undertake Paddy nursery sowing and treat the seed before sowing with Bavistin @ 2.5 g per kg of seed and sowing of maize. Continue sowing of cluster bean, daincha, senai, lobia for green manuring. Complete sowing of sunflower and fodder crops such as maize, cowpea, chari and bajra in irrigated areas. In high hilly regions continue sowing of peas, turnip, carrot, palak. Continue harvesting of matured onion and garlic. In mid hill areas continue transplanting of tomato, brinjal, chilli and capsicum. Continue sowing of cucurbits such as cucumber, bitter gourd, bottle gourd and summer squash, ageti okra, French bean and radish. Complete sowing of zaidmoong and mash in irrigated areas.
- In Mid Hills Sub-Humid Zone, complete sowing of bhindi, cucurbits, French bean, moong and mash and nursery raising and transplanting of tomato, chilli, capsicum and brinjal. Continue sowing of fodder crops like maize, cowpea and soybean.
- In High Hills Temperate Dry Zone, complete the pruning operations in apple orchard. Continue sowing of vegetable seeds in nursery beds. Undertake sowing of peas.
- In Mid Hills Sub-Humid Zone, weather is conducive for attack of purple blotch in onion, for control spray Redomil MZ @ 25 g per 10 litres of water on a non rainy day.
- In Sub-Montane and Low Hills Sub-Tropical Zone, weather is conducive for attack of red pumpkin beetle in cucurbitaceous crops, for control spray Diclorvos 76 EC (DDVP) @ 1 ml per litre of water.
- In Mild Hills Sub-Humid Zone, weather is conducive for arial attack of woolly apple aphids. For control, apply Dursban @ 400 ml or Marshal @ 200 ml in 200 litres of water on a non rainy day.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, weather is conducive for leaf curl disease in peach orchards, for control spray Hexaconazole 0.05% (Contaf / Hexole 100 ml) in 200 litres of water, 10 days of interval on a non rainy day.

▪ **Rajasthan:**

- In Southern Humid Plain Zone, complete sowing of mung, groundnut and fodder like SSG-59-3, MP chari, Rajasthan chari, Pratap maize chari-6A.
- In Sub Humid Southern Plain and Aravali Hill Zone, apply irrigation in vegetables. Complete harvesting of matured normal sown wheat and barley crop. Continue sowing of cucurbits also papaya in nursery.
- In Semi-Arid Eastern Plain Zone, continue land preparation for sowing of irrigated cotton. Undertake digging dry rabi onion & store them in cool & dry place.
- In Arid Western Plain Zone, continue sowing of American cotton and jeera. Continue transplanting of chilli. Continue sowing of green fodder viz. pearl millet, sorghum and cowpea. Apply irrigation in cucurbits, fruit plants and fodder crops as per requirement.
- In Irrigated North Western Plain Zone, undertake sowing of groundnut and nursery sowing of rice. Continue sowing of cotton and sowing of zaidmoong (SML 668).
- In Flood Prone Eastern Plain Zone, mustard residue/straw left over the field provide hibernation site to painted bug during hot summer. To mix straw/residue in the soil using deep plough, it will destroy various stages of pest besides enhancing soil health.
- In Flood Prone Eastern Plain Zone, due to rise in temperature, there may be chances of attack of mealybug in okra, for control spray Acephate 70 SP @ 1 gm. or Profenophos @ 3 ml per litre of water.
- In Irrigated North Western Plain Zone, due to dry weather conditions, there may be chances of attack of termites in sugarcane, for control, apply Emidacloprid 17.8 SL @ 125 ml or Chlorpyrifos 20 EC @ 1.25 litres with irrigation.
- In Irrigated North Western Plain Zone, due to dry weather conditions, there may be chances of attack of stem borer or root borer in sugarcane, for control, apply Furadan 3 % granules @ 6 kg. or Foret 10 % @ 4 kg per bhiga.
- In Arid Western Plain Zone, due to rise in temperature, there may be chances of attack of leaf curl virus in chilli, for control spray Methyl Demeton 25 EC @ 1litre per hectare.
- In Arid Western Plain Zone, due to rise in temperature, there may be chances of attack of fruit fly in watermelon and muskmelon, for control spray Malathion 50 EC @ 1 ml per 1litre of water.
- In Sub Humid Southern Plain and Aravali Hill Zone, due to rise in temperature, there may be chances of attack of aphid and jassids in mung, urad and groundnut, for control spray Imidacloprid @ 5 ml per 15 litres of water.

▪ **Punjab, Haryana and Delhi:**

- As dust/thunderstorm accompanied with squall likely at isolated places over Punjab and Haryana, Chandigarh & Delhi on 24th May, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane and keep harvested produce at safer places.
- In Western Plain Zone of Punjab, continue sowing of cotton, okra, spring maize and planting of sugarcane. Continue transplanting of chilli and cucurbits on the ridges. Undertake nursery sowing of rice.
- In Undulating Plain Zone of Punjab, undertake intercultural operations in vegetable crops from time to time to

conserve soil moisture. Irrigate the nursery of mango and litchi and other fruit crops twice in a week according to the prevailing weather conditions. Undertake nursery preparation for rice.

- In Western and Undulating Plain of Punjab, continue planting of turmeric.
- In Central and Undulating Plain Zone of Punjab, continue planting of sugarcane and sowing summer pulses.
- In Central, Western and Undulating Plain Zone of Punjab, continue planting of peach, plum, pear, pomegranate and ber plants.
- In Western Zone of Punjab, undertake nursery sowing of rice, transplanting of chilli, tomato, bell pepper. Undertake sowing of cucurbits, round gourd, sponge gourd, and other summer vegetables viz. okra, and cluster bean. Complete the sowing of cotton. Undertake harvesting of onion and garlic. Irrigate the standing vegetables crops.
- In Western Zone of Haryana, continue sowing of green gram and black gram. Complete the sowing of leafy vegetable, bottle gourd, cucumber, ridge gourd summer radish and direct sowing with certified seed and apply the irrigation as per the requirement of vegetables crops. Undertake the sowing of cotton. Continue transplanting of young seedlings of brinjal, chilli and direct sowing of cucurbits. Irrigation should be done after transplantation. Apply light irrigation to matured onion and garlic crops. Undertake sowing of arhar and complete the sowing of fodder crops such as bajra, lobia, sudan and napier grass.
- In Eastern zone of Haryana, undertake sowing of fodder crops such as guwar, maize, bajra, cluster bean.
- In Western Semi-Arid Zone of Delhi, undertake field preparation for sowing of pigeon pea and cotton, continue sowing of green gram, black gram. Undertake sowing of okra, French bean, cluster bean, baby corn and fodder crops such as sorghum, bajra and maize.
- In Western Zone of Punjab, due to prevailing weather condition, there may be chances of attack of red pumpkin beetle in cucurbits, for control spray Carbaryl @ 75 to 150 gm per acre in 50 to 100 litres of water and repeat after 10 days intervals. Also incidence of fruit and shoot borer of brinjal may be controlled by spraying 100 ml Sumicidin 20 EC or 200 ml Ripcord 10 EC or 800 ml of Ekalux 25 EC or 500 ml Triazophos 40 EC in 100-125 litres of water per acre.
- In Undulating Plain Zone of Punjab, due to prevailing weather condition, there may be chances of attack of fruit borer in tomato, for control, spray Fame 480 SL @ 30 ml or Fenvalerate 20 EC @ 100 ml or Deltamethrin 2.8 EC @ 160 ml or Cypermethrin 25 EC @ 80 ml. in 80 to 100 litres of water per acre.

▪ **Uttar Pradesh:**

- As thunderstorm accompanied with squall likely at isolated places over Uttar Pradesh from 22nd to 24th May, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane and keep harvested produce at safer places.
- Young saplings may be protected by erecting temporary shade. Undertake soil mulching or mulching with straw/polythene to conserve soil moisture.
- In Central Plain Zone, undertake nursery sowing of paddy in irrigated area and sowing of jowar, bajra, maize, urad, mung, sesame. Continue planting of sugarcane. Continue sowing of summer fodder crops like cowpea, maize, lobia and sowing of urad, mung, lobia, bhindi as inter crop in sugarcane, land preparation and sowing of cowpea, maize, garlic, turmeric, ginger. Continue sowing of sunhemp, lobia and dhaincha for green manuring. Continue nursery sowing of brinjal and *kharif* onion and transplanting of guava. Continue planting of banana.
- In Central Plain Zone, apply irrigation in vegetables as per requirement and summer sown maize, urd, mung, lobia crop at the interval of 12-15 days. Undertake hoeing operation in sunflower crop as per requirement.
- In Eastern Plain Zone, undertake sowing of rice and sowing of maize in irrigated areas. Apply irrigation in sugarcane, urad, mung and all vegetables as per requirement. Continue sowing of fodder crop dhaincha,
- In Western Plain Zone, continue harvesting of matured wheat and sowing baby corn and summer fodder crops jowar, bajra, lobia, maize. Undertake sowing of sunhemp and dhaincha, sanai, jwar, lobia, mung for green manuring. Continue transplanting of tomato, chilli and sowing of bhindi, cucurbits, planting of autumn sugarcane and sowing of sunflower, urad, mung, maize.
- In Bundelkhand Zone, apply irrigation in mung, bhindi, torai, cucurbits, cabbage, cauliflower, tomato, brinjal and chilli as per requirement.
- In Central Plain Zone, due to rise in temperature, there may be chances of attack of grass hopper, hairy-tobacco caterpillar, hairy caterpillar in sunflower, for control spray Phosphamidon @ 250 ml or Endosulphan 35 E.C @ 1.25 litres in 600 litres of water.
- In Central Plain Zone, due to rise in temperature, there may be chances of attack of stem borer in maize, for control spray Quinalphos @ 2 litres or Dimethoate 30 % @ 1 litre in 500 to 600 litres of water per hectare.
- In Central Plain Zone, due to rise in temperature, there may be chances of attack of fruit borer/leaf sheath in vegetables, for control, spray Neem oil @ 1.5 ml to 2 ml per litre of water, 3 to 4 times at 8 to 10 days of intervals.
- In North Eastern plain Zone, due to rise in temperature, there may be chances of attack of top borer in sugarcane, for control, spray Carbendazim @ 400 gm. in 200 litres of water per acre.
- Suitable varieties for sowing are given in Annexure III.

❖ **Horticulture:**

- In Cold Arid Zone of Jammu and Kashmir, undertake planting of fruit plants in the orchards.
- In Intermediate Zone of Jammu and Kashmir give irrigation to grafted plants and orchard.

- In Western Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit drop in mango; for control spray N.A.A. @ 15 mg per litre of water.
- In North Eastern Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of anthracnose in banana, for control spray 0.3 % Coperoxicloride.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, undertake grafting in apple and pear.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, weather is conducive for leaf spots on young leaves in soft seeded varieties (Sindhuri and Mridula) of in pomegranate, spray Bavistin @ 100 gm. + Streptocycline @ 20 g in 200 litres of water.
- In Transitional Plain Zone of Inland Drainage and in Semi-Arid Eastern Plain Zone of Rajasthan, due to rise in temperature, there may be chances of flower and fruit drops in citrus fruits; for control, spray Planofix @ 1 ml per 4.5 litres of water.
- ❖ **Animal Husbandry**
- As heat wave to severe heat wave conditions likely to prevail at a few places over Rajasthan and heat wave conditions likely to prevail at isolated places over Uttar Pradesh, Cattles/goats may preferably be allowed for grazing during early morning and late evening hours to avoid exposure to extreme hot conditions and during hot hours, they must be tied and fed in shaded place or under the tree. Sprinkle cold water 2-3 times a day on the body of the animal to overcome the heat. Apply 4-6 inch thick hay thatch as a roofing material. Undertake spraying of water on floor and roof of animal shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals. Proper ventilation should be maintained for free circulation of air in the sheds. Provide plenty of clean drinking water to animals and use anti-stress medicines like Zee-stress.
- In sub tropical Zone of Jammu Kashmir, farmers are advised to add calcium supplement in the feed of dairy animals and heifers especially fed rice straw these days to prevent calcium deficiency and intestinal blockage. Sheeps and goats need to be vaccinated against Sheep and Goat pox. Black Quarter vaccination must be carried among heifers above 4 month age.
- In Valley Temperate Zone of Jammu and Kashmir, farmers are advised to vaccinate sheeps and goats against Enterotoxaemia (ETV vaccine 2ml/sub cut) and FMD (FMD vaccine 1ml /Intra muscular).
- ❖ **Floriculture**
- In Valley Temperate Zone of Jammu & Kashmir, continue planting of liliun, gladiolus and dahlia.
- ❖ **Apiculture:**
- In Sub Tropical Zone of Jammu and Kashmir, keep bee colonies in shade or cover them with wet gunny bags. To control mite, dust sulphur on top bars @ 1g/frame/oxalic acid acid treatment @ 3.5%/litre water.

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

Annexure I

Week by week Rainfall Distribution

Sub-Divisions	04.05.16		11.05.16		18.05.16	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	0.0	-100.0
Changlang	122.3	-6	8.8	-83	216.2	150
Dibang Valley	1.0	-99	**	**	0.0	-100
East Kameng	26.7	-27	15.0	-73	10.8	-82
East Siang	43.3	-40	0.0	-100	87.9	27
Kurung Kumey	**	**	**	**	0.0	-100.0
Lohit	117.3	49	1.3	-98	181.2	188
Lower Dibang Valley	201.2	126	0.0	-100	141.1	176
Lower Subansari	**	**	**	**	0.0	-100.0
Papumpare	10.7	-82	33.6	-73	94.7	-5
Tawang	61.0	11	15.0	-76	69.0	-6
Tirap	87.0	-5	11.2	-82	70.7	7
Upper Siang	59.2	-40	92.2	125	90.7	-26
Upper Subansari	23.8	-20	59.6	148	54.8	149
West Kameng	0.0	-100	3.0	-95	27.6	-62

West Siang	3.0	-94	**	**	0.0	-100
Assam&Meghalaya						
Assam						
Baksa	24.6	-68	4.5	-94	96.5	11
Barpeta	32.9	-58	38.2	-47	149.0	72
Bongaigaon	38.0	-55	45.0	-57	101.3	20
Cachar	54.2	-30	6.4	-93	214.3	56
Chirang	27.4	-67	57.4	-45	131.5	-100
Darrang	**	**	**	**	0.0	-100
Dhemaji	0.0	-100	0.0	-100	0.0	-100
Dhubri	57.0	-16	63.8	-19	122.4	39
Dibrugarh	75.9	16	4.5	-93	107.8	75
Goalpara	83.9	-4	65.2	-3	141.3	51
Golghat	37.3	-30	8.7	-85	113.7	90
Hailakandi	110.6	18	9.0	-90	279.0	198
Jorhat	31.9	-53	8.8	-85	95.0	38
Kamrup(Rural)	70.2	-4	28.1	-48	156.7	130
Kamrup(Metro)	37.6	-49	18.6	-66	62.9	-8
Karbi Anglong	38.6	19	6.6	-73	33.5	15
Karimganj	103.3	-11	6.6	-96	251.2	112
Kokrajhar	31.9	-54	54.3	-45	174.2	105
Lakhimpur	27.8	-54	22.9	-65	88.9	24
Morigaon	20.8	-57	22.6	-33	51.0	41
N.C.Hills	128.1	179	0.0	-100	196.6	170
Nagaon	31.4	-35	2.5	-94	59.5	86
Nalbari	42.4	-64	35.3	-61	104.2	43
Sonitpur	9.7	-85	10.8	-82	107.2	84
Sibsagar	62.5	17	15.8	-72	80.8	24
Tinsukia	103.6	84	11.3	-83	111.8	79
Udalgiri	24.3	-66	26.8	-65	110.0	65
Meghalaya						
East Garo Hills	51.0	-43	160.4	83	128.0	40
East Khasi Hills	80.7	-47	48.6	-69	406.0	143
Jaintia Hills	1.0	-99	2.0	-98	0.5	-99
Ribhoi	42.1	-18	12.9	-80	52.1	-20
South Garo Hills	4.0	-95	24.0	-69	14.5	-83
West Garo Hills	43.4	-47	72.6	-6	81.8	-4
West Khasi Hills	16.0	-82	9.0	-85	0.5	-99
NMMT						
Mizoram						
Aizwal	96.7	25	1.2	-98	53.5	-27
Champhai	**	**	**	**	0.0	-100
Kolasib	**	**	**	**	0.0	-100
Lawngtlai	**	**	**	**	0.0	-100
Lunglei	**	**	**	**	0.0	-100
Mamit	**	**	**	**	0.0	-100
Saiha	78.0	96	13.0	-81	34.5	-63
Serchhip	5.1	-88	0.0	-100	1.4	-98
Manipur						

Bishnupur	**	**	**	**	0.0	-100
Chandel	58.0	161	2.0	-96	38.0	64
Churachandpur	**	**	**	**	0.0	-100
Imphal east	46.2	16	1.3	-98	57.1	42
Imphal west	71.6	132	0.0	-100	150.2	515
Senapati	**	**	**	**	0.0	-100.0
Tamenglong	**	**	**	**	0.0	-100
Thoubal	50.0	268	0.0	-100	53.0	136
Ukhrul	0.0	-100	0.0	-100	0.0	-100
Nagaland						
Dimapur	31.7	-12	4.5	-86	42.0	-8
Kephire	**	**	**	**	0.0	-100
Kohima	21.5	-38	0.9	-87	21.4	-40
Longleng	**	**	**	**	0.0	-100
Mokokchung	2.0	-95	**	**	0.0	-100
Mon	**	**	**	**	0.0	-100
Paran	**	**	**	**	0.0	-100
Phek	40.0	16	15.0	-52	26.5	-26
Tuensang	**	**	**	**	0.0	-100
Wokha	1.0	-99	4.0	-93	2.0	-97
Zunheboto	**	**	**	**	0.0	-100
Tripura						
Dhalai	88.8	3	55.6	-48	69.8	-32
NorthTripura	145.3	88	44.0	-62	136.0	48
SouthTripura	46.7	-28	8.5	-90	35.7	-55
West Tripura	46.1	-36	20.8	-76	61.9	-27
Himachal Pradesh						
Bilaspur	0.1	-97	62.3	642	0.2	-98
Chamba	3.0	-74	33.6	195	20.7	1
Hamirpur	0.0	-100	60.6	604	1.3	-89
Kangra	0.3	-98	54.2	421	2.0	-83
Kinnaur	2.3	-88	1.7	-89	2.5	-86
Kullu	3.4	-82	29.5	83	1.4	-92
Lahaul and Spiti	1.7	-93	13.3	-36	16.0	-43
Mandi	0.8	-92	107.1	649	0.0	-99
Shimla	6.8	-44	46.0	171	0.5	-97
Sirmaur	0.0	-100	18.2	149	0.0	-100
Solan	0.0	-100	81.2	560	0.0	-100
Una	0.0	-100	74.3	1276	0.0	-100
Punjab						
Amritsar	0.0	-100	0.0	-100	0.0	-100
Barnala	0.0	-100	0.0	-100	0.0	-100
Bhatinda	0.0	-100	0.0	-100	0.0	-100
Faridkot	2.0	25	0.0	-100	1.0	-83
Fatehgarh Saheb	0.0	-100	0.3	-90	0.0	-100
Ferozpur	0.3	-90	0.7	-81	0.0	-100
Gurdaspur	0.3	-96	12.3	119	0.0	-100
Hoshiarpur	0.0	-100	14.9	175	0.0	-100
Jalandhar	0.0	-100	0.0	-100	0.0	-100

Kapurthala	0.0	-100	0.0	-100	0.0	-100
Ludhiana	0.0	-100	7.0	38	1.4	-64
Mansa	0.0	-100	0.0	-100	0.0	-100
Moga	0.0	-100	0.0	-100	7.8	0
Muktesar	0.0	-100	0.0	-100	0.0	-100
Nawashahar	0.3	-92	27.5	305	0.0	-100
Patiala	0.0	-100	6.5	75	5.8	54
Ropar	0.0	-100	10.5	72	3.0	-61
Sangrur	0.0	-100	2.6	-50	1.9	-56
Mohali	0.0	-100	7.8	11	0.0	-100
TarnTaran	0.0	-100	0.0	-100	0.0	-100
Haryana,Chd,Delhi						
Haryana						
Ambala	0.0	-100	12.2	176	0.6	-92
Bhiwani	0.0	-100	0.0	-100	0.0	-100
Chandigarh	0.0	-100	22.2	394	0.9	-92
Faridabad	0.0	-100	14.0	419	0.0	-100
Fatehabad	0.0	-100	0.0	-100	0.0	-100
Gurgaon	0.0	-100	3.6	64	0.4	-90
Hissar	0.0	-100	0.0	-100	0.4	-92
Jhajar	0.0	-100	0.0	-100	0.0	-100
Jind	0.0	-100	1.7	-52	0.7	-85
Katihah	0.0	-100	0.0	-100	0.0	-100
Karnal	0.0	-100	13.4	253	2.2	-31
Kurukshetra	0.0	-100	8.3	230	0.0	-100
Mahendragarh	0.0	-100	8.1	153	0.0	-100
Mewat	0.0	-100	2.0	67	0.2	-92
Palwal	0.0	-100	0.0	-100	0.0	-100
Panchkkula	0.0	-100	13.3	80	0.8	-87
Panipat	0.0	-100	5.4	86	0.2	-92
Rewari	0.0	-100	3.8	217	0.0	-100
Rohtak	0.0	-100	0.0	-100	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.0	-100	11.2	219	0.0	-100
Yamunanagar	0.0	-100	9.8	21	0.0	-100
Delhi						
Central Delhi	0.0	-100	0.0	-100	0.0	-100
East Delhi	0.0	-100	0.0	-100	0.0	-100
New Delhi	0.0	-100	3.8	-11	0.0	-100
North Delhi	0.0	-100	3.0	-29	0.6	-90
North East Delhi	0.0	-100	4.0	-5	0.0	-100
North West Delhi	0.0	-100	7.0	67	0.0	-100
South Delhi	0.0	-100	1.4	-67	0.5	-92
South West Delhi	0.0	-100	0.5	-88	0.4	-93
West Delhi	0.0	-100	0.0	-100	0.0	-100
Jammu & Kashmir						
Anantnag	3.9	-83	12.3	-47	23.2	-17
Badgam	1.0	-94	10.7	-36	5.8	-76
Bandipore	**	**	**	**	**	**

Baramula	3.8	-87	19.9	-53	29.0	28
Doda	3.8	-85	15.6	-4	21.8	-4
Ganderbal	4.8	-75	19.4	18	17.2	-15
Jammu	0.5	-91	6.0	18	0.0	-100
Kargil	**	**	**	**	**	**
Kathua	11.2	261	3.9	200	1.0	-84
Kistwar	**	**	**	**	**	**
Kulgam	2.4	-89	9.2	-60	10.6	-62
Kupwara	6.3	-78	16.9	-28	29.2	8
Ladakh(Leh)	0.0	-100	0.0	-100	0.0	-100
Poonch	**	**	**	**	**	**
Pulwama	0.9	-96	8.0	-56	8.2	-68
Rajouri	3.0	-59	1.2	-73	0.0	-100
Ramban	4.9	-81	32.4	100	50.6	124
Reasi	1.0	-93	14.0	-14	1.8	-84
Samba	0.6	-89	1.8	-65	0.0	-100
Shopian	**	**	**	**	**	**
Srinagar	1.4	-93	10.3	-37	12.7	-37
Udhampur	0.2	-99	17.8	9	5.4	-52
East Madhya Pradesh						
Anuppur	0.0	-100	0.5	-93	0.0	-100
Balaghat	1.9	58	1.5	9	0.0	-100
Chhatarpur	0.2	-63	3.6	345	0.0	-100
Chindwara	0.0	-100	24.7	1956	3.8	533
Damoh	0.0	-100	19.5	3150	0.0	-100
Dindori	0.0	-100	7.0	600	0.0	-100
Jabalpur	1.6	-24	0.0	-100	0.0	-100
Katni	1.0	233	6.0	1900	0.0	-100
Mandla	1.4	-22	13.2	1550	0.0	-100
Narsingpur	0.2	-17	0.6	500	0.0	-100
Panna	0.0	-100	3.2	540	0.0	-100
Rewa	1.2	-100	0.0	-100	0.0	-100
Sagar	2.7	800	5.4	984	0.0	-100
Satna	1.4	250	4.5	793	1.3	-38
Seoni	0.0	-100	1.3	-2	0.0	-100
Shahdol	0.0	-100	8.0	789	0.0	-100
Sidhi	0.0	-100	0.0	-100	1.0	-58
Singrauli	0.0	-100	5.0	355	0.0	-100
Tikamgarh	0.0	-100	0.0	-100	0.0	-100
Umaria	0.2	-78	8.3	538	0.0	-100
West Madhya Pradesh						
Agar	0.0	-100	2.1	933	0.0	-100
Alirajpur	0.0	-100	19.8	19700	0.0	-100
Asoknagar	0.0	-100	7.3	2317	0.0	-100
Badwani	0.0	-100	2.1	313	0.0	-100
Betul	0.0	-100	4.7	1070	0.0	-100
Bhind	0.0	150	5.9	1080	0.0	-100
Bhopal	0.0	-100	9.0	1186	0.0	-100
Burhanpur	0.0	-100	1.4	-51	0.0	-100

Datia	0.0	-100	13.0	665	0.0	-100
Dewas	0.0	-100	3.3	1011	0.0	-100
Dhar	0.0	-100	0.5	371	0.0	-100
Guna	0.0	-100	2.8	300	0.0	-100
Gwalior	0.0	-33	22.4	964	0.3	-79
Harda	0.0	-100	0.0	-100	0.0	-100
Hosangabad	0.0	-100	5.4	970	0.0	-100
Indore	0.0	-100	8.7	624	0.0	-100
Jhabua	0.0	-100	18.0	1100	0.0	-100
Khandwa	0.0	-100	9.0	1025	0.0	-100
Khargone	0.0	-100	2.8	1292	0.0	-100
Mandsaur	0.0	-100	1.3	39	0.0	-100
Morena	0.0	-100	1.1	10	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	8.9	2880	0.0	-100
Rajgarh	0.0	-100	9.7	2330	0.0	-100
Ratlam	0.0	-100	12.4	1671	0.0	-100
Sehore	0.0	-100	4.6	1050	0.0	-100
Shajapur	0.0	-100	11.0	1733	0.0	-100
Sheopur Kalani	0.0	-100	0.0	-100	0.0	-100
Shivpuri	0.0	-100	1.0	-23	0.0	-100
Ujjain	0.0	-100	25.2	2700	0.0	-100
Vidisha	0.0	-100	2.2	214	0.0	-100
Chhattisgarh						
Bastar	8.9	5	6.2	-20	15.0	30
Bijapur	0.0	-100	18.6	613	0.0	-100
Bilaspur	3.2	-14	9.4	177	29.0	505
Dantewara	1.2	-63	2.4	-45	0.0	-100
Dhamtari	0.0	-100	19.8	662	0.0	-100
Durg	3.4	100	8.8	361	1.8	-25
Janjgir	**	**	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.7	-92
Kanker	0.0	-100	**	**	**	**
Korba	0.0	-100	6.3	126	4.2	23
Koriya	0.0	-100	**	**	**	**
Kawardha	**	**	0.0	-100	0.0	-100
Mahasumund	6.6	247	12.8	1494	0.0	-100
Narayanpur	**	**	66.2	1003	0.0	-100
Raigarh	2.2	-49	**	**	3.5	-13
Raipur	11.2	195	6.3	152	2.5	-51
Rajnandgaon	8.4	320	3.8	58	0.3	-93
Surguja	2.7	0	0.0	-100	2.7	-24
East Uttar Pradesh						
Allahabad	0.4	-63	0.0	-100	0.5	-71
Ambedkar Nagar	0.0	-100	13.5	487	0.0	-100
Azamgarh	12.7	452	2.1	11	0.0	-100
Bahraich	25.8	617	1.5	-73	2.0	-81
Ballia	1.7	-43	24.8	726	0.0	-100
Balrampur	0.0	-100	0.0	-100	0.0	-100

Banda	5.7	414	8.4	364	0.0	-100
Barabanki	0.0	-100	0.6	-75	0.0	-100
Basti	0.0	-100	0.0	-100	0.0	-100
Chandauli	0.0	-100	1.0	-23	0.0	-100
Deoria	0.0	-100	5.0	39	0.0	-100
Faizabad	0.0	-100	13.6	613	0.0	-100
Farrukhabad	0.0	-100	2.1	-13	0.0	-100
Fatehpur	0.5	-69	0.0	-100	0.0	-100
Gazipur	13.1	368	7.3	246	0.0	-100
Gonda	0.0	-100	1.0	-60	0.0	-100
Gorakhpur	0.0	-100	8.3	158	5.9	-38
Hardoi	0.0	-100	0.8	-73	0.1	-98
Jaunpur	1.9	-26	0.0	-100	0.0	-100
Kannauj	0.0	-100	0.0	-100	0.0	-100
Kanpur City	0.0	-100	8.3	654	0.0	-100
Kanpur Dehat	0.0	-100	5.6	1300	0.0	-100
Kaushambi	0.0	-100	0.0	-100	0.0	-100
Kheri	11.3	176	19.6	334	0.3	-97
Kushi nagar	0.0	-100	16.0	171	6.5	-36
Lucknow	0.0	-100	2.7	148	0.0	-100
Maharajganj	0.0	-100	22.5	226	0.5	-93
Mau	0.0	-100	3.5	52	0.0	-100
Mirzapur	0.0	-100	6.8	322	0.0	-100
Pratapgarh	0.0	-100	6.0	445	0.0	-100
RaiBareilly	0.0	-100	0.0	-100	0.0	-100
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnagar	0.0	-100	0.0	-100	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100
Shrawasti	**	**	**	**	**	-100
Sidharthnagar	0.0	-100	8.0	150	0.0	-100
Sitapur	1.0	-60	4.1	10	0.0	-100
Sonbhadra	0.0	-100	0.8	-74	1.9	-44
Sultanpur	5.1	63	6.9	433	0.0	-100
Unnao	0.0	-100	6.0	300	0.0	-100
Varanasi	0.1	-97	3.2	146	0.0	-100
West Uttar Pradesh						
Agra	1.1	-8	0.3	-88	0.6	-67
Aligarh	1.3	-60	5.1	88	0.0	-100
Auraiya	0.0	-100	2.0	54	0.0	-100
Badaun	0.0	-100	12.0	243	0.0	-100
Baghpat	0.0	-100	6.4	88	0.0	-100
Bareilly	0.0	-100	45.6	1528	0.0	-100
Bijnor	0.0	-100	13.0	364	0.0	-100
Bulandsahar	0.0	-100	13.0	282	0.0	-100
Etah	0.0	-100	0.7	-80	0.0	-100
Etawah	0.0	-100	0.0	-100	0.0	-100
Firozabad	0.0	-100	6.1	203	0.0	-100
GBNagar	0.0	-100	1.0	0	0.0	-100
Ghaziabad	0.0	-100	0.9	-76	0.5	-87

Hamirpur	0.0	-100	14.3	2283	1.3	67
Jalaun	0.0	-100	5.9	493	0.0	-100
Jhansi	0.5	-75	3.4	68	0.0	-100
Jotiba Phule Nagar	0.0	-100	0.0	-100	0.0	-100
Kanshiramnagar	0.0	-100	4.0	90	0.0	-100
Lalitpur	0.0	-100	1.0	25	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	0.0	-100
Mahoba	0.0	-100	3.0	25	0.0	-100
Mainpuri	0.0	-100	2.2	100	0.0	-100
Mathura	0.0	-100	0.0	-100	0.0	-100
Meerut	0.3	-89	4.1	2	0.0	-100
Moradabad	12.9	462	0.4	-86	0.6	-88
Muzaffarnagar	0.3	-88	2.0	-5	0.0	-100
Pilibhit	1.0	-60	17.6	433	0.0	-100
Rampur	1.3	-57	12.0	234	0.0	-100
Saharanpur	0.0	-100	3.3	-36	0.0	-100
Shahjahanpur	0.0	-100	7.5	242	0.0	-100
Uttarakhand						
Almora	0.0	-100	24.0	203	5.3	-58
Bageshwar	0.0	-100	48.5	514	60.0	380
Chamoli	8.0	-38	18.5	20	30.0	42
Champawat	3.5	-43	15.0	42	6.5	-62
Dehradun	3.7	-46	17.8	97	0.0	-100
Garhwal Pauri	0.0	-100	5.3	-32	0.7	-92
Garhwal Tehri	0.0	-100	21.2	102	0.0	-100
Haridwar	0.0	-100	23.3	276	0.0	-100
Nainital	0.0	-100	52.8	388	7.9	-41
Pithorgarh	4.0	-71	72.6	308	45.3	65
Rudraprayag	0.0	-100	12.8	-40	33.4	50
Udham Sing Nagar	0.0	-100	25.4	567	0.6	-92
Uttarkashi	2.9	-75	7.4	-52	5.5	-82
Bihar						
Araria	30.6	38	7.9	-59	51.3	94
Arwal	0.0	-100	0.0	-100	1.9	4
Aurangabad	0.0	-100	0.0	-100	5.0	32
Banka	0.0	-100	20.9	175	6.1	-42
Begusarai	0.0	-100	14.1	48	0.0	-100
Bhabua	0.0	-100	0.0	-100	0.7	-87
Bhagalpur	0.0	-100	25.5	111	4.7	-67
Bhojpur	0.0	-100	5.4	93	2.1	-74
Buxar	0.0	-100	**	**	0.0	-100
Darbhanga	20.0	54	**	**	45.1	264
East Champaran	0.0	-100	**	**	2.0	-81
Gaya	0.0	-100	0.0	-100	5.0	-4
Gopalganj	0.0	-100	**	**	4.2	-42
Jahanabad	0.0	-100	**	**	0.0	-100
Jamui	0.0	-100	**	**	6.5	-18
Katihar	0.0	-100	2.1	-90	4.0	-77
Khagadia	0.0	-100	3.1	-69	3.1	-71

Kishanganj	31.7	0	**	**	19.0	-25
Lakhisarai	0.0	-100	**	**	1.7	-85
Madhepura	20.7	51	27.7	63	18.8	-13
Madhubani	11.3	-13	**	**	36.9	104
Monghyar	0.0	-100	**	**	0.0	-100
Muzaffarpur	15.5	91	18.8	90	4.4	-69
Nalanda	0.0	-100	3.1	-32	8.2	37
Nawada	0.0	-100	4.1	-34	0.0	-100
Patna	2.1	-57	14.2	256	5.3	-26
Purnea	20.5	1	28.0	24	92.3	268
Rohtas	0.0	-100	0.0	-100	9.2	61
Saharsha	22.6	7	**	**	25.5	11
Samstipur	7.8	21	25.5	235	3.7	-53
Saran	3.2	-31	10.1	46	1.0	-86
Sheikpura	0.0	-100	**	**	17.6	179
Sheohar	0.0	-100	3.4	-73	0.0	-100
Sitamarhi	0.0	-100	0.0	-100	12.6	-22
Siwan	0.0	-100	0.0	-100	0.0	-100
Supaul	22.9	69	38.5	139	69.6	221
Vaishali	0.3	-95	44.2	1063	0.9	-86
West Champaran	0.0	-100	9.9	43	12.0	-6
Jharkhand						
Bokaro	1.4	-86	21.2	172	3.8	-51
Chatra	0.0	-100	**	**	8.5	130
Deoghar	0.0	-100	7.2	7	27.1	201
Dhanbad	0.0	-99	17.6	78	21.1	60
Dumka	0.0	-100	30.2	119	20.3	21
East Singbhum	24.1	146	35.4	160	19.9	31
Garhwa	0.0	-100	0.0	-100	10.0	1076
Giridih	0.0	-100	23.2	186	27.7	168
Godda	0.0	-100	15.0	95	0.0	-100
Gumla	0.0	-100	2.3	-77	33.0	166
Hazaribagh	12.2	139	7.4	19	11.2	37
Jamtara	1.1	-91	26.4	184	43.8	222
Khunti	0.0	-100	20.5	280	67.0	341
Koderrna	0.0	-100	2.0	-53	10.1	119
Latehar	0.0	-100	**	**	11.8	141
Lohardagga	0.0	-100	3.9	-29	15.4	108
Pakur	1.3	-91	8.2	-46	3.5	-84
Palamau	0.0	-100	0.0	-100	7.5	98
Ramgarh	0.0	-100	1.6	-81	4.8	-62
Ranchi	4.9	-21	8.2	19	6.8	-44
Sahebganj	0.0	-100	**	**	17.8	63
Saraikela	14.2	71	10.9	-7	44.1	262
Simdega	0.0	-100	0.0	-100	6.0	-52
West Singbhum	0.0	-100	23.3	77	49.0	253
East Rajasthan						
Ajmer	0.2	-71	0.0	-100	0.4	-71
Alwar	0.0	-100	13.3	291	0.1	-99

Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	4.4	775	0.0	-100
Bharatpur	0.0	-100	5.4	135	0.0	-100
Bhilwara	0.4	-65	3.5	250	0.0	-100
Bundi	0.0	-100	4.0	400	1.3	48
Chittorgarh	0.0	-100	3.4	180	0.4	-74
Dausa	0.0	-100	0.0	-100	0.0	-100
Dholpur	1.2	-27	2.2	67	1.0	-44
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.4	-56	6.1	165	1.2	-68
Jhalawar	0.0	-100	11.0	1000	0.0	-100
Jhunjhunu	0.4	-72	5.7	35	1.5	-72
Karauli	0.0	-100	0.0	-100	0.0	-100
Kota	0.0	-100	6.1	1419	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100
Rajsamand	0.0	-100	0.0	-100	0.0	-100
Sawai Madhopur	0.0	-100	0.0	-100	0.0	-100
Sikar	0.0	-100	15.7	282	0.4	-92
Sirohi	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-100	3.0	42	0.0	-99
Udaipur	0.0	-100	0.0	-100	2.0	31
West Rajasthan						
Barmer	0.0	-100	0.1	-95	0.0	-100
Bikaner	0.0	-100	0.0	-99	0.0	-100
Churu	0.0	-100	16.0	357	0.1	-97
Hanumangarh	0.0	-100	0.0	-100	0.0	-100
Jaisalmer	0.0	-100	4.4	631	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-100	0.0	-100	0.2	-85
Nagaur	0.0	-100	0.0	-100	5.1	50
Pali	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	0.0	-100	0.0	-98	0.0	-100
Gujarat Region						
Ahmedabad	0.0	-100	0.1	-97	0.0	-100
Anand	0.0	-100	2.6	119	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
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	12.5	1983	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100
Narmada	0.0	-100	0.0	-100	0.4	-60
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.2	-74	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100

Sabarkantha	0.0	-100	0.0	-100	0.0	-100
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	4.9	1528	0.0	-100
Bhavnagar	0.0	-100	0.2	-73	0.0	-100
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	1.7	237	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.0	-100
Maharashtra						
Konkan & Goa						
Mumbai City	0.0	-100	0.0	-100	0.0	-100
Mumbai Suburban	0.0	-100	0.0	-100	0.0	-100
North Goa	0.0	-100	0.0	-100	0.8	-93
Raigad	0.0	-100	0.0	-100	0.0	-100
Ratnagiri	0.0	-100	0.0	-100	0.1	-97
Sindhudurg	0.0	-100	0.0	-100	1.0	-81
South Goa	0.0	-100	0.0	-100	6.2	-37
Thane	0.0	-100	0.0	-100	0.0	-100
Madhya Maharashtra						
Ahmednagar	0.0	-100	0.0	-100	0.0	-100
Dhule	0.0	-100	2.4	300	0.0	-100
Jalgaon	0.0	-100	1.8	254	0.0	-99
Kolhapur	0.0	-100	0.0	-100	2.3	-82
Nandurbar	0.0	-100	0.3	-63	0.1	-95
Nasik	0.0	-100	9.3	615	5.3	281
Pune	0.0	-100	7.6	302	6.7	31
Sangli	0.8	-93	0.0	-100	2.7	-73
Satara	0.0	-100	1.4	-63	2.4	-64
Solapur	0.4	-91	0.6	-71	3.2	-45
Marathwada						
Aurangabad	0.0	-100	4.0	341	0.7	-50
Beed	0.8	-60	2.0	67	2.4	-33
Hingoli	0.0	-100	1.8	22	0.0	-100
Jalna	0.0	-100	0.9	-2	1.6	2
Latur	4.1	58	8.2	529	0.8	-79
Nanded	1.2	-17	9.9	481	0.2	-94
Osmanabad	1.4	-51	3.5	84	0.0	-100
Parbhani	0.3	-88	1.4	1	0.0	-100
Vidarbha						
Akola	0.0	-100	6.0	902	0.1	-89
Amraoti	0.0	-100	14.2	1483	0.2	-75
Bhandara	1.4	1	14.1	607	5.3	13
Buldhana	0.0	-100	4.8	855	1.3	31

Chandrapur	13.1	669	21.9	1051	0.2	-96
Gadchiroli	10.7	267	5.1	75	0.0	-100
Gondia	2.4	240	9.4	525	0.0	-100
Nagpur	0.1	-96	7.9	275	0.1	-92
Wardha	0.3	-86	10.2	437	0.0	-100
Washim	0.0	-100	9.7	593	1.0	-9
Yeotmal	0.1	-95	10.0	378	0.4	-87
Odisha						
Angul	3.3	-66	4.0	-64	2.4	-85
Balasore	8.4	-44	25.4	-1	0.4	-99
Bargarh	5.0	28	6.5	72	6.6	35
Bhadrak	0.0	-100	57.2	124	0.5	-98
Bolangir	5.9	22	4.1	-40	5.7	-56
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	2.8	-87	16.2	6	0.6	-97
Deogarh	1.7	-75	0.0	-100	12.6	52
Dhenkanal	0.8	-94	11.8	-24	0.3	-98
Gajapati	27.4	18	29.9	-40	34.1	-8
Ganjam	5.9	-44	10.1	-64	14.9	-36
Jagatsingpur	1.9	-90	2.3	-89	0.0	-99
Jajpur	0.3	-98	27.8	40	0.0	-100
Jharsuguda	0.2	-97	0.0	-99	6.8	-34
Kalahandi	0.0	-100	13.0	51	2.6	-81
Kandhamal	2.9	-80	2.3	-86	8.6	-59
Kendrapara	0.0	-100	8.7	-44	0.0	-100
Keonjhar	0.0	-99	26.8	11	29.8	7
Khurda	3.8	-60	1.1	-93	0.0	-100
Koraput	10.0	-44	35.4	28	37.9	97
Malkangiri	0.0	-100	23.8	143	6.8	-61
Mayurbhanj	5.1	-75	17.4	-14	16.0	-52
Nawapara	0.0	-100	2.9	-35	0.0	-100
Nawarangpur	3.0	-79	24.9	45	7.8	-49
Nayagarh	4.4	-68	6.0	-7	31.7	265
Puri	0.7	-93	0.0	-99	1.1	-96
Rayagada	2.5	-79	16.4	-51	29.9	18
Sambalpur	5.6	-19	1.6	-72	4.7	-43
Sonepur	2.7	-47	0.8	-84	0.0	-100
Sundargarh	1.2	-78	3.3	-49	3.3	-64
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
Nicobar	4.8	-92	19.7	-69	19.8	-76
North & Middle Andaman	0.0	-100	0.0	-100	1.4	-98
South Andaman	0.0	-100	0.0	-100	6.4	-92
GWB						
Bankura	4.8	-65	5.4	-62	46.3	256
Birbhum	3.0	-75	24.4	73	28.5	41
Burdwan	0.5	-97	31.2	173	51.1	169
East Midnapore	6.9	-69	3.0	-84	5.9	-69
Hooghly	2.6	-86	15.0	-24	35.3	53

Howrah	7.4	-65	2.1	-90	11.0	-60
Kolkata	4.6	-78	4.7	-76	13.4	-42
Murshidabad	1.0	-92	27.0	58	5.0	-70
Nadia	1.6	-92	65.9	274	65.5	270
24 Pargana (N)	6.7	-75	46.4	111	33.9	95
Purulia	1.5	-87	14.6	85	13.8	-20
24 Pargana (S)	3.6	-82	4.1	-81	9.2	-77
West Midnapore	30.1	81	40.6	129	13.0	-44
SHWB & Sikkim						
Cooch Behar	7.3	-87	57.1	-5	116.1	70
Darjeeling	10.0	-81	28.5	-40	36.9	-29
East Sikkim	14.7	-75	28.5	-53	109.2	55
Jalpaiguri	42.4	-27	56.1	-7	78.7	21
Malda	0.0	-100	21.9	7	28.2	46
North Dinajpur	**	**	**	**	**	**
North Sikkim	31.9	-56	25.8	-60	200.3	165
South Dinajpur	0.0	-100	2.3	-93	16.7	-50
South Sikkim	12.4	-79	22.0	-64	34.6	-51
West Sikkim	38.5	-47	20.5	-68	53.5	-29
Karnataka						
Coastal Karnataka						
Dakshina Kannada	2.4	-87	7.0	-64	74.2	139
Udupi	0.0	-100	0.0	-100	78.6	148
Uttara Kannada	0.1	-99	0.0	-100	49.9	156
NI Karnataka						
Bagalkote	2.0	-70	2.8	-63	17.4	37
Belagavi	5.2	-64	0.0	-100	29.1	72
Bidar	20.0	325	43.7	1021	6.2	-28
Dharwad	4.3	-75	0.0	-100	38.6	123
Gadag	2.8	-77	3.7	-62	29.3	60
Haveri	0.0	-100	6.1	-55	60.2	214
Kalaburgi	3.4	-35	33.2	656	7.4	-19
Koppal	0.0	-100	17.8	170	8.6	-39
Raichur	4.5	42	8.6	75	3.4	-70
Vijayapura	8.3	45	2.0	-56	15.1	51
Yadgir	0.9	-79	14.1	329	3.7	-65
SI Karnataka						
Ballari	4.8	-49	32.2	288	5.1	-60
Bangalore Rural	0.0	-100	55.3	300	6.1	-75
Bangalore Urban	0.0	-100	36.8	123	0.9	-97
Chamarajanagar	2.6	-90	51.5	108	20.0	-43
Chikaballapur	6.4	-50	28.4	208	2.3	-89
Chikkamagaluru	10.5	-53	7.8	-44	54.0	94
Chitradurga	9.4	-17	20.9	129	8.7	-51
Davangere	2.5	-81	0.0	-100	41.3	106
Hassan	8.1	-62	22.9	26	44.2	55
Kodagu	19.8	-31	58.1	120	56.8	61
Kolar	0.0	-100	58.7	482	2.0	-91
Mandya	1.4	-93	36.5	137	7.8	-75

Mysuru	9.5	-59	46.6	105	22.1	-38
Ramanagara	0.9	-97	27.5	43	4.5	-85
Shivamogga	6.4	-58	0.0	-100	49.3	139
Tumakuru	4.0	-73	14.2	18	3.2	-88
Kerala						
Alappuzha	16.1	-64	28.2	-41	109.4	62
Kannur	3.3	-87	22.7	-20	38.6	-26
Ernakulam	16.3	-64	37.5	18	83.7	18
Idukki	2.7	-94	93.8	212	92.2	64
Kasaragod	0.0	-100	0.1	-99	44.4	-2
Kollam	11.2	-76	53.7	22	201.2	261
Kottayam	29.8	-32	33.0	-21	99.2	59
Kozhikode	0.0	-100	15.9	-45	64.2	4
Malappuram	0.2	-99	52.2	35	46.6	-13
Palakkad	0.3	-99	64.5	163	43.5	20
Pathanamthitta	40.3	-28	52.7	-5	244.3	266
Thiruvananthapuram	5.0	-86	41.9	14	168.0	256
Thrissur	0.0	-100	58.1	44	55.1	-20
Wayanad	11.1	-55	50.3	117	30.6	-25
Tamil Nadu						
Ariyalur	0.0	-100	0.0	-100	43.2	128
Chennai	0.0	-100	0.0	-100	152.5	1299
Coimbatore	0.5	-97	25.1	46	45.4	93
Cuddalore	0.0	-100	0.0	-100	75.0	443
Dharmapuri	0.0	-100	15.3	0	15.5	-47
Dindigul	0.0	-100	39.0	110	40.0	84
Erode	0.4	-98	10.4	-30	18.0	-30
Kanchipuram	0.0	-100	0.0	-100	142.2	1280
Kanyakumari	3.2	-90	21.3	-22	82.4	169
Karikal	0.0	-100	0.0	-100	126.9	1144
Karur	0.0	-100	60.7	333	55.6	204
Krishnagiri	0.0	-100	30.4	76	14.8	-48
Madurai	0.0	-100	4.0	-78	40.1	125
Nagapattinam	0.0	-100	0.0	-100	124.6	1110
Namakkal	0.0	-100	23.5	39	39.2	44
Nilgiris	0.4	-98	30.6	51	32.2	-3
Perambalur	0.0	-100	66.8	480	62.3	218
Puducherry	0.0	-100	0.0	-100	38.8	270
Pudukottai	0.0	-100	4.2	-58	67.3	438
Ramanathapuram	4.1	-57	4.3	-63	74.9	534
Salem	0.0	-100	18.9	15	32.2	8
Sivaganga	0.0	-100	13.7	-10	76.3	406
Thanjavur	0.0	-99	1.3	-91	70.0	474
Theni	0.5	-97	31.8	129	33.0	145
Tirunelveli	1.3	-92	22.2	57	55.1	371
Tirupur	0.0	-100	25.7	90	76.3	214
Tiruvallur	0.0	-100	0.1	-99	108.3	875
Tiruvannamalai	0.0	-100	5.4	-57	43.0	105
Tiruvarur	0.0	-100	5.2	-65	106.6	988

Toothukudi	0.0	-100	1.4	-87	21.8	148
Trichy	0.0	-100	26.9	101	64.0	300
Vellore	0.0	-100	9.0	-34	25.1	40
Villupuram	0.0	-100	1.6	-84	49.4	196
Virudhunagar	0.0	-100	15.9	-12	41.8	158
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	1.8	-80	7.8	-71	8.0	-48
Guntur	3.2	-27	32.7	67	0.2	-98
Krishna	0.3	-96	20.4	122	4.0	-69
Nellore	0.4	-95	3.6	-70	69.6	377
Prakasam	2.3	-65	9.3	-11	4.7	-65
Sirkakulam	6.8	-26	7.3	-61	17.5	8
Visakhapatnam	7.9	-51	12.7	-59	17.2	-26
Vizianagram	17.8	38	11.2	-60	22.3	14
West Godavari	1.8	-72	12.0	-32	2.2	-86
Rayalaseema						
Anantapur	2.0	-77	13.9	79	4.4	-68
Chittoor	0.1	-99	25.7	120	30.7	69
Cuddapah	0.4	-94	10.2	40	7.9	-31
Kurnool	4.3	-32	18.9	136	2.6	-81
Telangana						
Adilabad	7.9	217	22.7	631	0.4	-93
Hyderabad	7.3	86	96.7	2150	0.1	-99
Karimnagar	5.7	36	50.0	707	0.7	-89
Khammam	3.7	-48	24.7	126	3.5	-73
Mehabubnagar	7.8	70	33.9	653	3.6	-68
Medak	3.4	16	36.5	748	2.4	-72
Nalgonda	8.3	176	73.1	1683	0.0	-100
Nizamabad	12.0	444	32.3	534	0.1	-99
Rangareddy	3.6	-42	62.5	1258	3.2	-72
Warangal	10.6	193	27.8	479	1.7	-82

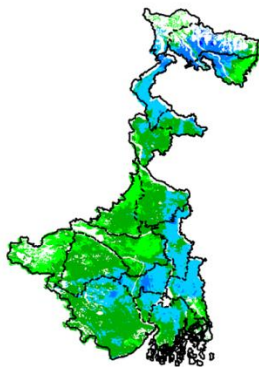
Legends

	(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

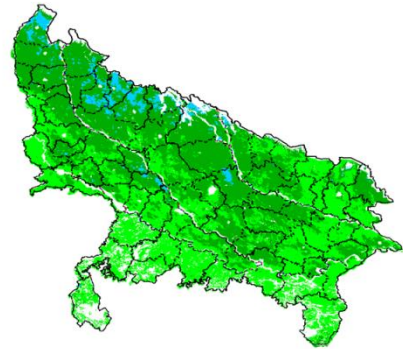
INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON
18th May 2016 FOR DIFFERENT STATES

West Bengal



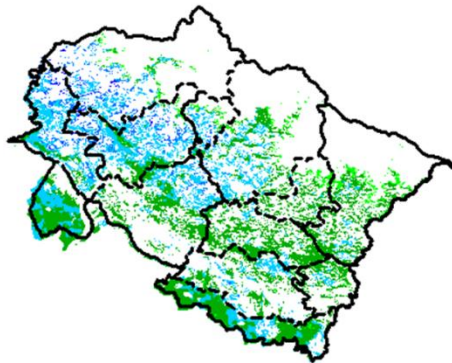
Agricultural vigour is good in West Bengal, whereas western region of the state shows moderate NDVI.

Uttar Pradesh



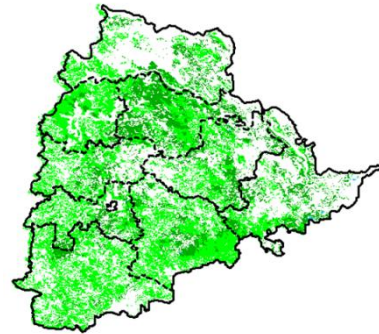
Agricultural vigour is moderate over entire state of Uttar Pradesh .

Uttarakhand



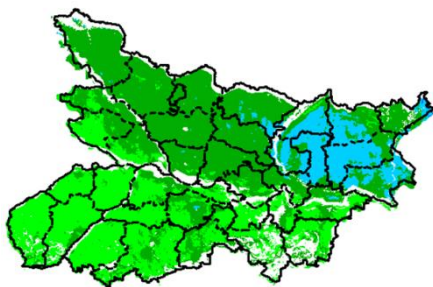
Agricultural vigour is moderate over entire state of Uttarakhand except few patches in west shows good Values of NDVI.

Telangana



Agriculture vigour is moderate over entire state of Telangana.

Bihar



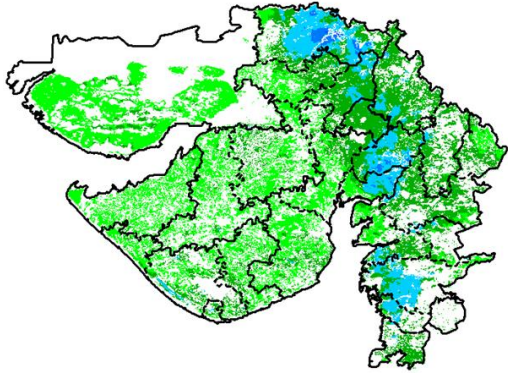
Agriculture vigour is moderate over major parts of Bihar whereas eastern part shows patches of good NDVI values.

Delhi



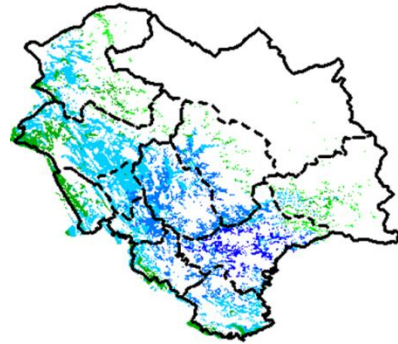
Agriculture vigour is moderate all over Delhi.

Gujarat



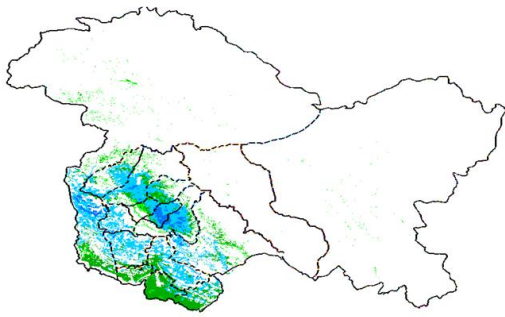
Agriculture vigour is moderate in Kutch and Saurashtra whereas, good agricultural vigour is observed over patches in Gujarat region.

Himachal Pradesh



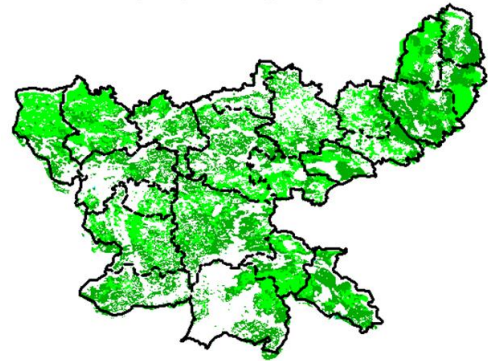
Agriculture vigour is good over entire state of Himachal Pradesh, except few patches over north and east shows moderate values of NDVI.

Jammu & Kashmir



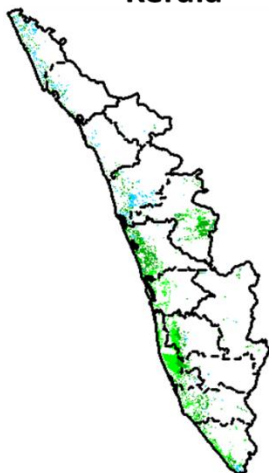
Agriculture vigour is good over central and northern part of Jammu & Kashmir, whereas the remaining region shows moderate NDVI.

Jharkhand



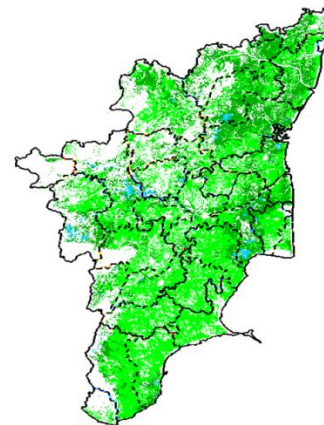
Agriculture vigour is moderate over entire state of Jharkhand.

Kerala



Agriculture vigour is moderate over entire state of Kerala except few patches over north shows good values of NDVI.

Tamil Nadu



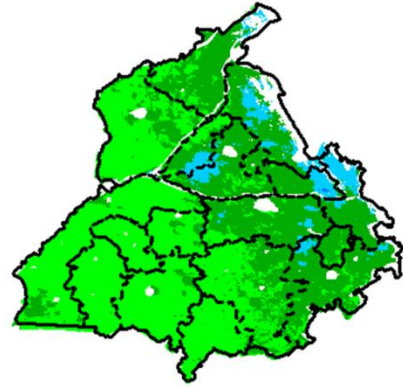
Agricultural vigour is moderate over entire state of Tamil Nadu.

Madhya Pradesh



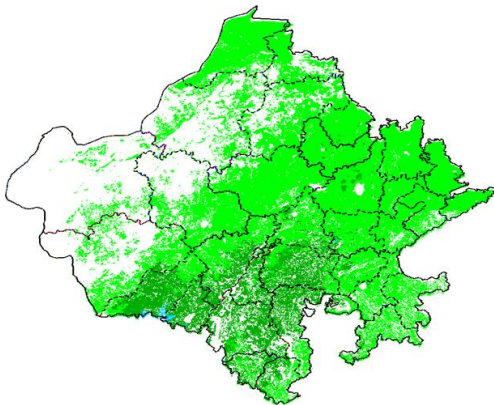
Agriculture vigour shows moderate values of NDVI over entire state of Madhya Pradesh except few patches in central shows good values of NDVI.

Punjab



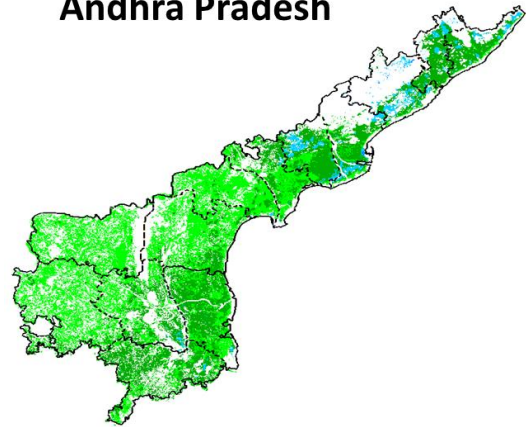
Agricultural vigour is good over northern parts of Punjab whereas, the remaining region shows moderate NDVI.

Rajasthan



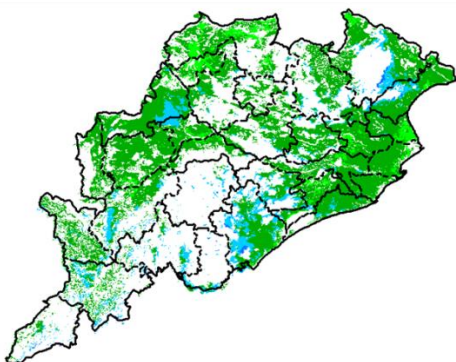
Agriculture vigour is moderate over the entire state of Rajasthan.

Andhra Pradesh



Agriculture vigour is good over coastal part of Andhra Pradesh whereas other region shows moderate values.

Odisha



Agricultural vigour is good in patches of coastal and western parts of Odisha where rest of region shows moderate NDVI.

Haryana



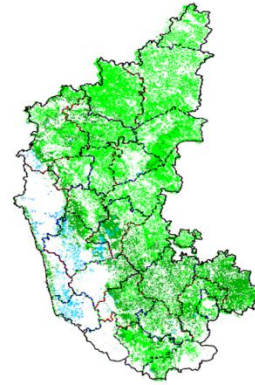
Agriculture vigour is moderate over entire state of Haryana.

Chhattisgarh



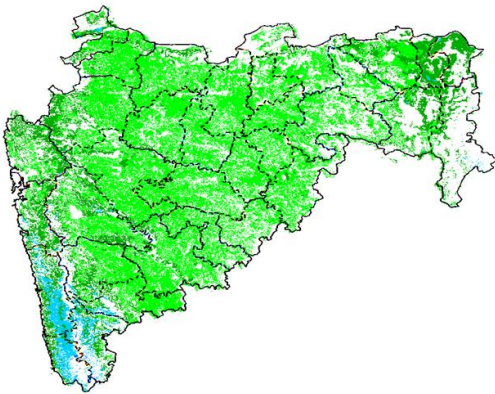
Agriculture vigour is moderate in the state of Chhattisgarh with few patches of good NDVI in southern region.

Karnataka



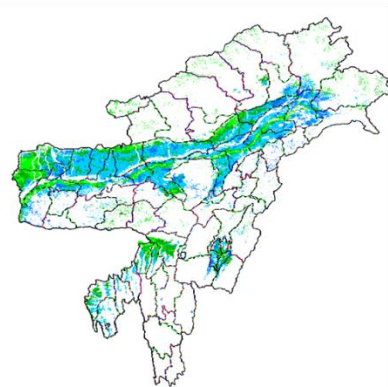
Agriculture vigour is good over patches in South-western part of Karnataka state. Rest of the state shows moderate values of NDVI.

Maharashtra

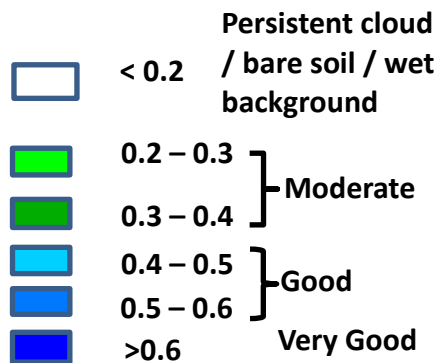


Agricultural vigour is good over south-western part of Maharashtra, whereas other region shows moderate values.

North East Region



Agriculture vigour is good over North-East states of India.



Annexure III

Assam

Early *ahu* rice: semi dwarf *ahu* rice varieties like Luit, Kopilee, Cauvery, Culture -1, Rasi, Banglami, Puthichapali, Nilajee, Hasakumra.

Early *ahu* rice (for low lying area): IR-50, Pusa 2-21, Rasi, Culture -1, Luit, Kopilee (Semi-dwarf varieties); Rongadoria, Dubaichenga, Nilajee (Tall varieties).

Transplanted normal *ahu* rice: Gobind, IR-36, IR-50.

Bao rice: Maguri, Kekua Bao, Negheri Bao, Tara Bao.

***Kharif* maize:** Hybrid variety like Ganga 5, Hi starch and Composite variety like NLD, Dhawal, Naviot, Diara.

Capsularis jute: JRC 321 and UPC 94.

Green gram:Pratap, T-44, Kopergaon, AAU-39, K-851 and ML-55.

Black gram:T-9, Pant-U-19, UG-157.

Sugarcane: Kolong, Luhit, Dhansiri, Co 1148, CO-Jor- 1, CO-Jor- 2.

Okra:Pusa Sawani, Arka Anamika, Parbhdani Kranti.

Ridge gourd: Pusa Nashdar or other local varieties like AAU-1, AAU-2, AAU-3 etc.

Sponge gourd: Pusa Chikni or other local varieties.

Tapioca: H-43, H-97, H-165, S-865, H-2304.

Maize: Ganga 5, Navjot.

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

Okra:Parvani Kranti, Arka Anamica.

Ginger: Nadia, Karkai, Maran, Jorhat, chaina etc.

Turmeric: Shillong type, CL-24, PTS-38, PCT-13, VK-145.

Meghalaya

Brinjal :Local Umroi, Muta Kesh, Narrow.

Bottle gourd: Pusa Summer, Prolific Long, Prolific Round, Pusa Meghdoot, Pusa Hybrid 2.

Manipur

Pre-*kharif* rice: RC Maniphou 4, 5 and 12.

Tripura

***Jhum*rice :**Garo Malati, Binnietc.

Odisha

Sugarcane: Nilamadhaha, Sabitri, Co 7508, Co 7704, Co 62175, Co 740, Co 7219, CoJ 8201, Co 975, Co 7706, Co 8402, Co 62175.

Groundnut:Smruti, AK 12-24 TAG

Jharkhand

Lentil: P.L.-406, P.L.-639, K.L.S -218,K-75

Barley: Jyoti,Ratna,D.L.-36,B.R.-32

Linseed: Sweta,Shubhra, T-397

Onion: N-53,Pusa red,Arka nicketan, Arka kalian

Jammu & Kashmir

Cabbage: Golden Acre, Pride of India and PusaMukta.

Cauliflower: Giant Snow Ball, Pant Gobh 2 & 3 and Pusa Synthetic.

Uttarakhand

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

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

Brinjal: (brinjal-4, ARU-1 etc) and potato (Kufri Jyoti, Kufri Ashok & Kufri Anand etc.

Tomato: Tomato-3, Pant T-3, Him Sona, Him Shikhar etc variety in nursery).

Himachal Pradesh

Cauliflower: snowball and Giant snowball.

Radish:Japanese white, Chinese pink and mino early white

Turnip: PTWG-1

Carrot:Pusakesar

Fenugreek :I.C. 74, kasoori.

Peas :Mater ageta-6 (early variety).

Cabbage:Pride of India, golden achor and hybrid

East Uttar Pradesh

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

Tomato: pusa early, pusa ruby, HS 101, Pant Ta-2, Azad Ta-2, Narendra Tamatar-1,2,4,5,6

Cauliflower: pusaDipali.

Okra:PusaSawani, VarsaUphar, Azad kranti.

Brinjal: Pant Samrat, Pant Rituraj, Pusa hybrid-6.
Cabbage: Japani, Pusa Dieepali, Pusa Kartiki
cowpea: Lobia-263 & Pusa phaguni
Chilli: Pant C-1, Jwala and Sadabahar etc.
Grapes: parlet, beauty seedless, pusa seedless.
Maize: nawjyoti, kanchan, gaurav, surya, navin, shweta, Azad uttam, prakash, dikalb-7074, payridikalp-8144, dakkan-115, mmh-135, pro-4212, ganga-11, pusa, makka-2, J.H.-3459,
Urad: TA-9, narendra urad-1, Azad urad-1, Uttara, azad urad-2, shekhar-2, pant. u. 19, pant u. 30, pant u. 35, P.D.U.-1
Mung: k-851 and JM-721, Narendra mung-1, Malviya jagruti, Janpriya, Meha, H.U.M.-16, Malviya Jyoti, T.M.V.-37, Samrat, P.D.M.-139, H.U.M.-12, pusa vaishakhi, T.A.-44, Pant mung 12, pusa vishal, pusa-9531, P.D.M.-11, S.M.L.668
Onion: Agrifound light red, Nashik selection-1
Radish: pusa chetaki, pusa himani, pusa saris, pusa reshmi, japanis white radish.

West Uttar Pradesh

Ladies finger: VRO-6, VRO-5.
Sugarcane: ko.sha 88230, ko.sha 8436, ko 0238, ko.sha 07250 or U.P. 0512.
Barseem: V.L.1, V.L.10, maskavi, jai, K-8027, K-9565, Mandakini.
Onion: pusa red, pusa white.
Sugarcane: The mid and late maturing varieties of sugarcane: CO Pant 211, Co Sa 687 and Co Sa 8436.
 The varieties recommended in areas with poor water drainage: B.O.54 and B.O.91.
Baby corn: M.H.-4

Punjab

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89, CO118, COJ85, COJ64.
Rice: Pusa-44, T.R-112 and T.R-113.
Onion: Punjab Naroya, Punjab White and PRO 6.
Radish: Punjab Pasand and Japanese white.
Turnip: L-1.
Carrot: Punjab Black Beauty, Punjab Carrot Red and PC-34.
Tomato: TH-1, Punjab Ratta, Punjab NR 7, Punjab Chuhara, Punjab Upma, Castle Rock.

Delhi

Oat : J.H.O-822, O.L.-9, Pusa oat-5.
Barseem: Vardan, Buland Barseem-1, Masakavi, J.B-3;
Radish: Japani White, Hill queen, French Radish;
Spinach: Pusa Bharti.
Amaranths: Pusalal Chaulai, Pusa Kiran.
Ladyfinger: Pusa A-4.
Radish: Japani White, Hill queen, French Radish.
Spinach: All Green, Pusa Bharti;
Fenugreek: Pusa Kasuri;
Coriander: Pant Haritama, Hybrids.
Turnip: Pusa Swati, Local Red variety.

West Rajasthan

Isabgol: RI 89 & GI-2.
Fenugreek: RMt 1 & RMt 305.
Barley: RD 2052, RD 2035 (suitable for saline and alkali soils) and RD 2715 (dual purpose), RD2058, 2503, 103, NDB1173.
cumin: GC 4, RZ -19, RZ 223, RZ19, 209, 223 and GC4b.
Cowpea: RC-19, RC-101, RCP-27.
Oat: OS 6, OS 9.
Berseem: BL 10, BL 22.
Cauliflower: Pusa snow ball K-1, Hisar-1, Dania and Selection-7.
Radish: Pusa Rashmi.
Carrot: Pusa Keshar.
Zaid moong: K-851, PDM-11, SML-668 Pusa Baisakhi, RMG-62, RMG-268 etc.
Tinda: Bikaneri green, dilpasand
Cucurbit: Lakhnau ageti and Arkasital,
Muskmelon: Durgapura madhu, Punjab sunehri, Punjab hybrid and pusa madhuras
Watermelon: sugar baby, Durgapura mitha, Durgapura lal and khira
Sugarcane: CO-6617, 7717; COS- 95255, 767
 Desi cotton: RG-8, 18, HD-123, hyb Raj- DH 9

East Rajasthan

Muskmelon: Durgapura madhu, Punjab sunehri, Punjab hybrid, arkajeet, hara madhu, pusa madhuras.
Water melon: Sugar baby, Durgapura meetha, durgapura kesar, arka jyoti (hybrid), madhu (hybrid).
Tinda: Beekaneri green, Dil pasand, arka tinda.
Kakri: Lucknow ageti and arka sheetal.

Zaid Pearl millet (fodder):raj bajra chari, rajko Zaint, L-72, L-74.

Zaid sorghum (fodder): Raj chari-3, Raj chari-1, Raj chari-2 for single cutting and SSG59-3, M.P. chari for many cutting.

Okra:Pusa Savani, Arka anamika, Arka Abhya, Aajad kranti, Prabhni kranti, Pusa-A-4,Pusa Makhmali.

Cowpea: Short durC-152, RS-9, FS-68, RC-19 and RC-101, C-152, RS-9.

Onion: Punjab safed goal, Udaipur 102, nasik red.

Lucerne :Anand-2, LLC-3, RL-88 & Type-9.

Berseem:Muskavivardan and PusaJiant.

Summer groundnut:T.A.G.24, T.G.37A, G.G.2, D.H.86.

Tamil Nadu

Cotton: Surabhi and SVPR-2

Madhya Pradesh

Soybean: JS 335, JS 93-05, JS 95-60, JS 72-52.

Red gram: Jawahar -4, Ahsa (ICPL-87119), JKM-7,189.

Rice: short duration (JR, 305, JR 201,Poornima).

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

Sugarcane: KO Jawahar-86141, 86572, 86032.