



# *National Agromet Advisory Service Bulletin*



*Friday 1<sup>st</sup> April 2016*

*(For the period 1<sup>st</sup> to 5<sup>th</sup> April 2016)*



*Issued by*

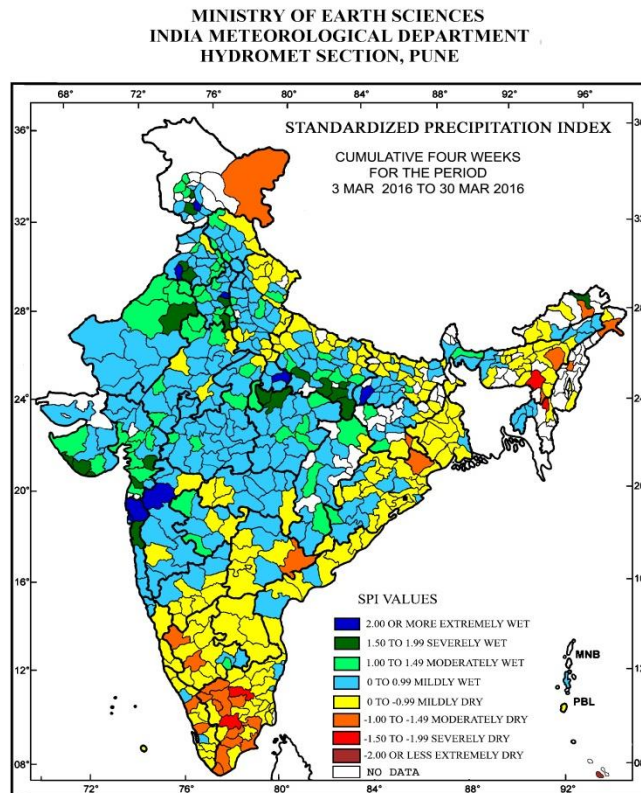
*National Agrometeorological Advisory Service Centre,  
Agricultural Meteorology Division,  
India Meteorological Department, Shivajinagar, Pune.*

**Weblink For**

District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

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

## Standardised Precipitation Index Four Weekly for the Period 3<sup>rd</sup> March to 30<sup>th</sup> March 2016

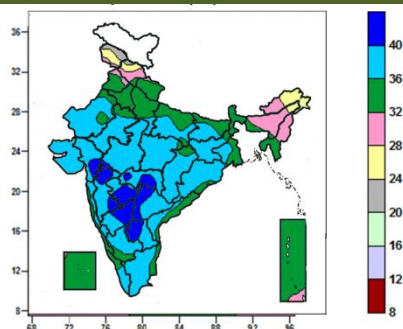


- Extremely/severely wet conditions experienced in a few districts of Konkan & Goa and Saurashtra, Kutch & Diu; Upper Siang district of Arunachal Pradesh; Rohtas district of Bihar; Allahabad, Fatehpur, Mirzapur, Sonbhadra, Varanasi, Hamirpur districts of Uttar Pradesh; Bhatinda, Muktsar, Faridkot districts of Punjab; Reasi, Pulwama, Ramban districts of Jammu & Kashmir; Churu district of Rajasthan; Chhatarpur, Tikamgarh districts of Madhya Pradesh; Surat, Narmada, Navsari districts of Gujarat Region; Nashik district of Maharashtra.
- Extremely/Severely dry conditions experienced in Jaintia Hills district of Meghalaya; Dindigul, Salem districts of TamilNadu.
- Moderately dry conditions experienced in few districts of Arunachal Pradesh; Tamil Nadu; Karbi Anglong, Hailakandi districts of Assam; Mayurbhanj district of Odisha; Seraikela-Khar district of Jharkhand; Ladakh (Leh), district of Jammu & Kashmir; Khammam district of Telangana; Chamarajanagar, Hassan, Shimoga districts of Karnataka; Ernakulam, Malappuram districts of Kerala.
- Rest of the country experienced moderately wet/ mildly dry/mildly wet conditions.



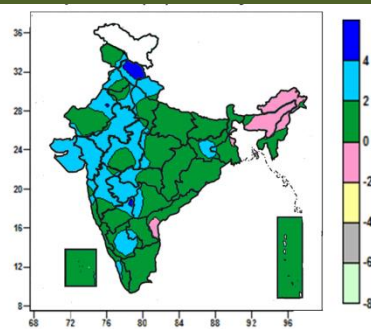
**Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 30.03.2016**

**Actual Mean Maximum Temperature (°C) in India for the week ending 30.03.2016**



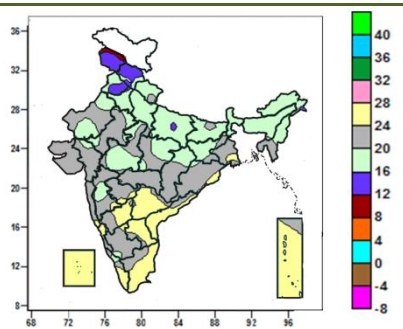
- Mean maximum temperature was above 40°C over many parts of Marathwada, North Interior Karnataka, some parts of Gujarat region, Madhya Maharashtra, Vidarbha, Telangana, Rayalaseema, and isolated pockets of West Madhya Pradesh, South Interior Karnataka
- Mean maximum temperature was between 32 to 40°C over rest of the country except Jammu & Kashmir, Arunachal Pradesh, Nagaland, many parts of Manipur and isolated pockets of Uttarakhand, Punjab, Andaman & Nicobar Islands where it was between 20 to 32°C.

**Mean Maximum Temperature (°C) Anomaly in India for the week ending 30.03.2016**



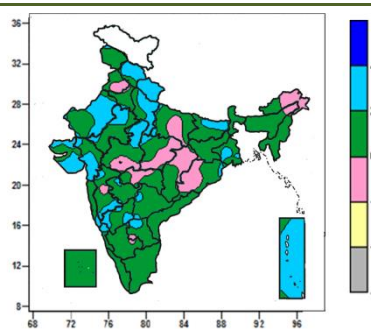
- Mean maximum temperature was above normal by 4 to 6°C over many parts of Himachal Pradesh and isolated pockets of Uttarakhand, North Interior Karnataka and West Rajasthan.
- Mean maximum temperature was above normal by 2 to 4°C over Gujarat, Marathwada, many parts of East Rajasthan, Uttarakhand, West Madhya Pradesh, Madhya Maharashtra, South Interior Karnataka, some parts of Punjab, Haryana & Delhi, Himachal Pradesh, West Uttar Pradesh, West Rajasthan, Jharkhand, Vidarbha, Telangana, isolated pockets of Jammu & Kashmir, Gangetic West Bengal, East Madhya Pradesh, Konkan, Rayalaseema and Kerala.
- It was normal to near normal in remaining parts of the Country.

**Actual Mean Minimum Temperature (°C) in India for the week ending 30.03.2016**



- Mean minimum temperature was between 8 to 12°C over isolated pockets of Jammu & Kashmir.
- Mean minimum temperature was between 12 to 16°C over many parts of Jammu & Kashmir, Himachal Pradesh, Punjab and isolated pockets of East Uttar Pradesh and Haryana.
- Mean minimum temperature was between 16 to 24°C over rest of the country except Lakshadweep, Goa, many parts of Telangana, Andhra Pradesh, North Interior Karnataka, Tamil Nadu, Kerala, Andaman & Nicobar Islands, some parts of Coastal Karnataka and isolated pockets of Madhya Maharashtra, Marathwada, South Interior Karnataka, Odisha and Gangetic West Bengal where it was between 24 to 28°C.

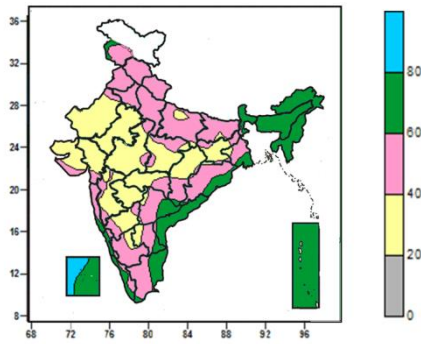
**Mean Minimum Temperature (°C) Anomaly in India for the week ending 30.03.2016**



- Mean minimum temperature was above normal by 2 to 4°C over Uttarakhand, Goa, many parts of Himachal Pradesh, West Uttar Pradesh, West Rajasthan, Gujarat, Andaman & Nicobar Islands, some parts of East Rajasthan, West Madhya Pradesh, Bihar, Coastal and North Interior Karnataka and isolated pockets of Gangetic West Bengal, Odisha, Telangana, Rayalaseema, South Interior Karnataka, Madhya Maharashtra, Marathwada.
- Mean minimum temperature was normal to near normal over rest of the country.

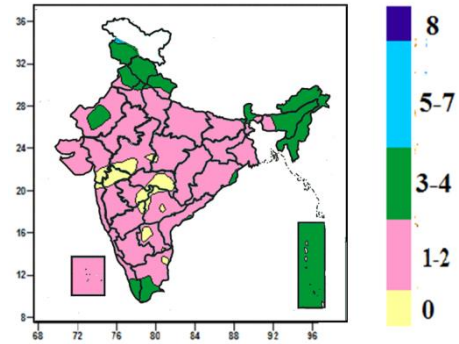
**Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 30.03.2016**

**Relative Humidity (%) over India for the week ending 30.03.2016**



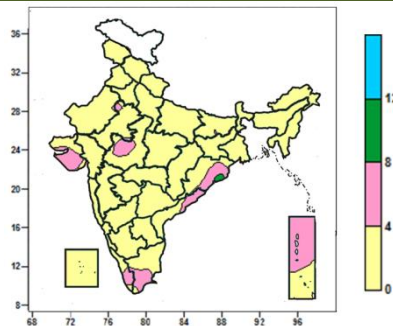
- Mean Relative humidity was above 80% over some parts of Lakshadweep.
- Mean Relative humidity was between 60 to 80% over North East India, Sikkim, Andaman & Nicobar Islands, many parts of Sub-Himalayan West Bengal, Coastal Andhra Pradesh, Lakshadweep, Kerala, Coastal Karnataka, some parts of Gangetic West Bengal, Odisha, Konkan & Goa, Telangana, Tamil Nadu and isolated pockets of Jammu & Kashmir, Rayalaseema and Chhattisgarh.
- Mean Relative humidity was between 20 to 60% over rest of the country.

**Cloud amount (okta) over India for the week ending 30.03.2016**



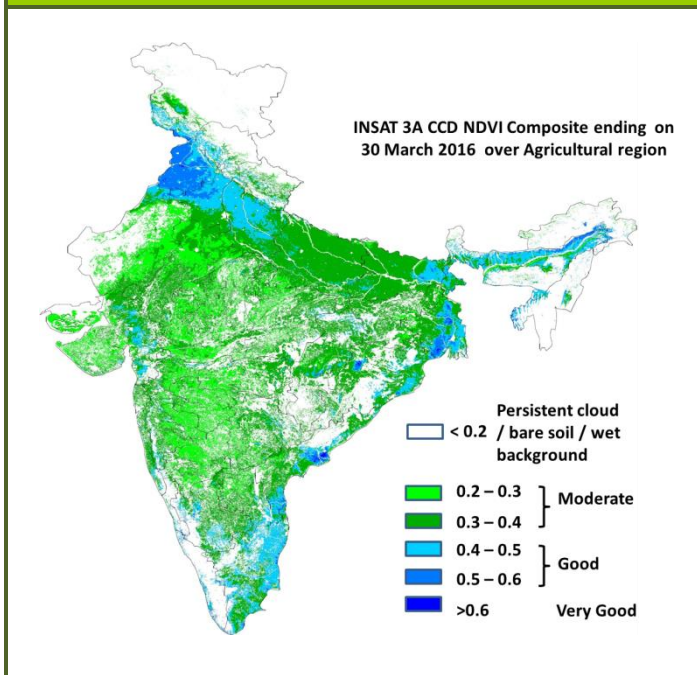
- Sky remained generally cloudy (5-7 okta) over isolated pockets of Jammu & Kashmir.
- Sky remained partly cloudy (3-4 okta) over Himachal Pradesh, Arunachal Pradesh, Nagaland, Manipur Mizoram & Tripura, Andaman & Nicobar islands, Sikkim, many parts of Jammu & Kashmir, Uttarakhand, Punjab, Assam & Meghalaya, some parts of Sub-Himalayan West Bengal, West Rajasthan, Tamil Nadu, Kerala and isolated pockets of Haryana, West Uttar Pradesh, Odisha, Bihar, Coastal Andhra Pradesh.
- Sky remained mainly clear/clear sky (1 to 2/0 okta) over rest of the country.

**Wind speed (knots) over India for the week ending 30.03.2016**



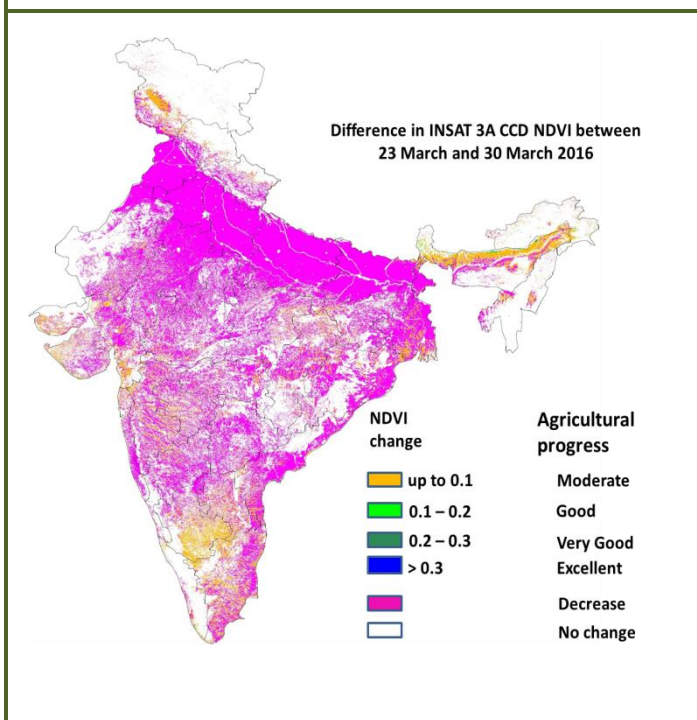
- Mean wind speed was 8 to 12 knots over isolated pockets of Odisha.
- Mean wind speed was 4 to 8 knots over many parts of Saurashtra & Kutch, Andaman & Nicobar Islands, some parts of West Madhya Pradesh, Odisha, Coastal Andhra Pradesh, Tamil Nadu, Kerala and isolated pockets of Rajasthan.
- It was less than 4 knots over rest of the country.

## INSAT 3A CCD NDVI COMPOSITE ENDING ON 30<sup>th</sup> March 2016 OVER AGRICULTURAL REGION OF INDIA



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

### Difference in INSAT 3A CCD NDVI between 23<sup>rd</sup> and 30<sup>th</sup> March 2016



- Moderate Progress in NDVI is observed in patches in South Interior Karnataka, Gujarat, Assam and Tamil Nadu. Decrease in NDVI is observed over entire region of India.

- INSAT 3A CCD NDVI composite maps for the week ending on 30<sup>th</sup> March 2016 for different States are given below in Annexure II.

## Weather Forecast for next 5 days valid upto 0830 hours of 6<sup>th</sup> April 2016

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- No large change in maximum temperature over plains of northwest India during next 24 hours and fall by 2-3°C over parts of northwest India thereafter.
- Maximum temperatures likely to rise by 1-2°C over west and central India during next 2-3days.

### 5 Day Rainfall Forecast (MID DAY)

1<sup>st</sup> April 2016

Met Sub-divisions	01 April	02 April	03 April	04 April	05 April
1. Andaman & Nicobar Islands	DRY	DRY	DRY	DRY	DRY
2. Arunachal Pradesh	SCT	SCT	SCT	FWS	WS
3. Assam & Meghalaya	FWS	SCT	SCT	FWS	WS
4. N. M. M. & T.	WS	FWS	FWS	WS	WS
5. S.H. West Bengal & Sikkim	SCT	ISOL	SCT	SCT	FWS
6. Gangetic West Bengal	ISOL	ISOL	ISOL	ISOL	ISOL
7. Orissa	ISOL	DRY	DRY	ISOL	ISOL
8. Jharkhand	ISOL	DRY	DRY	ISOL	ISOL
9. Bihar	ISOL	ISOL	ISOL	ISOL	DRY
10. East Uttar Pradesh	DRY	DRY	DRY	ISOL	ISOL
11. West Uttar Pradesh	DRY	DRY	ISOL	ISOL	ISOL
12. Uttarakhand	DRY	ISOL	SCT	SCT	ISOL
13. Haryana, Chd & Delhi	DRY	ISOL	ISOL	ISOL	ISOL
14. Punjab	ISOL	ISOL	ISOL	ISOL	ISOL
15. Himachal Pradesh	ISOL	FWS	FWS	SCT	SCT
16. Jammu & Kashmir	FWS	WS	WS	WS	SCT
17. West Rajsthan	DRY	ISOL	DRY	ISOL	DRY
18. East Rajasthan	DRY	ISOL	ISOL	ISOL	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	ISOL	ISOL
20. East Madhya Pradesh	DRY	DRY	DRY	ISOL	ISOL
21. Gujrat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	DRY	DRY	DRY
24. Madhya Maharashtra	DRY	DRY	DRY	ISOL	ISOL
25. Marathwada	DRY	DRY	DRY	DRY	ISOL
26. Vidharbha	DRY	DRY	DRY	ISOL	ISOL
27. Chhattisgarh	DRY	DRY	DRY	ISOL	ISOL
28. Coastal Andhra Pradesh	ISOL	DRY	DRY	DRY	DRY
29. Telangana	ISOL	DRY	DRY	DRY	ISOL
30. Rayalaseema	DRY	DRY	DRY	DRY	DRY
31. Tamilnadu & Puducherry	DRY	DRY	ISOL	ISOL	ISOL
32. Coastal Karnataka	ISOL	DRY	DRY	DRY	ISOL
33. North Interior Karnataka	ISOL	DRY	DRY	DRY	ISOL
34. South Interior Karnataka	ISOL	DRY	DRY	ISOL	ISOL
35. Kerala	ISOL	ISOL	ISOL	SCT	SCT
36. Lakshadweep	ISOL	DRY	DRY	DRY	DRY

#### % 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

- **01 April (Day 1):** Thunderstorm accompanied with squall/hail likely at isolated places over Jammu division of Jammu & Kashmir, West Bengal & Sikkim and thunderstorm accompanied with squall likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **02 April (Day 2):** Heavy rain/ snow likely at isolated places over Jammu & Kashmir. Thunderstorm accompanied with squall/hail likely at isolated places over Jammu division of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Gangetic West Bengal and thunderstorm accompanied with squall likely at isolated places over Nagaland, Manipur, Mizoram & Tripura.
- **03 April (Day 3):** Thunderstorm accompanied with squall/hail likely at isolated places over Jammu division of Jammu & Kashmir, Himachal Pradesh, Uttarakhand and thunderstorm accompanied with squall



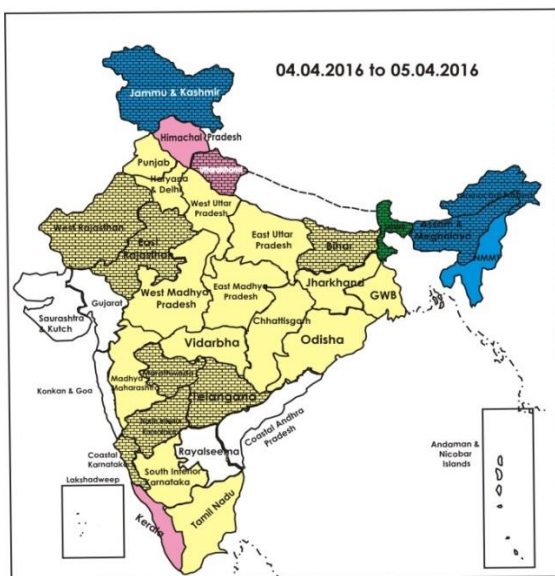
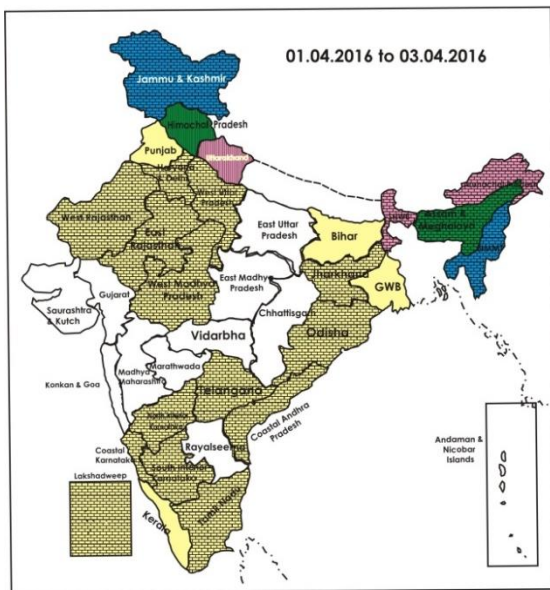
likely at isolated places over Punjab, Haryana, Chandigarh & Delhi.

- **04 April (Day 4):** Heavy rain likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Thunderstorm accompanied with squall likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **05 April (Day 5):** Heavy rain likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Thunderstorm accompanied with squall/hail likely at isolated places over south Madhya Pradesh, Vidarbha and south Chhattisgarh.

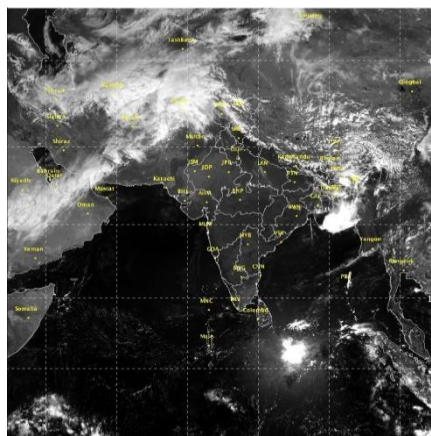
### Weather Outlook for subsequent 2 days from 6<sup>th</sup> to 8<sup>th</sup> April 2016

- Rain/thunderstorm very likely at many places over northeastern states and Sub-Himalayan West Bengal & Sikkim and at isolated places over south peninsular India.
- Rain/snow very likely at isolated places over Western Himalayan region.

### Weather Forecast Map (Valid upto 0830 hours of 6<sup>th</sup> April, 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



### Salient Advisories

- As thunderstorm accompanied with squall/hail likely at isolated places over **Jammu division** of Jammu & Kashmir from 1<sup>st</sup> to 3<sup>rd</sup> April, over **West Bengal & Sikkim** on 1<sup>st</sup>, over **Gangetic West Bengal** on 2<sup>nd</sup>, over **Uttarakhand** and **Himachal Pradesh** on 2<sup>nd</sup> & 3<sup>rd</sup> April and over **South Madhya Pradesh, South Chhattisgarh** and **Vidarbha** on 5<sup>th</sup> April, farmers are advised to use hail nets/hail caps for orchard crops to protect from mechanical damage. 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 Thunderstorm accompanied with squall likely at isolated places over **Assam & Meghalaya** on 1<sup>st</sup> & 4<sup>th</sup>, over **Nagaland, Manipur, Mizoram & Tripura** on 1<sup>st</sup>, 2<sup>nd</sup> and 4<sup>th</sup> and over **Punjab, Haryana, Chandigarh & Delhi** on 3<sup>rd</sup> April, farmers are advised to arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops from lodging due to strong winds. Keep already harvested produces at safer places.
- As Thunderstorm accompanied with squall/hail likely at isolated places over **Vidarbha**, on 5<sup>th</sup> April, farmers are advised to use hail nets/hail caps to protect orange and sweet lime orchards from mechanical damage and cover banana bunch with skirting bags.
- As rain/thundershowers likely at most/many places over **Arunachal Pradesh** on 4<sup>th</sup> & 5<sup>th</sup>, over **Assam & Meghalaya** on 1<sup>st</sup>, 4<sup>th</sup> & 5<sup>th</sup> and over **Nagaland, Manipur, Mizoram & Tripura** from 1<sup>st</sup> to 5<sup>th</sup> April, along with heavy rain at isolated places over Arunachal Pradesh on 5<sup>th</sup> and over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 4<sup>th</sup> & 5<sup>th</sup> April, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep the harvested produces at safer places. Provide adequate drainage in standing crop fields.
- As rain/snow would occur at most/many places over **Jammu & Kashmir** from 1<sup>st</sup> to 4<sup>th</sup> April and at many places over **Himachal Pradesh** on 2<sup>nd</sup> and 3<sup>rd</sup> April along with heavy rain/snow likely at isolated places over Jammu & Kashmir on 2<sup>nd</sup> April, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of matured crop and keep already harvested produces at safe places. Provide adequate drainage in standing crop fields to avoid water stagnation in Jammu & Kashmir.
- As rain/thundershowers likely at many places over **Sub-Himalayan West Bengal & Sikkim** on 5<sup>th</sup> April, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
- Undertake land preparation/sowing of the following summer crops:
  - In **Assam**, postpone sowing of *capsularis* jute, summer green gram & black gram and transplanting of *ahu* rice.
  - In **West Bengal**, in Hill Zone, continue planting of ginger and turmeric and in New Alluvial Zone, undertake land preparation and sowing of jute.
  - In **Odisha**, in North Eastern Ghat Zone, continue sowing summer sunflower and groundnut. In North Eastern Plateau Zone, complete sowing of green gram & black gram.
  - In **Uttar Pradesh**, continue sowing of cowpea, maize, urad, mung.



- In Bhal and Coastal Zone of **Gujarat**, complete sowing of green gram, pearl millet, cowpea, vegetable crops like ladies finger, bitter gourd, bottle gourd and small gourd.
  - In **Bihar**, continue sowing of summer maize and vegetables and in **Jharkhand**, continue sowing of green gram/black gram, maize and vegetables.
  - In the Cauvery Delta Zone of **Tamil Nadu**, continue sowing of black gram (ADT 5 variety) under irrigated conditions. Undertake land preparation for sowing of irrigated bajra in Western Zone.
- As mainly dry weather would prevail, continue harvesting of matured mustard, lentil in **Uttar Pradesh**, wheat in **Madhya Pradesh**, harvesting of castor, coriander, amaranth and fennel in North Gujarat Zone and cumin, castor in North West Zone of **Gujarat** and continue harvesting of rice in Problem Area Zone of **Kerala**. In North East Transition Zone of **Karnataka**, complete harvesting of sorghum, wheat and safflower. In the North Coastal Zone of **Andhra Pradesh**, continue harvesting of rice and harvesting of *rabi* groundnut in the Southern Zone and in Anantapur district.

### Detailed Zonewise Agromet Advisories

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



*Banana*



*Groundnut*



*Sugarcane*



*Cotton*

- **Realised Rainfall:** Rainfall occurred in Kollam district of Kerala. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - **Tamil Nadu:**
    - In the Cauvery Delta Zone, continue cultivation of blackgram (ADT 5 variety) under irrigated conditions, harvesting of matured rice fallow black gram and provide irrigation to sesame, sugarcane and rice fallow cotton crops.
    - In the Western Zone, considering the rise in both maximum and minimum temperature with reduced evening relative humidity, immediate irrigation may be given to summer irrigated sesame at flowering stage to prevent flower dropping. Undertake land preparation for sowing of irrigated bajra.
    - In the South Zone, as dry weather is expected during the coming days, provide irrigation to irrigated cotton crop. For inducing flowering in irrigated mango, spray Urea 5 g/litre of water or Potassium Nitrate 10 g/litre of water and for increasing fruit retention, spray NAA 20 ppm (20 mg/litre of water) and Potassium nitrate 20 g/litre at the stage of mustard size.
    - In the High Altitude Hilly Zone, undertake planting of bananas (Cavendish varieties) and continue planting of disease resistant varieties of potato (variety Kufri girdhari). Spray 0.5% Urea @ 5 g/litre of water or 1% Potassium nitrate @ 10 g /litre of water to induce flowering in mango crop.
    - In the North Western Zone, root rot incidence was observed in groundnut. To control this disease, undertake drenching with T-Viride and Pseudomonas @ 2 g/litre of water.
    - In Karaikal, prevailing dry and humid weather is congenial for incidence of stem weevil in cotton. To manage, uproot the affected plants and burn it. If damage is severe, follow earthing up and soil application of Carbofuran 3G @ 33 kg/ha.
    - Suitable varieties for sowing are given in Annexure III.
  - **Andhra Pradesh:**
    - In the Krishna Godavari Zone, continue harvesting of Bengal gram and *rabi* black gram. In view of the prevailing hot weather, continue providing irrigation to *rabi* jowar at flowering to grain formation stage.
    - In the North Coastal Zone, continue harvesting of rice and planting of sugarcane using single budded setts/bud chip seedlings and give irrigations at frequent interval to keep the soil moist. Spray Diafenphouiron @ 1.6g/litre of water on chilli to prevent upward and down ward leaf curling.
    - In the Southern Zone, continue harvesting of *rabi* groundnut and in the Scarce Rainfall Zone, continue harvesting of *rabi* groundnut in Anantapur district.
    - In the Southern Zone, prevailing dry and hot weather conditions are congenial for attack of viral diseases in fruit chillies. To control, To control, spray Imidachlopid @ 0.3 ml./litre of water.
    - In the North Coastal Zone, prevailing dry weather conditions are congenial for incidence of sucking pests in

tomato(fruit bearing stage). To control, spray Dimethoate @ 2 ml/litre of water.

- In the Scarce Rainfall Zone, leaf blast and sheath rot incidence is noticed in rice. Spray Tricyclazole 75 % 0.6g/ Isoprothiolin 40% @1.5ml/Kasugamycin 3L @ 2.5ml/litre of water to control leaf blast and Validamycin @ 2ml/litre of water or Propiconazole @ 2ml/litre of water for sheath rot.

- **Telangana:**

- In the Northern Telangana Zone, continue harvesting of bhendi and tomato. Due to the prevailing dry weather conditions, give frequent irrigations in mango orchards to get synchronized flowering.
- In the Northern Telangana Zone, leaf hopper incidence was noticed in bhendi.To control, spray Imidacloprid @ 1 ml/litre of water.
- In the Southern Telangana Zone, prevailing high temperatures are congenial for incidence of sucking pests like thrips, jassids and white fly in vegetables and these sucking pests transmit viral diseases.To control the sucking pests, spray Imidachloprid @ 0.3 ml or Thiomethaxam. @ 0.3 g per litre of water.

- **Karnataka:**

- Provide irrigation to vegetables in Eastern Dry Zone of Karnataka.
- Provide protective irrigation to the dry land horticultural crops and other field crops in Southern Dry Zone.
- In North East Transition Zone and North East Dry Zone, provide irrigation to mango at 15-20 days interval from fruit setting till maturity for the better development of fruits.
- Complete harvesting of sorghum, wheat and chickpea in North Transition Zone. Undertake picking of matured fruits of sapota.
- In Hill Zone, apply irrigation to arecanut, coconut and black pepper gardens either in furrows or by drip irrigation.
- In North Dry Zone, to manage wilting in lime, pour 8 litres of insecticide mixture prepared by dissolving Carbadezime @ 2 g or Propiconazole @ 2 ml dissolved in one litre of water.
- In present weather condition there is chance of attack of sucking pests in vegetables in Southern Dry Zone of Karnataka, spray Chlorpyriphos @ 2.5 ml dissolved in one litre of water for control.

- **Kerala:**

- In the Problem Area Zone, continue harvesting of matured rice .
- In the Southern Zone, provide propping for bunched banana plants and wait for few good showers before resuming tapping of rubber.
- In the Southern Zone, increase in temperature is congenial for rice bug incidence on rice. Spray Malathion @ 400 ml in 200 litres of water to control rice bug during grain filling stage. before 9 am on a non rainy day.
- In the Problem Area Zone, prevailing hot weather condition is congenial for incidences of sucking pest like mites and thrips in vegetables. To control, spray Oberon @ 0.6g/litre of water on a non rainy day. Monitor for white fly attack in vegetables. Yellow sticky trap must be installed in fields to control the attack, if noticed.
- In the Central Zone, due to increase in atmospheric temperature, attack of insects such as aphids, white flies, hoppers are more. As a result of this,there is a chance of mosaic disease in vegetables. To control, apply 5 gms of Verticillium or Metarhyzium in 1 litre of water. Add Neem cake as manure and apply Neem based insecticides on a non rainy day.
- In the Northern Zone, prevailing humid weather condition is congenial for incidence of gundhi bug attack in late sown rice crop. Apply Azadiractin @ 3000 ppm stock after diluting in water @ 3ml/litre of water immediately after sunset. To have better control, add and stir one to two ml. of Malathion @ 50EC per litre of the diluted Azadiractin solution before applying on a non rainy day.

- **Animal Husbandry**

- In the Krishna Godavari Zone of Andhra Pradesh, due to rise in temperature, avoid grazing of animals during day time, provide good thatched sheds for cooling, increase the frequency of drinking water facility and provide ragi and horsegram malts.
- In the Western Zone of Tamil Nadu, prevailing weather would raise thermal humidity index to more than 72. This may be cause discomfort to animals. Daily bathing of animals and keeping the cattle shed cool by operating foggers is necessary to prevent the reduction in milk production.
- In the North Western Zone of Tamil Nadu, expected day and night temperature of around 38.0°C and 26.0°C will induce heat stress and associated heat stroke in poultry. Reduced wind speed is likely to aggravate the situation. Hence, check drinking water availability and its temperature to ensure continues supply of cool drinking water throughout the day to control heat stroke and to sustain egg weight.
- In the North Eastern Zone of Tamil Nadu, provide mineral mixture and B-complex vitamins in drinking water to avoid heat stroke, bathe milch cows to reduce heat stress during hot part of the day to sustain milk production, animals should not be allowed for grazing during hot part of the day and provide cool drinking water and shade to the animals to reduce heat stress.
- In the South Zone of Tamil Nadu, give vaccination for foot and mouth disease to cattle as prophylactic measure to combat prevailing hot weather condition.
- Due to increase in temperature (40-41 degree C) in North East Transition Zone of Karnataka, provide cool water to poultry birds; add electrolytes (KCl, NaCl and NaCO<sub>3</sub>) in feed and water. Feed cattles with dry fodder after uniform mixing of 2% urea and 10% molasses or jaggery to improve palatability.



**Banana**



**Rice**



**Okra**



**Cabbage**

- **Realised Rainfall:** Rainfall occurred in Dibang Valley, Lohit, Lower Dibang Valley, Papumpara, Tawang and Upper Siang districts of Arunachal Pradesh; Baksa, Barpeta, Bongaigaon, Chirang, Dhubri, Goalpara, Hailakandi, Kamrup(Rural), Karimganj, Kokrajhar, Morigaon, N.C.Hills, Nalbari, Sonitpur and Udalgiri districts of Assam; East Garo Hills, East Khasi Hills, Ri-Bhoi, South Garo Hills, West Garo Hills and West Khasi Hills districts of Meghalaya; Aizwal district of Mizoram; all districts of Tripura. Weather remained mainly dry over rest of the region.

- **Advisories:**

- As Thunderstorm accompanied with squall likely at isolated places over Assam & Meghalaya on 1<sup>st</sup> & 4<sup>th</sup>, over Nagaland, Manipur, Mizoram & Tripura on 1<sup>st</sup>, 2<sup>nd</sup> and 4<sup>th</sup> April, farmers are advised to arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops from lodging due to strong winds. Keep already harvested produces at safer places.
- As rain/thundershowers likely at most/many places over Arunachal Pradesh on 4<sup>th</sup> & 5<sup>th</sup>, over Assam & Meghalaya on 1<sup>st</sup>, 4<sup>th</sup> & 5<sup>th</sup> and over Nagaland, Manipur, Mizoram & Tripura from 1<sup>st</sup> to 5<sup>th</sup> April, along with heavy rain at isolated places over Arunachal Pradesh on 5<sup>th</sup> and over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 4<sup>th</sup> & 5<sup>th</sup> April, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Keep the harvested produces at safer places. Provide adequate drainage in standing crop fields.
  - **Assam, Meghalaya & Arunachal Pradesh:**
  - Continue sowing of *baou* rice in Assam after current spells of heavy rain.
  - In Hill Zone of Assam, continue sowing of recommended high yielding varieties of bhindi, bottle guard, bitter guard. Undertake transplanting of normal *ahu* rice and early *ahu* rice. Continue sowing of summer green gram and black gram and land preparation and planting of ginger, summer sesame and spring sugarcane after current spells of heavy rain.
  - In Lower Bramhapurtra Valley Zone of Assam, continue transplanting of transplanted early *ahu* rice. Continue sowing of maize, summer pulses like green gram, black gram and planting of spring sugarcane after current spells of heavy rain.
  - In Upper Bramhaputra Valley Zone of Assam, continue nursery raising of transplanted *ahu* rice, planting of spring sugarcane after current spells of heavy rain and complete planting of banana suckers with first fortnight of April.
  - In Barak Valley Zone of Assam, continue nursery sowing of bitter gourd, ash gourd and bottle gourd after current spells of heavy rain.
  - In Central Bramhaputra Valley Zone of Assam, continue land preparation and sowing of early *ahu* rice, green gram/black gram, summer vegetables and *Capsularis* jute and planting of ginger, turmeric and spring sugarcane after current spells of heavy rain.
  - In North Bank Plain Zone of Assam, farmers are advised to undertake transplanting of early *ahu* rice after current spells of heavy rain. Continue planting of the high yielding varieties of ginger & turmeric, planting of sugarcane and banana after current spells of heavy rain.
  - In Meghalaya, undertake sowing of maize in high and mid altitude region after current spells of heavy rain. Continue planting of summer potato in high altitude region, sowing of bottle guard and ash guard and nursery bed preparation for brinjal and tomato. Undertake land preparation for *jhum* rice after current spells of heavy rain.
  - In Arunachal Pradesh, continue sowing of summer vegetables like cucumber, sponge gourd, bottle gourd, ladies finger and maize and cowpea after current spells of heavy rain.
  - In Lower Bramhapurtra Valley Zone of Assam, to control blast in seed bed of transplanted early *ahu* rice, spray Carbendazim @ 1g/litre or Ediphenophos @ 1ml/litre of water after current spells of rain.
  - In North Bank Plain Zone of Assam, in prevailing weather condition, there is chance of incidence of blast disease in *boro* rice at grain formation stage, spray Mancozeb (Dithene M-45) @ 2g/litre or Carbendazim (Dirosol) @ 1g/litre of water for control. Also farmers are advised to apply a paste made by mixing lime, water and 5% Malathion dust on the stems of the citrus plants up to a height of about 1m from the ground to prevent the attack stem borer. Undertake plant protection measures after current spells of rain.
  - In Barak Valley Zone of Assam, there may be stem borer attack in the *boro* rice field; to control the pest apply Chloropyriphos @ 1 ml/litre of water after current spells of rain.
  - In Arunachal Pradesh, in prevailing weather condition, there is chance of incidence of leaf eating insects in pea, cauliflower, cabbage, spray Azadirachtin 0.15% EC @ 6ml/litre against leaf eating insects after current spell of



rain.

- In Meghalaya, there may be attack of blast in boro rice during panicle initiation to flowering stage. To control blast spray Carbendazim @ 1g/litre of water after current spells of rain.
- **Nagaland, Manipur, Mizoram and Tripura:**
- In Nagaland, continue sowing of okra, cowpea and cucurbits.
- In Manipur, continue nursery sowing and transplanting of 35-40 days of old seedlings of pre-kharif rice. Undertake land preparation for planting of ginger/turmeric.
- In Mizoram, continue transplanting of brinjal and chilli in the main fields and sowing of French bean and cow pea.
- In Tripura, continue land preparation for sowing of *Jhum* rice.
- In Manipur, due to humid weather condition there is chance of attack of aphids and powdery mildew in lentil/pea. Spray Cypermethrin @ 2ml/litre of water or Nuvan @ 0.5ml/litre of water against aphids. Spray Bayleton (Triademonon 25% WP) @ 7.5 g/pump (15litre capacity) or Dinocap (Karathane 46% EC) @ 7.5ml/pump against powdery mildew after current spells of rain.
- In Tripura, there is chance of attack of yellow stem borer on *boro* rice. Apply Fipronil @ 2g per litre of water to manage the attack after current spells of rain.
- Suitable varieties for sowing are given in Annexure III.
- **Animal Husbandry:**
- In Barak Valley Zone of Assam, increase of temperature may cause stress in animals. Under these conditions, farmers are advised to feed their animals at night time and feed as much as green grass with small pieces.
- In Hill Zone of Assam, undertake proper sanitary measures in the poultry house, incubators should be properly disinfected sterilization of utensils may be carried regularly. Quarantine measures may be taken. Vaccination may be done during this period.
- In Meghalaya farmers are advised to vaccinate all newly born piglets against swine fever of age 3 months followed by annual booster dose. In epidemic areas vaccinate 6 months pigs with FMD vaccine once in a year. Vaccinate 6-9 months calves with brucella abortus cotton strain-19 @ 5ml subcutaneous on the neck.
- In Manipur, undertake vaccination against ranikhet disease in poultry. Vaccinate cattle against black quarter, haemorrhagic septicaemia and foot and mouth disease.

### WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



*Green gram*



*Sugarcane*



*Groundnut*



*Wheat*

- **Realised Rainfall:** Weather remained mainly dry/dry over the region.

- **Advisories:**

- **Maharashtra:**

- In Konkan, in Sindhudurg, maintain water level of 10 cm in rice fields. Apply irrigation to groundnut, vegetable crops and pulses. Apply irrigation to mango orchards @ 80 to 100 litres of water at 7 days interval to reduce fruit dropping. Also apply mulch with grass to avoid the water loss in mango orchards. Apply irrigation to cashew orchards @ 150 to 200 litres of water per tree at 15 days interval. Continue harvesting of *nagli*, okra, water melon and leafy vegetables. Continue planting of seasonal forage crops like cowpea, maize (African Tall), sorghum and rice bean.
- In Madhya Maharashtra, continue cultivation of summer vegetable crops like bitter gourd, cucumber, ridge gourd, bottle gourd, water melon and musk melon. Apply mulch of farm waste, dry grass, leaves and twigs in orchards (fig, pomegranate, sweet lime, guava) and vegetable crops to avoid loss of water due to evapotranspiration. Undertake mulching with trash in seasonal and ratoon sugarcane crops (5-6 ton of trash/ha) and apply irrigation by alternate furrow method considering water stress condition. Apply irrigation by drip or sprinkler method to summer crops. Also minimize the interval between two irrigations
- In Marathwada, apply mulch of sugarcane trash, dried grasses or black plastic film (polyethylene) to summer crops and orchards to avoid loss of water due to evapotranspiration. Make arrangement for shade to protect newly planted mango trees from sunlight. Apply irrigation to summer groundnut by sprinkler method. Make arrangement for shade for vegetable crops to protect the vegetables from bright sunshine.
- In Vidarbha, as Thunderstorm accompanied with squall/hail likely at isolated places on 5<sup>th</sup> April, farmers are advised to use hail nets/hail caps to protect orange and sweet lime orchards from mechanical damage. Farmers are advised to cover banana bunch with skirting bags. Maintain water level of 5-8 cm in summer rice field in East Vidarbha. Apply irrigation to summer green gram. Complete harvesting of timely sown matured wheat crop during morning hours.

- Due to rise in temperature in Konkan region, there may be attack of white fly and aphids on chilli and brinjal; spray Dimethoate @ 15 ml or Malathion @ 20 ml per 10 litres of water.
- **Gujarat:**
- In Middle Gujarat Zone, complete sowing of pearl millet. Carry out intercultural operations in summer crops like pearl millet, green gram, cow pea, okra etc. and apply irrigation. Undertake harvesting of matured papaya.
- In Bhal and Coastal Zone, complete sowing of green gram, pearl millet, cow pea, vegetable crops like ladies finger, bitter gourd, bottle gourd and small gourd.
- In South Saurashtra Zone, apply irrigation to onion, garlic (bulb development stage), sesame, green gram, black gram and groundnut.
- In South Gujarat Heavy Rainfall Zone, undertake mulching with paddy straw or black polythene in mango to reduce incidence of spongy tissues and mulching in cucurbits. Continue intercultural operations in vegetable crops. rice, groundnut and green gram. Undertake thinning in cluster bean crop by maintaining 20 cm distance between two plants. Apply irrigation in sugarcane, green gram groundnut, sweet corn as per requirement and in cluster bean, cowpea, okra, amaranth, pigeon pea and mango at 10-12 days interval. Continue harvesting of sweet potato; avoid any mechanical damage to tubers.
- In North Saurashtra Zone, apply irrigation in mango (pea size) orchards.
- In North Gujarat Zone, carry out weeding and inter cultural operations in timely sown ground nut, green gram, cowpea, pearl millet and vegetables. Complete harvesting of wheat, chickpea, castor, coriander, amaranth and fennel at physiological maturity.
- Complete sowing of summer crops like pearl millet, green gram, cow pea etc. in North West Zone of Gujarat.
- In present weather conditions severe attack of thrips has been observed above ETL in black gram, groundnut and sesame in North Saurashtra Zone; spray 500 ml of 5 % neem seed extract or neem seed oil 50 ml with Profenofos @ 20 ml or Imidacloprid 30.5 SC 3 ml/10 litres of water for control.
- Suitable varieties for sowing are given in Annexure III.
- **Animal Husbandry**
- Due to prevailing high temperature, hang gunny bags from outside the poultry shed and sprinkle it with water. Cover the roof with grass or gunny bags in Maharashtra.
- In Gujarat, provide cool drinking water for cattle thrice a day. Due to high temperature keep animals under shade during noon hours and avoid feeding between 11 AM to 3 PM. Make arrangement of curtains for poultry house.

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



*Rice*



*Wheat*



*Maize*



*Mustard*

- **Realised Rainfall:** Rainfall occurred in Araria district of Bihar; Cooch Behar, Darjeeling, Jalpaiguri districts of Sub-Himalayan West Bengal and North Sikkim district of Sikkim. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - **West Bengal:**
  - As thunderstorm accompanied with squall/hail likely at isolated places over West Bengal & Sikkim on 1<sup>st</sup> and over Gangetic West Bengal on 2<sup>nd</sup> April it is advised to use hail net for orchard crops in Gangetic West Bengal to protect from mechanical damage and arrange mechanical support to young fruit plants and staking of vegetables, to prevent the crops from lodging due to strong winds.
  - As rain/thundershowers likely at many places over Sub-Himalayan West Bengal & Sikkim on 5<sup>th</sup> April, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops.
  - In New Alluvial Zone, undertake land preparation for sowing of improved variety jute. Apply 2 tonnes of compost or FYM before first ploughing.
  - In Coastal Saline Zone, continue harvesting of sunflower in clear weather. Keep harvested produce at safer places.
  - In Hill Zone, continue sowing of maize, bhindi and French bean and planting of ginger, turmeric and round chilli.
  - In Coastal Saline Zone, due to rise in temperature there may be attack of brown plant hopper and Gundhi bug in *boro* rice at Milking stage, spray Imidachlorpid @ 3ml/10 litre or Acephate @ 1g/litre of water for control.
  - In New Alluvial Zone, in the prevailing weather condition, stem borer attack may be found in rice at tillering stage. To control stem borer, apply Cartap 4 G @ 25 kg/ha or Phorate 10 G @ 10 kg/ha.
  - In Terai and Old Alluvial Zone, weather is congenial for attack of fruit and shoot borer in brinjal. Use 6-8

pheromone traps/bigha or apply Acephate + Fenvelarate mixture @ 1ml/litre water with 2g of detergent powder as sticker after current spells of rain.

- In Terai Zone, in the prevailing weather condition Aphid attack may found in mustard in flowering stage. Spray Thiamethoxam @1 g/3 litres of water or Imidacloprid 17.8 SL @ 1 ml/5litres of water after current spells of rain.

- **Andaman and Nicobar Islands:**

- In Nicobar, clean the coconut garden and destroy the larva of Rhinoceros beetles. Cover the basin of coconut tree with coconut husk for moisture conservation.
- In South, North and Middle Andaman, undertake weeding in vegetables. Apply vermicompost @ 5 ton/hectare, earthing up and give one irrigation.
- In South, North and Middle Andaman, in the prevailing weather condition, bud rot diseases may be found in Arecanut. Remove the affected leaves and apply 1% Bordeaux mixture to prevent the spread of bud rot diseases.

- **Odisha:**

- In East and South Eastern Coastal Plain Zone, complete sowing of maize, green gram and black gram.
- In North Eastern Ghat Zone, continue sowing summer sunflower (PAC-36, MSFH-8 & SFH-17) and groundnut (Smurti, Phule Pragati, ICGS-44, TAG-24, TG-3, TMV-2 & TG-38).
- In North Eastern Coastal Plain Zone, as no rain expected, apply irrigation in maize at tasseling stage.
- In Mid Central Table Land Zone, continue sowing of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc.
- In East and South Eastern Coastal Plain Zone, increased temperature may favour the egg laying of stem borer in rice in the main field. To attract the butterflies, place 4 Pheromone Traps/acre, collect the adults and destroy them by burning them under soil or by burying. Apply Triazophos @ 2ml/litre of water when pest population reaches at ETL level. Increased difference between daily maximum and minimum temperature favours the infestation of blast in rice in main fields. Spray Beam @ 1 g/litre of water.
- In East and South Eastern Coastal Plain Zone, the prevailing partly cloudy weather may aggravate the infestation of aphids in pulses and powdery mildew in pulses and cole crops. Spray Imidachloprid @ 5 ml or Metacystox @ 20 ml per 10 litres of water to control aphids and spray Sulfex @ 50 g per 10 litre of water to control powdery mildew.
- In South Eastern Ghat Zone, variation in day and night temperature may lead to build up of stem borer in rice . Monitor the fields, when the insect incidence crosses the ETL level (ETL: 1 eggmass or 1-2 moths/m<sup>2</sup>), apply granular insecticide Carbofuran 3% @ 12 kg/acre or Cartap hydrochloride 4% @ 10 kg/acre.
- In Western Undulating Zone, during the tillering stage of sugarcane crop, irrigate the crop at 10days interval. Early shoot borer attacks the crop at this stage. Spray Triazophos/Profenophos @ 2ml/litre of water.
- In North Eastern Coastal Plain Zone, due to abrupt rise and fall in temperature, the pest problem is likely to aggravate. The stem borer attack has been widely noticed. Use pheromone trap @ 20-25 no. per hectare to notice it's population. Apply Fipronil or Triazophos @ 2ml/litre of water when pest population reaches at ETL level.
- In North Central Plateau Zone, there is chance of attack of mango hoppers in mango which suck the sap of inflorescence, to control it, spray Acephate 75% SP @ 1g/litre or Imidacloprid 17.8% SL @ 3 ml/10 litres of water and repeat the spray after two weeks of first spray.

- **Bihar:**

- In South Bihar Alluvial zone, continue harvesting of matured sweet potato. Complete planting of spring season Arvi crop. Continue sowing of summer vegetables.
- In North West Alluvial Plain Zone, continue sowing of fodder crops and planting of elephant foot yam and complete the sowing of summer vegetables, green gram and black gram. Apply light irrigation in standing vegetable crops such as pea, tomato, brinjal, chilli, cabbage and onion, late sown wheat and *rabi* maize.
- In North East Alluvial Zone, undertake land preparation for sowing of *garma* moong. Complete transplanting of Garma rice. Maintain minimum water (2-3 inch) in the fields of boro rice. Undertake harvesting of matured wheat.
- In North West Alluvial Plain Zone, in prevailing weather condition, fruit and shoot borer infestation may be found in brinjal crops. If pest population is above ETL, undertake spraying of Spinosad 48 EC @1ml/4 litres of water or Quinalphos @1.5ml/litre of water.
- In North East Alluvial Zone, prevailing temperature and humidity is congenial for incidence of yellow stem borer in rice and maize. For control, apply Fipronil 0.3% GR @ 20-25 Kg/ha or Chlorantranileprale 0.4% GR @ 10Kg/hectare.

- **Jharkhand:**

- In Western Plateau Zone, continue sowing of vegetables like sponge gourd, bottle gourd, pumpkin, water melon, musk melon etc. utilizing the realized rainfall. Continue sowing of green gram and broadcasting of urea in standing vegetable crops. To conserve the moisture, undertake intercultural operations in vegetables.
- In South Eastern Plateau Zone, continue sowing of summer moong.
- In Western Plateau Zone, harvest matured gram and lentil crops immediately, otherwise high wind speed & temperature may cause shattering of pods.
- 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 gm per litre of water against Powdery mildew disease.
- In South Eastern Plateau, Central and North Eastern Plateau Zone, prevailing high wind speed, humidity and



cloudy sky, which favours the movement of loose smut spores hence, there is a chance of spread of disease (loose smut) in wheat in a more speedy way. If loose smut is seen on earhead, uproot the affected plants and bury it deep in the soil.

- In South Eastern Plateau Zone, humid weather during morning hours and later on sunny weather favours infestation of white rust in late sown mustard (at flowering stage) crop and attack of aphids in timely sown crop at pod development stage. Monitor the crops frequently. In early stage, farmers are advised to remove and destroy the infected parts of the plants.
- In South Eastern Plateau Zone, to control hoppers in Mango, Litchi and Jack fruit, spray Metasystox @ 1ml or Kung-fu or Karate or Matador (Lambda Cyhalothrin) @ 2 g along with 0.5g Carbendazim per litre of water before or just after flowering in to minimize the attack.
- Suitable varieties for sowing are given in Annexure III.
- **Animal Husbandry**
- In Coastal Saline Zone of West Bengal, due to increasing temperature, feed intake of poultry bird may be reduced. Increase amino acid level by feeding them Electrolyte or Sodium Bi-Carbonate by mixing with the feed.

### CENTRAL INDIA [M.P., CHHATTISGARH]



*Cauliflower*



*Green gram*



*Okra*



*Wheat*

- **Realised Rainfall:** Weather remained mainly dry/dry over the region.

- **Advisories:**

- As thunderstorm accompanied with squall/hail likely at isolated places over South Madhya Pradesh and South Chhattisgarh on 5<sup>th</sup> April, farmers are advised to use hail nets/hail caps for orchard crops to protect from mechanical damage. 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.

- **Madhya Pradesh:**

- In Malwa Plateau Zone, continue land preparation for sowing of summer moong, urad and okra. Continue seedling preparation of cucurbits in polythene bags and harvesting of matured wheat. Undertake field preparation for sowing of summer vegetables.
- In Kymore Plateau and Satpura Hill Zone, continue harvesting of early sown wheat, matured lentil, field pea, linseed and sunflower. Apply irrigation in cucurbit crops.
- In Central Narmada Valley Zone, continue harvesting of matured wheat and undertake land preparation for sowing of summer moong.
- In Nimar Valley Zone and Satpura Plateau Zone, undertake sowing of cucurbit crops and continue harvesting of matured wheat.
- In Jhabua Hill Zone, continue harvesting of early sown mustard and matured wheat. Apply irrigation in tomato, chilli, brinjal, okra, onion crops. Continue sowing of summer moong, okra and cucurbits.
- In Grid Zone, undertake harvesting of matured wheat and sowing of summer moong.
- In Bundelkhand Zone, continue sowing of summer moong.
- There are chances of attack of red pumpkin beetle and fruit fly in cucurbits in Bundelkhand Zone, spray Triazophos 40 E.C. @ 2.0 ml per litre of water or Malathion 50 E.C. @ 1.0 ml per litre of water for their control and don't pick up the vegetables till next seven days.
- In Kymore Plateau and Satpura Hill Zone, due to increase in temperature and humidity, there may be increased attack of fruit borer and white flies in tomato, egg plant and okra. For control of white flies, apply Malathion @ 2 ml/litre water and for borer, apply Triazophos @ 750 ml per 500-600 litres of water.
- Suitable varieties for sowing are given in Annexure III.

- **Chhattisgarh:**

- In North Hill Zone, complete sowing of green gram, til and groundnut. Continue harvesting of matured mustard, gram, wheat and lentil. Undertake intercropping operations in cucurbit crops.
- In Bastar Plateau Zone, continue sowing of summer moong and urad. Continue harvesting of matured pea.
- In Chhattisgarh Plain Zone, continue sowing of green gram and undertake sowing of sesame and black gram.
- In North Hill Zone and Plain Zone, due to humid weather, there are chances of attack of stem borer in summer rice. Farmers are advised to use of pheromone traps @ 10 Nos/acre and collect and destroy the egg clusters.
- In Bastar Plateau Zone, present weather condition is favourable for incidence of powdery mildew disease in bottle gourd, snake gourd, pumpkin and ridge gourd, for control spray Karathan @ 1g/litre of water.

- **Animal Husbandry**

- In Madhya Pradesh and Chhattisgarh, provide adequate water and green fodder to animals and keep them in shade.

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



*Wheat*



*Sugarcane*



*Cauliflower*



*Mustard*

- **Realised Rainfall:** Rainfall occurred in Anantnag, Badgam, Baramula, Doda, Ganderbal, Kulgam, Kupwara, Pulwama, Rajouri and Srinagar districts of Jammu & Kashmir. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
  - As thunderstorm accompanied with squall/hail likely at isolated places over Jammu division of Jammu & Kashmir from 1<sup>st</sup> to 3<sup>rd</sup> April, over Uttarakhand and Himachal Pradesh on 2<sup>nd</sup> & 3<sup>rd</sup> April, farmers are advised to use hail nets/hail caps for orchard crops to protect from mechanical damage. 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 Thunderstorm accompanied with squall likely at isolated places over Punjab, Haryana, Chandigarh & Delhi on 3<sup>rd</sup> April, farmers are advised to arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops from lodging due to strong winds. Keep already harvested produces at safer places.
  - As rain/snow would occur at most/many places over Jammu & Kashmir from 1<sup>st</sup> to 4<sup>th</sup> April and at many places over Himachal Pradesh on 2<sup>nd</sup> and 3<sup>rd</sup> April along with heavy rain/snow likely at isolated places over Jammu & Kashmir on 2<sup>nd</sup> April, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of matured crop and keep already harvested produces at safe places. Provide adequate drainage in standing crop fields to avoid water stagnation in Jammu & Kashmir.
    - **Jammu & Kashmir:**
      - In Sub Tropical Zone, undertake land preparation for sowing of summer moong and mash after current spells of heavy rain.
      - In Intermediate Zone, continue transplanting of tomato, brinjal, chilli, cucumber, bottle gourd and bitter gourd and sowing of okra after current spells of heavy rain.
      - In Valley Temperate Zone, maintain drainage channels in the fields and orchards to avoid water logging. Continue transplanting of cauliflower, cabbage and knol khol after current spells of heavy rain.
      - In Intermediate Zone, keep strict vigil on yellow rust infestation in the wheat crop. If observed, spray Propiconazole (Tilt) 25 E.C. @ 1ml per litre of water after current spells of rain, repeat the spray after 10-15 days interval if the disease persists. Also if alternaria blight is observed in the mustard crops. Apply Mancozeb @ 2.5 g/litre of water and Redomil MZ @ 2.5 g/litre of water alternately as a curative measure after current spells of rain.
      - In Sub Tropical Zone, present weather is congenial for attack of leaf miner, citrus psylla and lemon butterfly in citrus plants, for control spray Dimethoate @ 1mg per litre of water after current spells of rain.
    - **Uttarakhand:**
      - In Bhabar and Tarai Zone, continue planting of potato with varieties like Kufri Jyoti, Kufri Ashok & Kufri Anand etc, sugarcane and nursery sowing of brinjal and tomato utilizing the realized rainfall.
      - In Sub Humid Sub Tropic zone, continue harvesting of matured mustard on bright sunny days.
      - In Hill Zone, continue sowing of vegetable pea, okra, French bean, lady finger and also planting of potato in mid hill region.
      - In Hill Zone as a precautionary measure against pest/diseases on apple and pear tree, spray mixture of Triol @ 300 ml in 10 litres of water, Copper Oxochloride @ 30gm and Chlorpyrifos @ 25ml on a non rainy day.
    - **Himachal Pradesh:**
      - In Sub-Montane and Low Hills Sub-Tropical Zone, complete sowing of sunflower and fodder crops such as chari and bajra, continue sowing of cucurbits such as cucumber, bitter gourd, bottle gourd and summer squash, ageti okra, French bean and radish, zaid moong and mash in irrigated areas. Undertake transplanting of tomato, brinjal, chilli and capsicum.
      - In Mid Hills sub-Humid Zone, undertake hoeing and weeding in onion and garlic after current spells of rain.
      - In Sub-Montane and Low Hills Sub-Tropical Zone, under prevailing weather conditions, there may be chances of attack of yellow rust in wheat, attack of caterpillars in gram and downey mildew in cruciferous vegetables. For control of yellow rust, spray Tilt @ 1ml per litre of water, spray Carbaryl-50WP @ 2 g per litre of water for caterpillars and spray Redomil M-Z @ 25 g per litres of water at 15 days interval. Undertake plant protection

measures after current spells of rain.

- In Mid Hills sub-Humid Zone, weather is conducive for attack of pod borer in pea crop, apply Carbaryl @ 2gms/litre of water after current spells of rain.

- **Rajasthan:**

- In East Rajasthan, continue field preparation for sowing of zaid moong and planting of sugarcane, apply irrigation in maize in Southern Humid Plain Zone. In Flood Prone Eastern Plain Zone, undertake harvesting of matured wheat and gram continue raising of nursery summer chilli, summer marigold, sowing of okra and leafy vegetables like spinach and amaranthus and also transplanting of tomato.
- Undertake sowing of summer okra in Semi-Arid Eastern Plain Zone.
- In Sub Humid Southern Plain and Aravali Hill Zone, apply irrigation in vegetables. Complete harvesting of matured normal sown wheat and barley crop in clear weather and keep harvested produce at safer places. Continue sowing of cucurbits also papaya in nursery.
- In West Rajasthan, in Arid Western Zone, undertake harvesting of matured crops like cumin, coriander, fennel and isabgol at ripening stage as soon as possible to prevent the shattering and other losses and also to maintain the quality of produce. Apply sixth irrigation wheat in timely sown wheat at dough stages and in late sown wheat, apply fifth irrigation at milk stage. Continue sowing of green fodder viz. sorghum and pearl millet. Apply irrigation in cucurbits in Barmer, Churu, Jalore, Jodhpur and Pali districts.
- In Irrigated North Western Plain Zone, apply fourth irrigation in wheat and barley crops. continue sowing of zaid moong(SML668). Undertake land preparation for sowing of summer moong. Undertake harvesting of matured mustard.
- In Semi-Arid Eastern Plain Zone, due to rise in temperature, there is a chance of attack of thrips in garlic and onion and attack of termite in rabi onion, spray Malathion 50 EC @ 1 ml per litre water for control of thrips and give Chlorpyrifos 20 EC @ 4 litre per hectare with irrigation water. Also there is a chance of attack of leaf curl and mosaic diseases in papaya crop. At the initial appearance of these diseases uproot & burn the affected plants & to check further spread of disease spray Dimethoate 30 EC or Methyl demeton 25 EC @ 1.0 ml per litre water.
- In Irrigated North Western Plain Zone, in the prevailing temperature, there is a chance of infestation of yellow rust in wheat; attack of termite in barley and gram, spray Imidacloprid @ 33 ml/100 litres of water for yellow rust and apply Chlorpyrifos 20 EC @ 4litre per ha with irrigation water for termite.
- In Southern Humid Plain Zone, there is a chance of attack of powdery mildew in mango, spray Sulphur @ 4g/litre water in mango.

- **Punjab, Haryana and Delhi:**

- In Western Plain Zone of Punjab, continue sowing of okra, spring maize and planting of sugarcane. Continue transplanting of chilli and cucurbits on the ridges.
- In Central and Undulating Plain Zone of Punjab, continue planting of sugarcane and 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, prepare the field for transplanting summer vegetables of chilli, tomato, bell pepper and planting of evergreen fruit plants of kinnow, lemon, guava ber and Amla.
- In Western Zone of Haryana, continue sowing of green gram and black gram. Undertake sowing of bhindi, bottle gourd, cucumber, ridge gourd and summer radish. Undertake harvesting and threshing of early sown matured mustard crop. In Eastern Zone, complete the planting of sugarcane.
- In Western Semi-Arid Zone of Delhi, apply irrigation in vegetables, apply light irrigation in the evening hours in wheat at grain filling stage, continue sowing of green gram, black gram and transplanting of marigold, brinjal, chilli in flat beds and direct sowing of cucurbits may be done in Hill channel method. Irrigation should be done after transplanting. 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 aphids and yellow rust in wheat. For control of aphids, spray Thiamethoxam 25 WG @ 20g per acre and for control of yellow rust, spray Tilt 25 E.C. or Folicur 25 E.C. @ 200 ml in 200 liters of water per acre.
- In Undulating Plain Zone of Punjab, due to prevailing weather condition, there may be chances of attack of rust in lentil for control spray Tilt @ 200 ml. in 200 litres of water per acre.
- In Central and Undulating Plain Zone of Punjab, there is chance for occurrence of yellow rust in wheat fields in the present weather condition. Monitor the crop and if symptoms are noticed, spray with Tilt/Shine/Bumper/Compass/Markzole @ 200 ml in 200 litres of water/acre.
- In Western Semi-Arid Zone of Delhi, monitor timely sown onion crop against attack of thrips . If symptoms appear, spray Imidacloprid @ 0.5 ml per litre of water with sticky material (Tipol @ 1.0 gram/litre) for effective control. Also, there is a chance of attack of shoot and fruit borer in brinjal crop. If pest population is high, spray Spinosad 48 EC @ 1 ml/4 litres of water.

- **Uttar Pradesh:**

- In Central Pain Zone, undertake harvesting of matured wheat. Continue sowing of summer fodder crops and sowing of urad, mung, lobia, bhindi as inter crop in sugarcane, land preparation and sowing of cowpea, maize, transplanting of onion, tomato, chili. Complete sowing of bhindi, tinda, cucurbits, water melon and bottle guard. Undertake sowing of sunhemp and dhaincha for green manuring



- In Eastern Plain Zone, continue sowing of bhindi, tinda, torai, cucurbits, and bottle guard, continue sowing of lobia, maize, urad, mung and transplanting of onion. Continue sowing of fodder crops lobia, bajra, m.p.chari, maize.
- In Western Plain Zone, continue transplanting of tomato, chilli and sowing of bhindi, cucurbits, planting of autumn sugarcane and sowing of sunflower, urad, mung, maize.
- In Bundelkhand Zone, continue harvesting of matured mustard, lentil. Undertake sowing of mung. Continue sowing of bhindi, torai, and continue sowing of cucurbits, transplanting of cabbage, cauliflower, tomato, brinjal and chilli and land preparation for sowing of groundnut.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of fruit borer in brinjal and tomato for control, spray Carbaryl @ 2 gm. per litre of water.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of pod borer in green gram and black gram, for control, spray Quinalphos 25 E.C. @ 1.25 litres in 600 to 800 litres of water per hectare.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of termite in sugarcane for control, spray Cloripyriphos 20 E.C. @ 1 litre per Acre.
- In North Eastern Plain Zone, due to prevailing weather condition, there may be chances of attack blight in lentil, for control spray 0.2 % Redomil MZ @ 200 gm. + 0.1 % Coper oxi Chloride @ 100 g in 200 liters of water per acre.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of thrips in onion, for control, spray Mencozeb 0.2 % or Dimethoate @ 1 ml per litre of water.
- Suitable varieties for sowing are given in Annexure III.
- **Horticulture:**
  - In North Eastern Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of mango hopper and mealy bug in mango trees for control spray mixture of 0.2 % Emidacloprid @ 400 ml and 0.2 % Carbendazim @ 400 g per 200 litres of water per 20 plants.
  - In Central Plain Zone of Uttar Pradesh, continue transplanting of papaya plants in new orchard.
  - In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit drop in mango, for control spray Naphthalene acetic acid @ 20 gm per litre of water.
  - In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit cracking in citrus plants, for control, spray Gibberellic Acid @ 100 mg. in 10 litres of water.
  - In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of incidence of leaf spot and rot in banana, for control, spray Bavestin or Carbendazim @ 1 g per litre of water.
  - In Western Zone of Punjab, due to prevailing weather condition, there may be chances of attack of powdery mildew in ber plants, for control, spray Karathane 40 E.C. @ 50 ml. or Bayleton 25 WP @ 50 g per 100 litres of water.
  - In Undulating Plain Zone of Punjab, due to prevailing weather condition, there may be chances of attack of litchi nut borer in litchi. For control spray Sumicidin or Fenval 20 EC (Fenvalerate) @ 750 ml or Ekalux 25 EC @ 1000 ml in 500 litres of water.
  - In Mid Hills sub-Humid Zone, of Himachal Pradesh, complete planting of new varieties of apple & pear and stone fruits, walnut, pecanut and grapes. Due to prevailing weather, there is a chance of attack of hopper in mango, apply Monocrotopos (200ml/200litres of water) or Imidacloprid (40ml/100litres of water) to control.
  - In Sub Montane and Low Hills Sub Humid Zone of Himachal Pradesh, undertake monitoring for mango hopper. Also there is a chance of attack of leaf minor in new growth of Citrus, spray 10 ml Matasystox or Malathion 10 ml in 10 litre of water. Peach leaf curl is also appearing in tree, spray Metasystox @ 1ml per litre + Blitox @ 3g per litre of water.
- **Animal Husbandry**
  - In High Hill Temperate Dry Zone of Himachal Pradesh, give daily 40-50g Minerals mixture per cow and protect newly born calves to protect from cold.
  - In Mid Hills sub-Humid Zone of Himachal Pradesh, spray Cypermethrin (2-2.5ml/litre of water) on the body of animals to protect them from attack of parasites.
  - In Sub-Montane and Low Hills Sub-Tropical Zone of Himachal Pradesh, for milch animals, follow schedule of 1 kg feed+50 g mineral mixtures per 2 litres of milk. Get the animals vaccinated against Foot and Mouth disease.
  - In Western Zone of Punjab, keep poultry shed clean, dry, cool and well ventilated and maintain optimum temperature inside the shed. Use economic and balanced diet for poultry breeds to avoid stress conditions. Avoid the over feeding in layers and Ad.Lib. feeding in Broilers. Avoid the feeding during extreme hot period of the day time.
- **Floriculture**
  - In Sub Montane and Low Hills Sub Humid Zone of Himachal Pradesh, as there is a chance of attack of aphids in winter flower plants, spray Malathion @ 0.05% for the control on a non rainy day.
  - In Valley Temperate Zone of Jammu & Kashmir, weather conditions are favourable for planting of bare-rooted rose plants. Undertake land preparation for sowing seeds of herbaceous perennials.
- **Apiculture:**
  - In Intermediate Zone of Jammu & Kashmir, farmers are advised to inspect honey bees colonies at weekly interval

to check insect pest attack particularly mite infestation and brood to avoid mortality of honey bees.

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

### Annexure I

#### Week by week Rainfall Distribution

Sub-Divisions	16.03.16		23.03.16		30.03.16	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
<b>Arunachal Pradesh</b>						
Anjaw	**	**	**	**	**	**
Changlang	62.4	-32	13.6	-88	14.6	-80
Dibang Valley	**	**	65.0	-15	25.0	-61
East Kameng	3.2	-87	3.7	-79	10.2	-55
East Siang	15.0	-15	4.2	-86	14.7	-39
Kurung Kumey	**	**	**	**	**	**
Lohit	32.6	-1	72.2	44	36.5	-19
Lower Dibang Valley	11.9	-85	41.4	-46	43.8	-31
Lower Subansari	**	**	**	**	**	**
Papumpare	44.5	26	52.2	45	23.0	13
Tawang	48.0	264	87.0	484	21.0	10
Tirap	27.4	34	34.0	-2	8.8	-79
Upper Siang	181.0	116	92.2	-2	65.4	-8
Upper Subansari	10.2	-51	20.8	-28	6.2	-73
West Kameng	0.0	-100	11.0	-26	0.8	-96
West Siang	15.0	-2	38.0	162	4.0	-76
<b>Assam&amp;Meghalaya</b>						
<b>Assam</b>						
Baksa	1.0	-90	16.9	44	48.6	135
Barpeta	0.0	-100	3.1	-74	37.7	82
Bongaigaon	0.0	-100	18.6	26	42.8	110
Cachar	16.6	-33	34.9	-28	18.8	-66
Chirang	0.0	-100	18.4	24	33.4	64
Darrang	**	**	**	**	**	**
Dhemaji	2.0	-88	7.0	-69	3.0	-84
Dhubri	0.0	-100	18.9	97	69.5	383
Dibrugarh	19.7	-19	46.6	31	8.8	-70
Goalpara	0.0	-100	11.0	-6	77.6	275
Golghat	4.7	-51	13.3	-27	19.4	-14
Hailakandi	8.7	-64	23.1	-23	22.9	-57
Jorhat	1.2	-92	20.7	-7	15.2	-37
Kamrup(Rural)	0.0	-100	1.1	-94	46.8	150
Kamrup(Metro)	0.0	-100	0.2	-99	19.2	3
Karbi Anglong	0.4	-97	1.5	-85	18.7	-11
Karimganj	20.0	-15	36.7	-24	34.3	-35
Kokrajhar	0.0	-100	8.8	119	108.5	350
Lakhimpur	9.5	-43	31.3	40	15.4	-19
Morigaon	0.0	-100	0.0	-100	35.2	82

N.C.Hills	0.0	-100	0.0	-100	27.0	-64
Nowgong	3.3	-63	0.0	-100	19.2	12
Nalbari	0.0	-100	10.5	102	53.3	135
Sonitpur	0.0	-99	4.1	-72	33.1	157
Sibsagar	18.6	1	31.3	60	12.1	-42
Tinsukia	34.5	38	41.0	-3	17.2	-45
Udalgiri	0.0	-100	5.4	-66	26.5	79
<b>Meghalaya</b>						
East Garo Hills	0.0	-100	28.4	306	35.8	122
East Khasi Hills	0.3	-98	32.6	-14	43.3	33
Jaintia Hills	0.0	-100	2.0	-87	4.0	-89
Ribhoi	0.0	-100	0.8	-93	20.1	-21
South Garo Hills	0.0	-100	4.0	-48	28.0	49
West Garo Hills	0.0	-100	4.6	-40	39.2	109
West Khasi Hills	0.0	-100	4.0	-64	26.0	1
<b>NMMT</b>						
<b>Mizoram</b>						
Aizwal	0.0	-100	47.9	124	35.0	-26
Champhai	**	**	**	**	**	**
Kolasib	**	**	1.0	-96	1.0	-98
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	12.0	-17	4.0	-90
Serchhip	0.0	-100	**	**	**	**
<b>Manipur</b>						
Bishnupur	**	**	**	**	**	**
Chandel	1.0	-70	0.0	-100	14.0	33
Churachandpur	**	**	**	**	**	**
Imphal east	3.8	-58	14.8	-34	12.2	-46
Imphal west	33.2	515	12.3	-48	19.7	56
Senapati	**	**	**	**	**	**
Tamenglong	**	**	**	**	**	**
Thoubal	**	**	**	**	**	**
Ukhrul	0.0	-100	0.0	-100	0.0	-100
<b>Nagaland</b>						
Dimapur	0.0	-100	1.2	-87	7.0	-67
Kephire	**	**	**	**	**	**
Kohima	6.0	-47	3.2	-74	1.9	-90
Longleng	**	**	**	**	**	**
Mokokchung	0.0	-100	2.0	-87	0.0	-100
Mon	**	**	**	**	**	**
Paran	**	**	**	**	**	**
Phek	3.0	-73	5.0	-60	3.0	-84
Tuensang	**	**	**	**	**	**
Wokha	1.0	-94	5.0	-71	14.0	-60
Zunheboto	**	**	**	**	**	**
<b>Tripura</b>						
Dhalai	0.0	-100	9.5	-72	95.4	202



NorthTripura	10.9	-34	50.0	41	69.0	82
SouthTripura	0.0	-100	39.6	8	68.0	155
West Tripura	0.7	-94	15.1	-11	84.1	204
<b>Himachal Pradesh</b>						
Bilaspur	35.8	307	6.7	-57	0.0	-100
Chamba	132.8	504	58.5	78	2.6	-86
Hamirpur	34.1	133	11.3	-12	0.0	-100
Kangra	49.3	141	30.5	31	0.7	-96
Kinnaur	34.0	27	33.0	-1	10.0	-63
Kullu	76.1	125	69.1	67	8.1	-68
Lahaul and Spiti	55.0	18	49.3	9	8.2	-80
Mandi	54.0	160	16.4	-30	0.6	-96
Shimla	55.6	190	26.3	7	1.3	-92
Sirmaur	34.1	284	3.9	-67	0.0	-100
Solan	76.2	411	8.3	-51	0.0	-100
Una	50.7	496	1.3	-86	0.0	-100
<b>Punjab</b>						
Amritsar	25.4	205	2.3	-80	0.8	-87
Barnala	0.0	-100	9.0	157	0.0	-100
Bhatinda	26.5	703	1.0	-78	0.0	-100
Faridkot	34.7	567	20.0	317	0.0	-100
Fatehgarh Saheb	30.0	392	1.7	-69	0.0	-100
Ferozpur	13.2	180	5.3	-14	0.0	-100
Gurdaspur	48.9	301	12.8	-7	0.9	-92
Hoshiarpur	16.3	88	0.9	-91	0.0	-100
Jalandhar	24.0	242	1.5	-80	0.0	-100
Kapurthala	53.7	842	0.6	-91	0.0	-100
Ludhiana	14.3	165	3.9	-34	0.0	-100
Mansa	3.6	24	0.0	-100	0.0	-100
Moga	20.0	388	0.5	-89	0.0	-100
Muktesar	43.0	900	3.2	-30	0.0	-100
Nawashahar	26.8	185	2.8	-58	0.0	-100
Patiala	21.7	361	4.2	-18	0.0	-100
Ropar	29.9	21	5.2	-35	0.0	-100
Sangrur	19.5	428	6.8	47	0.0	-100
Mohali	45.0	417	0.0	-100	0.0	-100
TarnTaran	32.0	482	0.0	-100	0.0	-100
<b>Haryana,Chd,Delhi</b>						
<b>Haryana</b>						
Ambala	16.4	80	0.8	-85	0.0	-100
Bhiwani	2.8	25	0.4	-80	0.0	-100
Chandigarh	49.4	606	3.9	-69	0.0	-100
Faridabad	8.5	372	1.3	150	0.0	-100
Fatehabad	17.3	590	0.8	-79	0.0	-100
Gurgaon	7.2	414	3.8	280	0.0	-100
Hissar	5.7	216	0.8	-74	0.0	-100
Jhajar	12.1	425	0.4	-76	0.0	-100
Jind	10.8	112	1.0	-62	0.0	-100
Katihah	22.9	781	0.0	-100	0.0	-100

Karnal	23.0	400	0.0	-100	0.0	-100
Kurukshetra	14.2	145	0.0	-100	0.0	-100
Mahendragarh	0.0	-100	3.7	116	0.0	-100
Mewat	8.2	310	0.3	-44	0.0	-100
Palwal	3.8	275	0.0	-100	0.0	-100
Panchkkula	13.7	185	1.3	-82	0.0	-100
Panipat	42.5	1533	0.2	-91	0.0	-100
Rewari	4.8	245	6.1	581	0.0	-100
Rohtak	10.4	181	0.3	-91	0.0	-100
Sirsa	16.3	803	0.0	-100	0.0	-100
Sonepat	36.9	738	0.2	-91	0.0	-100
Yamunanagar	23.7	133	0.8	-88	0.0	-100
<b>Delhi</b>						
Central Delhi	2.0	-57	0.0	-100	0.0	-100
East Delhi	4.0	-13	1.0	-64	0.0	-100
New Delhi	10.4	127	14.4	415	0.0	-100
North Delhi	8.0	73	0.1	-96	0.0	-100
North East Delhi	0.0	-100	8.0	186	0.0	-100
North West Delhi	6.0	30	0.0	-100	0.0	-100
South Delhi	17.0	270	2.0	-29	0.0	-100
South West Delhi	17.2	274	1.6	-43	0.0	-100
West Delhi	8.0	74	1.0	-64	0.0	-100
<b>Jammu &amp; Kashmir</b>						
Anantnag	62.7	106	79.7	73	30.5	6
Badgam	50.3	173	86.2	169	36.0	101
Bandipore	**	**	**	**	**	**
Baramula	81.2	51	147.8	-5	50.7	39
Doda	95.6	132	45.4	-34	24.8	-33
Ganderbal	65.4	176	81.8	164	36.5	78
Jammu	89.3	632	11.9	-41	1.1	-92
Kargil	**	**	**	**	**	**
Kathua	58.5	312	30.9	98	5.6	-48
Kistwar	**	**	**	**	**	**
Kulgam	68.9	126	75.0	63	37.8	32
Kupwara	114.9	121	135.1	129	58.0	38
Ladakh(Leh)	0.0	-100	1.9	46	0.0	-100
Poonch	**	**	**	**	0	-100
Pulwama	43.8	153	78.7	153	26.5	39
Rajouri	92.2	1518	64.0	281	20.4	15
Ramban	142.7	246	149.3	119	16.9	-54
Reasi	107.3	254	32.5	-30	5.8	-77
Samba	36.3	198	11.4	-44	0.0	-100
Shopian	**	**	**	**	**	**
Srinagar	45.9	93	91.1	194	32.9	60
Udhampur	88.0	190	27.6	-40	0.0	-100
<b>East Madhya Pradesh</b>						
Anuppur	9.8	46	0.0	-100	0.0	-100
Balaghat	9.7	193	0.0	-100	2.5	-21

Chhatarpur	17.1	716	0.0	-100	0.0	-100
Chindwara	5.8	4	0.0	-100	2.1	-46
Damoh	5.5	104	0.0	-100	0.7	-70
Dindori	6.0	122	0.0	-100	0.0	-100
Jabalpur	0.9	-63	0.0	-100	6.5	67
Katni	2.0	67	0.0	-100	0.0	-100
Mandla	3.9	-31	0.0	-100	2.6	-57
Narsingpur	0.4	-69	0.0	-100	4.6	142
Panna	8.3	276	0.0	-100	0.0	-100
Rewa	29.4	1447	0.0	-100	0.5	-87
Sagar	4.3	64	0.0	-100	0.0	-100
Satna	11.1	361	0.0	-100	0.8	-65
Seoni	10.2	88	0.0	-100	0.5	-92
Shahdol	0.1	-98	0.0	-100	0.0	-100
Sidhi	7.0	100	0.0	-100	0.0	-100
Singrauli	0.0	-100	0.0	-100	0.0	-100
Tikamgarh	21.5	1855	0.0	-100	0.5	-72
Umaria	11.2	129	0.0	-100	0.8	-80
<b>West Madhya Pradesh</b>						
Agar	0.0	-100	0.0	-100	0.0	-100
Alirajpur	0.0	-100	0.0	-100	0.0	-100
Asoknagar	6.0	400	0.0	-100	0.0	-100
Badwani	0.0	-100	0.0	-100	0.0	-100
Betul	0.3	-87	0.0	-100	9.8	277
Bhind	0.0	-100	0.0	-100	0.0	-100
Bhopal	5.2	373	0.0	-100	0.2	-93
Burhanpur	0.0	-100	0.0	-100	0.0	-100
Datia	0.8	33	0.0	-100	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	0.1	-52	0.0	-100	0.0	-100
Guna	1.5	15	0.0	-100	0.0	-100
Gwalior	1.6	7	0.0	-100	0.3	-79
Harda	1.1	-39	0.0	-100	0.0	-100
Hosangabad	3.1	7	0.0	-100	2.0	5
Indore	4.9	513	0.0	-100	0.0	-100
Jhabua	0.0	-100	0.0	-100	0.0	-100
Khandwa	1.0	-23	0.0	-100	0.0	-100
Khargone	0.0	-100	0.0	-100	0.0	-100
Mandsaur	0.0	-100	0.0	-100	0.0	-100
Morena	0.8	-33	0.0	-100	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	5.7	281	0.0	-100	0.0	-100
Rajgarh	0.0	-100	0.0	-100	0.0	-100
Ratlam	0.0	-100	0.0	-100	0.0	-100
Sehore	3.2	167	0.0	-100	0.0	-100
Shajapur	1.1	10	0.0	-100	0.0	-100
Sheopur Kalani	0.0	-100	0.0	-100	0.0	-100
Shivpuri	2.8	244	0.0	-100	0.0	-100



Ujjain	0.3	-63	0.0	-100	0.0	-100
Vidisha	6.6	291	0.0	-100	0.0	-100
<b>Chhattisgarh</b>						
Bastar	37.6	916	0.0	-100	3.6	-12
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	6.6	38	0.0	-100	6.5	59
Dantewara	4.0	400	0.0	-100	3.0	100
Dhamtari	21.2	1827	0.0	-100	1.6	-68
Durg	22.6	1226	0.0	-100	7.0	94
Janjgir	17.5	465	0.0	-100	**	**
Jashpurnagar	2.9	16	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	**	**
Korba	9.5	158	0.0	-100	0.0	-100
Koriya	17.8	560	0.0	-100	0.0	-100
Kawardha	7.0	106	0.0	-100	**	**
Mahasumund	16.8	1296	0.0	-100	**	**
Narayanpur	10.9	289	0.0	-100	0.0	-100
Raigarh	3.4	70	0.0	-100	0.4	-90
Raipur	10.0	426	0.0	-100	1.1	-66
Rajnandgaon	16.2	440	2.7	14	7.0	56
Surguja	14.7	286	0.0	-100	0.5	-85
<b>East Uttar Pradesh</b>						
Allahabad	16.3	1065	0.0	-100	0.0	-100
Ambedkar Nagar	6.0	131	0.0	-100	0.0	-100
Azamgarh	3.0	58	0.0	-100	0.0	-100
Bahraich	0.0	-100	0.0	-100	0.0	-100
Ballia	0.5	-77	0.0	-100	0.0	-100
Balrampur	0.0	-100	0.0	-100	0.0	-100
Banda	4.5	162	0.0	-100	0.0	-100
Barabanki	7.9	367	0.0	-100	0.0	-100
Basti	4.2	100	0.0	-100	0.0	-100
Chandauli	1.0	-29	0.0	-100	0.0	-100
Deoria	0.0	-100	0.0	-100	0.0	-100
Faizabad	18.0	1100	0.0	-100	0.0	-100
Farrukhabad	0.5	-79	0.0	-100	0.0	-100
Fatehpur	7.6	230	0.0	-100	3.3	52
Gazipur	13.1	2083	0.0	-100	0.1	-96
Gonda	0.0	-100	0.0	-100	0.0	-100
Gorakhpur	0.2	-93	0.0	-100	0.0	-100
Hardoi	0.0	-100	0.0	-100	0.0	-98
Jaunpur	6.3	317	0.0	-100	0.0	-100
Kannauj	0.0	-100	0.0	-100	0.0	-100
Kanpur City	3.0	103	0.0	-100	1.6	-4
Kanpur Dehat	2.0	82	0.0	-100	0.0	-100
Kaushambi	4.1	173	0.0	-100	0.0	-100
Kheri	0.8	-58	0.0	-100	0.0	-100
Kushi nagar	3.0	76	0.0	-100	0.0	-100
Lucknow	12.5	419	0.0	-100	0.5	-73
Maharajganj	11.0	214	0.0	-100	0.0	-100

Mau	0.0	-100	0.0	-100	0.0	-100
Mirzapur	12.5	862	0.0	-100	0.0	-100
Pratapgarh	1.0	-29	0.0	-100	0.0	-100
RaiBareilly	0.5	-70	0.0	-100	0.1	-93
Sahuji Maharajnagar	7.5	213	0.0	-100	0.0	-100
Sant Kabirnnagar	1.0	-55	0.0	-100	0.0	-100
Sant Ravidas Nagar	26.0	1757	0.0	-100	0.0	-100
Shrawasti	**	**	**	**	**	**
Sidharthnagar	0.0	-100	0.0	-100	0.0	-100
Sitapur	4.3	88	0.0	-100	0.0	-100
Sonbhadra	20.8	529	0.0	-100	0.0	-100
Sultanpur	0.0	-100	0.0	-100	0.0	-100
Unnao	0.0	-100	0.0	-100	0.0	-100
Varanasi	13.0	829	0.0	-100	0.0	-100
<b>West Uttar Pradesh</b>						
Agra	0.1	-97	0.0	-100	0.0	-100
Aligarh	0.8	-71	0.2	-80	0.0	-100
Auraiya	0.0	-100	0.0	-100	0.0	-100
Badaun	5.8	45	0.0	-100	0.0	-100
Baghpat	29.1	628	0.0	-100	0.0	-100
Bareilly	7.0	193	0.0	-100	0.0	-100
Bijnor	12.6	90	0.2	-95	0.0	-100
Bulandsahar	5.1	-1	0.0	-100	0.0	-100
Etah	1.0	-71	0.0	-100	0.0	-100
Etawah	0.0	-100	0.0	-100	0.0	-100
Firozabad	1.8	13	0.0	-100	0.0	-100
GBNagar	0.0	-100	0.0	-100	0.0	-100
Ghaziabad	20.2	512	0.0	-100	0.0	-100
Hamirpur	16.0	1233	0.0	-100	1.3	-17
Jalaun	8.3	589	0.0	-100	0.0	-100
Jhansi	8.0	563	0.0	-100	0.4	-82
Jotiba Phule Nagar	22.0	547	0.0	-100	0.0	-100
Kanshiramnagar	0.0	-100	0.0	-100	0.0	-100
Lalitpur	16.2	750	0.0	-100	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	0.0	-100
Mahoba	2.6	117	0.0	-100	0.0	-100
Mainpuri	0.0	-100	0.0	-100	0.0	-100
Mathura	0.0	-100	0.0	-100	0.0	-100
Meerut	14.8	312	1.5	-44	0.0	-100
Moradabad	22.0	779	0.0	-100	0.0	-100
Muzzaffarnagar	20.8	572	0.0	-100	0.0	-100
Pilibhit	0.0	-100	0.0	-100	0.0	-100
Rampur	15.1	358	1.0	-75	0.0	-100
Saharanpur	13.0	128	0.0	-100	0.0	-100
Shahjahanpur	2.4	-45	0.0	-100	0.0	-100
<b>Uttarakhand</b>						
Almora	56.9	493	4.5	-64	0.0	-100
Bageshwar	50.4	424	0.0	-100	0.0	-100

Chamoli	52.0	256	4.7	-84	5.0	-69
Champawat	13.0	97	2.0	-78	0.0	-100
Dehradun	30.4	179	2.3	-83	0.0	-100
Garhwal Pauri	17.8	155	0.0	-100	0.0	-100
Garhwal Tehri	28.4	134	1.2	-92	0.0	-100
Haridwar	18.1	144	2.2	-55	0.0	-100
Nainital	53.4	748	4.5	-49	2.1	-78
Pithorgarh	25.4	103	4.3	-79	0.3	-98
Rudraprayag	21.6	3	2.1	-91	0.0	-100
Udham Sing Nagar	2.3	5	1.0	-75	0.0	-100
Uttarkashi	36.2	113	6.3	-74	0.0	-100
<b>Bihar</b>						
Araria	0.6	-71	0.0	-100	27.9	389
Arwal	4.2	317	0.0	-100	0.0	-100
Aurangabad	7.4	313	0.0	-100	0.0	-100
Banka	0.0	-100	0.0	-100	0.0	-100
Begusarai	0.0	-100	0.0	-100	0.0	-100
Bhabua	10.1	1022	0.0	-100	0.0	-100
Bhagalpur	1.6	-13	0.0	-100	0.0	-100
Bhojpur	4.2	133	0.0	-100	0.0	-100
Buxar	**	**	0.0	-100	**	**
Darbhanga	3.0	36	0.0	-100	2.0	-50
East Champaran	0.0	-100	0.0	-100	0.0	-100
Gaya	11.6	406	0.0	-100	0.0	-100
Gopalganj	**	**	0.0	-100	0.0	-100
Jahanabad	3.6	100	0.0	-100	0.0	-100
Jamui	0.8	-33	0.0	-100	0.0	-100
Katihar	0.0	-100	0.0	-100	0.0	-100
Khagadia	0.0	-100	**	**	0.0	-100
Kishanganj	0.0	-100	0.0	-100	4.6	-13
Lakhisarai	7.3	387	0.0	-100	0.0	-100
Madhepura	0.0	-100	**	**	0.0	-100
Madhubani	0.0	-100	0.0	-100	4.0	-5
Monghyar	**	**	**	**	**	**
Muzaffarpur	0.0	-100	0.0	-100	0.0	-100
Nalanda	9.3	567	0.0	-100	0.0	-100
Nawada	3.7	267	0.0	-100	0.0	-100
Patna	2.4	7	0.0	-100	0.0	-100
Purnea	0.0	-100	0.0	-100	6.8	44
Rohtas	20.3	1594	0.0	-100	0.0	-100
Saharsha	0.0	-100	0.0	-100	0.0	-100
Samstipur	0.0	-100	0.0	-100	0.0	-100
Saran	0.0	-100	0.0	-100	0.0	-100
Sheikpura	**	**	0.0	-100	0.0	-100
Sheohar	0.0	-100	0.0	-100	0.0	-100
Sitamarhi	0.0	-100	0.0	-100	0.0	-100
Siwan	0.0	-100	0.0	-100	0.0	-100
Supaul	0.0	-100	0.0	-100	0.0	-100
Vaishali	3.4	100	0.0	-100	0.0	-100



West Champaran	2.9	-5	0.0	-100	0.0	-100
<b>Jharkhand</b>						
Bokaro	6.8	31	0.0	-100	0.0	-100
Chatra	15.3	752	0.0	-100	**	**
Deoghar	2.4	24	0.0	-100	**	**
Dhanbad	0.5	-88	0.0	-100	0.0	-100
Dumka	5.4	93	0.0	-100	0.0	-100
East Singbhum	1.3	-75	0.5	-88	0.0	-100
Garhwa	0.0	-100	0.0	-100	**	**
Giridih	8.0	134	0.4	-90	0.0	-100
Godda	0.3	-64	0.0	-100	**	**
Gumla	7.3	114	0.0	-100	0.5	-94
Hazaribagh	9.9	521	0.0	-100	**	**
Jamtara	1.0	-63	1.9	-57	0.0	-100
Khunti	0.0	-100	0.0	-100	**	**
Koderrna	4.1	154	0.0	-100	**	**
Latehar	12.7	170	0.0	-100	**	**
Lohardagga	20.4	410	**	**	**	**
Pakur	0.0	-100	0.0	-100	**	**
Palamau	20.1	616	0.0	-100	0.0	-100
Ramgarh	4.4	76	0.0	-100	0.0	-100
Ranchi	11.7	150	1.6	-61	0.0	-100
Sahebganj	0.0	-100	0.0	-100	**	**
Saraikela	0.0	-100	0.0	-100	0.0	-100
Simdega	17.9	518	0.0	-100	0.0	-100
West Singbhum	1.6	-74	4.8	116	0.0	-100
<b>East Rajasthan</b>						
Ajmer	0.0	-100	0.0	-100	0.0	-100
Alwar	0.2	-80	0.0	-100	0.0	-100
Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	1.8	192	0.0	-100	0.0	-100
Bharatpur	0.0	-100	0.2	-82	0.0	-100
Bhilwara	0.0	-100	0.0	-100	0.0	-100
Bundi	0.0	-100	0.0	-100	0.0	-100
Chittorgarh	0.0	-100	0.0	-100	0.0	-100
Dausa	0.0	-100	0.0	-100	0.0	-100
Dholpur	0.0	-100	0.0	-100	0.2	-91
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.0	-100	0.9	8	0.0	-100
Jhalawar	0.2	-50	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	2.0	55	0.0	-100
Karauli	0.0	-100	0.0	-100	0.0	-100
Kota	0.0	-100	0.0	-100	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	0.5	25	0.0	-100	0.0	-100
Sikar	0.0	-100	0.9	5	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-96	0.0	-100	0.0	-100

Udaipur	0.0	-100	0.0	-100	0.0	-100
<b>West Rajasthan</b>						
Barmer	1.8	1653	0.0	-100	0.0	-100
Bikaner	6.7	379	0.0	-100	0.0	-100
Churu	4.6	252	1.9	57	0.0	-100
Hanumangarh	10.6	861	0.0	-100	0.0	-100
Jaisalmer	0.7	138	0.0	-100	0.0	-100
Jalore	0.3	200	0.0	-100	0.0	-100
Jodhpur	0.2	100	0.0	-100	0.0	-100
Nagaur	0.0	-100	0.0	-100	0.0	-100
Pali	0.0	-100	0.0	-100	0.0	-100
Sri Ganganagar	11.9	375	0.1	-97	0.0	-100
<b>Gujarat Region</b>						
Ahmedabad	0.0	-100	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-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
Dangs	0.0	-100	0.0	-100	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	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	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
<b>S K &amp; Diu region</b>						
Amreli	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.1	33	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100
Kutch	0.5	33	0.0	-100	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
<b>Maharashtra</b>						
<b>Konkan &amp; Goa</b>						
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	0.0	-100

Raigad	0.0	-100	0.0	-100	0.0	-100
Ratnagiri	0.0	-100	0.0	-100	0.0	-100
Sindhudurg	0.0	-100	0.0	-100	0.0	-100
South Goa	0.0	-100	0.0	-100	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100
<b>Madhya Maharashtra</b>						
Ahmednagar	0.0	-100	0.0	-100	0.0	-100
Dhule	0.0	-100	0.0	-100	0.0	-100
Jalgaon	0.0	-100	0.0	-100	0.0	-100
Kolhapur	0.0	-100	0.0	-100	0.5	-68
Nandurbar	0.0	-100	0.0	-100	0.0	-100
Nasik	0.0	-100	0.0	-100	3.9	1827
Pune	0.0	-100	0.0	-100	0.0	-100
Sangli	0.0	-100	0.0	-100	0.0	-100
Satara	0.0	-100	0.0	-100	0.4	-69
Solapur	0.0	-94	0.0	-100	0.0	-99
<b>Marathwada</b>						
Aurangabad	0.0	-100	0.0	-100	0.1	-93
Beed	0.0	-100	0.0	-100	0.4	-62
Hingoli	0.0	-100	0.0	-100	2.1	48
Jalna	0.0	-100	0.0	-100	0.0	-100
Latur	0.0	-100	0.0	-100	0.9	-55
Nanded	0.0	-100	0.0	-100	0.8	-64
Usmanabad	0.0	-100	0.0	-100	0.0	-100
Parbhani	0.0	-100	0.0	-100	1.4	-10
<b>Vidarbha</b>						
Akola	0.0	-100	0.0	-100	1.0	-62
Amraoti	0.0	-100	0.0	-100	0.0	-100
Bhandara	5.5	-8	0.0	-100	10.3	172
Buldhana	0.0	-100	0.0	-100	0.3	-79
Chandrapur	12.0	252	0.8	-73	0.0	-100
Gadchiroli	0.0	-100	0.0	-100	4.4	23
Gondia	12.5	172	0.0	-100	13.3	203
Nagpur	2.4	-49	0.0	-100	3.8	-6
Wardha	4.9	52	0.0	-100	1.0	-65
Washim	0.0	-100	0.0	-100	0.1	-94
Yeotmal	1.3	-60	2.1	-8	1.5	-41
<b>Odisha</b>						
Angul	10.5	90	0.4	-91	10.6	165
Balasore	2.1	-69	0.9	-77	0.0	-100
Bargarh	12.4	376	0.0	-100	0.0	-100
Bhadrak	1.4	-85	1.9	-51	0.0	-100
Bolangir	5.8	38	1.6	-74	0.0	-100
Boudh	0.0	-100	0.0	-100	0.7	-87
Cuttack	3.6	-54	0.0	-100	0.2	-97
Deogarh	1.3	-70	0.0	-100	0.0	-100
Dhenkanal	16.9	116	0.5	-92	6.7	20
Gajapati	2.9	-85	20.6	98	2.3	-87



Ganjam	4.1	-56	3.3	-10	0.0	-100
Jagatsingpur	0.0	-100	11.1	457	0.0	-100
Jajpur	4.7	-51	0.0	-100	0.0	-100
Jharsuguda	3.4	1	0.0	-100	0.0	-99
Kalahandi	14.0	367	0.0	-100	0.0	-100
Kandhamal	23.2	453	2.1	-67	0.0	-100
Kendrapara	0.0	-100	6.0	50	0.0	-100
Keonjhar	10.1	34	0.2	-93	0.0	-100
Khurda	0.1	-99	2.2	-52	0.0	-100
Koraput	8.3	72	0.0	-100	7.0	59
Malkangiri	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	2.7	-71	1.6	-76	0.0	-100
Nawapara	0.8	-68	2.0	-61	2.4	-14
Nawarangpur	25.8	501	7.6	377	2.9	51
Nayagarh	15.3	200	0.0	-100	0.0	-100
Puri	0.0	-100	0.6	-90	0.5	-88
Rayagada	12.4	31	14.8	208	0.0	-100
Sambalpur	4.8	9	0.1	-96	0.2	-96
Sonepur	1.0	-75	1.8	-67	0.0	-100
Sundargarh	4.4	-13	0.0	-100	0.0	-100
<b>West Bengal &amp; Andaman Nicobar Islands</b>						
<b>A &amp; N ISLAND</b>						
Nicobar	0.0	-100	0.0	-100	0.0	-100
North & Middle Andaman	0.0	-100	0.0	-100	0.0	-100
South Andaman	0.0	-100	0.0	-100	0.0	-100
<b>GWB</b>						
Bankura	2.6	-55	0.4	-91	0.0	-100
Birbhum	0.6	-85	0.7	-85	0.1	-98
Burdwan	1.2	-48	0.0	-100	0.0	-100
East Midnapore	0.2	-95	13.0	149	0.0	-100
Hooghly	0.0	-100	5.8	13	0.0	-100
Howrah	0.0	-100	4.6	7	0.0	-100
Kolkata	0.0	-100	6.8	28	0.0	-100
Murshidabad	0.0	-100	0.0	-100	0.0	-100
Nadia	0.0	-100	8.0	63	0.0	-100
24 Pargana (N)	9.9	44	24.0	344	0.0	-100
Purulia	2.5	-39	1.3	-73	0.0	-100
24 Pargana (S)	0.0	-100	0.9	-71	0.0	-100
West Midnapore	0.3	-96	7.8	4	0.0	-100
<b>SHWB &amp; Sikkim</b>						
Cooch Behar	0.0	-100	11.2	104	44.2	220
Darjeeling	0.0	-100	2.6	-81	40.9	205
East Sikkim	8.6	-48	14.2	10	14.1	-4
Jalpaiguri	0.0	-100	5.1	-21	85.7	472
Malda	0.2	-93	0.0	-100	0.0	-100
North Dinajpur	**	**	**	**	**	**
North Sikkim	56.0	13	133.7	115	25.5	-36
South Dinajpur	5.2	93	0.0	-100	0.0	-100

South Sikkim	2.3	-86	5.1	-60	10.3	-29
West Sikkim	0.0	-100	4.0	-94	11.0	-73
<b>Karnataka</b>						
<b>Coastal Karnataka</b>						
Dakshina Kannada	0.0	-100	0.0	-100	0.0	-100
Udupi	0.0	-100	0.0	-100	0.0	-100
Uttara Kannada	0.0	-100	0.0	-100	0.0	-100
<b>N I Karnataka</b>						
Bagalkote	0.1	-89	0.0	-100	0.0	-100
Belagavi	0.0	-100	0.0	-100	5.4	100
Bidar	0.5	-86	0.0	-100	4.2	4
Dharwad	0.0	-100	0.0	-100	4.9	69
Gadag	0.0	-100	0.0	-100	0.0	-100
Haveri	0.0	-100	0.0	-100	4.0	152
Kalaburgi	0.0	-100	0.0	-100	1.1	-69
Koppal	0.0	-100	0.0	-100	0.0	-100
Raichur	0.0	-100	0.0	-100	0.0	-100
Vijayapura	0.0	-100	0.0	-100	0.0	-100
Yadgir	0.0	-100	0.0	-100	0.1	-98
<b>S I Karnataka</b>						
Ballari	0.0	-100	0.0	-100	0.0	-100
Bangalore Rural	11.3	563	0.0	-100	0.0	-100
Bangalore Urban	14.8	638	3.5	190	0.0	-100
Chamarajanagar	1.3	-30	0.8	-72	0.0	-100
Chikaballapur	1.4	40	0.0	-100	0.0	-100
Chikkamagaluru	0.4	-86	0.6	-64	2.8	-26
Chitradurga	0.0	-100	0.0	-100	0.6	-65
Davangere	0.0	-100	0.0	-100	0.0	-100
Hassan	0.1	-96	0.3	-84	0.0	-100
Kodagu	0.1	-98	0.8	-79	4.3	-28
Kolar	4.1	128	1.5	-29	0.0	-100
Mandya	0.3	-78	2.1	46	0.0	-100
Mysuru	9.0	402	0.0	-100	0.0	-100
Ramanagara	0.0	-100	0.0	-100	0.0	-100
Shivamogga	0.0	-100	0.0	-100	0.0	-100
Tumakuru	0.4	-75	2.1	163	0.0	-100
<b>Kerala</b>						
Alappuzha	18.1	49	14.8	59	14.2	2
Kannur	0.6	-66	0.0	-100	0.0	-100
Ernakulam	0.2	-97	1.7	-79	1.5	-82
Idukki	21.5	153	1.7	-82	1.5	-88
Kasaragod	0.0	-100	0.0	-100	0.0	-100
Kollam	23.1	46	5.5	-51	23.9	37
Kottayam	27.9	182	23.0	171	18.1	46
Kozhikode	22.5	602	0.0	-100	0.0	-100
Malappuram	0.7	-68	1.9	-42	0.0	-100
Palakkad	4.5	13	0.0	-100	0.0	-100
Pathanamthitta	26.6	62	19.4	21	10.7	-57
Thiruvananthapuram	15.6	123	0.0	-100	3.6	-70

Thrissur	0.0	-100	6.2	27	0.0	-100
Wayanad	8.6	83	0.0	-100	2.8	-58
<b>Tamil Nadu</b>						
Ariyalur	0.0	-100	0.0	-100	0.0	-100
Chennai	0.0	-100	0.0	-100	0.0	-100
Coimbatore	11.4	107	0.0	-100	3.0	-18
Cuddalore	0.0	-100	0.0	-100	0.4	-84
Dharmapuri	0.0	-100	3.3	5	0.0	-100
Dindigul	0.1	-99	0.7	-78	0.5	-91
Erode	0.0	-100	0.0	-100	0.0	-100
Kanchipuram	0.0	-100	0.0	-100	0.0	-100
Kanyakumari	7.7	-30	0.0	-100	6.9	-39
Karikal	0.0	-100	0.0	-100	0.0	-100
Karur	0.0	-100	0.0	-100	0.0	-100
Krishnagiri	1.9	13	0.0	-100	0.0	-100
Madurai	0.0	-100	0.0	-100	0.3	-94
Nagapattinam	0.0	-100	0.0	-100	0.0	-100
Namakkal	0.0	-100	0.0	-100	0.0	-100
Nilgiris	4.9	-52	0.0	-100	0.0	-99
Perambalur	0.0	-100	0.0	-100	0.0	-100
Puducherry	0.0	-100	0.0	-100	0.0	-100
Pudukottai	0.0	-100	0.0	-100	0.0	-100
Ramanathapuram	0.0	-100	0.0	-100	0.8	-83
Salem	0.0	-100	0.0	-100	0.0	-100
Sivaganga	0.0	-100	0.0	-100	0.1	-95
Thanjavur	0.0	-100	0.0	-100	0.0	-100
Theni	5.6	-31	2.5	-64	3.7	-52
Tirunelveli	0.1	-99	0.1	-99	11.7	13
Tirupur	0.0	-100	0.0	-100	0.0	-100
Tiruvallur	0.0	-100	0.0	-100	0.0	-100
Tiruvannamalai	0.0	-100	0.0	-100	0.0	-100
Tiruvarur	0.0	-100	0.0	-100	0.0	-100
Toothukudi	1.3	-86	0.0	-100	15.9	184
Trichy	0.0	-100	0.0	-100	0.0	-100
Vellore	0.0	-100	0.1	-95	0.1	-98
Villupuram	0.0	-100	0.0	-100	0.0	-100
Virudhunagar	0.0	-100	0.0	-100	0.6	-91
<b>Andhra Pradesh</b>						
<b>Coastal Andhra Pradesh</b>						
East Godavari	0.0	-100	0.0	-100	0.0	-100
Guntur	0.0	-100	0.0	-100	0.0	-100
Krishna	0.0	-100	0.0	-100	0.0	-100
Nellore	0.0	-100	0.0	-100	0.0	-100
Prakasam	4.9	76	0.5	-58	0.0	-100
Sirkakulam	3.7	-9	0.1	-97	0.0	-100
Visakhapatnam	0.0	-100	0.0	-100	0.0	-100
Vizianagram	4.7	-6	0.6	-79	0.0	-100
West Godavari	0.0	-100	0.0	-100	0.0	-100



<b>Rayalaseema</b>						
Anantapur	0.1	-92	0.0	-100	0.0	-100
Chittoor	2.8	102	0.1	-94	0.0	-100
Cuddapah	0.1	-92	0.0	-100	0.0	-100
Kurnool	0.3	-83	0.0	-100	0.0	-100
<b>Telangana</b>						
Adilabad	0.5	-74	0.0	-100	2.0	-48
Hyderabad	0.0	-100	0.0	-100	0.0	-100
Karimnagar	6.0	66	0.0	-100	0.0	-100
Khammam	0.2	-94	0.0	-100	0.0	-100
Mehabubnagar	0.0	-100	0.0	-100	0.0	-100
Medak	0.0	-100	0.0	-100	0.0	-100
Nalgonda	4.8	100	0.0	-100	0.0	-100
Nizamabad	0.0	-100	0.1	-84	0.0	-100
Rangareddy	0.0	-100	0.0	-100	0.0	-100
Warangal	1.9	-54	1.0	-44	0.0	-100

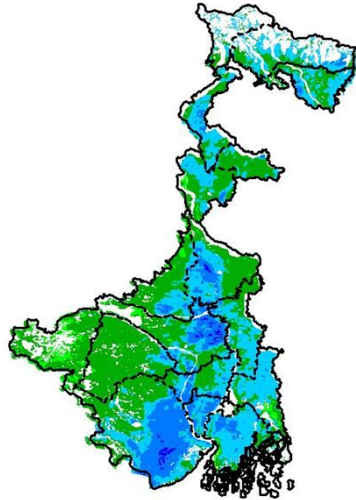
#### Legends

	(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

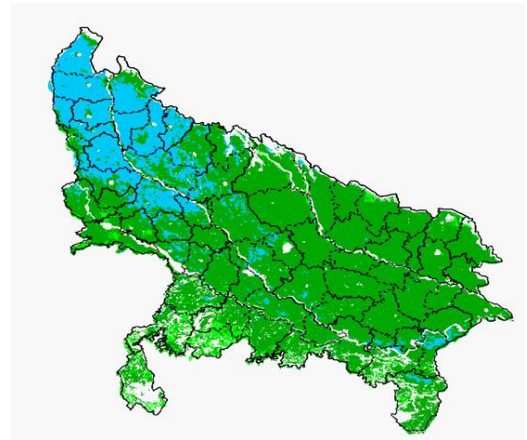
INSAT 3A CCD NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON  
30<sup>th</sup> March 2016 FOR DIFFERENT STATES

**West Bengal**



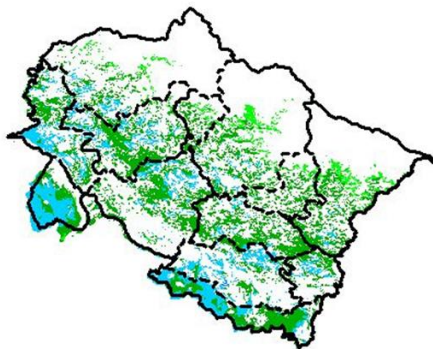
Agricultural vigour is good in central and Northern part of West Bengal, whereas rest of the state shows moderate NDVI.

**Uttar Pradesh**



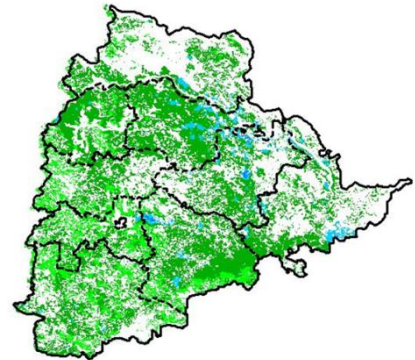
Agricultural vigour is good in north western parts of Uttar Pradesh. whereas rest of the state shows moderate values of NDVI.

**Uttarakhand**



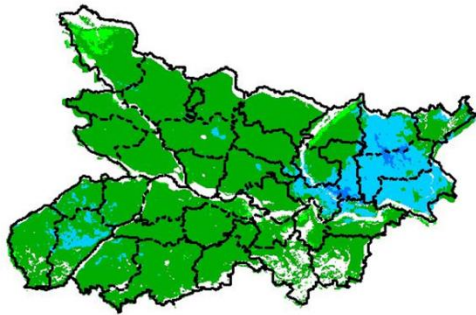
Agricultural vigour is moderate over entire state of Uttarakhand, whereas few patches in south and west part shows good values of NDVI.

**Telangana**



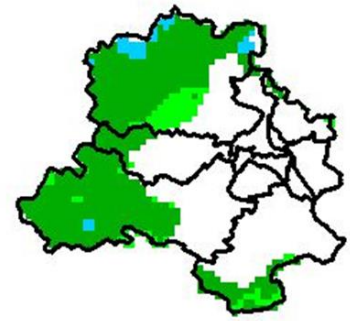
Agriculture vigour is moderate over most parts of Telangana. Few patches in eastern region shows good values of NDVI.

## Bihar



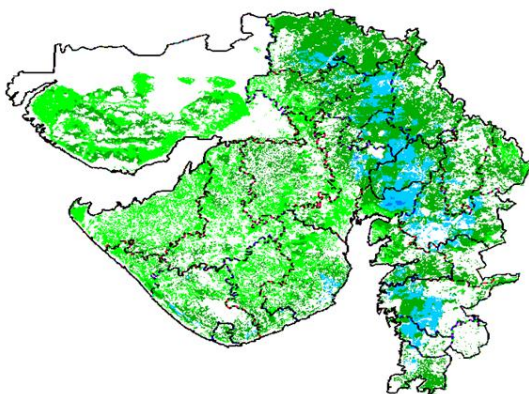
Agriculture vigour is moderate over major parts of Bihar whereas eastern part shows patches of good NDVI values.

## Delhi



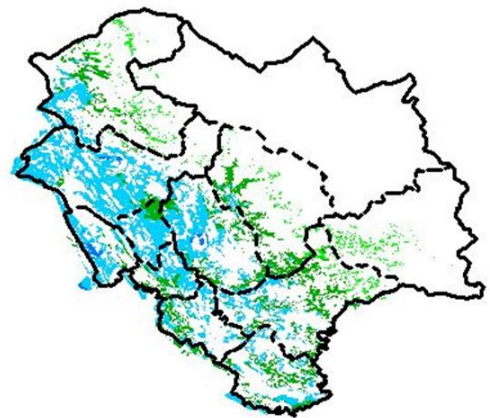
Agriculture vigour is moderate all over Delhi, whereas few patches over north show good vigour of NDVI.

## Gujarat



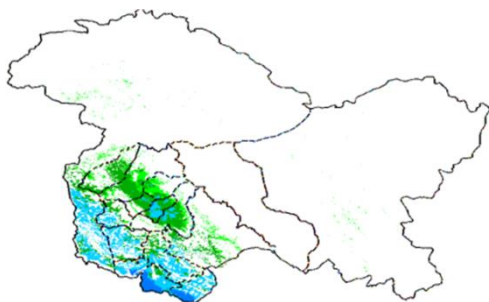
Agriculture vigour is moderate in Kutch and Saurashtra whereas, good agricultural vigour is observed over Gujarat region

## Himachal Pradesh



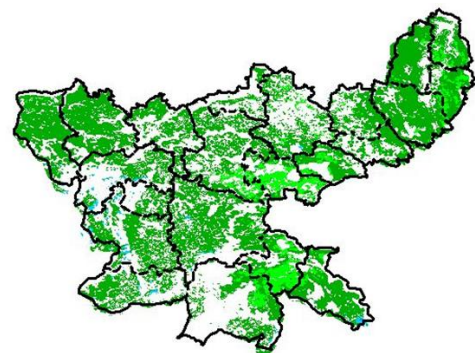
Agriculture vigour is good over western and southern parts of Himachal Pradesh, whereas rest of the state shows moderate values of NDVI.

## Jammu & Kashmir



Agriculture vigour is good over entire state of Jammu & Kashmir.

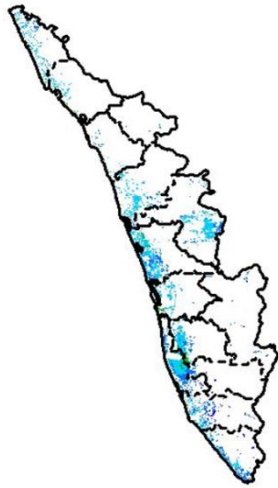
## Jharkhand



Agriculture vigour is moderate over entire state of Jharkhand.

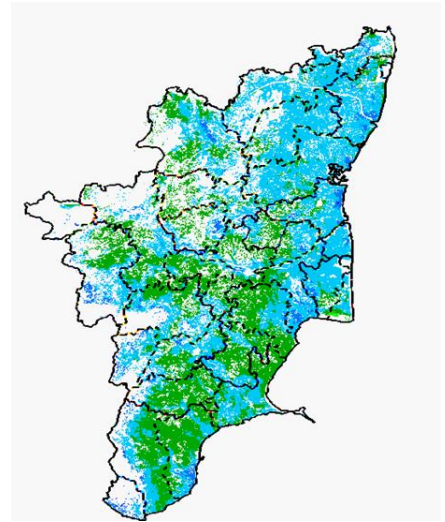


## Kerala



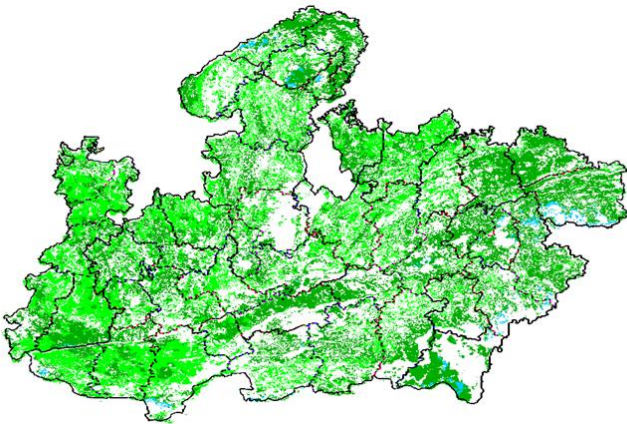
Agriculture vigour is good over entire state of Kerala.

## Tamil Nadu



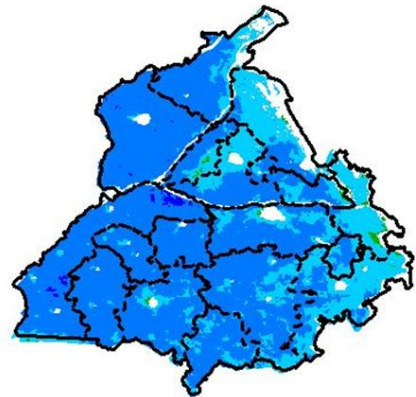
Agricultural vigour is good in patches over major part of Tamil Nadu, except for southern part shows moderate NDVI is observed in patches

## Madhya Pradesh



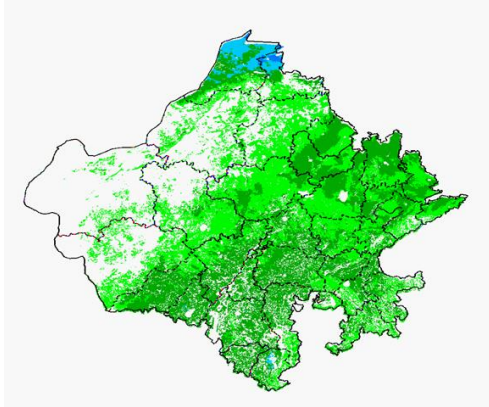
Agriculture vigour shows moderate values of NDVI over entire state of Madhya Pradesh.

## Punjab



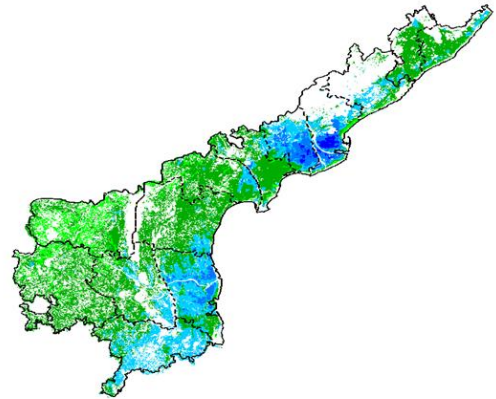
Agricultural vigour is very good over entire state of Punjab.

## Rajasthan



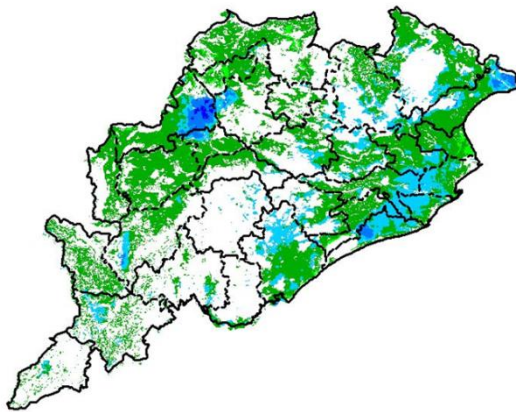
Agriculture vigour is moderate over the entire state and very good in northern parts of Rajasthan.

## Andhra Pradesh



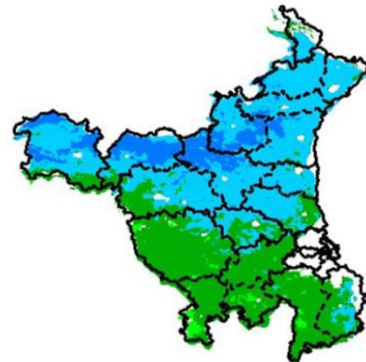
Agriculture vigour is very good over north-eastern part of Andhra Pradesh whereas western parts shows moderate values.

## Odisha



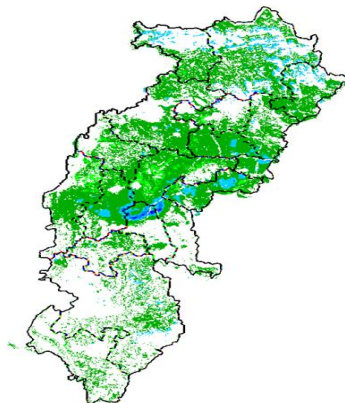
Agricultural vigour is good in patches of coastal parts of Odisha where rest of region shows moderate values of NDVI.

## Haryana



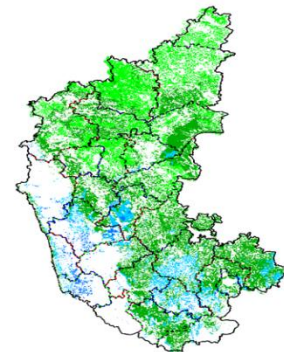
Agriculture vigour is good over major parts of Haryana and moderate values are observed in patches of southern parts of state.

## Chhattisgarh



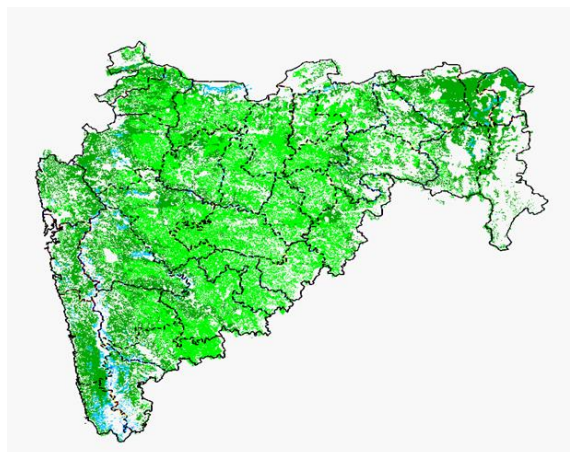
Agriculture vigour is moderate in the state of Chhattisgarh.

## Karnataka



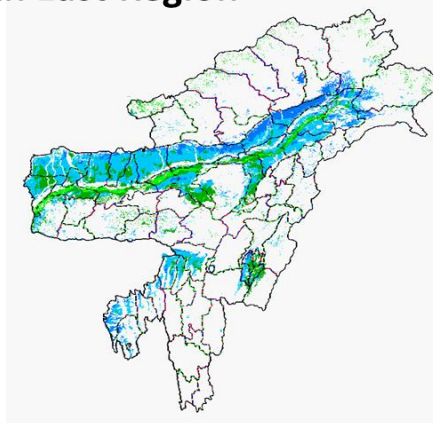
Agriculture vigour is good over western part of Karnataka state. Rest of the state shows moderate values of NDVI.

## Maharashtra

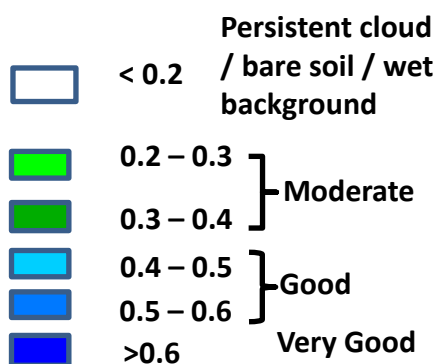


Agricultural vigour is moderate over entire state of Maharashtra.

## North East Region



Agriculture vigour is good in patches in Assam whereas, NDVI is moderate over rest of the regions of North-East



## Annexure III

### Assam

**Early ahu rice** :semi dwarf ahu rice varieties like Luit, Kopilee, Cauvery, Culture -1, Rasi, Banglami, Puthichapali, Nilajee, Hasakumra.Lachit, Chilaray, Gopinath, Gobind, IR-50, Culture-1 etc fortransplanted ahu rice.

**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)

**Capsularisjute** : 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** :CO-Jor- 1, CO-Jor- 2, Co 1148.

**Okra**:PusaSawani, ArkaAnamika, ParbhdaniKranti.

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

**Sponge gourd**:PusaChikni,Pusa Nasdar, selected local varieties, viz. AAUJ-1, AAUJ-2, AAUC-3 or other local varieties.

**Papaya**:Washington, Haflong, Rasi, KorgHoney Dew, Co-1, Co-2, Pusa Delicious, Pusa Majesty etc.

**Ginger & Turmeric**:HYV of ginger (Nadia, Karkai, Maran, Jorhat, chaina etc.) & turmeric (Shillong type, CL-24, PTS-38, PCT-13, VK-145, etc.) up to April.

### Meghalaya

**Maize( High and Mid altitude region)**: 61A, RCM 75, 76, Vivek Hybrid 25, Vivek QPM-1, etc and

### Odisha

**Sugarcane**: Nilamadhaba, 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, PusaDieepali, PusaKartiki  
**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  
**Mung:** k-851 and JM-721.

### **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.

### **Punjab**

**Sugarcane:** CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89,CO118, COJ85, COJ64.  
**Rice:** Pusa-44, T.R-112 and T.R-113.  
**Onion:** Punjab Naroya, Punjab White and PRO 6.  
**Radish:** Punjab Pasand and Japanese white.  
**Turnip:** L-1.  
**Carrot:** Punjab Black Beauty, Punjab Carrot Red and PC-34.  
**Tomato:**TH-1,PunjabRatta, Punjab NR 7, Punjab Chhuhara, 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:** PusaBharti.  
**Amaranths:** PusalalChaulai, PusaKiran.  
**Ladyfinger:** Pusa A-4.  
**Radish:**Japani White, Hill queen, French Radish.  
**Spinach:**All Green, PusaBharti;  
**Fenugreek:**PusaKasuri;  
**Coriander:**PantHaritama, Hybrids.  
**Turnip:**Pusa Swati, Local Red variety.



### **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, RZ19,209,223and 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:**PusaRashmi.

**Carrot:** PusaKeshar.

**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

### **East Rajasthan**

**Muskmelon:** Durgapura madhu, Punjab sunheri, 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.

### **Gujarat**

**Summer Groundnut:** GG2, GG 4 and GG20.

**Summer Sesame:** G.Til-1, G.Til-2, G.Til-3.

**Brinjal:** Junagadh oblong, Junagadh long, Guj. Bringle-2.

**Lady's finger:** Guj. Hy.-1 & 2.

**Ridge gourd:** Pusa nasdar, Jaipuri.

**Bottle gourd:** Junagadh tender long, Pusa summer prolific long.

**Sponge gouard:** Pusa chikni.

**Bitter gouard:** Priya, Pusa domosmi.

**Cluster bean:** Pusa sadabahar, Pusa navbahar, IC-11388.

**Water melon:** Sugar baby, Arka jyoti.

**Pearl millet:** GHB-526 and GHB-558.

**Green gram:**GM-2, 3, GM- 4.

**Black gram:** Guj-1, T-9.

### **Madhya Pradesh**

**Okra:** Pusa Makhamali, Pusa Sawani, A-4, Parbhani Kranti.

**Moong:** HUM -1, PDM -139,TJM-3, SML-668.

### **Tamil Nadu**

**Cotton:** Surabhi and SVPR-2