



National Agromet Advisory Service Bulletin



Thursday 7th April 2016
(For the period 7th to 11th April 2016)

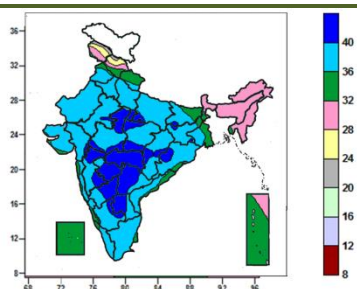


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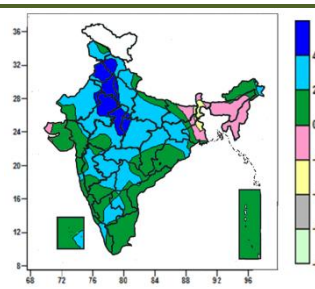
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 06.04.2016

Actual Mean Maximum Temperature (°C) in India for the week ending 06.04.2016



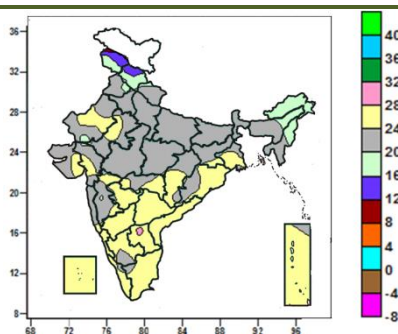
- Mean maximum temperature was above 40°C over Vidarbha, many parts of Marathwada, North Interior Karnataka, Telangana, Rayalaseema, some parts of Madhya Pradesh, Madhya Maharashtra, Odisha, South Interior Karnataka, Chhattisgarh and isolated pockets of East Rajasthan, Uttar Pradesh, Bihar, Jharkhand and Gujarat Region.
- Mean maximum temperature was between 32 to 40°C over rest of the country except Jammu & Kashmir, Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram, many parts of Himachal Pradesh, Sub-Himalayan West Bengal, Tripura, some parts of Andaman & Nicobar Islands where it was between 20 to 32°C.

Mean Maximum Temperature (°C) Anomaly in India for the week ending 06.04.2016



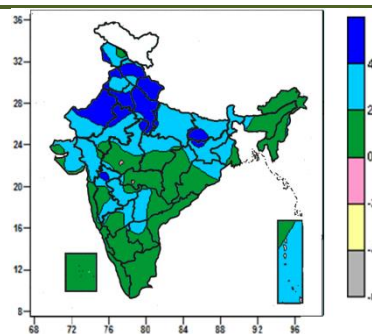
- Mean maximum temperature was above normal by 4 to 6°C over many parts of Punjab, Himachal Pradesh, Haryana & Delhi, some parts of East Rajasthan, West Madhya Pradesh and isolated pockets of West Rajasthan, West Uttar Pradesh, East Madhya Pradesh.
- Mean maximum temperature was above normal by 2 to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

Actual Mean Minimum Temperature (°C) in India for the week ending 06.04.2016



- 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 and some parts of Himachal Pradesh.
- Mean minimum temperature was between 16 to 20°C over Arunachal Pradesh, Nagaland, many parts of Himachal Pradesh, Manipur, some parts of Jammu & Kashmir, Assam & Meghalaya and isolated pockets of Punjab, Rajasthan, Madhya Maharashtra and Gujarat Region.

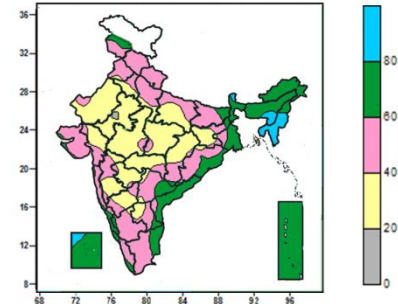
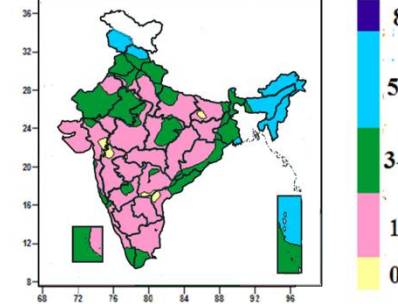
Mean Minimum Temperature (°C) Anomaly in India for the week ending 06.04.2016



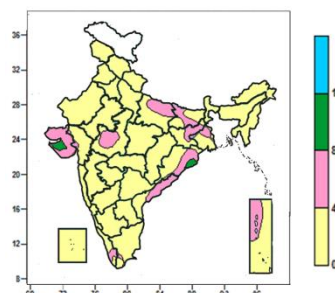
- Mean minimum temperature was above normal by 4 to 6°C over Uttarakhand, many parts of Himachal Pradesh, West Rajasthan, Haryana & Delhi, West Uttar Pradesh, some parts of Jammu & Kashmir, Punjab, East Rajasthan, Bihar and isolated pockets of East Uttar Pradesh, Jharkhand, West Madhya Pradesh and Madhya Maharashtra.
- Mean minimum temperature was above normal by 2 to 4°C over Sub-Himalayan West Bengal & Sikkim many parts of Jammu & Kashmir, Punjab, Rajasthan, East Uttar Pradesh, Bihar, Jharkhand,

<ul style="list-style-type: none"> • Mean minimum temperature was between 20 to 28^oC over rest of the country except isolated pockets of Rayalaseema where it was between 28 to 32^oC. 	<p>Gangetic West Bengal, Gujarat, Madhya Maharashtra, Marathwada, Telangana, Andaman and Nicobar Islands, some parts of Madhya Pradesh, Odisha, North Interior Karnataka, Rayalaseema, and isolated pockets of Assam, West Uttar Pradesh, Chhattisgarh, and Vidarbha.</p> <ul style="list-style-type: none"> • Mean minimum temperature was normal to near normal over rest of the country.
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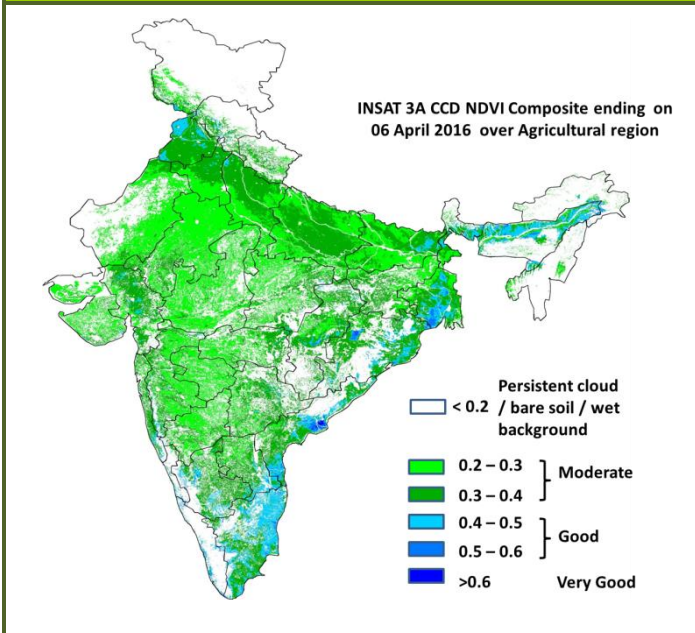
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 06.04.2016

Relative Humidity (%) over India for the week ending 06.04.2016	Cloud amount (okta) over India for the week ending 06.04.2016
	
<ul style="list-style-type: none"> • Mean Relative humidity was above 80% over Manipur, Mizoram, Tripura, some parts of Meghalaya and isolated pockets of Sikkim and Lakshadweep. • Mean Relative humidity was between 60 to 80% over Arunachal Pradesh, Andaman & Nicobar Islands, many parts of West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Coastal Andhra Pradesh, Lakshadweep, Coastal Karnataka, some parts of Jammu & Kashmir, Bihar, Odisha, Telangana, Rayalaseema, Tamil Nadu and isolated pockets of Jharkhand, Saurashtra & Kutch, Chhattisgarh, Goa, South Interior Karnataka, Kerala. • Mean Relative humidity was between 20 to 60% over rest of the country. 	<ul style="list-style-type: none"> • Sky remained generally cloudy (5-7 okta) over Jammu & Kashmir, many parts of North East India, Andaman & Nicobar Islands, some parts of Himachal Pradesh, isolated pockets of Sikkim and Gangetic West Bengal. • Sky remained partly cloudy/mainly clear (3-4 okta/1 to 2) over rest of the country except over isolated pockets of Bihar, Gujarat region, Madhya Maharashtra, Telangana and Coastal Andhra Pradesh where it was clear sky (0 okta).

Wind speed (knots) over India for the week ending 06.04.2016

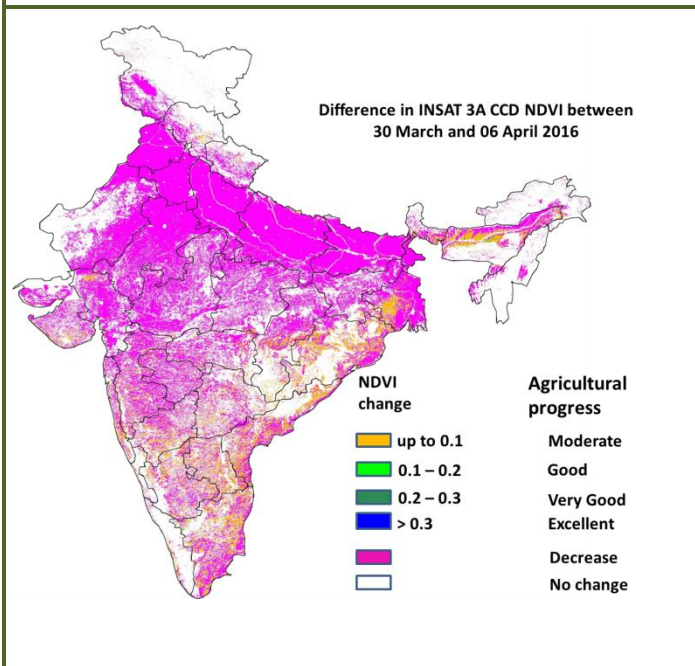

<ul style="list-style-type: none"> • Mean wind speed was between 8 to 12 knots over some parts of Saurashtra and isolated pockets of Odisha. • Mean wind speed was between 4 to 8 knots over many parts of Saurashtra & Kutch, Coastal Andhra Pradesh, some parts of East Uttar Pradesh, Bihar, Jharkhand, Gangetic West Bengal, West Madhya Pradesh, Odisha, Andaman & Nicobar Islands, Kerala and isolated pockets of Gujarat Region and Tamil Nadu. • It was less than 4 knots over rest of the country.

INSAT 3A CCD NDVI COMPOSITE ENDING ON 6th April 2016 OVER AGRICULTURAL REGION OF INDIA



- Agricultural vigour is good over some parts of north west Punjab, Coastal Andhra Pradesh, patches in Bihar, West Bengal, Coastal Odisha, 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 Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh, Gujarat, Telangana, Maharashtra, Karnataka and Odisha.

Difference in INSAT 3A CCD NDVI between 30th March and 6th April 2016



- Moderate Progress in NDVI is observed in patches in South Interior Karnataka, Saurashtra, Assam, West Bengal, Odisha, Andhra Pradesh and Tamil Nadu. Decrease in NDVI is observed over remaining region of India.

- INSAT 3A CCD NDVI composite maps for the week ending on 6th April 2016 for different States are given below in Annexure II.

Weather Forecast for next 5 days valid upto 0830 hours of 12th April 2016

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- No large change in maximum temperatures over plains of northwest and central India during next 2-3 days.

5 Day Rainfall Forecast (MID DAY) 7th April 2016

Met Sub-divisions	07 April	08 April	09 April	10 April	11 April
1. Andaman & Nicobar Islands	ISOL	DRY	DRY	DRY	DRY
2. Arunachal Pradesh	WS	FWS	FWS	SCT	SCT
3. Assam & Meghalaya	FWS	FWS	SCT	SCT	SCT
4. N. M. M. & T.	FWS	SCT	SCT	SCT	SCT
5. S.H. West Bengal & Sikkim	SCT	SCT	ISOL	ISOL	SCT
6. Gangetic West Bengal	ISOL	ISOL	DRY	DRY	DRY
7. Orissa	ISOL	ISOL	DRY	DRY	DRY
8. Jharkhand	DRY	DRY	DRY	DRY	DRY
9. Bihar	DRY	DRY	DRY	DRY	DRY
10. East Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
11. West Uttar Pradesh	ISOL	DRY	DRY	DRY	DRY
12. Uttarakhnad	SCT	ISOL	ISOL	ISOL	ISOL
13. Haryana, Chd & Delhi	ISOL	DRY	DRY	DRY	ISOL
14. Punjab	DRY	DRY	DRY	DRY	ISOL
15. Himachal Pradesh	FWS	SCT	SCT	SCT	FWS
16. Jammu & Kashmir	SCT	SCT	FWS	FWS	WS
17. West Rajsthan	DRY	DRY	DRY	ISOL	ISOL
18. East Rajasthan	ISOL	DRY	DRY	DRY	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
21. Guiarat 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	DRY	DRY
25. Marathawada	ISOL	DRY	DRY	DRY	DRY
26. Vidharbha	ISOL	DRY	DRY	DRY	DRY
27. Chhattisgarh	ISOL	ISOL	DRY	DRY	DRY
28. Coastal Andhra Pradesh	ISOL	ISOL	DRY	DRY	DRY
29. Telangana	ISOL	ISOL	DRY	DRY	DRY
30. Rayalaseema	ISOL	ISOL	DRY	DRY	DRY
31. Tamilnadu & Puducherry	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	DRY	DRY	ISOL	ISOL	DRY
33. North Interior Karnataka	DRY	DRY	ISOL	DRY	DRY
34. South Interior Karnataka	ISOL	ISOL	ISOL	ISOL	DRY
35. Kerala	ISOL	SCT	SCT	ISOL	ISOL
36. Lakshadweep	DRY	ISOL	ISOL	ISOL	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

- **07 April (Day 1):** Heavy rain likely at isolated places over Arunachal Pradesh. Heat wave conditions likely at isolated places over Odisha. Thunderstorm accompanied with squall/hail likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **08 April (Day 2):** Thunderstorm accompanied with squall/hail likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- **09 April (Day 3):** No weather warning.
- **10 April (Day 4):** No weather warning.
- **11 April (Day 5):** No weather warning.

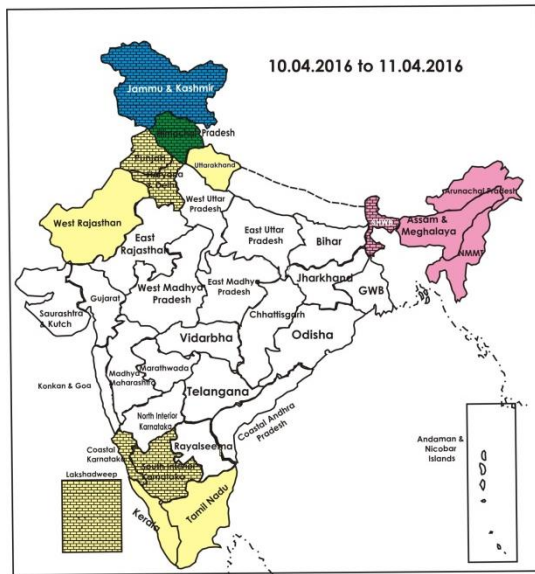
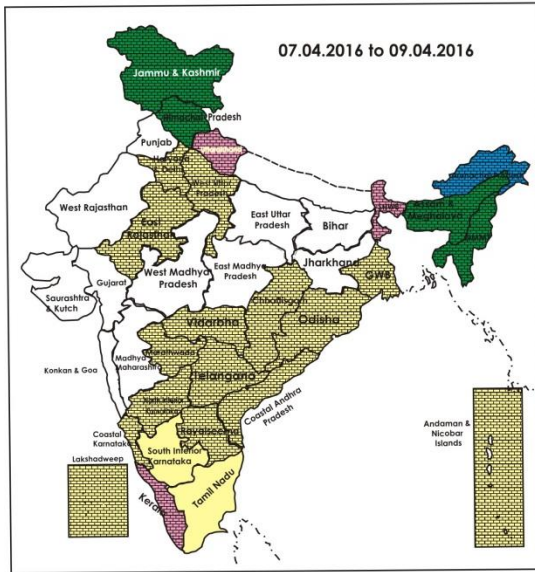
Weather Outlook for subsequent 2 days from 12th to 14th April 2016

- Rain/thunderstorms likely at many places over Arunachal Pradesh and Assam & Meghalaya; at a few

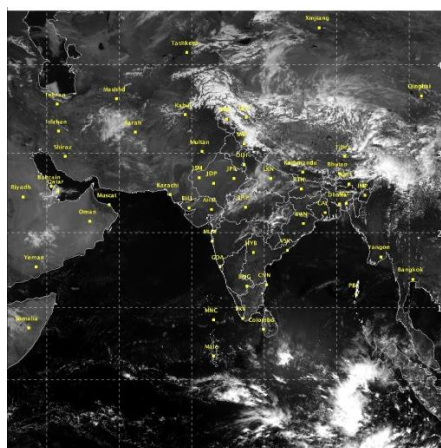
places over Nagaland, Manipur, Mizoram & Tripura and at isolated places over extreme peninsular India.

- Rain/snow very likely at a few places over Western Himalayan region.

Weather Forecast Map (Valid upto 0830 hours of 12th 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

- In view of the prevailing heat wave conditions in **Odisha** and high temperature conditions in **North Interior Karnataka, Telangana and Marathwada**, adopt the following measures for livestock:
 - Cattles/ goats may preferably be allowed for grazing during early morning and late evening to avoid exposure to extreme hot conditions and during hot hours, they must be tied and fed in shaded place or under the tree.
 - Sprinkle the cold water 2-3 times a day on the body of the animal to overcome the heat. Apply 4-6 inch thick hay thatch as a roofing material. Water can be used for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals
 - Proper ventilation should be maintained for free circulation of air in the sheds.
 - Provide plenty of clean drinking water to animals and water troughs should be regularly cleaned.
 - **In poultry:** Cover water tank and lines with gunny bags to provide cool water, use foggers/fans and sprinklers to reduce temperature and to increase air flow, cover roofs of the sheds with coconut tree leaves or grass, white wash roofs and water tank to reduce heat absorption, ensure proper cross ventilation to avoid ammonia accumulation and provide feed during cooler parts of the day (early morning or late evening). Add electrolytes and vitamin-C in drinking water.
- As heat wave conditions likely at isolated places over **Odisha** on 7th April, apply light and frequent irrigation to summer moong, vegetables and sugarcane to cope up with the excess evaporative demand. Make arrangement for shade to protect newly planted and young saplings. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas.
- In view of the prevailing high temperatures, in the Scarce Rainfall Zone of **Andhra Pradesh**, provide light irrigation through drip or check basin method mango, banana, sweet orange and vegetable fields, spray Potassium Nitrate @10g/litres of water in the morning hours and undertake mulching of the tree basin with organic mulch to conserve the moisture in mango, banana, sweet orange and vegetable fields to protect the crops from high temperature conditions. In Banana, cover the fruit bunch/peduncle with flag leaf to avoid the direct incidence of the sun rays/to avoid the scorching effect. Spray potassium nitrate @10g/lit at early hours. In Sweet Orange, spray calcium carbonate on the fruits@ 10-15 g/litres to avoid the sun scorching and direct radiation effect on the fruits. Spraying of the potassium nitrate @ 10g/litres at early hours.
- As thunderstorm accompanied with squall/hail likely at isolated places over **Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura** on 7th and 8th April, farmers are advised to provide hail net/hail caps in orchard crops, 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** from 7th to 9th, over **Assam & Meghalaya** on 7th and 8th and over **Nagaland, Manipur, Mizoram & Tripura** on 7th April, along with heavy

rain at isolated places over Arunachal Pradesh on 7th April, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crops fields in Arunachal Pradesh.

- In **Arunachal Pradesh**, postpone sowing of summer vegetables like cucumber, sponge gourd, bottle gourd and ladies finger. Prepare half moon terraces in fruit crops (orange/banana/apple/peach) grown in steep slopes to prevent nutrient loss during heavy downpour and follow proper drainage and earthing up practices in low land/plain areas to avoid water stagnation.
- As rain/snow would occur at many places over **Jammu & Kashmir** from 9th to 11th April; and over **Himachal Pradesh** on 7th and 11th April, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of crops in Himachal Pradesh and keep already harvested produces at safe places.
 - Undertake land preparation/sowing of the following summer crops:
 - In **Assam**, undertake sowing of *Capsularis* jute, summer green gram & black gram at optimum soil moisture conditions and undertake transplanting of *ahu* rice.
 - In **West Bengal**, in Hill Zone, continue planting of ginger and turmeric and in New Alluvial Zone, continue land preparation and sowing of jute.
 - In **Odisha**, in East and South Eastern Coastal Plain Zone, undertake land preparation for sowing of jute and in North Eastern Ghat Zone, continue sowing summer sunflower and groundnut.
 - In **Uttar Pradesh**, continue sowing of cowpea, maize, urad, mung.
 - In **Bihar**, continue sowing of summer maize and vegetables and in **Jharkhand**, continue sowing of green gram/black gram, maize and vegetables.
 - In **Tamil Nadu**, continue sowing of irrigated bajra in Western Zone.
- As mainly dry weather would prevail, continue harvesting of wheat and lentil in **Uttar Pradesh**, wheat in **Madhya Pradesh, Bihar** and **east Rajasthan**, undertake harvesting of wheat and castor in North West Zone of **Gujarat**. Continue harvesting of rice in Problem Area Zone of **Kerala** and in the North Coastal Zone of **Andhra Pradesh**, continue harvesting of rice and harvesting of *rabi* groundnut in the Southern Zone and Scarce Rainfall Zone.

Detailed Zonewise Agromet Advisories

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



Banana



Groundnut



Sugarcane



Cotton

- **Realised Rainfall:** Weather remained mainly dry over 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, spray 40 ppm NAA to irrigated sesame between 5-6 pm with available soil moisture and continue sowing of irrigated bajra.
 - In the High Altitude Hilly Zone, undertake planting of *chowchow* and continue planting of bananas (Cavendish varieties) and 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 High Rainfall Zone, provide irrigation to banana, coconut and pepper and continue mulching in coconut gardens for moisture conservation.
 - In the Cauvery Delta Zone, yellow mosaic disease is noticed in rice fallow black gram and aphids, thrips, mite,

hoppers and white flies in rice fallow cotton in the prevailing hot weather. To manage yellow mosaic disease, spray Neem Seed kernel Extract @ 5% or Methyl Dematone @ 200ml/acre or Chlorpyrifos @500 ml/acre in 200 litres of water and to manage aphids, thrips, mite, hoppers and white flies, spray Azadirachtin 0.03% (3 ml/L) along with sticking agent in the morning or evening using hand sprayer.

- In the Western Zone, rise in both day and night temperature is congenial for earhead bug attack on Navarai rice at flowering stage. To control the earhead bug, dust with 25 kg of KKM (10% of *Acorus calamus* Rhizome Powder and 90% of fly ash) per hectare during flowering stage and two weeks later.
- In Karaikal, prevailing dry and partly cloudy weather is congenial for incidence of hairy cut worm in groundnut. To control, spray Emamectin benzoate 5 SG @ 220 g/ha.
- In the South Zone, sucking pest incidence especially leaf hopper is noticed in cotton crop due to prevailing weather conditions. To control the sucking pests, spray Dimethyl Demeton or Dimethoate @ 2 ml/ litre of water or Imidachlopid @ 0.2 to 0.3 ml/litre of water.
- Suitable varieties for sowing are given in Annexure III.

▪ **Andhra Pradesh:**

- In the Scarce Rainfall Zone, provide light irrigation through drip or check basin method mango, banana, sweet orange and vegetable fields, spray Potassium Nitrate @10g/litre of water in the morning hours and undertake mulching of the tree basin with organic mulch to conserve the moisture in mango, banana, sweet orange and vegetable fields to protect the crops from high temperature conditions. In Banana, cover the fruit bunch/peduncle with flag leaf to avoid the direct incidence of the sunrays/ to avoid the scorching effect. Spray potassium nitrate @10g/lit at early hours. In Sweet Orange, spray calcium carbonate on the fruits@ 10-15 g/lit to avoid the sun scorching and direct radiation effect on the fruits. Spraying of the potassium nitrate @10g/lit at early hours.
- 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.
- In the Southern Zone, continue harvesting of *rabi* groundnut and in the Scarce Rainfall Zone.
- In the Southern Zone, prevailing dry and hot weather conditions are congenial for attack of thrips, aphids and anthrocanose in mango orchards. To control, spray Dimethoate @ 2 ml. + Carbendizum @ 1 g/litre of water.
- In the North Coastal Zone, prevailing dry weather conditions are congenial for incidence of flea beetles in summer pulses. To control, spray Chloripyriphos @ 2.05 ml. / litre of water in the evening hours.
- 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 Southern Telangana Zone, irrigate the ID crops during the evening hours to protect crops from prevailing heat wave conditions. Due to isolated rains forecast for the State, postpone harvesting of crops like maize, shade dry the already harvested crop under roof and cover the produce already transported to market with tarpaulin.
- 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, whitefly incidence was observed in green and black gram. To control, spray Monocrotophos @ 1.6 ml/litre of water or Triazophos @ 1.5 ml/litre of water or Acetamiprid @ 0.2 g/litre of water.
- In the Southern Telangana Zone, prevailing high temperatures are congenial for incidence of fruit fly in mango. To trap the flies in the container, hang the plastic containers with mixture of Methyl Eugenol @ 2 ml + Carbofuran 3G @ 3g per litre of water in the orchard.

▪ **Karnataka:**

- In Southern Dry Zone, due to high day temperature dropping of fruits in mango trees was noticed; to manage this, provide adequate quantity of irrigation water (go for drip irrigation wherever it is possible).
- In North East Transition Zone and North East Dry Zone, since, continue summer deep ploughing. Provide irrigation to mango at 15-20 days interval from fruit setting till maturity for the better development of fruits. Provide irrigation to sugarcane in North East Dry Zone.
- In Eastern Dry Zone of Karnataka, provide irrigation to vegetables and other crops. Remove the weeds such as lantana which are growing under the mango tree. Spray NAA (Naphthalene acetic acid) at 20 ppm twice at an interval of 15 days to control mango fruit drop in Eastern Dry Zone and North Transition Zone of Karnataka.
- In North Transition Zone, continue summer ploughing. Continue picking of matured fruits of sapota. If water scarcity is there, irrigate the sugarcane crop in alternate row.

▪ **Kerala:**

- In the Problem Area Zone, continue harvesting of matured rice and pepper . Since high temperature with low humidity and high wind speed is expected ,evaporative loss will be more and frequency of irrigation is to be increased. Continue mulching with dried leaves for reducing evapotranspiration loss and provide shade to newly planted coconut seedlings.
- In the High Altitude Zone, continue sowing of vegetables like bhindi, bitter gourd and amaranthus, if irrigation facilities are available, undertake planting of ginger and pepper and nursery preparation for cardamom.

- In the Northern Zone, undertake planting of Nendran bananas (Robusta, Poovan, Njalipoovan, Palayankodan varieties), precautionary measures to conserve water in rice fields to tackle drought and cultivation of vegetables as inter crops in coconut gardens.
- In the Southern Zone, as prevailing atmospheric temperature is very high, provide irrigation to Nendran bananas.
- Continue planting of cucurbitaceous vegetables like salad cucumber, bottle gourd, bitter melon, provide propping for bunched banana plants and wait for few good showers before resuming tapping of rubber.
- In the High Altitude Zone, attack of fruit fly, powdery mildew and shoot borers will be severe in bitter melon and snake melon due to increase in relative humidity. Irrigate the crops once in 3-4 days to control fruit fly, apply 2-3 g Wettable Sulphur for controlling powdery mildew and spray Carbaryl @ 50% (3 g per litre of water) to control shoot borers on a non rainy day.
- In the Southern Zone, fairly high humidity and temperature can favour the attack of mealy bugs in coconut. To control, spray Quinalphos (Ekalux) @ 2ml/litre of water 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.
- In the Central Zone, due to increase in temperature, symptoms of powdery mildew was observed in vegetables. To control, apply Wettable Sulphur @ 3-4 g/litre of water 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 Southern and Northern Telangana Zone, due to prevailing heat wave conditions, protect the poultry birds by arranging fans and foggers in sheds, cover the sheds with paddy straw and arrange sprinklers, feed with wet mash to increase the feed intake and provide cool water for drinking and provide green fodder to milch animals to improve the butter percentage in the milk.
- In the Scarce Rainfall Zone of Andhra Pradesh, in poultry, cover water tank and lines with gunny bags to provide cool water, use foggers /fans and sprinklers to reduce temperature and to increase air flow, cover roofs with coconut tree leaves or grass, white wash roofs and water tank to reduce heat absorption, ensure proper cross ventilation to avoid ammonia accumulation and distribute feed in cooler parts of the day (early morning or late evening).
- In the Western Zone of Tamil Nadu, do not allow animals to graze between 11am and 3pm, due to prevailing hot dry spell. Provide 20 -30 litres of drinking water per time 4-5 times per day.
- In the North Western Zone of Tamil Nadu, day time temperature is likely to continue at around 40.0°C. Hence, heat stress and heat stroke will increase in poultry. To prevent occurrence of unconsciousness in birds, ensure cool drinking water in the pipeline at slightly higher pressure. Drain out hot water in the pipeline frequently to ensure cool drinking water all the time. Monitor water intake by the birds. Use foggers to control excess heat in the poultry house. Add electrolytes and vitamin-C in drinking water. Offer feed during early morning and at night hours. For prevention of Enterotoxaemia in sheep, all the sheep should vaccinated against during this period.
- In North Interior Karnataka, in view of the prevailing high temperature conditions, the following measures to be adopted for livestock.
 - Leave the buffaloes in ponds during afternoon hours or sprinkle the cold water 2-3 times a day on the body of the animal to overcome the heat. Apply 4-6 inch thick hay thatch as a roofing material. Water can be used for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals
 - Proper ventilation should be maintained for free circulation of air in the sheds.
 - Animals may preferably be grazed during early morning and late evening to avoid exposure to extreme hot conditions and during hot hours, they must be tied and fed in shaded place or under the tree. This will also help in reducing the water requirement.
 - Provide clean drinking water to animals and clean water troughs regularly.
 - Maintain optimum temperature in poultry house.
- In North East Dry Zone and Eastern Dry Zone, conserve fodder (hay, silage and in large heaps) to meet the fodder requirement during approaching lean period.

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



Banana



Rice



Okra



Cabbage

- **Realised Rainfall:** Rainfall occurred in Changlang, Dibang Valley, East Kameng, East Siang, Lower Dibang Valley, Papumpara, Tawang and Tirap districts of Arunachal Pradesh; all districts of Assam except Darrang, Dhemaji, Kokrajhar, Morigaon and Nowgaon; East Garo Hills, East Khasi Hills, Ri-Bhoi, South Garo Hills and West Garo Hills districts of Meghalaya; Aizwal district of Mizoram; Chandel, Imphal East, Imphal West and Thoubal districts of Manipur; Dimapur, Phek and Wokha districts of Nagaland and all districts of Tripura. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - As thunderstorm accompanied with squall/hail likely at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 7th and 8th April, farmers are advised to provide hail net/ hail caps in orchard crops, 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 from 7th to 9th, over Assam & Meghalaya on 7th and 8th and over Nagaland, Manipur, Mizoram & Tripura on 7th April, along with heavy rain at isolated places over Arunachal Pradesh on 7th April, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crops fields in Arunachal Pradesh.
 - **Assam, Meghalaya & Arunachal Pradesh:**
 - In Assam, drain out excess water from rice nursery, maize, green gram, black gram and vegetable fields. Undertake sowing of *baorice* and *Capsularis* jute at optimum soil moisture conditions.
 - In Hill Zone of Assam, continue sowing of maize, bhindi, bottle guard, bitter guard, summer green gram and black gram and land preparation and planting of turmeric, summer sesame and spring sugarcane at optimum soil moisture conditions. Continue transplanting of normal *ahu* rice. Replanting of dead hills is to be done within 7-10 days of transplanting. Also collect healthy sword suckers of Dwarf Cavendish (Dwarf Cultivar), Cheni Champa, Malbhog (Medium Tall cultivars), etc. for planting of banana.
 - In Lower Brahmaputra Valley Zone of Assam, complete transplanting of transplanted early *ahu* rice. Continue sowing of maize, summer pulses like green gram, black gram and planting of spring sugarcane, ginger and turmeric at optimum soil moisture conditions.
 - In Upper Brahmaputra Valley Zone of Assam, continue planting of spring sugarcane and complete planting of banana suckers with first fortnight of April. Undertake land preparation and planting of papaya.
 - In North Bank Plain Zone of Assam, farmers are advised to continue transplanting of early *ahu* rice. Undertake planting of the high yielding varieties of ginger & turmeric, planting of sugarcane and banana and sowing of maize at optimum soil moisture conditions.
 - In Meghalaya, continue sowing of maize in high and mid altitude region and continue sowing of bottle guard and ash guard and nursery bed preparation for brinjal and tomato at optimum soil moisture conditions. Continue land preparation for *jhum* rice.
 - In Arunachal Pradesh, postpone sowing of summer vegetables like cucumber, sponge gourd, bottle gourd and ladies finger. Prepare half moon terraces in fruit crops (orange/banana/apple/peach) grown in steep slopes to prevent nutrient loss during heavy downpour and follow proper drainage and earthing up practices in low land/plain areas to avoid water stagnation in fruit orchards.
 - In Hill Zone of Assam, there is chance of attack of trunk borer/ shoot borer in khasi mandarin in the prevailing weather conditions. The affected branches/shoots should be pruned and destroyed without causing any injury to the trunk or main branches. Paint the main trunk upto one metre from the base with Sevin/ Monocrotophos + lime and water (1:1:25). At the late stage of infestation plug the hole with cotton soaked in Nuvan (0.07%) or Dimecron (0.05%) and plastered it with wet clay.
 - In Lower Brahmaputra Valley Zone of Assam, in the prevailing weather, there is chance of attack of rice bug in *boro* rice at booting to heading stage and stem borer in citrus plants. To control rice bug in *boro* rice, spray Malathion 5% dust @ 2.5-3kg/bigha. In citrus plants, apply a paste made by mixing lime, water and 5% Malathion dust on the stems of the plants up to a height of about 1m from the ground to prevent the attack of stem borer. Undertake plant protection measures 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 fields; to control the pest apply Chloropyriphos @ 1 ml/litre of water after current spells of rain.
- In Meghalaya, there may be attack of blast in *boro* rice during panicle initiation to flowering /milking stage. To control blast spray Carbendazim @ 1g/litre of water after current spells of rain.
- **Nagaland, Manipur, Mizoram and Tripura:**
- In Nagaland, drain out excess water from standing crop fields and undertake sowing of okra, cowpea and cucurbits at optimum soil moisture conditions.
- In Manipur, continue transplanting of 35-40 days of old seedlings of pre-*kharif* rice and 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, complete land preparation for sowing of *Jhum* rice at the earliest.
- In Nagaland, there is chance of attack of red pumpkin beetle in cucurbits, fruit borer in tomato and shoot and fruit borer in brinjal, to control red pumpkin beetle, undertake dusting of mixture of kerosene oil + ash in adequate proportion after current spells of rain. To control fruit borer in tomato, shoot and fruit borer in brinjal establish pheromone trap @ 12 nos per acre collect infested fruits and shoots and bury it in the soil.
- In Manipur, spray D. M-45 (Mencozeb) @ 2gm/litre against early blight in tomato 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, provide plenty of fresh and clean drinking water to poultry birds. Provide coccidiostatic like Amprolium @ 25-65 mg/kg feed once a day as a preventive measure against coccidiosis and to control the Ranikhet disease, vaccinate the poultry birds with F1/ Lasota vaccine (1 drop) at the age of 4-7 days old and 35 days old through eye and nostril.
- In Arunachal Pradesh, disinfect the animal/bird sheds with lime powder/ bleaching powder/ 4%NaOH at regular interval.
- In Meghalaya, undertake regular immunization of cattle & buffaloes against Foot & Mouth disease, Haemorrhagic septicaemia & Black Quarter.
- In Manipur, undertake vaccination against ranikhet disease in poultry. Vaccinate cattle against black quarter, haemorrhagic septicaemia and foot and mouth disease.
- In Tripura, undertake vaccination against swine fever in pig and deworming in calves.

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, apply irrigation to maintain around 10 cm water level in rice field at grain filling stage. Some varieties are at maturity stage, drain out water from field at least 8-10 days before harvesting. Start harvesting of already matured crop. 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. At a few places where mango fruits are at maturity stage(80-85 % Maturity), harvest the fruits early in the morning and in the evening. Keep the harvested fruits in shade to prevent spongy tissue disease and from heat. Apply irrigation to cashew orchards @ 150 to 200 litres of water per tree at 15 days interval. New graft and newly planted fruit crops may be protected from sun burn by erecting temporary shed. 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, apply light and frequent irrigation in the evening hours to summer crops and orchards. Continue sowing 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 and apply irrigation by alternate furrow method considering water stress condition. Apply irrigation by drip or sprinkler method to summer crops.

- In Marathwada, apply light and frequent irrigation in the evening hours to summer crops and orchards. 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. Cover banana bunch with perforated plastic bags to protect from bright sunshine. Apply irrigation to summer groundnut by sprinkler method. Make arrangement for shade for vegetable crops to protect the vegetables from scorching sun. Apply top dressing of Nitrogen (75 kg Nitrogen per ha) in sugarcane crop. Undertake April pruning in grape orchards.
- In Vidarbha, apply light and frequent irrigation in the evening hours to summer crops and orchards. 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. Cover banana bunch with perforated plastic bags to protect from bright sunshine. Maintain water level of 5-8 cm in summer rice field in East Vidarbha.
- Due to cloudy weather in Konkan region, there may be incidence of anthracnose on mango fruits; spray Carbendazim @10 g or Copper oxychloride @ 30 g per 10 litres of water on the whole tree.
- Due to humid weather in Marathwada region, there may be incidence of sigatoka in banana; spray Propiconazole @ 10 ml per 10 litres of water by mixing sticker in it.

▪ **Gujarat:**

- In North West Zone of Gujarat, carry out weeding and inter cultural operations in timely sown pearl millet, groundnut, green gram, cow pea and vegetable crops. Undertake harvesting of wheat and castor.
 - In Bhal and Coastal Zone, carry out weeding and inter cultural operations in timely sown pearl millet. Continue harvesting of wheat and fennel at physiological maturity.
 - In North Saurashtra Zone, apply light irrigation in groundnut (flowering), mango (pea size) orchards.
 - In North Gujarat Zone, apply irrigation in green gram crop at 9 to 10 days interval. Continue weeding and inter cultural operations in timely sown ground nut, green gram, cowpea, pearl millet and timely sown vegetables. Undertake picking of cotton during morning time, harvesting of gram and matured spikes of castor; complete harvesting of funnel at physiological maturity.
 - In South Gujarat Zone, in mango orchard, spray 20 ppm Naphthelin Acetic Acid and 2 % urea solution for effective control of dropping of fruits.
 - In Middle Gujarat Zone, undertake harvesting of matured onion. Carry out intercultural operations in summer crops like pearl millet, green gram, cow pea, okra etc. and apply irrigation.
 - 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; to reduce temperature fluctuation in soil give light irrigation to reduce fruit drop. 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 and mango at 10-12 days interval. Continue harvesting of early sweet potato; avoid any mechanical damage to tubers.
 - In North Gujarat Zone, forecasted weather condition is favourable for transmission of leaf curl disease and sucking pests like mites and thrips in Chilli and tomato. Leaf curl disease is transmitted through whitefly; to control it, spray Emidachloprid 17.8% S.L. @ 2.8 ml or Methyl-o-Dematone 25% E.C. @10 ml/10 litres of water. After picking the fruits, alternate spray should be done at 10 to 12 days interval. For control of sucking pests like mite and thrips, spray Carbofuran 3% granular @ 30 kg/hectare; after 20 days, spray systematic pesticides to sort out the problem.
 - Due to hot weather condition in Middle Gujarat Zone there is chance of attack of mite and thrips in bitter melon, long melon, pointed gourd (parwal), snake gourd, ash gourd (petha), bush squash, watermelon; if observed, spray Methyl-o-Dematone 25EC @ 10 ml in 10 litres of water for control.
 - Under present weather condition infestation of thrips, whiteflies and prodenia were observed in summer groundnut and sesame in North Saurashtra Zone; spray Acetamiprid 20 % SP @ 5 g and Emamectin Benzoate 7 g/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 around the walls of poultry shed and sprinkle it with water. Cover the roof with grass or gunny bags in Maharashtra. In Marathwada region, vaccinate all the grazing animals with Penicillin injection to control Anthrax disease.
 - 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



Green gram

- **Realised Rainfall:** Rainfall occurred in Purnea and Supaul districts of Bihar; Jajpur district of Odisha; Murshidabad district of Gangetic West Bengal; Cooch Behar, East Sikkim, Jalpaiguri, Malda, North Sikkim and West Sikkim districts of Sub-Himalayan West Bengal & Sikkim. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - **West Bengal:**
 - In New Alluvial Zone, continue land preparation for sowing of improved variety jute. Apply 2 tonnes of compost or FYM before first ploughing.
 - In Laterite and Red soil zone, maintain the water level upto 2cm in the rice field by giving irrigation. Give one or two light irrigations to maintain the optimum moisture content in the soil.
 - In Coastal Saline Zone, complete harvesting of sunflower in clear weather.
 - 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 and humidity, there may be attack of fruit borer and yellow mite in *okra* at fruiting stage and thrips attack in chilli. For control of fruit borer attack, spray Spinosad @1g/litre of water and for yellow mite, spray Properzite@1.5ml/litre of water. For thrips attack in chilli spray acephate @1g/litre of water.
 - In Hill Zone, in the prevailing weather condition, there may be white fly attack in tomato and gerbera. Use yellow sticky traps for controlling white fly.
 - In New Alluvial Zone, in the prevailing weather condition, there is a possibility of spread of blast disease in rice. To prevent it, apply Tricyclazole @ 7g/ 10 litres of water (when on an average 5% leaves are infested). If there is attack of brown plant hopper in the fields, apply Triazophos @ 2ml per litre of water.
 - 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 on a non rainy day.
 - In Old Alluvial Zone, in the prevailing weather condition Stem borer & Mealy bug may found in Mango, litchi & fruit crops in fruiting stage. If infestation of stem borer observed more than 5%, Spray quinalphos 1.5 ml/litre with water. If observe mealy bug on mango flower twigs /inflorescence spray acetamiprid @ 0.2ml/litre water on a non rainy day.
 - **Andaman and Nicobar Islands:**
 - In South, North and Middle Andaman, provide irrigation to cucurbit vegetables in the evening hours after making basin around the crop.
 - 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.
 - In Nicobar, harvest the matured coconut from coconut garden and keep for sun drying for *copra* production.
 - **Odisha:**
 - As heat wave conditions very likely at isolated places over Odisha on 7th April, apply light and frequent irrigation to summer moong, vegetables, sugarcane to cope up with the excess evaporative demand due to heat wave conditions. Young saplings may be protected by erecting temporary shade. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas
 - In East and South Eastern Coastal Plain Zone, complete sowing of maize, green gram and black gram. Weather is optimum for sowing of jute. Grow the recommended variety JRO-524 (Naveen).
 - 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).
 - As mainly dry weather is prevailing, apply irrigation in maize at tasseling stage In North Eastern Coastal Plain Zone and in Western Undulating Zone, apply irrigation in sugarcane crop during the tillering stage of sugarcane crop at 10days interval.
 - In Mid Central Table Land Zone, continue sowing of summer vegetables like pumpkin, bitter gourd, bottle gourd, okra etc. Apply irrigation in maize at tasseling stage to save the crop from drying of tassels.
 - In Western Undulating Zone, there is chance of early shoot borer attacks during the tillering stage of sugarcane crop, spray Triazophos/Profenophos @ 2ml/litre of water for control.
 - 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 East and South Eastern Coastal Plain Zone, flowering of early planted groundnut has been started. Do not disturb the soil to avoid disturbances in pegging. Infestation of thrips has been occurred. Spray 2 ml Endosulphan in 1 litre water. Increased temperature may aggravate the white ant and white grub attack in groundnut. Go for thorough soil drenching with Chloropyrifos solution @ 2ml/litre water. For row crops alternate rows may be irrigated. Current moderate temperature favours Thrips infestation. Spray 400 ml Dimethoate or Endosulphan in 200 litre water per acre
- In North Central Plateau Zone, due to mainly dry weather and rise in temperature, fruit drop problem may increase in mango. Spray water by pedal sprayer during forenoon hours to prevent fruit drop. To control Anthracnose and Powdery mildew disease in mango inflorescence, spray Carbendazim (1g/litre) or Cu- oxychloride (2g/litre) and Sulphur 50% WP @ 2g/litre water alternately at 10-12 days interval.

▪ **Bihar:**

- In South Bihar Alluvial zone, complete harvesting of matured wheat and store the grains after threshing in safe place.
- In North West Alluvial Plain Zone, continue sowing of elephant foot yam and complete the sowing of green gram and black gram. Undertake Intercultural operation in summer vegetable such as lady's finger, pumpkin, cucumber, sponge gourd etc. Undertake harvesting wheat, rabi maize and Pigeon Pea crop.
- In North East Alluvial Zone, undertake land preparation for sowing of Jute and moong. Complete transplanting of Garma rice. Undertake harvesting of wheat, after harvesting, drying, threshing and winnowing, store grain 8-10% moisture level.
- 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 Chlorantraniliprole 0.4% GR @ 10Kg/hectare. To control fruit & shoot borer in Brinjal or tomato fruit borer, apply Indoxicarb 15.8 EC @ 1ml/litre of water.

▪ **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 g 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 Odisha, keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Grazing / feeding of cattle/goats may be done during morning/ evening hours. Leave the buffaloes in ponds during afternoon hours or sprinkle the cold water 2-3 times a day on the body of the animal to overcome the heat. Apply 4-6 inch thick hay thatch as a roofing material. Water can be used for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals. Proper ventilation should be maintained for free circulation of air in the sheds. Provide plenty of clean drinking water to animals and water troughs should be regularly cleaned.
- 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.
- In North-East Alluvial Zone of Bihar, during summer season animals may be kept at cool places and provide sufficient amount of water approximately 30-35 litres water per day. The cattle and buffalo may be vaccinated against Black Quarter Disease, monovalent vaccine @ 2.5-3.0 ml S/C (Subcutaneously).

CENTRAL INDIA [M.P., CHHATTISGARH]



Cauliflower



Green gram



Okra



Wheat

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

- **Advisories:**

- **Madhya Pradesh:**

- In Satpura Plateau Zone, continue harvesting of wheat and matured vegetables. Continue sowing of summer moong and maize. Apply irrigation in summer crops.
 - In Malwa Plateau Zone, continue sowing of summer moong, urad and okra. Apply irrigation in mango, orange and pomegranate orchards.
 - In Kymore Plateau and Satpura Hill Zone, apply irrigation in cucurbit crops. Continue sowing of summer moong and urad.
 - In Central Narmada Valley Zone, continue sowing of summer moong and urad. Apply irrigation in sugarcane and undertake intercultural operations.
 - In Jhabua Hill Zone, apply irrigation in tomato, chilli, brinjal, okra, onion crops. Continue harvesting of vegetable and digging of matured onion.
 - In Grid Zone, continue harvesting of matured wheat and sowing of summer moong.
 - In Vindya Plateau Zone continue transplanting of vegetables and harvesting of matured wheat.
 - 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.
 - In Nimar Valley Zone due to rise in temperature there may be chances of attack of sucking pests in green gram. Spray Dimethoate - 30 or Profenophos - 50 @ 200 ml/100 litre of water per acre.
 - Suitable varieties for sowing are given in Annexure III.

- **Chhattisgarh:**

- In North Hill Zone, continue harvesting of matured wheat and lentil. Continue intercultural operations in cucurbit crops and apply irrigation.
 - In Bastar Plateau Zone, continue harvesting of matured pea. Undertake intercultural operations in cucurbit crops.
 - In Chhattisgarh Plain Zone, continue sowing of green gram, sesame and black gram.
 - In Plain Zone, there are chances of attack of stem borer in summer rice at tillering stage. Apply granular insecticides Cartap @ 20 kg/ha or Rynexypyr (Fartera) @10 kg/ha in the fields. Maintain about 5 cm standing water in the fields while applying the granular insecticides and do not allow the water to go out of the field at least for 24 hours.
 - 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, Baramula, Ganderbal, Kulgam, Kupwara districts of Jammu & Kashmir. Weather remained mainly dry/dry over rest of the region.

- **Advisories:**

- As rain/snow would occur at many places over Jammu & Kashmir from 9th to 11th April; and over Himachal Pradesh on 7th and 11th April, postpone irrigation, intercultural operation and application of plant protection

measures and fertilizers to the standing crops. Postpone harvesting of crops in Himachal Pradesh and keep already harvested produces at safe places.

▪ **Jammu & Kashmir:**

- In Sub Tropical Zone, continue land preparation for sowing of summer moong and mash in irrigated areas. Undertake harvesting of matured mustard immediately during clear weather and keep harvested produces at safe places.
- In Intermediate Zone, undertake transplanting of cauliflower, cabbage, knolkhol, tomato, brinjal, chilli, cucumber, bottle gourd and bitter gourd and sowing of okra. Postpone seed sowing of solanaceous crops in open beds and planting of potato tubers till weather becomes dry.
- In cold Arid Zone of Jammu and Kashmir, undertake harvesting of cabbage, broccoli, Chinese cabbage, beet leaf, lettuce, spinach, coriander.
- 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.

▪ **Uttarakhand:**

- In Bhabar and Tarai Zone, continue harvesting of toria, mustard and tomato crops in clear weather.
- In Hill Zone undertake harvesting of vegetables like cauliflower spinach, garlic, coriander, radish, carrot and matured mustard crop clear weather.
- 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 Oxychloride @ 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, zaidmoong 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, continue 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, continue 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 zaidmoong(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 of Sulphur @ 4g/litre water in mango.

▪ **Punjab, Haryana and Delhi:**

- In Western Plain Zone of Punjab, undertake sowing of cotton, complete sowing of summer mung and mash, 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, undertake transplanting of chilli, tomato, bell pepper. Undertake sowing of cucurbits, round gourd, sponge gourd, and other summer vegetables viz. okra, and cluster bean.
- In Western Zone of Haryana, continue harvesting and threshing of matured mustard crop. Continue sowing of green gram and black gram. Continue sowing of bhindi, bottle gourd, cucumber, ridge gourd and summer radish. In Eastern Zone, complete the planting of sugarcane.
- In Western Plain Zone of Punjab, due to prevailing weather condition, there may be chances of attack of early shoot borer in late planted sugarcane, for control, apply 10 kg granules of Regent / Mortel 0.3 G (Fipronil) before the setts are covered with soil by planking.
- In Western Zone of Punjab, due to prevailing weather condition, there may be chances of attack of fruit borer in tomato and bell pepper, for control spray Profenofos @ 600ml per acre or Decis @ 160 ml per acre or Fame @ 30 ml per acre in 100 litres of water at 14 days of intervals.
- In Western Zone of Punjab, due to prevailing weather condition, there may be chances of attack of red pumpkin beetle in cucurbits, for control spray Carbaryl @ 75 to 150 gm per acre in 50 to 100 litres of water and repeat after 10 days intervals.
- In Undulating Plain Zone of Punjab, due to prevailing weather condition, there may be chances of attack of army worm in wheat crop, for control, spray Nuvam 85 SL @ 200 ml. or Ekalux 25 EC @ 400 ml in 100 litres of water.
- In Undulating Plain Zone of Punjab, due to prevailing weather condition, there may be chances of attack of fruit borer larvae in tomato, for control spray Fame 480 SL @ 30 ml. or Fenvalerate 20 EC @ 100 ml. or Deltamethrin 2.8 EC @ 160 ml or Cypermethrin 25 EC @ 80 ml. in 80 to 100 litres of water per acre.
- 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 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 Plain Zone, continue harvesting of matured wheat and gram. Continue planting of sugarcane. 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. Undertake sowing of sunhemp and dhaincha for green manuring. Undertake nursery sowing of brinjal.
- 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, undertake harvesting of matured wheat and sowing baby corn and summer fodder crops jowar, bajra, lobia, maize. 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 sowing of mung, bhindi, torai, cucurbits and 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 thrips in green gram and black gram, for control, spray Dimethoate 30 E.C. @ 2 ml per litre of water.
- 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 Central Plain Zone, due to prevailing weather condition, there may be chances of attack of fruit borer/leaf sheath in vegetables, for control, spray Neem oil @ 1.5 ml to 2 ml per litre of water, 3 to 4 times at 8 to 10 days of intervals.
- In 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.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of incidence of yellow vein mosaic in bhindi, for control, spray Dimethoate 30 E.C. @ 1.5 ml per litre of water.
- **Horticulture:**
- In Central Plain Zone of Uttar Pradesh, continue transplanting of papaya plants in new orchard.
- 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, due to prevailing weather condition, there may be chances of attack of

maggot in mango, for control, spray 17.8 % Emidacloprid S.L. @ 1 ml in 3 litres of water or 25 % Quinalphos E.C. @ 2 ml. per litre of water.

- 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 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 Western Zone of Punjab, undertake planting of fruit plants like kinnow, lemon, guava ber and Amla.
- 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 EC @ 50 ml or Bayleton 25 WP @ 50 gm per 100 litres of water.
- In Sub Montane and Low Hills Sub Humid Zone of Himachal Pradesh, 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 after current spells of rain.
- **Animal Husbandry**
 - 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 tropical Zone of Jammu Kashmir undertake nursery land preparation for summer annuals. Collect seeds from winter annuals (Calendula, pansy etc) which are at harvesting stage. Undertake transplanting of marigold seedling in fields for summer crop after current spells of rain.
 - In Valley Temperate Zone of Jammu & Kashmir, undertake land preparation for planting liliun,gladiolus and dahlia.
- **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	23.03.16		30.03.16		06.04.16	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	13.6	-88	14.6	-80	57.1	-62
Dibang Valley	65.0	-15	25.0	-61	27.0	-79
East Kameng	3.7	-79	10.2	-55	20.0	-46
East Siang	4.2	-86	14.7	-39	57.6	26
Kurung Kumey	**	**	**	**	**	**
Lohit	72.2	44	36.5	-19	12.6	-87
Lower Dibang Valley	41.4	-46	43.8	-31	29.8	-76
Lower Subansari	**	**	**	**	**	**
Papumpare	52.2	45	23.0	13	44.6	24
Tawang	87.0	484	21.0	10	20.0	30
Tirap	34.0	-2	8.8	-79	33.4	-52
Upper Siang	92.2	-2	65.4	-8	19.6	-82

Upper Subansari	20.8	-28	6.2	-73	6.8	-70
West Kameng	11.0	-26	0.8	-96	0.1	-99
West Siang	38.0	162	4.0	-76	1.0	-98
Assam&Meghalaya						
Assam						
Baksa	16.9	44	48.6	135	26.4	-8
Barpeta	3.1	-74	37.7	82	58.1	103
Bongaigaon	18.6	26	42.8	110	67.6	155
Cachar	34.9	-28	18.8	-66	135.4	126
Chirang	18.4	24	33.4	64	112.8	326
Darrang	**	**	**	**	**	**
Dhemaji	7.0	-69	3.0	-84	2.0	-94
Dhubri	18.9	97	69.5	383	98.9	321
Dibrugarh	46.6	31	8.8	-70	32.3	-35
Goalpara	11.0	-6	77.6	275	57.0	153
Golghat	13.3	-27	19.4	-14	30.9	12
Hailakandi	23.1	-23	22.9	-57	256.6	440
Jorhat	20.7	-7	15.2	-37	22.6	-49
Kamrup(Rural)	1.1	-94	46.8	150	90.7	322
Kamrup(Metro)	0.2	-99	19.2	3	35.6	65
Karbi Anglong	1.5	-85	18.7	-11	29.7	70
Karimganj	36.7	-24	34.3	-35	227.1	165
Kokrajhar	8.8	119	108.5	350	15.2	-49
Lakhimpur	31.3	40	15.4	-19	40.4	22
Morigaon	0.0	-100	35.2	82	14.6	-31
N.C.Hills	0.0	-100	27.0	-64	49.3	27
Nowgong	0.0	-100	19.2	12	7.7	-62
Nalbari	10.5	102	53.3	135	46.4	35
Sonitpur	4.1	-72	33.1	157	32.9	32
Sibsagar	31.3	60	12.1	-42	32.9	58
Tinsukia	41.0	-3	17.2	-45	114.2	91
Udalgiri	5.4	-66	26.5	79	35.3	46
Meghalaya						
East Garo Hills	28.4	306	35.8	122	44.4	-8
East Khasi Hills	32.6	-14	43.3	33	92.8	80
Jaintia Hills	2.0	-87	4.0	-89	1.0	-98
Ribhoi	0.8	-93	20.1	-21	46.5	189
South Garo Hills	4.0	-48	28.0	49	39.0	26
West Garo Hills	4.6	-40	39.2	109	50.8	64
West Khasi Hills	4.0	-64	26.0	1	12.0	-20
NMMT						
Mizoram						
Aizwal	47.9	124	35.0	-26	167.5	409
Champhai	**	**	**	**	**	**
Kolasib	1.0	-96	1.0	-98	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	12.0	-17	4.0	-90	11.0	-63

Serchhip	**	**	**	**	**	**
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	0.0	-100	14.0	33	42.0	135
Churachandpur	**	**	**	**	**	**
Imphal east	14.8	-34	12.2	-46	48.3	40
Imphal west	12.3	-48	19.7	56	151.4	431
Senapati	**	**	**	**	**	**
Tamenglong	**	**	**	**	**	**
Thoubal	**	**	**	**	28.0	49
Ukhrul	0.0	-100	0.0	-100	0.0	-100
Nagaland						
Dimapur	1.2	-87	7.0	-67	45.3	148
Kephire	**	**	**	**	**	**
Kohima	3.2	-74	1.9	-90	13.0	-25
Longleng	**	**	**	**	**	**
Mokokchung	2.0	-87	0.0	-100	1.0	-92
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	5.0	-60	3.0	-84	27.0	55
Tuensang	**	**	**	**	**	**
Wokha	5.0	-71	14.0	-60	62.0	99
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	9.5	-72	95.4	202	135.4	148
NorthTripura	50.0	41	69.0	82	226.4	311
SouthTripura	39.6	8	68.0	155	67.3	136
West Tripura	15.1	-11	84.1	204	144.2	364
Himachal Pradesh						
Bilaspur	6.7	-57	0.0	-100	0.3	-95
Chamba	58.5	78	2.6	-86	19.0	18
Hamirpur	11.3	-12	0.0	-100	0.8	-85
Kangra	30.5	31	0.7	-96	2.2	-77
Kinnaur	33.0	-1	10.0	-63	5.6	-74
Kullu	69.1	67	8.1	-68	14.8	-31
Lahaul and Spiti	49.3	9	8.2	-80	17.5	-32
Mandi	16.4	-30	0.6	-96	4.2	-62
Shimla	26.3	7	1.3	-92	6.6	-42
Sirmaur	3.9	-67	0.0	-100	2.0	-55
Solan	8.3	-51	0.0	-100	5.0	-20
Una	1.3	-86	0.0	-100	0.0	-100
Punjab						
Amritsar	2.3	-80	0.8	-87	0.0	-100
Barnala	9.0	157	0.0	-100	0.0	-100
Bhatinda	1.0	-78	0.0	-100	0.0	-100
Faridkot	20.0	317	0.0	-100	0.0	-100
Fatehgarh Saheb	1.7	-69	0.0	-100	0.0	-100
Ferozpur	5.3	-14	0.0	-100	0.0	-100
Gurdaspur	12.8	-7	0.9	-92	0.0	-100

Hoshiarpur	0.9	-91	0.0	-100	0.0	-100
Jalandhar	1.5	-80	0.0	-100	0.0	-100
Kapurthala	0.6	-91	0.0	-100	0.0	-100
Ludhiana	3.9	-34	0.0	-100	0.0	-100
Mansa	0.0	-100	0.0	-100	0.0	-100
Moga	0.5	-89	0.0	-100	0.0	-100
Muktesar	3.2	-30	0.0	-100	0.0	-100
Nawashahar	2.8	-58	0.0	-100	0.0	-100
Patiala	4.2	-18	0.0	-100	0.0	-100
Ropar	5.2	-35	0.0	-100	0.0	-100
Sangrur	6.8	47	0.0	-100	0.0	-100
Mohali	0.0	-100	0.0	-100	0.0	-100
TarnTaran	0.0	-100	0.0	-100	0.0	-100
Haryana,Chd,Delhi						
Haryana						
Ambala	0.8	-85	0.0	-100	0.0	-100
Bhiwani	0.4	-80	0.0	-100	0.0	-100
Chandigarh	3.9	-69	0.0	-100	14.8	573
Faridabad	1.3	150	0.0	-100	0.0	-100
Fatehabad	0.8	-79	0.0	-100	0.0	-100
Gurgaon	3.8	280	0.0	-100	0.3	-77
Hissar	0.8	-74	0.0	-100	0.0	-100
Jhajar	0.4	-76	0.0	-100	0.0	-100
Jind	1.0	-62	0.0	-100	0.0	-100
Katihah	0.0	-100	0.0	-100	0.0	-100
Karnal	0.0	-100	0.0	-100	0.0	-100
Kurukshetra	0.0	-100	0.0	-100	0.0	-100
Mahendragarh	3.7	116	0.0	-100	0.0	-100
Mewat	0.3	-44	0.0	-100	0.0	-100
Palwal	0.0	-100	0.0	-100	0.0	-100
Panchkkula	1.3	-82	0.0	-100	0.5	-67
Panipat	0.2	-91	0.0	-100	0.0	-100
Rewari	6.1	581	0.0	-100	0.0	-100
Rohtak	0.3	-91	0.0	-100	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.2	-91	0.0	-100	0.0	-100
Yamunanagar	0.8	-88	0.0	-100	0.0	-100
Delhi						
Central Delhi	0.0	-100	0.0	-100	0.0	-100
East Delhi	1.0	-64	0.0	-100	0.0	-100
New Delhi	14.4	415	0.0	-100	0.0	-100
North Delhi	0.1	-96	0.0	-100	0.0	-100
North East Delhi	8.0	186	0.0	-100	0.0	-100
North West Delhi	0.0	-100	0.0	-100	0.0	-100
South Delhi	2.0	-29	0.0	-100	0.0	-100
South West Delhi	1.6	-43	0.0	-100	0.0	-100
West Delhi	1.0	-64	0.0	-100	0.0	-100
Jammu & Kashmir						
Anantnag	79.7	73	30.5	6	43.3	45

Badgam	86.2	169	36.0	101	13.4	-14
Bandipore	**	**	**	**	**	**
Baramula	147.8	-5	50.7	39	71.5	187
Doda	45.4	-34	24.8	-33	16.4	-34
Ganderbal	81.8	164	36.5	78	62.0	263
Jammu	11.9	-41	1.1	-92	0.0	-100
Kargil	**	**	**	**	**	**
Kathua	30.9	98	5.6	-48	0.5	-95
Kistwar	**	**	**	**	**	**
Kulgam	75.0	63	37.8	32	49.8	67
Kupwara	135.1	129	58.0	38	53.1	21
Ladakh(Leh)	1.9	46	0.0	-100	0.3	-50
Poonch	**	**	**	**	**	**
Pulwama	78.7	153	26.5	39	17.6	-6
Rajouri	64.0	281	20.4	15	10.2	-7
Ramban	149.3	119	16.9	-54	17.6	-29
Reasi	32.5	-30	5.8	-77	0.6	-96
Samba	11.4	-44	0.0	-100	0.0	-100
Shopian	**	**	**	**	**	**
Srinagar	91.1	194	32.9	60	12.6	-26
Udhampur	27.6	-40	0.0	-100	0.0	-100
East Madhya Pradesh						
Anuppur	0.0	-100	0.0	-100	0.0	-100
Balaghat	0.0	-100	2.5	-21	0.0	-100
Chhatarpur	0.0	-100	0.0	-100	0.0	-100
Chindwara	0.0	-100	2.1	-46	0.0	-100
Damoh	0.0	-100	0.7	-70	0.0	-100
Dindori	0.0	-100	0.0	-100	0.0	-100
Jabalpur	0.0	-100	6.5	67	0.0	-100
Katni	0.0	-100	0.0	-100	0.0	-100
Mandla	0.0	-100	2.6	-57	0.0	-100
Narsingpur	0.0	-100	4.6	142	0.0	-100
Panna	0.0	-100	0.0	-100	0.0	-100
Rewa	0.0	-100	0.5	-87	0.0	-100
Sagar	0.0	-100	0.0	-100	0.0	-100
Satna	0.0	-100	0.8	-65	0.0	-100
Seoni	0.0	-100	0.5	-92	0.0	-100
Shahdol	0.0	-100	0.0	-100	0.0	-100
Sidhi	0.0	-100	0.0	-100	0.0	-100
Singrauli	0.0	-100	0.0	-100	0.0	-100
Tikamgarh	0.0	-100	0.5	-72	0.0	-100
Umaria	0.0	-100	0.8	-80	0.0	-100
West Madhya Pradesh						
Agar	0.0	-100	0.0	-100	0.0	-100
Alirajpur	0.0	-100	0.0	-100	0.0	-100
Asoknagar	0.0	-100	0.0	-100	0.0	-100
Badwani	0.0	-100	0.0	-100	0.0	-100
Betul	0.0	-100	9.8	277	0.0	-100

Bhind	0.0	-100	0.0	-100	0.0	-100
Bhopal	0.0	-100	0.2	-93	0.0	-100
Burhanpur	0.0	-100	0.0	-100	0.0	-100
Datia	0.0	-100	0.0	-100	0.0	-100
Dewas	0.0	-100	0.0	-100	0.0	-100
Dhar	0.0	-100	0.0	-100	0.0	-100
Guna	0.0	-100	0.0	-100	0.0	-100
Gwalior	0.0	-100	0.3	-79	0.0	-100
Harda	0.0	-100	0.0	-100	0.0	-100
Hosangabad	0.0	-100	2.0	5	0.0	-100
Indore	0.0	-100	0.0	-100	0.0	-100
Jhabua	0.0	-100	0.0	-100	0.0	-100
Khandwa	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Neemuch	0.0	-100	0.0	-100	0.0	-100
Raisen	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Shajapur	0.0	-100	0.0	-100	0.0	-100
Sheopur Kalani	0.0	-100	0.0	-100	0.0	-100
Shivpuri	0.0	-100	0.0	-100	0.0	-100
Ujjain	0.0	-100	0.0	-100	0.0	-100
Vidisha	0.0	-100	0.0	-100	0.0	-100
Chhattisgarh						
Bastar	0.0	-100	3.6	-12	13.9	28
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.0	-100	6.5	59	1.2	-75
Dantewara	0.0	-100	3.0	100	0.0	-100
Dhamtari	0.0	-100	1.6	-68	9.7	169
Durg	0.0	-100	7.0	94	0.0	-100
Janjgir	0.0	-100	**	**	0.8	-78
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	**	**	0.0	-100
Korba	0.0	-100	0.0	-100	1.5	-63
Koriya	0.0	-100	0.0	-100	0.0	-100
Kawardha	0.0	-100	**	**	0.0	-100
Mahasumund	0.0	-100	**	**	0.0	-100
Narayanpur	0.0	-100	0.0	-100	0.0	-100
Raigarh	0.0	-100	0.4	-90	0.5	-87
Raipur	0.0	-100	1.1	-66	1.0	-64
Rajnandgaon	2.7	14	7.0	56	1.0	-63
Surguja	0.0	-100	0.5	-85	0.2	-92
East Uttar Pradesh						
Allahabad	0.0	-100	0.0	-100	0.0	-100
Ambedkar Nagar	0.0	-100	0.0	-100	0.0	-100
Azamgarh	0.0	-100	0.0	-100	0.0	-100

Bahraich	0.0	-100	0.0	-100	0.0	-100
Ballia	0.0	-100	0.0	-100	0.0	-100
Balrampur	0.0	-100	0.0	-100	0.0	-100
Banda	0.0	-100	0.0	-100	0.0	-100
Barabanki	0.0	-100	0.0	-100	0.0	-100
Basti	0.0	-100	0.0	-100	0.0	-100
Chandauli	0.0	-100	0.0	-100	0.0	-100
Deoria	0.0	-100	0.0	-100	0.0	-100
Faizabad	0.0	-100	0.0	-100	0.0	-100
Farrukhabad	0.0	-100	0.0	-100	0.0	-100
Fatehpur	0.0	-100	3.3	52	0.0	-100
Gazipur	0.0	-100	0.1	-96	0.0	-100
Gonda	0.0	-100	0.0	-100	0.0	-100
Gorakhpur	0.0	-100	0.0	-100	0.0	-100
Hardoi	0.0	-100	0.0	-98	0.0	-100
Jaunpur	0.0	-100	0.0	-100	0.0	-100
Kannauj	0.0	-100	0.0	-100	0.0	-100
Kanpur City	0.0	-100	1.6	-4	0.0	-100
Kanpur Dehat	0.0	-100	0.0	-100	0.0	-100
Kaushambi	0.0	-100	0.0	-100	0.0	-100
Kheri	0.0	-100	0.0	-100	0.0	-100
Kushi nagar	0.0	-100	0.0	-100	0.0	-100
Lucknow	0.0	-100	0.5	-73	0.0	-100
Maharajganj	0.0	-100	0.0	-100	0.0	-100
Mau	0.0	-100	0.0	-100	0.0	-100
Mirzapur	0.0	-100	0.0	-100	0.0	-100
Pratapgarh	0.0	-100	0.0	-100	0.0	-100
RaiBareilly	0.0	-100	0.1	-93	0.0	-100
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnagar	0.0	-100	0.0	-100	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100
Shrawasti	**	**	**	**	**	**
Sidharthnagar	0.0	-100	0.0	-100	0.0	-100
Sitapur	0.0	-100	0.0	-100	0.0	-100
Sonbhadra	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
West Uttar Pradesh						
Agra	0.0	-100	0.0	-100	0.0	-100
Aligarh	0.2	-80	0.0	-100	0.0	-100
Auraiya	0.0	-100	0.0	-100	0.0	-100
Badaun	0.0	-100	0.0	-100	0.0	-100
Baghpat	0.0	-100	0.0	-100	0.0	-100
Bareilly	0.0	-100	0.0	-100	0.0	-100
Bijnor	0.2	-95	0.0	-100	0.0	-100
Bulandsahar	0.0	-100	0.0	-100	0.0	-100
Etah	0.0	-100	0.0	-100	0.0	-100

Etawah	0.0	-100	0.0	-100	0.0	-100
Firozabad	0.0	-100	0.0	-100	0.0	-100
GBNagar	0.0	-100	0.0	-100	0.0	-100
Ghaziabad	0.0	-100	0.0	-100	0.0	-100
Hamirpur	0.0	-100	1.3	-17	0.0	-100
Jalaun	0.0	-100	0.0	-100	0.0	-100
Jhansi	0.0	-100	0.4	-82	0.0	-100
Jotiba Phule Nagar	0.0	-100	0.0	-100	0.0	-100
Kanshiramnagar	0.0	-100	0.0	-100	0.0	-100
Lalitpur	0.0	-100	0.0	-100	0.0	-100
Mahamaya Nagar	0.0	-100	0.0	-100	0.0	-100
Mahoba	0.0	-100	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	1.5	-44	0.0	-100	0.0	-100
Moradabad	0.0	-100	0.0	-100	0.0	-100
Muzzaffarnagar	0.0	-100	0.0	-100	0.0	-100
Pilibhit	0.0	-100	0.0	-100	0.0	-100
Rampur	1.0	-75	0.0	-100	0.0	-100
Saharanpur	0.0	-100	0.0	-100	0.0	-100
Shahjahanpur	0.0	-100	0.0	-100	0.0	-100
Uttarakhand						
Almora	4.5	-64	0.0	-100	0.0	-100
Bageshwar	0.0	-100	0.0	-100	0.0	-100
Chamoli	4.7	-84	5.0	-69	8.5	-15
Champawat	2.0	-78	0.0	-100	0.0	-100
Dehradun	2.3	-83	0.0	-100	0.5	-93
Garhwal Pauri	0.0	-100	0.0	-100	0.0	-100
Garhwal Tehri	1.2	-92	0.0	-100	0.0	-100
Haridwar	2.2	-55	0.0	-100	0.0	-100
Nainital	4.5	-49	2.1	-78	0.7	-87
Pithorgarh	4.3	-79	0.3	-98	7.6	-5
Rudraprayag	2.1	-91	0.0	-100	4.4	-57
Udham Sing Nagar	1.0	-75	0.0	-100	0.0	-100
Uttarkashi	6.3	-74	0.0	-100	5.1	-46
Bihar						
Araria	0.0	-100	27.9	389	1.2	-71
Arwal	0.0	-100	0.0	-100	0.0	-100
Aurangabad	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Bhagalpur	0.0	-100	0.0	-100	7.2	411
Bhojpur	0.0	-100	0.0	-100	0.0	-100
Buxar	0.0	-100	**	**	**	**
Darbhanga	0.0	-100	2.0	-50	4.6	130
East Champaran	0.0	-100	0.0	-100	1.9	93
Gaya	0.0	-100	0.0	-100	0.0	-100
Gopalganj	0.0	-100	0.0	-100	0.0	-100

Jahanabad	0.0	-100	0.0	-100	0.0	-100
Jamui	0.0	-100	0.0	-100	0.0	-100
Kathihar	0.0	-100	0.0	-100	13.6	750
Khagadia	**	**	0.0	-100	17.5	200
Kishanganj	0.0	-100	4.6	-13	0.0	-100
Lakhisarai	0.0	-100	0.0	-100	0.0	-100
Madhepura	**	**	0.0	-100	16.0	517
Madhubani	0.0	-100	4.0	-5	0.0	-100
Monghyar	**	**	**	**	**	**
Muzaffarpur	0.0	-100	0.0	-100	11.4	777
Nalanda	0.0	-100	0.0	-100	0.0	-100
Nawada	0.0	-100	0.0	-100	0.0	-100
Patna	0.0	-100	0.0	-100	0.0	-100
Purnea	0.0	-100	6.8	44	22.0	547
Rohtas	0.0	-100	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	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	28.1	1379
Vaishali	0.0	-100	0.0	-100	0.0	-100
West Champaran	0.0	-100	0.0	-100	0.0	-100
Jharkhand						
Bokaro	0.0	-100	0.0	-100	0.0	-100
Chatra	0.0	-100	**	**	0.0	-100
Deoghar	0.0	-100	**	**	0.0	-100
Dhanbad	0.0	-100	0.0	-100	0.0	-100
Dumka	0.0	-100	0.0	-100	0.0	-100
East Singbhum	0.5	-88	0.0	-100	0.2	-96
Garhwa	0.0	-100	**	**	0.0	-100
Giridih	0.4	-90	0.0	-100	0.0	-100
Godda	0.0	-100	**	**	1.8	25
Gumla	0.0	-100	0.5	-94	0.0	-100
Hazaribagh	0.0	-100	**	**	0.0	-100
Jamtara	1.9	-57	0.0	-100	0.4	-93
Khunti	0.0	-100	**	**	0.0	-100
Koderna	0.0	-100	**	**	0.0	-100
Latehar	0.0	-100	**	**	0.0	-100
Lohardagga	**	**	**	**	0.0	-100
Pakur	0.0	-100	**	**	14.2	284
Palamau	0.0	-100	0.0	-100	0.0	-100
Ramgarh	0.0	-100	0.0	-100	0.0	-100
Ranchi	1.6	-61	0.0	-100	0.0	-100
Sahebganj	0.0	-100	**	**	12.6	404
Saraikela	0.0	-100	0.0	-100	0.0	-100
Simdega	0.0	-100	0.0	-100	0.0	-100

West Singbhum	4.8	116	0.0	-100	0.0	-100
East Rajasthan						
Ajmer	0.0	-100	0.0	-100	0.0	-100
Alwar	0.0	-100	0.0	-100	0.0	-100
Banswara	0.0	-100	0.0	-100	0.0	-100
Baran	0.0	-100	0.0	-100	0.0	-100
Bharatpur	0.2	-82	0.0	-100	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	0.2	-91	0.0	-100
Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.9	8	0.0	-100	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	2.0	55	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Sikar	0.9	5	0.0	-100	0.0	-100
Sirohi	0.0	-100	0.0	-100	0.0	-100
Tonk	0.0	-100	0.0	-100	0.0	-100
Udaipur	0.0	-100	0.0	-100	0.0	-100
West Rajasthan						
Barmer	0.0	-100	0.0	-100	0.0	-100
Bikaner	0.0	-100	0.0	-100	0.0	-100
Churu	1.9	57	0.0	-100	0.0	-100
Hanumangarh	0.0	-100	0.0	-100	0.0	-100
Jaisalmer	0.0	-100	0.0	-100	0.0	-100
Jalore	0.0	-100	0.0	-100	0.0	-100
Jodhpur	0.0	-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	0.1	-97	0.0	-100	0.1	-92
Gujarat Region						
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	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
S K & Diu region						
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	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-100	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
Maharashtra						
Konkan & Goa						
Mumbai City	0.0	-100	0.0	-100	0.0	-100
Mumbai Suburban	0.0	-100	0.0	-100	0.0	-100
North Goa	0.0	-100	0.0	-100	0.0	-100
Raigad	0.0	-100	0.0	-100	0.0	-100
Ratnagiri	0.0	-100	0.0	-100	2.0	567
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
Madhya Maharashtra						
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	0.1	-31
Kolhapur	0.0	-100	0.5	-68	1.9	-46
Nandurbar	0.0	-100	0.0	-100	0.0	-100
Nasik	0.0	-100	3.9	1827	0.0	-100
Pune	0.0	-100	0.0	-100	0.6	-40
Sangli	0.0	-100	0.0	-100	2.0	-48
Satara	0.0	-100	0.4	-69	0.2	-90
Solapur	0.0	-100	0.0	-99	0.8	-68
Marathwada						
Aurangabad	0.0	-100	0.1	-93	0.0	-93
Beed	0.0	-100	0.4	-62	0.6	-52
Hingoli	0.0	-100	2.1	48	0.1	-88
Jalna	0.0	-100	0.0	-100	0.0	-100
Latur	0.0	-100	0.9	-55	1.7	-39
Nanded	0.0	-100	0.8	-64	0.6	-72
Usmanabad	0.0	-100	0.0	-100	1.8	18
Parbhani	0.0	-100	1.4	-10	0.0	-100

Vidarbha						
Akola	0.0	-100	1.0	-62	0.0	-100
Amraoti	0.0	-100	0.0	-100	0.0	-100
Bhandara	0.0	-100	10.3	172	0.8	-79
Buldhana	0.0	-100	0.3	-79	0.0	-100
Chandrapur	0.8	-73	0.0	-100	6.5	102
Gadchiroli	0.0	-100	4.4	23	1.3	-66
Gondia	0.0	-100	13.3	203	4.7	60
Nagpur	0.0	-100	3.8	-6	0.0	-100
Wardha	0.0	-100	1.0	-65	0.0	-100
Washim	0.0	-100	0.1	-94	0.0	-100
Yeotmal	2.1	-8	1.5	-41	2.6	-4
Odisha						
Angul	0.4	-91	10.6	165	11.3	141
Balasore	0.9	-77	0.0	-100	2.6	-75
Bargarh	0.0	-100	0.0	-100	4.0	14
Bhadrak	1.9	-51	0.0	-100	5.4	-31
Bolangir	1.6	-74	0.0	-100	0.1	-99
Boudh	0.0	-100	0.7	-87	19.3	142
Cuttack	0.0	-100	0.2	-97	2.3	-70
Deogarh	0.0	-100	0.0	-100	0.7	-83
Dhenkanal	0.5	-92	6.7	20	14.2	89
Gajapati	20.6	98	2.3	-87	16.8	13
Ganjam	3.3	-10	0.0	-100	2.2	-77
Jagatsingpur	11.1	457	0.0	-100	3.3	-69
Jajpur	0.0	-100	0.0	-100	20.3	178
Jharsuguda	0.0	-100	0.0	-99	0.0	-100
Kalahandi	0.0	-100	0.0	-100	0.3	-94
Kandhamal	2.1	-67	0.0	-100	0.4	-95
Kendrapara	6.0	50	0.0	-100	5.2	125
Keonjhar	0.2	-93	0.0	-100	13.0	54
Khurda	2.2	-52	0.0	-100	0.4	-96
Koraput	0.0	-100	7.0	59	12.0	9
Malkangiri	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	1.6	-76	0.0	-100	14.1	17
Nawapara	2.0	-61	2.4	-14	0.0	-100
Nawarangpur	7.6	377	2.9	51	10.9	34
Nayagarh	0.0	-100	0.0	-100	0.0	-100
Puri	0.6	-90	0.5	-88	0.0	-100
Rayagada	14.8	208	0.0	-100	9.1	-37
Sambalpur	0.1	-96	0.2	-96	4.3	11
Sonepur	1.8	-67	0.0	-100	0.0	-100
Sundargarh	0.0	-100	0.0	-100	0.0	-100
West Bengal & Andaman Nicobar Islands						
A & N ISLAND						
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	18.2	264

GWB						
Bankura	0.4	-91	0.0	-100	8.9	46
Birbhum	0.7	-85	0.1	-98	11.1	158
Burdwan	0.0	-100	0.0	-100	9.3	68
East Midnapore	13.0	149	0.0	-100	0.0	-100
Hooghly	5.8	13	0.0	-100	4.7	-11
Howrah	4.6	7	0.0	-100	4.2	-49
Kolkata	6.8	28	0.0	-100	1.6	-78
Murshidabad	0.0	-100	0.0	-100	24.0	314
Nadia	8.0	63	0.0	-100	3.2	-48
24 Pargana (N)	24.0	344	0.0	-100	3.5	-44
Purulia	1.3	-73	0.0	-100	0.0	-100
24 Pargana (S)	0.9	-71	0.0	-100	8.1	-7
West Midnapore	7.8	4	0.0	-100	14.4	21
SHWB & Sikkim						
Cooch Behar	11.2	104	44.2	220	85.4	336
Darjeeling	2.6	-81	40.9	205	17.0	-1
East Sikkim	14.2	10	14.1	-4	33.8	13
Jalpaiguri	5.1	-21	85.7	472	60.1	276
Malda	0.0	-100	0.0	-100	21.6	575
North Dinajpur	**	**	**	**	**	**
North Sikkim	133.7	115	25.5	-36	57.2	27
South Dinajpur	0.0	-100	0.0	-100	12.3	108
South Sikkim	5.1	-60	10.3	-29	5.9	-80
West Sikkim	4.0	-94	11.0	-73	26.0	-42
Karnataka						
Coastal Karnataka						
Dakshina Kannada	0.0	-100	0.0	-100	3.3	-48
Udupi	0.0	-100	0.0	-100	0.0	-100
Uttara Kannada	0.0	-100	0.0	-100	0.7	-77
N I Karnataka						
Bagalkote	0.0	-100	0.0	-100	8.3	124
Belagavi	0.0	-100	5.4	100	6.2	16
Bidar	0.0	-100	4.2	4	1.7	-69
Dharwad	0.0	-100	4.9	69	12.3	156
Gadag	0.0	-100	0.0	-100	6.3	81
Haveri	0.0	-100	4.0	152	2.5	-50
Kalaburgi	0.0	-100	1.1	-69	6.6	41
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	6.4	88
Yadgir	0.0	-100	0.1	-98	0.0	-100
S I Karnataka						
Ballari	0.0	-100	0.0	-100	4.2	26
Bangalore Rural	0.0	-100	0.0	-100	0.0	-100
Bangalore Urban	3.5	190	0.0	-100	0.0	-100
Chamarajanagar	0.8	-72	0.0	-100	0.0	-100
Chikaballapur	0.0	-100	0.0	-100	0.0	-100
Chikkamagaluru	0.6	-64	2.8	-26	5.6	-38

Chitradurga	0.0	-100	0.6	-65	2.9	-1
Davangere	0.0	-100	0.0	-100	0.0	-100
Hassan	0.3	-84	0.0	-100	1.8	-78
Kodagu	0.8	-79	4.3	-28	14.0	-5
Kolar	1.5	-29	0.0	-100	0.0	-100
Mandya	2.1	46	0.0	-100	0.0	-100
Mysuru	0.0	-100	0.0	-100	0.0	-100
Ramanagara	0.0	-100	0.0	-100	0.0	-100
Shivamogga	0.0	-100	0.0	-100	0.3	-95
Tumakuru	2.1	163	0.0	-100	0.0	-100
Kerala						
Alappuzha	14.8	59	14.2	2	1.7	-93
Kannur	0.0	-100	0.0	-100	0.0	-100
Ernakulam	1.7	-79	1.5	-82	2.1	-87
Idukki	1.7	-82	1.5	-88	4.2	-84
Kasaragod	0.0	-100	0.0	-100	0.1	-99
Kollam	5.5	-51	23.9	37	4.2	-85
Kottayam	23.0	171	18.1	46	12.7	-58
Kozhikode	0.0	-100	0.0	-100	5.4	-44
Malappuram	1.9	-42	0.0	-100	0.0	-100
Palakkad	0.0	-100	0.0	-100	0.0	-100
Pathanamthitta	19.4	21	10.7	-57	14.4	-59
Thiruvananthapuram	0.0	-100	3.6	-70	2.2	-88
Thrissur	6.2	27	0.0	-100	0.0	-100
Wayanad	0.0	-100	2.8	-58	9.1	-23
Tamil Nadu						
Ariyalur	0.0	-100	0.0	-100	0.0	-100
Chennai	0.0	-100	0.0	-100	0.0	-100
Coimbatore	0.0	-100	3.0	-18	0.0	-100
Cuddalore	0.0	-100	0.4	-84	0.0	-100
Dharmapuri	3.3	5	0.0	-100	0.0	-100
Dindigul	0.7	-78	0.5	-91	0.0	-100
Erode	0.0	-100	0.0	-100	0.0	-100
Kanchipuram	0.0	-100	0.0	-100	0.0	-100
Kanyakumari	0.0	-100	6.9	-39	13.3	-37
Karikal	0.0	-100	0.0	-100	0.0	-100
Karur	0.0	-100	0.0	-100	0.0	-100
Krishnagiri	0.0	-100	0.0	-100	0.0	-100
Madurai	0.0	-100	0.3	-94	0.0	-100
Nagapattinam	0.0	-100	0.0	-100	0.0	-100
Namakkal	0.0	-100	0.0	-100	0.0	-100
Nilgiris	0.0	-100	0.0	-99	0.0	-100
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	0.8	-83	0.0	-100
Salem	0.0	-100	0.0	-100	0.0	-100
Sivaganga	0.0	-100	0.1	-95	0.0	-100
Thanjavur	0.0	-100	0.0	-100	0.0	-100

Theni	2.5	-64	3.7	-52	0.0	-100
Tirunelveli	0.1	-99	11.7	13	0.0	-100
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	0.0	-100	15.9	184	0.2	-98
Trichy	0.0	-100	0.0	-100	0.0	-100
Vellore	0.1	-95	0.1	-98	0.0	-100
Villupuram	0.0	-100	0.0	-100	0.0	-100
Virudhunagar	0.0	-100	0.6	-91	0.0	-100
Andhra Pradesh						
Coastal Andhra Pradesh						
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	0.5	-58	0.0	-100	0.0	-100
Sirkakulam	0.1	-97	0.0	-100	3.3	-55
Visakhapatnam	0.0	-100	0.0	-100	8.3	4
Vizianagram	0.6	-79	0.0	-100	7.0	-5
West Godavari	0.0	-100	0.0	-100	0.0	-100
Rayalaseema						
Anantapur	0.0	-100	0.0	-100	0.0	-100
Chittoor	0.1	-94	0.0	-100	0.0	-100
Cuddapah	0.0	-100	0.0	-100	0.0	-100
Kurnool	0.0	-100	0.0	-100	0.3	-90
Telangana						
Adilabad	0.0	-100	2.0	-48	1.4	-51
Hyderabad	0.0	-100	0.0	-100	0.0	-100
Karimnagar	0.0	-100	0.0	-100	4.3	14
Khammam	0.0	-100	0.0	-100	0.0	-100
Mehabubnagar	0.0	-100	0.0	-100	2.6	11
Medak	0.0	-100	0.0	-100	0.1	-98
Nalgonda	0.0	-100	0.0	-100	0.6	-78
Nizamabad	0.1	-84	0.0	-100	1.3	-55
Rangareddy	0.0	-100	0.0	-100	4.2	31
Warangal	1.0	-44	0.0	-100	0.2	-94

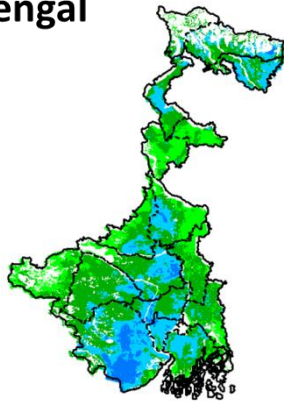
Legends

	(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
6th April 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



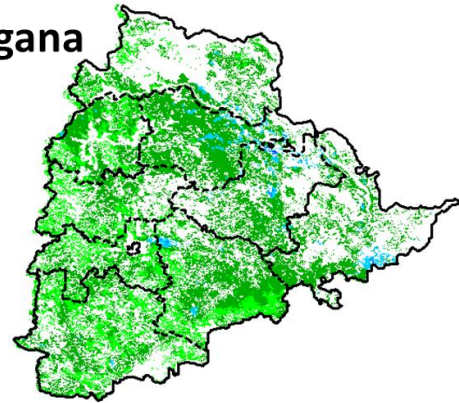
Agricultural vigour is moderate over entire state of Uttar Pradesh.

Uttarakhand



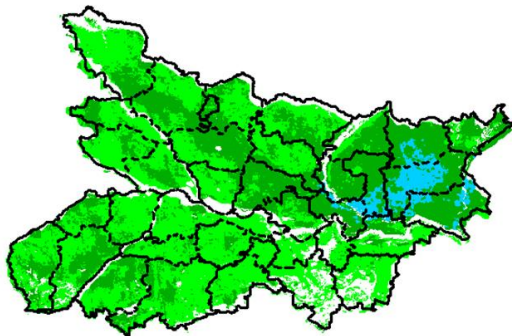
Agricultural vigour is moderate over entire state of Uttarakhand.

Telangana



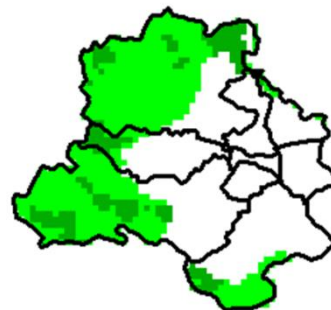
Agriculture vigour is moderate over most parts of Telangana. Few patches in eastern region shows good values of NDVI.

Bihar



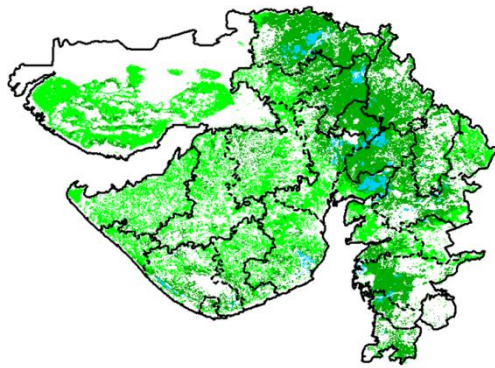
Agriculture vigour is moderate over major parts of Bihar whereas eastern part shows patches of good NDVI values.

Delhi



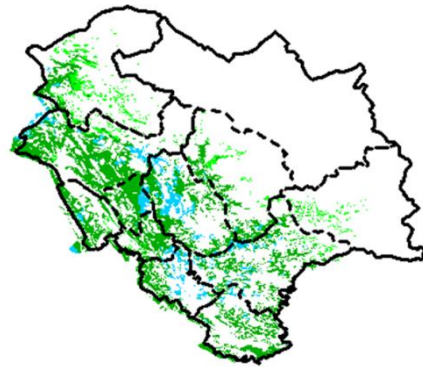
Agriculture vigour is moderate all over Delhi.

Gujarat



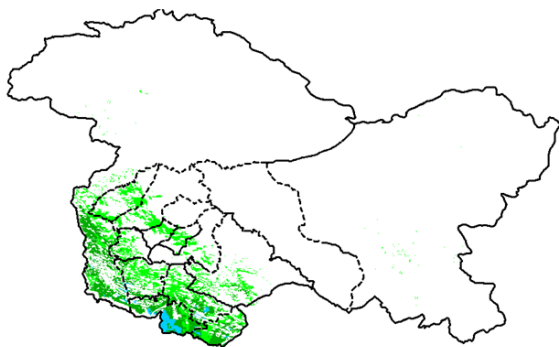
Agriculture vigour is moderate in Kutch and Saurashtra whereas, good agricultural vigour is observed over patches in Gujarat region

Himachal Pradesh



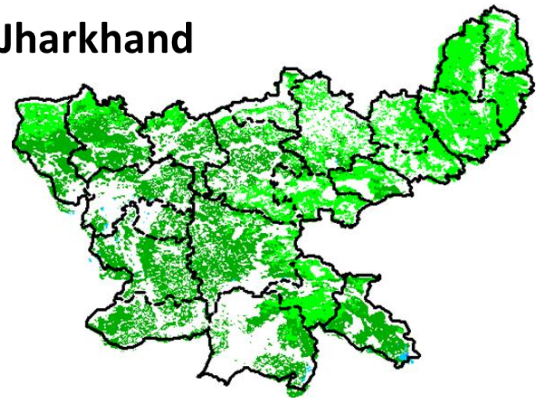
Agriculture vigour is good over western and southern parts of Himachal Pradesh, whereas rest of the state shows moderate values of NDVI.

Jammu & Kashmir



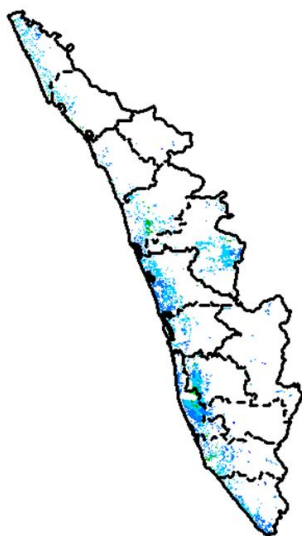
Agriculture vigour is good over southern part of Jammu & Kashmir, whereas the remaining region shows moderate NDVI.

Jharkhand



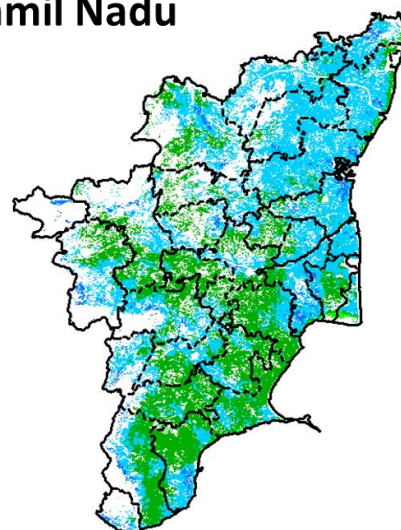
Agriculture vigour is moderate over entire state of Jharkhand.

Kerala



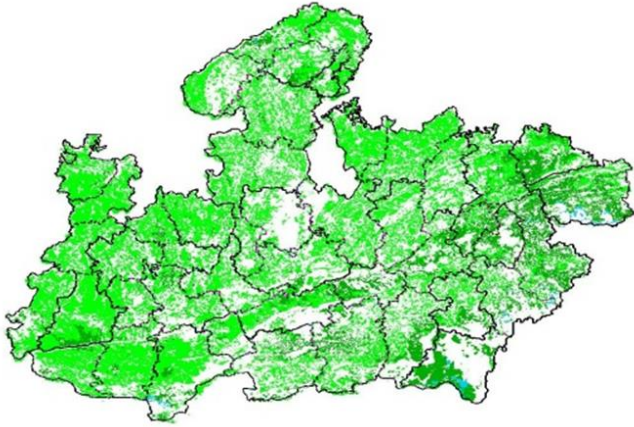
Agriculture vigour is good over entire state of Kerala.

Tamil Nadu



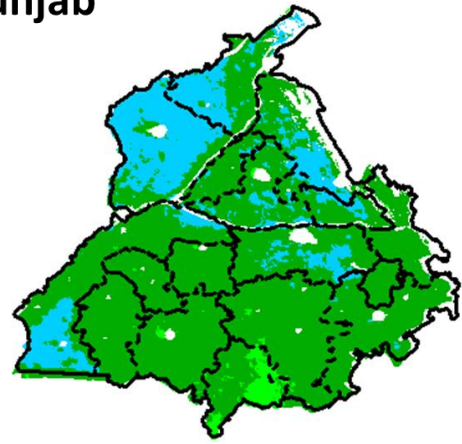
Agricultural vigour is good over major part of Tamil Nadu, except for southern part shows moderate NDVI.

Madhya Pradesh



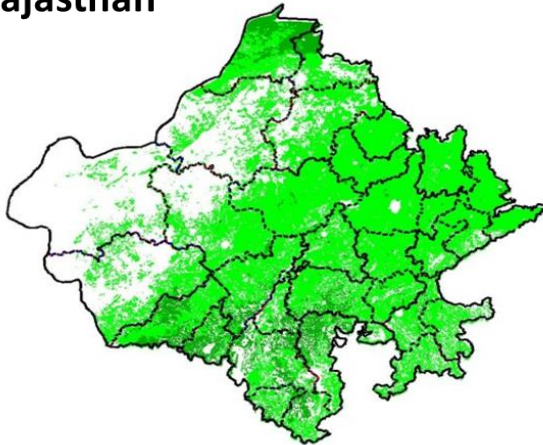
Agriculture vigour shows moderate values of NDVI over entire state of Madhya Pradesh.

Punjab



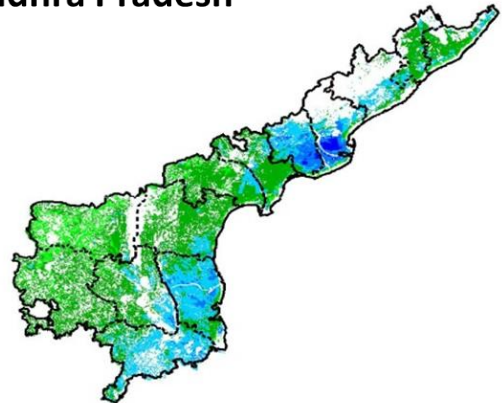
Agriculture vigour is good over northern and western parts of Punjab whereas, the remaining region shows moderate NDVI.

Rajasthan



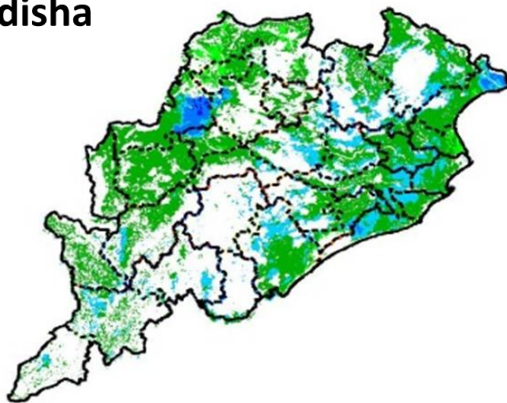
Agriculture vigour is moderate over the entire state of Rajasthan.

Andhra Pradesh



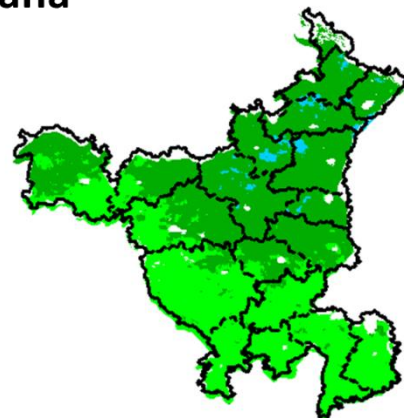
Agriculture vigour is very good over coastal part of Andhra Pradesh whereas other regions shows moderate values.

Odisha



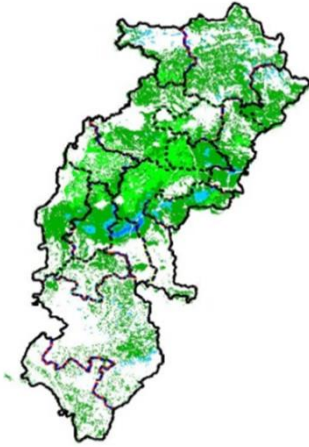
Agriculture vigour is good in patches of coastal and western parts of Odisha where rest of region shows moderate NDVI.

Haryana



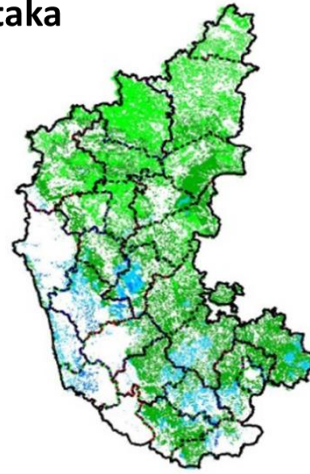
Agriculture vigour is moderate over entire state of Haryana.

Chhattisgarh



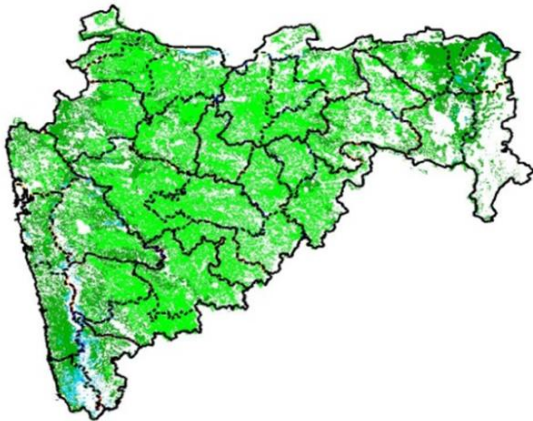
Agriculture vigour is moderate in the state of Chhattisgarh with few patches showing good NDVI in central region.

Karnataka



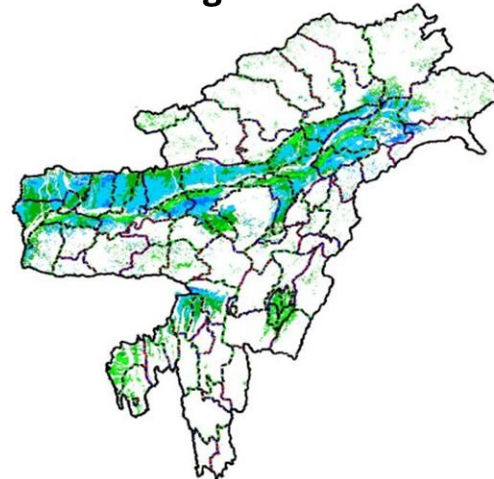
Agriculture vigour is good over central and southern part of Karnataka state. Rest of the state shows moderate values of NDVI.

Maharashtra

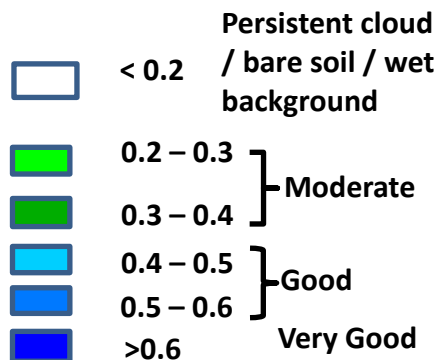


Agricultural vigour is moderate over entire state of Maharashtra.

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.

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

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

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

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

Capsularis jute: JRC 321 and UPC 94.

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

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

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

Okra: Pusa Sawani, Arka Anamika, Parbhdani Kranti.

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

Sponge gourd: Pusa Chikni or other local varieties.

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

Maize: Ganga 5, Navjot.

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

Okra: Parvani Kranti, Arka Anamica.

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

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

Meghalaya

Brinjal : Local Umroi, Muta Kesh, Narrow.

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

Manipur

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

Tripura

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

Odisha

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

Groundnut: Smruti, AK 12-24 TAG

Jharkhand

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

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

Linseed: Sweta, Shubhra, T-397

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

Jammu & Kashmir

Cabbage: Golden Acre, Pride of India and Pusa Mukta.

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, pant. u. 19, pant u. 30, pant u. 35, P.D.U.-1
Mung: k-851 and JM-721, Narendra mung-1, Malviya jagruti, Janpriya, Meha, H.U.M.-16, Malviya Jyoti, T.M.V.-37, Samrat, P.D.M.-139, H.U.M.-12, pusa vaishakhi, T.A.-44, Pant mung 12, pusa vishal, pusa-9531, P.D.M.-11, S.M.L.668

West Uttar Pradesh

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

Punjab

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89, CO118, COJ85, COJ64.
Rice: Pusa-44, T.R-112 and T.R-113.
Onion: Punjab Naroya, Punjab White and PRO 6.
Radish: Punjab Pasand and Japanese white.
Turnip: L-1.
Carrot: Punjab Black Beauty, Punjab Carrot Red and PC-34.
Tomato: TH-1, PunjabRatta, Punjab NR 7, Punjab 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, 223 and GC4b.
Cowpea: RC-19, RC-101, RCP-27.
Oat: OS 6, OS 9.
Berseem: BL 10, BL 22.
Cauliflower: Pusa snow ball K-1, Hisar-1, Dania and Selection-7.
Radish: 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
Desi cotton: RG-8, 18, HD-123, hyb Raj- DH 9

East Rajasthan

Muskmelon: Durgapura madhu, Punjab sunehri, Punjab hybrid, arkajeet, hara madhu, pusa madhuras.
Water melon: Sugar baby, Durgapura meetha, durgapura kesar, arka jyoti (hybrid), madhu (hybrid).
Tinda: Beekaneri green, Dil pasand, arka tinda.
Kakri: Lucknow ageti and arka sheetal.
Zaid Pearl millet (fodder): raj bajra chari, rajko Zaint, L-72, L-74.

Zaid sorghum (fodder): Raj chari-3, Raj chari-1, Raj chari-2 for single cutting and SSG59-3, M.P. chari for many cutting.
Okra: Pusa Savani, Arka anamika, Arka Abhya, Aajad kranti, Prabhni kranti, Pusa-A-4, Pusa Makhmali.
Cowpea: Short durC-152, RS-9, FS-68, RC-19 and RC-101, C-152, RS-9.
Onion: Punjab safed goal, Udaipur 102, nasik red.
Lucerne: Anand-2, LLC-3, RL-88 & Type-9.
Berseem: Muskavivardan and PusaJiant.
Summer groundnut: T.A.G.24, T.G.37A, G.G.2, D.H.86.

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 gourd: Pusa chikni.
Bitter gourd: 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