



National Agromet Advisory Service Bulletin



Friday 9th December 2016

(For the period 9th to 13th December 2016)



Issued by

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

Weblink For

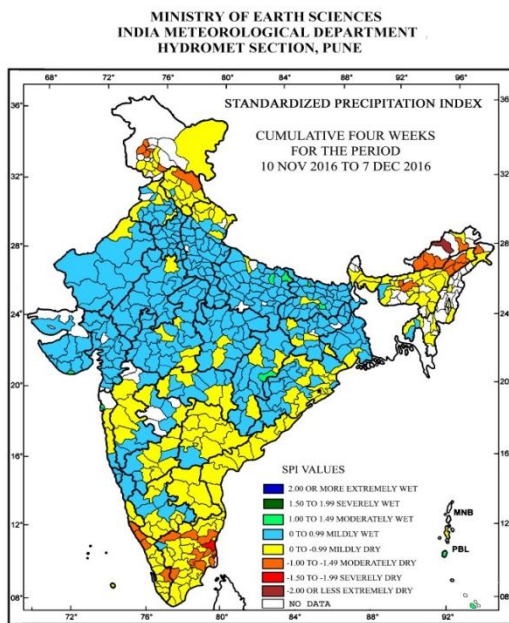
District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

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

- The cyclonic storm, **VARDHAH** over southeast Bay of Bengal remained practically stationary during past 03 hrs and lay centred at 0830 hrs IST of today, the 9th December, 2016 over southeast Bay of Bengal near Latitude 12.1°N and Longitude 90.4°E, about 990 km southeast of Visakhapatnam, 1090 km eastsoutheast of Machilipatnam and 250 km westnorthwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 12 hours. It is very likely to move initially northwestwards, then westnorthwestwards and cross Andhra Pradesh coast between Nellore and Kakinada around afternoon/evening of 12th December 2016. However, there is possibility of slight weakening of the system before landfall.

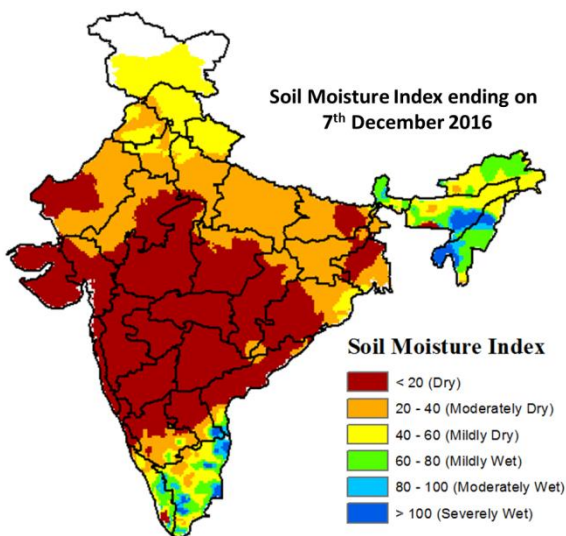
Northeast Monsoon watch: Northeast monsoon was weak over south peninsular India during past 24 hours.

Standardised Precipitation Index Four Weekly for the period 10th November to 7th December 2016



- Extremely/Severely dry conditions experienced in Upper Subansiri districts of Arunachal Pradesh; Cuddalore, Karaikal districts of Tamil Nadu & Puducherry.
- Moderately dry conditions experienced in many districts of Arunachal Pradesh; few districts of Assam, Jammu & Kashmir; Lahaul & Spiti district of Himachal Pradesh; Dharmapuri, Nagapattinam, Pudukkottai, Theni, Trichy, Tiruvarur, Viluppuram, Ariyalur districts of Tamil Nadu & Puducherry; Chamarajanagar district of Karnataka; Cannur, Kozhikode, Idukki, Kasargod districts of Kerala.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

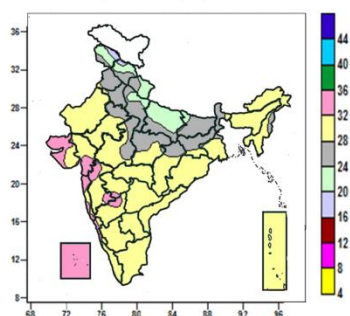
Soil Moisture Index for the week ending on 7th December 2016



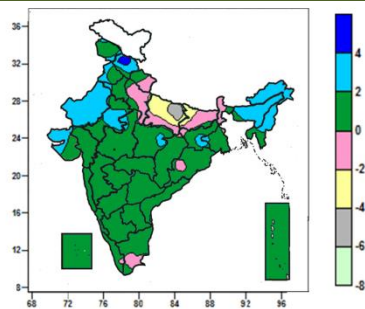
- Soil moisture index indicates severely and moderately wet condition in some parts of Rayalseema, North-East Region, Tamil Nadu and Kerala. Mild wet condition in many parts of North-East Region, Kerala, Tamil Nadu and some parts of South Interior Karnataka and Rayalaseema. Mild dry condition in many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand and some parts of Punjab, Haryana, Uttar Pradesh, Tamil Nadu, Kerala, North-East Region, Odisha. Rest of the country shows Moderate dry and dry condition.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 07.12.2016

Actual Mean Maximum Temperature (°C) in India for the week ending 07.12.2016



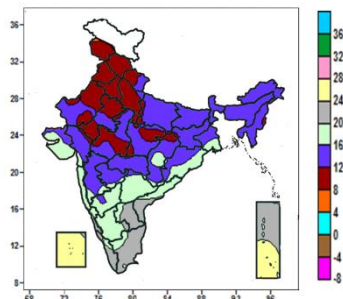
Mean Maximum Temperature (°C) Anomaly in India for the week ending 07.12.2016



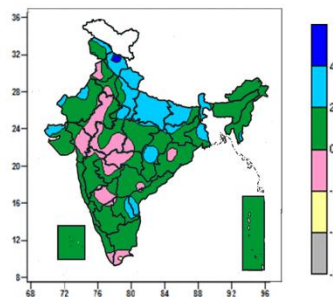
- Mean maximum temperature was between 32 to 36°C over Lakshadweep, many parts of Saurashtra & Kutch, Konkan & Goa, some parts of Gujarat region, Madhya Maharashtra, Coastal Karnataka and isolated pockets of Marathwada and North Interior Karnataka.
- Mean maximum temperature was between 24 to 32°C over rest of the Country except many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, some parts of West Uttar Pradesh and isolated pocket of Bihar, where it was between 16 to 24°C.

- Mean maximum temperature was above normal by 4 to 6°C over some parts of Himachal Pradesh and isolated pocket of West Madhya Pradesh.
- Mean maximum temperature was above normal by 2 to 4°C over Arunachal Pradesh, Meghalaya, Nagaland, Manipur, many parts of Himachal Pradesh, Assam, West Rajasthan, some parts of Punjab, East Rajasthan, Mizoram, Saurashtra & Kutch and isolated pockets of Jammu & Kashmir, Haryana, Madhya Pradesh, Gujarat Region, Jharkhand and Gangetic West Bengal.
- It was normal to near normal over rest of the country except many parts of East Uttar Pradesh, some parts of Bihar and isolated pocket of West Uttar Pradesh, where it was below normal by 2 to 6°C.

Actual Mean Minimum Temperature (°C) in India for the week ending 07.12.2016



Mean Minimum Temperature (°C) Anomaly in India for the week ending 07.12.2016



- Mean minimum temperature was between 4 to 8°C over isolated pocket of Jammu & Kashmir.
- Mean minimum temperature was between 8 to 12°C over Himachal Pradesh, Punjab, Haryana & Delhi, many parts of Jammu & Kashmir, Uttarakhand, West Uttar Pradesh, Rajasthan, some parts of Madhya Pradesh and isolated pockets of East Uttar Pradesh, Manipur, Gujarat Region, Chhattisgarh, Jharkhand and Vidarbha.
- Mean minimum temperature was between 12 to 16°C over Bihar, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Mizoram, Tripura, many parts of East Uttar Pradesh, Jharkhand, Gangetic West Bengal, Gujarat Region, Madhya Pradesh, Chhattisgarh, Madhya Maharashtra, Marathwada, Vidarbha, some parts of Uttarakhand, Rajasthan, Saurashtra & Kutch, Odisha and isolated pockets of West Uttar Pradesh, Konkan, North Interior Karnataka and Telangana.
- Mean minimum temperature was between 16 to 24°C

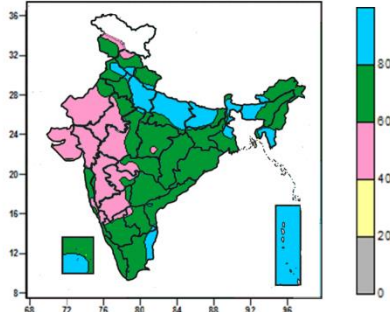
- Mean minimum temperature was above normal by 4 to 6°C over some parts of Himachal Pradesh.
- Mean minimum temperature was above normal by 2 to 4°C over Uttarakhand, Sikkim, many parts of Uttar Pradesh, Bihar, Sub-Himalayan West Bengal, some parts of Jammu & Kashmir, Chhattisgarh, Gangetic West Bengal, Saurashtra & Kutch, Coastal Andhra Pradesh, Rayalaseema and isolated pockets of Madhya Pradesh, West Rajasthan and Mizoram.
- Mean minimum temperature was normal to near normal over rest of the Country except isolated pocket of Tamil Nadu, where it was below normal by 2 to 4°C.

over rest of the Country.

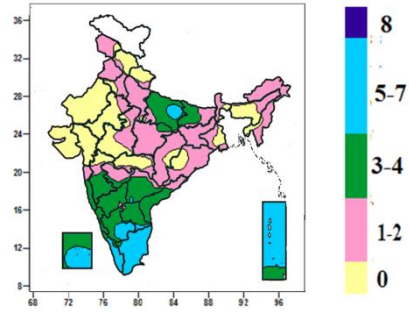
- Mean minimum temperature was between 20 to 28⁰C over Lakshadweep and Andaman & Nicobar Islands.

Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 07.12.2016

Relative Humidity (%) over India for the week ending 07.12.2016



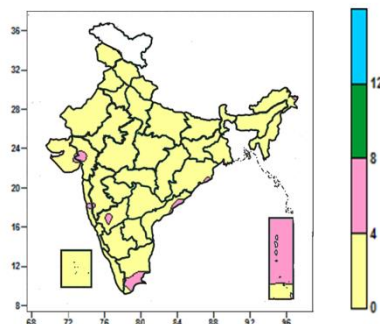
Cloud amount (okta) over India for the week ending 07.12.2016



- Mean Relative Humidity was above 80% over Andaman & Nicobar Islands, many parts of Uttar Pradesh, Sub-Himalayan West Bengal, Bihar, Mizoram, Tripura, some parts of Himachal Pradesh, Punjab, Sikkim, Assam & Meghalaya, Gangetic West Bengal, Tamil Nadu, Lakshadweep and isolated pockets of Uttarakhand, Haryana, West Madhya Pradesh, Arunachal Pradesh, Coastal Andhra Pradesh and Rayalaseema.
- Mean Relative Humidity was between 60 to 80% over Chhattisgarh, Odisha, Nagaland, Manipur, Kerala, many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Assam & Meghalaya, Sikkim, Punjab, Haryana & Delhi, East Madhya Pradesh, Jharkhand, Gangetic West Bengal, Vidarbha, Telangana, Coastal Andhra Pradesh, Rayalaseema, Konkan & Goa, South Interior Karnataka, Tamil Nadu, Lakshadweep, some parts of Mizoram, Tripura, Rajasthan, Uttar Pradesh, West Madhya Pradesh, Marathwada, Bihar, Coastal Karnataka and isolated pockets of Gujarat Region, Madhya Maharashtra, Sub-Himalayan West Bengal, and North Interior Karnataka.
- Mean Relative Humidity was between 40 to 60% over rest of the Country.

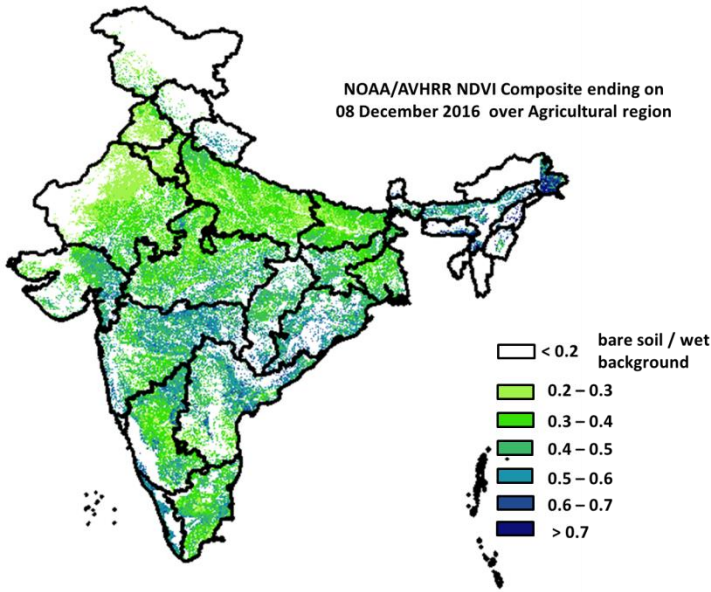
- Sky remained generally cloudy (5-7okta) over many parts of Tamil Nadu, Kerala, Andaman & Nicobar Islands, some parts of Bihar, Lakshadweep, South Interior Karnataka and isolated pockets of Telangana, Rayalaseema.
- Sky remained partly cloudy (3-4 okta) over Coastal Karnataka, many parts of East Uttar Pradesh, Bihar, Madhya Maharashtra, Interior Karnataka, Telangana, Coastal Andhra Pradesh, Rayalaseema, Konkan & Goa, Lakshadweep, some parts of Marathwada, Andaman & Nicobar Islands and isolated pockets of East Madhya Pradesh, Kerala and Tamil Nadu.
- Sky remained mainly clear/clear sky (1-2 okta/0 okta) over rest of the country.

Wind speed (knots) over India for the week ending 07.12.2016



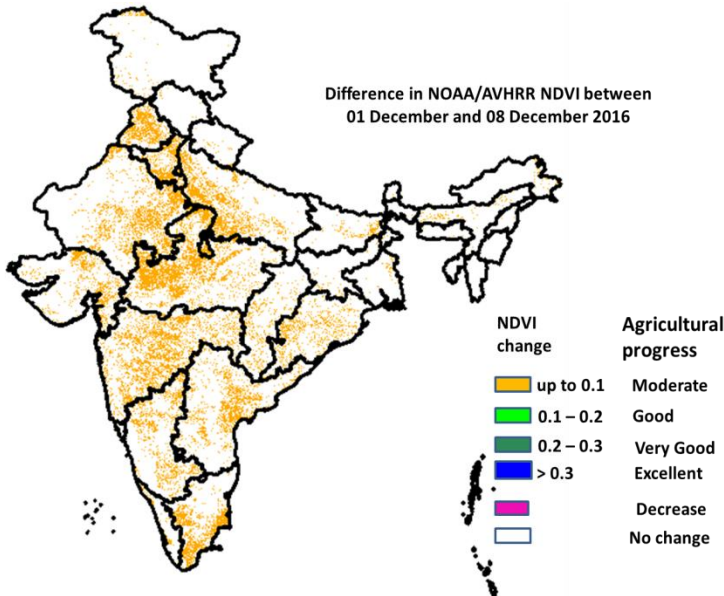
- Mean wind speed was between 0 to 4 knots over the country except many parts of Andaman & Nicobar Islands, some parts of Tamil Nadu and isolated pockets of Gujarat, Odisha, Konkan, Madhya Maharashtra, North Interior Karnataka, Coastal Andhra Pradesh and Kerala, where it was between 4 to 8 knots.

NOAA/AVHRR NDVI composite ending on 8th December 2016 over Agricultural region of India



- Agricultural vigour is good in east Madhya Pradesh, Odisha, Vidarbha region, patches in Karnataka, Kerala, Telangana, North Andhra Pradesh, Gujarat and North-east, where NDVI value varies from 0.5 to 0.7. NDVI is moderate in Rajasthan, Punjab, Haryana, west Madhya Pradesh, Uttar Pradesh, Madhya Maharashtra, southern region of Andhra Pradesh, Karnataka and Tamil Nadu (NDVI 0.2 to 0.5).

Difference in NOAA/AVHRR NDVI between 1st December and 8th December 2016



- Moderate progress in NDVI was observed in Punjab, Haryana, west and central Madhya Pradesh, east Rajasthan, west Uttar Pradesh, Maharashtra, Gujarat and patches in Karnataka, Kerala, Andhra Pradesh, Odisha and Tamil Nadu.

- NOAA/AVHRR NDVI composite maps for the week ending on 8th December 2016 for different States are given in Annexure II.

Weather Forecast for next 5 days valid upto 0830 hours of 14th December 2016

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- No significant change in minimum temperatures very likely over northwest, central, east & northeast India during next 3 days.
- Shallow to moderate fog at many places with dense to very dense fog at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, northeast Rajasthan and West Uttar Pradesh during next 2 days and dense to very dense fog at a few places over East Uttar Pradesh during next 2 days and dense at isolated places over Bihar during next 24 hours.
- Shallow to moderate fog at a few places very likely over north Madhya Pradesh, south Assam, Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 3 days.

5 Day Rainfall Forecast (MID DAY) 9th December 2016

Met Sub-divisions	09 Dec	10 Dec	11 Dec	12 Dec	13 Dec
1. Andaman & Nicobar Islands	FWS	SCT	ISOL	ISOL	ISOL
2. Arunachal Pradesh	DRY	DRY	DRY	DRY	DRY
3. Assam & Meghalaya	DRY	DRY	DRY	DRY	DRY
4. N.M.M. & T.	DRY	DRY	DRY	DRY	DRY
5. S.H. West Bengal & Sikkim	DRY	DRY	DRY	DRY	DRY
6. Gangetic West Bengal	DRY	DRY	ISOL	ISOL	ISOL
7. Odisha	DRY	DRY	ISOL	ISOL	SCT
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	DRY	DRY	DRY	DRY	DRY
12. Uttarakhand	DRY	DRY	DRY	DRY	DRY
13. Haryana, Chd & Delhi	DRY	ISOL	DRY	DRY	DRY
14. Punjab	DRY	ISOL	DRY	DRY	DRY
15. Himachal Pradesh	DRY	ISOL	ISOL	DRY	DRY
16. Jammu & Kashmir	ISOL	ISOL	ISOL	ISOL	DRY
17. West Rajasthan	DRY	DRY	DRY	DRY	DRY
18. East Rajasthan	DRY	DRY	DRY	DRY	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
21. Gujarat 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	ISOL
25. Marathwada	DRY	DRY	DRY	DRY	ISOL
26. Vidarbha	DRY	DRY	DRY	DRY	ISOL
27. Chhattisgarh	DRY	DRY	DRY	ISOL	DRY
28. Coastal Andhra Pradesh	DRY	ISOL	FWS	WS	FWS
29. Telangana	DRY	DRY	DRY	ISOL	ISOL
30. Rayalaseema	DRY	DRY	SCT	SCT	FWS
31. Tamil Nadu & Puducherry	ISOL	ISOL	ISOL	ISOL	ISOL
32. Coastal Karnataka	DRY	DRY	DRY	DRY	ISOL
33. North Interior Karnataka	DRY	DRY	DRY	DRY	ISOL
34. South Interior Karnataka	DRY	DRY	DRY	ISOL	SCT
35. Kerala	ISOL	ISOL	DRY	DRY	DRY
36. Lakshadweep	ISOL	DRY	DRY	DRY	DRY

% Station Reporting Rainfall

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

Weather Warning during next 5 days

- **09 December (Day 1):** Dense fog at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, Bihar, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and at a few places over East Uttar Pradesh. Cold wave very likely at isolated places over north Madhya Pradesh and Vidarbha. Squally wind speed reaching 35-45 kmph gusting 55 kmph would prevail over and around Andaman & Nicobar Islands. Fisherman are advised

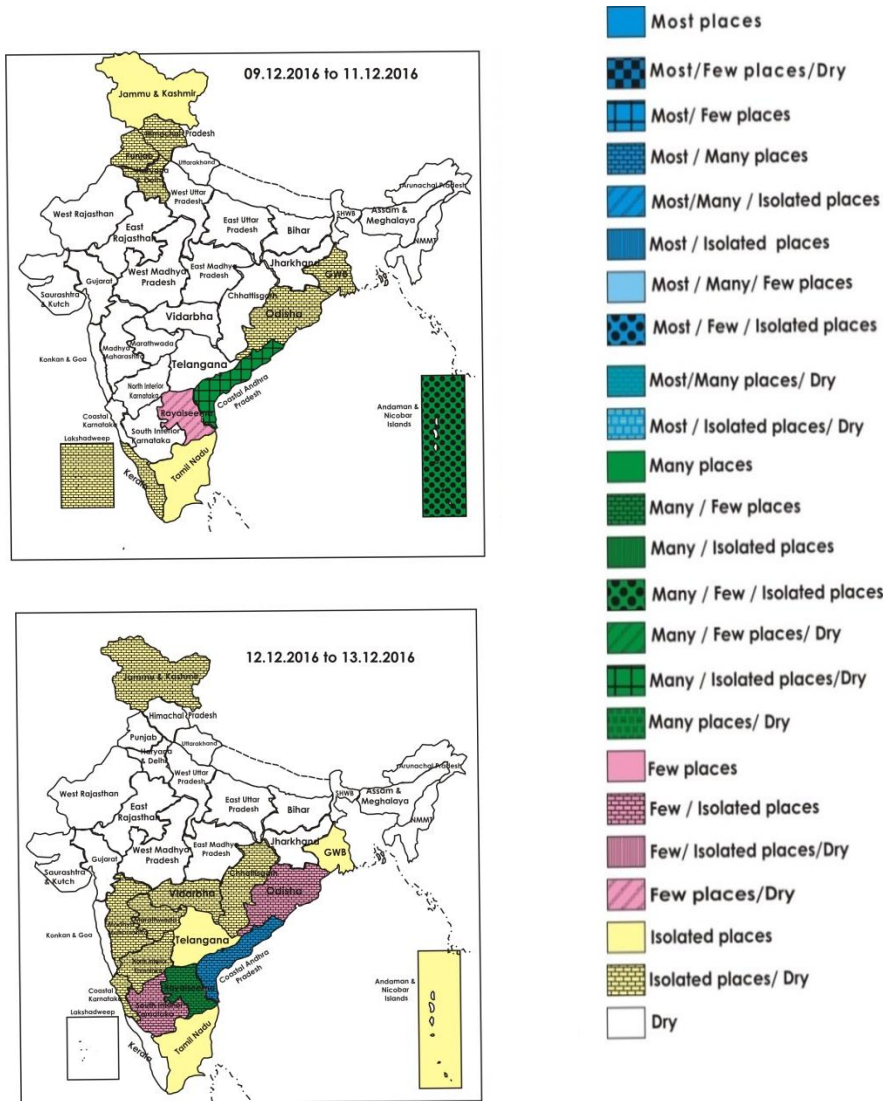
not to venture into the sea over and around Andaman Islands. The fishermen are out at sea are advised to return to the coast. Sea condition very likely to be moderate to rough over and around Andaman and Nicobar Islands.

- **10 December (Day 2):** Dense fog at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, Bihar, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and at a few places over East Uttar Pradesh. Cold wave very likely at isolated places over East Madhya Pradesh and Vidarbha.
- **11 December (Day 3):** Dense fog at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh, Bihar, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and at a few places over East Uttar Pradesh. Heavy rain very likely at many places over Coastal Andhra Pradesh with very heavy falls at isolated places over north Coastal Andhra Pradesh. Squally wind speed reaching 40-50 kmph gusting 60 kmph very likely along & off Andhra Pradesh coast. Fisherman are advised not to venture into the sea along & off Andhra Pradesh coast. Sea conditions very likely to be rough to very rough along & off Andhra Pradesh coast.
- **12 December (Day 4):** Heavy rain very likely at a few places with extremely heavy falls at isolated places over north Coastal Andhra Pradesh. Squally wind speed reaching 40-50 kmph gusting 60 kmph very likely along & off Andhra Pradesh coast. Fisherman are advised not to venture into the sea along & off Andhra Pradesh coast. Sea conditions very likely to be rough to very rough along & off Andhra Pradesh coast.
- **13 December (Day 5):** Squally wind speed reaching 40-50 kmph gusting 60 kmph very likely along & off Andhra Pradesh coast. Fisherman are advised not to venture into the sea along & off Andhra Pradesh coast. Sea conditions very likely to be rough to very rough along & off Andhra Pradesh coast.

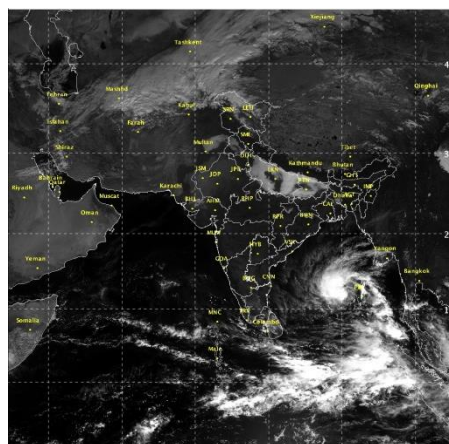
Weather Outlook for subsequent 2 days from 14th to 16th December 2016

- Rainfall at isolated places very likely over Andaman & Nicobar Islands and peninsular India.
- Rain/snow very likely at isolated places over Jammu & Kashmir.

Weather Forecast Map (valid upto 0830 hours 14th December 2016)



Satellite image dated, 09.12.2016, 0600 UTC



Salient Advisories

- In association with the cyclonic storm **VARDAH** over southeast Bay of Bengal; as rain/thundershowers likely at most/many places over **Coastal Andhra Pradesh** from 11th to 13th Dec. along with heavy rain very likely at many places over Coastal Andhra Pradesh with very heavy/extremely heavy falls at isolated places over **north Coastal Andhra Pradesh** on 11th & 12th Dec., postpone irrigation, application of fertilizers and plant protection methods to standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. In Prakasam, Nellore, Guntur, Krishna and West Godavari districts, undertake harvesting of matured early sown rice, maize, black gram crops immediately and complete picking of cotton. Keep harvested produce at safer places.
- As squally wind speed reaching 40 to 50 kmph gusting to 60 kmph very likely along & off **Andhra Pradesh coast** from 11th to 13th Dec., provide support to young fruit plants, banana, propping up in sugarcane and staking in vegetables to protect them from lodging.
- As rain/thundershowers likely at many places over **Andaman and Nicobar Islands** on 9th and over **Royalaseema** on 13th Dec., postpone irrigation, application of fertilizers and plant protection methods to standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep already harvested rice in safer places. Drain out excess water from vegetable fields in **Andaman and Nicobar Islands**.
- As cold wave very likely at isolated places over **north Madhya Pradesh** and **Vidarbha** on 9th & 10th Dec., it is advised to arrange for smoking around the fields during night, apply light and frequent irrigation/sprinkler irrigation in the evening to protect the crops from frost/cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/gunny bags.
- As dense fog very likely at isolated places over **Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh Bihar, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura** and at a few places over East **Uttar Pradesh** from 9th to 11th December, monitor potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
- In **Assam**, to protect the seedling of *Boro* rice from cold during night, cover the seedling with polythene sheet to help growth and development of the seedling. In **Madhya Maharashtra**, apply light irrigation to fig and grapes in the evening or during night time in Pune and Nasik district. In **Punjab**, the young and newly planted fruit plants should be covered with thatches or kullies made of sarkanda or farm waste materials to protect them from cold damage. The South-West side should be left open to allow sufficient sunlight.
- In view of the prevailing dry weather, apply irrigation to wheat crop which is at CRI stage in **Rajasthan, Punjab, Haryana, Madhya Pradesh, Uttar Pradesh and Gujarat**. In **Madhya Maharashtra**, apply protective irrigation in sugarcane, vegetable crops, rabi jowar and maize and in sugarcane, wheat, gram, vegetable crops, jowar and maize in **Marathwada**.
- Continue sowing of late sown varieties of wheat in **Punjab, Haryana & Delhi, Rajasthan, Uttar Pradesh** under pre sowing irrigation if adequate moisture is not available in the fields. Continue nursery sowing of rice and *rabi* maize in **Telangana**. Complete nursery sowing of *Boro* rice and planting of potato in **Assam** and continue transplanting of *Boro* rice. Continue planting of potato and sowing of pea in **Meghalaya**.
- In Central Plain Zone and Undulating Plain Zone of **Punjab**, foggy weather condition is conducive for incidence of late blight on potato. To protect the potato crop from late blight, spray with Indofil M-45/Mass M-45/Markzeb/Antracol/ Kavach @ 500- 700 g or Copper Oxychloride 50 WP/Mark copper @ 750- 1000 g/acre in 250- 350 litres of water before the appearance of the disease followed by 5 more sprays at 7 days interval.
- In Upper Brahmaputra Valley Zone of **Assam**, weather condition is becoming favourable for occurrence of late blight disease in potato crop. Spray the crop with Mancozeb @ 2.5 g per litre of water. Generally 3 such sprays are required at 12 days interval for good result.

- In **North Madhya Pradesh & Vidarbha**, in view of the prevailing cold wave conditions, keep the animals inside the sheds during night time and provide dry bedding and use heaters inside cattle sheds to protect them from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy to cope up with the situation. Keep the chicks warm by providing artificial light in the poultry sheds.
- In High Hills Temperate Dry Zone of **Himachal Pradesh**, protect the newly born calves and animals from cold. Feed pregnant and lactating cows and buffalos with balance feed including mineral mixture. Ensure to give 50 g mineral mixture to animals daily.

Detailed Zonewise Agromet Advisories

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



Banana



Rice



Sugarcane



Red gram

- **Realised Rainfall:** Rainfall occurred in all districts of Tamil Nadu except Dharmapuri, Kanyakumari, Krishnagiri, Salem, Theni, Thirunelveli and Toothukudi, in Nellore district of Coastal Andhra Pradesh, in Chittoor and Cuddapah districts of Rayalaseema and in Chikaballapura and Kolar districts of South Interior Karnataka. Weather remained mainly dry over rest of the region.
- **Realised Minimum Temperature:** Minimum temperatures are below normal (1.6°C to 3.0°C) at isolated places over Andhra Pradesh, Karnataka. They are above normal (1.6°C to 3.0°C) at isolated places over Tamilnadu and near normal over rest of the region.
- **Advisories:**
 - **Andhra Pradesh:**
 - As rain/thundershowers likely at most/many places over Coastal Andhra Pradesh from 11th to 13th Dec. along with heavy rain very likely at many places over Coastal Andhra Pradesh with very heavy/extremely heavy falls at isolated places over north Coastal Andhra Pradesh on 11th & 12th Dec., postpone irrigation, application of fertilizers and plant protection methods to standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. In Prakasam, Nellore, Guntur, Krishna and West Godavari districts, undertake harvesting of matured early sown rice, maize, black gram crops immediately and complete picking of cotton. Keep harvested produce at safer places.
 - As squally wind speed reaching 40 to 50 kmph gusting to 60 kmph very likely along & off Andhra Pradesh coast from 11th to 13th Dec., provide support to young fruit plants, banana plants, propping up in sugarcane and staking in vegetables to protect them from lodging.
 - In the High Altitude Tribal Zone, continue nursery sowing of rabi rice (MTU 1010, NLR 34449 (Nellore sannalu, Prabha), undertake seed treatment with Carbendazim @ 3g/kg seed to prevent seed borne diseases in rabi rice nursery and harvesting of cotton.
 - In the Scarce Rainfall Zone of Rayalaseema, continue sowing of *rabi* groundnut. Due to excess irrigation from drip and sprinkler, there is possibility of iron deficiency in rabi groundnut. If iron deficiency is noticed, undertake spraying of 1 kg Ferrous Sulphate in 200 litres of water/acre is twice with in a period of 10 days.
 - In Chittoor, and Kadapa districts of Southern Zone, continue sowing of rabi crops like jowar, ragi, horsegram and other short duration pulse crops and sowing of groundnut after proper seed treatment.
 - In Anantapur district of Scarce Rainfall Zone of Rayalaseema, incidences of groundnut leaf minor incidence was noticed in groundnut and spodoptera incidence in Bengal gram. To control groundnut leaf minor, spray Quinolphos @ 2ml/litre or Monocrotophos @ 1.6 ml/litre of water and spray Larvin @ 1.5g/litre of water on a non rainy day.
 - In the High Altitude Tribal Zone, prevailing weather conditions are congenial for incidence of mungbean yellow mosaic virus(MYMV) in green and black gram. To control, spray Monocrotophos @ 2ml/litre of water on a non rainy day.
 - In the Krishna Godavari Zone, due to prevailing dry weather conditions, stem borer may attack late sown rice. If the problem is severe, spray Cartophydrochloride @ 2 g or Chloropyriphos @ 2.5 ml or Acephate @ 1.5 g or Kostraniliphore @ 0.4 m/litre of water on a non rainy day.
 - In Nellore district of the Southern Zone, spray Monocrotophos @ 1.6 ml. or Hexaconazole @ 2 ml/litre of water

on a non rainy day to control hispa and leaf spot in rice nursery.

▪ **Telangana:**

- In Mahabubnagar, Nalgonda, Medak, Rangareddy, Khammam and Warangal districts (South Telangana Zone), raise rice nurseries of short duration varieties (Kunaram Sannalu, Telangana Sona, Bathukamma etc.,). Low temperatures during the *rabi* may cause cold injury in rice nurseries. To overcome cold injury and for better nursery growth, cover the nursery beds with polythene sheet during night and remove in the morning, irrigate the nursery bed every day in the evening and let out the water in the morning and apply 2 kg urea for 200 sq metre nursery area 10-15 days after sowing.
- In North Telangana Zone, since flowering and pod formation stages are most critical for moisture. stress, provide irrigation to kharif red gram to enhance the yield. Continue nursery sowing of rice. Cover entire rice nursery bed with polythene sheets in the night and remove in the morning to avoid the effect of cool temperatures on germination and growth of nursery. Provide one irrigation to Bengal gram crop at 30 - 35 days (before flowering) to fetch higher yields. Cotton crop is under slight moisture stress condition. If there is a possibility, give one irrigation to the protect the crop from the stress.
- In Mahabubnagar, Nalgonda, Medak, Rangareddy, Khammam and Warangal districts (South Telangana Zone), incidence of leaf eating caterpillar and aphids are noticed in safflower. To control, leaf eating caterpillar, spray Quinalphos @ 2 ml or Chlorpyrifos @ 2.5 ml/litre of water and to control aphids, spray Dimethoate @ 2 ml or Chlorpyrifos @ 2.5 ml/litre of water.

▪ **Tamil Nadu:**

- In the Western Zone, apply 3rd top dressing of 38 kg nitrogen and 12.5 kg K₂O per ha in medium duration *Samba* rice at flowering stage with impounded water.
- In the North Western Zone, to improve drought resistance in groundnut, green gram, black gram, red gram and cotton crop, PPFM (Pink Pigmented Facultative Methylo trophic methylo bacterium solution @ 5-10ml/litre of water can be applied as foliar spray.
- In the High Altitude Zone, since ground frost is expected, necessary measures may be taken to protect the crops. Spray PPFM @ 8 ml/ litre of water and apply 8 kg VAM fungus at the time sowing for drought tolerance.
- In the Cauvery Delta Zone, bacterial leaf blight and bacterial leaf streaks are noticed in *Samba* rice due to prevailing weather condition. To control, spray fresh cow dung extract twice (Starting from initial appearance of the disease and another at fortnightly interval) or Copper Hydroxide @ 500 g/ac in 200 litres of water.
- In the Western Zone, prevailing weather condition (low minimum temperature) is congenial for leaf spot disease in turmeric and blast disease in rice. To control leaf spot, provide fungicide and spray Carbendazim @ 1g/litre (or) Mancozeb @ 2g/litre of water and spray Carbendazim @ 500g/ha in 500 litres of water to control blast disease.
- In Puducherry, mealy bug incidence is observed in rice, spray Buprofezin 25 SC @ 800 ml/ha or Thiamethoxam 20 WG @ 100g/ha for control.
- In the South Zone, stem weevil and root rot incidence is noticed in cotton. For controlling stem weevil, spot drench with 0.1% Carbendazim or 0.05% Benomyl and to control root rot disease spray Carbaryl 50 WP@ 2.5 kg/ha or Carbofuran 3G @ 33.3 kg/ha
- In the High Rainfall Zone, if rhizome rot is noticed in turmeric, remove the affected plants. To avoid the spreading of disease, pour 1% Bordeaux mixture.

▪ **Kerala:**

- In the Northern Zone, continue planting of bananas.
- In Idukki and Wynad districts of High Altitude Zone, continue harvesting of cardamom and ginger on a non rainy day. In the Problem Area Zone, continue mulching in nutmeg gardens.
- In Pathanamthitta district of the Southern Zone, undertake harvesting of mature nutmeg and in Thiruvananthapuram district continue tapping of rubber.
- In the Northern Zone, protect pepper vines from direct sunlight. Cover the basal portion of vines with banana trashes. Provide good mulching. If wilt is noticed, spray Akomin @ 1ml/5 liters of water three times at weekly intervals. Also drench with copper oxy chloride solution @ 3g/litre of water. For improving the health of the plant, spray NPK 19: 19: 19 mixture @ 5g/litre of water on foliage separately.
- In the Central Zone, prevailing cloudy conditions are congenial for incidence of fruit borer in cow pea. To control fruit borer, apply any pesticide containing Neem oil 4 ml per one litre of water every week.
- In the Problem Area Zone, undertake precautions in rice fields (which reached 15 days after sowing) by placing Trichocards to prevent stem borer and leaf rollers.
- In the Northern Zone, incidence of rugose white fly is observed in coconut and vegetables which favours growth of black colour fungus and reduces the photosynthetic area of the leaves. To control, ensure balanced nutrition and soil pH correction after soil testing. In addition to that, apply micro nutrient mixture, 'Ayar', @ 50g/plant. If there is severe attack, spray Malathion @ 4ml/litre of water + sticking agent @ 3ml/litre solution.
- In the Southern Zone, there is possibility of leaf folder, rice stem borer, aphid and rice bug in rice. As a control measure against all these pests, apply Ekalux 2 ml/ litre of water.

▪ **Karnataka:**

- Continue harvesting of rice and sugarcane in Southern Transition Zone.

- Drain out water from the paddy fields one week before harvesting of paddy crop in Southern Dry Zone. Undertake harvesting of matured rice and ragi.
- Continue harvesting of red gram and ragi; undertake weeding in mango, guava, sapota orchard and put weeds in the basin as mulch in Eastern Dry Zone. Undertake pruning in grapes.
- Continue sowing of groundnut and black gram in Coastal Zone. Continue harvesting and threshing of rice in Hill Zone.
- Provide protective irrigation to wheat, Bengal gram, pigeon pea, vegetable and niger crops, if required, in Bidar district of North East Transition Zone.
- In Dharwad, Belagavi and Haveri districts of North Transition Zone, undertake intercultural operations in *rabi* crops (sorghum, Bengal gram etc.) to control the weeds and for moisture conservation. Apply irrigation in Bengal gram at flowering stage.
- In Vijayapura, Bagalkote and Gadag districts of North Dry Zone, apply irrigation to already sown *rabi* crops as per requirement.
- As a precautionary measure for control of hoppers in mango in Hill Zone, spray Melathion @ 2ml/litre of water or Monocrotophos @ 1.25ml/litre of water.
- Suitable varieties for sowing are given in Annexure III.

❖ **Animal Husbandry**

- In the Western Zone of Tamil Nadu, present weather is conducive for Anthrax disease in animals. Hence vaccinate animals to prevent the disease.
- In the Southern Zone of Tamil Nadu (Kannivadi), due to the rainy humid weather, diseases like Foot and Mouth disease, black quarter, Haemorrhagic septicemia, round worms may affect cattle. Due to this, the cattle may be affected by diarrhoea and other intestinal problems. Undertake deworming once in 3 to 6 months.
- In the South Zone of Tamil Nadu (Kovilpatti), the expected weather having high cloud cover, moderate rainfall and high humidity is conducive for liver fluke worm in cattle and sheep. To control, give deworming dose.
- In Southern Dry Zone, in view of low temperature in morning and night, maintain the optimum room temperature in dairy unit by providing electric bulb; keep cattle yard clean and dry. Maintain optimum room temperature in silkworm and poultry rearing houses.

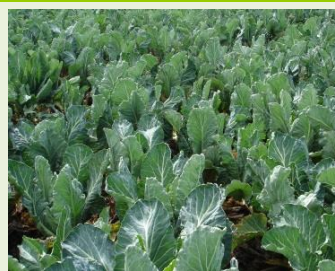
NORTHEAST INDIA [ARUNACHAL PRADESH, NMM&T, ASSAM, MEGHALAYA]



Banana



Rice



Cauliflower



Wheat

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Minimum Temperature:** Minimum temperatures are below normal (1.6°C to 3.0°C) at isolated places over Assam & Meghalaya and near normal over rest of the region.
- **Advisories:**
 - As dense very likely at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura from 9th to 11th December, monitor potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
 - **Assam, Meghalaya & Arunachal Pradesh:**
 - In Karimganj, Hailakandi and Cachar districts of Barak Valley Zone of Assam, continue nursery raising for winter vegetables and planting of potato. Continue land preparation for transplanting of Boro rice.
 - In Dhemaji, Lakhimpur, Sonitpur, Dibrugarh, Golghat, Jorhat and Sibsagar districts of Upper Brahmaputra Valley Zone of Assam, continue nursery sowing of *boro* rice. Complete harvesting of matured *Sali* rice.
 - In Karbi Anglong and NC Hills districts of Hill Zone of Assam, continue nursery sowing of *Boro* rice. Continue sowing of lentil and planting of potato.
 - In Marigaon and Nagaon districts of Central Brahmaputra Valley Zone of Assam, continue harvesting of *Sali* rice, nursery bed preparation and sowing of *Boro* rice, continue land preparation and sowing of wheat, *rabi* pulses, rapeseed and mustard. Continue harvesting of black gram/ green gram.
 - In Barpeta, Bongaigaoin, Dhubri and Goalpara districts of Lower Brahmaputra Valley Zone of Assam, continue sowing of pumpkin, radish, tomato, onion, planting of potato and nursery preparation of cabbage, cauliflower, knol khol. Continue transplanting of *Boro* rice.
 - In Barak Valley Zone of Assam, to control the attack of aphids and saw fly in rapeseed and mustard, spray Dimethoate (Rogar) @ 1 ml/litre of water.

- In North Bank Plain Zone of Assam, continue planting of potato. Continue harvesting of matured *Sali* rice. Continue nursery sowing of *boro* rice. Complete sowing of rapeseed/mustard
- In Arunachal Pradesh, continue harvesting of Wetland rice.
- In Meghalaya, continue transplanting of cauliflower/cabbage/broccoli and sowing of pea. Also continue harvesting of matured Upland rice, *Sali/kharif* rice, groundnut, soybean and ginger/ turmeric.
- In Hill Zone of Assam, spray Malathion 50EC @ 2ml/litre against infestation of aphid/ saw fly in rapeseed and mustard at vegetative stage. Also due to humid and cloudy weather there is chance of late light in tomato. Spray Ridomil MZ-72 (2g/ litre) and Indofil M-45 2.5g/litre.
- In Upper Bramhaputra Valley Zone, North Bank Plain Zone and Lower Bramhaputra Valley Zone of Assam, spray Chloropyriphos 20EC, 0.5 litre/ha, 500-700 litre of water per ha for hand sprayer and 200-250 lit/ha for power sprayer against aphid and saw fly in rapeseed and mustard.
- In Upper Bramhaputra Valley Zone of Assam, weather condition is becoming favourable for occurrence of late blight disease in potato crop. Spray the crop with Mancozeb @ 2.5 g per litre of water. Generally 3 such sprays are required at 12 days interval for good result. Alternatively, Zineb @ 25 g per 10 litre of water may also be used.
- In Arunachal Pradesh, spray Indofilm-45 @ 2.5g/litre as preventive measure against alternaria blight and Dimethoate 30 EC @ 3ml/litre for aphid in mustard. Also spray Sulfex @ 2g/litre water against powdery mildew in black gram & green gram.
- **Nagaland, Manipur, Mizoram and Tripura:**
- In Nagaland, with prevalence of continued dry weather, apply need based irrigation in standing *rabi* crops and vegetables. Sow zero tillage lentil and pea after rice harvesting by opening small furrow between rice stubbles. Continue harvesting of TRC/WRC rice.
- In Manipur, continue sowing of field pea, lentil and transplanting of cole crops/onion and planting of potato. Continue sowing rapeseed/mustard and pea. Continue land preparation for *rabi* maize.
- In Mizoram, continue harvesting of *khasi* mandarin/acid lime, oil palm, banana and colocasia. Continue nursery sowing of onion, winter vegetables and planting of potato.
- In Tripura, complete sowing of toria, sesame and lentil. Thinning and weeding along with gap filling may be done in the field of *rabi* Maize. Light irrigation in cole crops & tomato on every alternate day may be given for better establishment and smooth growth. Complete planting of potato.
- In Nagaland, spray 5% neem seed kernel extract to kill early stages larvae in tomato and chilli.
- In Manipur, to control leaf blotch & leaf spot in ginger/turmeric, application of Carbendazim @ 0.1% alternately with spraying of Mancozeb (2.5 g/litre) is also recommended.
- In Mizoram, apply insecticide like Imidacloprid 0.5 ml or Phosolone 1.5 ml or Acephate 1.0 g or Dimethoate 2 ml/litre of water against banana rhizome weevil disease in banana.
- In Tripura, due to lower night temperature, there is chance of infestation of aphids and leaf spot in banana. Apply Dimethoate (Rogor) or Imidacloprid @ 0.8ml per litre of water against aphid infestation and apply Propiconazole or Soaf @ 2g/litre against leaf spot.
- Suitable varieties for sowing are given in Annexure III.
- ❖ **Animal Husbandry**
- In Nagaland, protect poultry birds from cold winds by hanging curtain/clothing from outside the poultry shed. Use of electric bulbs for heat is advisable.
- In Assam, gunny bags or plastic sheath curtains should be given on the side walls and bedding material should be increased to protect poultry from cold. Care should be taken not to restrict ventilation.
- In Central Bramhaputra Valley Zone of Assam, the cattle, goat and pigs should be vaccinated against BQ, HS, Foot and Mouth disease. Vaccination to control the ranikhet disease of poultry may be done during this period.
- ❖ **Fishery**
- In Central Bramhaputra Valley Zone and Upper Bramhaputra Valley Zone of Assam, during winter season fishes are infested by various bacterial diseases. To control these diseases, application of Potash @ 4-5 mg per litre of water in the pond is recommended. Application of required doses of lime will give better results.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Maize



Mustard



Groundnut



Wheat

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

- **Realised Minimum Temperature:** Minimum temperatures are appreciably below normal (3.1°C to 5.0°C) at many places over Vidarbha, at isolated places over Madhya Maharashtra; below normal (1.6°C to 3.0°C) at isolated places over Gujarat and near normal over rest of the region.
- **Advisories:**
 - **Maharashtra:**
 - In Konkan, undertake sowing of *rabi* groundnut (Varieties: TG-26, TAG-24, TPG-41, Konkan Gaurav, Konkan Tapora). Prepare raised nursery bed of 90 cm breadth, 8-10 cm height and length according to convenience for *rabi* rice, Prepare 10 Are area (Are=100 m²) nursery for 1 ha area of main rice field. Apply NPK @ 20:50:50, 30:60:30 and 25:50:00 to Cowpea, Wal and Kulthi, respectively. Undertake preliminary operation like ploughing and addition of 10 ton FYM for cultivation of sunflower crop.
 - In Madhya Maharashtra, apply light irrigation to fig and grapes in the evening or during night time in Pune and Nasik district. Apply light irrigation to banana orchards and vegetables during night time. Apply protective irrigation and continue intercultural operations in sugarcane, vegetable crops, *rabi* jowar and maize. Continue picking fully opened cotton bolls during morning hours. Undertake harvesting of matured sugarcane and keep the produce in safer place. Do not burn the trash. Incorporate the trash in the soil to convert into compost. While composting use 50 Kg urea, 50 Kg SSP and 6 Kg composting culture per hectare.
 - In Marathwada, apply protective irrigation and continue intercultural operations in sugarcane, wheat, gram, vegetable crops, jowar and maize. Apply nitrogenous fertilizer @ 60 kg/ha to 21-25 DAS wheat crop. Irrigate the field at an interval of 18 to 21 days. Continue picking fully opened cotton bolls during morning hours. Undertake harvesting of matured sugarcane and keep the produce in safer place. Do not burn the trash. Incorporate the trash in the soil to convert into compost. While composting use 50 Kg urea, 50 Kg SSP and 6 Kg composting culture per hectare.
 - In Vidarbha, as cold wave very likely at isolated places over Vidarbha during next 2 days, farmers are advised to apply light and frequent irrigation in standing crops and orchards in Vidarbha region. Also make smoke around the fields of standing crops and orchards early in the morning. Apply nitrogenous fertilizer @ 60 kg/ha 21-25 DAS in wheat crop. Irrigate the field at CRI stage and at an interval of 18 to 21 days. Continue picking fully opened cotton bolls during morning hours.
 - Due to prevailing weather conditions, there may be attack of aphids in safflower, wheat, jowar, leafy vegetables and fruits like pomegranate; spray Diamethoate 30% EC @ 15 ml or Thiomethoxam 25 WG @ 1 g per 10 litres of water.
 - **Gujarat:**
 - Undertake land preparation for nursery sowing of summer paddy in South Gujarat Heavy Rainfall Zone. Undertake weeding in *rabi* pulses (Indian bean, gram, green gram). Continue sowing of onion, *rabi* pulses or vegetables as intercrop in sugarcane during early stage of sugarcane growth.
 - Apply irrigation in wheat (CRI stage), light irrigation in vegetable crops during evening hours in North West Zone. Carry out intercultural operations in mustard, brinjal, cabbage, cauliflower, chili and tomato. Continue harvesting of matured pomegranate, aonla and custard apple.
 - Continue sowing of wheat (late sowing), cumin, isabgol and lucern under assured irrigation facility in Middle Gujarat Zone. Carry out weeding and intercultural operations in *rabi* crops to conserve soil moisture; under dry weather condition apply irrigation in *rabi* crops.
 - Apply irrigation in wheat (at CRI stage) in Rajkot, Amreli, Jamnagar and Surendranagar districts of North Saurashtra Zone. Continue transplanting of onion.
 - In North Gujarat Zone, apply light irrigation in wheat (CRI stage), vegetable crops and *rabi* fennel (alternate row). Carry out weeding and intercultural operations in mustard, brinjal, cabbage, cauliflower, chili, tomato and *rabi* fennel. Continue harvesting of sorghum at physiological maturity and harvesting of matured fruits of pomegranate, aonla and custard apple.
 - Apply irrigation in wheat (CRI stage) and vegetable crops in South Saurashtra Zone. Continue picking of matured cotton bolls during morning hours and picking of matured clusters of castor.
 - Under present weather condition, there is chance of stem borer in corn in South Gujarat Zone; for control, spray pure Carbofuran-3 @ 8 kg/hectare in leaf pipe.
 - Under present weather condition attack of pink bollworm is observed in irrigated cotton in North Saurashtra Zone; farmers are advised not to take second flush of flowering and uproot the crop after picking. Monitor the chickpea crop regularly for prodenia and heliothis infestation; install "T" shaped bird perches in and around field for controlling insect population; if infestation cross ETL spray Quinalphos @ 20 ml in 10 litres of water.
 - Suitable varieties for sowing are given in Annexure III.
 - ❖ **Animal Husbandry**
 - In Vidarbha, in view of the prevailing cold wave conditions, keep the animals inside the sheds during night time and provide dry bedding and use heaters inside cattle sheds to protect them from cold. Increase protein level and minerals in the feed concentrate to keep the animals healthy to cope up with the situation. Keep the chicks warm by providing artificial light in the poultry sheds.
 - Keep cattle indoor at night time, protect from cold wind and give dry fodder twice a day in Middle Gujarat Zone.

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



Red gram



Okra



Maize



Wheat

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands. Weather remained dry over rest of the region.
- **Realised Minimum Temperature:** Minimum temperatures are appreciably below normal (3.1°C to 5.0°C) at isolated places over Odisha; below normal (1.6°C to 3.0°C) at isolated places over Gangetic West Bengal. They are appreciably above normal (3.1°C to 5.0°C) at a few places over Bihar and near normal over rest of the region.
- **Advisories:**
 - As dense fog very likely at isolated places over Bihar, Sub-Himalayan West Bengal & Sikkim from 9th to 11th December, monitor potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
 - **Odisha:**
 - In East and South Eastern Coastal Plain Zone, continue planting of potato. Continue harvesting of medium duration varieties of rice. The irrigated mustard is at 15 to 20 days stage. Go for hoeing and weeding. Thin out the plants and maintain optimum plant population. It is found to be affected by *Crociodollema* and aphids. Spray 400 ml Dimethoiate per acre for controlling aphids and 200 ml Ethofenprox or Deltamethrin in 200 litre water per acre.
 - In North Eastern Coastal Plain Zone, complete harvesting of rice and other matured crops immediately. Keep the harvested produces at safe places.
 - In Deogarh and Sundargarh districts of North Eastern Plateau Zone, complete sowing of groundnut, Mung, Biri, gram and Peas. Undertake nursery sowing of rice.
 - In Kalahandi and Nuapara districts of Western Undulating Zone, cover the vegetable nurseries to protect from low temperatures. Irrigate the vegetable seedling nursery during evening hours. Continue sowing of groundnut and mustard and nursery sowing of onion. Continue harvesting of matured direct seeded rice. Keep watch on false smut disease during grain development stage. If noticed spray Carbendazim or Matalaxyl + Mancozeb 2g/litre of water.
 - In Mayurbhanj and Keonjhar districts, continue sowing of green pea in fallow uplands and nursery raising of tomato, cauliflower and cabbage.
 - In Kalahandi and Nuapara districts of Western Undulating Zone, sucking pests like aphids, jassids infestation may occur in cotton crop at boll development to boll bursting stage. Spray Buprofezin 2ml/litre water for controlling sucking pests.
 - In Angul and Dhenkanal districts of mid Central Table Land Zone, the wide fluctuation in day and night temperature is conducive for attack of BPH/WBPH in rice. To control it, drain out water from the field and spray Thiomethoxam 25WG @ 1ml/3litre of water or Buprofezin @ 1.5ml/litre of water +Neem Oil @ 3ml/litre of water. Make alleys in the field at a distance of 2 m for proper ventilation and penetration of sunlight.
 - **West Bengal:**
 - In Burdwan, Murshidabad, Nadia, North 24 Parganas districts of New Alluvial Zone, undertake 1 sowing of wheat and planting of potato. Continue transplanting the nursery seedling of brinjal and tomato. Before transplanting dip the roots of seedling to the solution of Carbendazim 12% + Mancozeb 63% @ mixture (2 gm per litre of water). Continue harvesting of early transplanted *Aman* rice and prepare the field for sowing of rabi crop. Continue sowing of winter vegetables.
 - In Purba Midnapore and South 24-parganas districts of Coastal Saline Zone, prepare upland fields for nursery sowing of boro paddy and planting of potato. Treat the seeds by soaking for two minutes with Methoxy Mercuric Chloride @ 100g/per quintal of seeds.
 - In Laterite and Red Soil Zone, Give light irrigation to maintain the optimum moisture content in the soil. Undertake planting of potato. Apply fertilizer 17.4 kg Urea, 66 kg SSP and 13.5 kg MOP per bigha at the time of planting.
 - In Malda & Dakshin Dinajpur districts, undertake land preparation for sowing of wheat, pea & potato after completing the harvesting of rice crop. Before sowing wheat, seed should be treated with Trico derma viride @ 4 gram/kg seed with sufficient water or rice boiled water. Before sowing pea seed should be treated with Rhizobium culture.
 - In Terai Zone of West Bengal, undertake sowing of potato. Seed treatment with (Carbendazim 1g+Mancozeb 2.5g)

per litre of water by dipping the seeds for atleast 30 minutes to 1 hour. Treated seed to be dried in shade before sowing.

- In Old Alluvial Zone, prevailing weather condition is favourable for attack of sucking pests in chilli and cutworm in vegetables. To control sucking pests of chilli, spray with Acephate 50% + Imidachloropid 1.8% @ 2 g/litre of water. To Control Mustard sawfly larva, spray B.t. @ 1.5 g per litre water at evening hour.

- **Andaman and Nicobar Islands:**

- As rain/thundershowers likely at many places over Andaman and Nicobar Islands on 9th Dec., postpone irrigation, application of fertilizers and plant protection methods to standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation. Keep already harvested rice in safer places.
- In North, Middle & South Andaman, avoid application of any fertilizers and pesticides in the vegetable fields as moderate to heavy rain expected during next 24 hours. Drain out excess water from the vegetable fields.
- In Nicobar, make channel at coconut field to avoid soil erosion due to over flow of water.

- **Bihar:**

- In Araria, Katihar, Kishanganj, Madhepura, Purnea, Saharsa and Supaul districts in North East Alluvial Zone, complete sowing of wheat and maize. Undertake Thinning and weeding is recommended in timely sown mustard crop. Undertake earthing-up in potato if crop has attained a height of 15-22 cm. Undertake weeding in vegetables crops. Provide light irrigation in vegetables such as cauliflower, cabbage, tomato, pea, chilli, brinjal, garlic etc as per soil moisture status.
- In Darbhanga, East Champaran, Gopalganj, Samastipur, West Champaran districts of North West Alluvial Plain Zone, undertake land preparation for sowing of late sown wheat, and complete the sowing of gram & mustard. Undertake sowing of fodder crops such as Barseem and Oat and planting of potato and sugarcane. Undertake Weeding in vegetables crops. Provide light irrigation in vegetables such as cauliflower, cabbage, tomato, pea, chilli, brinjal, onion nursey, garlic etc as per soil moisture status.
- In South Bihar Alluvial Zone, complete the sowing of wheat. Before sowing seeds should be treated with Bavistin or Thiram @ 2-2.5 g per kilogram of seed. Undertake sowing of lentil and before sowing Seed treatment with Rhizobium and Phosphorus solubilising is advised. Undertake weeding and thinning in timely sown mustard and earthing-up in potato crop.

- **Jharkhand:**

- In South Eastern Plateau Zone, continue harvesting of matured rice. In harvested fields, continue land preparation and sowing of wheat, lentil, gram and cultivation of potato and green pea.
- In South Eastern Plateau Zone, now it is right and optimum time for nursery raising of Onion.
- In Central and North Eastern Plateau Zone, low land rice crop are at milky stage and this stage is susceptible to the attack of Gundhi bug. To control the insects, dusting of Chlorpyrifos/Quinolphos/Methyl Parathion dust @ 10 kg per acre is recommended.
- In South Eastern Plateau Zone, there may be attack of leaf eating and sucking pests in pigeon pea at flowering stage, for control, spray Monochrotophos @ 1 ml or Chlorpyrifos @ 1.5 ml per liter of water during evening time.
- In South Eastern Plateau Zone, green Pea crop is at vegetative stage and mostly are seen with the infestation of leaf eating insects due to variable weather condition and can be controlled by spraying of prepared concentration of neem or tobacco leaf extract diluted in the ratio of 1:10 liters or neem oil @ 5 ml per liter of water.
- In South Eastern Plateau Zone, green pea crop is mostly seen with the infestation of leaf eating insects and can be controlled by spraying of prepared concentration of neem or tobacco leaf extract diluted in the ratio of 1:10 liters or neem oil @ 5 ml per liter of water. Also attack of leaf eating insects have been increased in cucurbitaceous crops. Spray, Imidachlorpid @ 1g or Kung fu @ 2 ml per litre of water for control.
- In Western Plateau Zone, at existing weather condition, there is a chance of the attack of powdery mildew disease on green pea in which white powder appears on leaves and stem. To control this disease, spray Kairathen @ 1 ml per liter of water or Sulfex @ 3 gm per liter of water.
- Suitable varieties for sowing are given in Annexure III.

- ❖ **Animal Husbandry**

- In Odisha, animals should be given mineral mixture along with salt regularly and wheat grains, jaggery etc. may be provided @ 10%-20% in the daily ration during winter season to meet the energy requirement of the animals. 10% extra dry matter should be provided over and above the total requirement to fulfill the extra energy requirement in winter.
- In Jharkhand, weather is favourable for Foot and Mouth Disease (FMD), vaccinate FMD vaccine to the cattle with the consultation of veterinary doctor. Also due to decrease in temperature, PPR Disease may increase in goat & sheep, farmers are advised to vaccinate their animal with PPR vaccine @ 1ml S/C.
- In Old Alluvial Zone of West Bengal, keep animals in covered shed to protect from low temperature during night.

- ❖ **Pisciculture**

- In North Eastern Coastal Plain Zone of Odisha, as the winter is in the starting phase, there is a possibility of "EUS" disease in fish. Farmers are advised to apply 'Cifax' @ 400 ml mixed with 40 litre of water in one acre pond area as a preventive measure. The fishes should be fed daily with oil cake bran mixture at the rate of 2-3 % of their total biomass.

CENTRAL INDIA [M.P., CHHATTISGARH]



Maize



Cabbage



Mustard



Wheat

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Minimum Temperature:** Minimum temperatures are appreciably below normal (3.1°C to 5.0°C) at isolated places over East Madhya Pradesh; below normal (1.6°C to 3.0°C) at a few places over rest Madhya Pradesh and near normal over rest of the country region. The lowest minimum temperature of 4.4°C recorded at Damoh (East Madhya Pradesh) in the plains of the country.
- **Advisories:**
 - **Madhya Pradesh:**
 - As cold wave very likely at isolated places over north Madhya Pradesh on 9th & 10th Dec., it is advised to arrange for smoking around the fields during night, apply light and frequent irrigation/sprinkler irrigation in the evening to protect the crops from frost /cold injury. To protect young fruit plants from chilly winds, cover young fruit plants with straw/polythene sheets/gunny bags.
 - As dense fog very likely at isolated places over Madhya Pradesh from 9th to 11th December, monitor potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
 - In Indore and Ujjain districts, apply first irrigation at CRI stage in wheat and apply split dose of nitrogen. Apply irrigation in potato, pea, coriander and other vegetables as per requirement. Undertake earthing up in potato and repeat after 15 days.
 - In Nimar Valley Zone, continue nursery preparation for onion.
 - In Gwalior, Bhind, Morena, Guna, Ashoknagar and Shivpuri districts, complete sowing of wheat. Apply irrigation in vegetables and in wheat after 20-21 days of sowing.
 - In Chhindwara and Betul districts, continue nursery preparation for tomato, chilli, brinjal, cabbage, cauliflower and sowing of garlic, cumin, coriander etc. Apply irrigation in wheat at CRI stage. Continue sowing of late varieties of wheat and gram.
 - In Vindhya Plateau Zone, continue nursery preparation for winter vegetables like brinjal, chilli, cabbage, cauliflower, tomato and onion. Apply irrigation in early sown gram and wheat.
 - In Tikamgarh, Chhatarpur and Datia districts, undertake sowing of late varieties of wheat in irrigated areas. Apply irrigation in vegetables, mustard and wheat at crown root initiation stage. Continue earthing up in potato. Undertake weeding and hoeing in onion and garlic.
 - In Jhabua, Alirajpur and Dhar districts, continue transplanting of vegetables. Continue sowing of wheat, garlic and planting of potato. Continue picking up of matured bolls of cotton. Apply irrigation in early sown wheat and vegetables.
 - In Jabalpur, Rewa, Satna districts, continue sowing of wheat, mustard, gram, lentil and pea. Apply irrigation in vegetables, mustard and in wheat at CRI stage.
 - In Bundelkhand Zone, early transplanted chilli and tomato crops may be affected by leaf curl (churra-murra) disease, spray Methyl Dematon 25 E.C. @ 2.0 ml or Imidachloprid @ 0.5 ml per litre of water.
 - In Vindya Plateau Zone, due to partly cloudy weather there are chances of attack of sucking pests in vegetables, spray Emidachloprid 17.8 SL @ 1ml/3 litres of water.
 - **Chhattisgarh:**
 - In North Hill Zone, continue transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal etc. Continue sowing of late varieties of chickpea and leafy vegetables. Apply irrigation in wheat after 20-25 days of sowing. Apply light irrigation in potato and tomato and undertake earthing up in potato. Undertake planting of autumn sugarcane.
 - In Chhattisgarh Plain Zone, continue nursery sowing of cauliflower, cabbage, KnolKhol, tomato, brinjal, chillies and capsicum. Continue sowing of pulses and oilseeds. Complete sowing of early varieties of wheat by 10th December.
 - In Bastar Plateau Zone, continue sowing of sweet potato. Apply irrigation in wheat at CRI stage.
 - In North Hill Zone, due to partly cloudy weather during last few days, there are chances of infestation of pod borer in pigeon pea, spray Endoxacarb @ 300 ml/ha.
 - Suitable varieties for sowing are given in Annexure III.
 - ❖ **Animal Husbandry**
 - In north Madhya Pradesh, in view of the prevailing cold wave conditions, keep animals in sheds during night hours and cover the floor with paddy straw litter to protect from cold. Increase protein level and minerals in the

feed concentrate to keep the animals healthy. Provide artificial light during night time in poultry house.

- In Chhattisgarh, keep animals in shed during night hours, cover the floor with paddy straw litter to protect from cold.

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



Mustard



Maize



Cauliflower



Wheat

- **Realised Rainfall:** Weather remained dry over the region.
- **Realised Minimum Temperature:** Minimum temperatures are below normal (1.6°C to 3.0°C) at isolated places over Jammu & Kashmir. They are markedly above normal (5.1°C or more) at isolated places over West Rajasthan; appreciably above normal (3.1°C to 5.0°C) at isolated places over Uttarakhand; above normal (1.6°C to 3.0°C) at many places over Himachal Pradesh, Punjab & rest Rajasthan and at isolated places over Uttar Pradesh and near normal over rest of the region.
- **Advisories:**
 - As dense fog very likely at isolated places over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and at a few places over East Uttar Pradesh from 9th to 11th December, monitor potato, tomato and onion crops for early blight disease. If symptoms are noticed undertake plant protection measures.
 - **Rajasthan:**
 - In East Rajasthan, in Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, undertake sowing of late sown wheat, suitable time for late sowing of wheat is first to third week of December. Apply first irrigation in barely at 30-35 days after sowing and in mustard crop at 35-40 days. Continue weeding and hoeing operation in vegetables and fruit orchards.
 - In Dungarpur and Banswara districts of Southern Humid Plain Zone, undertake sowing of wheat. Treat the seeds with Carboxin+Thiram (1:1) @ 1.5 g/kg seed for control of smut and with Chlorpyrifos 20 EC @ 4.5 ml/kg seed for control of termite in wheat crop.
 - In Arid Western Plain Zone, in Barmer, Churu, Jalore, Jodhpur, Pali districts, apply first irrigation to jou crop at 20 to 25 days after sowing. Undertake hoeing and weeding operation in mustard crop. In Jaisalmer and Bikaner districts, continue sowing of wheat and barley. Apply first irrigation in mustard at 25 days with remaining dose of nitrogen and in gram at 40-45 days. Apply light irrigation to cumin crop as per requirement.
 - In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, continue sowing of late sown wheat. Treat the seeds with Mencozeb @ 2 g or Thiram @ 3 g and Fipronil 5 SC @ 6 ml per kg of seed before sowing. Apply first irrigation in mustard crop at 30 to 35 days after sowing and in gram at 40-50 days after sowing.
 - In Irrigated North Western Plain Zone, Hanumangarh and Sriganganagar, complete sowing of timely sown wheat and gram crop. Apply first irrigation to wheat crop 21-25 days after sowing and in mustard crop at 35 to 40 days after sowing and in jou crop at 25 to 30 days after sowing.
 - In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, prevailing weather condition is congenial for attack of aphid in mustard and barely crop, for control dusting of Malathion 2% @ 25 kg per hectare. If, facility of water exists, then spray Malathion 50 EC @ 1 ml per litre of water.
 - In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, prevailing weather condition is congenial for attack of mustard saw fly, leaf eaters and cabbage butter fly in cauliflower and cabbage, for control spray Malathion 5% or Carbaryl 5% dust @ 20-25 kg per hectare or spray Malathion 50 EC @ 1 ml per litre of water.
 - In Arid Western Plain Zone, in Barmer, Churu, Jalore, Jodhpur, Pali districts, prevailing weather condition is congenial for attack of wilt disease in cumin crop for control spray Mancozeb @ 2 gm per litre of water after 30 days of sowing.
 - In East Rajasthan, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, prevailing weather condition is congenial for attack of shoot fly and termite in wheat crop for control shootfly spray Monocrotophos 36 SL @ 500 ml, for control termites in standing crop of wheat apply Chlorpyrifos 20 EC @ 4 litres per hectare with irrigation.
 - In East Rajasthan, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, prevailing weather condition is congenial for attack of bagrada infestation, painted bug and saw fly in late sown mustard crop for control bagrada dusting of Methyl Parathion @ 25 kg per hectare and for control of painted bug and saw fly spray Methyl Parathion 2% or Carbaryl 5% dust @ 20 to 25 kg per hectare.

▪ **Jammu & Kashmir:**

- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, farmers are advised to go for one hoeing to control weeds, where the wheat crop is one month old. Undertake transplanting of late cauliflower and onion. Give sprinkle irrigation after next day of sowing/ transplanting. Undertake sowing of garlic. Undertake first cut of Berseem where the crop is 40-45 days old. Irrigate the crop after each cut. Give irrigation regularly every 3-4 days interval to all leafy vegetables.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, continue sowing of late varieties of wheat (WH-1021, PBW-590, PBW-373, Raj-3077, Raj-3765 DBW-1) under irrigated conditions and mustard (var. Kranti) in irrigated areas. Irrigate early sown mustard crop at 35-40 days of sowing. Apply 1st dose of nitrogen fertilizer as top dressing after irrigation. Continue sowing of lentil. Give weeding, hoeing and earthing up followed by irrigation in potato.
- In Valley Temperate Zone of Jammu and Kashmir, Continue planting of garlic and pran. Continue planting of healthy bulbs of onion for seed production. Provide drainage channels in the fields as there is possibility of accumulation of water in the field. Avoid stagnation of water in saffron field.

▪ **Uttarakhand:**

- In Udhampur district of Bhabar and Tarai Zone, in timely sown wheat, first irrigation should be given after 20-25 days of sowing. Weeding and hoeing is necessary two times in the timely sown gram crop. First weeding and hoeing should be done after 25-30 days of sowing and second 45-50 days after sowing and after first irrigation. Sowing of lentil should be completed up to 15th of December. Undertake harvesting of arhar and cauliflower during the week. Sowing of coriander should be continued. If moisture is not available in the field then pre sowing-irrigation should be given. Light irrigation should be given to cauliflower. Complete transplanting of late season variety of cauliflower by this week.
- In Nainital district of Bhabar and Tarai Zone, continue sowing of wheat. Complete sowing of pea, fenugreek, spinach and coriander. In valley, to save the potato from frost timely irrigation should be applied at required interval. Complete transplanting of seedlings of hilly variety of onion in irrigated valley. In hilly areas, if rai vegetable is transplanted earlier in the polyhouses then hoeing should be done after top dressing of Urea in proper moisture condition.
- In Udhampur district of Bhabar and Tarai Zone, there may be occurrence of Mahu in mustard crop, spraying of 1 liter of Methyl-O-Demeton 25 EC in 800-1000 liter of water should be done. Spraying should be done after 02:00 PM.
- In Tehri Garhwal, Chamoli, Champawat, Pithoragarh, Rudrapur and Uttarkashi districts of Hill Zone, complete sowing of wheat, gram, mustard and lentil at the earliest. Give first irrigation to wheat crop after 21-25 days of sowing. Continue transplanting of nursery of onion crop. Cover nursery of onion crop with grass to protect from frost and cold injury.
- In Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone, considering the favourable low temperature, undertake sowing of medium duration varieties of wheat. Complete sowing of spinach, radish, carrot etc. Give irrigation to potato crop to avoid damage due to avoid excess water on tubers. Undertake nursery sowing of tomato and onion crop where irrigation facility is available.

▪ **Himachal Pradesh:**

- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, complete late sowing of wheat crop. Undertake sowing of radish, carrot, turnip, palak, methi, carrot, broccoli, lettuce and Chinese cabbage, cauliflower (late group), Knol Khol, broccoli and ageti peas in mid hill areas of the State. Complete planting of potato in lower and mid hill regions. Continue thinning and weeding operation in timely sown mustard crop and apply irrigation 35 days after sowing. Undertake intercultural operations & weed control in sarson saag, bathua, radish, spinach, fenugreek, coriander, turnip, apply mulch and well rotten FYM on these crops. Treat the soil for cut worm before nursery sowing of vegetables. Drench the nursery beds with 2.5 ml Chlopyrifos per litre of water.
- In Mid Hills Sub-Humid Zone of Himachal Pradesh, in Bilaspur, Solan, Shimla and Sirmaur districts, undertake transplanting of onion nursery in field at a distance of 15 X 10 cm. Undertake hoeing and weeding operation in garlic crop.
- In High Hills Temperate Dry Zone of Himachal Pradesh, in Kinnaur and Lahaul & Spiti, undertake preparation of the basin and remove the weeds in apple orchards.
- In Mild Hills Sub-Humid Zone of Himachal Pradesh, in Kullu and Mandi districts, apply Blitox or Copper Hydroxide @ 600 g per 200 litre of water after harvesting apple orchards and apply Blitox @ 600 g per 200 litres of water or Bourdeaux mixture (1%) after harvesting Pomegranate orchards.
- In Sub-Montane and Low Hills Sub-Tropical Zone, in Una, Hamirpur, Kangra and Chamba districts, present weather is conducive for attack of damping off disease in vegetable crop for control apply Dithane M 45 dust @ 10-15 g in 1X3 metre beds. For control of powdery mildew in peas, spray Celfex @ 25 g per 10 litres of water or Karathane @ 5 ml per 10 litres of water.

▪ **Punjab, Haryana and Delhi:**

- In Western Zone of Punjab, apply first irrigation in wheat crop after four weeks of sowing. On light textured soils, first irrigation should be advanced by one week. Apply second dose of 55 kg urea per acre with first irrigation. Under late sown conditions, short duration varieties PBW 658 and PBW 590 should be sown for wheat

sown after 15th December. For the control of loose smut and flag smut in late sown wheat, treat the seed in seed treating drum with Raxil Easy/Orius 6 FS @ 13ml or Vitavax Power @ 120g or Vitavax @ 80g or Seedex 2 DS/Exzole 2 DS @ 40g per 40kg seed before sowing. Continue transplanting of 4-6 weeks old seedlings of cabbage, mid season cauliflower, chinese cabbage and broccoli. Continue sowing of English radish, turnip, carrot, tomato and chilli and seed bed preparation for onion. Apply light irrigation in onion after 10 days of sowing.

- In Faridkot and Ferozepur districts of Punjab, complete sowing of wheat till 15th of December. The early wheat crop sown around 1st November may reach to CRI growth stage, apply light irrigation at this stage. Undertake planting of potato. Intercropping of wheat, raya, toria, gobhisarson, pea, gram, potato, cabbage, radish, garlic etc. can be done with the sugarcane crop.
- In Gurdaspur and Hoshiarpur districts, complete sowing wheat and maize. Complete transplanting of cauliflower and cabbage. Irrigate the vegetable crops at regular interval as per crop need as dry weather is expected in coming days.
- In Rup Nagar district of Sub Montane Undulating Zone of Punjab, complete sowing of wheat, gram, taramira, raya and lentil. Undertake sowing of pea, garlic and coriander.
- In Central Plain Zone of Punjab, for sowing of wheat under late sown conditions, short duration varieties PBW 658 and PBW 590 should be sown. Treat the seed with Raxil Easy/Orius 6 FS @ 13ml or Vitavax Power @ 120g or Vitavax @ 80g or Seedex 2 DS/Exzole 2 DS @ 40g per 40kg seed before sowing.
- In Western Zone of Haryana, continue sowing of wheat under optimum soil moisture condition. Give first irrigation to timely sown wheat after 20 days of sowing. Weather is favourable for sowing of barley crop in the region.
- In Eastern Zone of Haryana, continue sowing of wheat. Complete harvesting of matured rice crop. Apply irrigation in vegetables and sugarcane as per requirement. Continue harvesting of early varieties of sugarcane.
- In Western Semi-Arid Zone of Delhi, complete sowing of wheat in prepared fields at optimum soil moisture conditions with seed rate of 100-125 kg seed per hectare (Recommended cultivars: - H.D. 2687, H.D. 2851, H.D. 2894, H.D. 2967, H.D. 3086, D.B.W.-17). Before sowing seeds should be treated with Bavistin or Thiram @ 2-2.5 g per kilogram of seed. Keeping in view of dry weather conditions, farmers are advised to irrigate wheat crop which is in CRI stage (21-25 days after sowing). After 3-4 days of irrigation, second dose of nitrogen should be broadcasted in the field. In timely sown mustard crop farmers are advised to do thinning and weeding. If mustard crop is 35-40 days old, farmers are advised to apply irrigation as there is no rain forecast for the next five days. Undertake monitoring of mustard crop against attack of painted bug. If attack is severe than, spraying of Carbaryl (Sevin) 2 gram/litre of water is advised.
- In Central Plain Zone and in Gurdaspur and Hoshiarpur districts of Undulating Plain Zone, foggy weather condition is conducive for incidence of late blight on potato. To protect the potato from late blight, spray the crop with Indofil M-45/Mass M-45/Markzeb/Antracol/ Kavach @ 500- 700 g or Copper Oxychloride 50 WP/Mark copper @ 750- 1000 g/acre in 250- 350 litres of water before the appearance of disease followed by 5 more sprays at 7 days interval. Under heavy disease situation instead of 3rd and 4th spray of Indofil M-45/Mass M-45/Markzeb/Antracol/Kavach give two sprays of Revus 250 SC @ 250 ml or Melody duo or Ridomil Gold or Curzate M-8 or Sectin 60 WG @ 700g or Equation Pro @ 200 ml per acre at 10 days interval.

▪ **Uttar Pradesh:**

- In Central Plain Zone of Uttar Pradesh, continue sowing of wheat and lentil. Continue nursery sowing of onion. Continue hoeing and weeding operation in mustard 15 to 20 days after sowing and in timely sown pea and gram 20 to 25 days after sowing. Apply light irrigation in mustard after 30 to 35 days of sowing. Apply light irrigation in toria, potato and in long duration pigeon pea crop. Continue intercultural operation followed by irrigation after 20-25 days of sowing in winter maize.
- In Eastern Plain Zone of Uttar Pradesh, continue sowing of wheat. Continue transplanting of late sown cabbage, cauliflower and sowing of rabi onion.
- In Western Plain Zone of Uttar Pradesh, Continue transplanting of mature seedlings of tomato, cauliflower, cabbage, knollkhol and broccoli crop in the raised bed. Continue earthing up potato crop. Weather is suitable for sowing of rabi onion. Seed rate- 10 kg/ha, before sowing seeds should be treated with Captan @ 2.5 g/ kg of seeds. Continue weeding and thinning operation in timely sown mustard crop. Apply irrigation in wheat crop which is at CRI stage (21-25 days after sowing). After 3-4 days of irrigation second dose of nitrogen should be broadcast in the field.
- In Bundelkhand Zone of Uttar Pradesh, undertake sowing of late sown wheat. Treat seeds with Thiram @ 2 gm, Chloropyrifos @ 3 mg per kg of seeds. Apply irrigation in wheat crop at CRI stage (after 18 – 21 days of sowing). Apply irrigation to gram, lentil, pea as per requirement. Undertake thinning operation in mustard crop. Undertake nursery sowing of brinjal, chilli, tomato, cabbage, cauliflower and sowing of spinach, fenugreek, radish, cabbage, carrot, coriander.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of mosaic in tomato and chilli, for control spray Mancozeb 0.2% @ 2g per litre of water.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of powdery mildew in pea crop, for control, broadcast Sulphur 80% @ 2 kg or Trico derma 80% EC @ 500 ml in 600 to 700 litres of water per hectare.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of attack

of cut worm in gram crop, for control, spray Chloripyriphos 20% EC @ 2.5 litre in 500 to 600 litres of water per hectare.

- In Western Plain Zone of Uttar Pradesh, to prevailing weather condition, there may be chances of attack of painted bug in mustard crop, for control spraying of Carbaryl (Sevin) @ 2 g/litre of water.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of blight in gram crop, for control spray Zinc Manganese Carbamate @ 20 kg per 1000 litres of water.
- Suitable varieties for sowing are given in Annexure III.

❖ **Horticulture**

- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit fall in ber, for control spray Super fix harmonics @ 1ml per 4.5 litre of water per tree.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of milibug in Mango and Litchi trees. For control, dust Methyl Parathion @ 250 g per tree.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit fall in ber, for control spray Super fix harmonics @ 1ml per 4.5 litre of water per tree.
- In Central Plain Zone of East Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of milibug in Mango and Leachi trees for control dust Methyl Parathion @ 250 g per tree.
- In Punjab, it is the right time for layout, preparation of fields (digging and filling of pits) for planting deciduous fruit plants in January. The young and newly planted fruit plants should be covered with thatches or kullies made of sarkanda or farm waste materials to protect them from cold damage. The South-West side should be left open to allow sufficient sunlight. In Gurdaspur and Hoshiarpur districts of Punjab, irrigate young fruit plants and orchard trees at regular interval for proper growth and to avoid adverse effects of low temperature.
- In Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone, prevailing weather condition is congenial for attack of pomegranate butter fly in Aonla trees at fruiting stage, for control spray Carbaryl 50 WP 2-4 gm @ 1 ml per litre of water. This butterfly causes rotting of Aonla fruits.
- In Himachal Pradesh present weather is conducive for the attack of leaf minor in new growth of citrus, for control spray Matasystox or Malathion @ 10 ml in 10 litres of water.
- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, farmers are advised to go for preparation of nursery beds and sowing of seeds for raising of root stocks of stone fruits like peach, plum, apricot, almond walnut and peacan nut. As dry weather is prevailing give irrigation to orchads.

❖ **Floriculture**

- In Himachal Pradesh, present weather is conducive for the attack of blue beetle in roses and balsam, for control spray Endosulfan @ 0.1% or Cypermethrin @ 0.05%.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, spray chrysanthemum with Bavistin or DM-45 @ 1g/litre or 2g/litre respectively to protect from fungal diseases.

❖ **Apiculture**

- In Himachal Pradesh, give the winter packing immediately to bee colonies. Check the colonies for nector and give artificial food to honey bees as there is scarcity of flowers during these days. And keep colonies in sun on clear day.
- In Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone, give sugar feeding (1:1). Migrate colonies to areas having floral resources (near toria/vegetable crops). Provide winter packing to bee colonies to protect them from cold. Reduce the entrance. Sulphur dusting/oxalic acid spray @ 3.5% in one litre of water is recommended at fortnight intervals to control ectoparasitic mites.
- In Rajouri, Ramban, Poonch and Udhampur districts of Jammu & Kashmir, farmers are advised to miigrate the honey bee colonies from hilly regions to plains to avoid mortality due to decline in temperature.

❖ **Animal Husbandry**

- In Rajasthan, due to cold winds milch and baby animals are likely to be affected with infection of respiratory tracts. If symptoms like droppings from nose, fever etc. are observed in animals, 3 days course of Ciprofloxacin, Anorflaxin or Sulpha may be given under the guidance of Veterinary Doctor.
- In High Hills Temperate Dry Zone of Himachal Pradesh, protect the newly born calves and animals from cold. Feed pregnant and lactating cows and buffalos with balance feed including mineral mixture. For milch animals follow schedule of 1 kg feed+50g mineral mixtures per 2 litres of milk. Ensure to give 50 g mineral mixture to animals daily. Ensure cleanliness in cows having advanced pregnancy to avoid mastitis.
- In Punjab, keep the animals in dry place and change the bedding material as and when required. Newly born calves need special care during cold weather as they are susceptible to attack of pneumonia. Keep the animals under shed at night time. The energy content of the concentrate mixture should be increased by 5-10 % where the protein in the concentrate can be reduced by 2-3 per cent during cold season. Get all the animals vaccinated against Foot and Mouth disease (FMD).
- In Jammu & Kashmir, calcium should be supplemented in the diet of dairy animal as rice straw feeding leads to depletion of Ca levels in the blood thereby reduces milk yield and general health condition. Deworming of all livestock needs to be done against helminths using fenbendazole or closantel. Put some bedding material like puaal etc. to keep animals

❖ **Poultry**

- In Himachal Pradesh, replace the poultry houses with fresh litter to avoid wetting and keep the houses clean and

ensure clean drinking water to the birds. Protect the birds from cold and increase the feed by 10%. For the attack of cocksedia disease consult the nearby veterinarian. Temperature is falling so farmers are advised to make the arrangements for protection of cold in the poultry houses.

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

Annexure I

Week by week Rainfall Distribution

Sub-Divisions	23.11.16		30.11.16		07.12.16	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	0.0	-100	0.0	-100	0.0	-100
Dibang Valley	0.0	-100	0.0	-100	0.0	-100
East Kameng	0.0	-100	0.0	-100	0.0	-100
East Siang	0.0	-100	0.0	-100	0.0	-100
Kurung Kumey	**	**	**	**	**	**
Lohit	0.6	-100	0.0	-100	0.3	-97
Lower Dibang Valley	0.0	-100	0.0	-100	0.0	-100
Lower Subansari	**	**	**	**	**	**
Papumpare	0.0	-100	0.0	-100	0.0	-100
Tawang	0.0	-100	0.0	-100	9.0	157
Tirap	0.0	-100	0.0	-100	0.0	-100
Upper Siang	0.0	-100	0.0	-100	0.0	-100
Upper Subansari	0.0	-100	0.0	-100	0.8	-11
West Kameng	0.0	-100	0.0	-100	0.0	-100
West Siang	0.0	-100	0.0	-100	0.0	-100
Assam&Meghalaya						
Assam						
Baksa	0.0	-100	0.0	-100	0.0	-100
Barpeta	0.0	-100	0.0	-100	0.0	-100
Bongaigaon	0.0	-100	0.0	-100	0.0	-100
Cachar	0.0	-100	0.0	-100	0.0	-100
Chirang	0.0	-100	0.0	-100	0.0	-100
Darrang	**	**	**	**	**	**
Dhemaji	0.0	-100	0.0	-100	0.0	-100
Dhubri	0.0	-100	0.0	-100	0.0	-100
Dibrugarh	0.0	-100	0.0	-100	0.0	-100
Goalpara	0.0	-100	0.0	-100	0.0	-100
Golaghat	0.0	-100	0.0	-100	0.0	-100
Hailakandi	0.0	-100	0.0	-100	0.0	-100
Jorhat	0.0	-100	0.0	-100	0.0	-100
Kamrup(Rural)	0.0	-100	0.0	-100	0.0	-100
Kamrup(Metro)	0.0	-100	0.0	-100	0.0	-100
Karbi Anglong	0.0	-100	0.0	-100	0.0	-100
Karimganj	0.0	-100	0.0	-100	0.0	-100

Kokrajhar	0.0	-100	0.0	-100	0.0	-100
Lakhimpur	0.0	-100	0.0	-100	0.0	-100
Morigaon	0.0	-100	0.0	-100	0.0	-100
N.C.Hills	0.0	-100	0.0	-100	0.0	-100
Nagaon	0.0	-100	0.0	-100	0.0	-100
Nalbari	0.0	-100	0.0	-100	0.0	-100
Sonitpur	0.0	-100	0.0	-100	0.0	-100
Sibsagar	0.0	-100	0.0	-100	0.0	-100
Tinsukia	0.0	-100	0.3	-94	0.0	-100
Udalgiri	0.0	-100	0.0	-100	0.0	-100
Meghalaya						
East Garo Hills	0.0	-100	0.0	-100	0.0	-100
East Khasi Hills	0.0	-100	1.3	-86	0.0	-100
Jaintia Hills	0.0	-100	0.0	-100	0.0	-100
Ribhoi	0.0	-100	0.0	-100	0.1	-94
South Garo Hills	0.0	-100	0.0	-100	3.0	900
West Garo Hills	0.0	-100	0.0	-100	0.0	-100
West Khasi Hills	0.0	-100	0.0	-100	0.0	-100
NMMT						
Mizoram						
Aizwal	0.0	-100	0.0	-100	0.0	-100
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	0.0	-100
Lawngtlai	**	**	**	**	**	**
Lunglei	0.0	-100	0.0	-100	0.0	-100
Mamit	**	**	**	**	**	**
Saiha	0.0	-100	0.0	-100	**	**
Serchhip	0.0	-100	0.0	-100	**	**
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	0.0	-100	0.0	-100	**	**
Churachandpur	**	**	**	**	0.0	-100
Imphal east	0.0	-100	0.0	-100	**	**
Imphal west	0.0	-100	0.0	-100	0.0	-100
Senapati	**	**	**	**	0.0	-100
Tamenglong	**	**	**	**	0.0	-100
Thoubal	0.0	-100	0.0	-100	**	**
Ukhrul	**	**	**	**	0.0	-100
Nagaland						
Dimapur	0.0	-100	0.3	-80	0.0	-100
Kephire	0.0	-100	0.0	-100	**	**
Kohima	0.0	-100	0.0	-100	0.0	-100
Longleng	**	**	**	**	0.0	-100
Mokokchung	0.0	-100	0.0	-100	0.0	-100
Mon	**	**	**	**	**	**
Paren	**	**	**	**	0.0	-100
Phek	0.0	-100	0.0	-100	0.0	-100
Tuensang	**	**	**	**	0.0	-100
Wokha	0.0	-100	0.0	-100	0.0	-100

Zunheboto	**	**	**	**	0.0	-100
Tripura						
Dhalai	0.0	-100	0.0	-100	**	**
NorthTripura	0.0	-100	0.0	-100	**	**
SouthTripura	0.0	-100	0.0	-100	**	**
West Tripura	0.0	-100	0.0	-100	0.0	-100
Himachal Pradesh						
Bilaspur	0.0	-100	0.0	-100	0.0	-100
Chamba	0.0	-100	0.0	-100	0.0	-100
Hamirpur	0.0	-100	0.0	-100	0.0	-100
Kangra	0.0	-100	0.0	-100	0.0	-100
Kinnaur	0.0	-100	0.0	-100	0.0	-100
Kullu	0.0	-100	0.0	-100	0.0	-100
Lahaul and Spiti	0.0	-100	0.0	-100	0.0	-100
Mandi	0.0	-100	0.0	-100	0.0	-100
Shimla	0.0	-100	0.0	-100	0.0	-100
Sirmaur	0.0	-100	0.0	-100	0.0	-100
Solan	0.0	-100	0.0	-100	0.0	-100
Una	0.0	-100	0.0	-100	0.0	-100
Punjab						
Amritsar	0.0	-100	0.0	-100	0.0	-100
Barnala	0.0	-100	0.0	-100	0.0	-100
Bhatinda	0.0	-100	0.0	-100	0.0	-100
Faridkot	0.0	-100	0.0	-100	0.0	-100
Fatehgarh Saheb	0.0	-100	0.0	-100	0.0	-100
Ferozpur	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	0.0	-100	0.0	-100	0.0	-100
Hoshiarpur	0.0	-100	0.0	-100	0.0	-100
Jalandhar	0.0	-100	0.0	-100	0.0	-100
Kapurthala	0.0	-100	0.0	-100	0.0	-100
Ludhiana	0.0	-100	0.0	-100	0.0	-100
Mansa	0.0	-100	0.0	-100	0.0	-100
Moga	0.0	-100	0.0	-100	0.0	-100
Muktesar	0.0	-100	0.0	-100	0.0	-100
Nawashahar	0.0	-100	0.0	-100	0.0	-100
Patiala	0.0	-100	0.0	-100	0.0	-100
Ropar	0.0	-100	0.0	-100	0.0	-100
Sangrur	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Bhiwani	0.0	-100	0.0	-100	0.0	-100
Chandigarh	0.0	-100	0.0	-100	0.0	-100
Faridabad	0.0	-100	0.0	-100	0.0	-100
Fatehabad	0.0	-100	0.0	-100	0.0	-100
Gurgaon	0.0	-100	0.0	-100	0.0	-100
Hissar	0.0	-100	0.0	-100	0.0	-100

Jhajar	0.0	-100	0.0	-100	0.0	-100
Jind	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Mewat	0.0	-100	0.0	-100	0.0	-100
Palwal	0.0	-100	0.0	-100	0.0	-100
Panchkkula	0.0	-100	0.0	-100	0.0	-100
Panipat	0.0	-100	0.0	-100	0.0	-100
Rewari	0.0	-100	0.0	-100	0.0	-100
Rohtak	0.0	-100	0.0	-100	0.0	-100
Sirsa	0.0	-100	0.0	-100	0.0	-100
Sonepat	0.0	-100	0.0	-100	0.0	-100
Yamunanagar	0.0	-100	0.0	-100	0.0	-100
Delhi						
Central Delhi	0.0	-100	0.0	-100	0.0	-100
East Delhi	0.0	-100	0.0	-100	0.0	-100
New Delhi	0.0	-100	0.0	-100	0.0	-100
North Delhi	0.0	-100	0.0	-100	0.0	-100
North East Delhi	0.0	-100	0.0	-100	0.0	-100
North West Delhi	0.0	-100	0.0	-100	0.0	-100
South Delhi	0.0	-100	0.0	-100	0.0	-100
South West Delhi	0.0	-100	0.0	-100	0.0	-100
West Delhi	**	**	**	**	**	**
Jammu & Kashmir						
Anantnag	0.0	-100	0.0	-100	0.1	-98
Badgam	0.0	-100	0.0	-100	0.0	-100
Bandipore	**	**	**	**	**	**
Baramula	0.0	-100	0.2	-98	0.0	-100
Doda	0.0	-100	0.0	-100	0.0	-100
Ganderbal	0.0	-100	0.0	-100	0.0	-100
Jammu	0.0	-100	0.0	-100	0.0	-100
Kargil	**	**	**	**	**	**
Kathua	0.0	-100	0.0	-100	0.0	-100
Kistwar	**	**	**	**	**	**
Kulgam	0.0	-100	0.0	-100	0.0	-100
Kupwara	0.0	-100	0.0	-100	0.0	-100
Ladakh(Leh)	0.0	-100	0.0	-100	0.0	-100
Poonch	**	**	**	**	**	**
Pulwama	0.0	-100	0.0	-100	0.0	-100
Rajouri	0.0	-100	0.0	-100	0.0	-100
Ramban	0.0	-100	0.0	-100	0.0	-100
Reasi	0.0	-100	0.0	-100	0.0	-100
Samba	0.0	-100	0.0	-100	0.0	-100
Shopian	**	**	**	**	**	**
Srinagar	0.0	-100	0.0	-100	0.0	-100
Udhampur	0.0	-100	0.0	-100	0.0	-100

East Madhya Pradesh						
Anuppur	0.0	-100	0.0	-100	0.0	-100
Balaghat	0.0	-100	0.0	-100	0.0	-100
Chhatarpur	0.0	-100	0.0	-100	0.0	-100
Chindwara	0.0	-100	0.0	-100	0.0	-100
Damoh	0.0	-100	0.0	-100	0.0	-100
Dindori	0.0	-100	0.0	-100	0.0	-100
Jabalpur	0.0	-100	0.0	-100	0.0	-100
Katni	0.0	-100	0.0	-100	0.0	-100
Mandla	0.0	-100	0.0	-100	0.0	-100
Narsingpur	0.0	-100	0.0	-100	0.0	-100
Panna	0.0	-100	0.0	-100	0.0	-100
Rewa	0.0	-100	0.0	-100	0.0	-100
Sagar	0.0	-100	0.0	-100	0.0	-100
Satna	0.0	-100	0.0	-100	0.0	-100
Seoni	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100
Umaria	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100
Bhind	0.0	-100	0.0	-100	0.0	-100
Bhopal	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100
Harda	0.0	-100	0.0	-100	0.0	-100
Hoshangabad	0.0	-100	0.0	-100	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						
Balod	0.0	-100	0.0	-100	0.0	-100
Baloda Bazar	0.0	-100	0.0	-100	0.0	-100
Balrampur	0.0	-100	0.0	-100	0.0	-100
Bastar	0.0	-100	0.0	-100	0.0	-100
Bemetara	0.0	-100	0.0	-100	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	0.0	-100	0.0	-100	0.0	-100
Dantewara	0.0	-100	0.0	-100	0.0	-100
Dhamtari	0.0	-100	0.0	-100	0.0	-100
Durg	0.0	-100	0.0	-100	0.0	-100
Gariaband	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.0	-100	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100
Kabirdham	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100
Kondagaon	0.0	-100	0.0	-100	0.0	-100
Korba	0.0	-100	0.0	-100	0.0	-100
Koriya	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100
Mungeli	0.0	-100	0.0	-100	0.0	-100
Narayanpur	0.0	-100	0.0	-100	0.0	-100
Raigarh	0.0	-100	0.0	-100	0.0	-100
Raipur	0.0	-100	0.0	-100	0.0	-100
Rajnandgaon	0.0	-100	0.0	-100	0.0	-100
Sukma	0.0	-100	0.0	-100	0.0	-100
Surajpur	0.0	-100	0.0	-100	0.0	-100
Surguja	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	0.0	-100
Gazipur	0.0	-100	0.0	-100	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	-100	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	0.0	-100	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	0.0	-100	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	0.0	-100	0.0	-100
Sahuji Maharajnagar	0.0	-100	0.0	-100	0.0	-100
Sant Kabirnagar	0.0	-100	0.0	-100	0.0	-100
Sant Ravidas Nagar	0.0	-100	0.0	-100	0.0	-100
Shrawasti	**	**	**	**	**	**
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	0.0	-100	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	0.0	-100	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	0.0	-100	0.0	-100
Jalaun	0.0	-100	0.0	-100	0.0	-100
Jhansi	0.0	-100	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Moradabad	0.0	-100	0.0	-100	0.0	-100
Muzaffarnagar	0.0	-100	0.0	-100	0.0	-100
Pilibhit	0.0	-100	0.0	-100	0.0	-100
Rampur	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Bageshwar	0.0	-100	0.0	-100	0.0	-100
Chamoli	0.0	-100	0.0	-100	0.0	-100
Champawat	0.0	-100	0.0	-100	0.0	-100
Dehradun	0.0	-100	0.0	-100	0.0	-100
Garhwal Pauri	0.0	-100	0.0	-100	0.0	-100
Garhwal Tehri	0.0	-100	0.0	-100	0.0	-100
Haridwar	0.0	-100	0.0	-100	0.0	-100
Nainital	0.0	-100	0.0	-100	0.0	-100
Pithorgarh	0.0	-100	0.0	-100	0.0	-100
Rudraprayag	0.0	-100	0.0	-100	0.0	-100
Udham Sing Nagar	0.0	-100	0.0	-100	0.0	-100
Uttarkashi	0.0	-100	0.0	-100	0.0	-100
Bihar						
Araria	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100
Bhojpur	0.0	-100	0.0	-100	0.0	-100
Buxar	0.0	-100	0.0	-100	0.0	-100
Darbhanga	0.0	-100	0.0	-100	0.0	-100
East Champaran	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100
Khagadia	0.0	-100	0.0	-100	0.0	-100
Kishanganj	0.0	-100	0.0	-100	0.0	-100
Lakhisarai	0.0	-100	0.0	-100	0.0	-100
Madhepura	0.0	-100	0.0	-100	0.0	-100
Madhubani	0.0	-100	0.0	-100	0.0	-100
Monghyar	0.0	-100	0.0	-100	0.0	-100
Muzaffarpur	0.0	-100	0.0	-100	0.0	-100
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	0.0	-100	0.0	-100
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	0.0	-100
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	0.0	-100
Deoghar	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Garhwa	0.0	-100	0.0	-100	0.0	-100
Giridih	0.0	-100	0.0	-100	0.0	-100
Godda	0.0	-100	0.0	-100	0.0	-100
Gumla	0.0	-100	0.0	-100	0.0	-100
Hazaribagh	0.0	-100	0.0	-100	0.0	-100
Jamtara	**	**	**	**	**	**
Khunti	0.0	-100	0.0	-100	0.0	-100
Koderrna	0.0	-100	0.0	-100	0.0	-100
Latehar	0.0	-100	0.0	-100	0.0	-100
Lohardagga	0.0	-100	0.0	-100	0.0	-100
Pakur	0.0	-100	0.0	-100	0.0	-100
Palamau	0.0	-100	0.0	-100	0.0	-100
Ramgarh	**	**	**	**	**	**
Ranchi	0.0	-100	0.0	-100	0.0	-100
Sahebganj	0.0	-100	0.0	-100	0.0	-100
Saraikela	0.0	-100	0.0	-100	0.0	-100
Simdega	0.0	-100	0.0	-100	0.0	-100
West Singbhum	0.0	-100	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	0.0	-100	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	0.0	-100	0.0	-100

Dungarpur	0.0	-100	0.0	-100	0.0	-100
Jaipur	0.0	-100	0.0	-100	0.0	-100
Jhalawar	0.0	-100	0.0	-100	0.0	-100
Jhunjhunu	0.0	-100	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	0.0	-100	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	0.0	-100	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	0.0	-100	0.0	-100	0.0	-100
Gujarat Region						
Ahmedabad	0.0	-100	0.0	-100	0.0	-100
Anand	0.0	-100	0.0	-100	0.0	-100
Aravalli	0.0	-100	0.0	-100	0.0	-100
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
Chhota Udepur	0.0	-100	0.0	-100	0.0	-100
DNH	**	**	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100
Daman	**	**	**	**	**	**
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
Mahisagar	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
Vadodara	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
Botad	0.0	-100	0.0	-100	0.0	-100
Devbhoomi Dwarka	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Gir Somnath	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
Morbi	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	0.0	-100
Sindhudurg	1.7	-100	0.0	-100	0.0	-100
South Goa	0.6	-75	0.0	-100	0.0	-100
Thane	**	**	**	**	**	**
Madhya Maharashtra						
Ahmednagar	0.0	-100	0.0	-100	0.0	-100
Dhule	**	**	**	**	**	**
Jalgaon	0.0	-100	0.0	-100	0.0	-100
Kolhapur	0.1	-99	0.0	-100	0.0	-100
Nandurbar	**	**	**	**	**	**
Nasik	0.0	-100	0.0	-100	0.0	-100
Pune	0.0	-100	0.0	-100	0.0	-100
Sangli	1.0	-100	1.0	-100	1.0	-100
Satara	0.0	-100	0.0	-100	0.0	-100
Solapur	0.0	-100	0.0	-100	0.0	-100
Marathwada						
Aurangabad	0.0	-100	0.0	-100	0.0	-100
Beed	**	**	**	**	**	**
Hingoli	**	**	**	**	**	**
Jalna	0.0	-100	0.0	-100	0.0	-100
Latur	0.0	-100	0.0	-100	0.0	-100
Nanded	0.0	-100	0.0	-100	0.0	-100
Osmanabad	**	**	**	**	**	**
Parbhani	0.0	-100	0.0	-100	0.0	-100
Vidarbha						
Akola	0.0	-100	0.0	-100	0.0	-100
Amraoti	0.0	-100	0.0	-100	0.0	-100
Bhandara	0.0	-100	0.0	-100	0.0	-100
Buldhana	0.0	-100	0.0	-100	0.0	-100

Chandrapur	0.0	-100	0.0	-100	0.0	-100
Gadchiroli	0.0	-100	0.0	-100	0.0	-100
Gondia	0.0	-100	0.0	-100	0.0	-100
Nagpur	0.0	-100	0.0	-100	0.0	-100
Wardha	0.0	-100	0.0	-100	0.0	-100
Washim	0.0	-100	0.0	-100	0.0	-100
Yeotmal	0.0	-100	0.0	-100	0.0	-100
Odisha						
Angul	0.0	-100	0.0	-100	0.0	-100
Balasore	0.0	-100	0.0	-100	0.0	-100
Bargarh	0.0	-100	0.0	-100	0.0	-100
Bhadrak	0.0	-100	0.0	-100	0.0	-100
Bolangir	0.0	-100	0.0	-100	0.0	-100
Boudh	0.0	-100	0.0	-100	0.0	-100
Cuttack	0.0	-100	0.0	-100	0.0	-100
Deogarh	0.0	-100	0.0	-100	0.0	-100
Dhenkanal	0.0	-100	0.0	-100	0.0	-100
Gajapati	0.0	-100	0.0	-100	0.0	-100
Ganjam	0.0	-100	0.0	-100	0.0	-100
Jagatsingpur	0.0	-100	0.0	-100	0.0	-100
Jajpur	0.0	-100	0.0	-100	0.0	-100
Jharsuguda	0.0	-100	0.0	-100	0.0	-100
Kalahandi	0.0	-100	0.0	-100	0.0	-100
Kandhamal	0.0	-100	0.0	-100	0.0	-100
Kendrapara	0.0	-100	0.0	-100	0.0	-100
Keonjhar	0.0	-100	0.0	-100	0.0	-100
Khurda	0.0	-100	0.0	-100	0.0	-100
Koraput	0.0	-100	0.0	-100	4.5	200
Malkangiri	0.0	-100	0.0	-100	6.4	3100
Mayurbhanj	0.0	-100	0.0	-100	0.0	-100
Nawapara	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	0.0	-100	0.0	-100	0.0	-100
Nayagarh	0.0	-100	0.0	-100	0.0	-100
Puri	0.0	-100	0.0	-100	0.0	-100
Rayagada	0.0	-100	0.0	-100	0.0	-100
Sambalpur	0.0	-100	0.0	-100	0.0	-100
Sonepur	0.0	-100	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	5.9	-92	87.7	29	375.3	431
North & Middle Andaman	0.0	-100	6.4	-79	77.8	198
South Andaman	32.1	-54	57.9	16	274.4	543
GWB						
Bankura	0.0	-100	0.0	-100	0.0	-100
Birbhum	0.0	-100	0.0	-100	0.0	-100
Burdwan	0.0	-100	0.0	-100	0.0	-100
East Midnapore	0.0	-100	0.0	-100	0.0	-100

Hooghly	0.0	-100	0.0	-100	0.0	-100
Howrah	0.0	-100	0.0	-100	0.0	-100
Kolkata	0.0	-100	0.0	-100	0.0	-100
Murshidabad	0.0	-100	0.0	-100	0.0	-100
Nadia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (N)	0.0	-100	0.0	-100	0.0	-100
Purulia	0.0	-100	0.0	-100	0.0	-100
24 Pargana (S)	0.0	-100	0.0	-100	0.0	-100
West Midnapore	0.0	-100	0.0	-100	0.0	-100
SHWB & Sikkim						
Cooch Behar	0.0	-100	0.0	-100	0.0	-100
Darjeeling	0.0	-100	0.0	-100	0.0	-100
East Sikkim	0.0	-100	0.1	-99	0.4	-93
Jalpaiguri	0.0	-100	0.0	-100	0.4	-86
Malda	0.0	-100	0.0	-100	0.0	-100
North Dinajpur	**	**	**	**	**	**
North Sikkim	0.0	-100	0.0	-100	0.0	-100
South Dinajpur	0.0	-100	0.0	-100	0.0	-100
South Sikkim	0.0	-100	0.0	-100	1.8	-62
West Sikkim	**	**	**	**	**	**
Karnataka						
Coastal Karnataka						
Dakshina Kannada	0.0	-100	0.0	-100	5.4	3
Udupi	0.0	-100	0.0	-100	9.6	37
Uttara Kannada	0.0	-100	0.0	-100	0.0	-100
NI Karnataka						
Bagalkote	0.0	-100	0.0	-100	0.0	-100
Belagavi	0.5	-92	0.0	-100	0.0	-100
Bidar	0.0	-100	0.0	-100	0.0	-100
Dharwad	0.0	-100	0.0	-100	0.0	-100
Gadag	0.0	-100	0.0	-100	0.4	-88
Haveri	0.0	-100	0.0	-100	0.0	-100
Kalaburgi	0.0	-100	0.0	-100	0.0	-100
Koppal	0.0	-100	0.0	-100	0.0	-100
Raichur	0.0	-100	0.0	-100	0.0	-100
Vijayapura	0.0	-100	0.0	-100	0.0	-100
Yadgir	0.0	-100	0.0	-100	0.0	-100
SI Karnataka						
Ballari	3.1	-52	0.0	-100	0.3	-95
Bangalore Rural	0.0	-100	0.0	-100	9.6	96
Bangalore Urban	0.0	-100	0.0	-100	13.8	97
Chamarajanagar	0.0	-100	0.0	-100	2.9	-71
Chikaballapur	0.0	-100	0.0	-100	22.7	344
Chikkamagaluru	0.0	-100	0.0	-100	8.9	147
Chitradurga	0.0	-100	0.0	-100	6.4	88
Davangere	0.0	-100	0.0	-100	1.0	-73
Hassan	0.0	-100	0.0	-100	3.0	-7
Kodagu	0.3	-99	0.0	-100	9.5	83
Kolar	0.7	-94	0.0	-100	26.1	223

Mandya	0.0	-100	0.0	-100	4.9	53
Mysuru	0.0	-100	0.0	-100	4.0	14
Ramanagara	0.0	-100	0.0	-100	8.9	106
Shivamogga	0.0	-100	0.0	-100	1.3	-49
Tumakuru	0.0	-100	0.0	-100	12.7	272
Kerala						
Alappuzha	2.2	-94	0.0	-100	16.4	-18
Kannur	0.0	-100	0.0	-100	0.0	-100
Ernakulam	0.0	-100	9.8	-41	9.4	-17
Idukki	1.0	-97	0.0	-100	12.9	-23
Kasaragod	0.0	-100	0.0	-100	0.7	-86
Kollam	8.6	-78	0.0	-100	16.4	-14
Kottayam	8.8	-71	0.0	-100	7.0	-44
Kozhikode	0.0	-100	0.0	-100	4.5	-60
Malappuram	0.0	-100	0.0	-100	4.2	-53
Palakkad	0.0	-100	0.0	-100	14.1	38
Pathanamthitta	17.5	-57	0.0	-100	6.3	-69
Thiruvananthapuram	12.7	-57	4.7	-79	14.8	-32
Thrissur	0.0	-100	0.0	-100	17.2	60
Wyand	0.0	-100	0.0	-100	4.8	-37
Tamil Nadu						
Ariyalur	2.6	-94	0.0	-100	27.1	-53
Chennai	0.6	-99	0.0	-100	91.7	65
Coimbatore	0.0	-100	0.0	-100	32.9	96
Cuddalore	3.9	-94	0.0	-100	24.8	-65
Dharmapuri	0.0	-100	0.0	-100	6.8	-60
Dindigul	0.3	-99	0.0	-100	39.7	32
Erode	0.0	-100	0.0	-100	21.1	29
Kanchipuram	4.7	-92	0.0	-100	92.6	80
Kanyakumari	29.0	-18	0.3	-99	12.9	-37
Karaikal	12.4	-81	0.0	-100	27.8	-65
Karur	0.3	-99	0.0	-100	28.4	48
Krishnagiri	0.0	-100	0.0	-100	10.5	-8
Madurai	0.3	-99	0.0	-100	51.3	177
Nagapattinam	45.1	-48	0.0	-100	28.1	-74
Namakkal	0.0	-100	0.0	-100	21.2	45
Nilgiris	0.6	-98	0.0	-100	48.0	62
Perambalur	0.0	-100	0.0	-100	32.3	-1
Puducherry	0.0	-100	0.0	-100	85.1	12
Pudukottai	8.2	-79	0.0	-100	22.6	-41
Ramanathapuram	40.4	12	0.0	-100	35.4	-17
Salem	0.0	-100	0.0	-100	13.3	-30
Sivaganga	9.0	-67	0.0	-100	55.8	100
Thanjavur	13.3	-73	0.0	-100	33.1	-44
Theni	1.3	-95	0.0	-100	10.6	-32
Tirunelveli	21.3	-43	0.8	-97	16.1	-43
Tirupur	0.0	-100	0.0	-100	20.5	14
Tiruvallur	0.0	-100	0.0	-100	72.8	51
Tiruvannamalai	0.0	-100	0.0	-100	38.9	19

Tiruvarur	29.7	-59	0.0	-100	34.3	-59
Toothukudi	22.8	-40	0.0	-100	2.9	-91
Trichy	0.0	-100	0.0	-100	20.2	-30
Vellore	0.0	-100	0.0	-100	42.0	105
Villupuram	0.0	-100	0.0	-100	31.6	-26
Virudhunagar	8.5	-74	0.0	-100	42.6	121
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	0.0	-100	0.0	-100	1.3	-13
Guntur	1.0	-94	0.0	-100	0.8	-80
Krishna	5.0	-63	0.0	-100	1.8	-36
Nellore	3.9	-93	0.0	-100	54.6	38
Prakasam	1.4	-94	0.0	-100	7.9	-20
Sirkakulam	0.0	-100	0.0	-100	0.5	-57
Visakhapatnam	0.0	-100	0.0	-100	1.0	29
Vizianagram	0.0	-100	0.0	-100	0.3	-84
West Godavari	0.2	-99	0.0	-100	3.8	53
Royalaseema						
Anantapur	0.2	-95	0.0	-100	5.5	10
Chittoor	1.4	-94	0.0	-100	56.8	148
Cuddapah	4.1	-68	0.0	-100	25.6	122
Kurnool	0.0	-100	0.0	-100	0.0	-100
Telangana						
Adilabad	0.0	-100	0.0	-100	0.0	-100
Hyderabad	0.0	-100	0.0	-100	0.1	-96
Karimnagar	0.0	-100	0.0	-100	0.0	-100
Khammam	0.0	-100	0.0	-100	0.2	-79
Mehabubnagar	0.0	-100	0.0	-100	0.0	-100
Medak	0.0	-100	0.0	-100	0.0	-100
Nalgonda	0.0	-100	0.0	-100	0.0	-100
Nizamabad	0.0	-100	0.0	-100	0.0	-100
Rangareddy	0.0	-100	0.0	-100	0.0	-100
Warangal	0.0	-100	0.0	-100	0.0	-100

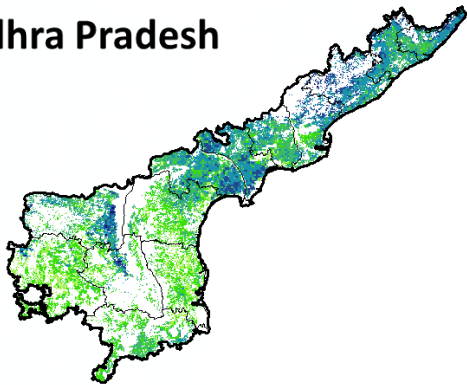
Legends

	(20% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-20 to -59%) deficient rainfall	**	Data not available

Annexure II

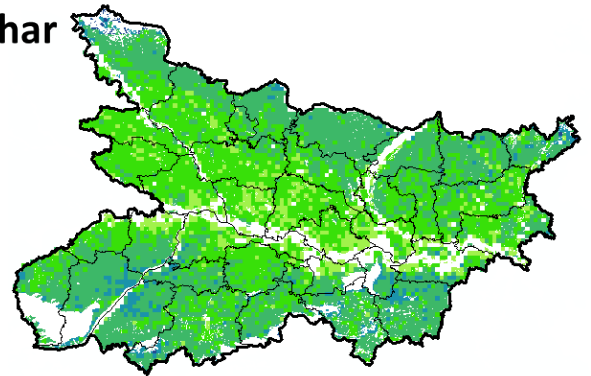
**NOAA/AVHRR NDVI COMPOSITE MAPS FOR THE WEEK ENDING ON
8th December 2016 FOR DIFFERENT STATES**

Andhra Pradesh



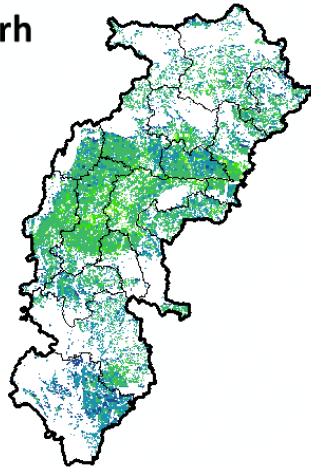
Agriculture vigour is moderate over central and southern part whereas, northern parts show good to very good NDVI in the state of Andhra Pradesh.

Bihar



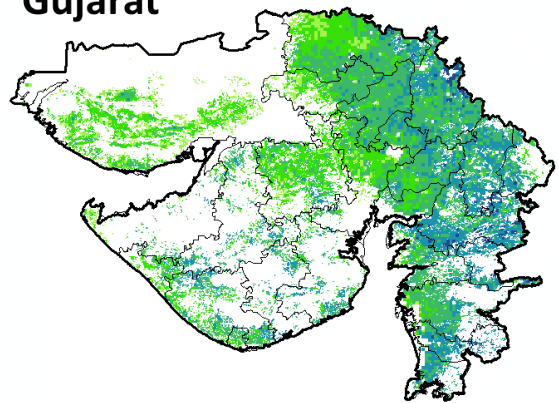
Agriculture vigour is moderate over central parts of Bihar whereas southern and patches in northern part shows good NDVI values.

Chhattisgarh



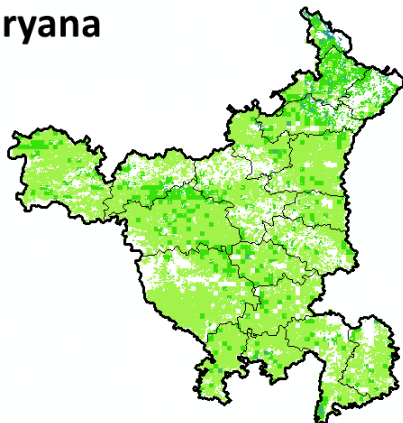
Agriculture vigour is good in southern region whereas, very moderate vigour is seen in central and northern region of Chhattisgarh.

Gujarat



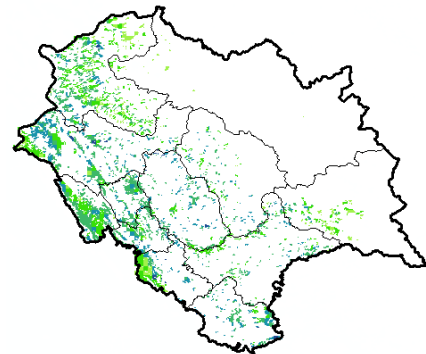
Moderate NDVI values are observed in patches in Kutch region whereas, good to very good NDVI is observed in Saurashtra and Gujarat.

Haryana



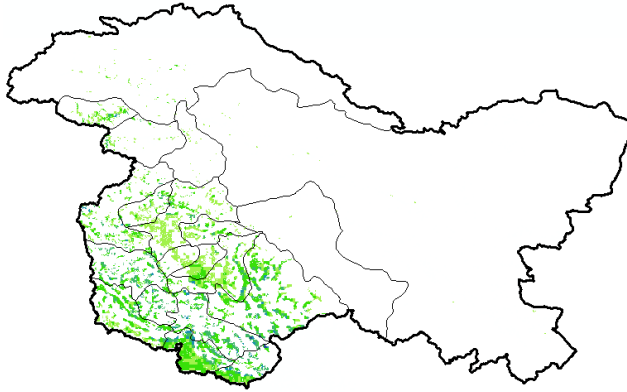
Moderate agriculture vigour is observed over entire state of Haryana.

Himachal Pradesh



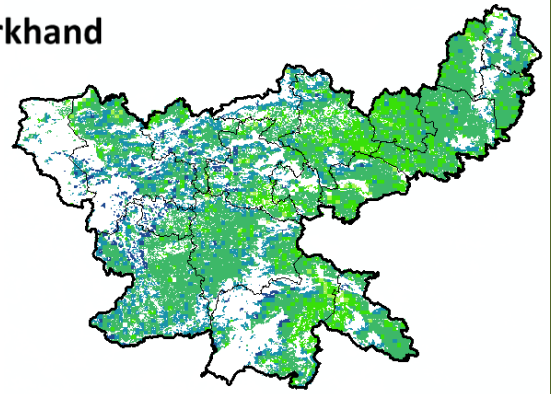
Agriculture vigour is moderate to good over Himachal Pradesh.

Jammu & Kashmir



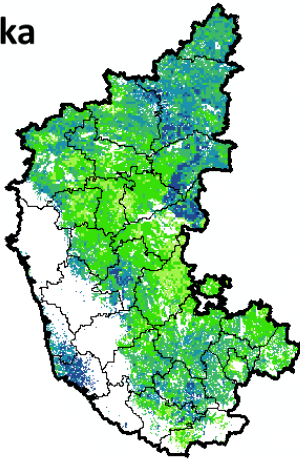
Agriculture vigour is moderate over entire state of Jammu & Kashmir.

Jharkhand



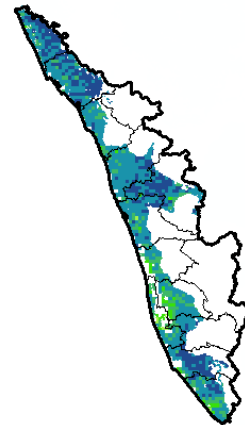
Agriculture vigour is very good over few patches in western region of Jharkhand whereas, remaining states shows good to moderate NDVI values.

Karnataka



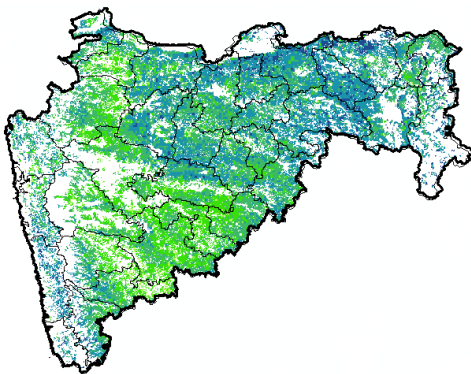
Agriculture vigour is moderate over patches in central region of the state whereas good vigour is observed in the northern and patches in southern regions.

Kerala



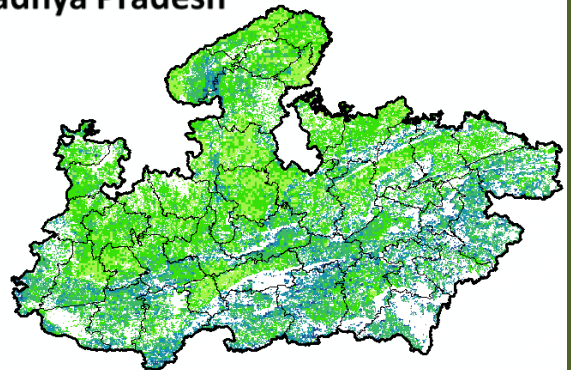
Agriculture vigour is good over entire state of Kerala except central part which shows moderate NDVI values.

Maharashtra



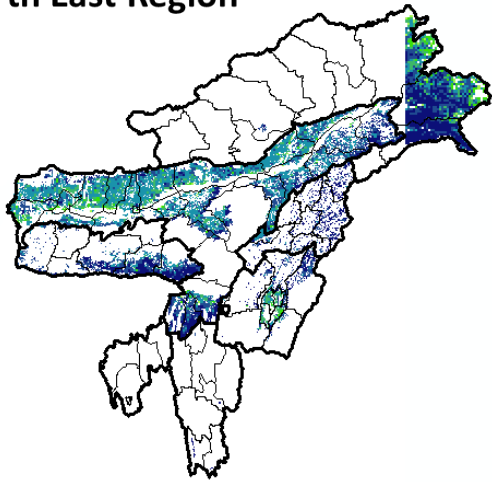
Agricultural vigour is moderate over central Maharashtra whereas, good to very good vigour is observed in the north and eastern regions.

Madhya Pradesh



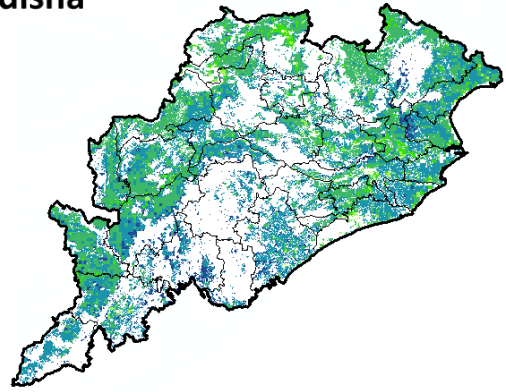
Agriculture vigour is moderate over patches in western and northern region of the state of Madhya Pradesh whereas, good vigour is observed over eastern and southern region.

North East Region



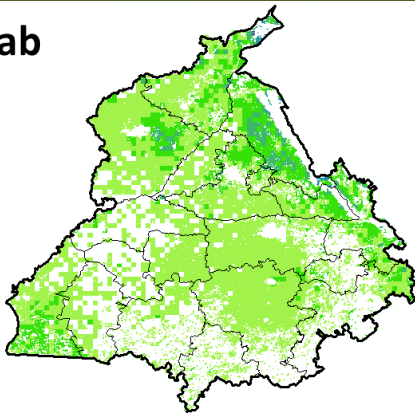
Agriculture vigour is good & very good over north-east states of country.

Odisha



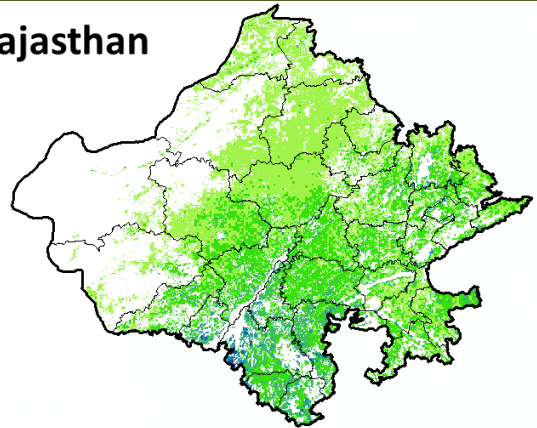
Agricultural vigour is moderate over few patches in coastal region of Odisha whereas, good vigour is observed in entire state.

Punjab



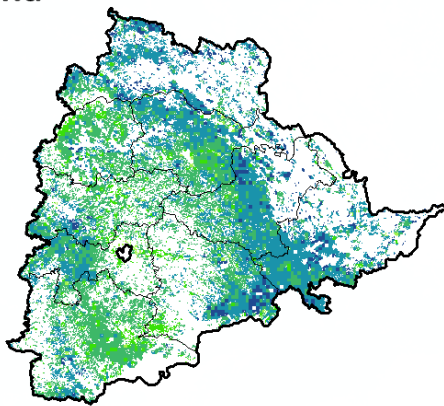
Agricultural vigour is moderate over entire state of Punjab.

Rajasthan



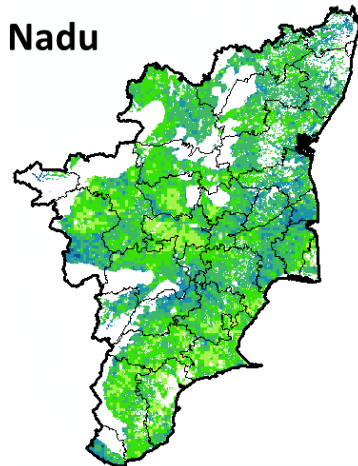
Agriculture vigour is moderate over western and northern Rajasthan whereas, good vigour is observed over southern region.

Telangana

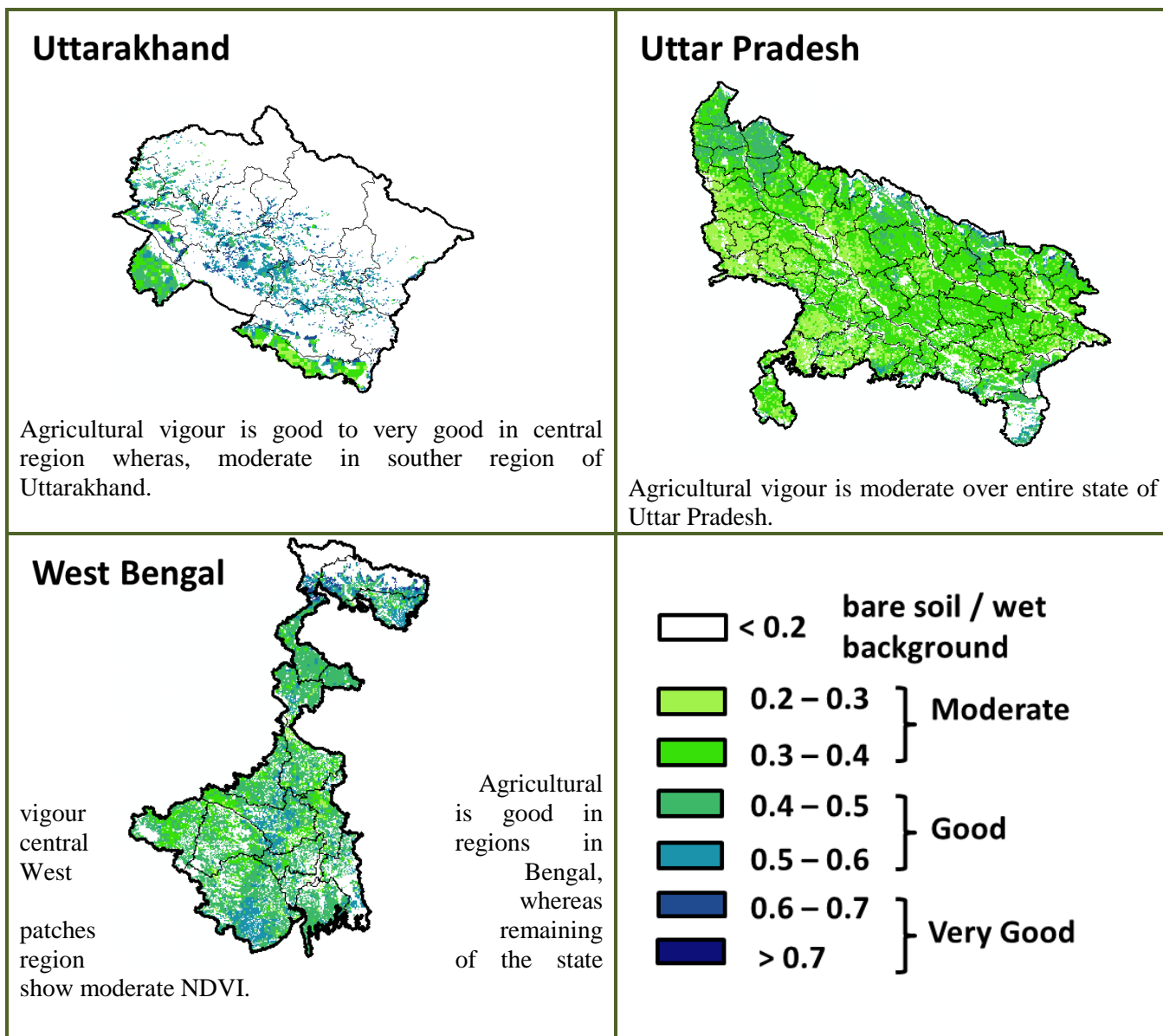


Agriculture vigour is good to very good over northern region of Telangana whereas, moderate vigour is observed in patches in the central and southern region.

Tamil Nadu



Agricultural vigour is good in patches in northern and central part of Tamil Nadu, whereas rest of the part shows moderate NDVI.



* For New Delhi NOAA/AVHRR NDVI COMPOSITE Map is not available due to some problem in data set.

Annexure III

- Assam**
- Okra:** Pusa Sawani, Arka Anamika, Parbhdani Kranti.
- Cauliflower :** Early Kunwari, Pusa Ketki, Pusa Dipali.
- Winter brinjal:** Pusa Kranti, Pusa Purple Long, Pusa Purple Round, Pusa Vairab, Pant Samra.
- Pumpkin:** Arke Suryamukhi, Arka Chandan.
- Radish :** Pusa Desi, Pusa Chetki.
- Tomato :** Punjab Chuhara, S-12, Punjab Kesri, Pusa Early Dwarf, Sioux, Pusa Ruby, VC- 48-1, Arka Abha (BWR-1), Arka Alok (BWR-5), BT-1, Bilahi-1, Bilahi-2).
- Brinjal :** Cluster, Barbengena, JC-1, Kuchia, Pusa Kranti, Pusa Purple Long (for long varieties).
Pusa Purple Round, Pusa Vairab, JC-2, BWR-12 (round varieties).
- Potato :** Kufri Chandramukhi, Kufri Jyoti, Kufri Megha, Kufri Badshah, Kufri Sindhuri.
- Onion :** Pusa Red, Pusa Ratnar, Pusa white (Round), Pusa white (Flat), N-53, Agrifound Light Red, Punjab Red Round, Pusa Madhuri, Arka Niketan.
- Cauliflower :** Early Kunwari, Pusa Katki and Pusa Deepali (for early maturity).
Improved Japanese, Pusa Synthetic, Pusa Snowhall (for mid maturity).
Snowball-16, Pusa Snowball, K-1 and Hissar 1 (for late maturity) etc.
- Cabbage :** Golden Acre, Pride of India, Pusa Mukta (Sel – 8) (for early maturity).
Drum Head and Eclipse Drum Head (for late maturity).
- Knol-Khol :** White Vienna (for early maturity).
Purple Viena (for late maturity).

Manipur

Pea :Arkel.

Tripura

Tomato: Trishul, Allrounder, T- 1408, T- 1458, Anup.

Cauliflower: CFL- 4048, Pusa early synthetic, Kamaya, Suhasihi.

Cabbage: BC- 76, Pusa Drum Head, Pusa Synthetic.

Broccoli: Everest, Ayeshwaria.

Odisha

Green pea: Rachana, Arkel. and T -163.

Mustard:Parbhathi, Anuradha, TS-29 & M-27.

Garlic:Phawari, Rajalbadi, Jamnagar and G-282

Potato: Kufri Chandramukhi, Kufri Chamatkar, Kufri Jyoti, Kufri Sinduri and Kufri Alankar, etc

Greengram- TARM1, OUM11-5, Hum-1

Blackgram-PU-19, LBG-17

Gram-Radhey, Annegiri, Sweta, Bharati, JG 11

Groundnut:are Smruti, AK 12-24, JL-24.

Bihar

Pigeon pea: Bahar, Pusa-9, Narendra Arher-1, Rajendra Arher-1 and Maalvia-13.

Sesame : Kanak, kalika, Uma, Usha, Tilottama, Neelima and Prachi

Green gram : K -851, PDM -54, PDM -11, OUM 11-5

Black gram : T-9, Pant-U-19. Pant -U-30, Pant -U-11

Niger : Deomali

Horsegram : Urmi, DS 1-2-2, DS 1-2

Jharkhand

Mustard: Shivani, Varuna, Pusa bold, Kranti, Pusa jaikisan , Vardan etc.

Potato: Kufri Ashoka, Kufri Pukhraj, Kufri Lalima, Kufri Pushkar and Kufri Kanchan.

Toria: BR-23,T.-9, P.T. 303, Panchali and Bhavani.

Gram: KAK-2, ICCC-2, HK94-134(Kabuli) and Pusa 256, Pusa 372, Pant G-114, KWR 108, ICCC 37.

Lentil:P.L.- 406, P.L.-639, D.P.L.-15, D.P.I.- 62 etc.

Green pea: Arkel or Azad pea.

Wheat: HDR-77, K-8027, C-306, Birsa genhu – 3 etc. HDR-77, K-8027, C-306, Birsa genhu – 3 etc.

Linseed:Sweta, Shubhra, T-397 etc.

West Bengal

Coconut: Eastcoastal, Hazari

Banana:Mortoman, Chapa, Kathali, Singapuri,

Mustard:Varuna, Sita and Bhagirathi.

Jute : Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali etc.

Cabbage :Pride of India, Pusa early, Kranti.

Cauliflower : Jawhar moti, Bharat Jyoti, Early banaras.

Uttarakhand

Wheat:HS-562,VL-616,VL-829,VL-802,VL-802

Onion:VL-Pyaj-3,Nasik Red,Pusa Red

Pea: Vivek 10,Vivek 11,Pant 3,

Radish:Meenu early, Japanese white, PusaHimani.

Carrot:PusaVrishi,

Rai:Varuna, Rohini, Krishna, Kanti, Vardan, Vaibhav, Basanti, Narendra, Early rai-4, Urvashi and varieties

Yellow Mustard: Ragini, Binoy (B-9), Pant peeli Sarso-1.

Jammu and Kashmir

Wheat: PBW-175, PBW-396, RSP-81(Jitto).

Pea: AP-1, Bonnevillea, Rachna and Arkel

Chickpea: K-468, Gourav

Lentil: L-4147, L-9/12,PL-406.

Berseem:Vardan, mascavi, pusa giant, BL-1

Potato: Kufri Badshah, K.Sinduri, K.Chipsona & K.Sona

Gram: C-235,Gaurav,K-468,SCS-3,PBG-1

Toria: RSPT-1 and RSPT-2

Himachal Pradesh

Cauliflower: snowball and Giant snowball.

Radish:Japanese white, Chinese pink and mino early white

Turnip: PTWG-1
Carrot: Pusakesar
Peas : Mater ageta-6 (early variety).
Cabbage: Pride of India, golden achor and hybrid

East Uttar Pradesh

Wheat: PVW-343, UP-2338, WH-542, K-9107, K-9006, HP-1731, NW-1012, UP-2382, HUW-468, PVW-443, HD-2733, HD-2824, K-307, K-9423, NW-1067, KRL-210, KRL-213, PBW-323, CBW-38, DBW-39, UP2332 and HUW510, C-306, K-65,78,8027 and HUW-533.

Mustard: varuna, Rohini, kranti, krushna, vardan, vaibhav, narendra rai (8501).

Onion: Kalyanpur Lal gol, Pusa ratnakar, Agrifound lite red, bargandi, KP, Orient, Rosi.

Jou: Azad, K-141/11.

Turmeric: Kasturi, Paspu, Amlapuram, Madhukar, Sugna, Rajendra

Ginger -suprabha, suruchi, surbhi and Hingiri

Arahar: Bahar, Amar, Narendra Arahar-1,2, pusa-2001, pusa-991, pusa-992, parasmanak, UPAS 120.

Moong: Type-27, 56

Toria: TA-9, Bhawani, PT-30, PT-507, TA-36, PT-303.

Potato: Kufri Ashoka, Kufri Chandramukhi and Kufri Jawahar (Improved varieties of potato) Kufri Badshah, Kufri Satlaj, Kufri Khalima (inferior varieties), Kufri Ashoka, Kufri Chandramukhi, Kufri sadabahar.

Gram: JCP-105, K-850, Pusa-256, Avrodhi, Pusa-256, KWR-108, DCP-92-3, KDG-1168, K-850, and Kabuli chana: HK-94-134.

Mustard: Narendra ageti, rai-4, Varuna (T59), Basti (Pili), rohini, Maya, Narendra swarna-rai-8(pili), Narendra rai (NDR-8501), vaibhav.

Kabuli gram: chatmatkar, Puse-1003, Subhra as good varieties.

Pea: Rachna, Pantmatar-5, Aparna Malviya Matar-2, Malviya Matar-15, Shikha and Sapna are good varieties.

Radish: kalyanpur No.1, Pusa Rashmi, Hisar selection-1, Japani Safed, pusa Chetaki, Pusa Himani, Pusa deshi, Arka Nishant and Jaunpuri.

Cabbage: Pusa snowball, Pusa snowball II, Snowball 16 and Pusa snowball K1

West Uttar Pradesh

Wheat: magahar, mandakini, C-306, Loak-1, k-9465, and kathia meghdoot, H.D. 2687, H.D. 2851, H.D. 2894, H.D. 2967, H.D. 3086, D.B.W.-17.

Barseem: V.L.1, V.L.10, maskavi, jai, K-8027, K-9565, Mandakini.

Baby corn: M.H.-4.

Toria: bhavani

Mustard: Urvashi, Rohini, Maya, Giriraj, Vardan, Vaibhav

Linseed: Parvati, sharda, Padmini

Vegetable pea: Azad-3, Aakril

Gram: Zaki-9218, KGD-1168, KWR-108, Uday

Pea: KPRM-522, KPRM-400, Vikas, Prakash

Lentil: DPL-62, Malika

Potato: Kufri Badshah, Kufri Bahar, Kufri Aanand, Chipsona-1, Chipsona-2, Chipsona-3.

Punjab

Sugarcane: CoJ-85, CoJ-83, CoJ-64 (early maturing), COH-119, CoJ-88, CoS-8436 for and CoJ-89, CO118, COJ85, COJ64.

Onion: Punjab Naroya, Punjab White and PRO 6.

Radish: Punjab Pasand and Japanese white.

Turnip: L-1.

Carrot: Punjab Black Beauty, Punjab Carrot Red and PC-34.

Tomato: TH-1, Punjab Ratta, Punjab NR 7, Punjab Chhuhara, Punjab Upma, Castle Rock.

Okra: Punjab-8 and Punjab-7

Cauliflower: Pusa Snow Ball-1, Pusa Snow Ball K-1

Wheat: PBW 725, PBW 677, HD-3086, WH 1105, PBW 621, HD 2967.

Kabuli gram: L 552, L 550 & BG-1053.

Raya: RLC3, PBR 357, PBR 210, RLC-1, RLM-619, PBR-91

Gram: C 235, HC 5

un-irrigated/rainfed (HC 1)

Delhi

Wheat: H.D. 2687, H.D. 2851, H.D. 2894, H.D. 2967, H.D. 3086, D.B.W.-17

Gram: Kabuli type - Pusa 267, Pusa 1003, Pusa Chatmatkar; local type – C235, Pusa 246, P.B.G. 1, Pusa 372.

Pea: Pusa Pragati, Arkel, Azad Matar-3, Pant Matar-3 and Bournville.

Potato: Kufri Badshah, Kufri Bahar, Kufri Aanand, Chipsona-1, Chipsona-2, Chipsona-3.

East Rajasthan:

Wheat:Raj-1555, Raj-3765, Lok-1, WH-147, GW-190, GW-322 and GW-273. The suitable varieties for unirrigated wheat are HI-1500 and HI-1531. Raj-4037, Raj-3777, Raj-4120, Raj-4037, Raj-4069, Raj-4238 and MP-3288.

Barley: RD-2552, RD-2052, RD-2035, RD-2503, RD-2715, RD-2660, RD-2508 and Jyoti, RD 2668

Gram:RSG 44, Dahod yellow, GNG 16, ICCV 10, RSG 888, GNG 469 and Pratap chana 1, RSG-895, RSG-973, RSG-896, RSG-902, RSG-991 and GNG-1581

Lentil: T 36, BL 406, Sihore 74-7 and K 75

Sorghum: CSH-6, CSH-9, CSV-10, CSV-15, TG37-A, DH-86, Pratap Mungfali-1.

Maize: Aravali Makka-1, Pratap Makka-1, Pratap Makka-5, Pratap Hybrid Maize-1, Pratap Hybrid Maize-2 and bio-9637, Hybrid varieties are-MahiDhawal, PEHM- 2, Pratap Hybrid Maize-1, Pratap Makka-3, Pratap Makka-5, Bio-9637, Bio-9681, Pratap HQPM-1, Pratap Hybrid Maize-3, Pratap Makka-9, Ageti-76, Bassi Selected, MahiKanchan

Greengram:RMG-62, RMG-268. RMG-492 & RMG-344, IPM-02-3.

Cowpea: FS-68, RC-19 and RC-101.

Moth: RMO-40, IPCMO-912, RMO-257, RMO-225, RMO-435 (Vikash) (improved varieties)

Pea(early): Arkil, Hara bona, VL-3, Jawahar Matar-4, Matar Ageti-6 improved varieties.

Cauliflower: Pusa snow ball K-1, Hisar-1, Dania and Selection-7 are improved varieties.

Carrot:PusaKeshar is improved variety.

Mustard: Pusa jai kisan, RH-30, Pusa bold, Laxmi, kranti, Pusa Jai Kisan, PR-15 (Kranti), Vashundra, RRN 573, RGN-73, Bio-902 (Pusa Jaikisan), Aashirwad, RH-9304 (Vasundhara), RH-9802 (Swarn Jyoti), RH-8812 (Laxmi).

Radish: Japanese white & hill queen.

West Rajasthan

Wheat: Raj-3077, Raj-3777, Raj-4037, Raj-1482, WH-147 and Loak-1.

Jou:RD-2052, RD-2035, RD-57, RD-31, and Bilada-2, RD-2660, RD-2552, RD-2592 or Mald varieties RD-2503, DWRUB-52(timely sowing) or DWRUB-64(late sowing)

Cumin: RZ-19, RZ-209, GG-4, RZ-223.

Isabgol: RI 89 & GI-2.

Fenugreek :RMt 1 & RMt305.

Bhindi: Ark Anamika, varshauphar, Parbhanikranti, pusamakhmali.

Groundnut: HNG-123, HNG-69, ICHG-00440, HNG-10, TG-37 A, Girnar-2, R.G.-425, GG-20, TG-39.

Gram: c-235, RSG-44, GNG-663(vardan), RSG-888, GNG-469(samrat), GNG_1581(gangour), for kabulichana-GNG-1499(gouri) and GNG-1292

Mustard: RGN-13, RGN-73, Laxmi, Pusa bold, RGN-298, RGN-229, RGN-48, barni (timely sowing) RGN-145, RGN-236 (for late sowing), Bio-902, T-59, Pusa bold, Arawali and RGN-48,

Radish: Japanese white & hill queen.

Garlic: lava, maleva

Onion: Pusa red, Nasik red, Udaipur-102, pusa white flate

Madhya Pradesh

Wheat: (Irrigated- JW 1203, 1215, HI 1544).

Non irrigated- JW 3288, 3173. HI-1500, HI- 1531, HW-2004, JWS-17.

Gram: JG 130, JG 218, JG 11, JG 16, JG 6, JG 315, RVJ 202, JAKI-92-18, RVG-201, RVG-203.

Garlic:G 282, 223.

Lentil:RVL 31, JL 2.

Mustard: Pusa Jaikisan, RH-749, RH-406, IJ-31, NRCHB-101, RVM- 1, RVM-2.

Chhattisgarh

Mustard:Shiwani, Varuna, Pusa Bold, BR-40. Mustard.

Wheat:Lok-1, W.H. 147, Kanchan & Raj, C 308, Sujata, H.W. 2004, Ratan, H.I.-8627 & H.I. 1531.

Linseed:R.L.C. 92 (Indira Alsi), Dipika (R.L.C.-78), Indira Alsi (R.L.C.-81), Kartika (R.L.C.-76), Jawahar 552* (R.L.C.-552), Kiran (R.L.C.-6)*.

Safflower:J.S.F.-1, J.S.I-7, J.S.H.-129.

Sugarcane:CO 86032, CO 419, CO 1305, CO J 86-141, CO 6304, CO 8338, CO 6217, CO 775, CO J 2087.

Maharashtra

Jowar :Maldandi (M-35 – 1), SPV-655, SPV-839, Phule Yashoda, Parbhani Moti, Swati.

Wheat: NIAW-301 (Trimbak), NIAW-917 (Tapovan), NIDW-295 (Godavari), Late sowing- NIDW-15 (Panchavati), NIAW- 1495, NIAW-5439, MACS-1967, Ajinta.

For irrigated- NIAW-34, Tapovan, Godavari, Trimbak and PBN – 51.

Linseed: PKV NL-260, NL-97, NL-142 and NL-165.

Gujarat

Wheat: Lok-1, GW-496, GW -503, GW -273, GW -322, GW 173, GW 11.

Mustard: Gujarat Mustard 1, 2, 3, 4, Varuna.

Chick pea: Gujarat chana-2 (Unirrigated), Gujarat chana-3 (irrigated), Dahod Yellow, Chaffa.

Maize: Ganga safed -2, GM -6.

Cumin: Gujarat cumin-1, GC-2, GC 3 or MC-43.

Garlic: Gujarat Garlic-4 or Local, GG- 2,3,4, G-41, 50, 282.

Carrot: Patan Local, Pusa Kesar and Pusa Chamdagni.

Cabbage: Kranti, Golden Acaire Pride of India, Coppen Market.

Coriander: Gujarat Coriander-1, Gujarat Coriander-2.

Pea: Pusa Pragati.

Carrot: Pusa Rudhira, Pusa Kesar.

Fenugreek: Gujarat Fenugreek -1.

Onion: Junagadh local (pili patti), Talaja red, Agri found dark red, pusa white flat.

Potato: Punkharaj, Kufari Chandramukhi, Kufari Jawahar, Kufari Bahar, Asoka; long duration cultivars viz., Kufari Laukar, Kufari Jyoti, Kufari Badshah, Kufari Sinduri, Satalaj.

Karnataka

Sugarcane: CO-86032, 740, 671.

Andhra Pradesh

Sorghum: CSH-9, CSH-13, CSH-14, PSV-15, PSV-19

Bajra: ICTP 8203, PBH 3

Korra: Prasad, Krishnadevaraya, Narashimharaya, Srilakshmi, Surya nandi

Cowpea: C 152 GC3 CO-4 CO-5

Sunflower: NDSH1 KBSH1 KBSH 44 DRSH 1

Green gram: LGG 407 LGG 450 LGG 460 MGG 295 ML 267, LGG 410, TM 96-2.

Field bean: TFB-1 TFB-5

black gram: LBG-752, LBG-20, T-9, LBG-623, PU-31, LB-402, LBG-709 and LBG-787.

Bengal gram: JG-11, LBEG-7, JG-130. Nadyal-1 and swetha.

Telangana

Cotton: American Cotton varieties, Desi Cotton varieties (G. arboreum. L and G. herbaceum. L, Intra/Inter – specific Cotton hybrids, Bt. cotton.