



National Agromet Advisory Service Bulletin



Friday 22nd April 2016
(For the period 22nd to 26th April 2016)

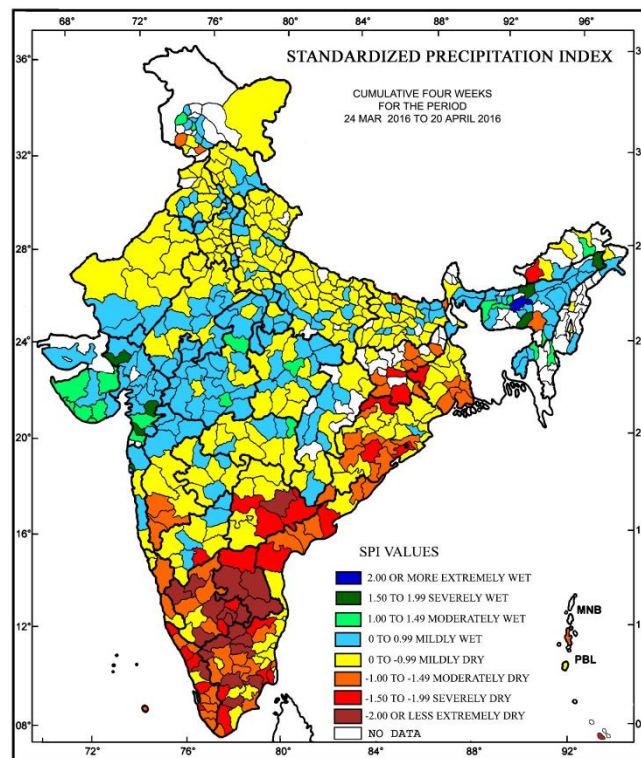


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District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>
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Standardised Precipitation Index Four Weekly for the Period 24th March to 20th April 2016

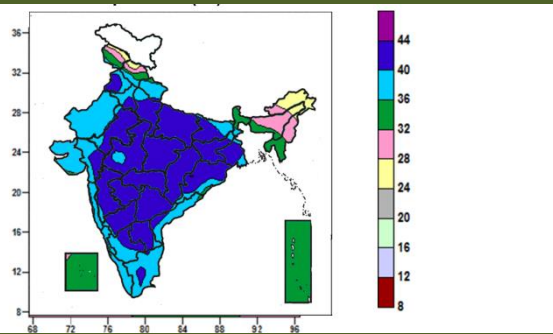
MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT
HYDROMET SECTION, PUNE



- Extremely/severely wet conditions experienced in Kamrup, Tinsukia, Udalguri districts of Assam; East Khasi Hills district of Meghalaya; Narmada, Navsari, Patan districts of Gujarat Region; Mumbai Suburban district of Konkan & Goa.
- Extremely/Severely dry conditions experienced in few districts of Andhra Pradesh; Telangana; Tamil Nadu; Karnataka; Nicobar District of Andaman & Nicobar Islands; West Kameng district of Arunachal Pradesh; Purulia district of West Bengal; Khurda, Kandhamal, Sundargarh districts of Odisha; Ranchi, West Singhbhum districts of Jharkhand; Alappuzha, Ernakulam, Kozhikode, Malappuram, Palakkad, Kasargod districts of Kerala.
- Moderately dry conditions experienced in few districts of West Bengal; Odisha; Jharkhand; Coastal Andhra Pradesh; Tamil Nadu; Kerala; Jaintia Hills district of Meghalaya; Kishanganj, Sitamarhi districts of Bihar; Udhampur, Rajouri districts of Jammu & Kashmir; Kolhapur, Sangli, Satara districts of Maharashtra; Uttar Kannada, Udupi, Bellary, Chikkamagaluru, Chitradurga, Mandya districts of Karnataka; Lakshadweep district of Lakshadweep.
- Rest of the country experienced moderately wet/mildly dry/mildly wet conditions.

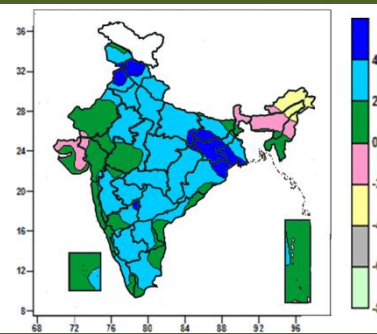
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 20.04.2016

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 20.04.2016



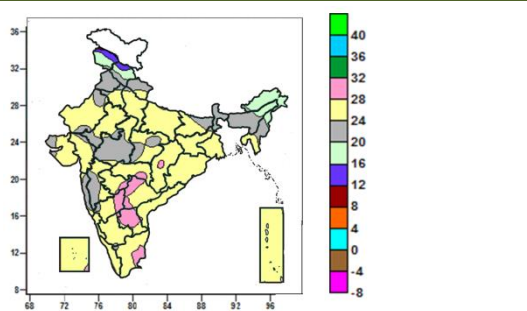
- Mean maximum temperature was between 40 to 44°C over East Uttar Pradesh, East Madhya Pradesh, Marathwada, Vidarbha, many parts of Punjab, West Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Chhattisgarh, Telangana, Bihar, Jharkhand, Gangetic West Bengal, Odisha, Madhya Maharashtra, North Interior Karnataka, Rayalaseema, some parts of Haryana & Delhi, Gujarat Region, South Interior Karnataka and isolated pockets of Uttarakhand, Coastal Andhra Pradesh and Tamil Nadu.
- Mean maximum temperature was between 36 to 40°C over rest of the country except North East India, Andaman & Nicobar Islands and Lakshadweep, many parts of Jammu & Kashmir, Himachal Pradesh, Sub-Himalayan West Bengal & Sikkim and isolated pockets of Uttarakhand, where it was between 20 to 36°C .

Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 20.04.2016



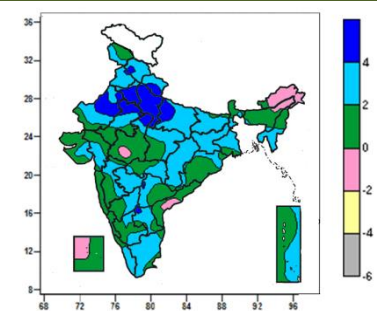
- Mean maximum temperature was above normal by 4 to 6°C over many parts of Himachal Pradesh, Punjab Jharkhand, some parts of Bihar, Gangetic West Bengal, Odisha and isolated pockets of Jammu and Kashmir, East Uttar Pradesh, Chhattisgarh, North Interior Karnataka.
- Mean maximum temperature was above normal by 2 to 4°C over rest of the country except Coastal Karnataka, Sub-Himalayan West Bengal and Sikkim, Manipur, Mizoram, Tripura, many parts of Gujarat, Konkan and Goa, West Rajasthan, Assam and Meghalaya, Nagaland, West Madhya Pradesh, Coastal Andhra Pradesh, Andaman & Nicobar Islands and Lakshadweep, some parts of Bihar, Odisha, Madhya Maharashtra, North Interior Karnataka, Tamil Nadu, Kerala and isolated pockets of Jammu & Kashmir, Jharkhand, Rayalaseema where it was normal to near normal.
- Mean maximum temperature was below normal by 2 to 4°C over many parts Arunachal Pradesh, some parts of Assam and Nagaland.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 20.04.2016



- Mean minimum temperature was between 8 to 12°C over isolated pockets of Jammu & Kashmir.
- Mean minimum temperature was between 12 to 16°C over some parts of Jammu & Kashmir, Himachal Pradesh.
- Mean minimum temperature was between 16 to 20°C over many parts of Jammu & Kashmir, Himachal Pradesh, Arunachal Pradesh, some parts of Assam and Nagaland.
- Mean minimum temperature was between 20 to 28°C over rest of the country except many parts of Rayalaseema, some parts of Telangana, North Interior

Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 20.04.2016



- Mean minimum temperature was above normal by 4°C over many parts of West Uttar Pradesh, Haryana & Delhi, some parts of Uttarakhand, Rajasthan, East Uttar Pradesh and isolated pockets of Punjab, Himachal Pradesh, Madhya Pradesh, Telangana, North Interior Karnataka and Rayalaseema.
- Mean minimum temperature was above normal by 2 to 4°C over Jharkhand, Marathwada, Mizoram and Tripura, many parts of Punjab, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, Gangetic West Bengal, Vidarbha, East Madhya Pradesh, Chhattisgarh, Rayalaseema, Tamil Nadu and Kerala, some parts of

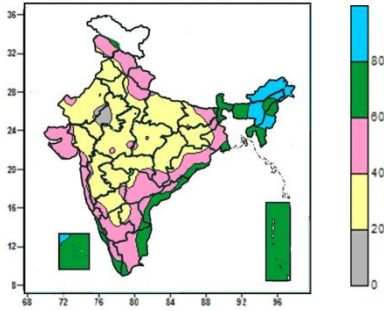
Karnataka and Tamil Nadu, isolated pockets of Marathwada, Vidarbha, Chhattisgarh, South Interior Karnataka and Lakshadweep, where it was between 28 to 32^oC.

Jammu & Kashmir, Rajasthan, Gujarat, Madhya Maharashtra, Odisha, Sub-Himalayan West Bengal, Manipur, Interior Karnataka, Telangana, Andaman & Nicobar Islands and isolated pockets of West Madhya Pradesh, Assam & Meghalaya.

- Mean minimum temperature was normal to near normal over rest of the country.

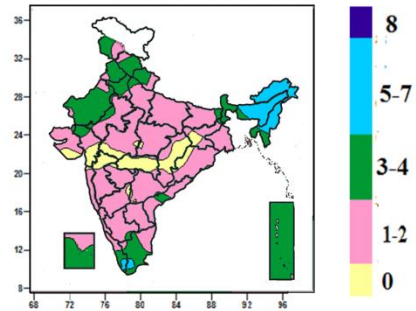
Contour maps for Relative Humidity, Cloud amount and Wind speed for the week ending on 20.04.2016

Relative Humidity (%) over India for the week ending 20.04.2016



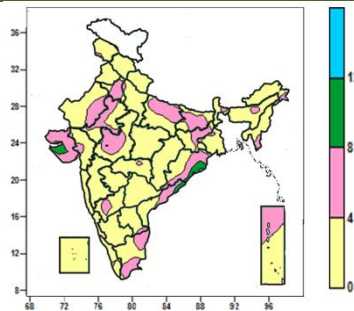
- Mean Relative humidity was above 80% over Arunachal Pradesh, Manipur, many parts of Assam & Meghalaya and isolated pockets of Lakshadweep.
- Mean Relative humidity was between 60 to 80% over Sub-Himalayan West Bengal & Sikkim, Nagaland, Mizoram, Tripura, Andaman & Nicobar Islands, many parts of Lakshadweep,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

Cloud amount (okta) over India for the week ending 20.04.2016



- Sky remained generally cloudy (5-7 okta) over Arunachal Pradesh, Nagaland, Manipur, many parts of Assam & Meghalaya, isolated pockets of, Mizoram, Tripura, Tamil Nadu and Kerala.
- Sky remained partly cloudy/mainly clear (3-4 okta/1 to 2) over rest of the country except many parts of Vidarbha, Chhattisgarh, some parts of Gujarat, West Madhya Pradesh, Madhya Maharashtra, Jharkhand, Odisha, isolated pockets of East Madhya Pradesh, Marathwada, Telangana, North Interior Karnataka where it was clear sky (0 okta).

Wind speed (knots) over India for the week ending 20.04.2016



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

Weather Forecast for next 5 days valid upto 0830 hours of 27th April 2016

- Meteorological sub-division wise detailed 5 day rainfall forecast is given below.
- Increase in day temperatures likely by 2-3°C over Madhya Maharashtra and south peninsular India during next 2-3 days.
- Fall in day temperatures likely over northwest India and no significant changes likely in day temperatures over central and rest west India during next 2 days.

5 Day Rainfall Forecast (MID DAY) 22nd April 2016

Met Sub-divisions	22 April	23 April	24 April	25 April	26 April
1. Andaman & Nicobar Islands	DRY	DRY	DRY	DRY	DRY
2. Arunachal Pradesh	ISOL	ISOL	FWS	FWS	SCT
3. Assam & Meghalaya	FWS	FWS	FWS	FWS	SCT
4. N.M.M. & T.	FWS	FWS	FWS	FWS	SCT
5. S.H. West Bengal & Sikkim	SCT	SCT	ISOL	ISOL	ISOL
6. Gangetic West Bengal	DRY	DRY	DRY	DRY	DRY
7. Odisha	DRY	DRY	DRY	DRY	ISOL
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	ISOL	SCT	ISOL	DRY	DRY
13. Haryana, Chd & Delhi	ISOL	ISOL	DRY	DRY	DRY
14. Punjab	SCT	ISOL	DRY	DRY	DRY
15. Himachal Pradesh	WS	FWS	ISOL	DRY	DRY
16. Jammu & Kashmir	WS	FWS	SCT	ISOL	ISOL
17. West Rajasthan	ISOL	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	DRY
26. Vidarbha	DRY	DRY	DRY	DRY	ISOL
27. Chhattisgarh	DRY	DRY	ISOL	DRY	ISOL
28. Coastal Andhra Pradesh	DRY	DRY	DRY	DRY	DRY
29. Telangana	ISOL	DRY	DRY	DRY	DRY
30. Rayalaseema	ISOL	ISOL	ISOL	ISOL	ISOL
31. Tamil Nadu & Puducherry	DRY	DRY	DRY	DRY	DRY
32. Coastal Karnataka	DRY	DRY	DRY	DRY	DRY
33. North Interior Karnataka	ISOL	DRY	DRY	ISOL	ISOL
34. South Interior Karnataka	ISOL	ISOL	ISOL	ISOL	SCT
35. Kerala	ISOL	DRY	DRY	ISOL	ISOL
36. Lakshadweep					

% 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

- **22 April (Day 1) :** Heat wave conditions very likely at a few places with severe heat wave conditions at isolated places over Jharkhand, Odisha, Telangana and Rayalaseema. Heat wave conditions very likely at a few places over Vidarbha and at isolated places over Bihar, Gangetic West Bengal, Chhattisgarh, Marathwada and North Interior Karnataka. Thunderstorm accompanied with squall/hail likely at isolated places over Himachal Pradesh and thunderstorm accompanied with squall likely at isolated places over Punjab, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Heavy to very heavy rain very likely at isolated places over Arunachal Pradesh; heavy rain very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Dust/thunderstorm likely at isolated places over Haryana, Chandigarh & Delhi and West Uttar Pradesh.
- **23 April (Day 2):** Heat wave conditions very likely at a few places with severe heat wave conditions at isolated places over Jharkhand, Odisha, Telangana, Rayalaseema. Heat wave conditions very likely at a few places over Vidarbha and

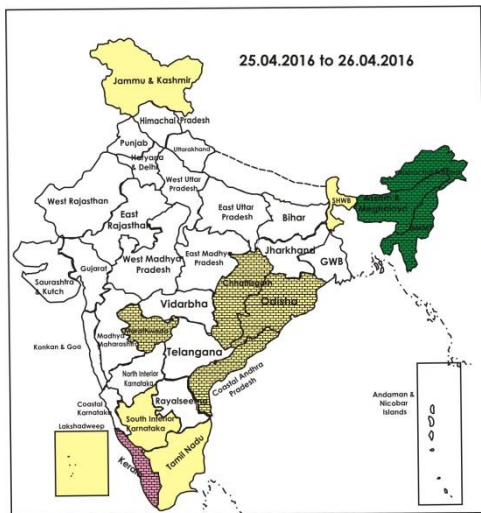
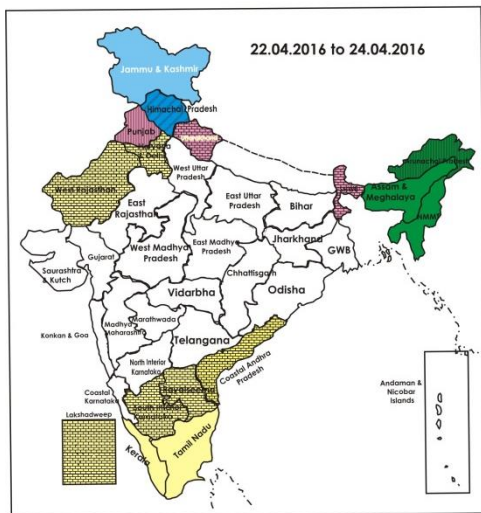
at isolated places over Bihar, Gangetic West Bengal, Chhattisgarh, Marathwada and North Interior Karnataka. Thunderstorm accompanied with squall/hail likely at isolated places over Himachal Pradesh & Uttarakhand and thunderstorm accompanied with squall likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Heavy rain very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. Dust/thunderstorm likely at isolated places over West Uttar Pradesh.

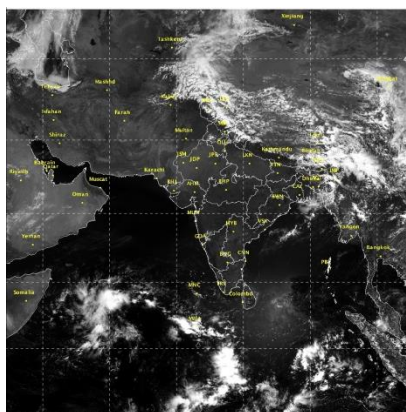
- **24 April (Day 3):** Heat wave conditions very likely at a few places with severe heat wave conditions at isolated places over Odisha. Heat wave conditions very likely at a few places over Jharkhand, Vidarbha, Telangana, Rayalaseema and at isolated places over Bihar, Gangetic West Bengal, Chhattisgarh and North Interior Karnataka. Heavy rain very likely at isolated places over Arunachal Pradesh and Assam & Meghalaya.
- **25 April (Day 4):** Heat wave conditions very likely at a few places over Odisha; at isolated places over Jharkhand, Telangana, Rayalaseema and North Interior Karnataka. Heavy rain very likely at isolated places over Arunachal Pradesh.
- **26 April (Day 5):** Heat wave conditions very likely at a few places over Odisha and at isolated places over Jharkhand.

Weather Outlook for subsequent 2 days from 27th to 29th April 2016

- Rain/thunderstorms likely at many places over northeastern states and at isolated places over Sub-Himalayan West Bengal & Sikkim.
- Rain/snow likely at isolated places over Western Himalayan region.

Weather Forecast Map (Valid upto 0830 hours of 27th April, 2016)





Salient Advisories

- As heat wave conditions prevailed and very likely to prevail at a few places with severe heat wave conditions at isolated places over **Jharkhand** and **Odisha** from 22nd to 25th, over **Telangana** and **Royalaseema** on 22nd to 24th and heat wave conditions at a few places over **Vidarbha** and at isolated places over **Bihar**, **Gangetic West Bengal** and **Chhattisgarh** on 22nd to 24th, over **Marathwada** on 22nd & 23rd and over **North Interior Karnataka** from 22nd to 24th April, farmers are advised to adopt the following measures for **livestock**:
 - Cattles/goats may preferably be allowed for grazing during early morning and late evening to avoid exposure to extreme hot conditions and during hot hours, they must be tied and fed in shaded place or under the tree.
 - Sprinkle cold water 2-3 times a day on the body of the animal to overcome the heat. Apply 4-6 inch thick hay thatch as a roofing material. Undertake spraying of water on floor and roof of animal shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals.
 - Proper ventilation should be maintained for free circulation of air in the sheds.
 - Provide plenty of clean drinking water to animals and use anti-stress medicines like Zee-stress.
 - **In poultry:** Cover water tank and lines with gunny bags to provide cool water, use foggers/fans and sprinklers to reduce temperature and to increase air flow, cover roofs of the sheds with coconut tree leaves or grass, white wash roofs and water tanks to reduce heat absorption, ensure proper cross ventilation to avoid ammonia accumulation and provide feed during cooler parts of the day (early morning or late evening). Add electrolytes and vitamin-C in drinking water.
- As heat wave conditions prevailed and very likely to prevail at a few places with severe heat wave conditions at isolated places over **Jharkhand** and **Odisha** from 22nd to 25th, over **Telangana** and **Royalaseema** on 22nd to 24th and heat wave conditions at a few places over **Vidarbha** and at isolated places over **Bihar**, **Gangetic West Bengal** and **Chhattisgarh** on 22nd to 24th and over **North Interior Karnataka** from 22nd to 24th April, apply light and frequent irrigation to standing crops to cope up with the excess evaporative demand. Young saplings may be protected by erecting temporary shade. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas. Cover the young vegetable nurseries with polythene or with straw. Resort to drip and sprinkler irrigation practices wherever possible.
- As day temperature is prevailing above 40°C in **Madhya Maharashtra**, **Vidarbha** and **Marathwada** region since last 3 days, heat wave conditions is very likely at a few places over Vidarbha and at isolated places over Marathwada during next 3 days and also increase in day temperatures likely by 2-3°C over Madhya Maharashtra during 27th to 29th April, farmers are advised to apply light and frequent irrigation to the summer crops and orchards to reduce the impact of heat wave. Farmers are advised to prepare artificial windbreaks with the help of stover of sorghum and apply on the border of banana orchard to protect from heat wave in Marathwada and Vidarbha regions.
- As thunderstorm accompanied with squall/hail likely at isolated places over **Himachal Pradesh** on 22nd & 23rd and over **Uttarakhand** on 23rd, thunderstorm accompanied with squall likely at isolated places over **Punjab**

on 22nd and over **Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura** on 22nd & 23rd April, farmers are advised to provide hail net/hail caps in orchard crops, arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops. Undertake propping in sugarcane.

- As rain/thundershowers likely at many places over **Arunachal Pradesh** on 24th & 25th, over **Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura** from 22nd to 25th, along with heavy/heavy to very heavy rain very likely at isolated places over Arunachal Pradesh on 22nd to 25th and heavy rain at isolated places over Assam & Meghalaya on 22nd to 24th and over Nagaland, Manipur, Mizoram & Tripura on 22nd and 23rd April, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields.
- As dust/thunderstorm likely at isolated places over **Haryana, Chandigarh & Delhi** on 22nd and over **West Uttar Pradesh** on 22nd & 23rd April, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane and keep harvested produce at safer places.
- As rain/snow would occur at most/many places over **Jammu & Kashmir** and **Himachal Pradesh** on 22nd & 23rd April, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of wheat and keep already harvested produces at safe places.
- Undertake land preparation/sowing of the following summer crops:
 - In **Assam**, postpone sowing of *Capsularis* jute, summer green gram & black gram and transplanting of *ahu* rice till the end of current spells of heavy rain.
 - In **West Bengal**, continue transplanting of chilli and sowing of maize, bhindi and French bean in Sub Himalayan West Bengal & Sikkim and in New Alluvial Zone, continue land preparation and sowing of jute.
 - In **Odisha**, in East and South Eastern Coastal Plain Zone, continue land preparation and sowing of jute and in North Eastern Ghat Zone, continue sowing summer sunflower and groundnut.
 - In **Uttar Pradesh**, continue sowing of cowpea, maize, urad and mung.
 - In **Bihar**, continue sowing of summer maize and vegetables and in **Jharkhand**, continue sowing of green gram/ black gram, maize and vegetables.
 - In **Punjab** and **Haryana**, continue planting of sugarcane and undertake sowing of cotton.
- As mainly dry weather would prevail, continue harvesting of wheat in **Uttar Pradesh, Bihar, Rajasthan, Uttarakhand, Punjab** and **Haryana**. Continue harvesting of rice in Problem Area Zone and south Zone of **Kerala**. In the North Coastal Zone of **Andhra Pradesh**, continue harvesting of rice and in the Southern Zone and Scarce Rainfall Zone, continue harvesting of groundnut.

Detailed Zonewise Agromet Advisories

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



Banana



Groundnut



Sugarcane



Cotton

- **Realised Rainfall:** Rainfall occurred in Hassan district of South Interior Karnataka. Weather remained mainly dry/dry over rest of the region.
- **Advisories:**
 - As heat wave conditions very likely at a few places over Telangana and Rayalaseema with severe heat wave at isolated places on 22nd & 23rd and heat wave conditions at a few places on 24th & 25th and heat wave conditions at isolated places over North Interior Karnataka from 22nd to 24th April April, apply light and frequent irrigation to standing crops to cope up with the excess evaporative demand. Young saplings may be protected by erecting

temporary shade. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas.

▪ **Tamil Nadu:**

- In the Cauvery Delta Zone, continue cultivation of blackgram (ADT 5 variety) under irrigated conditions, harvesting of matured rice fallow black gram and provide irrigation to sesame, sugarcane and rice fallow cotton crops.
- In the Western Zone, continue summer ploughing in both dryland and irrigated fallow land. Propping may be given to banana of more than 5 months old against lodging. Provide irrigation to irrigated sesame.
- In the South Zone, undertake harvesting of matured chillies.
- In the High Altitude Hilly Zone, since moderate rain fall is expected in the coming days, undertake land preparation for sowing of summer crops and continue providing irrigation with sprinkler in coffee to increase blossoming and higher yields.
- In the North Western Zone, continue cultivation of green gram (short duration varieties such as Co-8 and Vamban-2) utilizing the expected summer showers.
- In the South Zone, prevailing light cloud cover and high humid weather condition is congenial for incidence of leaf hopper and whitefly in cotton. To control, set up yellow pan traps and sticky traps 12/ha and spray Neem seed kernel extract @ 5% or Neem oil 5 ml/litre of water.
- In the North Eastern Zone, incidence of *spodoptera* larvae is noticed in groundnut due to prevailing hot weather conditions. To control the pest, spray Imidacloprid @ 17.8% SL 40-50 ml/acre or Quinalphos 25% EC 560 ml/acre.
- In the High Altitude Hilly Zone, due to hot weather conditions, there is chance of mites in tea crop, spray Neem oil or Propargite 57% EC or Profenofos 50% EC/Dicofol 18.5% EC @ 2 ml / litre of water for control.
- In the High Rainfall Zone, sprinkle Carbofuran 3G @ 40 g (before sprinkling, corm should be dipped in mud slurry) to control nematode attack in bananas.
- Suitable varieties for sowing are given in Annexure II.

▪ **Andhra Pradesh:**

- In the Scarce Rainfall Zone, since heat wave conditions are likely to prevail over Rayalaseema during next 2days, provide light irrigation through drip or check basin method mango, banana, sweet orange and vegetable fields, spray Potassium Nitrate @10g/litre of water in the morning hours and undertake mulching of the tree basin with organic mulch to conserve the moisture in mango, banana, sweet orange and vegetable fields in order to protect the crops from high temperature conditions. In banana, cover the fruit bunch/peduncle with flag leaf to avoid the direct incidence of the sunrays/ to avoid the scorching effect. Spray potassium nitrate @10g/litre at early hours. In sweet orange, spray calcium carbonate on the fruits @ 10-15 g/litre to avoid the sun scorching and direct radiation effect on the fruits.
- In the Krishna Godavari Zone, continue harvesting of Bengal gram and *rabi* black gram. In view of the prevailing hot weather, continue providing irrigation to *rabi* jowar at flowering to grain formation stage.
- In the North Coastal Zone, continue harvesting of rice and planting of sugarcane using single budded setts/bud chip seedlings and give irrigations at frequent interval to keep the soil moist.
- In the Southern Zone, continue harvesting of *rabi* groundnut.
- In the Southern Zone, prevailing increasing temperature conditions are highly congenial for attack of mealy bug in vegetable crops mainly brinjal, tomato. To control, spray Malathion or Dimithioate @ 2 ml and mix with Sandowit @ 1 ml/litre of water.
- In the North Coastal Zone, prevailing dry hot weather conditions are congenial for incidence of mites (yellow mite & red mite) in sugarcane. To control, spray Wettable Sulphur @ 3 g/litre of water.
- In the Scarce Rainfall Zone, leaf blast and sheath rot incidence is noticed in rice. Spray Tricyclazole 75 % 0.6g/ Isoprothiolin 40% @ 1.5ml @ 2.5ml/litre of water to control leaf blast and Validamycin @ 2ml/litre of water or Propiconazole @ 2ml/litre of water for sheath rot.
- In the High Altitude Tribal Zone, irrigate the rice field and spray Dichlorovos @ 1.0 ml + Chlorpyrifos @ 2.5 ml/litre of water in the evening hours to control cut worm incidence.

▪ **Telangana:**

- In the Southern and Northern Telangana Zone, irrigate the ID crops during the evening hours to protect crops from prevailing heat wave conditions.
- In the Northern Telangana Zone, undertake harvesting of groundnut, maize and sesamum. Light irrigation may be provided to all vegetables through drip or check basin method and spray Potassium nitrate @ 5g/litre of water in the early hours in the morning.
- In the Northern Telangana Zone, stem borer incidence was noticed in rice. To control, spray Acephate @ 1.5 g/litre of water or Cartap Hydrochloride @ 2 g/litre of water or Chlorantraniliprole @ 0.4 ml/litre of water.
- In the Southern Telangana Zone, incidence of mites in noticed in chillies. To control, spray Spiromesifen @ 1.25 ml or Fenpyroximate @ 2ml per litre or Wettable Sulphur @ 3 g or Dicofol @ 5 ml per litre of water.

▪ **Karnataka:**

- In Southern Dry Zone, dry land farmers may take up land preparation across the slope for pre-monsoon sowing after receipt of sufficient rain and keep inputs ready.
- In North East Dry Zone, to overcome the dry condition, the farmers are advised to follow some technology tips in

sugarcane:

- Apply 50 kg Potash fertilizer per hectare with last irrigation.
- Adopt alternate furrow irrigation method where there is scarcity of irrigation water.
- Weed control through herbicides in late planted cane (2, 4-D @ 3.3 kg/ha).
- Mulching by dry leaves and grasses to conserve soil moisture.
- Spraying of 2.5% urea or MOP in the situations of prolonged dry condition.
- The hoeing in inter row spacing to create dust mulch to break soil capillaries for checking surface moisture loss.

- In North Transition Zone and Eastern Dry Zone of Karnataka, spray NAA (Naphthalene acetic acid) 20 ppm twice at an interval of 15 days to control mango fruit drop; apply one protective irrigation to reduce the fruit drop.
- In Eastern Dry Zone of Karnataka, procure seeds for sowing and store for pre monsoon season sowing; ragi, cowpea, sesame, black gram and green gram are recommended for sowing during month of May. Agricultural implements and seeds (Ragi: Indaf -9, Sesamum : Navile-1, T-7, Cowpea: TVX-944, KBC-1, Green gram: PS-16, PDM-84,178, Black gram: Karagao-3, T-9, Rashmi (LBG-625) may be kept ready for sowing of above crops. Mulching and weeding is recommended in mango orchard to conserve soil moisture. Provide irrigation to vegetables and other crops.
- In North East Transition Zone, North Transition Zone and North East Dry Zone, continue summer deep ploughing.
- In North Transition Zone of Karnataka, continue picking of matured fruits of sapota. Continue harvesting of chilli, tomato and brinjal. Apply irrigation in sugarcane either in alternate rows or by drip irrigation method in North Transition Zone and North East Transition Zone.
- Due to cloudy weather during last week, thrips and mites are observed in chilli crop in Southern Dry Zone; to control, spray Roger @ 1.7 ml + Dicotal @ 2.5 ml/litre of water.

▪ **Kerala:**

- In the Problem Area Zone, continue harvesting of matured rice. Continue mulching with dried leaves for reducing evapotranspiration loss and provide shade to newly planted coconut seedlings.
- In the Northern Zone, continue planting of Nendran bananas(Robusta, Poovan, Njalipoovan, Palayankodan varieties), precautionary measures to conserve water in rice fields to tackle drought and cultivation of vegetables as inter crops in coconut gardens.
- In the Southern Zone, undertake harvesting of *puncha* rice and continue land preparation for sowing of *Virippu* rice after proper seed treatment to reduce the incidence of fungal diseases, after receiving sufficient rainfall.
- In the Southern Zone, fairly high humidity and high temperature conditions are congenial for attack of root wilt disease along with leaf rot. To control, remove the rotten parts of leaves in the affected palms and apply Copper oxychloride /Dithane M 45 @4g/litre of water.
- In the Problem Area Zone, prevailing hot weather condition is congenial for incidences of sucking pest like mites and thrips in vegetables. To control, spray Oberon @ 0.6g/litre of water on a non rainy day. Monitor for white fly attack in vegetables. Yellow sticky trap must be installed in fields to control the attack.
- In the Central Zone, prevailing increase in temperature is congenial for incidence of aphid attack on rice.To control, spray Imidacloprid @ 3 ml/10 litres of water.

• **Animal Husbandry**

- In the Krishna Godavari Zone of Andhra Pradesh, due to rise in temperature, avoid grazing of animals during day time, provide good thatched sheds for cooling, increase the frequency of drinking water facility and provide ragi and horsegram malts.
- In the Scarce Rainfall Zone, since heat wave conditions are likely to prevail over Rayalaseema in the coming two days,cover water tank and lines may be covered with gunny bags to provide cool water,ensure cool drinking water available throughout the day, use foggers and sprinklers to reduce temperature, cover roofs with coconut tree leaves or grass, white wash the roofs and water tanks to reduce heat absorption,ensure proper cross ventilation to avoid ammonia accumulation use, use pedestrian fans to increase air flow and distribute feed in cooler parts of the day (early morning or late evening).
- In the North Coastal Zone of Andhra Pradesh, as high temperature is prevailing, keep the animals in shade and keep water available to the animals.
- In the Southern and Northern Telangana Zone, due to prevailing heat wave conditions, protect the poultry birds by arranging fans and foggers in sheds, cover the sheds with paddy straw and arrange sprinklers, feed with wet mash to increase the feed intake and provide cool water for drinking and provide green fodder to milch animals to improve the butter percentage in the milk.
- In the Western and Southern Zone of Tamil Nadu, since there is increase in both maximum and minimum temperature, animals should not be allowed to graze outside between 10 am to 4 pm. Provide plenty of drinking water.
- In North East Transition Zone and North Dry Zone of Karnataka, due to increase in day temperature (42° to 43°C) there is probability of drop in feed intake in poultry birds; maintain optimum temperature by applying 4 - 6 inch thick hay thatch as a roofing material. Water can be used for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature in poultry sheds. Provide cold water for poultry birds. Add

electrolytes (KCl, NaCl and NaCO₃) in feed and water. Leave the buffaloes in ponds during afternoon hours or sprinkle the cold water 2-3 times a day on the body of the animal to overcome the heat. Apply 4-6 inch thick hay thatch as a roofing material. Water can be used for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals.

- In North East Dry Zone and Eastern Dry Zone of Karnataka, conserve fodder (hay, silage and in large heaps) to meet the fodder requirement during approaching lean period.
- In Southern Dry Zone of Karnataka, make drinking water available for animals and birds in and around home as well as in the farm fields.

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



Banana



Rice



Okra



Cabbage

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

- **Advisories:**

- As thunderstorm accompanied with squall likely at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 22nd & 23rd April, farmers are advised to provide hail net/hail caps in orchard crops, arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops. Undertake propping in sugarcane.
- As rain/thundershowers likely at many places over Arunachal Pradesh on 24th & 25th, over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura from 22nd to 25th, along with heavy /heavy to very heavy rain very likely at isolated places over Arunachal Pradesh on 22nd to 25th and heavy rain at isolated places over Assam & Meghalaya on 22nd to 24th and over Nagaland, Manipur, Mizoram & Tripura on 22nd and 23rd April, farmers are advised to postpone irrigation, intercultural operations and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields.
- **Assam, Meghalaya & Arunachal Pradesh:**
 - In Assam, drain out excess water from rice nursery, maize, green gram, black gram and vegetable fields. Continue sowing of *baou* rice and *Capsularis* jute after current spells of heavy rain.
 - In Hill Zone of Assam, continue sowing of maize, bhindi, bottle guard, bitter guard and transplanting of normal *ahu* rice after current spells of heavy rain. Also collect healthy sword suckers of Dwarf Cavendish (Dwarf Cultivar), Cheni Champa, Malbhog (Medium Tall cultivars), etc. for planting of banana.
 - In Lower Brahmaputra Valley Zone of Assam, continue sowing of cow pea and planting of spring sugarcane at optimum soil moisture conditions. Undertake replanting of dead hills within 7-10 days of transplanting of transplanted early *ahu* rice. Undertake sowing of *ahu* rice with selection of right varieties like Rasi, IR-36 of normal direct seeded/transplanted *ahu* rice after current spells of heavy rain.
 - In Upper Brahmaputra Valley Zone of Assam, continue planting of spring sugarcane and in Barak Valley Zone of Assam, undertake planting of lemon after current spells of heavy rain.
 - In Central Brahmaputra Valley Zone of Assam, continue land preparation and sowing of early *ahu* rice, summer vegetables and *Capsularis* jute and planting of ginger, turmeric and spring sugarcane after current spells of heavy rain.
 - In North Bank Plain Zone of Assam, farmers are advised to continue transplanting of early *ahu* rice, planting of the high yielding varieties of ginger & turmeric, banana after current spells of heavy rain. Complete sowing of maize at the earliest.
 - In Meghalaya, continue sowing of maize in high and mid altitude region and continue sowing of bottle guard and ash guard and nursery bed preparation for brinjal and tomato after current spells of heavy rain. Continue land preparation and sowing of *jhum* rice after current spells of heavy rain.
 - In Arunachal Pradesh, postpone sowing of summer vegetables like cucumber, sponge gourd, bottle gourd and ladies finger as they are likely to spoil during rain. Right time for transplantation of vegetables. Prepare half moon terraces in fruit crops (orange/banana/apple/peach) grown in steep slopes to prevent nutrient loss during heavy downpour and follow proper drainage and earthing up practices in low land/plain areas to avoid water stagnation in fruit orchards. Undertake nursery sowing/transplanting of rice after current spells of heavy rain.

- In Hill Zone of Assam, there is chance of attack of rice blast in transplanted early *ahu* rice at tillering stage due to the prevailing weather conditions. Spray Carbendazim @ 1g/litre after current spells of rain.
- In Lower Brahmaputra Valley Zone of Assam, in the prevailing weather, there is chance of attack of rice bug in *boro* rice at booting to heading stage. Spray Malathion 5% dust @ 2.5-3kg/bigha against rice bug after current spells of rain.
- In North Bank Plain Zone of Assam, spray Mencozeb (Dithene M-45) @ 2g/litre or Carbendazim (Dirosol) @ 1g/litre of water for controlling blast disease in *boro* rice at grain formation stage after current spells of rain.
- In Barak Valley Zone of Assam, there may be stem borer attack in the *boro* rice fields; to control the pest apply Chloropyriphos @ 1 ml/litre of water after current spells of rain.
- In Meghalaya, there may be attack of blast, rice Gandhi bug and stem borer in *boro* rice during flowering/milking stage. To control blast spray Carbendazim @ 1g/litre of water, spray Malathion 5% dust @ 6.25kg/ha against rice gandhi bug and Chloropyriphos @ 0.02% or Monocrotophos @ 0.04% against stem borer after current spells of rain.
- **Nagaland, Manipur, Mizoram and Tripura:**
 - In Nagaland, undertake sowing of okra, cowpea and cucurbits after current spells of heavy rain. Undertake pit preparation for plantation of fruit crops after current spells of heavy rain.
 - In Manipur, complete transplanting of 35-40 days of old seedlings of pre-*kharif* rice at the earliest and maintain water depth of 2-3cm in the field after transplanting. Undertake planting of ginger/turmeric and land preparation for sowing of soybean, groundnut, black gram and pit preparation for fruit plants like banana, lime, lemon, orange, kiwi after current spells of heavy rain.
 - In Mizoram, continue transplanting of brinjal and chilli in the main fields and sowing of French bean, cow pea and maize after current spells of heavy rain.
 - In Tripura, complete land preparation for sowing of *Jhum* rice. Keep water level in the fields of *boro* rice 5 cm during flowering stage.
 - In Nagaland, there is chance of attack of red pumpkin beetle in cucurbits and fruit borer in tomato shoot and fruit borer in brinjal to control red pumpkin beetle, undertake dusting of mixture of kerosene oil + ash in adequate proportion after current spells of rain. To control fruit borer in tomato, shoot and fruit borer in brinjal establish pheromone trap @ 12 nos per acre collect infested fruits and shoots and bury it in the soil.
 - In Manipur, apply few granules of Carbofuradan 3G at maize whorl at vegetative stage against stem borer after current spells of rain.
 - In Tripura, there is chance of attack fruit and shoot borer on summer brinjal and tomato. Apply Cypermethrin @ 1.5ml or Flubendamid 0.5 ml per litre of water to manage the attack after current spells of rain.
 - Suitable varieties for sowing are given in Annexure II.
- **Animal Husbandry:**
 - In Hill Zone of Assam, undertake vaccination against Ranikhet disease in poultry during this time and proper sanitary measures in poultry house and incubators.
 - In Barak Valley Zone of Assam, due to increase of temperature with increasing the humidity is not suitable for animal in this condition. Farmers may feed their animals at night time and feed as much as possible green grass with small pieces.
 - In Meghalaya, due to increased in temperature, keep the poultry house well ventilated during day time.
 - In Manipur, undertake vaccination against ranikhet disease in poultry. Vaccinate cattle against black quarter, haemorrhagic septicaemia and foot and mouth disease.
 - In Tripura, undertake vaccination against swine fever in pig and deworming in calves.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]



Green gram



Sugarcane



Groundnut



Banana

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

- **Advisories:**

- **Maharashtra:**

- As day temperature is prevailing above 40°C in Madhya Maharashtra, Vidarbha and Marathwada region since last 3 days, heat wave conditions is very likely at a few places over Vidarbha and at isolated places over Marathwada during next 3 days and also increase in day temperatures likely by 2-3°C over Madhya Maharashtra during 27th to 29th April, farmers are advised to apply light and frequent irrigation to the summer crops and orchards to reduce the impact of heat wave. Farmers are advised to prepare artificial windbreaks with the help of stover of sorghum

- and apply on the border of banana orchard to protect from heat wave in Marathwada and Vidarbha regions.
- In Marathwada, apply irrigation by sprinkler method to summer groundnut, sugarcane, vegetables and mango orchards. Cover banana bunch with perforated plastic bags to protect from bright sunshine. Apply mulch of sugarcane trash, dried grasses or black plastic film (polyethylene) to summer crops and orchards to avoid loss of water due to evapotranspiration. Make arrangement for shade to protect newly planted mango trees and vegetable crops from scorching sun.
 - In Vidarbha, apply irrigation by sprinkler method to summer groundnut, vegetables, sugarcane, rice and mango orchards. Cover banana bunch with perforated plastic bags to protect from bright sunshine. Apply mulch of sugarcane trash, dried grasses or black plastic film (polyethylene) to summer crops and orchards to avoid loss of water due to evapotranspiration. Maintain water level of 5-8 cm in summer rice field in East Vidarbha.
 - In Madhya Maharashtra, apply irrigation by drip or sprinkler method to summer groundnut, sugarcane, vegetables and mango orchards. Apply mulch of farm waste, dry grass, leaves and twigs in orchards (fig, pomegranate, sweet lime, guava) and vegetable crops to avoid loss of water due to evapotranspiration. Undertake mulching with trash in seasonal and ratoon sugarcane crops and apply irrigation by alternate furrow method to conserve water. Farmers are advised to protect the banana bunches from severe heat by covering the bunches with banana leaves or perforated polythene bags. Undertake April pruning in vineyards. Undertake harvesting of onion crop.
 - In Konkan, apply light irrigation to groundnut, vegetable crops, pulses and orchards like mango and cashew. Also apply mulch to reduce evapotranspiration. New graft and newly planted fruit saplings may be protected from sun burn by erecting temporary shed. In Sindhudurg, apply irrigation to maintain around 10 cm water level in rice field at grain filling stage. Continue harvesting of already matured rice crop.
 - Due to prevailing temperature in Madhya Maharashtra, there may be attack of sap sucking pests like whitefly and thrips in tomato; spray Dimethoate @ 15 ml per 10 litres of water at an interval of 7 days.
 - Due to prevailing temperature in Western Maharashtra Scarcity zone, there may be attack of thrips and jassids in summer groundnut, spray Dimethoate @ 14 ml per 10 litre of water.
- **Gujarat:**
- In South Gujarat Zone, under high temperature conditions, protect banana bunch with plastic sheet, apply irrigation in fruit crops by drip irrigation method for 1/2 to 3/4 hrs; if drip irrigation is not available, provide 12 to 15 litres of water per graft.
 - In North West Zone of Gujarat, under high temperature condition, cover papaya fruits with gunny bags and provide support to heavy fruiting plants. Apply irrigation in groundnut (peg initiation), pearl millet, castor, pomegranate, sapota, lemon and papaya orchards. Pluck matured vegetables and fruits regularly.
 - In South Saurashtra Zone, apply irrigation in garlic (bulb development stage) and onion (bulb development stage).
 - In North Gujarat Zone, under high temperature condition, cover papaya fruits using gunny bags and provide support to heavy fruiting plants to protect against high wind; apply irrigation in groundnut crop at peg initiation stage. Spray 0.1% FeSo₄ @ 100 g with 10 g Citric Acid solution to correct chlorosis in groundnut. Apply irrigation to pearl millet, pomegranate, sapota, lemon and papaya orchards. Pluck matured fruits and vegetables like bhindi, tomato, cucumbers, watermelon and muskmelon. Continue harvesting of matured onion bulbs and keep the bulbs at well aerated place.
 - In Middle Gujarat Zone, spray Nephelin Acetic Acid 20 ppm and 2 % Urea solution in mango orchard for effective control of dropping of fruits. Apply second top dressing in summer paddy crop keeping 5 inch water depth in the field.
 - In Bhal and Coastal Zone, carry out weeding and inter cultural operations in timely sown pearl millet, cluster bean and green gram and apply irrigation at 8 to 10 days interval.
 - In South Gujarat Heavy Rainfall Zone, continue intercultural operations in vegetable crops, rice, groundnut and green gram. Apply irrigation in cluster bean, sugarcane, green gram, groundnut, sweet corn as per requirement. Continue early harvesting of sweet potato. Undertake mulching in mango and cucurbits. Apply light irrigation in mango to reduce fruit drop.
 - In North Saurashtra Zone, apply light and frequent irrigation to groundnut (flowering), mango (gram grain size) orchards, vegetables crops and in lemon orchard.
 - Under present weather condition there is chance of infestation of prodenia, heliothis and caterpillar in green gram in Middle Gujarat Zone; if found, spray Emamectin Benzoate @ 7 g/10 litres of water for control.
- **Animal Husbandry**
- In Maharashtra, keep animals under shade/shed during noon hours and provide plenty of water for drinking. Also proper aeration should be maintained in the cattle shed to keep the shed cool. The iron sheet walls and roof of the cattle shed should be colored white from outside and covered with grass, farm trash to reduce the impact of heat. To reduce the impact of hot and dry weather, poultry sheds may be surrounded with moist gunny bags. In Madhya Maharashtra region, vaccinate the goats against rinder pest disease and sheeps for sheeppox during the month of April.
 - In Gujarat, under present high temperature conditions, keep animals under shade or in sheds during noon hours, avoid grazing of animals during hot time, provide plenty of cool water mixed with minerals for drinking and shower the animals with cold water two to three times in a day. Increase the green fodder quantity for feeding. Supplementary feeding of vitamins A and D should be given. Provide ragi and horse gram malts.

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



Rice



Okra



Maize



Green gram

- **Realised Rainfall:** Rainfall occurred in Cooch Behar, Darjeeling, Jalpaiguri, North Sikkim and West Sikkim districts of Sub-Himalayan West Bengal & Sikkim. Weather remained mainly dry/dry over rest of the region.

- **Advisories:**

- As heat wave conditions prevailed and very likely to prevail at a few places with severe heat wave conditions at isolated places over Jharkhand and Odisha from 22nd to 25th and heat wave conditions at isolated places over Bihar, and Gangetic West Bengal on 22nd to 24th April, apply light and frequent irrigation to standing crops to cope up with the excess evaporative demand. Young saplings may be protected by erecting temporary shade. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas. Cover the young vegetable nurseries with polythene or with straw. Resort to drip and sprinkler irrigation practices wherever possible.

- **West Bengal:**

- In New Alluvial Zone, continue land preparation and sowing of improved variety of jute. Before sowing, seeds should be treated with Carbendazim @ 2 to 3 g per Kg of seed.
- In Laterite and Red soil zone, maintain the water level up to 2-3cm in the rice fields.
- In Coastal Saline Zone, as dry weather would prevail, complete harvesting of *boro* rice. After the harvesting, keep for sun drying and threshing. Apply irrigation during afternoon hours in okra, brinjal during fruit bearing stage.
- In Hill Zone, continue sowing of bhindi and French bean and planting of round chilli and pit preparation for new orchard of mandarin orange.
- In Laterite and Red soil Zone, due to hot weather condition, there may be attack of gundhi bug in rice at milking stage. If 16 gundhibugs/100 panicles (Economic Threshold Level) are present at milking stage, spray Neem Seed Kernel Extract solution @ 50 ml/litre of water twice during the early hours of the day.
- In Hill Zone, in the prevailing weather condition, there may be white fly attack in tomato and gerbera. Use yellow sticky traps for controlling white fly on non rainy day.
- In Terai Zone, weather is congenial for attack of fruit and shoot borer, collar rot in brinjal. Apply Cartap hydrochloride 50 SP @1 g/litre of water or Pheromone trap (Leucilure) 12-14 nos. per ha. For collar rot, undertake soil drenching with Chlorothanil @1 gm+Carbendazim @ 2g/litre of water on non rainy day.
- In Old Alluvial Zone, under hot and humid weather condition, brown spot and stem borer may be seen in rice. To control Brown Spot disease, spray Carbendazim (Bavistin) @ 1g/litre of water or Tricyclonazole (Beam) @ 0.5g/litre of water on non rainy day. To control stem borer use pheromone traps 3-4/ bigha.

- **Andaman and Nicobar Islands:**

- In South, North and Middle Andaman, fruit borer infestation may be found in brinjal. Collect the infested parts and destroy them.
- In Nicobar, conserve the soil moisture in the basins of coconut and spices by mulching with plantation wastes/grasses.

- **Odisha:**

- In East and South Eastern Coastal Plain Zone, postpone transplanting of summer vegetables till the end of heatwave conditions, otherwise plant in the evening and cover with paper cap during day time. Apply irrigation in groundnut crops at flowering stage. Cover the young vegetable nurseries with polythene or with straw. Resort to drip and sprinkler irrigation practices wherever possible.
- As mainly dry weather along with high temperature is prevailing, apply light and frequent irrigation in maize at tasseling stage in North Eastern Coastal Plain Zone and in sugarcane crop during the tillering stage in Western Undulating Zone.
- In East and South Eastern Coastal Plain Zone and North Central Plateau Zone increased temperature may favour the egg laying of stemborer in rice. To attract the butterflies, place 4 Pheromon Traps/acre, collect the adults and destroy them by burning them under soil or by burying. Also YMV infestation has been found in summer pulses. Spray Rogor @ 20 ml/10 litre water to control the white fly.
- In East and South Eastern Coastal Plain Zone, infestation of thrips has been occurred in summer groundnut. Spray 2 ml Endosulphan in 1 litre water. Increased temperature may aggravate the white ant and white grub attack in groundnut. Go for thorough soil drenching with Chloropyrifos @ 2ml/litre of water.
- In North Eastern Coastal Plain Zone, the higher differential between day and night temperature will aggravate

- whitefly problem in summer green gram. To control whitefly, spray Thiomethoxam @ 80g/acre.
- In Mid Central Table Land Zone, due to very high temperature the papaya fruits are affected by papaya mealy bug. To control, spray Propenophos @ 2ml/litre of water. For better result add surfactant like APSA 80 @ 5ml/10 litre.
- In Mid Central Table Land Zone, due to high temperature there is Thrips attack in onion. Yellow or white sticky traps may be used along field edges to monitor the initial migration of thrips into a field. Cleaning plant debris from the field and the surrounding area may aid in controlling thrips.
- In West Central Table Land Zone, the milking stage in rice is susceptible to attack of Gundhi bug. The adult and nymph suck the juice from developing grain at early stage of grain development. To control it, broadcast Quinalphos 1.5% dust @ 10 kg/acre.
- **Bihar:**
- In South Bihar Alluvial zone, complete sowing of summer moong and complete harvesting of matured wheat and store the grains after threshing in safe places. Undertake sowing of fodder crop maize, jowar, bajra and lobia.
- In North West Alluvial Plain Zone, continue sowing of elephant foot yam and Continue harvesting wheat and rabi maize crop.
- In North East Alluvial Zone, continue land preparation and sowing of jute. Maintain minimum water level of 2-3cm in boro rice fields. Continue harvesting of wheat and after harvesting, drying, threshing and winnowing and store grain 8-10% moisture level.
- In North West Alluvial Plain Zone, in prevailing weather condition fruit borer and mite infestation may be found in tomato and lady's finger. To control fruit borer Spraying of Spinosad 48EC@1ml/4 litres of water, if pest population reaches ETL. To control mite spraying of Ethion @ 1.5-2 ml/litre of water.
- In North East Alluvial Zone, prevailing temperature and humidity is congenial for incidence of yellow stem borer in rice and maize. For control, apply Fipronil 0.3% GR @ 20-25 Kg/ha or Chlorantranileprale 0.4% GR @ 10Kg/hectare. To control fruit & shoot borer in Brinjal or tomato fruit borer, apply Indoxicarb 15.8 EC @ 1ml/litre of water.
- **Jharkhand:**
- In Western Plateau Zone, continue sowing of vegetables like sponge gourd, bottle gourd, pumpkin, water melon, musk melon etc. Continue sowing of green gram and broadcasting of urea in standing vegetable crops. To conserve the moisture, undertake intercultural operations in vegetables.
- In South Eastern Plateau Zone, continue sowing of summer moong.
- In Central and North Eastern Plateau Zone, if irrigation facilities are available, cultivate summer maize with high yielding variety - Birsa Makka-1, Birsa Makka-2, Suwan-1(Hybrid), HQPM (Hybrid) with recommended dose of fertilizer.
- In Western Plateau Zone, as mainly dry weather is prevailing, irrigate the fruit bearing trees at regular interval. Spray Planofix @ 5 ml per 10 litre of water to check dropping of tiny fruits. Spray Sulfex @ 2 g per litre of water against Powdery mildew disease.
- In South Eastern Plateau Zone, high temperature favours blast disease occurrence in summer rice. Hence, spraying of Tricyclazole @ 0.5 g per liter of water is recommended. Don't broadcast urea for 4-5 days after the application of chemicals. Maintain water level upto 3-4 cms.
- In South Eastern Plateau Zone, in mango, to increase the size as well as for controlling fruit dropping, it is advisable to spray, Planofix or Acimone or Multiplex @ 5-10 ml per litre of water. Spray Malathion 50 % @ 2 ml along with Carbendazim and Sulfex @ 2-3 g per litre of water control the insects attack and anthracnose disease. In litchi, to protect from mites and bug attack on leaves, spray Dicofol @ 2 ml per litre of water for mites and Monocrotophos @ 1ml per litre of water for bug.
- In Central and North Eastern Plateau Zone, to control Pirella nymph and adult on sugarcane crop spray Monocrotophos or Emidaclorpid @ one litre per hectare. And for shoot borer apply Chlorpyriphos 10 G granules 2 to 3g in apical leaf part in 30 day after transplanting.
- Suitable varieties for sowing are given in Annexure II.
- **Animal Husbandry**
- As heat wave conditions are prevailing and also very likely to prevail at isolated places over Gangetic West Bengal, Jharkhand and Odisha during next 2 days, keep animals under shade/shed during noon hours and provide plenty of water mixed with minerals for drinking. Grazing/feeding of cattle/goats may be done during morning/evening hours. Leave the buffaloes in ponds during afternoon hours or sprinkle the cold water 2-3 times a day on the body of the animal to overcome the heat. Apply 4-6 inch thick hay thatch as a roofing material. Water can be used for spraying the floor and roof of shelter periodically during peak hot hours which lowers the temperature and consequently reduces the heat load on animals. Proper ventilation should be maintained for free circulation of air in the sheds. Provide plenty of clean drinking water to animals and water troughs should be regularly cleaned.
- In Hill Zone of West Bengal, cattle should be vaccinated yearly against Haemorrhagic Septicaemia (HS) and Black Quarter (BQ) before onset of monsoon.
- In South, North and Middle Andaman, adopt the deworming practice regularly for pig and poultry with the help of local veterinary dispensary.

CENTRAL INDIA [M.P., CHHATTISGARH]



Cauliflower



Green gram



Okra



Sugarcane

- **Realised Rainfall:** Weather remained dry over the region.
- **Advisories:**
 - **Madhya Pradesh:**
 - In Satpura Plateau Zone, continue sowing of summer moong and maize. Apply irrigation in summer crops.
 - In Malwa Plateau Zone, apply irrigation in vegetables and mango, orange and pomegranate orchards. Apply irrigation and undertake hand weeding in moong and urad.
 - In Kymore Plateau and Satpura Hill Zone, apply irrigation in cucurbit crops. Continue sowing of summer moong and urad under irrigation.
 - In Nimar Valley Zone, undertake sowing of okra.
 - In Central Narmada Valley Zone, as dry weather would prevail, apply irrigation in moong and vegetables. Continue harvesting of matured tomato, brinjal and onion.
 - In Jhabua Hill Zone, apply irrigation in tomato, chilli, brinjal, okra, onion crops. Continue harvesting of vegetables. Apply irrigation in moong.
 - In Vindya Plateau Zone, undertake earthing up in sugarcane.
 - In Jhabua Hill Zone, due to rise in temperature, there may be attack of sucking pests in moong, spray Thiamethoxam or Acetamiprid @ 0.35-0.45 g/litre of water.
 - In the prevailing temperature conditions, there are chances of attack of red pumpkin beetle and fruit fly in cucurbits in Bundelkhand Zone and Grid Zone. Spray Triazophos 40 E.C. @ 2 ml per litre of water or Malathion 50 E.C. @ 1ml per litre of water for their control.
 - Suitable varieties for sowing are given in Annexure II.
 - **Chhattisgarh:**
 - As heat wave conditions very likely at isolated places over Chhattisgarh on 22nd to 24th April, apply light and frequent irrigation to standing crops to cope up with the excess evaporative demand. Young saplings may be protected by erecting temporary shade. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas.
 - In North Hill Zone, continue intercultural operations in cucurbit crops and apply irrigation in summer rice, moong and vegetables.
 - In Bastar Plateau Zone, continue intercultural operations in cucurbit crops and apply irrigation at regular intervals.
 - In Chhattisgarh Plain Zone, continue sowing of green gram, sesame and black gram. Apply irrigation in summer rice and orchards.
 - In Bastar Plateau Zone, present weather condition is favourable for incidence of powdery mildew disease in bottle gourd, snake gourd, pumpkin and ridge gourd, for control spray Karathan @ 1g/litre of water.
- **Animal Husbandry**
 - In Madhya Pradesh and Chhattisgarh, due to prevailing high temperature special attention should be given to milch animals, provide adequate water and green fodder to animals and keep them in shade.

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



Wheat



Sugarcane



Cauliflower



Okra

- **Realised Rainfall:** Rainfall occurred in Kinnaur, Kullu and Lahaul & Spiti districts of Himachal Pradesh; Anantnag, Badgam, Baramula, Doda, Kulgam, Phulwama, Ramban and Srinagar districts of Jammu & Kashmir. Weather remained mainly dry/dry over rest of the region.

- **Advisories:**

- As thunderstorm accompanied with squall/hail likely at isolated places over Himachal Pradesh on 22nd & 23rd and over Uttarakhand on 23rd, thunderstorm accompanied with squall likely at isolated places over Punjab on 22nd April, farmers are advised to provide hail net/hail caps in orchard crops, arrange mechanical support to banana, young fruit plants and staking of vegetables to prevent the crops. Undertake propping in sugarcane.
- As dust/thunderstorm likely at isolated places over Haryana, Chandigarh & Delhi on 22nd and over West Uttar Pradesh on 22nd & 23rd April, farmers are advised to provide mechanical support to young fruit plants and staking in vegetables to prevent the crops from lodging due to strong winds. Undertake propping in sugarcane and keep harvested produce at safer places.
- As rain/snow would occur at most/many places over Jammu & Kashmir and Himachal Pradesh on 22nd & 23rd April, postpone irrigation, intercultural operation and application of plant protection measures and fertilizers to the standing crops. Postpone harvesting of wheat and keep already harvested produces at safe places.

- **Jammu & Kashmir:**

- In Sub Tropical Zone, undertake sowing of summer moong and mash in irrigated areas. Continue sowing of summer fodder (maize + cowpea + charri) and bajra. Undertake harvesting of early sown wheat after current spells of rain.
- In Intermediate Zone, continue transplanting of tomato, brinjal, cucumber, bottle gourd and bitter gourd and sowing of okra. Undertake transplanting of seedling of chilli after dipping in 2% Bavistine solution in well drained fields to avoid wilt attack on the crop. Undertake harvesting of matured mustard crop.
- In Valley Temperate Zone continue transplanting of cole, solanaceous and cucurbits crops in the main field. Undertake sowing of summer radish.
- In cold Arid Zone of Jammu and Kashmir, continue harvesting of cabbage, broccoli, Chinese cabbage, beet leaf, lettuce, spinach, coriander in clear weather. Undertake harvesting of turnip in the lower belts of the district. In the lower & middle belts replant the carrot roots in the fields for seed production. Sow the Cucurbits in the polybags & raise Solanaceous & Cruciferous crops nursery.
- In Sub Tropical Zone there may be incidence of powdery mildew in pea and attack of pod borer in gram. To control powdery mildew spray Karathane 50 g in 25 litres of water per kanal and to control pod borer spray Cypermethrin @ 1.5 ml/litre in water or Chloropyrifos 20 EC @ 2ml/litre in water after current spells of rain.

- **Uttarakhand:**

- In Bhabar and Tarai Zone, continue harvesting of mustard, potato, tomato and sugarcane crop on bright sunny days. As dry and hot weather prevailing give irrigation to onion, garlic, mango and litchi crop.
- In Hill Zone, continue nursery sowing of tomato crop. Continue sowing of French bean and okra.
- In Sub Humid and Sub Tropic Zone undertake harvesting of mid sown wheat crop.

- **Himachal Pradesh:**

- As thunderstorm accompanied with squall/hail likely at isolated places over Himachal Pradesh on 22nd & 23rd April, farmers are advised to provide hail net/hail caps in orchard crops like pomegranate, mango, peach etc.
- In Sub-Montane and Low Hills Sub-Tropical Zone, complete sowing of sunflower and fodder crops such as maize, cowpea, chari and bajra in irrigated areas. Continue sowing of cucurbits such as cucumber, bitter gourd, bottle gourd and summer squash, ageti okra, French bean and radish. Complete sowing of zaidmoong and mash in irrigated areas. Continue transplanting of tomato, brinjal, chilli and capsicum.
- In Mid Hills sub-Humid Zone, continue sowing of bhindi, cucurbits, French bean, moong and mash and nursery raising and transplanting of tomato, chilli, capsicum and brinjal and. Continue sowing of fodder crops like maize, cowpea and soybean.
- In High Hills Temperate Dry Zone, complete the pruning operations in apple orchard.
- In Mid Hills sub-Humid Zone, weather is conducive for attack of pod borer in pea crop, apply Carbaryl @ 2 g/litre of water after current spells of rain.
- In Mid Hills sub-Humid Zone, weather is conducive for attack of caterpillars in gram crop, for control spray Carbaryl 50 WP @ 2 g per litre of water after current spells of rain.
- In Mid Hills Sub-Humid Zone, weather is conducive for attack of woolly apple aphid at pink bud stage, for control, spray Dursban @ 400 ml or Marshal @ 200 ml in 200 litres of water after current spells of rain.
- In Mid Hills sub-Humid Zone, weather is conducive for attack of moth in potato crop, for control spray Cypermethrin 25 EC @ 1 ml per litre of water after current spells of rain.
- In Sub-Montane and Low Hills Sub-Tropical Zone, under prevailing weather conditions, there may be chances of incidence of dieback disease in onion is observed in some pockets for control spray Indofil-M45 @ 25 g per 10 litres of water or Redomil MZ @ 25 g per 10 litres of water after current spells of rain.

- **Rajasthan:**

- In East Rajasthan, continue field preparation for sowing of zaid moong and planting of sugarcane, apply irrigation in maize in Southern Humid Plain Zone. In Flood Prone Eastern Plain Zone, continue harvesting of matured wheat and gram continue raising of nursery summer chilli, summer marigold, sowing of okra and leafy vegetables like spinach and amaranthus and also transplanting of tomato.
- In Southern Humid Plain Zone, complete sowing of mung, groundnut and fodder like SSG-59-3, MP chari, Rajasthan chari, Pratap maize chari-6A.

- In Sub Humid Southern Plain and Aravali Hill Zone, apply irrigation in vegetables. Complete harvesting of matured normal sown wheat and barley crop in clear weather and keep harvested produce at safer places. Continue sowing of cucurbits also papaya in nursery. Continue earthing up of summer groundnut.
- In Arid Western Plain Zone, continue harvesting of matured crops like cumin, coriander, fennel and isabgol at ripening stage. Continue transplanting of chilli. Continue sowing of green fodder viz. Pearl millet, sorghum, cowpea and pearl millet. Apply irrigation in cucurbits in Barmer, Churu, Jalore, Jodhpur and Pali districts.
- In Irrigated North Western Plain Zone, continue harvesting of matured wheat and gram. Continue sowing of cotton. Continue sowing of zaidmoong (SML668). Continue land preparation for sowing of summer moong.
- In Flood Prone Eastern Plain Zone, due to prevailing weather condition, there may be chances of attack of mosaic in bhindi and chilli, for control spray Malathion 50 EC @ 1 ml per litre of water.
- In Arid Western Plain Zone, due to prevailing weather condition there may be chances of attack of fruit fly in watermelon and muskmelon, for control spray Malathion 50 EC @ 1 ml per litre of water.
- In Semi-Arid Eastern Plain Zone, due to prevailing weather condition there may be chances of attack of fruit fly in summer cucurbits like bitter gourd, ridge gourd, muskmelon & watermelon, for control, spray Malathion 50 EC or Dimethoate 30 EC @ 1 ml per litre water.
- In Semi-Arid Eastern Plain Zone, due to prevailing weather condition there may be chances of attack of fruit borer in tomato and brinjal, for control, spray Carbaryl 50 WP @ 4 g or Acephate 75 SP @ 1.5 g per litre water.
- **Punjab, Haryana and Delhi:**
- In Western Plain Zone of Punjab, continue sowing of cotton, complete sowing of summer mung and mash, continue sowing of okra, spring maize and planting of sugarcane. Continue transplanting of chilli and cucurbits on the ridges. Apply light and frequent irrigations to newly planted fruit orchards.
- In Undulating Plain Zone of Punjab, undertake intercultural operations in vegetable crops from time to time to conserve soil moisture as temperature is expected to increase.
- In Central and Undulating Plain Zone of Punjab, continue planting of sugarcane and summer pulses.
- In Central, Western and Undulating Plain Zone of Punjab, continue planting of peach, plum, pear, pomegranate and ber plants.
- In Western Zone of Punjab, undertake transplanting of chilli, tomato, bell pepper. Undertake sowing of cotton, cucurbits, round gourd, sponge gourd, and other summer vegetables viz. okra, and cluster bean.
- In Undulating Plain Zone of Punjab, complete the harvesting/threshing of matured oilseed crops and store the product in proper place. In Central Plain Zone of Punjab, continue harvesting/threshing of mustard crop.
- In Western Zone of Haryana, undertake harvesting and threshing of wheat crop. Continue sowing of green gram and black gram. Complete the sowing of leafy vegetable, bottle gourd, cucumber, ridge gourd summer radish and direct sowing with certified seed and apply the irrigation as per the requirement of vegetables crops. Undertake the sowing of cotton. Due to high temperature, apply irrigation in sugarcane. In Eastern Zone, complete the planting of sugarcane and undertake harvesting of wheat crop.
- In Western Semi-Arid Zone of Delhi, apply light irrigation to all standing and vegetable crops, continue sowing of green gram, black gram and transplanting of marigold, brinjal, chilli in flat beds and direct sowing of cucurbits may be done in Hill channel method. Irrigation should be done after transplanting. Undertake sowing of okra, French bean, cluster bean, baby corn and fodder crops such as sorghum, bajra and maize.
- In Western Zone of Punjab, due to prevailing weather condition, there may be chances of attack of fruit borer in tomato and bell pepper, for control spray Profenofos @ 600ml per acre or Decis @ 160 ml per acre or Fame @ 30 ml per acre in 100 litres of water at 14 days of intervals.
- In Western Zone of Punjab, due to prevailing weather condition, there may be chances of attack of red pumpkin beetle in cucurbits, for control spray Carbaryl @ 75 to 150 gm per acre in 50 to 100 litres of water and repeat after 10 days intervals. The incidence of the powdery mildew disease may be reduced by spraying the ber plantation with karathane 40 EC @ 50 ml or Bayleton 25 WP 50 g per 100 litres of water.
- In Undulating Plain Zone of Punjab, due to prevailing weather condition, there may be chances of attack of fruit borer larvae in tomato, for control spray Fame 480 SL @ 30 ml or Fenvalerate 20 EC @ 100 ml or Deltamethrin 2.8 EC @ 160 ml or Cypermethrin 25 EC @ 80 ml. in 80 to 100 litres of water per acre.
- **Uttar Pradesh:**
- As heat wave conditions at a few places over East Uttar Pradesh on 22nd April, apply light and frequent irrigation to standing crops to cope up with the excess evaporative demand. Young saplings may be protected by erecting temporary shade. Undertake soil mulching/mulching with straw/polythene to conserve soil moisture in dry land areas.
- In Central Plain Zone, continue harvesting of matured wheat, barley, pea and oat. Continue planting of sugarcane. Continue sowing of summer fodder crops like cowpea, maize, lobia and sowing of urad, mung, lobia, bhindi as inter crop in sugarcane, land preparation and sowing of cowpea, maize, garlic, turmeric. Continue sowing of sunhemp and dhaincha for green manuring. Continue nursery sowing of brinjal and kharif onion.
- In Eastern Plain Zone, continue sowing of bhindi, tinda, torai, cucurbits, and bottle guard and radish. Continue sowing of lobia, maize, urad, mung and transplanting of onion. Continue sowing of fodder crops lobia, bajra, m.p.chari, maize.
- In Western Plain Zone, continue harvesting of matured wheat and sowing baby corn and summer fodder crops jowar, bajra, lobia, maize. Continue transplanting of tomato, chilli and sowing of bhindi, cucurbits, planting of

- autumn sugarcane and sowing of sunflower, urad, mung, maize.
- In Bundelkhand Zone, apply irrigation in mung, bhindi, torai, cucurbits, cabbage, cauliflower, tomato, brinjal and chilli as per requirement.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of purple blotch/ stemphylium in onion, for control, spray Mencozeb @ 2.5 g or Copper Oxychloride @ 3 gm. per litre of water in clear weather.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of fruit borer/leaf sheath in vegetables, for control, spray Neem oil @ 1.5 ml to 2 ml per litre of water, 3 to 4 times at 8 to 10 days of intervals.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of incidence of yellow vein mosaic in bhindi, for control, spray Dimethoate 30 E.C. @ 1.5 ml per litre of water.
- In North eastern plain Zone, due to prevailing weather condition, there may be chances of attack of blight and aphids in bhindi, for control, spray mixture of 0.2% Redomil MZ and 0.2% Monocrotophos @ 200 ml in 200 litres of water per acre.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of thrips or white fly in urad/mung, for control, spray Methyl-O-Demeton 25 EC or Dimethoate 30 EC @ 1 litre in 600 to 800 litres of water per hectare.
- In Central Plain Zone, due to prevailing weather condition, there may be chances of attack of shoot fly in maize, for control, spray Methyl-O-Demeton 25 EC or Monocrotophos36 EC @ 1 litre in 700 to 800 litres of water per hectare.
- Suitable varieties for sowing are given in Annexure II.
- **Horticulture:**
 - In North Eastern Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of mango hopper and mealy bug in mango trees for control spray mixture of 0.2 % Emidacloprid @ 400 ml and 0.2 % Carbendazim @ 400 g per 200 litres of water per 20 plants.
 - In Western Plain Zone, of Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit drop in mango, for control spray N.A.A. @ 15 mg per litre of water.
 - In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of attack of maggot in mango, for control, spray 17.8 % Emidacloprid S.L. @ 1 ml in 3 litres of water or 25 % Quinalphos EC @ 2 ml per litre of water.
 - In Central Plain Zone of Uttar Pradesh, due to prevailing weather condition, there may be chances of fruit cracking in citrus plants, for control, spray Gibberellic Acid @ 100 mg. in 10 litres of water.
 - In Sub-Montane and Low Hills Sub-Tropical Zone, of Himachal Pradesh, there is a chance of attack of leaf minor in new growth of Citrus, spray 10 ml Matasystox or Malathion 10 ml in 10 litre of water. Peach leaf curl is also appearing in tree, spray Metasystox @ 1ml per litre + Blitox @ 3g per litre of water.
 - In Semi-Arid Eastern Plain Zone of Rajasthan, due to prevailing weather condition there may be chances of attack of leaf curl and mosaic diseases in papaya, for control, spray Dimethoate 30 EC or Methyl Demeton 25 EC @ 1 ml per litre water.
 - In Semi-Arid Eastern Plain Zone of Rajasthan, due to prevailing weather condition there may be chances of attack of mango hopper in mango, for control, spray Malathion 50 EC @ 1 ml per litre of water.
 - In Southern Humid Plain Zone of Rajasthan, there is a chance of attack of powdery mildew in mango, for control, spray Sulphur @ 4g per litre of water in mango trees.
 - In Intermediate Zone of Jammu and Kashmir, farmers are advised to whitewash lower portion of the trunk of fruit trees on clear sunny day with a solution of Copper Sulphate to avoid infestation of fungal disease and insect pests.
 - In Valley Temperate Zone of Jammu and Kashmir, farmers are advised to vaccinate sheeps and goats against Enterotoxaemia (ETV vaccine 2ml/sub cut) and FMD (FMD vaccine 1ml/Intra muscular).
- **Animal Husbandry**
 - In Sub-Montane and Low Hills Sub-Tropical Zone of Himachal Pradesh, for milch animals, follow schedule of 1 kg feed + 50 g mineral mixtures per 2 litres of milk. Get the animals vaccinated against Foot and Mouth disease.
 - In sub tropical Zone of Jammu Kashmir, farmers are advised to add calcium supplement in the feed of dairy animals and heifers especially fed rice straw these days to prevent calcium deficiency and intestinal blockage. Sheeps and goats need to be vaccinated against Sheep and Goat pox. Black Quarter vaccination must be carried among heifers above 4 month age.
- **Floriculture**
 - In sub tropical Zone of Jammu Kashmir undertake nursery land preparation for summer annuals. Collect seeds from winter annuals (Calendula, pansy etc.) which are at harvesting stage.
 - In Valley Temperate Zone of Jammu & Kashmir, undertake land preparation for planting liliun, gladiolus and dahlia.
- **Apiculture:**
 - In Sub Tropical Zone of Jammu and Kashmir, migrate bee colonies near to floral resources. Prepare colonies for honey flow. It is the right time to start bee keeping as pollen and nectar are in plenty and bee activity is at its peak.

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

Annexure I

Week by week Rainfall Distribution

Sub-Divisions	06.04.16		13.04.16		20.04.16	
	Actual (mm)	% dep.	Actual (mm)	% dep.	Actual (mm)	% dep.
Arunachal Pradesh						
Anjaw	**	**	**	**	**	**
Changlang	57.1	-62	193.7	55	70.8	-28
Dibang Valley	27.0	-79	32.0	-57	17.0	-69
East Kameng	20.0	-46	16.1	-50	22.3	-41
East Siang	57.6	26	188.5	356	67.9	41
Kurung Kumey	**	**	**	**	**	**
Lohit	12.6	-87	118.1	30	124.2	69
Lower Dibang Valley	29.8	-76	565.3	663	287.4	423
Lower Subansari	**	**	**	**	**	**
Papumpare	44.6	24	132.9	311	73.3	30
Tawang	20.0	30	127.0	457	135.0	251
Tirap	33.4	-52	214.4	186	105.8	57
Upper Siang	19.6	-82	76.0	-12	32.0	-56
Upper Subansari	6.8	-70	82.2	558	18.0	-25
West Kameng	0.1	-99	0.0	-100	8.9	-77
West Siang	1.0	-98	5.0	-95	1.0	-99
Assam&Meghalaya						
Assam						
Baksa	26.4	-8	57.8	84	46.2	9
Barpeta	58.1	103	60.7	93	74.0	74
Bongaigaon	67.6	155	46.0	55	72.6	50
Cachar	135.4	126	41.3	-32	150.6	174
Chirang	112.8	326	28.8	-3	67.0	39
Darrang	**	**	**	**	**	**
Dhemaji	2.0	-94	0.0	-100	1.0	-97
Dhubri	98.9	321	0.8	-96	66.1	74
Dibrugarh	32.3	-35	152.0	232	86.8	49
Goalpara	57.0	153	2.4	-94	166.8	258
Golghat	30.9	12	14.0	-51	112.6	184
Hailakandi	256.6	440	37.2	-23	112.2	150
Jorhat	22.6	-49	64.5	45	146.5	210
Kamrup(Rural)	90.7	322	62.9	121	200.3	397
Kamrup(Metro)	35.6	65	9.2	-68	105.3	161
Karbi Anglong	29.7	70	3.7	-82	60.7	170
Karimganj	227.1	165	87.3	22	254.0	289
Kokrajhar	15.2	-49	3.7	-92	148.3	263
Lakhimpur	40.4	22	73.8	116	45.1	23
Morigaon	14.6	-31	11.0	-46	89.6	258
N.C.Hills	49.3	27	44.7	-13	126.4	123

Nagaon	7.7	-62	6.6	-75	82.4	175
Nalbari	46.4	35	77.1	89	109.1	246
Sonitpur	32.9	32	9.4	-71	45.1	22
Sibsagar	32.9	58	69.7	122	87.4	155
Tinsukia	114.2	91	152.9	247	114.8	132
Udalgiri	35.3	46	62.9	78	110.8	126
Meghalaya						
East Garo Hills	44.4	-8	20.8	-48	125.4	289
East Khasi Hills	92.8	80	183.2	202	374.9	375
Jaintia Hills	1.0	-98	5.0	-91	20.0	-69
Ribhoi	46.5	189	0.0	-100	39.4	68
South Garo Hills	39.0	26	0.0	-100	18.0	-53
West Garo Hills	50.8	64	0.0	-100	86.6	127
West Khasi Hills	12.0	-20	7.0	-72	14.0	-66
NMMT						
Mizoram						
Aizwal	167.5	409	4.5	-85	75.6	142
Champhai	**	**	**	**	**	**
Kolasib	**	**	**	**	**	**
Lawngtlai	**	**	**	**	**	**
Lunglei	**	**	**	**	**	**
Mamit	**	**	**	**	**	**
Saiha	11.0	-63	0.0	-100	0.0	-100
Serchhip	**	**	0.0	-100	4.8	-73
Manipur						
Bishnupur	**	**	**	**	**	**
Chandel	42.0	135	3.0	-78	43.0	69
Churachandpur	**	**	**	**	**	**
Imphal east	48.3	40	13.6	-63	49.3	48
Imphal west	151.4	431	38.0	64	57.4	84
Senapati	**	**	**	**	**	**
Tamenglong	**	**	**	**	**	**
Thoubal	28.0	49	10.0	-68	34.0	12
Ukhrul	0.0	-100	1.0	-95	1.0	-95
Nagaland						
Dimapur	45.3	148	3.3	-86	97.3	1058
Kephire	**	**	**	**	**	**
Kohima	13.0	-25	0.6	-97	23.5	49
Longleng	**	**	**	**	**	**
Mokokchung	1.0	-92	0.0	-100	1.0	-97
Mon	**	**	**	**	**	**
Paren	**	**	**	**	**	**
Phek	27.0	55	0.0	-100	33.0	109
Tuensang	**	**	**	**	**	**
Wokha	62.0	99	3.0	-90	1.0	-95
Zunheboto	**	**	**	**	**	**
Tripura						
Dhalai	135.4	148	8.2	-81	45.2	-31
NorthTripura	226.4	311	18.8	-65	89.3	14

South Tripura	67.3	136	0.0	-100	0.4	-99
West Tripura	144.2	364	0.0	-100	16.1	-70
Himachal Pradesh						
Bilaspur	0.3	-95	2.0	-65	0.3	-94
Chamba	19.0	18	18.2	194	9.8	-37
Hamirpur	0.8	-85	0.0	-100	4.7	-29
Kangra	2.2	-77	1.9	-81	8.3	-12
Kinnaur	5.6	-74	49.0	154	42.9	119
Kullu	14.8	-31	23.3	19	46.1	147
Lahaul and Spiti	17.5	-32	13.8	-49	28.9	3
Mandi	4.2	-62	6.0	-55	6.0	-49
Shimla	6.6	-42	17.1	47	15.2	16
Sirmaur	2.0	-55	7.7	120	0.7	-91
Solan	5.0	-20	6.5	-5	0.4	-95
Una	0.0	-100	0.2	-96	1.0	-73
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 Sahib	0.0	-100	0.0	-100	0.0	-100
Ferozpur	0.0	-100	0.0	-100	0.0	-100
Gurdaspur	0.0	-100	5.1	-32	0.5	-94
Hoshiarpur	0.0	-100	1.4	-68	0.6	-85
Jalandhar	0.0	-100	0.0	-100	0.4	-92
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	0.3	-94	0.0	-100
Patiala	0.0	-100	0.7	-63	0.0	-100
Ropar	0.0	-100	0.3	-90	0.0	-100
Sangrur	0.0	-100	0.0	-100	0.0	-100
Mohali	0.0	-100	2.0	-29	3.0	-42
Tarn Taran	0.0	-100	0.0	-100	0.0	-100
Haryana, Chd, Delhi						
Haryana						
Ambala	0.0	-100	4.2	90	0.3	-81
Bhiwani	0.0	-100	0.0	-100	0.0	-100
Chandigarh	14.8	573	0.6	-78	0.1	-99
Faridabad	0.0	-100	0.0	-100	0.0	-100
Fatehabad	0.0	-100	0.0	-100	0.0	-100
Gurgaon	0.3	-77	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	0.7	-76	0.0	-100

Kurukshetra	0.0	-100	0.8	-53	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	0.5	-67	4.2	145	0.5	-87
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	5.2	52	1.7	-59
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	0.0	-100	0.0	-100	0.0	-100
Jammu & Kashmir						
Anantnag	43.3	45	32.0	27	31.0	4
Badgam	13.4	-14	32.9	114	27.8	33
Bandipore	**	**	**	**	**	**
Baramula	71.5	187	40.1	-6	42.2	-15
Doda	16.4	-34	34.5	29	33.5	15
Ganderbal	62.0	263	49.6	164	15.6	-22
Jammu	0.0	-100	5.8	-33	1.8	-79
Kargil	**	**	**	**	**	**
Kathua	0.5	-95	4.7	-45	1.9	-55
Kistwar	**	**	**	**	**	**
Kulgam	49.8	67	28.9	15	31.1	5
Kupwara	53.1	21	33.3	16	15.4	-59
Ladakh(Leh)	0.3	-50	0.0	-100	0.7	-67
Poonch	**	**	**	**	**	**
Pulwama	17.6	-6	24.5	29	23.7	6
Rajouri	10.2	-7	10.4	117	3.0	-68
Ramban	17.6	-29	49.0	83	31.4	8
Reasi	0.6	-96	13.8	-25	6.5	-56
Samba	0.0	-100	1.6	-81	0.0	-100
Shopian	**	**	**	**	**	**
Srinagar	12.6	-26	43.0	129	30.6	53
Udhampur	0.0	-100	5.9	-68	5.0	-66
East Madhya Pradesh						
Anuppur	0.0	-100	0.0	-100	0.0	-100
Balaghat	0.0	-100	0.1	-93	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	1.3	-37	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
Hosangabad	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						
Bastar	13.9	28	0.2	-97	0.0	-100
Bijapur	0.0	-100	0.0	-100	0.0	-100
Bilaspur	1.2	-75	0.5	-89	0.0	-100
Dantewara	0.0	-100	0.0	-100	0.0	-100
Dhamtari	9.7	169	0.0	-100	0.0	-100
Durg	0.0	-100	0.0	-100	0.0	-100
Janjgir	0.8	-78	0.0	-100	0.0	-100
Jashpurnagar	0.0	-100	0.0	-100	0.0	-100
Kanker	0.0	-100	0.0	-100	0.0	-100
Korba	1.5	-63	0.0	-100	0.0	-100
Koriya	0.0	-100	**	**	0.0	-100
Kawardha	0.0	-100	0.0	-100	0.0	-100
Mahasumund	0.0	-100	0.0	-100	0.0	-100
Narayanpur	0.0	-100	0.5	-92	0.0	-100
Raigarh	0.5	-87	0.0	-100	0.0	-100
Raipur	1.0	-64	0.0	-100	0.0	-100
Rajnandgaon	1.0	-63	0.2	-91	0.0	-100
Surguja	0.2	-92	0.5	-73	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	0.5	-78
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	0.1	-89	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	0.1	-80	0.0	-100
Muzzaffarnagar	0.0	-100	4.7	211	0.0	-100
Pilibhit	0.0	-100	0.0	-100	0.7	-71
Rampur	0.0	-100	0.0	-100	0.0	-100
Saharanpur	0.0	-100	0.0	-100	3.7	162
Shahjahanpur	0.0	-100	0.0	-100	0.0	-100
Uttarakhand						
Almora	0.0	-100	5.2	-22	0.6	-91
Bageshwar	0.0	-100	2.8	-59	0.0	-100
Chamoli	8.5	-15	5.1	-54	2.7	-78

Champawat	0.0	-100	0.0	-100	5.0	-53
Dehradun	0.5	-93	4.5	-21	6.3	2
Garhwal Pauri	0.0	-100	6.0	114	0.0	-100
Garhwal Tehri	0.0	-100	11.3	64	1.7	-82
Haridwar	0.0	-100	0.5	-78	0.0	-100
Nainital	0.7	-87	4.3	18	2.8	-53
Pithorgarh	7.6	-5	4.5	-38	6.5	-51
Rudraprayag	4.4	-57	11.4	-1	10.3	-26
Udham Sing Nagar	0.0	-100	0.5	-29	7.3	170
Uttarkashi	5.1	-46	7.2	-43	2.5	-80
Bihar						
Araria	1.2	-71	0.0	-100	1.0	-88
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
Bhabua	0.0	-100	0.0	-100	0.0	-100
Bhagalpur	7.2	411	0.0	-100	0.0	-100
Bhojpur	0.0	-100	0.0	-100	0.0	-100
Buxar	**	**	**	**	0.0	-100
Darbhanga	4.6	130	0.0	-100	0.0	-100
East Champaran	1.9	93	0.0	-100	2.9	-30
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
Jamui	0.0	-100	0.0	-100	0.0	-100
Kathihar	13.6	750	0.0	-100	0.0	-100
Khagadia	17.5	200	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	16.0	517	0.0	-100	0.0	-100
Madhubani	0.0	-100	0.0	-100	0.0	-100
Monghyar	**	**	**	**	0.0	-100
Muzaffarpur	11.4	777	0.0	-100	0.0	-100
Nalanda	0.0	-100	**	**	0.0	-100
Nawada	0.0	-100	**	**	0.0	-100
Patna	0.0	-100	0.0	-100	0.0	-100
Purnea	22.0	547	0.0	-100	0.0	-100
Rohtas	0.0	-100	0.0	-100	0.0	-100
Saharsha	0.0	-100	**	**	0.0	-100
Samstipur	0.0	-100	0.0	-100	0.0	-100
Saran	0.0	-100	0.0	-100	0.0	-100
Sheikpura	0.0	-100	**	**	0.0	-100
Sheohar	0.0	-100	**	**	0.0	-100
Sitamarhi	0.0	-100	0.0	-100	0.0	-100
Siwan	0.0	-100	**	**	0.0	-100
Supaul	28.1	1379	0.0	-100	0.0	-100
Vaishali	0.0	-100	**	**	0.0	-100
West Champaran	0.0	-100	0.0	-100	8.2	140

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	3.3	33
Dhanbad	0.0	-100	0.0	-100	0.4	-89
Dumka	0.0	-100	0.0	-100	0.0	-100
East Singbhum	0.2	-96	2.4	-52	0.0	-100
Garhwa	0.0	-100	0.0	-100	0.0	-100
Giridih	0.0	-100	0.0	-100	0.5	-92
Godda	1.8	25	0.0	-100	0.0	-100
Gumla	0.0	-100	0.7	-87	0.0	-100
Hazaribagh	0.0	-100	0.0	-100	0.0	-100
Jamtara	0.4	-93	0.0	-100	0.6	-60
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	14.2	284	0.0	-100	0.0	-100
Palamau	0.0	-100	0.1	-88	0.0	-100
Ramgarh	0.0	-100	0.0	-100	0.0	-100
Ranchi	0.0	-100	0.0	-100	0.0	-100
Sahebganj	12.6	404	0.0	-100	0.0	-100
Saraikela	0.0	-100	2.5	-25	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	0.1	-92	0.9	-23	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
Banaskantha	0.0	-100	0.0	-100	0.0	-100
Baroda	0.0	-100	0.0	-100	0.0	-100
Broach	0.0	-100	0.0	-100	0.0	-100
DNH	**	**	**	**	**	**
Dahod	0.0	-100	0.0	-100	0.0	-100
Daman	0.0	-100	0.0	-100	0.0	-100
Dangs	0.0	-100	0.0	-100	0.0	-100
Gandhinagar	0.0	-100	0.0	-100	0.0	-100
Kheda	0.0	-100	0.0	-100	0.0	-100
Mehsana	0.0	-100	0.0	-100	0.0	-100
Narmada	0.0	-100	0.0	-100	0.0	-100
Navsari	0.0	-100	0.0	-100	0.0	-100
Panchmahal	0.0	-100	0.0	-100	0.0	-100
Patan	0.0	-100	0.0	-100	0.0	-100
Sabarkantha	0.0	-100	0.0	-100	0.0	-100
Surat	0.0	-100	0.0	-100	0.0	-100
Tapi	0.0	-100	0.0	-100	0.0	-100
Valsad	0.0	-100	0.0	-100	0.0	-100
S K & Diu region						
Amreli	0.0	-100	0.0	-100	0.0	-100
Bhavnagar	0.0	-100	0.0	-100	0.0	-100
Diu	0.0	-100	0.0	-100	0.0	-100
Jamnagar	0.0	-100	0.0	-100	0.0	-100
Junagarh	0.0	-100	0.0	-100	0.0	-100
Kutch	0.0	-100	0.0	-100	0.0	-100
Porbandar	0.0	-100	0.0	-100	0.0	-100
Rajkot	0.0	-100	0.0	-100	0.0	-100
Surendranagar	0.0	-100	0.0	-100	0.0	-100
Maharashtra						
Konkan & Goa						
Mumbai City	0.0	-100	0.0	-100	0.0	-100
Mumbai Suburban	0.0	-100	0.0	-100	0.0	-100
North Goa	0.0	-100	0.0	-100	0.0	-100
Raigad	0.0	-100	0.0	-100	0.0	-100

Ratnagiri	2.0	567	0.0	-100	0.0	-100
Sindhudurg	0.0	-100	0.0	-100	0.0	-100
South Goa	0.0	-100	0.1	-86	0.0	-100
Thane	0.0	-100	0.0	-100	0.0	-100
Madhya Maharashtra						
Ahmednagar	0.0	-100	0.0	-100	0.0	-100
Dhule	0.0	-100	0.0	-100	0.0	-100
Jalgaon	0.1	-31	0.0	-100	0.0	-100
Kolhapur	1.9	-46	2.6	-51	0.0	-100
Nandurbar	0.0	-100	0.0	-100	0.0	-100
Nasik	0.0	-100	0.0	-100	0.0	-100
Pune	0.6	-40	0.0	-100	0.1	-94
Sangli	2.0	-48	0.4	-91	0.0	-100
Satara	0.2	-90	0.3	-89	0.7	-82
Solapur	0.8	-68	4.3	65	0.0	-100
Marathwada						
Aurangabad	0.0	-93	0.0	-100	0.0	-100
Beed	0.6	-52	0.6	-71	0.0	-100
Hingoli	0.1	-88	2.5	7	0.0	-100
Jalna	0.0	-100	0.2	-70	0.0	-100
Latur	1.7	-39	5.1	130	0.0	-100
Nanded	0.6	-72	1.3	-53	0.0	-100
Usmanabad	1.8	18	2.4	9	0.0	-100
Parbhani	0.0	-100	0.8	-53	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	0.8	-79	1.4	-48	0.0	-100
Buldhana	0.0	-100	0.0	-100	0.0	-100
Chandrapur	6.5	102	0.0	-100	0.0	-100
Gadchiroli	1.3	-66	0.0	-100	0.0	-100
Gondia	4.7	60	0.2	-90	0.0	-100
Nagpur	0.0	-100	3.6	62	0.0	-100
Wardha	0.0	-100	0.0	-100	0.0	-100
Washim	0.0	-100	0.0	-100	0.0	-100
Yeotmal	2.6	-4	0.0	-99	0.0	-100
Odisha						
Angul	11.3	141	0.0	-100	0.0	-100
Balasore	2.6	-75	7.6	-24	5.7	-63
Bargarh	4.0	14	0.0	-100	0.0	-100
Bhadrak	5.4	-31	0.0	-100	0.1	-99
Bolangir	0.1	-99	0.1	-98	1.3	-78
Boudh	19.3	142	0.0	-100	0.0	-100
Cuttack	2.3	-70	0.0	-100	0.0	-100
Deogarh	0.7	-83	0.0	-100	0.0	-100
Dhenkanal	14.2	89	0.0	-100	2.1	-81
Gajapati	16.8	13	0.1	-99	0.0	-100
Ganjam	2.2	-77	0.1	-99	0.0	-100
Jagatsingpur	3.3	-69	0.0	-100	0.0	-100

Jajpur	20.3	178	0.0	-100	0.0	-100
Jharsuguda	0.0	-100	0.0	-100	0.0	-100
Kalahandi	0.3	-94	0.0	-100	0.0	-100
Kandhamal	0.4	-95	0.0	-100	0.0	-100
Kendrapara	5.2	125	0.0	-100	0.0	-100
Keonjhar	13.0	54	0.0	-100	0.0	-100
Khurda	0.4	-96	0.0	-100	0.0	-100
Koraput	12.0	9	0.0	-100	0.0	-100
Malkangiri	0.0	-100	0.0	-100	0.0	-100
Mayurbhanj	14.1	17	2.0	-75	9.6	-39
Nawapara	0.0	-100	0.0	-100	0.0	-100
Nawarangpur	10.9	34	0.8	-92	0.0	-100
Nayagarh	0.0	-100	2.2	-66	0.0	-100
Puri	0.0	-100	0.1	-95	0.0	-100
Rayagada	9.1	-37	5.7	-47	0.0	-100
Sambalpur	4.3	11	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	0.0	-100	4.4	-78	0.0	-100
North & Middle Andaman	0.0	-100	0.0	-100	0.0	-100
South Andaman	18.2	264	0.0	-100	0.0	-100
GWB						
Bankura	8.9	46	0.0	-100	0.8	-92
Birbhum	11.1	158	0.0	-100	0.0	-100
Burdwan	9.3	68	0.0	-100	0.0	-100
East Midnapore	0.0	-100	5.1	11	0.9	-88
Hooghly	4.7	-11	0.0	-100	0.0	-100
Howrah	4.2	-49	0.0	-100	0.0	-100
Kolkata	1.6	-78	0.0	-100	0.0	-100
Murshidabad	24.0	314	0.0	-100	0.0	-100
Nadia	3.2	-48	0.0	-100	0.0	-100
24 Pargana (N)	3.5	-44	0.0	-100	0.0	-100
Purulia	0.0	-100	0.0	-100	0.1	-99
24 Pargana (S)	8.1	-7	0.0	-100	0.0	-100
West Midnapore	14.4	21	3.4	-58	8.5	-40
SHWB & Sikkim						
Cooch Behar	85.4	336	2.0	-86	20.5	-37
Darjeeling	17.0	-1	0.0	-100	12.0	-61
East Sikkim	33.8	13	19.9	-54	70.2	88
Jalpaiguri	60.1	276	1.1	-93	20.0	-23
Malda	21.6	575	0.0	-100	0.0	-100
North Dinajpur	**	**	**	**	**	**
North Sikkim	57.2	27	8.6	-88	63.7	38
South Dinajpur	12.3	108	0.0	-100	0.0	-100
South Sikkim	5.9	-80	0.0	-100	8.1	-78
West Sikkim	26.0	-42	1.0	-99	34.0	-26

Karnataka						
Coastal Karnataka						
Dakshina Kannada	3.3	-48	0.4	-95	9.1	0
Udupi	0.0	-100	0.0	-100	0.0	-100
Uttara Kannada	0.7	-77	1.1	-74	0.0	-100
NI Karnataka						
Bagalkote	8.3	124	11.2	167	0.0	-100
Belagavi	6.2	16	4.1	-32	0.0	-100
Bidar	1.7	-69	7.1	30	3.3	-19
Dharwad	12.3	156	3.2	-61	2.3	-80
Gadag	6.3	81	17.5	166	0.0	-100
Haveri	2.5	-50	7.8	3	0.0	-100
Kalaburgi	6.6	41	4.2	24	0.1	-98
Koppal	0.0	-100	0.0	-100	0.0	-100
Raichur	0.0	-100	2.9	-22	0.0	-100
Vijayapura	6.4	88	0.8	-79	0.4	-92
Yadgir	0.0	-100	1.1	-75	0.0	-100
SI Karnataka						
Ballari	4.2	26	0.0	-100	0.5	-91
Bangalore Rural	0.0	-100	0.0	-100	0.0	-100
Bangalore Urban	0.0	-100	1.9	-68	0.0	-100
Chamarajanagar	0.0	-100	2.6	-79	1.4	-93
Chikaballapur	0.0	-100	0.0	-100	2.8	-55
Chikkamagaluru	5.6	-38	6.5	-41	4.3	-68
Chitradurga	2.9	-1	1.1	-77	0.8	-83
Davangere	0.0	-100	0.0	-100	0.3	-95
Hassan	1.8	-78	13.9	47	21.3	92
Kodagu	14.0	-5	5.8	-70	7.8	-59
Kolar	0.0	-100	0.0	-100	0.0	-100
Mandya	0.0	-100	5.9	-30	4.6	-57
Mysuru	0.0	-100	4.1	-65	6.3	-56
Ramanagara	0.0	-100	2.8	-66	0.0	-100
Shivamogga	0.3	-95	0.5	-93	0.4	-96
Tumakuru	0.0	-100	0.0	-100	0.9	-89
Kerala						
Alappuzha	1.7	-93	4.2	-87	9.3	-66
Kannur	0.0	-100	1.0	-92	0.0	-100
Ernakulam	2.1	-87	30.8	21	5.0	-81
Idukki	4.2	-84	21.6	-27	8.4	-79
Kasaragod	0.1	-99	0.0	-100	0.0	-100
Kollam	4.2	-85	11.1	-65	19.5	-48
Kottayam	12.7	-58	25.2	-30	10.7	-62
Kozhikode	5.4	-44	0.3	-99	0.0	-100
Malappuram	0.0	-100	4.6	-79	0.0	-100
Palakkad	0.0	-100	1.6	-93	2.0	-91
Pathanamthitta	14.4	-59	34.1	-13	11.8	-73
Thiruvananthapuram	2.2	-88	28.0	4	17.2	-40
Thrissur	0.0	-100	35.2	91	0.7	-96
Wayanad	9.1	-23	4.4	-77	3.2	-83

Tamil Nadu						
Ariyalur	0.0	-100	0.0	-100	0.0	-100
Chennai	0.0	-100	0.0	-100	0.0	-100
Coimbatore	0.0	-100	19.1	105	0.6	-96
Cuddalore	0.0	-100	0.0	-100	0.0	-100
Dharmapuri	0.0	-100	0.0	-100	0.0	-100
Dindigul	0.0	-100	6.0	-45	1.1	-93
Erode	0.0	-100	11.9	60	1.3	-89
Kanchipuram	0.0	-100	0.0	-100	0.0	-100
Kanyakumari	13.3	-37	16.0	-30	2.5	-91
Karikal	0.0	-100	0.0	-100	0.0	-100
Karur	0.0	-100	1.9	-75	0.0	-100
Krishnagiri	0.0	-100	1.2	-78	0.2	-98
Madurai	0.0	-100	14.5	25	0.0	-100
Nagapattinam	0.0	-100	0.0	-100	0.0	-100
Namakkal	0.0	-100	5.3	-23	0.0	-100
Nilgiris	0.0	-100	7.6	-64	0.2	-99
Perambalur	0.0	-100	0.0	-100	0.0	-100
Puducherry	0.0	-100	0.0	-100	0.0	-100
Pudukottai	0.0	-100	0.0	-100	0.0	-100
Ramanathapuram	0.0	-100	6.5	-39	0.0	-100
Salem	0.0	-100	0.0	-100	0.0	-100
Sivaganga	0.0	-100	12.5	47	0.0	-100
Thanjavur	0.0	-100	0.0	-100	0.9	-88
Theni	0.0	-100	7.6	-46	1.0	-94
Tirunelveli	0.0	-100	2.0	-89	2.9	-83
Tirupur	0.0	-100	12.5	67	0.0	-100
Tiruvallur	0.0	-100	0.0	-100	0.0	-100
Tiruvannamalai	0.0	-100	0.0	-100	0.0	-100
Tiruvarur	0.0	-100	0.0	-100	0.0	-100
Toothukudi	0.2	-98	3.5	-71	0.0	-100
Trichy	0.0	-100	0.8	-87	0.0	-100
Vellore	0.0	-100	0.0	-100	0.0	-100
Villupuram	0.0	-100	0.0	-100	0.0	-100
Virudhunagar	0.0	-100	1.3	-92	0.0	-100
Andhra Pradesh						
Coastal Andhra Pradesh						
East Godavari	0.0	-100	0.0	-100	0.0	-100
Guntur	0.0	-100	0.0	-100	0.0	-100
Krishna	0.0	-100	0.0	-100	0.0	-100
Nellore	0.0	-100	0.6	-29	0.0	-100
Prakasam	0.0	-100	0.0	-100	0.0	-100
Sirkakulam	3.3	-55	1.1	-71	0.0	-100
Visakhapatnam	8.3	4	0.0	-100	0.9	-92
Vizianagram	7.0	-5	1.0	-80	0.0	-100
West Godavari	0.0	-100	0.0	-100	0.0	-100
Rayalaseema						
Anantapur	0.0	-100	0.0	-100	0.2	-96

Chittoor	0.0	-100	0.0	-100	0.0	-100
Cuddapah	0.0	-100	0.0	-100	0.0	-100
Kurnool	0.3	-90	0.0	-100	0.3	-93
Telangana						
Adilabad	1.4	-51	1.0	-57	1.6	-48
Hyderabad	0.0	-100	0.0	-100	6.6	42
Karimnagar	4.3	14	0.0	-100	2.1	-51
Khammam	0.0	-100	0.1	-98	0.0	-100
Mehabubnagar	2.6	11	0.0	-100	0.0	-98
Medak	0.1	-98	0.0	-100	0.0	-100
Nalgonda	0.6	-78	0.0	-100	0.0	-100
Nizamabad	1.3	-55	0.1	-97	0.7	-79
Rangareddy	4.2	31	0.0	-100	1.3	-70
Warangal	0.2	-94	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

Assam

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

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

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

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

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

Capsularis jute: JRC 321 and UPC 94.

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

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

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

Okra:Pusa Sawani, Arka Anamika, Parbhdani Kranti.

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

Sponge gourd: Pusa Chikni or other local varieties.

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

Maize: Ganga 5, Navjot.

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

Okra:Parvani Kranti, Arka Anamica.

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

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

Meghalaya

Brinjal :Local Umroi, Muta Kesh, Narrow.

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

Manipur

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

Tripura

Jhumrice :Garo Malati, Binnietc.

Odisha

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

Groundnut:Smruti, AK 12-24 TAG

Jharkhand

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

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

Linseed: Sweta,Shubhra, T-397

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

Jammu & Kashmir

Cabbage: Golden Acre, Pride of India and PusaMukta.

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

Uttarakhand

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

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

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

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

Himachal Pradesh

Cauliflower: snowball and Giant snowball.

Radish:Japanese white, Chinese pink and mino early white

Turnip: PTWG-1

Carrot:Pusakesar

Fenugreek :I.C. 74, kasoori.

Peas :Mater ageta-6 (early variety).

Cabbage:Pride of India, golden achor and hybrid

East Uttar Pradesh

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

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

Cauliflower: pusaDipali.

Okra:PusaSawani, VarsaUphar, Azad kranti.

Brinjal: Pant Samrat, Pant Rituraj, Pusa hybrid-6.

Cabbage:Japani, PusaDieepali, PusaKartiki

cowpea: Lobia-263 & Pusa phaguni

Chilli: Pant C-1, Jwala and Sadabahar etc.

Grapes: parlet, beauty seedless, pusa seedless.

Maize: nawjyoti, kanchan, gaurav, surya, navin, shweta, Azad uttam, prakash, dikalb-7074, payridikalp-8144, dakkan-115, mmh-135, pro-4212, ganga-11, pusa, makka-2, J.H.-3459,

Urad: TA-9, narendra urad-1, Azad urad-1, Uttara, azad urad-2, shekhar-2, pant. u. 19, pant u. 30, pant u. 35, P.D.U.-1

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

Onion: Agrifound light red, Nashik selection-1

Radish: pusa chetaki, pusa himani, pusa saris, pusa reshmi, japanis white radish.

West Uttar Pradesh

Ladies finger:VRO-6, VRO-5.

Sugarcane: ko.sha 88230, ko.sha 8436, ko 0238, ko.sha 07250 or U.P. 0512.

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

Onion: pusa red, pusa white.

Sugarcane:The mid and late maturing varieties of sugarcane: CO Pant 211, Co Sa 687 and Co Sa 8436.

The varieties recommended in areas with poor water drainage: B.O.54 and B.O.91.

Baby corn: M.H.-4

Punjab

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

Rice: Pusa-44, T.R-112 and T.R-113.

Onion: Punjab Naroya, Punjab White and PRO 6.

Radish: Punjab Pasand and Japanese white.

Turnip: L-1.

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

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

Delhi

Oat : J.H.O-822, O.L.-9, Pusa oat-5.

Barseem:Vardan, Buland Barseem-1, Masakavi, J.B-3;

Radish:Japani White, Hill queen, French Radish;

Spinach: PusaBharti.

Amaranths: PusalalChaulai, PusaKiran.

Ladyfinger: Pusa A-4.

Radish:Japani White, Hill queen, French Radish.

Spinach:All Green, PusaBharti;

Fenugreek:PusaKasuri;

Coriander:PantHaritama, Hybrids.

Turnip:Pusa Swati, Local Red variety.

West Rajasthan

Isabgol: RI 89 & GI-2.

Fenugreek:RMt 1 &RMt 305.

Barley: RD 2052, RD 2035 (suitable for saline and alkali soils) and RD 2715 (dual purpose),RD2058,2503,103,NDB1173.

cumin: GC 4, RZ -19, RZ 223, RZ19,209,223and GC4b.

Cowpea:RC-19, RC-101, RCP-27.

Oat:OS 6, OS 9.

Berseem: BL 10, BL 22.

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

Radish:PusaRashmi.

Carrot: PusaKeshar.

Zaid moong: K-851, PDM-11,SML-668 Pusa Baisakhi,RMG-62, RMG-268 etc.

Tinda: Bikaneri green, dilpasand

Cucurbit: Lakhnau ageti and Arkasital,

Muskmelon: Durgapura madhu, Punjab sunehri, Punjab hybrid and pusa madhuras

Watermelon:sugar baby, Durgapura mitha, Durgapura lal and khira

Sugarcane: CO-6617,7717;COS- 95255, 767

Desi cotton: RG-8,18,HD-123, hyb Raj- DH 9

East Rajasthan

Muskmelon: Durgapura madhu, Punjab sunehri, Punjab hybrid, arkajeet, hara madhu, pusa madhuras.

Water melon: Sugar baby, Durgapura meetha, durgapura kesar, arka jyoti(hybrid), madhu (hybrid).

Tinda: Beekaneri green, Dil pasand, arka tinda.

Kakri: Lucknow ageti and arka sheetal.

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

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

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

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

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

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

Berseem:Muskavivardan and PusaJiant.

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

Madhya Pradesh

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

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

Tamil Nadu

Cotton: Surabhi and SVPR-2