

Significant weather and realized rainfall during last week:

- Significant rainfall occurred in Ganderwal and Ramban districts of Jammu & Kashmir during last week. Mainly dry / dry weather prevailed over rest of the country.
- During the last week, cold wave conditions prevailed over some parts of east Uttar Pradesh, Bihar and Vidarbha on 12th and abated on 13th. No cold wave / cold day conditions observed over the country thereafter.

Central India

- Dry weather conditions prevailed during last week and likely to prevail over Madhya Pradesh. Farmers are advised to apply irrigation to field crops. In view of increase in temperature farmers in Bundelkhand Zone of Madhya Pradesh are advised to monitor the chickpea crop against pod borer, mustard against attack of aphids, pea against leaf minor and pod borer.
- Farmers in Bundelkhand Zone of Madhya Pradesh are advised to monitor chickpea crop against pod borer, mustard against attack of aphids, pea against leaf minor and pod borer as present weather condition are favourable for their incidence.
- As dry weather is expected in Chhattisgarh Plain Zone apply timely irrigation in *rabi* crops and in Chhattisgarh Baster Plateau Zone, apply irrigation to wheat crop 21 days after sowing at CRI stage.

Northwest India

- As rain / snowfall would occur at most / many places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Delhi and west Uttar Pradesh along with heavy rain/snowfall at a few places with very heavy snowfall at one or two places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours, farmers are advised to postpone irrigation and intercultural operations in standing crops. Farmers in Jammu & Kashmir, Himachal Pradesh and Uttarakhand are also advised to arrange for drainage facilities to avoid water stagnation due to heavy rain / snowfall.
- As hailstorm would occur at one or two places over Haryana, Delhi, Uttar Pradesh, Uttarakhand, Himachal Pradesh during next 24 hours, farmers are advised to use hail net for orchard crops to prevent from mechanical damage.
- There is possibility of white rust and alternaria blight in the mustard crop due to high humidity in Western Zone of Haryana, farmers are advised to monitor the crop and take proper plant protection measure.
- Due to foggy and cloudy weather, white rust is observed in mustard at some places in Irrigated North Western Plain Zone of Rajasthan. Farmers are advised to monitor the field regularly and after observing the symptoms spray mixture of Metalexis (Redomil M. Z.) @ 2 gm / litre water. Due to continuous cool and humid weather, Alternaria blight (black spot) disease may attack mustard crop in some pockets of Flood Prone Eastern Plain Zone of Rajasthan. Farmers are advised to destroy the infested plants and spray Iprodione or Mencozeb @ 2 kg/800 litre solution. Repeat the spray in 15 days interval.

West India

- As dry weather prevailed over the State during last few weeks and is expected to continue during next 5 days, farmers of Madhya Maharashtra, Marathwada and Vidarbha are advised to apply irrigation to the *rabi* jowar at grain formation stage, wheat at ear head emergence, safflower at head formation and regular irrigation to sugarcane, vegetables and orchard crops.
- As day temperature is rising, farmers of North Konkan are advised to apply straw mulch to the pulses grown on residual moisture; for water conservation.
- As dry weather prevailed during last few weeks and mainly dry weather is expected to prevail, farmers in Gujarat region are advised to apply irrigation to wheat, gram, cumin, potato, vegetables viz. chilli, brinjal and tomato.

(Continued on Page 2)



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The bulletin is also displayed in the website (<http://www.imdagrimet.gov.in>) of the Division

Executive Summary

(Continued from page no. 1)

Northeast India

- As mainly dry weather prevailed during last week and no significant rain is likely to occur during the period, farmers in Lower Brahmaputra Valley Zone of Assam are advised to give light irrigation to lentil at pod filling stage.
- As there is no significant rain during last few weeks in Arunachal Pradesh, farmers are advised mulching in cole crops with locally available weeds, rice straws etc. to conserve the soil moisture and to prevent the effect of low temperature.
- Due to favourable weather conditions, there is chance of attack of aphids and saw fly on rapeseed and mustard and late blight in potato in North Bank Plain Zone of Assam. Farmers are advised to apply Dimethoate 30 EC or Chloropyrifos @ 2 ml / litre of water to control aphids and saw fly and to spray Mancozeb @ 2.5 g / litre of water against late blight.
- Due to favourable weather conditions, there is chance of attack of saw fly in toria and thrips on boro rice in Upper Brahmaputra Valley Zone of Assam; farmers are advised to apply Endosulfan @ 2 ml per litre of water during evening hours to control saw fly in toria and spray Chloropyrifos @ 2 ml / litre of water for thrip attack in *boro* rice if infestation is noticed above ETL level.
- In Temperate Sub Alpine Zone of Meghalaya, due to congenial weather, there is chance of attack of aphids in toria, pea and lentil; farmers are advised to apply Dimethoate @ 2 ml / litre of water or Malathion 50 EC @ 1.5 ml / litre of water if incidence is noticed.
- Due to prevailing weather conditions in Mild Tropical Plain Zone of Tripura, there is chance of attack of aphids in toria, powdery mildew in pea and bean at flowering stage and late blight in potato; farmers are advised to spray Monocrotophos @ 2 ml per litre of water for attack of aphids in toria, Mancozeb (Indofil M-45) @ 2.5 g per liter of water in potato field at least twice at an interval of 15 days and Wettable sulphur 2 g / litre of water or to dust Sulphur at 25 kg / ha on pea and bean as precautionary measures.

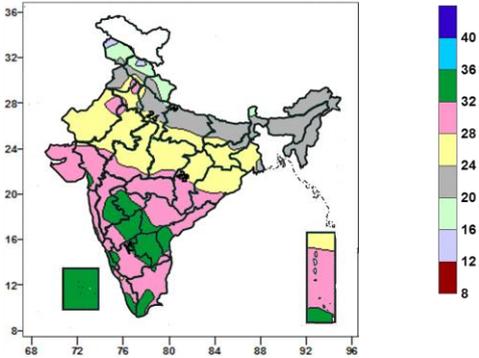
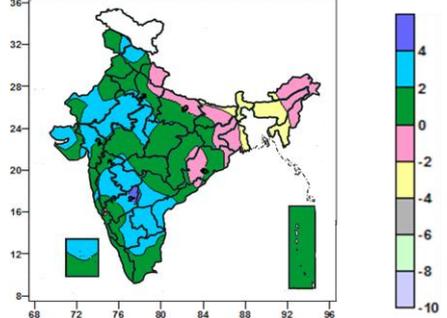
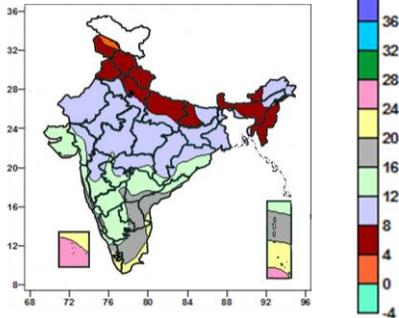
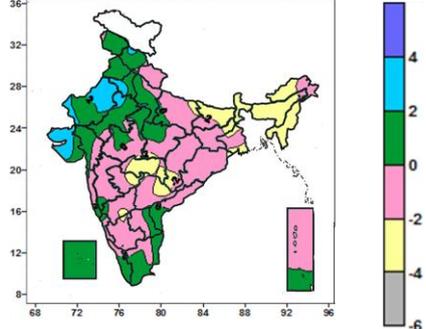
East India

- Due to low temperature in *Terai* Zone of West Bengal, protect the seedbed of *boro* rice by dragging the rope in the early morning to drop down the dew from leaf canopy. Irrigate the field at night and drain out in the next morning. Do not transplant the seedling, wait for temperature rise. Irrigate the field of wheat crop as there is no forecast of significant rainfall. Due to present weather conditions in Old Alluvial Zone, New Alluvial Zone and Terai Zone of West Bengal, there may be chance of late blight attack in potato, spray Mancozeb (2 g / litre of water) and Blitox (4 g / litre of water) alternately at 10-12 days interval by completely wetting the leaves.
- In North West Alluvial Plain Zone of Bihar, early and late blight disease may intensify in potato crop due to foggy weather condition during last week, spray Endophil M-45 or mixture of Synomaxi and Mancozeb @ 2.0 g per litre of water on a non-rainy day. Due to partial cloudy sky and prevailing temperature condition, aphid infestation may be observed in mustard, spray Metasystox @ 1.0 ml per litre of water.
- As dry weather is prevailing, farmers in Jharkhand are advised to irrigate gram & lentil after 50-55 days of sowing (prior to flowering stage).
- Due to cloudy weather condition incidence of powdery mildew in mustard is likely to increase in North Eastern Plateau Zone of Odisha, farmers are advised to spray Sulfur powder @ 1kg /ac in 200 liters of water.

South India

- Incidence of leaf miner in groundnut is noticed in some parts of North Coastal zone and Southern Telangana zone of Andhra Pradesh and weather is congenial for incidence of Tikka leaf spot also in groundnut. Farmers are advised to spray Dimethoate @ 2ml/l to control leaf miner.
- As dry weather is expected in the coming days and wind speed is expected to shoot up, water requirement for the standing crops would increase. Hence, farmers in Western Zone of Tamil Nadu are advised to apply irrigation to irrigated maize and sorghum.
- Farmers in the Northern and Central Zone of Kerala are advised to mulch the soil to prevent evaporation loss of water in coconut gardens and in the High Altitude zone in pepper and arecanut plantations. Present weather condition is highly favorable for the incidence of leaf thrips in puncha rice. Farmers are advised to monitor the crop and take appropriate plant protection measures.
- In Eastern Dry Zone of Karnataka, weather is congenial for powdery mildew and leaf hopper on mango and powdery mildew in grapes. In view of dry weather likely during next three days, farmers are advised to undertake plant protection measures.

Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 16.01.2013

<p>Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 16.01.2013</p>  <p>Actual Mean Maximum temperature ranged between 32 to 36$^{\circ}\text{C}$ over many parts of Madhya Maharashtra, Marathwada, North Interior Karnataka, Rayalaseema, Lakshadweep Islands, some parts of Telanagana, Coastal Andhra Pradesh, Coastal Karnataka, South Interior Karnataka, Kerala, Tamil Nadu, Andaman & Nicobar Islands, 20 to 24$^{\circ}\text{C}$ over many parts of Punjab, Uttar Pradesh, Bihar, Sub-Himalayan West Bengal North East India, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Jharkhand, Gangetic West Bengal, 16 to 20$^{\circ}\text{C}$ over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, some parts of West Uttar Pradesh, Sub-Himalayan West Bengal, 12 to 16$^{\circ}\text{C}$ over some parts of Uttarakhand, West Uttar Pradesh, Jammu & Kashmir, Himachal Pradesh, 24 to 32$^{\circ}\text{C}$ over remaining parts of the country.</p>	<p>Mean Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 16.01.2013</p>  <p>Actual Mean Maximum temperature anomaly ranged between 4 to 6$^{\circ}\text{C}$ over some parts of North Interior Karnataka, Telanagana, Marathwada, 2 to 4$^{\circ}\text{C}$ over many parts of Himachal Pradesh, Rajasthan, Gujarat, Andhra Pradesh, South Interior Karnataka, Madhya Maharashtra, Marathwada, some parts of Jammu & Kashmir, Madhya Pradesh, Saurashtra & Kutch, Konkan, North Interior Karnataka, Tamil Nadu, Lakshadweep Islands, -4 to -2$^{\circ}\text{C}$ over many parts of Sub-Himalayan West Bengal & Sikkim, Mizoram, Tripura, some parts of Bihar, Gangetic West Bengal, Arunachal Pradesh, Assam, -2 to 2$^{\circ}\text{C}$ over rest of the country.</p>
<p>Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 16.01.2013</p>  <p>Actual Mean Minimum Temperature ranged between 24 to 28$^{\circ}\text{C}$ over many parts of Lakshadweep, some parts of Andaman & Nicobar Islands, 20 to 24$^{\circ}\text{C}$ over some parts of Tamil Nadu, Kerala, Coastal Andhra Pradesh, Raylaseema, Lakshadweep, Andaman & Nicobar Islands, 4 to 8$^{\circ}\text{C}$ over many parts of Jammu & Kashmir, Himachal Pradesh, Uttarkhand, Punjab, Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Assam, Nagaland, Manipur, Mizoram, Tripura, some parts of Haryana, Bihar, Arunachal Pradesh, 0 to 4$^{\circ}\text{C}$ over some parts of Jammu & Kashmir, 8 to 20$^{\circ}\text{C}$ over remaining parts of the country.</p>	<p>Mean Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 16.01.2013</p>  <p>Minimum Temperature anomaly ranged between 2 to 4$^{\circ}\text{C}$ over many parts of West Rajasthan, Saurashtra & Kutch, some parts of Himachal Pradesh, Haryana, East Rajasthan, 0 to 2$^{\circ}\text{C}$ many parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, West Uttar Pradesh, Rajasthan, Gujarat, Tamil Nadu, Lakshadweep Islands, some parts East Uttar Pradesh, Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Coastal Andhra Pradesh, Raylaseema, Kerala, Saurashtra & Kutch, Andaman & Nicobar Islands, -4 to -2$^{\circ}\text{C}$ over most parts of Bihar, Sub-Himalyan West Bengal & Sikkim, North East India, Vidarbha, some parts of East Uttar Pradesh, Gangetic West Bengal, Chattisgarh, Telanagana, Marathwada, North & South Interior Karnataka, -2 to 0$^{\circ}\text{C}$ over remaining parts of the country.</p>

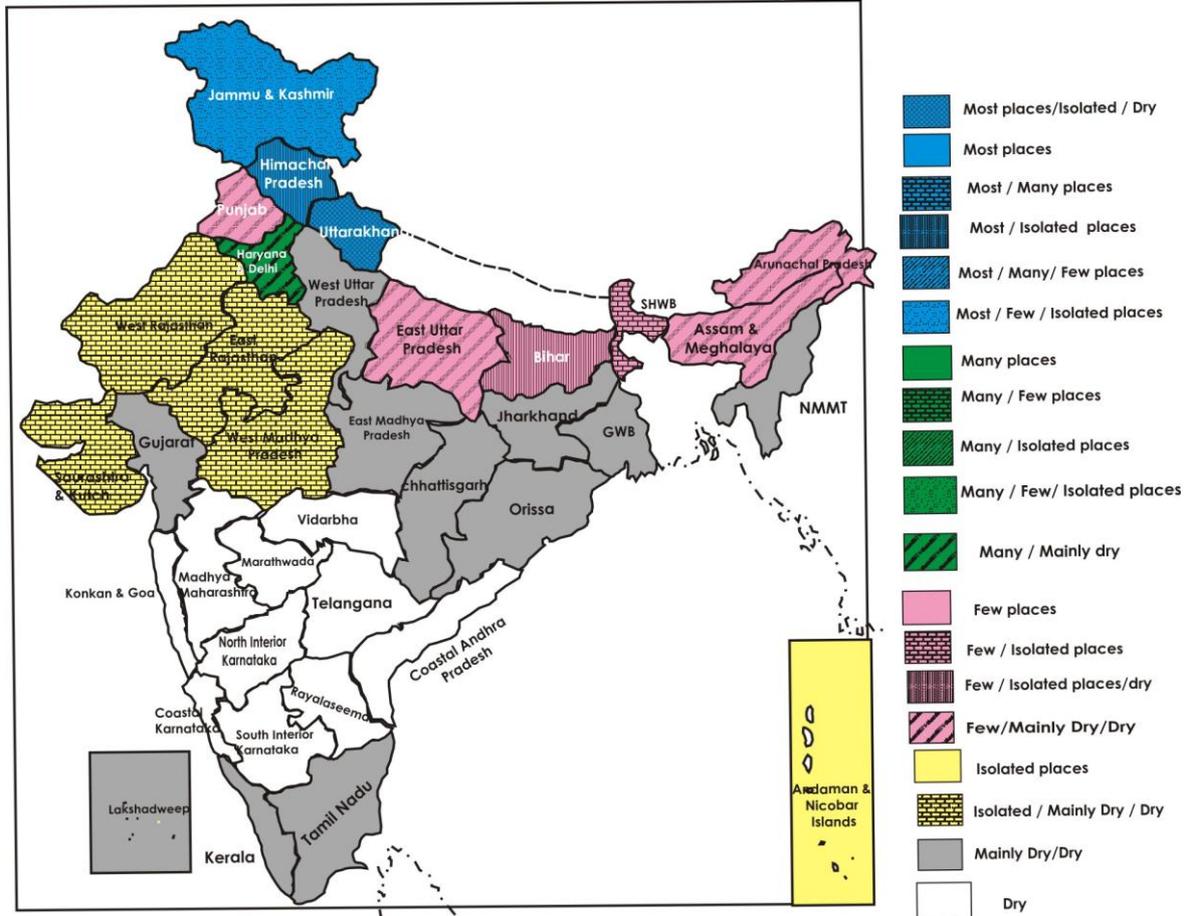
Distribution of rainfall of the country during week ending on 16.01.2013

State/Districts	Actual (mm)	% Dep.
Jammu & Kashmir		
Anantnag	9.1	-30
Badgam	6.7	-19
Bandipore	**	**
Baramula	19.3	22
Doda	7.4	-64
Ganderwal	38.2	378
Jammu	0.4	-96
Kargil	0.0	-100
Kathua	4.4	-70
Kistwar	**	**
Kulgam	7.5	-42
Kupwara	25	88
Ladakh(Leh)	0.2	-89
Poonch	0.0	-100
Pulwama	2.1	-64
Rajouri	2.1	-86
Ramban	23.3	12
Reasi	11.0	-19
Samba	0.2	-98
Shopian	3.0	-47
Srinagar	5.3	-34
Udhampur	4.0	-70

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

Weather Forecast (Valid upto 0830 hours of 21st January, 2013)



Major Feature of Weather Forecast up to 0830 hours IST of 21st January, 2013

- Rain/snow would occur at most places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours and decrease thereafter.
- Rain/thundershowers would occur at a many places over Haryana, Delhi and west Uttar Pradesh; at a few places over Punjab and east Uttar Pradesh and at one or two places over Saurashtra & Kutch, Rajasthan and north Madhya Pradesh during next 24 hours.
- Rain/thundershowers would occur at a few places over Bihar and Sub- Himalayan West Bengal & Sikkim during next 48 hours and over Arunachal Pradesh and Assam on 19th.
- Rain/thundershower may occur at one or two places over Andaman & Nicobar Islands.
- Fall by 2-4°C in maximum temperatures over northwest India during next 24 hours and in minimum temperatures from 19th onwards over northwest and central India.
- Fog/dense fog would occur over Punjab, Haryana, Delhi, north Rajasthan and west Uttar Pradesh from 19th onwards.
- Mainly dry weather would prevail over rest parts of the country.

Weather Warning during next 3 days

- Heavy rain/snow (more than 3 cm of water equivalent) at a few places with very heavy snowfall (more than 7 cm of water equivalent) at one or two places would occur over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours.
- Hailstorm would occur at one or two places over Haryana, Delhi, Uttar Pradesh, Uttarakhand, Himachal Pradesh and Bihar during next 24 hours.

Weather Outlook for subsequent 4 days from 21st to 25th January, 2013

- Isolated precipitation likely over Western Himalayan region.
- Rain/thundershowers would occur at one or two places over Sub-Himalayan West Bengal, Arunachal Pradesh and Assam.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** There was no significant rain over the States of the region during last week.
- **Weather Forecast:** Rain/thundershowers would occur at one or two places over Arunachal Pradesh and Assam on 19th.

Advisories:

- As there was no significant rain over most of the districts of the States of the region during last week and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops.
 - As mainly dry weather prevailed during last week and no significant rain is likely to occur during the period, farmers in Lower Brahmaputra Valley Zone of Assam are advised to give light irrigation to lentil at pod filling stage.
 - As there was no significant rain during last few weeks in Arunachal Pradesh, farmers are advised for mulching in cole crops with locally available weeds, rice straws etc. to conserve the soil moisture.
 - Due to mainly dry weather conditions in Nagaland, farmers are advised for mulching in pea, tomato and banana to conserve soil moisture.
 - Suitable varieties of crops are mentioned in Annexure III.
 - Due to foggy weather conditions, infestation of aphids, jassids and beetles are seen in French bean which is in early vegetative stage in Barak Valley Zone of Assam; farmers are advised to spray Malathion 50 EC @ 1.5 ml / litre of water to control the attack.
 - Due to favourable weather conditions, there is chance of attack of aphids and saw fly on rapeseed and mustard and late blight in potato in North Bank Plain Zone of Assam. Farmers are advised to apply Dimethoate 30 EC or Chloropyrifos @ 2 ml / litre of water to control aphids and saw fly and to spray Mancozeb @ 2.5 g / litre of water against late blight.
 - Due to humid and cloudy weather conditions, there is chance of attack of late blight in tomato in Hill Zone of Assam; farmers are advised to apply Ridomil MZ-72 @ 2 g / litre of water and Indofil M-45 2.5g / litre of water at 15 days interval.
 - Due to favourable weather conditions, there is chance of attack of saw fly in toria and thrips on *boro* rice in Upper Brahmaputra Valley Zone of Assam; farmers are advised to apply Endosulfan @ 2 ml per litre of water during evening hours to control saw fly in toria and spray Chloropyrifos @ 2 ml / litre of water for thrip attack in *boro* rice if infestation is noticed above ETL.
 - Due to favourable weather conditions, potato is affected by late blight in Arunachal Pradesh; farmers are advised to apply Ridomil MZ-72 @ 2 g / litre of water. There is also report of infestation of aphids in pea; farmers are advised to apply Dimethoate @ 2 ml / litre of water. Rapeseed and mustard have also been affected by aphids and painted bug, farmers are advised to remove the affected plants or undertake gentle dusting with wood ash.
 - In Temperate Sub Alpine Zone of Meghalaya, due to congenial weather, there is chance of attack of aphids in toria, pea and lentil; farmers are advised to apply Dimethoate @ 2 ml / litre of water or Malathion 50 EC @ 1.5 ml / litre of water if incidence is noticed.
 - Due to prevailing weather conditions in Mild Tropical Plain Zone of Tripura, there is chance of attack of aphids in toria, powdery mildew in pea and bean at flowering stage and late blight in potato; farmers are advised to spray Monocrotophos @ 2 ml per litre of water for attack of aphids in toria, Mancozeb (Indofil M-45) @ 2.5 g per liter of water in potato field at least twice at an interval of 15 days and wettable sulphur 2 g / litre of water or to dust Sulphur at 25 kg / ha on pea and bean as precautionary measures.
 - Other advisories are mentioned in Annexure - I
 - Stages of major crops are mentioned in Annexure II.
- **Animal Husbandry**
 - In Lower Brahmaputra Valley Zone of Assam, farmers are advised to protect poultry birds (Broiler) from cold by using electric bulb (300 Watt for 100 sq.feet) to prevent *Coryza* disease.
 - Farmers in Mild Tropical Hill Zone of Nagaland are advised to provide continuous light of 24 hours a day as it stimulates early egg production in poultry and fowls may lay eggs throughout the year without interruption.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL & SIKKIM]

- **Realised Rainfall:** Dry weather prevailed over the region.
- **Weather Forecast:** Rain/thundershowers would occur at a few places over Sub-Himalayan West Bengal & Sikkim during next 48 hours and at a few places over Bihar during next 24 hours and decrease thereafter. Mainly dry weather would prevail over rest parts of the region.
- **Weather Warning:** Hail storm would occur at one or two places over Bihar during next 24 hours.

- **Advisories:**

- Farmers are advised to apply irrigation to the standing crops in the region as there was mainly dry weather in those States and no significant rainfall is likely to occur during next three days.
- As hail storm would occur at one or two places over Bihar during next 24 hours, farmers are advised to protect the crops from hail injury by hail net or mulching.
- As prevailing dry weather condition would continue, farmers of Western Undulating Zone of Odisha are advised to maintain thin film of water in rice and apply irrigation to vegetable crops. Harvesting of pulses and cotton can be done utilizing dry weather conditions.
- Due to low temperature in *Terai* Zone of West Bengal, protect the seedbed of *boro* rice by dragging the rope in the early morning to drop down the dew from leaf canopy. Irrigate the field at night and drain out in the next morning. Do not transplant the seedling, wait for temperature rise. Irrigate the field of wheat crop as there is no forecast of significant rainfall.
- Occurrence of pod borer in gram and pea in East and South Eastern Coastal Plain Zone of Odisha is reported; spray 50 ml Imidacloprid or 400 ml Dimethoate or Metasystox in 200 litre water per acre.
- Due to present weather conditions in Old Alluvial Zone, New Alluvial Zone and *Terai* Zone of West Bengal, there may be chance of late blight attack in potato, spray Mancozeb (2 g / litre of water) and Blitox (4 g / litre of water) alternately at 10-12 days interval by completely wetting the leaves.
- In North West Alluvial Plain Zone of Bihar, early and late blight disease may intensify in potato crop due to foggy weather condition during last week, spray Endophil M-45 or mixture of Synomaxi and Mancozeb @ 2.0 g per litre of water on a non-rainy day. Due to partial cloudy sky and prevailing temperature condition, aphid infestation may be observed in mustard, spray Metasystox@1.0 ml per litre of water.
- As dry weather is prevailing, farmers in Jharkhand are advised to irrigate gram & lentil after 50-55 days of sowing (prior to flowering stage).
- Due to cloudy weather condition incidence of powdery mildew in mustard is likely to increase, farmers of North Eastern Plateau Zone of Odisha are advised to monitor the crop and spray Sulphur powder @ 1kg /acre in 200 liters of water.
- Fruit and shoot borers in brinjal have been found in Mid Central Table Land Zone of Odisha; farmers are advised to install Pheromone trap @12 nos /acre. Alternately spray 4 g Sevin WP or 2 ml Malathion in 1 litre water and thrips has also been found in chilli, spray 300 ml Ethion or 400 ml Carbosulphan in 200 litre water/acre.
- Other crop advisories are mentioned in Annexure I.
- Stages of major crops are mentioned in Annexure II.
- Suitable varieties of crops are mentioned in Annexure III.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over Saurashtra & Kutch region during next 24 hours. Mainly dry / dry weather would prevail over the rest region.
- **Advisories:**
 - As dry weather prevailed during last few weeks and mainly dry weather is expected to prevail, farmers in Gujarat region except in Kutch region are advised to apply irrigation to wheat, gram, cumin, potato, vegetables *viz.* chilli, brinjal and tomato.
 - As dry weather prevailed in Madhya Maharashtra, Marathwada and Vidarbha during last few weeks and is expected to continue during next 5 days, farmers are advised to apply irrigation to *rabi* jowar at grain formation stage, wheat at ear head emergence, safflower at head formation and give regular irrigation to sugarcane, vegetables and orchard crops.
 - As day temperature is rising in North Konkan, farmers in the region are advised to apply straw mulch in pulses grown on residual moisture to conserve soil moisture in the field.
 - As minimum temperature below 10°C in Western Ghat Region and is likely to continue, hence farmers in this region are advised to postpone sowing of summer bajra and groundnut, till there is rise in temperature.
 - As prevailing minimum temperature is below 10°C in North Madhya Maharashtra, farmers in the region are advised to apply mulch with crop residue to banana and apply irrigation in the evening.
 - As gram is in flowering stage in Middle Gujarat Zone and wheat is in milking stage in South Gujarat Heavy Rainfall Zone, apply irrigation in gram and wheat crop.
 - As mustard is in flowering stage in North Gujarat Zone and dry weather conditions are prevailing, apply irrigation in mustard crop.
 - Due to increase in minimum temperature during this week, there may be incidence of mango hoppers and powdery mildew in North Konkan, spray 17.8% Imidachloprid @ 3 ml along with Hexaconazole @ 5 ml or water soluble Sulphur @ 20 g or Carbendazim @ 10 g per 10 litres of water.

- Due to low minimum temperature there may be increase in infestation of powdery mildew in grapes, in Pune region spray Dinocap @ 5 ml in 10 litres of water.
 - Weather condition is congenial for outbreak of powdery mildew in pea in South Gujarat Zone. Farmers are advised to spray the crop with wettable sulphur @ 0.25% or Dinocap@ 0.05%, in clear weather.
 - Due to cloudy weather with high temperature and humidity in North Gujarat Zone, there is chance of occurrence of early blight and late blight in potato and cumin. Spray Mancozeb 0.25% @ 30gm in 10 liter of water for early blight and Metalaxil MZ (Redomel gold) @ 20 gm of 10 liter water for late blight control. Spray Dimethoate 30 EC 0.1% to manage sucking pests in cumin and vegetable crops.
 - Other advisories are mentioned in Annexure – I.
 - Stages of the crops are mentioned in Annexure II.
 - Varieties of the crops are mentioned in Annexure III.
- **Animal Husbandry**
 - Keep animals in sheds for protection against cold in Gujarat and take special care of young calves during morning hours. Cover poultry house by gunny bags or cloth / plastic sheets and give dry fodder to animals for protection against cold in North Saurashtra Zone.

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

- **Realised Rainfall:** Significant rainfall occurred in Ganderwal, Kupwara, Ramban districts of Jammu & Kashmir and mainly dry / dry weather prevailed over rest of the region.
- **Weather Forecast:** Rain/snow would occur at most places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours and decrease thereafter. Rain/thundershowers would occur at a many places over Haryana, Delhi and west Uttar Pradesh; at a few places over Punjab and east Uttar Pradesh and at one or two places over Rajasthan during next 24 hours. Fall by 2-4°C in maximum temperatures during next 24 hours and in minimum temperatures from 19th onwards over the region. Fog/dense fog would occur over Punjab, Haryana, Delhi, north Rajasthan and west Uttar Pradesh from 19th onwards.
- **Warning:** Heavy rain/snowfall (more than 3 cm of water equivalent) at a few places with very heavy snowfall (more than 7 cm of water equivalent) at one or two places would occur over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours. Hail storm would occur at one or two places over Haryana, Delhi, Uttar Pradesh, Uttarakhand and Himachal Pradesh during next 24 hours.
- **Advisory :**
 - As rain /snowfall would occur at most / many places over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Delhi and west Uttar Pradesh along with heavy rain/snowfall at a few places with very heavy snowfall at one or two places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours, farmers are advised to postpone irrigation and intercultural operations in standing crops. Farmers in Jammu & Kashmir, Himachal Pradesh and Uttarakhand are also advised to arrange for drainage facilities to avoid water stagnation due to heavy rain / snowfall.
 - As hailstorm would occur at one or two places over Haryana, Delhi, Uttar Pradesh, Uttarakhand, Himachal Pradesh during next 24 hours, farmers are advised to use hail net for orchard crops to prevent from mechanical damage.
 - In Bhabar and Tarai Zone of Uttarakhand, last week low night temperatures and sunny days caused sufficient photosynthesis in wheat crop at all growth stages. Due to sufficient rainfall expected during this week, farmers are advised not to apply irrigation or any pesticides in standing crops during this week.
 - In the Mid Hills Sub humid Zone of Himachal Pradesh farmers are advised to continue pruning and training operations in apple/stone fruits. Protect the sub-tropical fruit plants of 4-5 years of age by covering with dry and Sarkanda grass by keeping eastward side open for proper sun light and air.
 - Due to high humidity in Western Zone of Haryana there is possibility of white rust and *Alternaria* blight in the mustard crop, farmers are advised to monitor the crop and take proper plant protection measure.
 - In the Mid Hills Sub humid Zone of Himachal Pradesh due to prevailing weather conditions chances of incidences of downy mildew in cauliflower has increased. Farmers are advised to monitor the crop.
 - In the present weather condition, garlic & onion crop is likely to be affected by thrips attack in Semi-Arid Eastern Plain Zone in Rajasthan. To control farmers are advised to spray Methyl Dematon 25 EC or Melathion 50 EC @ 1.0 ml per litre water.
 - Due to continuous cool and humid weather, *Alternaria* blight (black spot) disease may attack mustard crop in some pockets of Flood Prone Eastern Plain Zone of Rajasthan. Farmers are advised to destroy the infested plants and spray Iprodione or Mencozeb @ 2 kg/800 litre solution and repeat the spray in 15 days interval.

- Due to foggy and cloudy weather, white rust is observed in mustard at some places in Irrigated North Western Plain Zone of Rajasthan. Farmers are advised to monitor the field regularly and after observing the symptoms (above ETL) spray mixture of Metalexis (Redomil M. Z.) @ 2 gm / litre water, on non-rainy day.
- Farmers in Punjab, Haryana, Delhi and west Uttar Pradesh are also advised to monitor the crops for the incidence of pests and diseases and undertake plant protection measures as fog/dense fog would occur from 19th onwards.
- Other crop advisories are mentioned in Annexure I.
- Stages of major crops are mentioned in Annexure II.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- **Realised Rainfall:** Mainly dry / dry weather occurred over the region during last week.
- **Rainfall Forecast:** Mainly dry / dry weather would prevail over the region.
- **Advisories:**
 - As mainly dry weather occurred during last week and likely to continue over the region, apply irrigation to the standing crops viz. maize, groundnut and sorghum .
 - As mainly dry weather is expected, farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to apply mulching to conserve moisture in tea.
 - Farmers in the Northern and Central Zone of Kerala are advised to mulch the soil or use soil mulch to prevent evaporation loss of water in coconut gardens and in the High Altitude zone in pepper and arecanut plantations.
 - In view of mainly dry weather likely during next three days, farmers in Problem Area Zone of Kerala are advised to apply 150 kg lime in rice field and drain out standing water followed by application of 2nd dose of fertilizers in rice. Newly planted coconut seedlings may be protected from scorching effect of sunlight and irrigated at 2 days intervals. Mulching with crop residues may be done to reduce evapotranspiration loss.
 - In Eastern dry zone of Karnataka, weather is congenial for powdery mildew and leaf hopper on mango and powdery mildew in grapes. In view of dry weather likely during next three days, farmers are advised to undertake plant protection measures.
 - Tomato crop is infected with early leaf blight (ELB) in the Coastal Zone of Karnataka. Farmers are advised to spray mancozeb @ 2 g/L or cuprous oxide @ 2.5 g/L to control early leaf blight.
 - Due to continuous dry weather in the North East Dry Zone of Karnataka, increase in thrips activity in vegetables is noticed. To control them, spray oxydemeton methyl (1.5 ml) or dimethoate (1.7 ml) with one liter of water.
 - Incidence of leaf miner in groundnut is noticed in some parts of North Coastal zone and Southern Telangana zone of Andhra Pradesh and weather is congenial for incidence of tikka leaf spot also in groundnut. Farmers are advised to spray Dimethoate @2ml/l to control leaf miner.
 - Leaf miner and tobacco cut worm incidence is noticed in groundnut, brown plant hopper in *rabi* rice, shoot borer in sorghum and maize in scarce rainfall zone of Andhra Pradesh due to prevailing weather. Due to rise in minimum temperatures (> 5⁰C), weather is favourable for pod borer incidence on redgram, gram caterpillar and flower dropping in bengal gram. Prevailing conditions are also congenial for early leaf spot and stem necrosis disease in groundnut. Farmers are advised to undertake plant protection measures.
 - Other advisories are mentioned in Annexure – I
 - Stages of major crops are mentioned in Annexure II.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Mainly dry weather prevailed over the region.
- **Weather forecast:** Rain/thundershowers would occur at one or two places over west Madhya Pradesh during next 24 hours. Mainly dry weather would prevail over rest parts of the region. Fall by 2-4°C in minimum temperatures from 19th onwards over the region.
- **Advisories:**
 - As mainly dry weather is expected, farmers are advised to apply irrigation to standing crops.
 - As dry weather is expected in Satpura Plateau Zone of Madhya Pradesh, farmers are advised to irrigate wheat after 60-65 DAS; also irrigate vegetables viz. brinjal as per requirement.
 - In Satpura Plateau Zone of Madhya Pradesh weather is favourable for attack of insect pests in gram crop; farmers are advised to spray quanolphos 25 EC@ 2.0 ml/lit of water if pest reaches at ETL.
 - Farmers in Bundelkhand Zone of Madhya Pradesh of are advised to monitor chickpea crop against pod borer, mustard against attack of aphids, pea against leaf miner and pod borer as present weather condition are favourable for their incidence.
 - As dry weather is expected in Chhattisgarh Plain Zone apply timely irrigation in *rabi* crops.
 - In Chhattisgarh Plain Zone pheromone trap is an effective measure for the control of tobacco caterpillar and fruit borer in vegetables. Farmers are advised to spray spynoshed @ 150 ml/ha for the control of leaf cater pillar.
 - Other crop advisories are mentioned in Annexure I.
 - Stages of major crops are mentioned in Annexure II.
 - Suitable varieties of crops are mentioned in Annexure III.

Annexure I Other Advisories

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

- Farmers in Barak Valley Zone of Assam are advised to complete transplanting of *boro* rice at the earliest.
- In Temperate Sub Alpine Zone of Meghalaya, farmers are advised to undertake nursery preparation for *boro* rice.
- In Mild Tropical Plain Zone of Tripura, farmers are advised to undertake transplanting of *boro* rice at the right age. Complete harvesting of cole crops, tomato and brinjal. Undertake nursery raising of summer tomato and brinjal and sowing of moong and black gram.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL &SIKKIM]

- In North East Alluvial Zone of Bihar, farmers are advised to complete transplanting of *boro* rice.
- Farmers in Central and western Plateau Zone of Jharkhand are advised to prepare the nursery-bed for raising seedlings of summer rice.
- As dry weather is expected to prevail in Western Undulating Zone of Odisha farmers are advised to carry out threshing of rice and harvesting of cotton.
- Farmers in Western Undulating Zone of Odisha are advised to undertake land preparation for planting of sugarcane. After deep ploughing collect the stubbles from field and destroy by burning.
- Farmers in East and South Eastern Coastal Plain Zone of Odisha are advised to undertake land preparation for sowing of summer groundnut and sunflower. Complete nursery sowing of summer rice in this week if not sown earlier.
- Farmers of North Central Plateau Zone of Odisha are advised that complete transplanting of summer rice.
- Farmers of North Eastern Plateau Zone of Odisha are advised to complete the sowing of sunflower as early as possible.
- Farmers in Western Plateau Zone of Jharkhand and Central and North Eastern Plateau Zone are advised to prepare the nursery-bed for raising seedlings of summer rice and prepare field for sowing of long gourd, round gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon. In Western Plateau Zone as timely sown toria crops are at maturity stage, harvest the crop and irrigate gram & lentil crops.
- Farmers in Central and North Eastern Plateau Zone of Jharkhand are advised to undertake intercultural operation to control weed and apply rest dose of urea @ 52 kg per acre after irrigation for timely sown wheat.
- Farmers in Coastal Saline Zone and New Alluvial Zone of West Bengal are advised to start transplanting the seedling of *boro* rice and ensure 5 cm standing water in the field during transplanting.
- Farmers in Old Alluvial Zone of West Bengal are advised to undertake land preparation for transplanting of *boro* rice. Irrigate the nursery bed regularly by maintain 2-3 cm water in the main field.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Due to favourable weather conditions, farmers in Madhya Maharashtra and Vidarbha are advised to undertake planting of *suru* sugarcane.
- As summer rice seedlings are 30-35 days old in East Vidarbha region, farmers in the region are advised to start transplanting in main rice field and maintain water level 2-3 cm in the field.
- As weather conditions are favourable, farmers in North Saurashtra Zone and Middle Gujarat Zone are advised for sowing of groundnut.
- Taking advantage of dry weather, carry out harvesting of matured castor capsules in Middle Gujarat Zone.

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

- In Sub-tropical and Intermediate Zone of Jammu & Kashmir, farmers are advised to postpone sowing of late varieties of wheat, vegetables *viz.* radish, beans-bush type and planting of potato. Undertake nursery sowing of tomato, brinjal and transplanting of onion and knol-khol.
- Farmers in Low Hills Subtropical Zone of Himachal Pradesh are advised to continue planting of potato, onion and radish.
- In the Western Plain Zone of Punjab farmers are advised to continue transplanting of 4-6 weeks old seedlings of onion in the field, when rise in temperature. Farmers can start planting of deciduous fruit plants *viz.* pear, peach & plum in these days.
- Farmers in Rajasthan are advised to undertake hoeing and weeding in all *rabi* crops. Irrigate normal sown wheat, barley crop at tillering stage (45-50 DAS), gram at pod initiation stage (80-90 DAS) and mustard after 25-30 days interval of previous irrigation. In Arid Western Plain Zone of Jodhpur, farmers are advised to prepare field for sowing of summer cucurbits crops *viz.* ridge gourd, bottle gourd, cucumber, white gourd, bitter gourd, round gourd, water melon etc.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- Dry weather likely to continue in North East dry zone of Karnataka, farmers are advised to continue picking of cotton, harvesting of pigeon pea and intercultural operations and earthing in *rabi* jowar. Farmers are advised to prepare nursery for sowing of summer rice.
- Due to prevailing dry weather is likely to continue, farmers in Eastern Dry Zone of Karnataka are advised to harvest pigeon pea and apply irrigation to ragi at tillering stage.
- Farmers in Central zone of Kerala are advised to harvest rice utilizing dry weather and sowing of pulses like black gram and green gram.
- In view of likely dry weather, farmers in coastal zone of Karnataka are advised to harvest *rabi* rice and sow cowpea, black gram, green gram, horse gram and field bean.
- In Hill zone of Karnataka, farmers are advised to sow sunflower. Farmers are advised for earthing up and top dressing of fertilizers in maize and jowar utilizing dry weather.
- Farmers in Problem Area Zone of Kerala are advised to sow amaranthus, bhindi, cabbage, cauliflower and prepare field for planting of banana.
- Farmers in central zone of Kerala are advised to continue harvesting of rice utilizing dry sunny weather.
- In High Altitude Hilly Zone of Tamil Nadu, farmers are advised to sow potato.
- Farmers in North Coastal Zone of Andhra Pradesh are advised to continue transplanting of *rabi* rice in the main field. Farmers in Northern Telangana zone are advised to sow sunflower, cowpea and sesame.

Animal Husbandry

- Farmers in the North East Dry Zone of Karnataka are advised to vaccinate domestic animals against FMD and Anthrax disease, as January month is congenial for these disease occurrence.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Present weather conditions are favourable for planting of onion during this week in Chhattisgarh Plain Zone; farmers are advised to complete planting of onion.

Annexure II

Major Crops

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

- *Boro* rice (nursery raising / transplanting), cole crops (head formation / maturity / harvesting), wheat (CRI / tillering), rapeseed, mustard (flowering / capsule formation), potato (tuber formation / maturity), tomato (flowering / fruiting / maturity), *rabi* pulses like lentil, rajmah, pea (vegetative / flowering / pod formation), *rabi* maize (vegetative), okra, Fench bean (sowing) in Assam.
- Cauliflower, cabbage (vegetative / head formation / maturity), brinjal (fruiting / maturity), tomato (flowering / fruiting / maturity), potato (vegetative / tuber formation), pea (vegetative / flowering), mustard (flowering / capsule formation) in Arunachal Pradesh.
- Potato (vegetative), pea (vegetative / flowering), cauliflower, cabbage (vegetative), rapeseed (vegetative / flowering), onion, garlic (vegetative), cucurbits (nursery raising), *rabi* maize (vegetative), tomato, chilli, brinjal (transplanting), bean (sowing / early vegetative), cucurbits (nursery raising) in Manipur.
- *Rabi* maize (vegetative), *boro* rice (nursery preparation), cole crops (vegetative / head formation), turmeric, ginger (rhizome maturity / harvesting), pea, mustard (vegetative / flowering), toria (flowering / pod formation), *Dolichos* / French bean (flowering / pod formation) in Meghalaya.
- Cole crop (vegetative / head formation), beans (flowering / pod formation), pea, lentil (flowering / pod formation), tomato (transplanting) in Mizoram.
- Cabbage (head formation), mustard (flowering / capsule formation), tomato (vegetative / flowering / fruiting), pea (flowering / pod formation / pod maturity), banana (vegetative), potato (vegetative / tuber formation) in Nagaland.
- *Boro* rice (nursery sowing / transplanting), toria (pod formation / pod filling), summer brinjal, tomato (nursery raising), potato (vegetative / tuber formation), cole crops (maturity / harvesting), banana (harvesting), pea, bean (flowering / pod formation), summer moong, black gram (sowing) in Tripura.

EAST INDIA [JHARKHAND, BIHAR, ORISSA, WEST BENGAL &SIKKIM]

- Gram, peas, sunflower, maize (vegetative/flowering), sugarcane (planting), potato, lentil (vegetative), mustard (flowering), urad, arhar, bajra etc. (grain formation), mango, litchi, guava (early vegetative / vegetative), winter vegetables (vegetative), wheat (crown root initiation) and toria (vegetative), pigeon pea (flowering / pod formation) in Bihar.
- Wheat (CRI to jointing stage), potato (vegetative to harvesting), pigeon pea (pod formation), onion (transplanting), vegetables (vegetative, flowering, harvesting), mustard, gram and linseed, lentil, pea (vegetative) in Jharkhand.
- Sugarcane (grand growth), banana (vegetative), rice (maturity/harvesting), mustard, sunflower, sesame, cowpea (sowing/vegetative), groundnut (sowing/vegetative/pod formation), fruit crops (planting / seedling), rice (land preparation), wheat (CRI), maize (vegetative) in Odisha.
- *Boro* rice (seedbed preparation/sowing/seedling), wheat (tillering), vegetable (vegetative/flowering), sunflower (sowing), potato (sowing to emergence stage), tomato (flowering/fruiting), mustard (flowering/siliqua formation stage) in West Bengal.
- Ginger (sprouting / early vegetative), large cardamom (vegetative / primary flowering / secondary flowering), vegetables (vegetative), rice (grain formation / maturity) in Sikkim.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane (*suru*) (active tillering / elongation in Madhya Maharashtra and Marathwada), new *suru* sugarcane (planting), sugarcane *adsali* (cane maturity / harvesting), sugarcane (new *adsali*) (early tillering), sugarcane (new pre seasonal) (early tillering), *rabi* jowar (grain formation in Madhya Maharashtra and Marathwada), safflower (head formation in Madhya Maharashtra and Marathwada), maize (tasseling / silking / cob initiation in Marathwada and Madhya Maharashtra), gram (flowering / pod formation), wheat (tillering / ear head emergence), summer rice (early tillering in South Konkan and seedling / transplanting in Western Ghat region and East Vidarbha) in Maharashtra.
- Summer rice (nursery sowing / seedling), wheat (tillering / ear head emergence), gram (vegetative / pod formation), cumin (branching / flowering), cotton (boll maturity / picking), sugarcane (planting / early vegetative), castor (spike maturity / harvesting), winter vegetables (flowering / fruiting), chilli, brinjal (fruiting / harvesting), cauliflower (vegetative / head formation), potato (vegetative / tuber formation), mustard (vegetative / flowering /capsule formation), jowar (flowering), *rabi* fennel (vegetative / flowering), fenugreek (vegetative), maize (vegetative / tasseling) in Gujarat.

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

- Wheat (tillering), pea, radish (sowing), Pome and stone fruits (planting), vegetables (vegetative) in Himachal Pradesh.
- Cauliflower, cabbage, broccoli and tomato (vegetative), carrot, pea (vegetative), sarson saag, bathua, radish, spinach, fenugreek, coriander and turnip (vegetative), mustard (vegetative), onion (vegetative), wheat (CRI stage) in Delhi.
- *Rabi* cereal (wheat), pulses (pea and lentil), brown sarson, fodder oat (in dormant stage in Valley Temperate zone (Srinagar), sunflower (early vegetative / vegetative), garlic, cucurbits, okra (seedling / early vegetative), potato (sowing), radish, spinach (sowing), carrot, turnip (sowing), onion, cole crops (nursery sowing / transplanting), mustard (late sown- flowering, normal / early sown- seed formation), brown sarson (rosette stage), wheat (late sown- emergence / tillering / jointing, normal/early sown- tillering / jointing / flag leaf initiation), barley (tillering / jointing stage), pulses (pea, lentil, gram) (vegetative) in Jammu & Kashmir.
- Wheat (CRI/tillering), arhar and ginger (vegetative), autumn sugarcane (vegetative), mustard, yellow sarson, rai, brinjal, chilli, lady's finger, barley, oat, chick pea, lentil (vegetative / flowering), in Uttarakhand.
- Wheat (tillering), late sown wheat (sowing/germination), barley (emergence/ CRI/tillering), sugarcane (grand growth/ ripening), masoor, alsi, jai (vegetative), fodder barseem (vegetative/1st cutting), vegetable crops - radish, carrot, onion, garlic (vegetative), rapeseed, mustard, pea, lentil & gram, maize (vegetative) in Uttar Pradesh.
- Wheat (tillering / jointing), sugarcane (harvesting), mustard (flowering) in Punjab.
- Wheat (tillering), sugarcane (harvesting), mustard (flowering / seed formation), barseem (sowing/vegetative) in Haryana.
- Cauliflower, cabbage, onion (transplanting / early vegetative), sugarcane (maturity), maize (maturity), Capsicum, guar, vegetable (tinda, water melon, pumpkin, cucumber, coriander, bhendi, ridge gourd) (sowing / germination / seedling), potato (tuberization), green gram (vegetative / flowering), moong (vegetative), early sown mustard (vegetative / flowering/silqua formation), wheat (CRI/ early tillering), fruits and vegetables (active vegetative / harvesting), barley (vegetative) in Rajasthan.

SOUTH INDIA [TN, AP, KERALA, KARNATAKA, LAKSHADWEEP, ANDAMAN & NICOBAR ISLANDS]

- Cowpea, black gram and green gram (pod development/harvesting), pigeon pea (harvesting), *kharif* cotton (picking), chilli (maturity), October sown wheat (late jointing to flowering), jowar (flowering/grain maturity), ragi (tillering), maize (cob initiation / seed setting), horse gram (flowering/ pod formation), sugarcane (maturity / ripening) in Karnataka.
- Vegetables (fruiting/maturity), *rabi* groundnut (flowering/pod development), *rabi* maize (grain filling/harvesting), sunflower (flowering/seed filling), pulses (sowing/vegetative/flowering), *rabi* jowar (maturity), Bengal gram (pod formation/harvesting), red gram (pod maturation/harvesting), Bt. cotton (picking), mango (flowering) and *rabi* rice (nursery sowing/transplanting) in Andhra Pradesh.
- Coconut (flowering / nut development), *puncha* rice (early vegetative), cardamom (harvesting), rubber (tapping), vegetables (harvesting), mundakan paddy (maturity/harvesting), cardamom/ vegetables (new planting) in Kerala.
- Late *samba* rice (tillering), *samba* rice (panicle initiation/flowering/maturity), sorghum (flowering), cowpea (maturity), black gram (maturity), rainfed groundnut (flowering), cotton (boll maturity), maize(tasseling/silking), irrigated maize (tasseling/silking), red gram (flowering), sugarcane (planting), irrigated groundnut (sowing), vegetables (fruiting) in Tamil Nadu.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Ladies finger, cucurbits (flowering/fruiting), pigeon pea (pod formation), potato (vegetative), sugarcane (planting), *rabi* vegetables (transplanting/early vegetative), wheat (tillering/ booting stage), maize (vegetative), fodder crops (sowing), chickpea, lentil, mustard, linseed (pod / capsule formation) in Madhya Pradesh.
- Sugarcane (planting/vegetative), pigeon pea, groundnut (pod filling), sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), onion (planting), vegetables (transplanting / vegetative), millet (vegetative), wheat (crown root initiation), niger, kulthi (land preparation / sowing) in Chhattisgarh.

Annexure III

List of Varieties

Assam

Boro rice: Mahsuri, IR-50, Bishnuprasad, Jyotiprasad, Kanaklata and Dinanath, *Boro* 1, 2, 3, Kalinga-3, Joymati, Swarnav.
Okra: Parvani Kranti, Arka Anamika.

Tripura:

Mung: PDM 139.

Black gram: T-9, Panth Urd- 35.

Odisha

Groundnut: Smruti and JL-24, TMV-2, Devi

Sunflower: Morden, Sunrise, Surya, TNAUSUF-7, DRSF 108, DRSF 113 and Hybrid varieties like Jwalamukhi, KBSH-1, KBSH-3, Sungene 85 and MSFH 1, MSFH 8, MFSH 17, PAC 36, DRSH 1, Pro.Sun 09.

Coriander: CO-1, CO-2, CO-3, Swati, Sadhana, Ram Selction and Udi.

Rice: Lalat, MTU-1010, MTU-100, Parijat, Khandagiri, Naveen.

West Bengal:

Boro Rice : Supriya, Jamini, Bhupen, IET-2233, Satabdi (IET-4786), Kitish (I.E.T.-4094), Ratna, Bikash etc.

Potato : Chandramukhi, Joyti.

Jharkhand:

Onion : Pusa Red, Pusa Ratnar, N-53, Arka Nikatan, Arka kalyan, Agrifound Dark Red.

Maharashtra

Suru Sugarcane: CO-419, COM-7125, CO-860032, CO-94012 and COM-0265 for Madhya Maharashtra and CO-86032, CO-M 7125, CO-8014, CO-740, CO-7219 for Marathwada region.

Gujarat

Groundnut: TAG-24, GG-2, TG-37-A

Madhya Pradesh

Sugarcane: KO-J-N- 86572, KO-J-N- 86141

Chattisgarh

Niger: JNC-1, JNC-6, JNC-9, GA-10, Ootakmund, KGN-2

Kulthi: AK-21, Ak-42, Bastar Kulthi, Birsa Kulthi and VLG-9

Annexure IV

Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 16.01.2013

