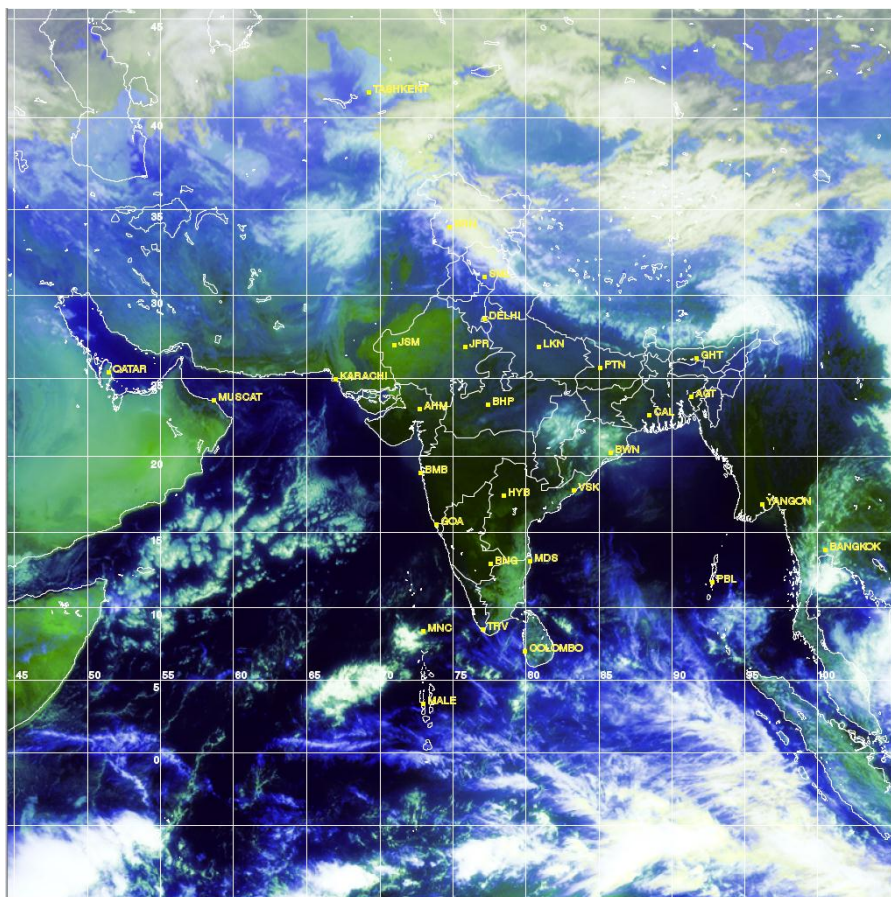




National Agromet Advisory Bulletin

Wednesday, 25th January, 2012
(For the period 25th to 29th January, 2012)



Satellite image 0600 UTC dated 27th January, 2012



Issued by

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

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

Executive Summary

Minimum temperatures prevailed in the range of 4-6° over many parts of Jammu & Kashmir, Himachal Pradesh and Punjab. Cold wave along with ground frost conditions prevailed at a few places over Haryana and in isolated pockets of Punjab, Rajasthan, West Uttar Pradesh, north Madhya Pradesh and some parts of east India during mid-period of last week. Also chances of fall in minimum temperatures by 1-2°C over parts of northwest and east India during next 1-2 days. Farmers are advised to keep vigil and provide light, frequent irrigation and arrange for smoking around the fields to protect standing crops from frost / cold injury. However, the prevailing weather conditions are favourable for the growth of wheat crop in these regions.

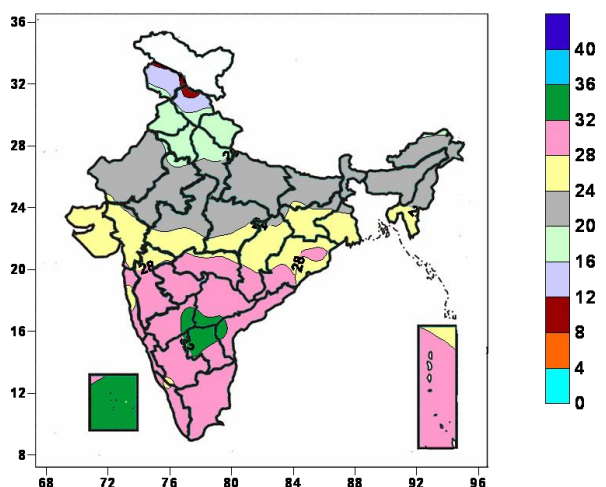
Scattered rain / snowfall occurred over Jammu & Kashmir and Himachal Pradesh during last week. Rain / snowfall is also likely to occur at many places over Jammu & Kashmir and Himachal Pradesh after 24 hours. Farmers in these States are advised to postpone irrigation to the standing *rabi* crops. Mainly dry weather prevailed over most of the remaining parts of the country and either isolated rainfall or dry / mainly dry weather is likely to occur. Farmers are advised to provide irrigation to the *rabi* crops which are at critical stages (flowering / grain filling).

Farmers are advised to undertake sowing of cucurbitaceous and leafy vegetables in Madhya Pradesh, sowing of groundnut, moong, urad and maize and planting of onion in Orissa, land preparation and transplanting of *boro* rice in West Bengal and Tripura, planting of sugarcane in Assam, nursery sowing of tomato, brinjal, chilli and sowing of cucurbits in Jammu & Kashmir, sowing of cumin in Uttar Pradesh and sowing of water melon and planting of sugarcane in Maharashtra.

Due to favourable weather conditions, incidences of thrips in onion, brinjal and bhindi in Karnataka, leaf folder and stem borer (white ear) in *thaladi* rice in Tamil Nadu, leaf eating caterpillar in gram in Madhya Pradesh, stem borer in rice (nursery) in Chhattisgarh and pod borer in gram and aphids in rapeseed and mustard in Orissa are noticed below economic threshold level (ETL). Farmers are advised to undertake appropriate plant protection measures to control the pests and diseases, if their population goes beyond ETL.

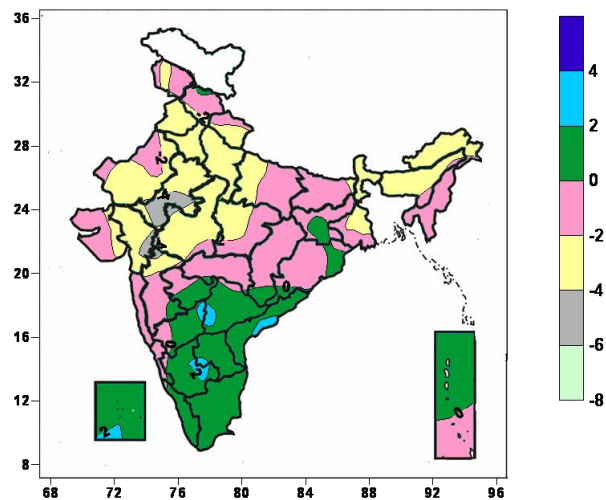
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 25.01.2012

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 25.01.2012



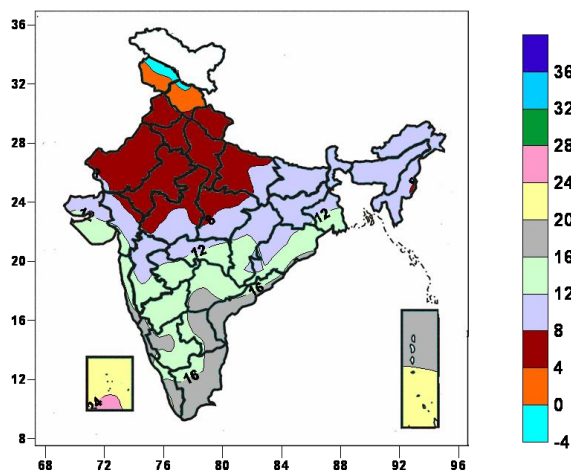
Actual Mean Maximum temperature ranged between 32°C and above over most parts of Lakshadweep Islands, some parts of South & North Interior Karnataka and Andhra Pradesh, 28 to 32°C over most parts of Maharashtra, South India (except Lakshadweep Islands), some parts of Orissa, Chattisgarh and Andaman & Nicobar Islands, 12 to 16°C over most parts of Jammu & Kashmir and Himachal Pradesh, 16 to 20°C over most parts of Uttarakhand, Punjab, Haryana, Delhi and West Uttar Pradesh, some parts of Rajasthan, 20 and 28°C over remaining parts of the country.

Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 25.01.2012



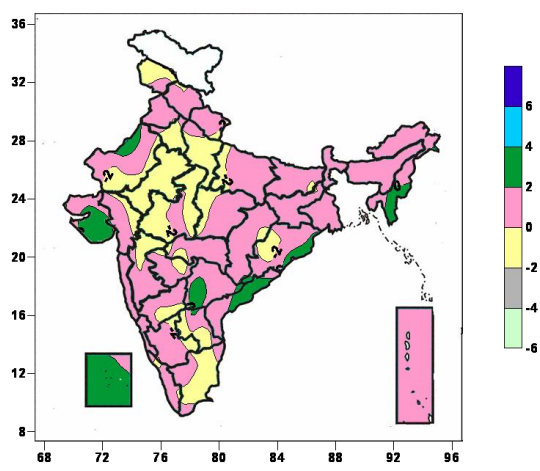
Actual Mean Maximum temperature anomaly ranged above 2°C over some parts of Andhra Pradesh, South & North Interior Karnataka and Lakshadweep Islands, 0 to 2°C over most parts of Marathwada, South India (except Coastal Karnataka), some parts of Orissa, Chattisgarh, Jharkhand, Madhya Maharashtra and Vidarbha, -6 to -4°C over some parts of East Rajasthan, Gujarat, -4 and 0°C over remaining parts of the country.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 25.01.2012



Actual Mean Minimum Temperature ranged between 20°C and above over most parts of Lakshadweep, Andaman & Nicobar Islands, 16 to 20°C over most parts of Andhra Pradesh, Coastal Karnataka, Kerala, Tamil Nadu, Andaman & Nicobar Islands, some parts of Konkan & Goa, South Interior Karnataka and coastal Orissa, 0 to 4°C over most parts of Jammu & Kashmir, Himachal Pradesh, 4 to 8°C over most parts of Uttarakhand, Punjab, Delhi, Haryana, Rajasthan, Uttar Pradesh, North Madhya Pradesh, some parts of Gujarat, 8°C to 16°C over remaining parts of the country.

Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 25.01.2012



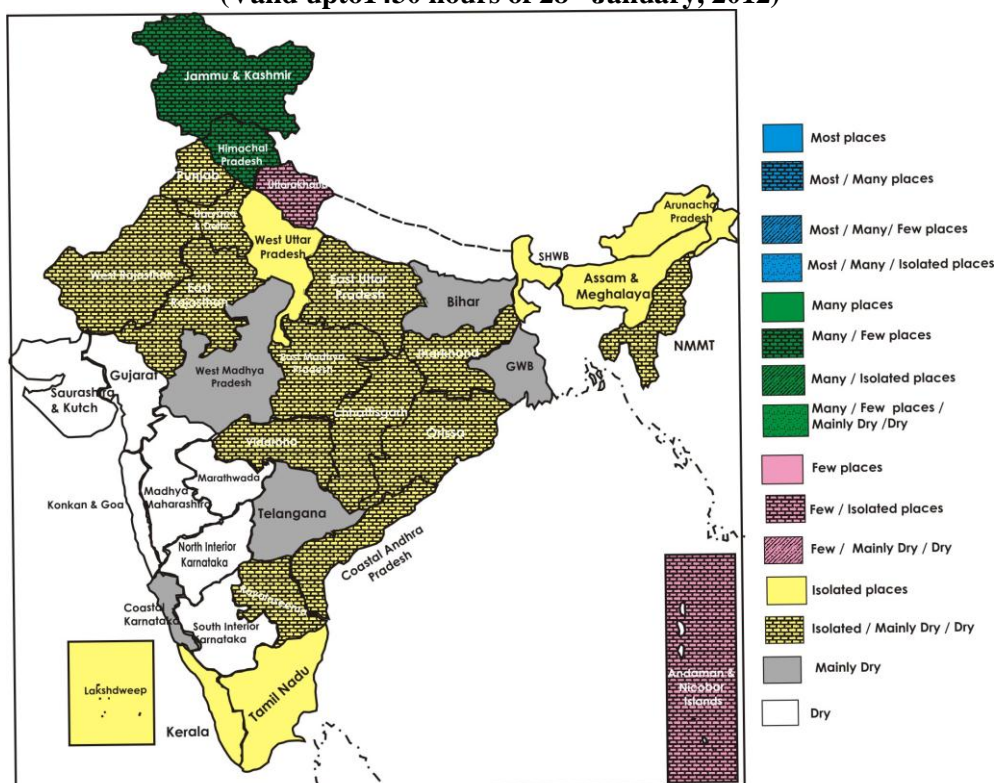
Minimum Temperature anomaly ranged between 2 to 4°C over most parts of Lakshadweep Islands, some parts of West Rajasthan, Manipur, Mizoram, Tripura, Saurashtra & Kutch, Andhra Pradesh, -2 to 0°C over most parts of Haryana, Delhi, West Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Tamil Nadu, some parts of Jammu & Kashmir, Uttarakhand, East Uttar Pradesh, Bihar, Orissa, Chattisgarh, Maharashtra (except Konkan & Goa), Rayalaseema, North & South Interior Karnataka, Kerala. 0 to 2°C over remaining parts of the Country.

Distribution of rainfall of the country during week ending on 25.01.2012

State/Districts	Actual (mm)	% Dep.
Arunachal Pradesh		
Anjaw	0.0	-100
Changlang	12.5	-1
East Kameng	1.0	-90
East Siang	28.0	460
Lohit	2.0	-78
Lower Subansiri	4.0	-83
Papumpara	4.0	-25
Tawang	2.0	-81
Tirap	20.6	203
Upper Dibang Valley	66.0	362
Upper Siang	54.0	306
Upper Subansiri	0.0	-100
West Kameng	0.7	-94
Himachal Pradesh		
Bilaspur	2.1	-85
Chamba	67.5	140
Hamirpur	5.7	-71
Kangra	13.5	-29
Kinnaur	14.1	-35
Kullu	13.5	2
Lahaul and Spiti	2.3	-94
Mandi	8.7	-48
Shimla	11.6	-27
Sirmaur	0	-100
Solan	0.2	-99
Una	4.4	-61
Jammu & Kashmir		
Anantnag	30.9	26
Badgam	9.8	-41
Baramulla	7.3	-76
Doda	38	11
Ganderwal	23.4	33
Jammu	0.3	-98
Kargil	4	-69
Kathua	1.1	-94
Kulgam	24.9	1
Kupwara	19.9	-5
Ladakh(Leh)	0.1	-96
Poonch	7	-81
Pulwama	9.2	-32
Rajouri	8.1	-56
Ramban	37.4	10
Reasi	5.2	-81
Samba	1.3	-91
Shopian	20	47
Srinagar	14.5	-18
Udhampur	8.3	-70

	(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 1430 hours of 28th January, 2012)



Major Feature of Weather Forecast upto 1430 hours IST of 28th January, 2012

- Rain/snow would occur at a few places over western Himalayan region during next 24 hours and at many places thereafter.
- Minimum temperatures would rise slightly over parts of northwest India and by 2-3°C over adjoining central & east India during next 1-2 days.
- Maximum temperatures would rise by 2-3°C over central & east India during next 2-3 days.
- Rain/thundershowers would occur at one or two places over plains of northwest, central and east India during next 48 hours and mainly dry weather thereafter.
- Rain/thundershowers would occur at one or two places over northeastern states and extreme south peninsular India.
- Rain/thundershowers would occur at one or two places over Andaman & Nicobar Islands during next 24 hours and at a few places thereafter.
- Fog/shallow fog may occur mainly in morning hours over isolated pockets of east and northeast India.
- Weather would be mainly dry over remaining parts of the country.

Weather Warning

- No weather warning.

Weather Outlook up to 1430 hours IST of 30th January, 2012

- Rain/snowfall would continue to occur at one or two places over western Himalayan region.
- Rain/thundershowers would occur at a few places over Andaman & Nicobar Islands and at one or two places over northeastern states and central, east & south peninsular India.
- Weather would be mainly dry over rest parts of the country.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** No significant rain occurred in most of the districts of the States of the region except in Upper Dibang Valley and Upper Siang districts of Arunachal Pradesh during last week.
- **Rainfall Forecast:** Rain / thundershower would occur at isolated places over Arunachal Pradesh, Assam and Meghalaya and mainly dry weather will prevail over Nagaland, Manipur, Mizoram and Tripura during the period.
- **Advisories**
 - As significant rain occurred in Upper Dibang Valley and Upper Siang districts of Arunachal Pradesh, farmers in these districts are advised to postpone irrigation to the standing crops. As there was no significant rain during last few weeks in most of the remaining districts of the States of the region and no significant rain is likely to occur, farmers are advised to apply irrigation to the standing crops.
 - Farmers in Assam are advised to continue preparation of nursery bed and transplanting of *boro* rice.
 - Farmers in Hill Zone of Assam are advised to harvest matured bolls of cotton, preferably in the morning hours to get good quality cotton.
 - Farmers of Upper Brahmaputra Valley Zone of Assam are advised to continue land preparation and planting of sugarcane.
 - Farmers of Lower Brahmaputra Valley Zone of Assam are advised to continue land preparation and sowing of *ahu* rice, sugarcane, pointed gourd, musk melon, water melon, pumpkin etc.
 - Farmers in Mid Tropical Plain Zone of Tripura are advised to complete sowing of *boro rice* in lowland. As dry weather is prevailing during last few weeks and there is less possibility of significant rainfall, farmers are advised to apply light irrigation to pulse crops and also to sugarcane.
 - Farmers in Temperate Sub Alpine Zone of Meghalaya are advised to continue preparation of nursery bed and transplanting of *boro* rice. Prepare land for sowing of ladies finger, pumpkin and French bean.
 - Farmers of Sub tropical Plain Zone of Manipur are advised to undertake sowing of cucurbits like water-melon, cucumber and sponge gourd. Undertake land preparation for sowing of rice and complete land preparation for transplanting of French bean / tomato/ brinjal / chilli.
 - As there was no significant rain during last few weeks in Mild Tropical Hill Zone of Mizoram, lack of moisture coupled with present weather conditions caused fruit cracking in tomato; hence farmers in Mild Tropical Hill Zone of Mizoram are advised to ensure sufficient moisture.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - Due to prevailing weather, there is chance of late blight on tomato at vegetative and fruiting stage in Hill zone of Assam; farmers are advised to apply Ridomil MZ-72 @ 2 g / litre of water and Indofil M-45 @ 2.5 g / litre of water at 15 days interval.
 - Farmers in North Bank Plain Zone and Upper Brahmaputra Valley Zone of Assam are advised to monitor potato crop as there is chance of attack of late blight due to congenial weather; for controlling the late blight of potato, spray Mancozeb 75% a.i. @ 2.5 g / litre of water at an interval of 12 days.
 - There is attack of wilt disease and aphids on lentil and lathyrus crops at vegetative stages in Central Brahmaputra Valley Zone of Assam; farmers are advised to drench the soil with Bavistin @ 1 ml / litre of water to protect the crop from wilt and apply Malathion

50 EC @ 2 ml / litre of water. Present weather condition is congenial for appearance and spread of late blight disease in potato. Spray Mancozeb 75% a.i. @ 2.5 g / litre of water against late blight.

- Prevailing weather is favourable for the incidence of leaf curl and late blight disease in tomato and brinjal crops in Mid Tropical Plain Zone of Tripura; spray Rogor @ 2 ml per liter of water or Monocrotophos @ 3 ml per liter of water or Imidacaloprid @ 2 g per liter of water to manage the attack at an interval of 15 days. Due to prevailing weather conditions, there is chance of late blight and early blight diseases in potato. To manage the attack of blight diseases, spray Indofil M-45 or Ridomil or Mancozeb @ 2 g per litre of water or Cut Zed @ 2.5 g per litre of water.
- In Mild Tropical Hill Zone of Mizoram, due to prevailing weather conditions, there is chance of infestation of aphids in khasi mandarin; spray Monocrotophos (0.05%) against aphid attack. Due to prevailing weather, infestation of fruit borer may occur in tomato. Spray 5% neem seed extract to kill larvae or spray NPV @ 250-500 LE / ha with teepol @ 100 ml.
- Due to congenial weather, there is chance of attack of late blight in potato and powdery mildew in pea in Mild Tropical Hill Zone of Nagaland; farmers are advised to monitor crops and apply appropriate plant protection measures.
- Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Fishery farmers in North Bank Plain Zone and Lower and Central Bramhaputra Valley Zone of Assam are advised to apply Potash @ 4-5 mg / litre of water, Sukrena WS @ 1 litre per bigha of water against various bacterial diseases. Poultry farmers are advised to vaccinate poultry against ranikhet disease.
 - Wet bedding and cold weather are prerequisite for pneumonia; farmers in Arunachal Pradesh are advised to provide dry bedding material to pig / piglets and deworm pig / piglets and goat.
 - Prevailing cold weather is favourable for chances of pneumonia in newly born calves in Mild Tropical Plain Zone of Tripura; farmers are advised to take special care to avoid cold weather. Provide warm shed to poultry birds and pigs against cold.
 - The farmers in Mild Tropical Hill Zone of Mizoram are advised to deworm against Ascariasis / Malap.
 - The poultry farmers in Nagaland are advised to vaccinate against bird flue and vaccinate pig / piglet against swine flu. Vaccinate cattle, buffalo, pig, sheep and goat against FMD.
 - The poultry farmers in Manipur are advised to vaccinate against IBD / Gumboro disease and deworm pig / piglet.

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

- **Realised Rainfall:** Mainly dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Either isolated rain / thundershowers would occur or mainly dry weather will prevail over the States of the region during the period.
- **Advisories:**
 - As there was no significant rain during last week over the States of the region and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops.
 - Undertake sowing of oilseed crops like summer groundnut in Western Undulating Zone, East and South Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa.
 - Farmers in Western Undulating Zone of Orissa are advised to undertake land preparation for planting of sugarcane. Farmers are also advised to undertake transplanting of summer

rice and harvesting of cotton on sunny days. Apply irrigation to mustard wherever the crops are at seed formation stage.

- In view of prevailing dry weather, farmers in North Eastern Plateau Zone of Orissa are advised to apply irrigation to mustard and sunflower.
- Farmers in East and South Eastern Coastal Plain Zone of Orissa are advised to transplant summer rice. Farmers are also advised to undertake harvesting of sugarcane, sowing of the crops like summer sunflower and groundnut and transplanting of ragi crop. The farmers are also advised to give irrigation to *rabi* sunflower as it is at flowering stage.
- Farmers in North central Plateau Zone of Orissa are advised to undertake transplanting of summer rice and apply irrigation to wheat crop. Taking the advantage of dry weather, farmers are also advised to undertake inter cultural operation in groundnut and sunflower, apply irrigation to mustard crop and undertake sowing of early summer vegetables.
- As temperature condition is now congenial for planting of autumn planted sugarcane, onion and sowing of summer vegetables in North West Plain Zone of Bihar, farmers are advised to undertake these operations.
- As dry weather is prevailing, farmers in the districts of North Bihar are advised to apply irrigation in wheat and harvest matured tobacco crop.
- Apply second irrigation and urea as nutrients in timely sown wheat crop, first irrigation in late sown wheat crops and undertake intercultural operation to maize crop in South Bihar Alluvial Zone.
- Farmers in Western, Central and North Eastern Plateau Zone of Jharkhand are also advised to plant / sow onion, African marigold or French marigold and prepare the field for vegetables like long gourd, round gourd, bitter gourd, sponge gourd, cucumber, water melon and musk melon.
- As dry weather is prevailing, farmers in Central and North Eastern Plateau Zone of Jharkhand are advised to undertake intercultural operations in timely sown wheat, gram, green pea and pigeon pea.
- Farmers in Old Alluvial Zone of West Bengal are advised to undertake land preparation and transplanting of seedlings of summer rice. Cover the nursery bed with polythene or keep 2 to 3 cm stagnant water in the nursery bed especially for the night-time to protect the seedlings from cold and drain out the water in the morning. Irrigate the nursery bed regularly.
- Farmers in Laterite and Red soil zone of West Bengal are advised to transplant *boro* rice seedlings of 4-5 weeks age and maintain 2-3 cm of standing water. Farmers are also advised to undertake field preparation and sowing of groundnut.
- Farmers in New Alluvial Zone of West Bengal are advised to transplant of *boro* rice and maintain 5 cm standing water. Apply irrigation to wheat crop.
- Farmers in coastal Saline Zone of West Bengal are advised to complete transplanting of *boro* rice and chilli and sowing operation of Sunflower.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- There are chances of infestation of pod borer in pigeon pea in North West Alluvial Plain Zone of Bihar; apply Dimethoate 30% @ 1 to 1.5 ml per litre of water. Due to partial cloudy sky and prevailing temperature condition, aphid infestation may occur in mustard; spray *Metasystox* @ 1.0 ml per litre of water.
- Due to high relative humidity and low temperature in South Bihar Alluvial Zone, infestation of late blight may occur in potato and tomato; spray Indofil M-45 @ 2 ml / litre of water and monitor the crop constantly.
- Decreased sunshine hours with variant humidity in South Eastern Plateau Zone of Jharkhand is congenial for attack of Diamond back moth, aphids and thrips in cole crops

and tomato; hence, spray Dimethoate (30%) @ 1 ml per litre of water to control the attack. Due to cool and humid weather during morning time, infestation of late blight is seen in potato; spray Krilaksil or Ridomil MZ @ 1.5 g per litre of water.

- Weather is favourable for the attack of late blight in potato in Western Plateau Zone of Jharkhand; spray fungicide like Mancozeb @ 2.5 g per litre of water, Saaf or Intop @ 2 g per litre of water or Ridomil @ 1.5 g per litre of water.
 - Infestation of pod borer has occurred in gram and pea in East and South Eastern Coastal Plain Zone of Orissa; spray 50 ml Imidacloprid or 400 ml Dimethoate or Metasystox in 200 litres water per acre. Leaf eating caterpillar and leaf miner have been found in *rabi* sunflower; spray 400 ml Endosulphan / acre.
 - Current weather is favourable for infestation of leaf eating caterpillar in groundnut in East and South Eastern Coastal Plain Zone of Orissa. Apply 10 Kg of 2% Methyl Parathion dust around the bund. Thrips infestation may be found due to current weather. Spray 400 ml Dimethoate or 50 ml Imidachloprid in 200 litrewate per acre. The current temperature may also aggravate the infestation of downy mildew in mustard. Spray 2 g Redomil-MZ / litre water.
 - In cauliflower, diamond backed moth infestation has occurred in North Eastern Plateau Zone of Orissa; spray Cartaf Hydrochloride @ 2 ml / litre water.
 - Current weather favours the infestation of aphids and leaf eating caterpillars in pulses in North Eastern Coastal Plain Zone of Orissa; Spray Methyl demeton @ 400 ml per acre to control these insects. Foggy weather has aggravated the attack of aphids in rapeseed and mustard. Farmers are advised to spray Imidacloprid @ 0.5 ml / litre or Methyl demeton @ 2 ml / litre of water.
 - There is infestation of aphids in mustard in Old Alluvial Zone and Hill Zone of West Bengal. To control, spray Imidachlorpid @ 1 ml / 5 litres of water or Dimethoate @ 2 ml / litre of water at 10-15 days interval. There is also possibility of downy mildew in cucumber in Terai Zone of West Bengal. To control the disease, spray Mancozeb @ 2 g / litre or Metalaxyl 8% and Mancozeb 64% @ 1-1.5 g / litre of water.
 - Current weather is favourable for the attack of late blight in potato in New Alluvial zone of West Bengal; spray Blitox or Mancozeb @ 2.5 g / litre of water at an interval of 5-7 days.
 - Due to lower temperature and foggy weather in Terai Zone and Old Alluvial Zone of West Bengal, potato may be attacked by late blight. To prevent the attack of late blight, spraying of Mancozeb (2 g / litre of water) and Blitox (4 g / litre of water) alternately at 10-12 days interval by completely wetting the leaves is recommended. If attacked by late blight, spray the mixture of Metalaxyl 8% and Mancozeb 64% @ 1 to 1 ½ g per litre of water alternately at 12-15 days interval by completely wetting the leaves.
 - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry**
 - Due to low temperature, calves and kids are susceptible to respiratory infection mostly pneumonia. Farmers in North Eastern Coastal Plain Zone and North Central Plateau Zone of Orissa are advised to provide warm and comfortable housing and good ventilation to animals and birds. Vaccination of FMD (Foot and Mouth Disease) to animals is also recommended. In case of disease outbreak, strict isolation of affected animals should be done.
 - **Pisciculture**
 - Weather conditions are favourable for growth of fishes in North Eastern Plateau Zone of Orissa and Western Plateau Zone of Jharkhand; farmers are advised to add cow dung and lime in the pond as natural foods for them and alternative feeds may also be used like rice bran and mustard cake (each of 5 kg per day per acre area of pond).

- Farmers in North Central Plateau Zone and North Eastern Coastal Plain Zone of Orissa are advised to prevent the EUS disease in fish during winter; apply Cifax @ 400 ml per pond of 1 acre area and 1 meter depth of water.

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

- **Realised Rainfall:** Either no significant rainfall or dry weather prevailed over most states of the region during last week except in Chamba district in Himachal Pradesh.
- **Rainfall Forecast:** Rain/snow is likely to occur at a few places during next 24 hours and at many places later on over Jammu & Kashmir and Himachal Pradesh and decrease thereafter. Mainly dry / dry or isolated rainfall is likely to occur over remaining parts of the region.
- **Advisory:**
 - There was no significant rainfall in Jammu & Kashmir and Himachal Pradesh except Chamba district in Himachal Pradesh. Farmers are advised to apply irrigation to the standing crops and postpone irrigation in above mentioned district.
 - Farmers in New Delhi are advised to give light irrigation at evening in tomato, chilli, capsicum, marigold, peas, gram and other field crops to protect the crops from possible cold injury. In timely sown wheat crop, second irrigation may be given. Farmers are also advised to transplant onion, late cauliflower (snowball), cabbage and knolkhol, sowing of spinach, prepare nursery bed for chilli, tomato and brinjal crops and seedling of early cucurbitaceous crops in poly house.
 - Farmers in Punjab are advised to give light irrigation to the standing crop at flowering stage to protect it from cold and also damage of horticultural and vegetable crops.
 - Farmers in Central Plain Zone of Punjab, are advised to apply second irrigation to wheat sown during November and first irrigation to wheat sown during December. To late sown wheat, apply second dose of N with first irrigation. For controlling Gulli Danda a new herbicide Axial (Pinoxadon 5 EC) at 400 ml g/acre can be used.
 - In Sub Tropical Zone of Jammu and Kashmir, farmers are advised to undertake nursery sowing of tomato, brinjal, chilli crop, harvesting of citrus fruits and raise cucurbits under protection in polythene bags. Due to decrease in minimum temperature, they are advised to protect the mustard crop from frost by burning farm waste for creating smoke around the field and also to protect young evergreen plants by providing with thatches prepared from Sarkanda or any other material and to keep open on eastern side to allow sufficient sun shine and air for the plant. Farmers can plan for plantation of new orchards during these days. Due to previous and further chances of rainfall, farmers are advised to not allow stagnating water in wheat, barley, mustard and gobhi sarson field under low laying area areas.
 - In Valley Temperate zone of Srinagar, wheat, brown sarson, pea, lentil, oat are in dormant stage, farmers are advised to stop all agronomic activities in the field. Farmers are also advised to maintain orchard sanitation and in case of heavy rainfall / snow, drainage channels should be dug so as to avoid water stagnation. Farmers are advised to complete transplanting of onion, planting of garlic, sowing of leafy vegetables (orach, spinach and methi) in poly house. Also advised to mulch seed crops of Knol Khol, cabbage and root crops, stop pruning activities in fruit crops and not to go for new planting.
 - In Intermediate Zone of Jammu & Kashmir, farmers are advised to raise cucurbits under protection in polythene bags, nursery sowing of tomato and brinjal, transplanting of onion, knolkhol.

- Farmers in Leh region are advised to harvest Chinese cabbage, lettuce, beet leaf var. Mongol at weekly interval. It is advised to clear the snow from the poly houses and trenches to avoid excessive weight on the UV film and cover the polythene of green houses with black polythene in the night for proper growth of crops. They are also advised to give one light irrigation to garlic crop germinated in the low tunnel during day time.
- In High Hill Temperate Dry Zone of Himachal Pradesh, treat the apple plants damaged by snow with chowbatia paste / fungicides and remove heavy snow from branches particularly in orchards where pruning is yet to be done. Farmers are also advised to prepare pits for planting new plants.
- In Uttar Pradesh, farmers are advised to complete sowing of cumin. Continue cutting of berseem (fodder), digging of matured carrot, raddish, turnip and harvesting of early maturing arhar.
- Farmers in Uttar Pradesh are advised to give light irrigation in normal wheat, rabi pulses, rabi oilseeds, sugarcane, potato, already transplanted vegetable crops to protect from low temperature/frost injury. Also advised to go for topdressing of Urea for enhancing the growth of rajmaha and other crops.
- Prevailing weather condition are favourable for yellow rust in wheat (rust susceptible varieties) in Sub Tropical Zone of Jammu & Kashmir, under such condition farmers are advised to spray the crop with propiconazole (Tilt) @ 0.1 or mancozeb @ 0.2% at disease appearance and repeat after 30-35 days intervals. There are also chances of increase in early & normal sown mustard crop under this situation farmers are advised to spray the crop with Chloropyriphos @ 0.05% or Metasystox @ 0.03% when 40-45% plants are infested with aphid.
- In Bhabar and Tarai, sub-humid sub tropic zones of Uttarakhand, due to last week rainfall and snowfall, there has been sufficient moisture in soil, and weather during this week will remain dry, hence farmers are advised to top dress Urea @ one kg per Nali to boost the ear head emergence of wheat crops. Also if there is deficit of moisture in soil then, farmers are advised to give irrigation in early sown nursery of Tomato, Capsicum, Onion & other vegetable crops like coriander, spinach, radish, menthe, if irrigation facilities are not available, then put straw mulch in between rows for moisture conservation.. Continue digging of late planted potato crop.
- In sub-humid sub tropic zones of Uttarakhand, farmers are advised to control fruit borers in tomato and brinjal apply DDVP 76 EC or Malathion 50EC @ 750ml and 2litres respectively in 600-800litres of water.
- In Western Zone of Punjab farmers are advised to spray 250 g Blitox or Indofil M 45 in 100 litres of water per acre for the control of alternaria blight/ downy mildew/ white rust in oilseeds. For avoiding aphid attack in raya spray the crop with 40 Actara 25 WG or Rogor 30 EC or 600 ml of Dursban 20 EC in 80-125 litres of water per acre or apply 4 kg Thimet 10 G (Phorate) or 13 kg Furadan 3 G followed by light irrigation.
- In Delhi, in present weather condition, constant monitoring of wheat crop against attack of yellow rust is advised. If symptom is found spraying of Propiconazole 25 EC (Tilt 25 EC) @0.1 % is recommended to check its further spread. This treatment also provides protection against Powdery mildew and Karnal bunt disease, beside rust.
- Due to cloudy weather in past week, mustard crop may be affected with aphid insect attack in Transitional Plain Zone of Inland Drainage zone of Rajasthan. Farmers are advised to dust methyl parathion 2% @ 25 kg per hectare or spray Methyl Demeton 25 EC per litre water where facility of water exists. Repeat spray if problem persists. Spray after clearing of weather.
- Stages of major crops are mentioned in Annexure I.

- **Animal Husbandry**

- In Himachal Pradesh, in view of falling night temperature, it is advised to protect newly born calves from the cold as weather is conducive for white scour, naval ill and pneumonia. Ensure cleanliness in cows having advanced pregnancy to avoid mastitis and Feed pregnant and lactating cows and buffallos with balance feed including mineral mixture.
- In Semi-Arid Eastern Plain Zone of Rajasthan, it is advised to protect milch and infant animals from cold, cover the door of animal house and wrap jute bag around animal back and keep litter dry everyday.
- Newly born calves need special care during cold weather as they are susceptible to attack of pneumonia. Keep them warm by providing clean & dry bedding in Punjab and Haryana.
- Farmers in Bundelkhand zone and in western plain zone in Uttar Pradesh are advised to tie young cattle in closed shelter and feed them with big cardamom, ajwain and jaggery, keep cattle shelter clean and take special care of young ones to protect from cold in this season.

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

- **Realised Rainfall:** No significant rainfall occurred in most states of the region.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over extreme south peninsular India. Rain/thundershowers would occur at one or two places over Tamil Nadu and Kerala during next three days.
- **Advisories:**
 - As no significant rainfall occurred in most states of the region, apply irrigation to the standing crops.
 - Farmers in the Eastern Dry Zone of Karnataka are advised to continue harvesting and threshing of paddy and finger-millet, since there is no rain for next five days as per the forecast. In areas where the paddy harvesting is completed, farmers are advised to take up the sowing of pulses like black gram and green gram.
 - Farmers in the North Dry Zone of Karnataka are advised to continue sowing of groundnut and transplanting of onion under irrigated conditions and complete harvesting of chickpea, sorghum and safflower and take up picking of byadagi chilli and cotton, since clear sky with bright sunshine is forecasted during the next five days.
 - Farmers in the Hill Zone of Karnataka are advised to take up plant protection measures, since there is no possibility of rainfall in the district during the coming five days.
 - Farmers in the South Zone of Tamil Nadu are advised to harvest the rice crop that attained maturity, avoid threshing rice on stone blocks and use mechanical thresher, dry rice seeds to 9% moisture content and mix captan at 4 g/kg of seeds for long term storage, plant sugar-cane and irrigate the crops, since dry weather is expected in the coming days.
 - Farmers in the Problem Area Zone of Kerala are advised to harvest sugarcane crop when it is fully mature because delayed harvesting will reduce the yield of jaggery, undertake land preparation for the next crop and planting has to be done within January. They are also advised to prune the excessive vegetative growth in cowpea and plant vegetables.
 - Farmers in the North Eastern Zone of Tamil Nadu are advised to drain out excess water in the paddy field, undertake propping of three or four mature paddy crops to avoid germination in the field itself, drain excess water in case of vegetative paddy crops and apply top dressing with nitrogen and potassium fertilizers to facilitate the recovery of crops and undertake weeding operation in groundnut crops. They are also advised to

provide adequate facilities to drain water from sugarcane crops, top the lodged sugarcane crops in order to avoid damage caused by water logging and provide support to partially fallen banana trees.

- Incidences of leaf folder and stem borer (white ear) are being noticed in thaladi rice in the Cauvery Delta Zone of Tamil Nadu. Farmers are advised to apply cartop hydrochloride 4 G @ 6 kg with sand or chlorophyriphos 400 ml/ac to control them.
- Farmers in the Western Zone of Tamil Nadu are advised to take proper plant protection measures for managing leaf folder incidence and false smut disease and blast disease in paddy.
- Farmers in the South Zone of Tamil Nadu are advised to monitor leaf hopper in cotton and spray imdachloprid 100 ml / ha and neem oil 3 % thrice at 15 days interval if incidence is severe.
- Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised to monitor mites infestation in tea and adopt suitable mulching measures to avoid frost damage.
- Farmers in the Southern Telangana Zone of Andhra Pradesh are advised to monitor leaf folder in paddy, thrips and leaf miner in groundnut, stem borer in maize, powdery mildew in coriander, gourds and bhendi, aphids in beans, powdery mildew and gemini virus in chillies, leaf miner and canker in sweet orange, hoppers, powdery mildew and anthracnose in mango and powdery mildew and downy mildew in grapes and undertake plant protection measures.
- Farmers in the Krishna Godavari Zone of Andhra Pradesh are advised to undertake plant protection measures, since present weather conditions are conducive for seedling rot, bacteria leaf spot and canophora blight in chilli, powdery mildew, cercospora and leaf spot in rabi pulses, smut disease in paddy, sucking pest, kamma rogam, rust and blight in rice fallow maize.(repeated)
- Farmers in the High Altitude Zone of Kerala are advised to irrigate the crops as dry weather is expected in the coming week and also select short-medium duration varieties for summer paddy crop.
- Thrips activity is increased in vegetables like onion/brinjal/bhendi in the North Dry Zone of Karnataka, due to continuous dry weather. Farmers are advised to spray oxydemeton methyl (1.5 ml) or dimethoate (1.7 ml) with one liter of water and use sufficient quantity of spray mixture, so that whole the canopy can be covered to control them.
- **Animal Husbandry:**
 - Farmers in the North East Dry Zone of Karnataka are advised to vaccinate the animals against Foot and Mouth disease, as there are reports of incidences of the disease.
 - Farmers in the North Western Zone of Tamil Nadu are requested to adopt strict biosecurity measures for Tracheitis infection in birds, as there were reports of infection.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Dry weather is likely to prevail over the States of the region during the period.
- **Advisories:**
 - As dry weather prevailed over the States of the region during last few weeks and dry weather is also likely to prevail during the period, farmers are advised to apply irrigation to the standing crops.
 - Taking the advantage of dry weather, farmers are advised to continue harvesting of already matured tur in Madhya Maharashtra, Marathwada and Vidarbha and sugarcane in Madhya Maharashtra and Marathwada.

- Under prevailing weather farmers of Madhya Maharashtra and Marathwada are advised undertake planting of sugarcane (*Suru*).
 - Prevailing weather is favourable for planting of water melon in Pune division.
 - In view of prevailing dry weather, farmers of South Konkan and East Vidarbha are advised to apply irrigation to maintain 2 to 3 cm water level for first 8 to 10 days and accordingly increase up to 5 cm in transplanted rice field.
 - Under prevailing weather farmers are advised to complete preparatory tillage and undertake sowing of summer groundnut in Madhya Maharashtra, Marathwada and west Vidarbha. Sowing of erect variety may be done at 30 x 10 cm distance, semi-spreading variety at 30 x 15 cm and spreading variety at 45 x 15 cm spacing.
 - Farmers in South Saurashtra Zone of Gujarat State are advised to prepare land for summer crops like groundnut, moong and pearl millet. Apply irrigation to wheat, chickpea / gram, castor and garlic.
 - Farmers in Bhal and Coastal Zone are advised to carry out picking of capsules in castor during early morning hours. Apply irrigation in mustard crop during pod development stage.
 - Farmers in South Gujarat Heavy Rainfall Zone are advised to apply irrigation in orchards, castor and gram. Taking advantage of dry weather, carry out hand weeding and other intercultural operations in crops.
 - Farmers in North Gujarat Zone are advised to apply light irrigation in gram, wheat, castor, mustard and vegetables. Apply supplementary dose of Nitrogen @ 15 kg N / ha to isabgol at 30 DAS. Harvest fully matured panicles in castor. Carry out the hand weeding and intercultural operations in vegetable crops. Cut inflorescences of young mango plants (less than 3 years) for better vegetative growth. Pluck fully matured fruits of papaya, ber, guava, pomegranate and citrus fruits. Harvest the maize crop at tasseling stage for fodder purpose.
 - Farmers in North West Zone of Gujarat are advised to apply light irrigation to cumin crop.
 - Suitable varieties of the crops for sowing are mentioned in Annexure II.
 - Due to cold and dry weather, infestation of rust in pea and bean may increase in Pune region; spray Tubeconazole @ 12 ml per 10 litres of water. Second spraying may be done after 10 to 12 days.
 - Under prevailing weather there is chance of infestation of rust in wheat in western Maharashtra scarcity zone; spray Mancozeb 75% @ 1500 g / ha in 500 litres of water with 10 kg Urea.
 - As weather condition is congenial, there may be attack of pod borer in gram in Marathwada; spray Imamectin Benzoate @ 3 g or Heliokil @ 20 ml in 10 litres water.
 - Due to favourable condition, there may be incidence of anthracnose on new vegetative flush and inflorescence of mango in South Konkan; spray Carbendazim @ 10 g or Thiophenate methyl @ 10 g or Propineb @ 20 g per 10 litres of water. There is huge amount of flowering in Cashew trees and there is also possibility of incidence of tea mosquito bug in cashew at flowering stage; spray 35 % Profenophos @ 10 ml per 10 litres of water.
 - Stages of major crops are mentioned in Annexure I.
- **Animal Husbandry:**
 - Give dry fodder to poultry birds in Middle Gujarat Zone and in South Gujarat Heavy Rainfall Zone to maintain body heat during cold period. Put curtains to protect poultry from chill injury.

- In North West Zone of Gujarat udder of milking animals must be properly cleaned with insecticide or Zinc Oxide. The beaks of birds in the poultry under the age of 15 Weeks should be cut. Rats in the poultry should be destroyed. Provide warm water to lactating animals in North Gujarat Zone.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Sky remain mainly clear over the region.
- **Rainfall Forecast:** Possibility of dry weather and clear sky condition over the region.
- **Advisories:**
 - There is a possibility of clear and dry weather conditions during next 5 days hence farmers in Bundelkhand region of Madhya Pradesh are advised to give irrigation in wheat, gram, lentil and all vegetable crops.
 - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to undertake sowing of cucurbitaceous crops, also sow leafy vegetables and prepare land for summer vegetables.
 - Farmers in Jhabua Hills region of Madhya Pradesh are advised to give third irrigation in fully irrigated wheat and maize crops 55-60 DAS, also give recommended dose of fertilizer. They are also advised to arrange seed of summer vegetables i.e. cucurbit family, water melon, musk melon, okra, cilli, tomato, brinjal etc. and when temperature increase and fallow field available then sown these crops.
 - Due to dry weather forecast farmers in Nimar Valley region of Madhya Pradesh are advised to irrigate wheat and gram crop; also start planting of sugarcane and prepare nursery of chilli, brinjal and tomato.
 - In view of dry weather conditions and low minimum temperature farmers in Central Narmada Zone of Madhya Pradesh are advised to irrigate the crops. Farmers are also advised to do for intercultural operations and irrigation in Lentil and Linseed. They are also advised to irrigate wheat crop.
 - Present weather conditions are favourable for planting of onion during this week in Chattisgarh Plain Zone hence it is advised to complete the planting of onion seedlings.
 - Inter-culture, fertilizer application, earthing followed by irrigation is advised in sugarcane crop wherever the crop is at knee height stage. Also, where the crop is at knee height stage farmers are advised for topdressing of nitrogen followed by earthing and irrigation in Chattisgarh Plain Zone.
 - At present wheat is at CRI / tillering stage in Chattisgarh Plain Zone and these stages are critical for moisture stress hence it is advised to irrigate the crop and apply N at CRI stage.
 - Farmers in Bastar Plateau Zone of Chhatisgarh are advised to complete sugarcane planting at the earliest and earlier planted sugarcane should be irrigated. Summer crop seeds like moong, urad and maize crops of high yielding varieties should be selected and sowing should be done.
 - Farmers in Bundelkhand region of Madhya Pradesh are advised that wheat crop are damaged due to root aphid, for its control apply the recommended dose of insecticide i.e. phorate 10 G @ 04 kg per acre mix with sand after irrigation, also stem borer are damaging the wheat crop, for the control use insecticide trizophos 40 EC @ 2.0 ml/liter of water.
 - Chickpea crop is being damaged by the caterpillar in Central Narmada region of Madhya Pradesh so farmers are advised to monitor the chickpea crop and when pest reaches at ETL level the spray of quinalphos 20E.C @ 2.0 ml. per liter of water is recommended.
 - Due to cloudy conditions powdery mildew attack can be there in the crops like lathyrus and lentil in Bastar Plateau Zone of Chhatisgarh. For its control any sulphur based

fungicide can be used. In the safflower and mustard crop, the attack of aphids is being observed. For its control, Methyl demeton should be sprayed @ 1 ml/ litre of water.

- Incidence of stem borer is seen in the nursery of summer rice in Chattisgarh Plain Zone. Hence the farmers are advised to use light trap to control it. In case of heavy infestation of stem borer, apply Carbofuron @ 33 kg/ha.
- Due to cloudy weather condition prevailed during first fortnight of January aphids in vegetables and mustard, fruit and shoot borer in brinjal and thrips in groundnut may occur in Chattisgarh Plain Zone. Hence, farmers are advised to keep keen watch over the crops and adopt integrated pest management practices like light trap, pheromone trap, bird prech etc. for initial control. If necessary spray Polytrin C @ 1 litre/ha or Metasystox @ 2 ml/liter water solution followed by spraying of Dimethioate @ 2ml/liter water solution after 15 days of first spraying is advised.
- **Animal Husbandry & Poultry**
- Farmers in Bundelkhand region are advised that there is possibility of decrease in disease resistance in chicken; therefore antibiotic may be added in their feed. Also there is possibility of clear sky conditions during next 5 days, hence sheep raiser are advised to do medicine bath in sunny condition to control parasites.
- Farmers in Jhabua hills region of Madhya Pradesh are advised to vaccinate their animals to FMD, BQ, and HS via Raksha Triback vaccine. For control of Ranikhet disease in chicks vaccinate with F-1 or Lasota or R2B Strain vaccine.

Annexure I

Major Crops

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

- Sugarcane (old) (harvesting), sugarcane (new) (land preparation / planting), *boro* rice (transplanting / seedling / tillering), *ahu* rice (sowing), wheat (tillering / vegetative / ear head), tomato, brinjal, country bean (vegetative / flowering / fruiting), cauliflower, cabbage, knoll khol (vegetative / head formation/ harvesting), *rabi* pulses like pea, lentil (flowering / pod formation), onion (vegetative), khasi mandarin (fruit maturity / harvesting), potato (stolon formation / tuber development / harvesting), rapeseed and mustard (flowering / siliqua formation / seed formation), *rabi* maize (vegetative), okra, pointed gourd, musk melon, water melon, pumpkin, sunflower, ridge gourd, sponge gourd (sowing) in Assam.
- Cabbage, cauliflower, knolkhol etc. (vegetative / head formation/ maturity / harvesting), maize (tasseling / silking / cob formation / harvesting), mustard (flowering/ pod formation), potato (tuber formation / harvesting) and pea (pod formation / maturity / harvesting), turmeric, ginger (maturity) in Arunachal Pradesh.
- Rice (sowing), cucurbits (sowing / transplanting), rapeseed / mustard (flowering / siliqua formation), tomato / brinjal / chilli (transplanting), potato (tuber formation), cauliflower and cabbage (head formation / maturity), pea (flowering / fruiting / harvesting), *rabi* maize as inter-crop (vegetative) in Manipur.
- *Boro*rice (tillering / panicle initiation), wheat (tillering / ear initiation), garlic and lettuce (seedling / vegetative), toria, mustard, rapeseed (siliqua formation / maturity), potato (tuber formation), Khasi mandarin (flowering / fruiting), lentil, Bengal gram, pea (flowering / pod formation), *rabi* onion (vegetative / bulb formation), cashew, apricot (planting / vegetative / maturity), cabbage and knol-khol (head formation / maturity) in Meghalaya.
- Ginger and turmeric (rhizome formation / maturity / harvesting), khasi mandarin (vegetative / fruiting / harvesting), banana (vegetative / fruiting / maturity / harvesting), cole crops (head formation / harvesting), tomato (vegetative / flowering / fruiting / harvesting), pea, bean (pod formation / harvesting), maize (tasseling / silking / cob formation) in Mizoram.
- Cabbage and broccoli (vegetative / head formation), pea (pod formation / harvesting), rapeseed, mustard (siliqua formation), French bean (flowering / pod formation), potato (vegetative / tuber initiation), brinjal (flowering / fruiting / harvesting) and maize (tasseling / silking / cob formation) in Nagaland.
- *Boro* rice (tillering), pulse crop – pea, beans (vegetative / flowering / pod formation), ginger and turmeric (rhizome formation / harvesting), mustard (siliqua formation), tomato (flowering / fruiting), cucurbits and other vegetables (flowering / fruiting), potato (tuber formation), banana (vegetative / flowering / fruiting) in Tripura.

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

- Sugarcane (vegetative), lobia for green fodder (vegetative), mishrikand (vegetative), onion, radish (vegetative), cauliflower, cabbage (vegetative / head formation), pigeon pea (seed formation / maturity), fruit trees (transplanting), potato, sweet potato (tuber formation), rapeseed, mustard (pod formation / seed formation), wheat (tillering / booting), vegetables (vegetative / flowering / fruiting), maize (tasseling / silking / cob formation), pulses (pod formation), sugarcane, onion (planting) in Bihar.

- Pigeon pea (pod formation / seed formation), turmeric and ginger (vegetative / rhizome formation), elephant foot yam (tuber elongation), potato (tuber formation / maturity), sweet potato (stem elongation / tuber elongation / maturity / harvesting), mustard (siliqua formation / seed formation), linseed (pod formation / seed formation), toria (seed formation / maturity), green pea (pod formation), cauliflower, cabbage (head formation / maturity), chilli, tomato (vegetative / flowering / fruiting / harvesting), wheat (tillering), papaya (transplanting), gram (flowering / pod formation), onion, African or French marigold (sowing / vegetative) in Jharkhand.
- Summer rice (transplanting), summer groundnut, sunflower (land preparation / sowing), arhar (seed formation / maturity), mustard (pod formation / seed formation), sugarcane (maturity / harvesting), sugarcane (new) (planting), Bengal gram, lentil, linseed, green pea (pod formation / seed formation), wheat (tillering), banana and marigold (vegetative), potato (tuber formation / maturity), tomato (flowering / fruiting), cauliflower, cabbage, knol-khol (head formation / maturity), onion (vegetative) in Orissa.
- *Boro* rice (transplanting), winter vegetables (vegetative / flowering / fruiting), mustard (siliqua development / seed formation), wheat (tillering), lentil, gram, sunflower (flowering / pod formation / seed formation), potato (tuber formation), chilli (flowering / fruiting) in West Bengal.
- *Rabi* vegetables (fruiting / harvesting), orange (harvesting), ginger (harvesting), wheat (tillering / flowering), mustard (flowering / siliqua formation), *rabi* potato (tuber formation) in Sikkim.

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

- Wheat (tillering), mustard (siliqua formation), sugarcane (planting), *rabi* onion (transplanting), cauliflower, cabbage, broccoli, knolkhol (vegetative / fruiting), carrot, turnip, early sown tomato radish, spinach and coriander (vegetative/fruiting), pea, gram (flowering / pod formation), Chilli, tomato, brinjal, cucurbits (nursery preparation in polyhouse) in Delhi.
- Wheat (emergence/ early vegetative/ vegetative), vegetables (bhindi, cucurbits), potato (sowing), mirch, brinjal (nursery sowing in polyhouses), Khira, summer squash, bitter gourd, tur, brinjal, Shimla mirch, and tomato (sowing / transplanting), Apple and other temperate fruits (dormant stage in High Hill Temperate Dry Zone), arbi, amaranthus, turmeric, rice, maize, barley, radish, onion, pea, garlic, coriander, cabbage, knol khol, parsley, lettuce, fennel, cauliflower, broccoli (sowing / planting) in Himachal Pradesh.
- Very late sown Wheat (sowing / emergence), early/normal sown wheat (CRI stage / vegetative), early/normal sown barley (jointing / tillering), late sown barley (CRI stage), onion (transplanting), winter vegetable crops viz. potato, radish, carrot, turnip, garlic, spinach, methi, onion (sowing / transplanting / vegetative / fruiting etc.), cole crops viz. early cauliflower, cabbage, knoll khol, broccoli (vegetative), *rabi* oilseeds i.e. gobi sarson(bud formation), mustard (pod formation/ reproductive stage), late sown mustard (flowering), brown sarson (rosette stage), *rabi* pulses i.e. lentil, gram, pea (vegetative)], fodder crops like oats (vegetative (2nd cut)), berseem (vegetative), Horticultural crops viz. [Apricot, Apple (nursery sowing), orange & guava (fruiting), citrus fruits (harvesting)] in Jammu & Kashmir. Wheat, *Brown Sarson*, pea, lentil and Oat are in dormant stage in Srinagar.
- Chilli, capsicum, cauliflower, broccolli (transplanting/seedling), sugarcane (planting), litchi, loquat, peach, citrus (flowering / fruiting), mango (early varieties) (flowering), foxtail millet, okhra, bottle gourd, bitter gourd, ginger, turmeric (germination / vegetative), mustard (Siliqua formation), toria (harvesting), papaya (planting), sorghum, pigeon pea (vegetative), urd and pearl millets (germination/ early vegetative), potato

(maturity / digging), barley, sarson (germination/ vegetative), fodder barseem, (vegetative/ 1st cutting), onion (transplanting/germination), wheat (late tillering/ear head emergence), lentil (sowing) in Uttarakhand.

- Wheat (crown root initiation/ vegetative growth), winter sugarcane (vegetative growth), cucurbits like gourd, bitter gourd, cucumber, etc. and other vegetables like lady's finger, tomato, brinjal, chilli, bhindi etc. (vegetative / flowering / fruiting), coriander (vegetative), cabbage, garlic, cauliflower (fruiting / maturity/ harvesting), onion (transplanting / vegetative growth), rai /mustard/ sarson (flowering / siliqua formation), barley (vegetative / tillering), jai, gram, alsi, maize, masoor, pea, pigeon pea, chick pea (vegetative growth / flower initiation), berseem (vegetative growth / 1st cutting), potato (tuber formation / harvesting) in Uttar Pradesh.
- Spring sugarcane (sprouting), berseem (vegetative), autumn sugarcane (tillering), gram, lentil, barley, mustard, rape seed (branching/flowering), radish, carrot, turnip, onion, cauliflower (transplanting/vegetative), barley / wheat (CRI/tillering - timely sown) in Punjab.
- Sugarcane (spring season) (early vegetative), barseem (vegetative), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), mustard, sarson, raya (vegetative/flowering), radish, turnip (sowing), wheat (CRI/tillering) in Haryana.
- Wheat (CRI stage / tillering), very late sown wheat (germination), sweet potato, chilli and cluster bean (vegetative), mustard (flowering / siliqua formation), gram(flowering / pod development), coriander (germination), barley, oats, lentil, lucerne, taramira, linseed, opium poppy, vegetables (potato, fenugreek, brinjal, radish, chilli, carrot, palak, berseem, cumin, isabgol, ajwain, garlic (vegetative growth), errand, cotton (harvesting), sugarcane (maturity / harvesting), green pea (vegetative growth / pod formation), summer tomato (nursery sowing), cauliflower, cabbage, *rabi* onion (transplanting) in Rajasthan.

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

- Sugarcane (planting), cotton (flowering/square formation), maize (vegetative/ harvesting), sunflower (heading), Bengal gram (pod filling/harvesting), red gram (maturity/harvesting), rabi jowar (grain filling), late planted paddy (harvest), wheat (grain formation), safflower (grain/pod filling/capsule stage), finger millet (harvest), black gram (sowing), green gram (sowing), mango (flowering), chilli (flowering), ginger (vegetative), vegetable (nursery) and horticultural crops (vegetative growth/ flowering/ fruit development) in Karnataka.
- Groundnut (vegetative/flowering), rabi groundnut (flowering/pegging), rabi paddy (pre-harvest/harvesting), maize (vegetative/tasseling), sunflower (heading), sugar-cane (ratooning/planting), jowar (grain filling), green gram (vegetative/ flowering), rabi pulses (vegetative/flowering), rice fallow maize (seedling), rice fallow jowar (seedling), rice fallow pulses(seedling), Bengal gram (flowering), red gram (maturity/harvesting), castor (vegetative/ flowering), vegetables (flowering/ fruiting), chilli (vegetative) and bhendi (various stages), field bean (various stages), mango(flowering) in Andhra Pradesh.
- Rice (tillering/ panicle emergence/flowering), arecanut (harvesting), pepper (harvesting), ginger (harvesting), cardamom (harvesting), nutmeg (maturity), sugarcane (harvesting/ planting), vegetables (sowing/vegetative/ flowering/ harvesting), banana rainfed (maturity), banana irrigated (vegetative/ harvesting/planting), mundakan paddy (harvesting), virippu paddy (nursery sowing), coconut (picking) in Kerala.
- Rice - Samba (maturity), Thaladi (flowering/maturity), Rice fallow Pulses (sowing), cotton (boll formation/maturity), vegetables (vegetative/ harvest), sugarcane (planting), maize (harvest), millets like sorghum (vegetative), pulses (vegetative), groundnut (various stages), chilli (flowering), ginger and turmeric (harvest) in Tamil Nadu.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane (old *adsali* and old pre-seasonal) (cane maturity / harvesting), sugarcane (old *suru*) (elongation / cane maturity), sugarcane (new *adsali*) (early vegetative), sugarcane (new pre-seasonal) (sprouting / early tillering), sugarcane (new *suru*) (planting in Madhya Maharashtra and Marathwada), *Kharif* red gram (pod maturity / harvesting), *rabi* jowar (grain formation), safflower (flowering / head formation), irrigated gram (pod development), irrigated wheat (ear head emergence / flowering), sunflower (flowering / head formation), maize (tasseling and silking / cob initiation), summer rice (transplanting / early tillering in south Konkan & East Vidarbha), summer groundnut (sowing / germination) in Maharashtra.
- Wheat (tillering / booting / milking), gram (flowering / pod development), *rabi* maize (vegetative), Isabgol (sowing / branching / flowering), sugarcane (planting / early vegetative), jowar (seedling / vegetative), cotton (picking), castor (capsule formation / maturity), mustard (flowering / siliqua formation), vegetables (vegetative / flowering / fruiting), cluster bean, cauliflower, cabbage, sweet corn (vegetative) and potato (vegetative / tuber development) in Gujarat.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Sugarcane(vegetative), vegetables (fruiting), Mustard (flowering / siliqua formation), wheat (flowering/grain filling), maize (tillering), onion, garlic, tomato, brinjal, chilli (sowing / transplanting), gram (branching/flowering) in Madhya Pradesh.
- Sugarcane (planting), groundnut, arhar, green gram and sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative) cauliflower, pigeon pea (pod filling), potato (planting), linseed (flowering stage) tomato, brinjal, chilli, niger, horsegram, ramtil, toria, cauliflower, cabbage, niger, kulthi (sowing), wheat (crown root initiation / tillering), onion (planting), summer rice (nursery), summer vegetables (land preparation), moong, urad and maize (sowing) in Chhattisgarh.

Annexure II

List of Varieties

Assam

Ridge gourd: Pusa Nasdar, AAUJ-1, AAUJ-2, AAUC-3.

Sponge gourd: Pusa Chikni.

Musk melon: Pusa Sharbati, Hara Madhu, Punjab Sunehri, Durgapur Madhu, Arka Rajhans and Arka Jeet.

Water melon: Asahi, Pusa Bedana, Sugar Baby, Faizabadi.

Sugarcane: Kolong, Luhit, Dhansiri, Doris, Co 1148.

Ahu rice: Luit, Kopilee, Rasi.

Okra: Pusa Sawani, Arka Anamika, Parbhdani Kranti.

Meghalaya

Boro rice: NEH Megha Rice-1, NEH Megha Rice-2.

West Bengal

Boro Rice: Supriya, Jamini, Bhupen, IET-2233.

Jharkhand

Papaya: Pusa Giant, Pusa Dwarf, Honey Dew, Pusa Majesty.

Onion: Pusa Red, Pusa Ratnar, N-53, Arka Niketan, Arka Kalyan, Agrifound Dark Red.

Summer Rice: MTU 1010, IR 36, 64, Naveen, Lallat.

Orissa

Sugarcane: CO 740, CO 6304, CO7219, COT 8201, Neelamadhaba and Sabita.

Summer Sunflower: High Yielding Varieties like Modern and Hybrid Varieties like PAC 36, KBSH, MSFH-8 and MSFH 17.

Summer Groundnut: Smruti (OG 52-1), Phule Pragati, ICGS-44, TAG-24, TG-3, TMV-2 and TG 38.

Himachal Pradesh

Lettuce: Iceberg, **Brinjal :** Arka Nidhi, PPC

Ageti bhindi : P-8, Prabhini kranti, Arka anamika, **Frenchbean :** Contender

Pepper : Surjmukhi, **Broccoli:** Palam Samridhi, **Rajmash :** Triloki,Jwala,baspa Kailash

Raddish : japani white and early mino white, **Turnip :PTWG-1.**

Cabbage, coriander: Snow ball K-1 Palam uphar, golden acre.

Knol khol : White Bina, **Cauliflower :** Pride of India

Jammu & Kashmir

Vegetable crop like **radish** (var. Pusa chetki, Japanese white & Pusa reshmi), **carrot** (var.Pusa kesar), **turnip** (var PTWG), **garlic** (var. local, large segmented), **spinach** (prickly seeded) and **methi** (P.E.B.K methi), **Cauliflower** (var. Pusa Dipali), **knoll khol** (White Vienna), **Broccoli** (Early green).

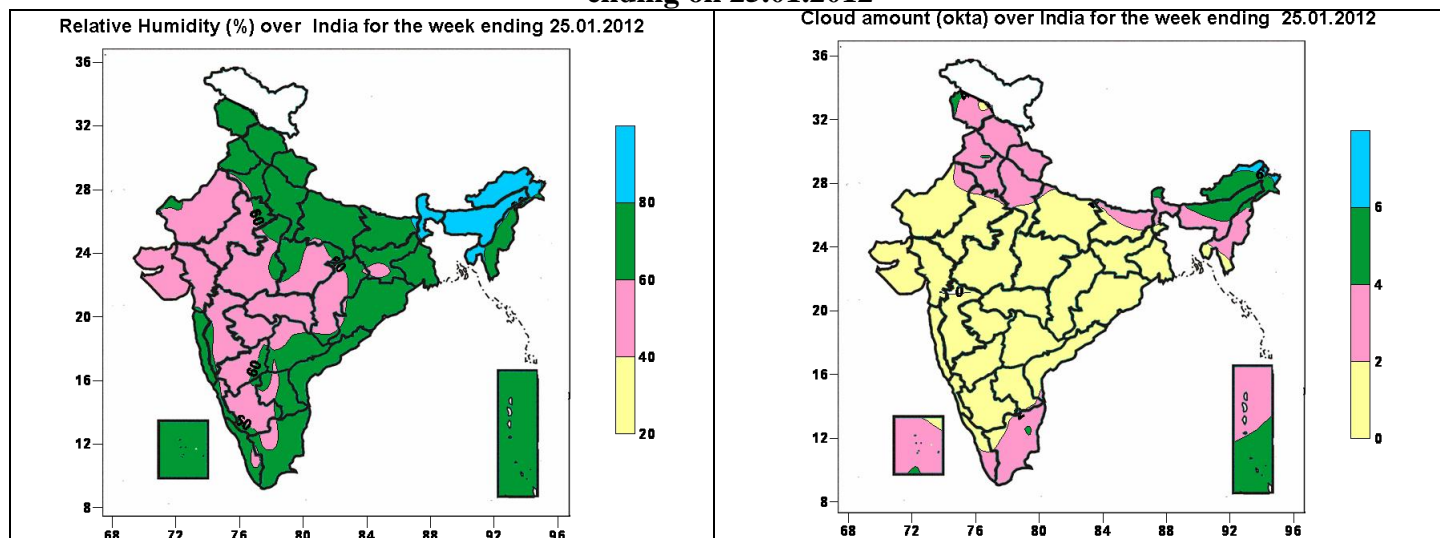
Punjab

Radish: Japanese White, white Icicle,

Turnip: Golden Ball,

Haryana**Radish:** Japanese White, white Icicle,**Turnip:** L-1, Carrot: Selection 21 and PC-34**Sugarcane:** CoJ85.CoJ64, CoJ83**Uttarakhand:****Potato:** Kufri Bahar, Kufri Jawahar, Kufri Ashok, Kufri Anand.**Sunflower:** Divyamukhi, MHFS-8, Ranjha, Raja, Badshah, Heer, KBSH-1, NSFH-9.**Tomato:** VL Tomato-3, Pant T-3, Him Sona, Him Shikhar etc.**Capsicum:** California Vander, Dipti, Anupam. Heera, Indira, Supriya & Bharat etc.**Uttar Pradesh:****Cumin :** RS1,NC43**Rajasthan****Onion:** Pusa Red, Pusa Madhavi, Arka, Niketan, Local Red and Pusa white.**Maharashtra****Suru sugarcane:** Co-86032(Neera), Co-94012(Savitri), CO-419, CO-M7125, CO-M 0265(Phule265).**Water melon:** Sugar Baby, Arka Jyoti or Arka Manik.**Summer groundnut:** erect varieties – SB-11, JL-286, TPJ-41, TAG-24, TG-26, JL-501 and TMV-10; semi-spreading varieties – SB-11, TAG-37.**Madhya Pradesh****Garlic-G-283, G-1, G-41 or G-323****Linseed-PKDL-21, JL-1, JL-3, Mallika, JLS-1, IPL-81****Lentil-JLS-03****Pea- Jawahar pea 1 and 2****Gram-Late sown variety: JG-14****Sugarcane- CoJN 86032, CoJN 86582****Chattisgarh****Sugarcane- Co 86032, Co 86141**

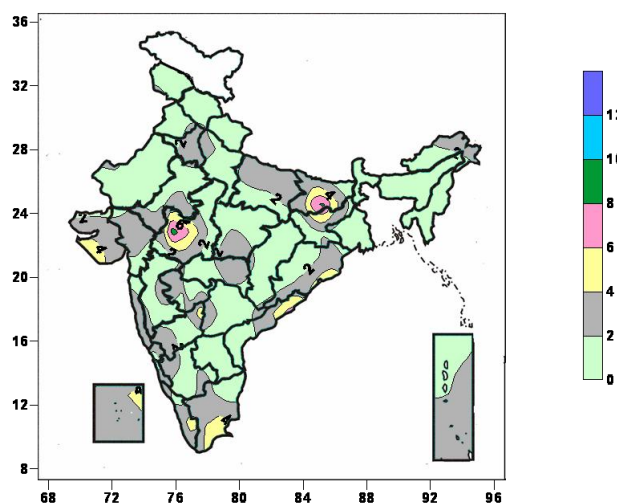
Annexure III
Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 25.01.2012



Relative humidity ranged between 80% and above over most parts of Sub-Himalayan West Bengal, Sikkim, Arunachal Pradesh, Assam & Meghalaya, Tripura, 40 to 60% over most parts of Rajasthan, Central India, West India (except Konkan), South & North Interior Karnataka, some parts of Haryana, Jharkhand, Orissa, Telangana, Rayalaseema, Tamil Nadu and Kerala, 60 to 80% over remaining parts of the country.

Cloud amount 4 to 6 okta over most parts of Arunachal Pradesh, Assam & Meghalaya, some parts of Sikkim, Andaman & Nicobar Islands, 2 to 4 okta over most parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, West Uttar Pradesh, Sub-Himalayan West Bengal, Nagaland, Manipur, Mizoram, Kerala, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, some parts of Rajasthan, East Uttar Pradesh, Bihar, Assam & Meghalaya, Tripura, Coastal Andhra Pradesh, Rayalaseema, 0 to 2 okta over remaining parts of the country.

Wind speed (knots) over India for the week ending 25.01.2012



Wind speed ranged between 6 knots and above some parts of West Madhya Pradesh and Bihar, 4 to 6 knots over some parts of Bihar, Jharkhand, Orissa, West Madhya Pradesh, Kutch, Coastal Andhra Pradesh, North Interior Karnataka, Kerala, Tamil Nadu, Lakshadweep Islands, 2 to 4 knots over most parts of Haryana, Delhi, East Uttar Pradesh, Bihar, Jharkhand, Orissa, Gujarat, Saurashtra & Kutch, Konkan & Goa, Coastal Karnataka, Kerala, Tamil Nadu, Lakshadweep, Andaman & Nicobar Islands, some parts of Punjab, Rajasthan, West Uttar Pradesh, Arunachal Pradesh, Chattisgarh, Madhya Pradesh, Maharashtra, Andhra Pradesh, 0 to 2 knots over remaining parts of the country.