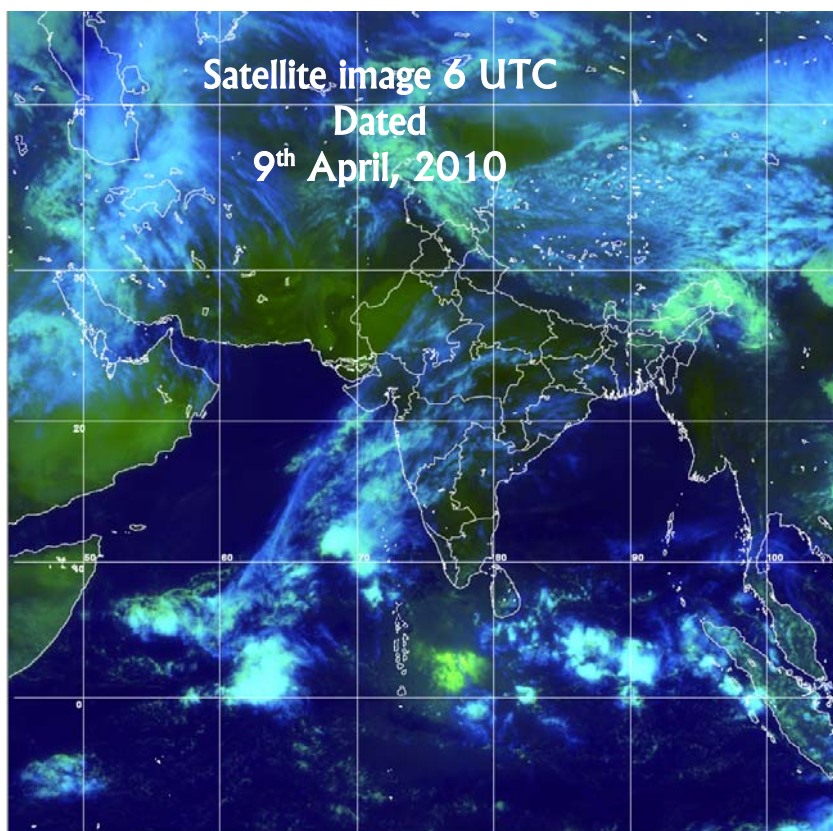




# National Agromet Advisory Bulletin

Thursday, 8<sup>th</sup> April, 2010  
(For the period 8<sup>th</sup> to 12<sup>th</sup> April, 2010)



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.org>) of the Division

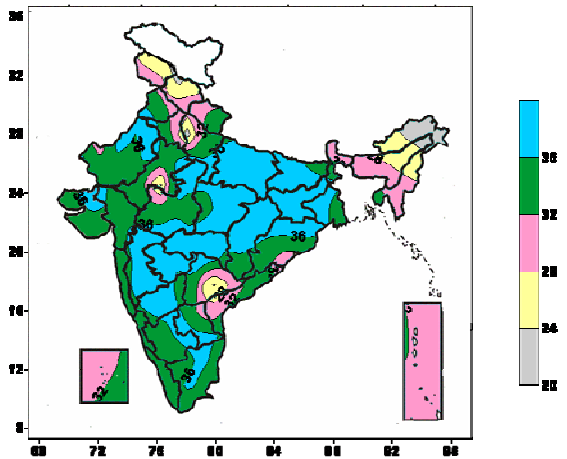
## Executive Summary

### Major crops in different States

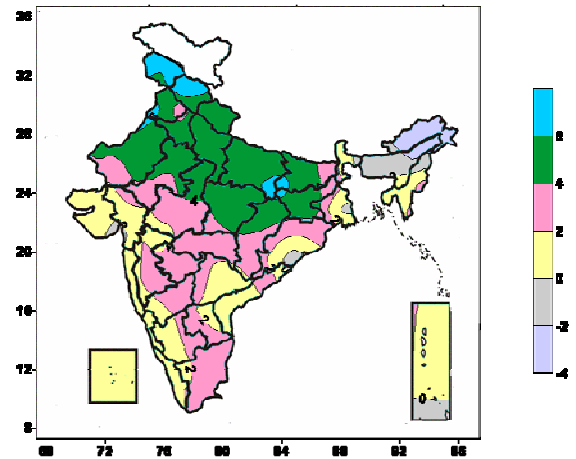
- Wheat is at grain formation / early maturity / maturity stage in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh, Rajasthan, Madhya Pradesh and Jharkhand, at early maturity / maturity stage in Bihar, Jharkhand, Orissa, and South Madhya Pradesh and at early maturity / maturity / harvesting stage in Maharashtra, Gujarat, Chhattisgarh, Assam and West Bengal.
- Summer / *boro* rice is at tillering/ panicle initiation / flowering/ grain formation stage in Orissa, Chhattisgarh, West Bengal, Sikkim and Assam.
- Mustard is at pod formation / early maturity stage in Himachal Pradesh, Punjab, Haryana, and Jharkhand, at early maturity / maturity stage in Rajasthan, maturity / harvesting stage in Delhi, Uttarakhand, Rajasthan, Bihar, Jharkhand, Orissa, West Bengal and Assam.
- Potato is at tuber formation/ maturity stage in Punjab, West Bengal.

### Contour maps of Maximum and minimum temperatures for the week ending 31.03.10

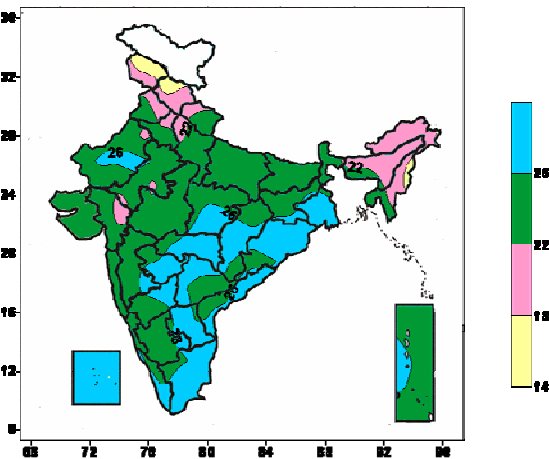
Actual Mean Maximum Temperature (°C) In India for the week ending 31.03.10



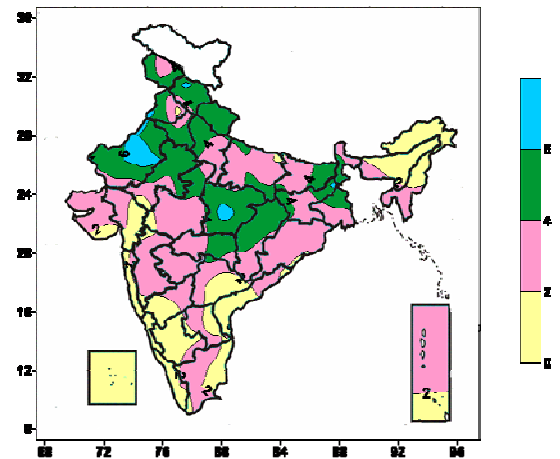
Maximum Temperature (°C) Anomaly In India for the week ending 31.03.10



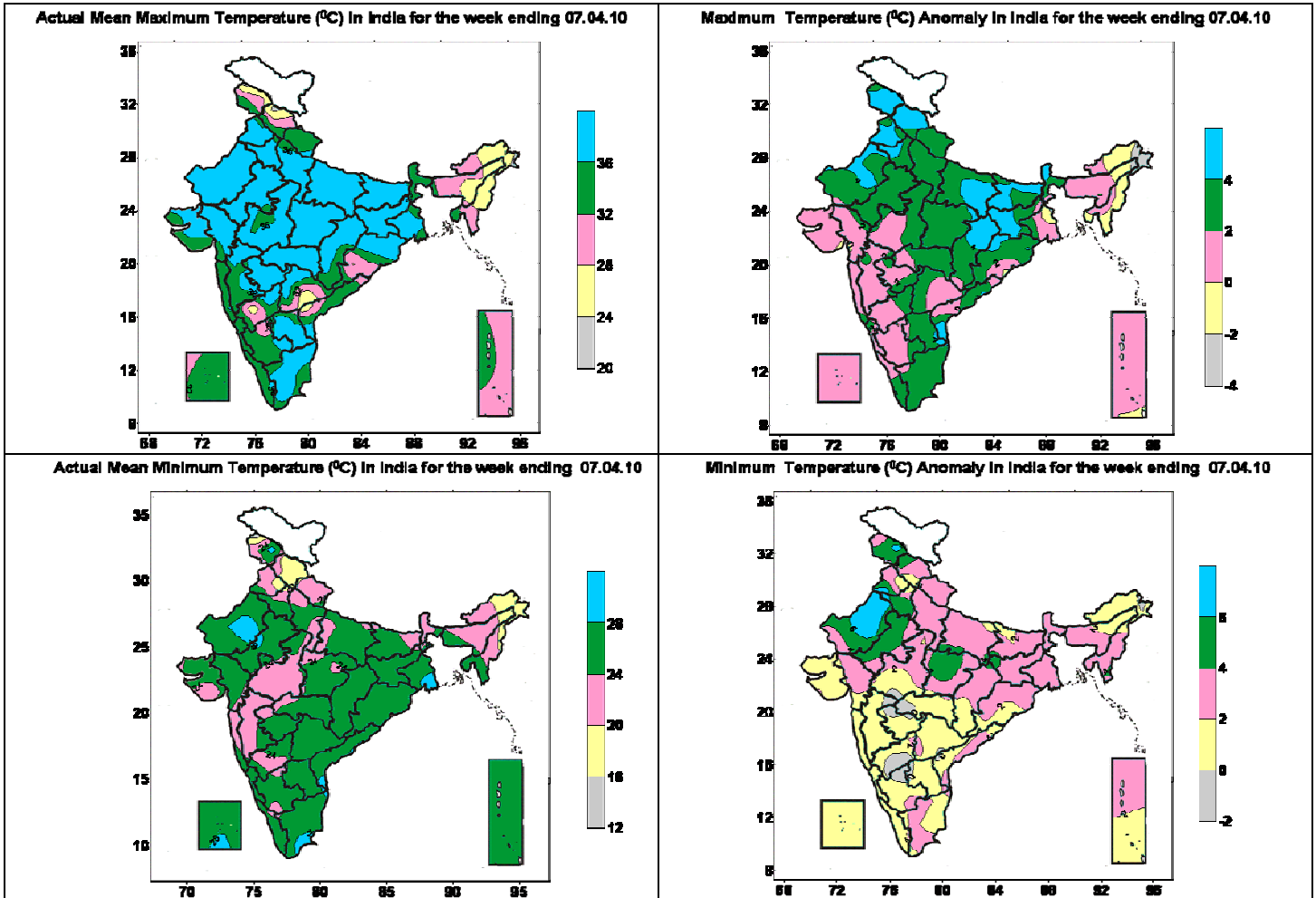
Actual Mean Minimum Temperature (°C) In India for the week ending 31.03.10



Minimum Temperature (°C) Anomaly In India for the week ending 31.03.10



## Contour maps of Maximum and minimum temperatures for the week ending 7.4.10



### Significant past weather

- Maximum temperature anomaly was  $4^{\circ}\text{C}$  and above over most parts of Jammu & Kashmir, Himachal Pradesh, Punjab, East Uttar Pradesh, Bihar, Jharkhand, Sikkim, 2 to  $4^{\circ}\text{C}$  over most parts of Uttarakhand, Haryana, Delhi, Rajasthan, Uttar Pradesh, Sub-Himalayan West Bengal, Orissa, Chhattisgarh, Madhya Pradesh, Vidarbha, Andhra Pradesh, Tamil Nadu.
- Maximum temperature anomaly has declined in parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Delhi, Rajasthan, West Uttar Pradesh, Madhya Pradesh and Chhattisgarh as compared to last week and remains unchanged in most parts of Punjab, Haryana, East Uttar Pradesh, Bihar, Jharkhand.
- Rainfall occurred in most of the districts of Assam, Arunachal Pradesh and Kerala. and Jalpaiguri district of West Bengal also received rainfall during last week. Rainfall occurred at some places in Jammu & Kashmir, South Interior Karnataka, Coastal Andhra Pradesh and Tamil Nadu. Either no significant rainfall occurred or dry or mainly dry weather prevailed in remaining parts of the country.

### Rainfall Situation in some of the States in the country for the week ending 7.4.2010

Districts	Actual	% dep.
<b>Assam</b>		
Barpeta	40.1	57
Bongaigaon	38.6	45
Cachar	242.2	323
Dhubri	39.8	127
Dibrugarh	103.7	143
East Khasi Hills	418.6	765
Goalpara	45.2	116
Hailakandi	103.1	89
Jorhat	41.3	-10
Kamrup	92.4	260
Karimganj	255.7	278
Kokrajhar	40.4	52
Lakhimpur	53.8	69
N.C.Hills	69.2	110
Nalbari	74.6	190
Nowgong	33.4	79
Sonitpur	36.9	53
Tinsukia	140.5	358

Districts	Actual	% dep.
<b>Arunachal Pradesh</b>		
East Siang	115.3	119
Lohit	192.4	56
Papumpara	69.3	112
Upper Siang	34.0	-66
Upper Subansiri	160.8	392
West Kameng	27.8	928
<b>Sub-Himalayan West Bengal</b>		
Coochbehar	22.0	16
Jalpaiguri	30.3	212
Sikkim	42.2	-2
<b>Kerala</b>		
Alappuzha	54.8	93
Ernakulam	55.7	127
Kollam	30.7	13
Kottayam	50.6	62
Pathanamthitta	36.6	1
Thiruvananthapuram	21.6	-7
Thrissur	21.8	61

#### Forecast

- Rain is likely to occur at isolated places during next 24 hours, at a few places or many places thereafter in Assam and in Arunachal Pradesh. Rain is likely to occur at isolated places or mainly dry weather is likely in Nagaland, Manipur, Mizoram and Tripura during the period. Rainfall is likely to occur at a few places in Jammu and Kashmir for the next two days. Rain/thundershowers is likely to occur at a few places in Kerala. Either isolated rain will occur or dry or mainly dry weather will prevail in remaining days over remaining States of the country during the period.

#### Warning:

- Heat wave conditions may continue over isolated pockets of Bihar, West Bengal, Jharkhand, Chhattisgarh, Vidarbha and Telangana during next 24 hours.

#### • Salient advisories

Based on high temperature conditions prevailed over major parts of the country and occurrence of rainfall in North East, Eastern region and parts of south India, following salient advisories are issued to cope up the high temperature and utilize the realized rainfall.

- As heat wave conditions continue to prevail over Bihar, West Bengal, Jharkhand, Chhattisgarh, Vidarbha and Telangana, farmers are advised to apply light and frequent irrigation to the standing *rabi* crops.
- In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature conditions, farmers in Punjab, Haryana, Uttar Pradesh and Delhi are advised to apply light and frequent irrigation to wheat wherever the crops are at milk stage to meet the excess evaporative demands. In view of above weather condition farmers are also advised to apply light and frequent irrigation in other standing crops in above mentioned States and also in Rajasthan. Irrigation should be applied in the evening as due to high wind velocity during day time lodging may occur.

- Evaporations rates are presently quite higher due to prevailing dry weather condition as well as high temperature and it is being recorded between 12-13 mm / day in Chhattisgarh plain zone. This has increased the water requirements of summer crops like summer rice, vegetables, sunflower, green gram, groundnut etc. Hence, farmers are advised to apply light and frequent irrigation to these crops.
- Considering rainfall during last week and expected rainfall during next few days, postpone irrigation to the standing crops in Assam and Arunachal Pradesh. As there is possibility of rain, undertake harvesting of already matured crops of wheat, rajmah, pea, potato and arhar in Assam and Arunachal Pradesh immediately before onset of rain.
- Utilizing the recent pre-monsoon showers and expected rain, undertake sowing of the crops like maize, jute, mesta and summer vegetables like Ladies finger, ridge gourd etc. and also planting of sugarcane setts. High yielding varieties of maize are Ganga-5, Highstars, NLD, Dhawal, Navjot, Kissan, Vijay etc. Select varieties from Dhansiri, Kalang, Luhit, CO-Jor- 1, CO-Jor- 2 etc. for planting of sugarcane in Assam.
- As weather condition is optimum for sowing of jute in West Bengal and Orissa, farmers are advised to sow jute. The recommended varieties are Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali etc. in West Bengal and JRO-524 (Naveen) in Orissa.
- In Himachal Pradesh, it is right time to start sowing of pea in Miyad, Chandra, Tod valley of Lahaul and also in areas of Spiti valley where snow has melted. Use pea varieties like Azad P1 and P 89. Use nets to protect stone fruits from hailstorm in mid hills.
- Farmers are advised to continue sowing of pea as well as sowing of nurseries of vegetables like capsicum, tomato, cucumber, cabbage and cauliflower, summer squash etc. Himachal Pradesh and mash, summer moong and jowar in Jammu and Kashmir.
- Sowing of hybrid cluster bean (Pusa Komal, Pusa Sukamol) can also be done in present weather in Delhi.
- In Rajasthan, deep summer ploughing is recommended just after harvesting of *rabi* crops to control soil borne insects, diseases and nematode attack. This will also help in conserving rainfall in situ.
- Due to cloudy weather, crops like cucumber, ridge gourd, bottle gourd, water melon etc. in Maharashtra are likely to be infested by downey mildew. Farmers are advised to spray Chlorothalonil or Mancozeb or Copper oxychloride @ 25 g in 10 litres water at 8-10 days interval.
- Since forecast of increasing wind speed in Hill zone of Karnataka, there is possibility of falling of plants. Therefore farmers are advised to go for staking with sticks.
- Farmers in Central zone of Kerala are advised to undertake mulching in the coconut basin using husks to reduce evapotranspiration. Coir pith @ 25 kg/palm is an ideal mulching material to preserve moisture. Irrigation can be continued. Banana bunches should be covered with leaves to prevent sun scorching.
- Farmers in north eastern zone in Tamil Nadu are advised to spray 0.5% of Potassium Chloride to withstand the moisture scarcity.
- Rainfall occurred in most of the districts of Kerala. This would be beneficial for vegetables and plantation crops.

## Zonewise Agromet Advisories

**NORTH WEST INDIA [J & K, H. P., UTTARAKHAND, PUNJAB, HARYANA, DELHI, UP, RAJASTHAN]**

- **Realised Rainfall:** Rainfall occurred at some places in Jammu & Kashmir during last week. Dry weather prevailed over Himachal Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Uttar Pradesh and Rajasthan.
- **Rainfall Forecast:** Rainfall is likely to occur at a few places in Jammu and Kashmir for the next two days. Either dry or mainly dry condition will prevail or isolated rain will occur in all other days in all the States of the region.
- **Major Rabi Crops:**
  - Wheat (grain formation / early maturity / maturity), mustard, gram and lentil (pod formation / early maturity / maturity) and vegetables (sowing / nursery sowing) in Himachal Pradesh.
  - Wheat, barley (grain formation/ early maturity), brown sarson (seed formation/ early maturity), vegetable crops (sowing / vegetative / flowering / fruiting / harvesting) in Jammu & Kashmir
  - Wheat (grain formation/early maturity), mustard, lentil, gram (seed formation/maturity), pea, rajmah (pod formation) in Uttarakhand.
  - Wheat (grain formation/early maturity), raya, rapeseed and mustard (pod formation/maturity), potato (tuber formation) in Punjab.
  - Wheat (grain formation/early maturity), raya and mustard (pod formation/maturity), summer sunflower, maize(early vegetative) in Haryana
  - Wheat (grain formation / maturity / harvesting); pea and gram (maturity / harvesting); mustard (maturity / harvesting) and vegetable crops (vegetative / flowering / fruiting / harvesting) in Delhi.
  - Wheat (grain formation/early maturity), gram, pea, and lentil (seed maturity/harvesting) in Uttar Pradesh.
  - Wheat (grain formation/ early maturity), gram and mustard (early maturity / maturity), vegetable crops (flowering / fruiting / harvesting) in Rajasthan
- **Advisory:**
  - In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature conditions, farmers in Punjab, Haryana, Uttar Pradesh, Uttarakhand and Delhi are advised to apply light and frequent irrigation to wheat wherever the crops are at grain formation stage to meet the excess evaporative demands. In view of above weather condition farmers are also advised to apply light and frequent irrigation in other standing crops in above mentioned States and also in Rajasthan. Irrigation should be applied in the evening as due to high wind velocity during day time lodging may occur. As upper layer of soil is dry in Himachal Pradesh, apply irrigation to fruit plants.
  - Farmers are advised to continue sowing of pea as well as sowing of nurseries of vegetables like capsicum, tomato, cucumber, cabbage and cauliflower, summer squash etc. Himachal Pradesh and mash, summer moong and jowar in Jammu and Kashmir.
  - Isolated rain in last week and expected rain at a few places help growth of wheat at grain formation stage and farmers are advised not to apply irrigation to the crop in Jammu and Kashmir.
  - In Himachal Pradesh, it is right time to start sowing of pea in Miyad, Chandra, Tod valley of Lahaul and also in areas of Spiti valley where snow has melted. Use pea varieties like Azad P1 and P 89.
  - As temperature is suitable, it is optimum time for sowing of Liliium in valley areas of Himachal Pradesh.
  - In areas of Himachal Pradesh where the snow cover has melted, especially in Spiti and Tod valley, go for immediate application of 220 g SSP and 115 g MOP for 1<sup>st</sup> year old plant and increase the dose with age as it's multiple.
  - Use nets to protect stone fruits from hailstorm in mid hills of Himachal Pradesh.
  - As temperature is rising in the region, so do the regular de-worming of animals. In view of prevailing weather, the cowshed should be kept well airy.

- Under prevailing weather light irrigation is also advised in onion crop in Delhi.
- Use nets to protect stone fruits from hailstorm in mid hills of Himachal Pradesh.
- Harvesting of the already matured mustard is advised in Haryana, Punjab, Uttar Pradesh, Uttarakhand, Rajasthan and Delhi as clear sky is forecasted for the next five days. Immediate threshing after drying is advised. Attack of painted bug will be more if crop is kept in the field for long time after harvest. Farmers are advised to plough the field deep in hot summer to destroy the various stages of pest under heat.
- In Rajasthan, deep summer ploughing is recommended just after harvesting of *rabi* crops to control soil borne insects, diseases and nematode attack. This will also help in conserving rainfall in situ.
- In present weather conditions planting of sugarcane sets should be done as early as possible in Delhi. Sowing of hybrid cluster bean (Pusa Komal, Pusa Sukamol) can also be done in present weather.
- Due to dry weather there are chances of occurrence of powdery mildew. For its control spray Hexaconazole @ 100 ml per 200 liters of water after petal fall.
- There is possibility of infestation of powdery mildew disease in mango in Rajasthan, due to rise in temperature, which leads to flower and fruit drop in mango. Spray Karathane @ 1 ml / litre of water to manage the disease.
- Weather conditions are favourable for aphids in maize and powdery mildew disease in pea in Rajasthan. To control aphids in maize spray Methyl Demeton 25 EC @ 1 litre / ha or Phosphomidan 85 WSC @ 300 ml / ha at the time of aphid infestation on tassel. To control powdery mildew disease in pea, spray 2g wettable Sulphur / litre of water or 1 ml Kerathane / litre of water.

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

- **Realised Rainfall:** In West Bengal, Jalpaiguri districts and Sikkim received rainfall and rest of the districts received no significant rainfall during last week. Dry weather prevailed over Jharkhand, Bihar and Orissa.
- **Rainfall Forecast:** Either isolated rain will occur or dry or mainly dry weather will prevail over the region during the period.
- **Major Rabi Crops:**
  - Wheat (grain development/early maturity), maize (flowering), potato (maturity/harvesting), gram, pea, and lentil (pod formation/maturity), mustard (pod maturity/harvesting), summer maize, moong and sunflower (early vegetative) in Bihar
  - Wheat (grain formation), rai, *toria*, gram, mustard (pod formation/maturity), peas (pod formation), arhar (pod formation/maturity) in Jharkhand
  - Wheat (grain formation), pulses (pod formation/maturity), sunflower, groundnut (vegetative), mustard (maturity/harvesting), summer rice (active tillering/panicle initiation) in Orissa
  - Wheat (early maturity / maturity), Sugarcane (vegetative), vegetable crops (vegetative / flowering / fruiting / harvesting), mustard (maturity / harvesting), *boro* rice (tillering / panicle initiation / flowering), potato (maturity / harvesting) in West Bengal
  - High hills (1500 to 2000 m) in Sikkim: Large Cardamom (vegetative / germination), Wheat (maturity / harvesting), Seed Potato (vegetative, *Kharif* Vegetable (sowing / nursery sowing)). (b) Medium hills (1000 to 1500 m): Large Cardamom (vegetative / germination), Orange (orchard trees / early flowering), *Rabi* Potatoes (tuberization), Mustard (harvesting), Wheat (harvesting), Maize (early vegetative / vegetative), *Kharif* Vegetable (sowing / nursery sowing), Ginger (land preparation). (c) Low Hills (Below 1000 m): Large Cardamom (vegetative / germination), *Rabi* Potatoes (tuberization), Mustard (harvesting), Wheat (grain formation / maturity), Maize (early vegetative / vegetative), *Kharif* Vegetables (sowing / nursery sowing), Ginger (land preparation).
- **Advisories:**
  - As there is less possibility of rain during the period, harvest already matured crops of wheat, mustard and pulses in West Bengal, wheat, mustard, linseed, lentil, gram, peas and lathyrus in Bihar, wheat and mustard in Jharkhand and mustard in Orissa at the earliest taking the advantage of dry condition.
  - As there was sufficient rainfall during last week in Sikkim, farmers are advised to postpone irrigation to large cardamom, potato and maize. Undertake land preparation and sowing of maize.

- Wheat crop is at grain filling stage at some places of Jharkhand. Farmers are advised to apply light and frequent irrigation to wheat crop at grain filling stage to maintain moisture level in the soil to meet excess evaporative demand.
- In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature, farmers are advised to apply light and frequent irrigation to the standing *rabi* crops in Bihar and Jharkhand. As there was no significant rain during last week in West Bengal except in Coochbehar and Jalpaiguri districts and no significant rain is likely to occur over the State, apply irrigation to sugarcane, vegetables and other standing crops. Postpone irrigation to the crops in above mentioned districts of West Bengal.
- As day length is optimum for sowing of jute in West Bengal and Orissa, farmers are advised to sow jute. The recommended varieties are Chaitali, Basudev, Naveen, Sonali, Sobujsona, Shyamali etc. in West Bengal and JRO-524 (Naveen) in Orissa.
- Due to variation of temperature between day and night, *boro* rice may be infested with brown spot disease in South 24 Parganas and Purba Medinipore districts in West Bengal. Spray the crop with Ediphenphos 50 EC @ 1 ml / litre or Carbendazim 50 WP @ 1 g / litre or Tricyclozole 75 WP @ 0.6 g / litre of water when the above disease symptoms occur. Attack of stem borer may be also found in *boro* rice in these districts due to increase of temperature. Spraying alternatively with Triozophos 40 EC @ 1.2 ml / litre or Cartap WP @ 1 g / litre or Endosulfan @ 1.5 ml / litre is advised when 5% dead heart or white ear head or one egg mass per hill will be found.
- Due to high maximum temperature, anthracnose disease may occur on the upper surface of the leaves of betel vine in South 24 Parganas district in West Bengal. Farmers are advised to spray the vine with Bordeaux mixture (4:4:50) @ 0.5% or with any copper oxychloride preparation @ 0.3–0.4% at 7 days intervals.
- Due to high humidity and increased temperature, there is possibility of infestation of fruit and shoot borer in ladies finger in Purba Medinipore district in West Bengal. Farmers are advised to remove and destroy attacked shoots and fruits and also to spray Dichlorvos @ 1.5 ml / litre or Carbaryl WP @ 2 g / litre or Cartap hydro chloride @ 1 g / litre of water; remove all fruits before spraying.
- Under prevailing weather condition, there is a possibility of spread of blast disease in *boro* rice in New Alluvial zone in West Bengal. To prevent apply Hinosan or Kitazin with proper caution due to forecast of higher wind speed.
- In the prevailing weather situation, there is a possibility of attack of the disease leading to leaf-rolling in sesame in New Alluvial zone in West Bengal. Uproot the infected plants.
- In the prevailing weather condition, there is a possibility of the increased attack of Anthracnose leading to black spot in mango in New Alluvial zone in West Bengal. To control it, spray 1 ml Carbendazim per lt. of water.
- High humidity may cause the outburst of leaf blight in *boro* rice in Red Laterite zone in West Bengal; apply carbendazim 50 WP and try to use less nitrogen fertilizer.

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

- **Realised Rainfall:** Rainfall occurred in most of the districts of Assam and Arunachal Pradesh during last week.
- **Rainfall Forecast:** Rain is likely to occur at isolated places during next 24 hours, at a few places or many places thereafter in Assam and in Arunachal Pradesh. Rain is likely to occur at isolated places or mainly dry weather is likely in Nagaland, Manipur, Mizoram and Tripura during the period.
- **Major *Rabi* Crops:**
  - Wheat (maturity / harvesting), pea, arhar (maturity / harvesting), vegetables (vegetative / flowering / fruiting / harvesting), *boro* rice (flowering / grain formation), *ahu* rice (sowing / seedling / transplanting), sugarcane (planting), maize, jute, mesta (sowing) in Assam.
  - Pea, potato (harvesting), maize (grain formation) in Arunachal Pradesh.



- **Advisory:**

- Considering rainfall during last week and expected rainfall during next few days, postpone irrigation to the standing crops in Assam and Arunachal Pradesh.
- As there is possibility of rain, undertake harvesting of already matured crops of wheat, rajmah, pea, potato and arhar in Assam and Arunachal Pradesh immediately before onset of rain.
- Utilizing the recent pre-monsoon showers and expected rain, undertake sowing of the crops like maize, jute, mesta and summer vegetables like Ladies finger, ridge gourd etc. and also planting of sugarcane setts. High yielding varieties of maize are Ganga-5, Highstars, NLD, Dhawal, Navjot, Kissan, Vijay etc. Select varieties from Dhansiri, Kalang, Luhit, CO-Jor- 1, CO-Jor- 2 etc. for planting of sugarcane in Assam.
- Farmers are advised to also plant the high yielding varieties of ginger (Nadia, Karkai, Maran, Jorhat, Chaina etc.) & turmeric (Shillong type, CL-24, PTS-38, PCT-13, VK-145, etc.) utilizing the recent rain in Assam.
- Undertake sowing of Bao rice seeds and normal direct seeded ahu rice seeds within April utilizing recent rainfall. The recommended varieties of Bao rice for Nagaon and Morigaon districts are Maguri, Kekua Bao, Negheri Bao, Tara Bao etc. The recommended varieties of normal ahu rice is Gobind, IR-50, IR-36, Lachit, Chilarai etc. in Assam.
- Farmers are advised to provide support to the plants particularly to the tall and semi dwarf varieties to prevent from lodging during heavy wind and rain in Assam.

- **Animal Husbandry:**

- Immunizations against FMD, HS and BQ in cattle & buffaloes and swine-fever in pigs may be carried out during pre-monsoon season.

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

- **Realised Rainfall:** Most of the districts of Kerala received rainfall. Rainfall occurred at some places in Tamil Nadu and no significant amount of rainfall occurred in South Interior Karnataka and Coastal Andhra Pradesh during last week. Dry weather prevailed over remaining parts of the region.
- **Rainfall Forecast:** Either isolated rain will occur or dry or mainly dry weather will prevail over the region during the period except Kerala where rain/thundershowers is likely to occur at a few places.
- **Major Rabi Crops:**
  - Cotton is at boll maturity/picking and other *rabi* crops are at grain development/ maturity stage in Andhra Pradesh.
  - Pigeon pea and sunflower (maturity / harvesting), Vegetables (Flowering / fruiting / harvesting), *Rabi* Sorghum (grain development / maturity), Bengal gram (maturity / harvesting) in Karnataka.
  - Rice (grain maturity/harvesting), Vegetables (flowering / fruiting / harvesting) and plantation crops (coconut, arecanut, pepper and cashew) in Kerala.
  - Rice (grain development), pulses (pod maturity), cotton (picking) in Tamil Nadu.
- **Advisories:**
- As there was no rainfall during last week and dry weather/ no significant rainfall is likely for the next five days, farmers in Andhra Pradesh, Karnataka, Tamil Nadu and Kerala except in Alapuzha, Ernakulam, Kottayam and Pathanamthitta districts are advised to apply irrigation to standing *rabi* crops and horticultural / plantation crops. As there was sufficient rainfall during last week in the districts mentioned in Kerala, postpone irrigation to the standing crops.
- Heat wave conditions prevail over Telangana region in Andhra Pradesh. Farmers are advised to apply light and frequent irrigation to overcome heat injury on standing crops.
- Undertake harvesting of summer green gram and black gram in Northeast transition zone of Karnataka. After harvesting, undertake summer ploughing to kill pupae and to destroy soil borne pathogens.
- Since forecast of increasing wind speed in Hill zone of Karnataka, there is possibility of falling of plants. Therefore farmers are advised to go for staking with sticks.

- Farmers in Central Dry zone of Karnataka are advised to apply irrigation to arecanut and coconut and pepper as temperature is increasing and to avoid sun scorching.
- Farmers in Central zone of Kerala are advised to undertake mulching in the coconut basin using husks to reduce evapotranspiration. Coir pith @ 25 kg/palm is an ideal mulching material to preserve moisture. Irrigation can be continued.
- Banana bunches should be covered with leaves to prevent sun scorching.
- Farmers in north eastern zone in Tamil Nadu are advised to spray 0.5% of Potassium Chloride to withstand the moisture scarcity.
- Under present weather condition incidence of early shoot borer is noticed in sugarcane in Southern Telangana zone. To control, adopt IPM measures.
- Prevailing weather conditions are congenial for the incidence and spread of yellow and red spider mites. To control, spray Wettable Sulphur @ 3 g per litre of water to cover the under surface of the leaves.
- Dry conditions in Kerala may favour the multiplication of white flies and jassids which act as vectors for spreading crinkling in cucurbits especially bitter gourd. Spraying of neem oil + castor oil garlic emulsion may be undertaken.
- Dryness can aggravate the incidence of pests like aphids, mites etc. in vegetables in Kerala. Farmers are advised to look out for symptoms like leaf crinkling, brittleness / rough leaves etc. Placing a yellow board smeared with castor oil among the vegetable crops will help to control the pests causing this condition.
- Weather conditions are favourable for wide spread occurrence of stem borer and black bug in summer rice crop in Cauvery Delta zone of Tamil Nadu; spray Acephate @ 1g/litre of water along with sticking agent in the evening using hand sprayer. In rice fallow cotton present weather conditions are favourable for occurrence of jassids, thrips, hoppers, and white flies. To check the prevalence of these insects use yellow trap smeared with castor oil or white grease and spray any one of the blue labelled systemic insecticide along with sticking agent at recommended dose.

- **Animal Husbandry**

- **Andhra Pradesh**

- To minimize the summer effect on poultry birds, the following management practices need to be adopted
  - 
  - Arrange fans and foggers in sheds.
  - Cover the sheds with rice straw and arrange sprinklers.
  - Feed poultry birds with wet mash to increase the feed intake.
  - Provide cool water for drinking.

- **Karnataka**

- Due to increase in day temperature from 34<sup>0</sup> to 35<sup>0</sup>C in poultry farm, there is a probability of drop in feed intake, drops in egg weight and deterioration in shell quality. So farmers are advised to maintain optimum temperature between 18<sup>0</sup> and 29<sup>0</sup> C in poultry sheds for better production.
- Due to high day temperature between 36<sup>0</sup>-37<sup>0</sup>C, the dairy farmers are advised not to allow grazing of animals between 12 pm to 5 pm, and also advised to supply adequate quantity of drinking water, sprinkle the water on the animals before milking & keep the floor cool and clean. Calves may be dewormed during summer months to increase the appetite of the animals.

- **Kerala**

- Milch cows should be given proper protection against high temperature. Give more water to drink. Keep the body of the cattle cool by frequent watering. Tie the animals under shade. Farmers are advised to get their cattle vaccinated against the Foot and Mouth Disease. This should be done essentially before the rainy season starts.

## WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

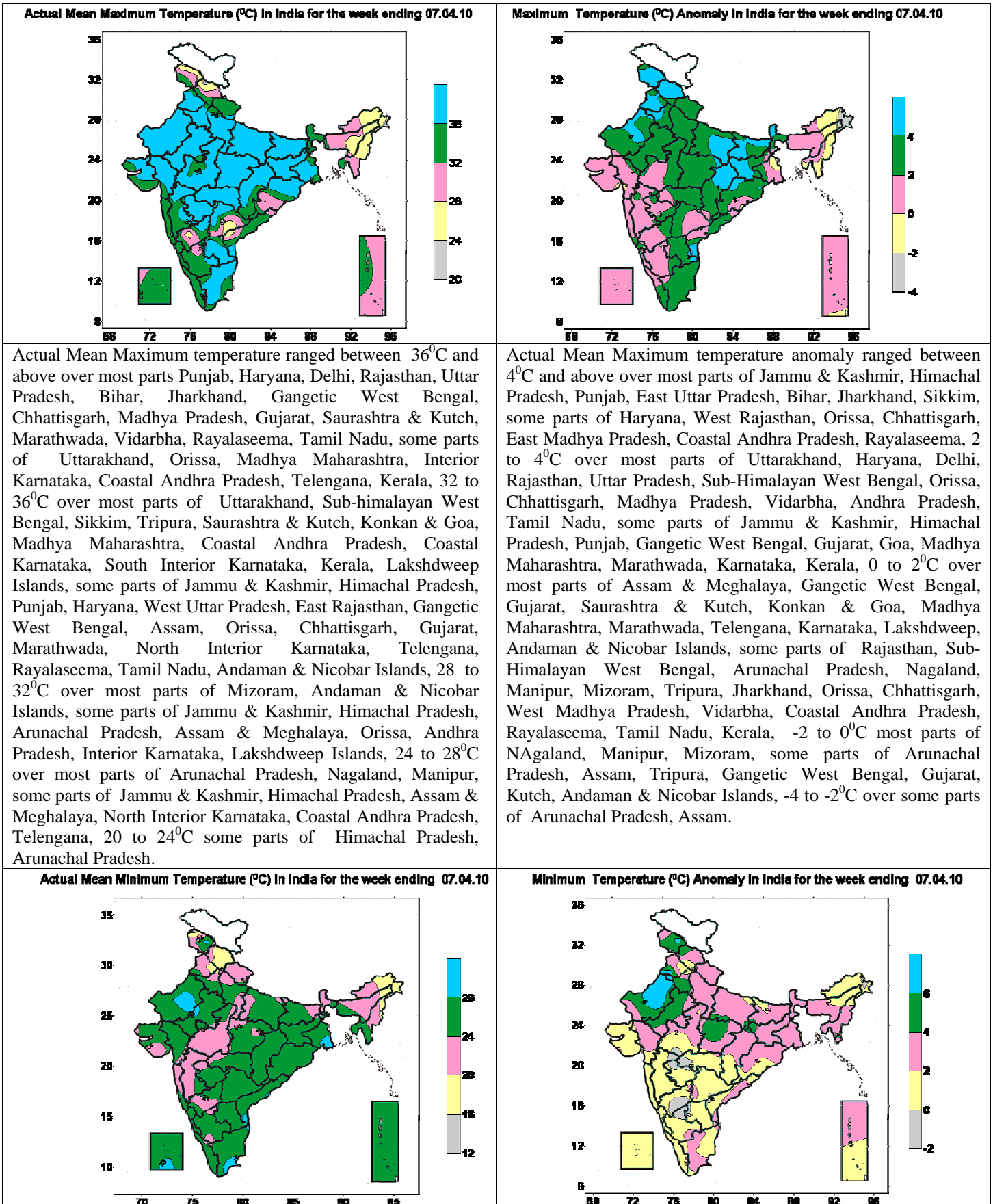
- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Either isolated rain will occur or dry/ mainly dry weather will prevail over the region during the period.
- **Major Rabi Crops:**
  - In Maharashtra: Vegetables (vegetative / flowering / fruiting / harvesting) and summer rice (grain formation / grain maturity in South Konkan and panicle initiation / flowering in East Vidarbha), summer groundnut (pod formation / pod maturity in Sindhudurga district and flowering & pegging / pod formation in other regions), summer sunflower (vegetative / floral bud initiation / flowering), summer maize (vegetative / tasseling & silking), summer *bajra* (flag leaf initiation / flowering / grain formation).
  - In Gujarat: wheat (maturity / harvesting), green gram (flowering / pod formation), summer groundnut (flowering / pegging) and vegetables (vegetative / flowering / fruiting / harvesting).
- **Advisory:**
  - Conserve moisture in the crop field of *rabi* crops at maturity stage.
  - As there is increase in evaporation due to high temperature, apply irrigation at groundnut crop at pegging stage and green gram at pod formation stage. Also apply irrigation to other standing crops like *bajra*, vegetables etc.
  - Due to clear sky forecast during next week, harvest isabgul and castor in Gujarat taking the advantage of dry weather.
  - To reduce the transpiration rate in banana, spray mixture of 800 g Kaolin dissolved in 10 liters of water in Maharashtra.
  - Due to increase in evaporation, farmers are advised to apply irrigation in groundnut at 8-10 days interval in Maharashtra.
  - As dry weather prevailed during last week over the State and dry weather is likely to prevail during next five days, apply protective irrigation to the standing crops of Maharashtra. In view of persisting high temperature in East Vidarbha, farmers are advised to apply light and frequent irrigation to the standing crops.
  - As dry weather is prevailing for last few weeks and also there is possibility of only isolated rain during next five days along with persistent high temperature, apply irrigation to rice, *bajra*, groundnut, greengram etc. in Gujarat.
  - Due to increase in temperature premature fruit dropping may occur in mango in Maharashtra. To reduce the same, provide irrigation to mango @ 150 to 200 litres / plant at fortnightly interval and spray 2% Urea (20 g / litre water).
  - Due to cloudy weather, crops like cucumber, ridge gourd, bottle gourd, water melon etc. in Maharashtra are likely to be infested by downey mildew. Farmers are advised to spray Chlorothalonil or Mancozeb or Copper oxychloride @ 25 g in 10 litres water at 8-10 days interval.
  - Due to increase in temperatures summer chilli is likely to be infested by thrips & mites in Maharashtra, spray Methyl dimeton 25 EC @ 15 ml or Dimethoate 30 EC 2 16 ml + Sulphur 80 % @ 20 g in 10 litres water.
  - Due to dry weather forecast next week harvest isabgul crop in Gujarat during noon time and dry in cemented barnyard. Also harvest castor taking the advantage of dry weather.
  - Due to increase in air temperature, farmers are advised to protect banana bunch with plastic sheet in Gujarat.
  - Due to high temperature forecast, keep animals under shade during noon hours and provide clean drinking water in Gujarat. Put curtains on north-west side of poultry house and sprinkle water on curtains during noon time.
  - The growth of fishes and water in the pond may be checked periodically in Maharashtra. Natural feed and supplementary feed like groundnut cake, rice or whet bran be mixed in 1:1 proportion and mixed with water and given twice a day.

## CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Dry weather prevailed over the region during last week.
- **Rainfall Forecast:** Either isolated rain will occur or dry or mainly dry weather will prevail over the region during the period.
- **Major Rabi Crops:**
  - Wheat (maturity), pulses and gram (grain maturity), sugarcane (cane development), cotton (boll development / maturity) and vegetable crops (flowering) in Madhya Pradesh.
  - Wheat (maturity / harvesting), *boro* rice (panicle initiation / flowering), sesame (vegetative / flowering / pod formation) in Chhattisgarh.
- **Advisory:**
  - In view of prevailing dry weather condition during last few weeks and also during next five days along with persisting high temperature over central India, farmers are advised to apply light and frequent irrigation to the standing crops to meet the excess evaporative demands.
  - As present weather conditions are favourable, farmers in Grid zone of Madhya Pradesh are advised to undertake sowing of summer moong and sunflower under irrigated conditions.
  - Weather conditions are favourable for proper germination of maize to be grown for green cobs in Chattisgarh Plain zone. Hence, the farmers who have assured irrigation facility are advised to complete the sowing of summer maize at the earliest.
  - Evaporations rates are presently quite higher due to prevailing dry weather condition as well as high temperature and it is being recorded between 12-13 mm / day. This has increased the water requirements of summer crops like summer rice, vegetables, sunflower, green gram, groundnut etc. Hence, farmers are advised to apply light and frequent irrigation to these crops.
  - After harvesting of *rabi* crops deep ploughing is advised wherever sufficient soil moisture is there in the fields, particularly in those fields where wilt, stem rot and nematode diseases are frequently observed, to facilitate soil solarisation to control these pests and diseases.
  - Under prevailing weather condition in Madhya Pradesh incidence of sucking pests may occur in chilli, tomato, brinjal; spray Dimethoate @ 1 ml per litre of water or Phosphomidan @ 3 ml per 10 litres of water. Incidences of hopper in mango may also occur; spray with Imidachloprid 200 SL @ 0.25 ml per litre of water or Endosulfan 35 EC @ 1.5 ml per litre of water in mango plantation.
- **Animal Husbandry**
  - Due to forecast of high temperature in coming days in Madhya Pradesh, farmers are advised to provide clean drinking water to cattle. Prevent young calves from scorching sun.

## Annexure I

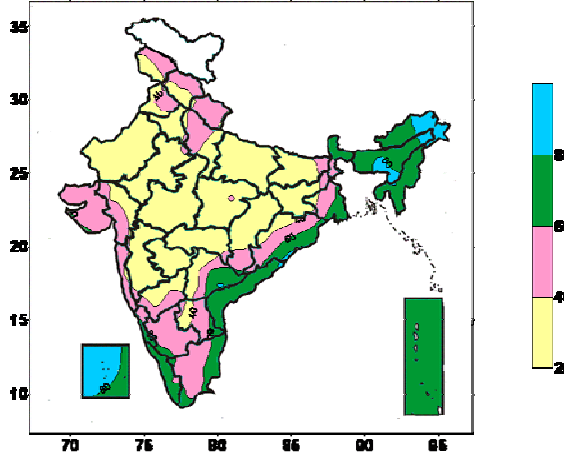
### Contour maps o for the week ending 07.04.10



Actual Mean Minimum Temperature ranged between 28<sup>0</sup>C and above over some parts of Jammu & Kashmir, Rajasthan, Gangetic West Bengal, Coastal Andhra Pradesh, Tamil Nadu, Lakshdweep Islands, 24 to 28<sup>0</sup>C over most parts of Haryana, Delhi, Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Mizoram, Tripura, Gangetic West Bengal, Mizoram, Tripura, Orissa, Chhattisgarh, East Madhya Pradesh, Gujarat, Saurashtra & Kutch, Goa, Marathwada, Vidarbha, South India, some parts of Jammu & Kashmir, Punjab, Uttarakhand, Sub-Himalayan West Bengal, Assam & Meghalaya, West Madhya Pradesh, Konkan, Madhya Maharashtra, 20 to 24<sup>0</sup>C over most parts of Punjab, Uttarakhand, Sub-Himalayan West Bengal, Sikkim, Assam & Meghalaya, Manipur, West Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, some parts of Jammu & Kashmir, Himachal Pradesh, Haryana, Uttar Pradesh, Bihar, Jharkhand, Arunachal Pradesh, East Madhya Pradesh, East Rajasthan, Gujarat, Saurashtra & Kutch, Marathwada, Vidarbha, Interior Karnataka, Kerala, 16 to 20<sup>0</sup>C over most parts of Himachal Pradesh, some parts of Jammu & Kashmir, Punjab, Haryana, Arunachal Pradesh, Assam, Nagaland, 12 to 16<sup>0</sup>C over some parts of Jammu & Kashmir.

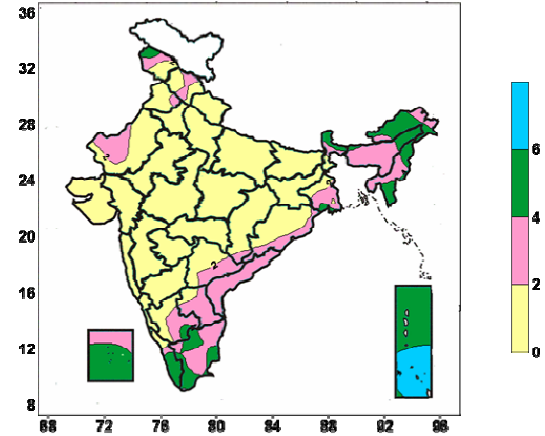
Minimum Temperature anomaly ranged 6<sup>0</sup>C and above over most parts of West Rajasthan, some parts of Jammu & Kashmir, 4 to 6<sup>0</sup>C over most parts of Haryana, Delhi, East Rajasthan, East Madhya Pradesh, some parts of Jammu & Kashmir, Punjab, Himachal Pradesh, East Uttar Pradesh, West Rajasthan, Bihar, Jharkhand, Chhattisgarh, 2 to 4<sup>0</sup>C over most parts of Himachal Pradesh, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Orissa, Chattisgarh, Madhya Pradesh, Gujarat, Tamil Nadu, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Punjab, Haryana, Rajasthan, Andhra Pradesh, Interior Karnataka, 0 to 2<sup>0</sup> C over most parts of Arunachal Pradesh, West Madhya Pradesh, Saurashtra & Kutch, Maharashtra, Karnataka, Andhra Pradesh, Kerala, Lakshdweep, Andaman & Nicobar Islands, some parts of Himachal Pradesh, Punjab, Haryana, East Uttar Pradesh, Bihar, Assam, Nagaland, Orissa, Chhattisgarh, East Madhya Pradesh, Gujarat, Tamil Nadu. -2 to 0<sup>0</sup> C over some parts of Arunachal Pradesh, West Madhya Pradesh, North Madhya Maharashtra, Marathwada, Vidarbha, Interior Karnataka, Coastal Andhra Pradesh, Telengana.

Relative Humidity (%) over India for the week ending 07.04.10



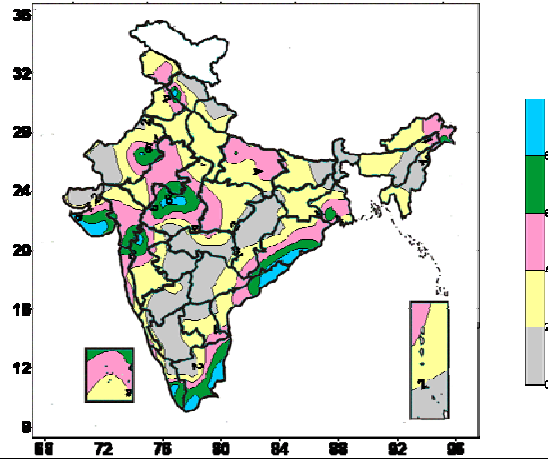
Relative humidity between 80% and above over most parts of Lakshadweep Island, some parts of Arunachal Pradesh, Assam & Meghalaya, Orissa, Coastal Andhra Pradesh, Telengana, 60 to 80% over most parts of Northeast India, Sub-Himalayan West Bengal, Sikkim, Coastal Orissa, Coastal Andhra Pradesh, Kerala, Andaman & Nicobar Islands, some parts of Gangetic West Bengal, Telengana, Rayalaseema, Coastal Karnataka, South Interior Karnataka, Tamil Nadu, Lakshdweep Islands, 40 to 60% over most parts of Himachal Pradesh, Uttarakhand, West Uttar Pradesh, Gujarat, Saurashtra & Kutch, Konkan & Goa, Interior Karnataka, Tamil Nadu, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, East Rajasthan, West Uttar Pradesh, Bihar, Jharkhand, West Bengal, Orissa, Chhattisgarh, East Madhya Pradesh, Madhya Maharashtra, Coastal Karnataka, Telengana, Rayalaseema, Kerala, 20 to 40% over most parts of Haryana, Delhi, East Uttar Pradesh, Bihar, Jharkhand, Central India, Madhya Maharashtra, Marathwada, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, Uttarakhand, West Uttar Pradesh, Gangetic West Bengal, Orissa, Gujarat, Konkan, North Interior Karnataka, Telengana, Rayalaseema.

Cloud amount (okta) over India for the week ending 07.04.10



Cloud amount 6 okta and above over some parts Andaman & Nicobar Islands, 4 to 6 okta over most parts of Sikkim, Arunachal Pradesh, Kerala, Andaman & Nicobar, Lakshadweep Islands, some parts of Jammu & Kashmir, Assam & Meghalaya, Tripura, Nagaland, Tamil Nadu, South Interior Karnataka, 2 to 4 okta over most parts of Gangetic West Bengal, Assam & Meghalaya, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, West Rajasthan, Sub-Himalayan West Bengal, Arunachal Pradesh, Mizoram, Tripura, Orissa, Chhattisgarh, Telengana, Tamil Nadu, Kerala, South Interior Karnataka, Lakshadweep Islands, 0 to 2 okta over remaining parts of the country.

Wind speed (knots) over India for the week ending 07.04.10



Wind speed ranged between 8 knots and above over some parts of Himachal Pradesh, West Madhya Pradesh, Orissa, Kutch, Madhya Maharashtra, Coastal Andhra Pradesh, Kerala, Tamil Nadu, 6 to 8 knots over some parts of Himachal Pradesh, Rajasthan, East Uttar Pradesh, Gangetic West Bengal, Arunachal Pradesh, Orissa, West Madhya Pradesh, Gujarat, Kutch, Konkan, Madhya Maharashtra, Coastal Andhra Pradesh, Kerala, Tamil Nadu, Lakshdweep Islands, 4 to 6 knots over most parts of East Uttar Pradesh, East Rajasthan, Gangetic West Bengal, Gujarat, Konkan & Goa, Lakshdweep Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Punjab, West Rajasthan, Arunachal Pradesh, Assam, Orissa, Madhya Pradesh, Chhattisgarh, Saurashtra & Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Andhra Pradesh, Kerala, Tamil Nadu, Andaman & Nicobar Islands, 2 to 4 knots over most parts of Punjab, Haryana, Delhi, West Uttar Pradesh, Bihar, Jharkhand, Assam, Arunachal Pradesh, Mizoram, Tripura, East Madhya Pradesh, south Madhya Maharashtra, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Rajasthan, East Uttar Pradesh, Gangetic West Bengal, Orissa, Chhattisgarh, West Madhya Pradesh, Gujarat, Saurashtra, Konkan & Goa, Marathwada, Vidarbha, Karnataka, Andhra Pradesh, Kerala, Tamil Nadu, Lakshdweep Islands, 0 to 2 knots over most parts of Sub-Himalayan West Bengal, Sikkim, Nagaland, Manipur, Chhattisgarh, Saurashtra, Marathwada, Vidarbha, Interior Karnataka, Telengana, some parts of Himachal Pradesh, Uttarakhand, West Rajasthan, Bihar, Jharkhand, Gangetic West Bengal, Assam & Meghalaya, Orissa, Madhya Pradesh, Gujarat, Coastal Andhra Pradesh, Rayalaseema, Coastal Karnataka, Tamil Nadu, Kerala, Andaman & Nicobar Islands.