

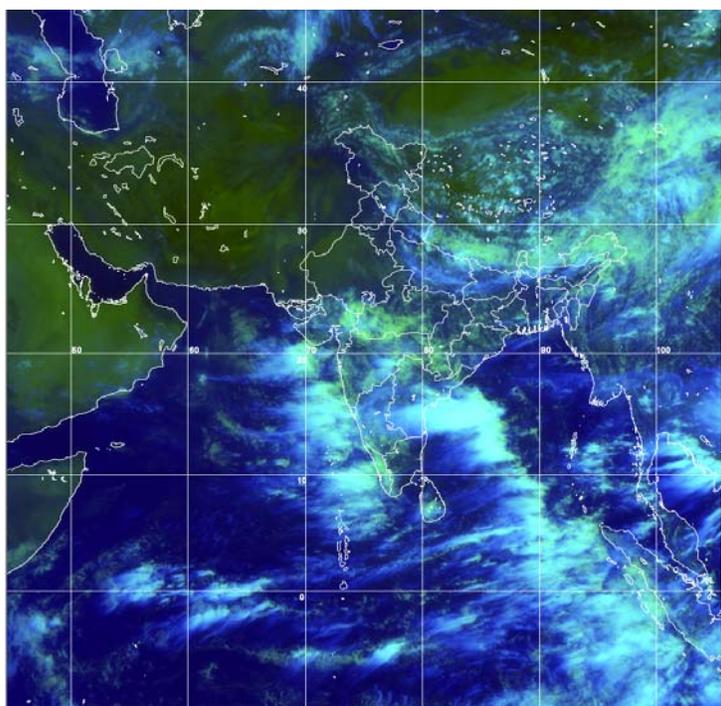


# National Agromet Advisory Bulletin

Thursday, 15<sup>th</sup> July, 2010

**(For the period 15<sup>th</sup> to 19<sup>th</sup> July, 2010)**

Satellite image 6 UTC Dated  
16<sup>th</sup> July, 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.gov.in>) of the Division

## Executive Summary

**Distribution of rainfall (% departure from normal) of the districts receiving subdued rainfall due to delayed onset of monsoon in Uttar Pradesh, Bihar, Jharkhand and Madhya Pradesh for last five weeks**

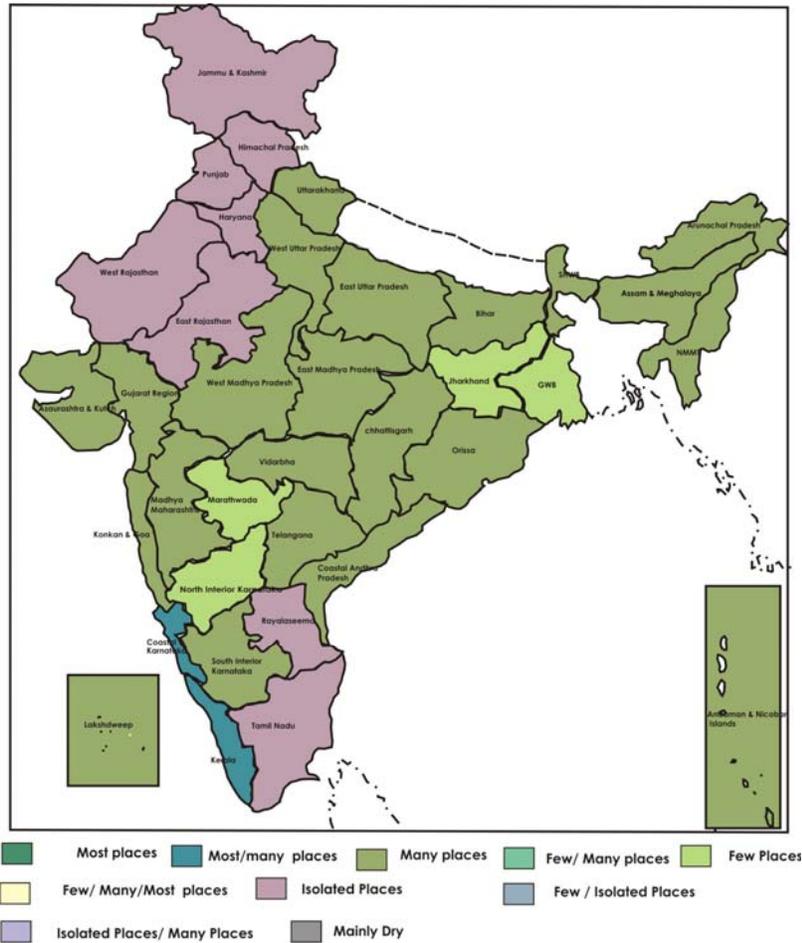
State/Districts	16.06.10	23.06.10	30.06.10	07.07.10	14.07.10
<b>More than 3 weeks continuously deficient to no rain</b>					
<b>East Uttar Pradesh</b>					
Allahabad	-100	-100	-81	-89	-59
Barabanki	-22	-100	-82	-54	-42
Basti	-73	-100	-68	-83	-66
Fatehpur	-100	-100	-98	-33	-78
Hardoi	-36	-100	-81	-45	-68
Jaunpur	-100	-100	-87	-100	-66
Maharajanjan	-89	-64	-40	-90	-59
Mau	-100	-100	-62	-97	-71
Mirzapur	-100	-100	-100	-99	-56
Pratapgarh	-100	-100	-100	-84	-36
RaiBareilly	-100	-100	-89	-88	-92
Sant Ravidas Nagar	-100	-100	-100	-100	-62
Shrawasti	-100	-33	-27	-46	-38
Sidharthnagar	-74	-50	-78	-33	-61
Sitapur	-58	-100	-66	-32	-35
<b>West Uttar Pradesh</b>					
Etawah	-100	-100	-83	-21	-78
Firozabad	-100	-100	-82	-28	-73
Ghaziabad	-100	-100	-100	-38	-46
Hamirpur	-50	-100	-66	-78	-58
Jhansi	-80	-100	-54	-47	-24
Lalitpur	-100	-100	-56	-35	-48
Mainpuri	-100	-100	-72	-77	-84
Pilibhit	-92	-100	-53	-47	-47
Shahjahanpur	-57	-100	-85	-52	-69
<b>3 weeks continuously deficient to no rain</b>					
<b>East Uttar Pradesh</b>					
Kushi nagar	-92	-9	-86	-85	-44
<b>2 weeks continuously deficient to no rain</b>					
<b>East Uttar Pradesh</b>					
Azamgarh	-100	-100	5	-92	-59
Bahraich	-54	-71	-18	-26	-37
Balrampur	45	-100	-12	-43	-36
Kanpur City	-100	-100	16	-36	-63
Lucknow	-100	-100	5	-63	-63
<b>More than 3 weeks continuously deficient to no rain</b>					
<b>Bihar</b>					
Bhojpur	**	-99	-48	-100	-44
Buxar	-74	-48	-89	-99	-75
Sitamarhi	**	-69	-40	-93	-23
Siwan	**	-100	-45	-87	-37
<b>Jharkhand</b>					
Chatra	**	-71	-86	-99	-45
East Singbhum	-60	-57	-94	-70	-92
Lohardagga	-93	-20	-75	-62	-33
Ranchi	-76	-57	-66	-43	-27
West Singbhum	-86	-39	-72	-68	-97

<b>3 weeks continuously deficient to no rain</b>					
<b>Bihar</b>					
Aurangabad	-53	-19	-70	-85	-46
Khagadia	-95	19	-28	-91	-37
Vaishali	**	**	-98	-93	-45
<b>Jharkhand</b>					
Hazaribagh	-100	75	-57	-99	-38
<b>2 weeks continuously deficient to no rain</b>					
<b>Jharkhand</b>					
Giridih	-65	-61	-15	-91	-27
<b>More than 3 weeks continuously deficient to no rain</b>					
<b>East Madhya Pradesh</b>					
Satna	-96	-100	-78	-58	-35
Tikamgarh	-100	-100	-91	-42	-73
<b>West Madhya Pradesh</b>					
Hosangabad	-66	-57	-61	-22	-40
Jhabua	-100	-100	-37	-84	-61
Raisen	212	-54	-96	-96	-89
Rajgarh	-24	-90	-97	-36	-85
Sehore	-100	-96	-54	-25	-96
Sheopur Kalani	-83	-100	-57	-21	-44
<b>2 weeks continuously deficient to no rain</b>					
<b>West Madhya Pradesh</b>					
Gwalior	-50	-100	80	-36	-92
Ratlam	-84	-100	11	-64	-68
Shivpuri	11	-100	0	-28	-66
Vidisha	-34	-100	59	-34	-70

## LEGEND

	EXCESS 20% OR MORE
	NORMAL +19% TO - 19%
	DEFICIENT - 20% TO - 59%
	SCANTY - 60% TO - 99%
	NO RAIN - 100%
	DATA NOT AVAILABLE

## Weather Forecast (Valid upto 1430 hours of 18<sup>th</sup> July, 2010)



- Rainfall is likely to occur at many places over North East India, Sub Himalayan West Bengal, Sikkim, Orissa, Bihar, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Vidarbha, Gujarat, Saurashtra, Kutch, Konkan & Goa, Madhya Maharashtra, Chhattisgarh, Coastal Andhra Pradesh, Telangana, South Interior Karnataka, Lakshdweep, Andaman & Nicobar Islands, at many places over Coastal Karnataka, Kerala for next 24 hours and at most places thereafter, at a few places over Gangetic West Bengal, Jharkhand, North Interior Karnataka, at isolated places over Haryana, Chandigarh & Delhi, Himachal Pradesh, Punjab, Jammu & Kashmir, Rajasthan, Rayalaseema, Tamil Nadu & Pondicherry.

### Weather Outlook (upto 1430 hours IST of 20<sup>th</sup> July, 2010)

- Increase in rainfall activity over northwest, east and northeast India.

### Warning

- Isolated heavy to very heavy rainfall would occur over Assam & Meghalaya, Arunachal Pradesh, Sub-Himalayan West Bengal & Sikkim during next 48 hours.
- Isolated heavy rainfall would occur over Uttar Pradesh, Madhya Pradesh, Bihar, Chhattisgarh and Vidarbha during next 48 hours.

## Weekly Summary of Agromet Advisory Services in India

Though the monsoon rainfall is deficient in some districts in the country, but the rainfall is well distributed throughout the country rather than concentrated in specific areas during last fortnight and this ultimately helped in sowing of *kharif* crops in larger areas of the country. Revived monsoon rains in north India accelerated the sowing/transplanting of rice, oilseeds and cotton and rice sowing is at its peak. Rainfall during last fortnight softened the soil so that already sown / transplanted crops particularly in Punjab, Haryana, Uttar Pradesh, Rajasthan are in good condition. Most parts of soybean-growing Madhya Pradesh have also received adequate rains. Most of the cane growing areas in the country already received good rainfall. Due to this high rainfall the groundnut crop area is increased substantially in Anantapur district in Rayalaseema subdivision of Andhra Pradesh. Not only groundnut, the area of red gram and castor as sole crops also increased as compared to normal because of good rains in the month of June and subsequent rains during July in this district.

- Due to inadequate spatial and temporal distribution of rainfall in some parts of the country farmers in rainfall deficient districts of Uttar Pradesh are advised to undertake sowing of short duration rice crop and crops requiring less water like maize, yellow gram, soyabean, black gram, green gram and sesamum in place of rice in upland situation.
- Farmers in rainfall deficient districts of Madhya Pradesh are advised to undertake intercultural operations i.e. soil mulching to preserve available soil moisture. As sowing of soyabean is not recommended after 1<sup>5th</sup> July in West M.P., sowing of black gram or red gram is recommended in view of expected rainfall during next few days as an alternative of soyabean till 3<sup>0th</sup> July. However, in East M.P., sowing of soyabean may be continued till 25<sup>th</sup> July utilizing the rainfall likely to occur over this region.
- Farmers in Belgaum, Dharwad, Gadag and Haveri districts in North Interior Karnataka are advised to arrange for life saving irrigation to save the crops. Wherever sowing has not been carried out till date, farmers are advised to select maize, chilli, spreading groundnut, sesamum and niger after receiving sufficient rainfall.
- Farmers in Pune, Sangli and Satara districts of Madhya Maharashtra are advised to apply life saving irrigation to save the crops. If the sowing has not been done till date, farmers are advised to take crops like sunflower, arhar, castor, bajra etc. and intercrops like sunflower+ arhar (2:1), arhar + cluster beans (2:1), bajra + arhar (2:1) etc. and wait for sufficient rain to occur to undertake sowing operation.
- Due to continuous rainfall, severe infestation of blight in tomato and leaf folder in upland rice in Wokha district and damping off in French bean and blister beetle in okra in Dimapur district in Nagaland is still persisting from previous week. Severity of fruit rot in chilli in Wokha district, flea beetle in banana in Mokokchung district and leaf folder in rice in Mon district in Nagaland is also reported during last week. Jassid attack in cotton in Bharuch district in Gujarat and swarming caterpillar in rice in Orissa have also been reported. Most of the remaining parts of the country are reported to be free from major pests and disease incidences.
- Normal sowing of crops and other agricultural activities are continued over remaining parts of the country.

## Zonewise Agromet Advisories

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

- **Realised Rainfall:** Rain occurred in Bilaspur, Hamirpur, Kangra, Kullu, Mandi and Una districts in Himachal Pradesh, Amritsar, Fatehgarh Sahib, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Moga, Patiala, Ropar and Sangrur districts in Punjab, Ambala, Chandigarh, Jind, Katihai, Karnal, Panchkula, Panipat, Sonapat and Yamunanagar districts in Haryana, Delhi, many districts in East Uttar Pradesh, Auraiya, Baghpat, Bareilly, Bulandsahar, Ghaziabad, Jalaun, Jhansi, Jotirba Phule Nagar, Lalitpur, Meerut, Moradabad, Muzaffarnagar, Pilibhit, Saharanpur districts in West Uttar Pradesh, Dehradun, Garhwal Pauri, Haridwar, Nainital, Pithoragarh, Udham Sing Nagar and Uttarkashi districts in Uttarakhand and Bharatpur, Dausa, Karaul and Tonk districts in Rajasthan and Jammu and Kathua district in Jammu & Kashmir. No significant rainfall occurred in the remaining parts of the region during last week.
- **Rainfall Forecast:** Rainfall is likely at many places in East Uttar Pradesh, West Uttar Pradesh and Uttarakhand during next three days. Rainfall is likely at isolated places in Haryana, Delhi, Punjab, Himachal Pradesh, Jammu & Kashmir, West Rajasthan and East Rajasthan during the period. Isolated heavy rainfall would occur over Uttar Pradesh during next 48 hours.
- **Major Crops:**
  - Rice(transplanting), jowar, pigeon pea and maize(sowing), vegetable crops (fruiting / harvesting) in Delhi
  - Rice(transplanting),vegetables (transplanting / vegetative) in Himachal Pradesh.
  - Vegetable crops (flowering / fruiting / harvesting), rice(transplanting/early vegetative), maize, groundnut and sunflower(sowing) in Jammu & Kashmir.
  - Sugarcane (vegetative), rice (transplanting), soybean, jowar, bajra, pigeon pea and ground nut(sowing) in Uttarakhand.
  - Sugarcane (vegetative), cotton, maize (early vegetative), rice (nursery sowing/transplanting), mung, mash(sowing) in Punjab.
  - Sugarcane (vegetative), cotton (early vegetative), rice, guar, bajra(sowing) in Haryana.
  - Sugarcane (vegetative), vegetable crops (sowing), black gram, green gram, jowar, bajra, groundnut, sesamum, lobia, maize, pigeon pea + pulses, groundnut and sesamum(sowing) in Uttar Pradesh.
  - Sugarcane(Vegetative), vegetable crops (flowering / fruiting / harvesting), maize, soybean, bajra, jowar, mung, cluster bean, sesamum and groundnut in Rajasthan.
- **Advisory:**
  - As rain occurred in Bilaspur, Hamirpur, Kangra, Kullu, Mandi and Una districts in Himachal Pradesh, Amritsar, Fatehgarh Sahib, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Moga, Patiala, Ropar and Sangrur districts in Punjab, Ambala, Chandigarh, Jind, Katihai, Karnal, Panchkula, Panipat, Sonapat, Yamunanagar districts in Haryana, Delhi, Bharatpur, Dausa, Karaul and Tonk districts in Rajasthan and Jammu and Kathua district in Jammu & Kashmir during last week, postpone irrigation to the crops in these districts. In view of no significant rainfall in remaining districts of the States in the region, farmers are advised to apply irrigation to the standing crops.
  - Farmers are advised to postpone irrigation to the already sown crops in East Uttar Pradesh, West Uttar Pradesh and Uttarakhand. Provide adequate drainage facilities in Uttar Pradesh as isolated heavy rainfall would occur over Uttar Pradesh during next 48 hours.
  - Farmers in Delhi are advised to start transplanting of rice and continue sowing of guar, bajra, maize, cluster bean, spinach, amaranths and ladyfinger (varieties in Annexure I).
  - Farmers in Delhi are advised to undertake transplanting of rice, tomato, chilli and brinjal and sowing of cucurbit vegetables.

- Farmers in sub-montane & low hills sub-tropical zone (Chamba, Hamirpur, Una, Kangra districts) in Himachal Pradesh are advised to undertake transplanting of rice and tomato, brinjal, capsicum and chillies and sowing of bhendi utilizing rainfall during last week
- Farmers in mid hill sub-tropical sub-humid zone (Shimla, Solan and Sirmour districts) in Himachal Pradesh are advised to undertake sowing of ladyfinger, brinjal, cucurbits and beans utilizing the monsoon rainfall during last week(varieties in Annexure I).
- Farmers in Flood Prone Eastern Plain Zone (Alwar, Bharatpur, Dholpur, Karauli, Sawai, Madhopur districts) in Rajasthan are advised to continue sowing of bajra, jowar, urd, mung, cluster bean, sesamum and groundnut with available moisture due to rainfall received during last two weeks(varieties in Annexure I).
- Undertake sowing of short duration varieties of maize, cowpea, urd and mung in Sub Humid Southern Plain and Aravali Hill Zone (Bhilwara, Chittorgarh, Sirohi, Rajasmund districts) in Rajasthan with available moisture due to rainfall received during last two weeks.
- Farmers in Semi Arid Eastern Plain Zone (Dausa, Ajmer, Tonk, Jaipur districts) in Rajasthan are advised to continue sowing of pearl millet, sorghum, maize, green gram, moth bean, cowpea and cluster bean with available moisture due to rainfall received during last two weeks. Also undertake sowing of rainy season cucurbits like *khira*, bottle gourd, ridge gourd, bitter gourd, radish sweet potato, cucumber and nursery for mid season cauliflower.
- In Southern Humid Plain Zone (Banswara district) in Rajasthan, undertake sowing of maize, soybean and cotton utilising available moisture due to rainfall received during last two weeks.
- Farmers in Bhabar and Tarai Zone (Nainital and Uttam Singh Nagar) in Uttarakhand are advised to continue sowing of jowar, bajra, pigeon pea, groundnut and soybean(varieties in Annexure I) utilising the rainfall during last two weeks.
- Farmers in Hill Zone (Tehri Gharwal, Rudraprayag, Champawat, Uttarkashi, Pitorgarh, Bageshwar, Almora districts) in Uttarakhand are advised to complete transplanting of rice in valley region utilizing the rainfall during the last two weeks.
- Farmers in Sub Tropical Zone (Jammu and Kathua) in Jammu & Kashmir are advised to undertake transplanting of rice and vegetables and sowing of maize, pulses, bajra and groundnut available moisture due to rainfall received during last two weeks.
- Farmers in Valley Temperate Zone (Srinagar, Anantnag, Kupwara, Budgam districts) in Jammu & Kashmir are advised to undertake sowing of sunflower in rainfed conditions with available moisture due to rainfall received during last two weeks.
- Undertake land preparation in Intermediate Zone (Doda, Rajouri, Udampur districts) in Jammu & Kashmir for sowing of mash and moong crops utilizing monsoon rainfall during last week.
- Farmers in North Western Plain zone in Uttar Pradesh (Aligarh, Badaun, Bhagpat, Bareilly, Bijnor, Bulandshahar, Farrukhabad, Gaziabad, Jyotiba Phule, Meerut, Moradabad, Muzaffarnagar, Noida, Pilibhit, Rampur, Saharanpur, Shahajahanpur districts) are advised to complete transplanting of rice utilizing rains this week with 3 to 4 plants per hill, if plants are more than 30 days old and also reduce distance between rows and reduce quantity of recommended fertilizers. Also complete sowing of soybean utilizing rainfall realized during last two weeks.
- Farmers in Central Plain Zone in Uttar Pradesh (Allahabad, Chitrkut, Fatehpur and Kaushambhi districts) are advised to undertake nursery sowing of short duration and medium duration rice varieties utilizing utilizing rainfall realized during last two weeks. Also undertake sowing of maize, pigeon pea, jowar, pigeon pea + urd, moong, lobia as cover crop in between two lines of pigeon pea utilizing rainfall realized during last two weeks.
- Farmers in Bundelkhand zone in Uttar Pradesh are advised to undertake sow crops like black gram, green gram, jowar, bajra, groundnut, sesamum and lobia utilising rainfall realized during last two weeks.
- Due to heavy rainfall forecast, farmers are advised to resume sowing after current spells of rain in Uttar Pradesh.

- Farmers in Punjab are advised to complete transplanting of rice in western zone (Bhatinda, Moga, Muktsar, Mansa, sangrur districts), Central Plain Zone (Amritsar, Kapurthala, Fatehgarh Sahib, Ludhiana and Jalandhar districts) and undertake of transplanting of basmati rice varieties in western plain zone (Firozpur and Faridkot districts). Also undertake sowing of mash and moong in western zone utilizing rainfall received during last week.
- Farmers in Haryana are advised to complete the sowing of basmati rice and also undertake sowing of guar and bajra in rainfed areas utilizing rainfall during last two weeks.
- Postpone fertilizer application, spraying and intercultural operations in Uttar Pradesh and Uttarakhand as rainfall is likely at many places during next five days.

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

- **Realised Rainfall:** Most of the districts of West Bengal, Bihar, Jharkhand, Sikkim and Bargarh, Bolangir, Deogarh, Gajapati, Jharsuguda, Kalahandi, Kandhamal, Koraput, Malkangiri, Mayurbhanj, Nawapara, Nawarangpur, Rayagada, Sambalpur, Sonepur and Sundargarh districts of Orissa received good rainfall during last week. Many of the remaining districts of Orissa also received some rain during last week.
- **Rainfall Forecast:** Rain is likely to occur at many places in Sub Himalayan West Bengal and Sikkim, Bihar and Orissa and at a few places in Gangetic West Bengal and Jharkhand during the period. Isolated heavy to very heavy rainfall over Sub-Himalayan West Bengal & Sikkim and isolated heavy rainfall over Bihar would also occur during next 48 hours.
- **Major Crops:**
  - Rice, maize, sesamum, sunflower, groundnut, soybean, castor, black gram, green gram, arhar and vegetables like tomato, cabbage, ladies finger, French bean etc. (land preparation / sowing) in Bihar and Jharkhand.
  - Rice (nursery sowing / direct sowing / transplanting) and maize, groundnut, pulses, soybean, sesamum, ragi, cotton, vegetable crops (sowing / germination / seedling) in Orissa.
  - Sugarcane (vegetative), vegetable crops (vegetative / flowering / fruiting / harvesting), jute (vegetative), *aus* rice (early tillering), *aman* rice (nursery sowing / transplanting), pulses and vegetables (sowing / germination / seedling) in West Bengal.
  - Large cardamom (capsule formation / transplanting of suckers from nursery), orange (transplanting of seedling from nursery / early fruiting), seed potato and summer potato (tuberization), maize (tasseling & silking / flowering & cob filling / cob harvesting), *kharif* vegetable and off season vegetables (late vegetative / harvesting), ginger (early vegetative / vegetative), rice (Medium Hills) (early tillering), rice (Low Hills) (transplanting / early tillering) in Sikkim.
- **Advisories:**
  - As rain occurred in most of the districts of the States of this region during last couple of weeks and rain is also likely to occur at many places in Bihar, Orissa, Sub Himalayan West Bengal and Sikkim during the period, postpone intercultural operation, irrigation and application of plant protection measures and fertilizer to the standing crops in these States. As rain is also likely to occur at a few places in Jharkhand and Gangetic West Bengal, postpone irrigation in these regions.
  - As isolated heavy to very heavy rainfall over Sub-Himalayan West Bengal & Sikkim and isolated heavy rainfall over Bihar would occur during next 48 hours, farmers are advised to withhold sowing over these regions for 48 hours and also drain out excess water from the fields of already sown crops. Resume sowing operation after that.
  - As there was good rainfall in most of the districts during last couple of weeks and rain is also likely to occur during next few days in Orissa, farmers are advised to undertake field preparation and nursery sowing / direct sowing / transplanting of rice and also sowing of maize, ragi, cotton, pulses (green gram, black gram, arhar, cow pea, rice bean), oilseeds (groundnut, soybean, sesamum, niger), vegetable crops etc.

- Farmers are advised to undertake sowing of maize, sesamum, sunflower, groundnut, soybean, castor, black gram, green gram, arhar and vegetables like tomato, cabbage, ladies finger, French bean etc. in Bihar utilizing recent rain and also rain likely to occur during next few days.
- Farmers in North West Alluvial Plain Zone in Bihar are also advised to utilize the available rain water for transplanting recommended varieties in the medium land and low land situations with 2-3 seedlings / hill and closer spacing.
- As sowing time of long and medium duration varieties of rice in the nursery is almost over in South Bihar Alluvial Zone due to poor rain during earlier days, short duration varieties and photosensitive tall local varieties should be sown in the nursery, as soon as possible, utilizing realized rain and also expected rainfall likely during next few days.
- As there is rain in most of the districts of Jharkhand during last week and rain is also likely to occur during next few days, farmers are advised to undertake direct sowing / transplanting of rice and also sowing of *kharif* crops like maize, sesamum, sunflower, groundnut, soybean, castor, black gram, green gram, arhar and vegetables.
- Farmers are advised to complete wet nursery bed for *aman* rice and start transplanting with 21 – 25 days old seedlings in New Alluvial Zone, Coastal Saline Zone and Laterite and Red Soil Zone and also to sow arhar and also vegetables like brinjal, okra, pumpkin, bitter gourd, sponge gourd and ridge gourd in upland situation of West Bengal utilizing recent monsoon rainfall as well as rainfall likely to occur during next few days.
- Also start planting of fruit crops like coconut, mango and guava in Coastal Saline Zone of West Bengal.
- Recommended varieties of major crops to be sown in different States of the region are mentioned in Annexure I.
- Due to cloudy weather and high humidity, attack of fruit rot due to fungus may be prevalent in pointed gourd in New Alluvial Zone of West Bengal. Remove the infected fruits from the land. Spray Blitox (4 g per litre of water) or Blue-copper oxide on a non-rainy day.
- Attack of swarming caterpillar in rice in Orissa has been reported and attack may increase under prevailing weather condition. Farmers are advised to apply plant protection measures after current spells of rain.

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

- **Realised Rainfall:** Rainfall occurred in most of the districts of the states in the region during last week.
- **Rainfall Forecast:** Rainfall is likely to occur at many places in the region during the period along with isolated heavy to very heavy rainfall over Assam & Meghalaya during next 48 hours.
- **Major Crops:**
  - Vegetables (flowering / fruiting / harvesting), sugarcane (cane development), maize, jute, mesta (vegetative), *sali* rice (nursery sowing / transplanting / early vegetative), *ahu* rice (transplanted summer rice) (panicle initiation) and arhar, cotton and sesamum (sowing / germination / early vegetative) in Assam.
  - *Jhum* / WRC rice, pulses, sesame and vegetables (sowing / germination / early vegetative) and maize (sowing / vegetative) in Arunachal Pradesh.
  - Upland rice (tillering), *aman* rice (nursery sowing / transplanting / early vegetative) and vegetables like pumpkin, ridge gourd, cucumber, ladies finger (sowing / vegetative) in Tripura.
  - *Sali* rice and transplanted *ahu* rice (transplanting / early vegetative), arhar and potato (sowing / planting / early vegetative), ladies finger, bottle gourd, pumpkin, ridge gourd, cucumber, bitter gourd, snake gourd etc. (sowing / germination / early vegetative), tomato, chilli and brinjal (transplanting / early vegetative) and maize (vegetative) in Meghalaya.
- **Advisory:**
  - In view of realized rainfall during last few weeks in most of the districts of the States and also rain / thundershower likely at many places over the region during the period, postpone irrigation, intercultural

operation, application of fertilizers and plant protection measures to maize, sugarcane, jute, green gram, black gram, ginger, turmeric and vegetable crop fields. Also arrange for draining out excess water from the fields of these crops in Assam and Meghalaya, as there is possibility of isolated heavy to very heavy rainfall over these States during next 48 hours.

- Farmers are also advised to withhold sowing and transplanting in Assam and Meghalaya in view of likely heavy to very heavy rainfall during next 48 hours and resume the same after that.
- Farmers are advised to transplant *sali* rice and to sow jute (for seed purpose), pigeon pea, sesame and early cauliflower in Lower Brahmaputra Valley Zone, to transplant *sali* rice and to sow sesame in Upper Brahmaputra Valley Zone, to transplant *sali* rice and to sow early semi dwarf Autumn rice and sesame in Barak Valley Zone and to sow *sali* rice, sesame and early varieties of cauliflower in North Bank Plain Zone in Assam. As sufficient rain received, farmers are advised to transplant 25 to 30 days old seedlings of *sali* rice in the main field at a spacing of 15 x 20 cm.
- Farmers of flood affected areas of North Bank Plain Zone in Assam may prepare nursery beds with suitable rice varieties which can withstand flood for several days.
- Farmers are advised to start preparatory tillage for cultivation of early semi dwarf autumn rice under medium land situation in Barak Valley Zone in Assam as sufficient rainfall occurred during last fortnight.
- Farmers in Arunachal Pradesh are advised to undertake sowing of *jhum* / WRC rice and maize and also vegetable crops like ridge gourd, bitter melon, bottle gourd, pumpkin, okra, etc. and pulses like black gram, green gram, French bean, etc., preferably in raised beds and sesame.
- System of Rice Intensification (SRI)\* method can be adopted in Meghalaya. Also carry out transplanting of *ahu* rice and sowing of jute, arhar, toria and vegetables and planting of potato at optimum moisture condition.
- Planting of banana, pine apple and papaya may be carried out in Mizoram during this period. Also carry out transplanting of rice and sowing of soyabean and black gram in Manipur.
- Recommended varieties of major crops to be sown in different States of the region are mentioned in Annexure I.
- Farmers are advised to drain out excess water from maize, green gram and black gram crop fields immediately as the crop can not withstand stagnant water.
- Present weather is favourable for stem borer infestation in sugarcane crop in Upper Brahmaputra Valley Zone in Assam. Stem borer infestation may be checked by burying or burning the infested canes.
- Due to continuous rainfall, severe infestation of blight in tomato and leaf folder in upland rice in Wokha district and damping off in French bean and blister beetle in okra in Dimapur district in Nagaland is still persisting from previous week. Severity of fruit rot in chilli in Wokha district, flea beetle in banana in Mokokchung district and leaf folder in rice in Mon district in Nagaland is also reported during last week. Apply plant protection measures to control these pests after current spells of rain.
- Due to continuous rainfall in Mizoram, the mandarin orchard faced severe infestation of trunk borer and medium infestation of bark eating caterpillar. Regular monitoring and killing of larva by inserting wire inside the tunnel or inserting cotton with kerosene or petrol followed by bordeaux paste (1:1.5:10) is recommended.
- In present weather conditions, to prevent skin infection in Arunachal Pradesh, animals should be washed with neem leaf extract. Neem leaf extract can be prepared by soaking crushed neem leaves overnight in a container.

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

- **Realised Rainfall:** All the districts in Kerala except Alappuzha, Kannur, Kollam, Malappuram, Thiruvananthapuram and Thrissur, all the districts in Andhra Pradesh except Nellore, Mehbubnagar and Cuddappah districts, all the districts in Coastal Karnataka, all the districts in South Interior Karnataka except

Bellary, Chitradurga, Davagare, Mysore and Shimoga districts and all the districts in Tamil Nadu except Cuddalore, Nagappattinam, Tuticorin, Villupuram and Virudunagar received rainfall during last week.

- **Rainfall Forecast:** Rain is likely to occur at many/most places over Kerala, Coastal Karnataka, South Interior Karnataka, Coastal Andhra Pradesh and Telangana and at a few places over North Interior Karnataka during next three days. Rain is likely at isolated places over Rayalaseema and Tamil Nadu.
- **Major Crops:**
  - *Kharif* crops viz., cotton, rice, groundnut, red gram, castor, etc. (sowing) in Andhra Pradesh. Early sown crops are at early vegetative/ vegetative stage.
  - *Kharif* crops viz., red gram, ragi, green gram, black gram, jowar, soybean, maize and groundnut (sowing) and sugarcane (cane development) in Karnataka. Early sown crops are at early vegetative/ vegetative stage.
  - *Virippu* rice (tillering), bhindi (sowing), upland rice (sowing), coconut, cashew, ginger and turmeric (planting), banana (bunching), ginger, vegetables (vegetative), pepper (berry development) and plantation crops (coconut, arecanut, pepper and cashew – various stages) in Kerala.
  - *Kuruvai* rice (early vegetative/vegetative), green gram and groundnut (grain formation/development), maize (cob formation/development) and sorghum (milking) in Tamil Nadu.
- **Advisories:**
- Dry conditions prevail in Belgaum, Dharwad, Gadag and Haveri districts in North Interior Karnataka for the last few weeks. Farmers are advised to arrange for life saving irrigation to save the crops. Wherever sowing has not been carried out till date, farmers are advised to select maize, chilli, spreading groundnut, sesamum and niger after receiving sufficient rainfall. Detailed contingent planning is given in Annexure II.
- Rain is likely to occur at many/most places over Kerala and Coastal Karnataka, South Interior Karnataka, Coastal Andhra Pradesh and Telangana, farmers are advised to postpone irrigation to plantation crops and vegetable crops.
- As there was rainfall in the entire districts of Tamil Nadu except Cuddalore, Nagappattinam, Tuticorin, Villupuram and Virudunagar, farmers are advised to postpone irrigation to standing crops. Apply irrigation to standing crops in the above districts as there was no sufficient rainfall during last week.
- Farmers are advised to undertake sowing of red gram, ragi, groundnut and rice nursery in Eastern Dry Zone and rice, cotton, maize and ginger in Southern Transition Zone in Karnataka utilizing the monsoon showers.
- Farmers in North East transition Zone (Bidar) are advised to soak the seeds of pigeon pea in a solution of 20 grams of calcium chloride dissolved in one liter of water for one hour and shade dry the seeds for seven hours before sowing so as to induce drought resistance in the crop.
- As sufficient rainfall received during last week, farmers are advised to undertake transplanting of rice in main field in Coastal Zone (Udupi and Dakshi Kannada), planting of arecanut, cardamom and black pepper in Central Dry Zone (Sirai) and sowing of groundnut, sunflower, redgram, maize and jowar in Hill Zone (Devangere, Chitradurga, Kodagu, Tumkur) in Karnataka.
- Farmers in Southern Telangana Zone (Medak, Nalgonda, Rengareddy and Warrangal) of Andhra Pradesh are advised to undertake sowing of cotton, groundnut, maize, red gram, castor. Farmers in Southern Telangana Zone are advised to continue nursery sowing of short and medium duration rice varieties and sowing of bhendi, bitter gourd, ridge gourd, bottle gourd and snake gourd with monsoon showers received in the region. (varieties in Annexure I)
- Good amount of rainfall received in Scarce Rainfall Zone (Ananthpur, Kurnool) of Rayalaseema. Farmers are advised to undertake sowing of groundnut in July. Select red gram as intercrop in 7:1 ratio for assured crop.
- Farmers in Krishna Godavari Zone (West Godavari, Guntur, Krishna and Prakasam districts) are advised to undertake sowing of pulse crops like green gram and black gram and nursery sowing of rice with the

rains received (varieties in Annexure I). Farmers in Guntur may start land preparation and sowing of cotton during second fortnight of June to second fortnight of July and short duration rice varieties in the nursery.

- Farmers in High Altitude and Tribal Zone (East Godavari and Khammam) are advised to undertake sowing of short and medium duration rice in nursery and sowing of maize in the main field utilizing the recent rainfall.
- As sufficient rainfall was received in remaining parts of Andhra Pradesh, farmers are advised to continue sowing of kharif crops like rice in the nursery, pulse crops, groundnut, etc.
- As high wind speed is expected in Hill Zone of Karnataka, Southern Zone of Tamil Nadu and High altitude Zone of Kerala, farmers are advised to provide mechanical support to banana and sugarcane crops to prevent from lodging.
- Farmers are advised to undertake planting of coconut and cashew in Northern Zone and planting of ginger and turmeric in Central zone in Kerala utilizing the monsoon showers.
- As temperature is higher in Western and Southern Zones of Tamil Nadu, evapotranspiration rates are increasing. Farmers are advised to apply irrigation to garden land crops.
- Farmers in Northwestern Zone of Tamil Nadu are advised to undertake sowing of maize in *Adi pattam*
- As high cloud cover and humidity conditions prevail in Southern Zone of Tamil Nadu, there are chances of incidences of stem borer in rice, aphids and boll worms in cotton and leaf miner and leaf spot in groundnut. Farmers are advised to undertake plant protection measures to control the pests and diseases.
- Prevailing weather conditions are congenial for the incidence of damping off in vegetable crops, flower drop in chilli and tomato and bacterial blight in pomegranate in Scarce Rainfall Zone (Ananthpur, Kurnool) of Rayalaseema. Undertake plant protection measures to control the pests.
- Plant protection measures may be continued after spells of rain in Kerala, Coastal Karnataka, South Interior Karnataka, Coastal Andhra Pradesh and Telangana and on a non rainy day in North Interior Karnataka

#### **Animal husbandry:**

- Prevailing weather conditions are congenial for the occurrence of Hemorrhagic Septicemia, Foot and mouth disease in cattle, ET and sheep pox in sheep and Ranikhet disease in poultry in Andhra Pradesh. To prevent the diseases, vaccinate the animals at the earliest.
- Vaccinate the livestock against Foot and mouth disease (FMD vaccination), Hemorrhagic Septicemia, Black Quarter. Vaccinate sheep and goats against Enterotoxaemia (ET vaccine) in Karnataka.

#### **WEST INDIA [GOA, MAHARASHTRA, GUJARAT]**

- **Realised Rainfall:** Most of the districts of Maharashtra State (except Pune, Sangli, Satara, Akola, Beed, Jalna, Usmanabad and Washim), Gujarat region (except Banaskantha, Dahod, Mehsana, Panchmahal, Patan, Sabarkantha) and Saurashtra and Kutch (except Surendranagar) received rain during last week.
- **Rainfall Forecast:** Rain is likely at many places over the region except at Marathwada where rain is likely to occur at a few places.
- **Major Crops:**
  - *Kharif* rice (germination / early seedlings in East Vidarbha and transplanting in South Konkan, Kolhapur, Nashik & Pune (western parts) divisions), soyabean and bajra (sowing / germination / early vegetative), jowar, cotton, sunflower and groundnut (germination / early vegetative), red gram, green gram (sowing / germination) and irrigated cotton (early vegetative / vegetative) in Maharashtra.
  - Rice, groundnut, cotton, castor, maize, bajra, pigeon pea, soybean, sesamum, green gram and black gram (land preparation / sowing / germination / early vegetative) in Gujarat.
- **Advisory:**
  - As rain occurred in most of the districts of the States of this region during last couple of weeks and rain is also likely to occur at many places over this region except Marathwada during the period, postpone intercultural operation, irrigation and application of plant protection measures and fertilizer to the

standing crops. As rain is also likely to occur at a few places in Marathwada, postpone irrigation in this region.

- As Pune, Sangli and Satara districts of Madhya Maharashtra received scanty rain during last fortnight; farmers are advised to undertake sowing of *kharif* bajra, sunflower, tur, castor, hulga (horse gram) by selecting improved and short duration varieties in second fortnight of July after receiving sufficient rain. Farmers may also undertake sowing of intercrops like sunflower + tur (2:1), tur + cluster bean (1:2) and bajra + tur (2:1) under this situation. Farmers of this region are also advised to apply protective irrigation to save the already sown crops and to preserve moisture by undertaking hoeing operation in the field through soil mulching.
- In view of rainfall occurred during last few weeks and likely occurrence of rainfall during next few days, farmers in remaining parts of Maharashtra are advised to complete the sowing of *kharif* crops by selecting improved and high yielding varieties of bajra, groundnut, sunflower, *kharif* cotton, red gram, green gram etc.
- As rain occurred in most of the districts of Saurashtra and Kutch and Gujarat region and rainfall is also expected over the State during next few days, farmers are advised to undertake sowing of the *kharif* crops like groundnut, cotton, castor, maize, bajra, pigeon pea, soybean, sesamum, green gram and black gram.
- Recommended varieties of major crops to be sown in different States of the region are mentioned in Annexure I.
- There is report of infestation of green semi looper & tobacco leaf eating caterpillar in soyabean in West Vidarbha and infestation is likely to increase under present weather condition; spray 5% Neem extract or Endosulfan 35% @ 15 ml or Fenvalerate 20% @ 5 ml in 10 liters water.
- Due to cloudy weather, there is chance of more infestation of fruit borer in brinjal in Maharashtra; spray 4% Neemark or Prophenophos @ 20ml or Carbosulfan @ 10 ml in 10 liters of water.
- There is attack of rust disease in fig in Maharashtra and infestation may increase under prevailing situation; spray mixture of 2 g Chlorothalonil and 1 g Carbendazim per litre of water at the interval of 14 days.
- Decrease in temperature, high cloud cover and humidity expected during the coming days are conducive for the incidence of cigatoca leaf spot in banana in South Gujarat Zone. If incidence is noticed, spray carbendazim @ 1 g / litre of water.
- Apply plant protection measures after current spells of rain in Konkan, Vidarbha, Madhya Maharashtra and Gujarat State and on a non rainy day in Madhya Maharashtra and Marathwada.

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

- **Realised Rainfall:** Rain occurred over all the districts of East Madhya Pradesh except Tikamgarh, all the districts of West Madhya Pradesh except Badwani, Betul, Dhar, Harda, Hoshangabad, Neemuch, Shahjapur and Sheopur Kalani districts and all the districts in Chhattisgarh during the period.
- **Rainfall Forecast:** Rain is likely at many places over Madhya Pradesh and Chhattisgarh for the next three days. Isolated heavy rainfall is likely during next 48 hours over the region.
- **Major Crops:**
  - *Kharif* crop like soyabean, maize, sorghum, green gram and black gram (sowing) in Madhya Pradesh. Early sown crops are at early vegetative stage.
  - *Kharif* crops like black gram, green gram, soyabean, maize, etc (sowing), Rice (nursery sowing) and Sugarcane (cane development) in Chhattisgarh. Early sown crops are at early vegetative stage.
- **Advisory:**
  - Sufficient rainfall received in all the districts in Madhya Pradesh except Tikamgarh, Badwani, Betul, Dhar, Harda, Hoshangabad, Neemuch, Shahjapur and Sheopur Kalani districts and Chhattisgarh during last week, sowing of *kharif* crops may be continued in all the districts. Though rainfall was not received in the above districts during last week, sowing may be continued with available moisture due to rainfall

received during first week of July and with forecast rain in next three days. Select early and medium duration rice varieties in lieu of long duration rice varieties.

- Farmers in rainfall deficient districts of Madhya Pradesh are advised to undertake intercultural operations i.e. soil mulching to preserve available soil moisture. As sowing of soyabean is not recommended after 15th July in West M.P., sowing of black gram or red gram is recommended in view of expected rainfall during next few days as an alternative of soyabean till 30th July. However, in East M.P., sowing of soyabean may be continued till 25th July utilizing the rainfall likely to occur over this region.
- Farmers are advised to continue land preparation and sowing of kharif crops like soybean, maize, sorghum etc. and green fodder in Malwa Plateau Zone (varieties in Annexure I) and transplanting of brinjal, tomato, chilli, etc in Nimar Valley Zone, Grid Zone, Satpura Hill Zone and Jhabua Hills Zone in Madhya Pradesh utilizing the monsoon rainfall. Due to delayed monsoon in Jhabua Hills Zone select short duration varieties for soybean maize, pigeonpea, etc (varieties in Annexure I).
- As sufficient rainfall received during last week, farmers are advised to continue land preparation and sowing of crops like sesamum, red gram and other pulse crops in Bhundelkhand Zone (Tikamgarh, Chattarpur, Datia) and green gram, black gram, red gram and soyabean in Vindya Plateau Zone (Bhopal, Sehore, Vidisha) (varieties in Annexure I). Start sowing of maize, soyabean, groundnut and jowar in Bhundelkhand Zone. Provide drainage facilities for maize.
- Postpone intercultural operations and application of fertilizers and pesticides in Madhya Pradesh and Chhattisgarh as rain is likely at many places. Provide drainage facilities as isolated heavy rainfall is likely during next 48 hours. Withhold sowing at the time of heavy rainfall.
- Farmers in Chhattisgarh Plain and Bastar Plateau Zones are advised to continue field preparation and sowing of rice in nursery / transplanting in the main field as sufficient rainfall (80-100 mm) received during last week. Select short duration varieties for rice due to delayed monsoon (varieties in Annexure I). Farmers in the upland of these zones are advised to continue sowing of soybean, groundnut, sesame, pigeon pea (varieties in Annexure I). Also undertake sowing of bottle gourd, okra, snake gourds, bitter gourd in the main field with realized rainfall.

## Annexure I

### List of Varieties

#### Delhi

**Rice:** Hybrid varieties- KRH 2, PHB 71, Arich 6444, Pant hybrid Dhan1, Narendra hybrid Dhan 1 and PRH 10; High yielding varieties - Pusa Sughand 5, Pusa Improved Basmati, Pusa 44, Pusa Sughand 4, Pant Dhan 10, Pant Dhan 4, Narendra Dhan 359, Pusa 834, Ranvir Basmati and Taravadi Basmati.

**Pigeon pea:** Pusa 2001, Pusa 991 and Pusa 992, Paras, Manak and UPAS 120

**Maize:** AH-421, AH-58 Composites varieties; Pusa composite-3 Pusa composite-4

**Cucurbit vegetables:** Hybrid varieties: Bottle Gourd- Pusa Naveen, Pusa Sandesh; Bitter Gourd- Pusa Visesh, Pusa-2 mosumi; Pumpkin- Pusa Visvash; Ridge Gourd- Pusa Chikni, Pusa Supriya.

#### Uttarakhand:

**Soybean:** Brag, PK-262, PK-327, VL Soya-2 and VL Soya-21, Pant Soybean-1024, Pant Soybean-1042, Pant Soybean-1092, Pant Soybean-1347

**Ghagat:** VLG-1

#### Jammu & Kashmir

**Rice:** Jaya, RR-8585, PC-19, IET-1410 and Ratna

**Groundnut:** Punjab No.1, M-13 & JL-24

**Maize:** GS-2, super composite, mansar, C-6, C-8 and local varieties

#### Uttar Pradesh

**Rice:** Taravadi, Bansmati, Bansmati-370, Pant-15 & Pusa Bansmati-1, Pusa-1121, Sugandh-4, Narendra 118, Narendra-97, Ashwini, Saket-4, Pantdhan-12, Govind, Ratna, Saket-4, Pant-10, 12, Narendra-118, Ashwini, Manhor & Narendra-80

**Groundnut:** Type-64, Chandra, Kaushal, Prakash & Amber

**Soybean:** Pant soyabean-1024, Pant Soyabean-1092, PK-262, PK-472, PK -416, PS -564

**Jowar:** Hybrid: Vasha, CSH-16, CSH-9, CSH-14, Sankul: CSV-13, CSV-15, Bundela, CSV-13, CSV-15, CSV-17

**Maize:** Hybrid: Ganga-2, Ganga-1, Sankul: Navin, Kanchan, Sweta, Azad, Surya, Uttam, Desi:Meerut Pili.

**Bajra:** Hybrid: Pusa-322, Pusa-23, ISMH-451, Sankul: ICMV-155, WCC-75, ICTP-8203, Raj-171, Desi: Mainpuri

**Pigeon pea :** Bahar, Narendra arhar, Azad, malviya vikas, malviya chatmatkar

**Black gram:** Azad- 1 & 2 , Uttra, Narendra, urd -1, Pant urd-31

**Green gram :** Samrat, Narendra moong-1, T-44

**Sesamum:** Shekhar, Pragati

#### Punjab:

**Rice:** PR-120, PR-118, PR-116, PR-114, PR-111 and PR-113

#### Rajasthan

**Maize :** Him – 129, Aravali Makka, PEHM-1, PEHM- 2, Pratap Makka-1, Pratap Makka-3, Pratap Makka-5

**Jowar :** CSV – 15, CSV – 17, Pratap Jowar – 1430, CSH – 13, CSH – 14, CSH-16

**Soybean :** JS–335, MACS–13, PK – 472, MACS–58, PS – 16, JS – 71 – 05, Pratap Soya-1 **Moong :** K 851, RMG – 62, K – 851, Pusa Baisakhi, RMG 268 and Ganga

**Urd :** Krishna, T – 9, PU – 19 and Barkha.

**Pearmillet:** Pusa 334, Pusa 383, HHB 67, HHB 94, Raj 171, ICMH 356, ICTP 820 and RHB 121

**Cleaster bean:** RGC 936, RGC 986, RGC 1002, RGC 1003, RGC 1017, M83 and HG 365

**Sesamum:** Pratap,TC 25, RT 46, RT 54, RT 103, RT 125 and Tt 13

**Ground nut:** GG 2, GG 7, HNG 10, Prakash and M 13

**Radish:** Pusa Chetki

**Cauliflower:** Improved Japanese, Pusa hybrid-2 & Himjoyti

### Assam

**Sali rice:** Ranjit, Bahadur, Vasundhara, Kushal, Piyoli, Moniram, Rangali, Bhogali, Ketkijaha etc. (Long duration), Satya and Basundhara (medium duration).

**Rice for flood affected areas:** Jalashree, Plaban, Jalkonwari.

**Red gram:** T-21.

**Sesamum:** AST-1, Madhavi, Vinayak, Punjab Til -1, Gauri, SG 1981, RT-1 etc.

**Cotton:** J-34, MCU-1, MCU-4, Khaki etc.

**Jute (for seed purpose):** Tarun.

**Early varieties of cauliflower:** Pusa Keteki, Pusa Dipalee, Early Kowari, Jowahar Moti etc.

### Meghalaya

**SRI rice:** Ranjeet or Naveen.

### Bihar:

#### Rice:

##### North West Alluvial Plain Zone:

**Medium land:** Rajshree, Santosh, Rajendra Suvasni, Rajendra Bhagwati.

**Low land:** Rajshree, R. Sweta, R. Mansoori 1.

##### South Bihar Alluvial Zone:

**Short duration varieties:** Pusa 2-21, IR-36, Saket, Prabhat.

**Photosensitive tall local varieties:** Katarni, Kamini, Sugandha, Tulsi Munjari etc.

**Kharif maize:** Ganga -11, Shaktiman 1, 2, Devki and Suwan etc.

### Jharkhand:

#### Rice:

**Medium land:** IR – 36, IR – 64, Rajendra Dhan 202, Kanak, Sugandha, Lalat, BR 10, Birsa Vikar Sugandh Dhan 2, Birsa Vikas Dhan 203, Birsamati, Pro Agro 6444, Birsa Dhan 202, Rajshree etc.

**Low land:** Birsa Dhan 202, Rajshree, Suvarna (MTU 7029), Sambha Mahsoori (BPT 5204).

**Kharif maize:** Suwan Composite – 1, HQMP – 1, Birsa Makai – 1, Kanchan, Birsa Vikas–2 etc.

**Black gram:** T-9, PU-19.

**Green gram:** K-851, Pusa Vishal.

**Groundnut:** Birsa Groundnut 2, 3, Verginia, BAU 13.

**Soybean:** Birsa Soybean, JS 335, Birsa safed soybean 2.

**Arhar:** Birsa Arhar 1, Bahar.

### Orissa:

#### Rice:

**Up land:** Khandagiri, Vandana, ZHU XI-26, Parijat, Annada, Heera.

**Medium land:** Lalat, Konark, Surendra, Naveen, Swarna, Kharavela, Pratikhya, MTU-1001 and Geetanjali (aromatic rice).

**Low land:** Mahanadi, Moti, Indravati and aromatic rice like Dubraj and Ketakijoha.

#### Maize:

**Composites:** Navjot, Megha, Pratap, Shakti 1, Pragati.

**Hybrids:** Decan 103, Decan 109, Decan 115, Bio 9681, Pro 311, Ganga II, Cargil 900 M, Cargil 633, Sartaj.

#### Ragi:

**Early varieties:** Dibyasinha, VL 149.

**Medium varieties:** Bhairavi, Subhra, Godavari, Chilika.

**Cotton:** Bunny, Sri Tulasi, Bhaskar and Atal.

**Arhar:** Mahak, UPAS 120, Asha, Laxmi, Jagruti, Maruti.

**Green gram:** PDM-54, HUM 1, TARM 1, TARM 2, K 851, Dhauli.

**Black gram:** Sarala, Pant U 30, Pant U 35, KU 301, KU 300

**Cowpea:** SEB 2, FS 68, Swarna, SGL 1.

**Soyabean:** JS-72-44, PK-73-163, T-49, Ankur.

**Ground nut:** AK-12-24, Kisan, Jawan, Smruti.

**Sesamum:** Uma, Usha, Prachi, Kanaka, Kalika.

**Nizer:** GA-10 (Deomali), IGP-76 (Sahayadri).

**Brinjal:** Utkal madhury, Utkal tarrini, Utkal keshari, Pusa kranti

**Chilli:** Utkal rashmi, Utkal ava, Pusa jwala, Pant C 1, NP 46A

**Tomato:** Utkal pallavi, Utkal dipti, Panjab chhuara, Pusa hybrid-1

**Onion:** N 53, Arka kalyan, Agrifound dark red, Arka pragati

**Radish:** Pusa chetki, Pusa rashmi, Japanese white.

**Cowpea:** Pusa barsati, Arka garima, Utkal manik, Pusa dofasali.

### West Bengal:

**Aman rice:** IET-4094, 2233, Ratna, Bikash, Kitish, Sasya-shree, IR-42, Swarna, Mashuri, IET-8002, IET-5656, IET-4694, IET-4786, IET-1444, MTU-7029 etc.

**Arhar:** JSA-59, Pusa-9, Bahar etc.

**Coconut:** East Coastal, Hazari.

**Mango:** Himsagar, Bombai, Langra, Amrapali, Mallika.

**Guava:** Safeda, L-49.

**Banana:** Joint Governor, Robusta, Kabuli, Mortaman.

### Gujarat:

**Groundnut:** GAUG-10, GG-11, GG-12, GG-13, GG-20 for groundnut (spreading), GAUG-1, GG-2, GG-4, GG-5 for groundnut (bunch).

**Castor:** GAUCH-1, GCH-2, GCH-4, GCH-5.

**Maize:** GM-3, GM-4, GM-6, Ganga Safed-2, Farm sameri, Narmda Moti.

**Bajra:** GHB-183, GHB-215, GHB-316, GHB-528.

**Green gram:** GM-3, GM-4 and K-851.

**Black gram:** T-9 and GU-1.

**Cowpea:** Gujarat cowpea-1, 2, 4 and Pusa Falguni.

**Pegion pea:** BDN-2, GTH-1, GT-100 and GT-101.

**Sesamum:** GT-2 or GT-3 for sesamum.

**Soybean:** Guj. Soyabean-1, Guj. Soyabean-2.

### Maharashtra:

**Bajra:** Shardha (RHRBH-8609), Saburi (RHRBH-8924) and ICTP-8203.

**Groundnut:** SB-11, Phule Pragati (JL-24), TG-26, Phule Vyas (JL-220), Phule Unap and TGP-41 for Madhya Maharashtra, Konkan Gaurav and Trombay Konkan (Tapora) for Konkan.

**Red gram:** ICPL-87, Vipula, B.M.S.R.-853 & BSMR-736 in Madhya Maharashtra.

**Cotton:** Indian improved varieties AKA-5, 7 and 8, Indian hybrid varieties like PKV DH-1, American improved varieties AKH-081, PKV-Rajat and AKH- 8828 for Vidarbha.

**Green gram:** Vaibhav, Kopergaon-1 and B.P.M.R- 145, Jalgaon 781, S-8, PhuleM-2.

**Sunflower:** EC-68414, Modern, SS-56, K.B.S.H-1, Bhanu, Phule Raviraj.

**Andhra Pradesh****Groundnut:** K-6, K-9, Narayani etc**Green gram (upland):** ML 267, LGG 450, LGG 460, LGG 407, Pusa 105, PDM 54**Black gram:** LBG 20, T 9, LBG 623, WBG 26.**Rice:** MTU1010, MTU1081, Swarna and BPT 5204 .**Karnataka****Red gram:** TTB-7, BRG-1 and Hyd-3C**Ragi:** Indaf-8, MR-1**Kerala****Bhundi:** Arka anamika and Susthira**Brinjal:** Haritha**Chilli:** Anugraha**Madhya Pradesh****Paddy:****Early:** JR-201, Poornima, JRH-5, JRH-8 (Hybrid)**Medium:** IR-36, IR-64, Pusa sugandha-5, MTU-1001, Pusa basmati-1, Mahamaya, Kranti**Late:** Syamla, Swarna**Jowar:** JJ-741, JJ-938, JJ-1022, JJ-1041 and CSV-15**Arhar:** Laxmi, Pragti, Asha, Jagrati, JKM-7 and JKM-189**Soybean:** JS-95-60, JS-93-05, JS-97-52, JS-80-21, JS-335, NRC-37**Green gram:** K-851, JHawahar moong-721, Pant Moong-4, TJM -3,**Black gram:** Pant U 30, RBU – 38, Jawahar Urd-3, JU 86.**Jhabua Hills Zone:****Soybean:** JS 93 05, JS 9560**Maize:** JVM-421**Pigeonpea:** TJT 501 etc.**Chhattisgarh****Rice:****Matasi soil-** Samleshwari, Aditya, Poornima, Annada, Danteshwari.**Dorsa soil-** MTU 1010, IR – 36, IR-64.**Kanhar soil-** Mahamaya, Karma Masuri, MTU 1001, etc.**Soybean:** JS 335, Indira, Soya-09, JS 93-05.

## Annexure II

### Contingency planning

#### Belghum

Medium to Deep black soil (If sowing not yet done up to July 2nd week).

Normal cropping:

Groundnut (- JL-24, GPBD-4) / Soybean / Black gram Green gram- R.Jowar / wheat / chickpea /safflower

Hybrid cotton

Green gram/ Black gram-R.Jowar / safflower Maize-Chickpea

Sunhemp-Tobacco

Change in cropping:

Avoid green gram, black gram, soybean, *kharif* sorghum.

Maize (Early maturing maize hybrids (Vivek-9), PEMH-2 / composites (Renuka)).

Sunflower, sole tobacco, groundnut, cotton, transplanted Chilli,

Chilli+ cotton(1:1)

Cotton+ Red gram(1:2)

Maize + Red gram(4:2)

Tobacco + Onion (1:2),

Hybrid Bajra

Agronomic Measures:

Apply enriched compost (FYM+ press mud + poultry manure) to tobacco.

Adopt 60 x 60 cm in cotton

Red loamy soil (If sowing not yet done up to July 2<sup>nd</sup> week).

Normal cropping:

Spreading groundnut (DSG-1) Hy.Bajra, Horse gram, Hybrid cotton (Bt.),Groundnut, Chilli,

Foxtail millet

Hy.Sorghum + Redgram (Maruti) (4:2)

Groundnut + Redgram (4:1)

Change in cropping:

Avoid sorghum+ Red gram.

Go for groundnut + Red gram

Bajra+Horse gram(2:2)

Bajra +Sesamum(4:2)

Bajra+ Moth bean (2:4)

Crop contingency:

Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.

Agronomic measures: Intercultivation, Conservation furrows, go for gap filling & crop residue mulching as a crop management measure.

For soil and water management, adopt:

Crop Residue Mulching

Spraying of MOP (2%) / Kaoline (1%)

Urea spray (1.5%) in maize

Protective irrigation

#### Dharwad

Crop contingency: If sowing not yet done up to July 1 week

Normal cropping system:

Maize (maize hybrids) - Chickpea ( A-1)

Soybean (JS 335)- Rabi Jowar( M 35-1)

Groundnut (GPBD 4, TMV2, JL 24) - R. Jowar /

Wheat (DWR 162)

Green gram (CM/SM)-Rabi Jowar/Wheat

Chilli ( B. Dabbi & B. Kaddi) + desi Cotton ( Jayadhar ) + Onion .

Change in cropping system:

Normal cropping can be continued up to July 15<sup>th</sup>, but avoid green gram – rabi Jowar ( M 35-1) cropping sequence.

Maize + Red gram ( 4:2)

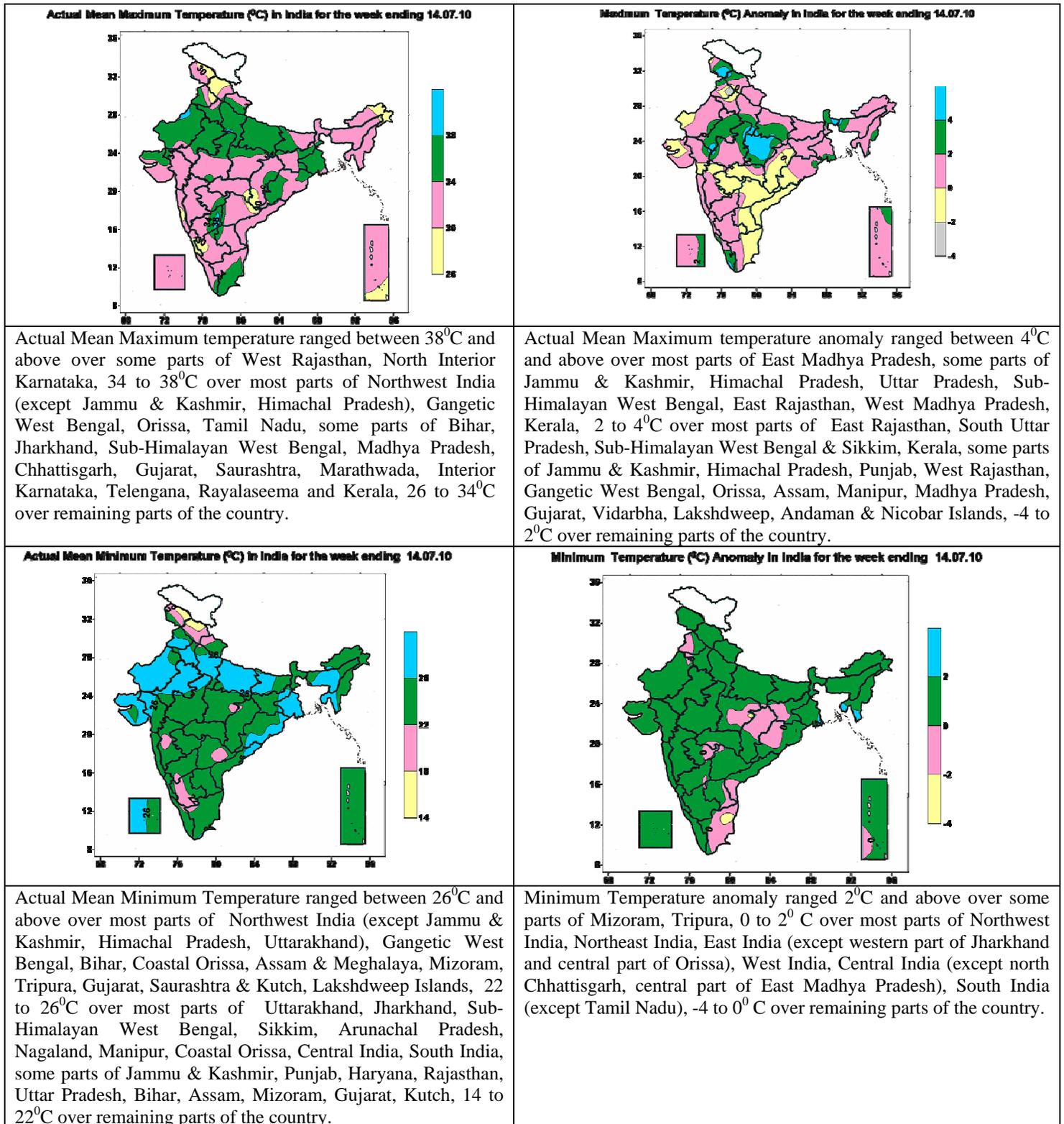
Groundnut + Red gram ( 4:2)

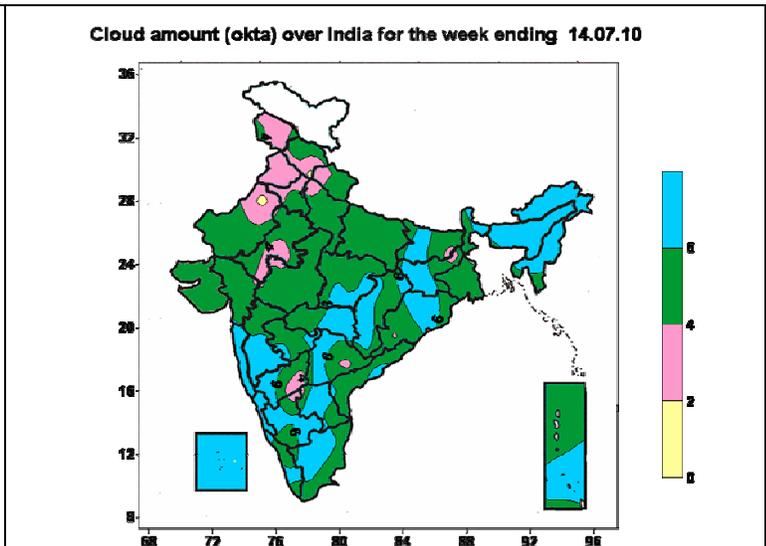
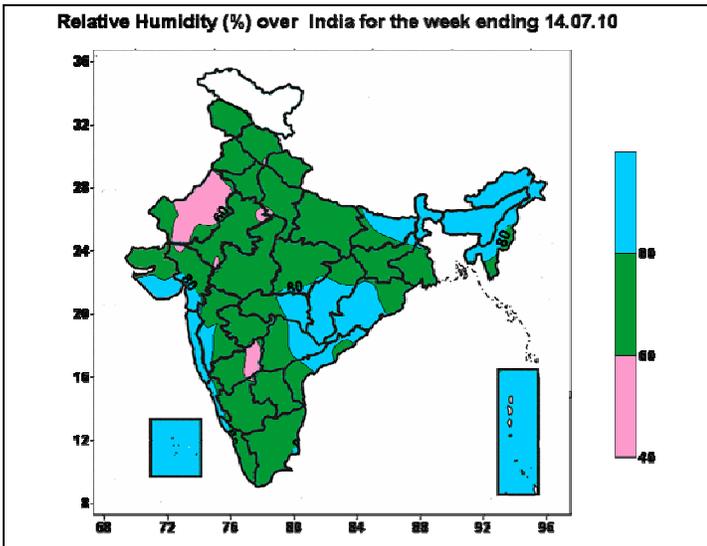
Agronomic measures:

Follow ridges & Furrow method of sowing.

### Annexure III

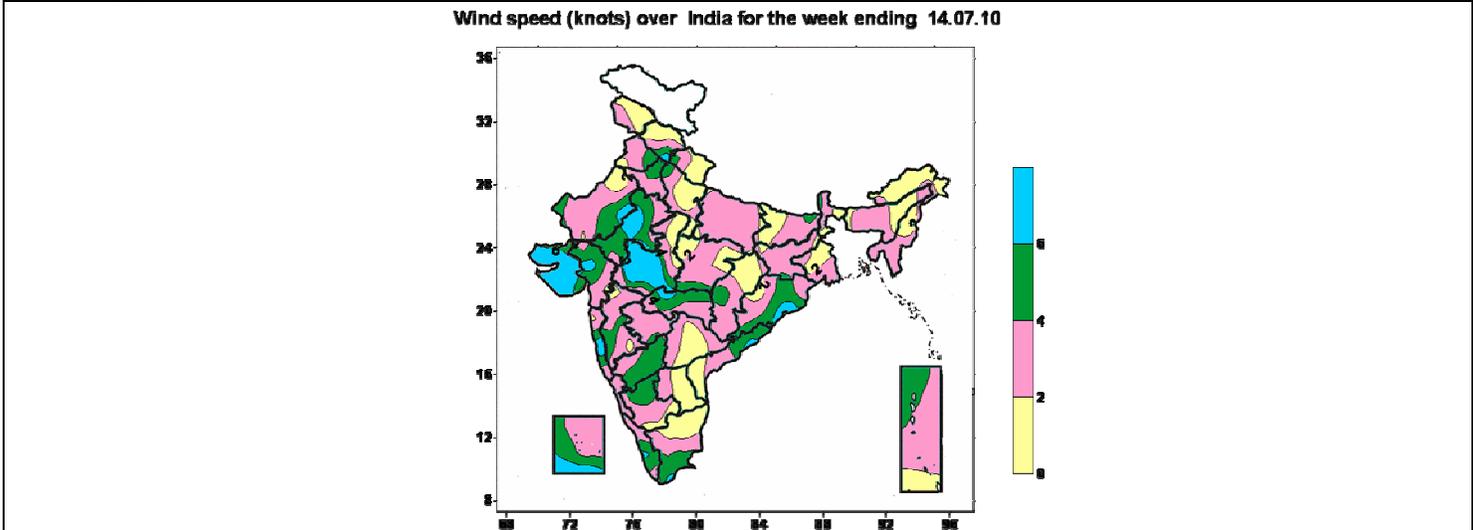
#### Contour maps for the week ending 14.07.10





Relative humidity between 80% and above over most parts of North East India, Sub-Himalayan West Bengal & Sikkim, Bihar, Orissa, Chhattisgarh, Kutch, Konkan & Goa, Coastal Karnataka, Lakshdweep, Andaman & Nicobar Islands, some parts of Jharkhand, East Madhya Pradesh, Gujarat, Madhya Maharashtra, Vidarbha, Coastal Andhra Pradesh, Telengana, Kerala, Tamil Nadu, 60 to 80% over most parts of North India (except West Rajasthan), Jharkhand, Gangetic West Bengal, Mizoram, Central India (except Chhattisgarh), West India (except Kutch, Konkan & Goa), Andhra Pradesh, Tamil Nadu, South & North Interior Karnataka, Kerala, 40 to 60% over remaining parts of the country.

Cloud amount 6 to 8 okta over most parts of North East India, Sub-Himalayan West Bengal, Jharkhand, North Orissa, Chhattisgarh, Vidarbha, Madhya Maharashtra, Konkan & Goa, South India (except Coastal Andhra Pradesh, Kerala, Northern part of Andman & Nicobar Islands), some parts of Bihar, Sikkim, East Madhya Pradesh, Marathwada, 4 to 6 okta over most parts Uttarakhand, Uttar Pradesh, Haryana, Delhi, Rajasthan, East India, Central India, Gujarat, Saurashtra & Kutch, Marathwada, Coastal Andhra Pradesh, Telengana, Kerala, Coastal Tamil Nadu, Andaman & Nicobar Islands, some parts of Jammu & Kashmir, Himachal Pradesh, Mizoram, Tripura, Interior Karnataka, Rayalaseema, 0 to 4 okta over remaining parts of the country.



Wind speed ranged between 6 knots and above over most parts of West Madhya Pradesh, Saurashtra & Kutch, some parts of Himachal Pradesh, Rajasthan, Orissa, Vidarbha, Konkan, Gujarat, Kerala, Coastal Andhra Pradesh, Lakshdweep Islands, 4 to 6 knots over most parts of East Rajasthan, Central Orissa, Gujarat, North Interior Karnataka, Kerala, some parts of Himachal Pradesh, Uttarakhand, Punjab, Haryana, West Uttar Pradesh, West Rajasthan, Bihar, Jharkhand, Central India, Saurashtra & Kutch, Konkan, Madhya Maharashtra, Marathwada, North Coastal Andhra Pradesh, South Interior Karnataka, Tamil Nadu, Lakshdweep Islands, Andaman & Nicobar Islands, 0 to 4 knots over remaining parts of the country.