

Significant rainfall occurred over most of the districts in Kerala, Tamil Nadu and at a few districts in Coastal Andhra Pradesh and South Interior Karnataka during last week. Rainfall for the above mentioned regions during last week is given at page no. 5.

Isolated rainfall or mainly dry weather is likely to prevail over the Country for next three days except Tamil Nadu and Kerala where rain / thundershower is likely at a few places during next 48 hours and decrease thereafter. Farmers are advised to apply irrigation and undertake intercultural operation and application of fertilizers and plant protection measures in the regions except Tamil Nadu and Kerala. Weather forecast map is provided at page no. 6.

Crop situation and advisories for the sub-divisions in the southern peninsula are given below:

1. **Tamil Nadu:** Farmers are advised to continue transplanting of *samba* rice and nursery sowing of late sown short duration varieties of *samba* rice.
2. **Kerala:** Monitor *mundakan* rice for rice bug incidence and undertake plant protection measures. Mulching may be undertaken to conserve soil moisture in coconut and arecanut fields.
3. **South Interior Karnataka:** Farmers in the Eastern dry zone are advised to take up intercultural operation and top dressing with urea in the standing crops like ragi.
4. **North Interior Karnataka:** In North Dry Zone, sowing of sunflower, safflower, *rabi* jowar, chickpea and wheat may be completed. In North East Dry Zone, farmers may undertake sowing of *rabi* sorghum. Sunflower can be sown upto the end of October under irrigated conditions.
5. **Coastal Andhra Pradesh:** Complete sowing of *rabi* pulses like black gram, red gram and green gram. Infestation of brown plant hopper and sheath blight is noticed in rice in the North Coastal Zone of Andhra Pradesh. Farmers are advised to spray Acephate @ 1 g / litre of water at the base of the hill for brown plant hopper and Hexaconazole @ 2 ml / litre of water for sheath blight.
6. **Royalaseema:** Continue sowing of Bengal gram. Leaf spot in groundnut in Cuddapah district of Southern zone of Andhra Pradesh is noticed. Farmers are advised to spray carbendazim 0.1% or mancozeb 0.2% to control the disease. In some district of Scarce Rainfall zone of Andhra Pradesh, ground nut crop is facing moisture stress. Continue sowing of Bengal gram.

Continued on Page No. 2.



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

Executive Summary

(Continued from page no. 1)

In the remaining parts of the country, southwest monsoon has withdrawn and *kharif* crops are at grain formation to harvesting stages. Crop status and advisories for those subdivisions are given below:

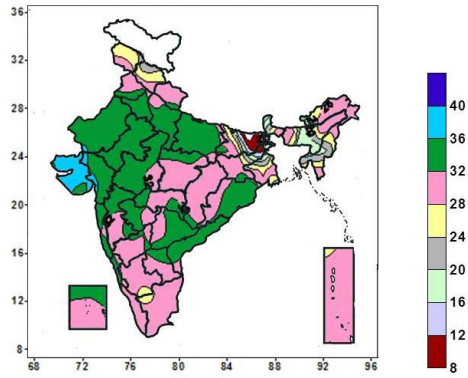
1. **Saurashtra & Kutch:** In North Saurashtra Zone, carry out harvesting of early sown groundnut. Undertake sowing of gram and mustard, if facilities of 2-3 irrigations are available. Harvest already matured green gram and other pulses in North West Zone. Apply irrigation in groundnut, bajra and jowar. Farmers are advised to spray quinalphos 20 ml in 10 litres of water for control of semilooper in castor and in cotton, carbendazim 10 gm to prevent grey mildew and acetemaprige 5 gm in 10 litres of water to control aphid, jassids, thrips etc.
2. **Gujarat region:** Under high temperature condition, apply irrigation to crops like castor, groundnut, fennel etc. Continue land preparation for sowing of *rabi* crops, make crop planning and procure farm inputs for *rabi* crops. Undertake nursery raising for *rabi* vegetables. Carry out sowing of castor. Wait for sowing till the maximum temperature become down around 30°C for transplanting of cabbage, brinjal, cauliflower and sowing of onion, raddish and garlic select improved cultivars.
3. **Madhya Maharashtra:** In North Madhya Maharashtra as mainly dry weather is expected during next 5 days, farmers are advised to continue picking of fully opened cotton boll. Farmers are advised to continue sowing of *rabi* jowar, safflower, maize and rainfed gram and wheat with the help of residual soil moisture in the field. Prevailing weather is favourable for cultivation of carnation flowers in Pune region and also undertake sowing of rainfed wheat in second fortnight of October.
4. **Marathwada:** Farmers are advised to continue sowing of *rabi* jowar, safflower, maize and rainfed gram with the help of residual soil moisture in the field. Under prevailing weather incidence of leaf curl is observed in chilli in Marathwada region, spray Fipronil 5 % @ 20 ml in 10 litres of water. Also Pomegranate is at fruit (Mrigbahar fruit) development stage in Marathwada region. Under prevailing weather there may be infestation of oily spot, spray 1 % Bordeaux mixture or Copper oxy chloride @ 25 g in 10 litres of water.
5. **Vidarbha:** Farmers are advised to complete harvesting of already matured *kharif* crops. Farmers are also advised to continue sowing of *rabi* safflower, maize and rainfed gram with the help of residual soil moisture in the field. Start harvesting of already matured late rice variety.
6. **Konkan & Goa:** As early and mid-late varieties of *kharif* rice are at maturity stage in Konkan Division, farmers are advised to harvest the crops.
7. **East Madhya Pradesh:** Undertake sowing of *rabi* crops and *rabi* vegetables.
8. **West Madhya Pradesh:** Undertake sowing of irrigated and rainfed crops of wheat, gram, pea, potato, mustard etc.
9. **Chattisgarh:** Farmers are advised to undertake transplanting of vegetable crops. After the harvesting of rice crop, sow gram and lathyrus.
10. **Punjab:** In Western Zone of Punjab complete harvesting of rice, continue picking of cotton. Start sowing of raya, radish, turnip, carrot and barseem or Lucerne in mixture with oats and sarson. transplanting of main season varieties of cauliflower and cabbage, also complete sowing of autumn potato crop. In Undulating Plain Zone in Punjab, complete planting of sugarcane as early as possible and need based irrigation may be given to sugarcane crop.. Undertake sowing of gram, peas, raya and gobhi sarson. In Western Plain Zone of Punjab raise nursery for sowing of onion and garlic. Undertake planting of Autumn sugarcane in this week. Start sowing of mid season pea for green pods as well as tomato from mid-October. Complete sowing of autumn potato crop.
11. **Haryana:** Farmers in Eastern Zone in Haryana are advised to prepare field and start sowing of mustard crop with certified seeds. Undertake picking of cotton when the dew is dried up. Start harvesting of matured bajra. There is mild attack of hopper and moderate to severe attack of leaf folder on basmati rice in Western Zone; spray the crop with 250 ml Monocrotophos, or dusting of Methyl parathion @ 10 kg / acre.
12. **Delhi:** Continue sowing of early mustard, pea, planting of early potato, sowing of carrot, sarson saag, spinach, radish, fenugreek, coriander, bathua, turnip etc and oat and barseem for fodder purpose. Transplant mature seedlings of cauliflower, cabbage, broccoli and tomato in raised bed. Nursery preparation of these crops should be started for late transplanting which mature in December or January. False smut may appear in rice due to present weather conditions. Spraying of Blitox 50 @ 500 grams per hectare at 10 days interval (2-3 times) is advised.
13. **Himachal Pradesh:** Continue sowing of barley in the high altitudes and complete sowing of potato in the lower hill areas. Complete sowing of toria and early varieties of pea, raddish, turnip, coriander, cabbage,

Knol-khol, broccoli, parsley, lettuce, fennel and cauliflower. In the Mild Hills Sub Humid Zone, for protection from attack of cut worm apply 80ml 20 EC chloropyriphos in 1kg sand in fields, and attack of Fruit borer is observed in bhindi and brinjal, spray carbaryl 50wp @2g per litre of water or endosulphan @1.5ml per litre of water for control.

14. **Jammu & Kashmir:** Undertake sowing of toria intercropped with gobi sarson, berseem and harvesting of moong, vegetables, maize, *kharif* fodder, early sown rice crops and mosmmi and sweet lime. Farmers are advised to undertake sowing of vegetables and mustard.
15. **Uttarakhand:** Continue harvesting and threshing of matured rice crop during this week. In the hilly region, farmers are advised to go for sowing of vegetable crops like vegetable pea, coriander, spinach, radish and mentha etc. and sowing of mustard. Supplemental irrigation should be given after earthing up and weeding in crops like brinjal, chilli, lady's finger etc.
16. **West Rajasthan:** Sowing of taramira may be carried out. Prepare field for sowing of the *rabi* crops like mustard, gram. Start the harvesting of guar.
17. **East Rajasthan:** Undertake harvesting of *kharif* crops. Start field preparation and sowing of *rabi* crops like mustard and other horticultural crops.
18. **East Uttar Pradesh:** Farmers are advised to harvest short and medium duration varieties of rice, apply irrigation in long duration varieties of rice, start sowing of early potato, onion, garlic, radish, Autumn sugarcane, maize, leafy vegetables / tuber crops, mustard, vegetable pea, lentil & gram, undertake thinning in toria, intercultural operation in pea, urd, mung and transplanting of cauliflower, brinjal etc. Farmers are also advised to prepare land for sowing of tomato, chilli, brinjal, cabbage, cauliflower. Sowing of barseem may be undertaken as fodder crop.
19. **West Uttar Pradesh:** Farmers are advised to undertake transplanting of brinjal, chilli and okra and start field preparation and sowing of maize, toria, lahi, leafy vegetables, tuber crops, mustard, pea, lentil and gram. Also start sowing of intercrops like rainfed wheat and rai in Bundelkhand Zone.
20. **Bihar:** Farmers are advised to apply life saving irrigation in rice crop, which is at grain formation/maturity stage. Farmers are also advised to prepare land for sowing of gram, peas, maize, mustard, sunflower and *rabi* vegetables. Farmers are advised to harvest the matured maize and early varieties of rice. Farmers are advised to provide irrigation and undertake intercultural operations like weeding/hoeing and top dressing of urea in early transplanted cauliflower, chilli, brinjal, tomato etc. Prepare well nursery bed for sowing of autumn planted tomato, cauliflower, chilies, tomato, Palak, carrot, radish, khnol khol, turnip, beet, garlic and cabbage. Farmers are advised to prepare the land for *Rabi* crops. Temperature condition is favourable for cultivation of Oyster mushroom and sowing of pea crop.
21. **Jharkhand:** Farmers are advised to undertake sowing of toria, *rabi* crops like gram, lentil, linseed, pea, mustard, kulthi, African marigold or French marigold and planting of potato and sowing of vegetables like turnip, spinach, carrot etc.
22. **Orissa:** Farmers are advised to sow mustard, sunflower, green pea and sesame. Undertake raising of nursery for *rabi* vegetables.
23. **Nagaland, Manipur, Mizoram & Tripura, Arunachal Pradesh and Assam & Meghalaya:** Undertake land preparation and nursery sowing of winter vegetables like cauliflower, radish, tomato, brinjal, Knolkhol, carrot and spinach. 4-6 weeks aged seedlings may be transplanted to the main field in Assam. Undertake land preparation and sowing of mustard and *rabi* maize in Meghalaya. Undertake sowing of *rabi* maize, toria, sesame and lentil in Tripura.
24. **Sub Himalayan West Bengal:** Start land preparation for sowing and transplanting of early cauliflower, radish, broccoli, cabbage and onion. Farmers are also advised to harvest maize.
25. **Sikkim:** Farmers are advised to maintain 3-5 cm standing water in flowering stage of rice.
26. **Gangetic West Bengal:** Undertake land preparation for sowing of mustard and onion and planting of pointed gourd and seasonal flower like gladiolus.
27. **Telangana:** Incidence of jassids and leaf spot is noticed on BT Cotton in the Southern Telangana zone of Andhra Pradesh. To prevent the flower, square drop and to control jassids, spray Planofix NAA @ 2.5 ml + Monocrotophos @ 16 ml per 10 litres of water, to control leaf spot, spray Copper-Oxy-Chloride @ 30 g and Plantomycin @ 2 g per 10 litres of water.
28. **Coastal Karnataka:** Harvest the already matured rice crops.

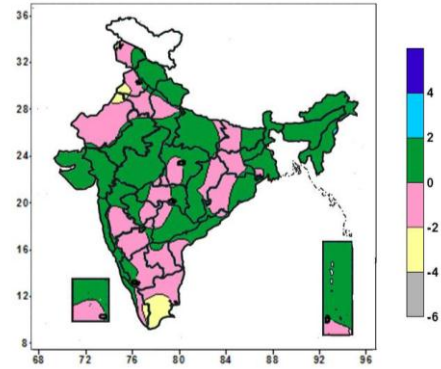
Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 25.10.2012

Actual Mean Maximum Temperature ($^{\circ}\text{C}$) in India for the week ending 24.10.2012



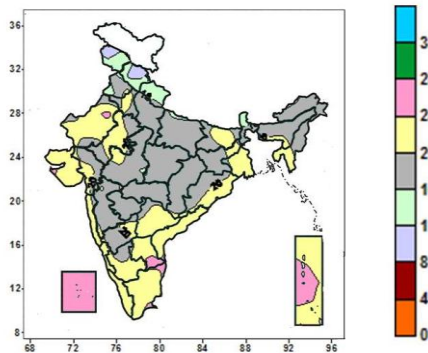
Actual Mean Maximum temperature ranged 36°C and above over many parts of Saurashtra & Kutch, 28 to 32°C over most parts of Chattisgarh, south & North Interior Karnataka, Kerala, Tamilnadu, Andamaan & Nicobar Islands, Uttarakhand and some parts of Northeast India, West Madhya Pradesh, Madhya Maharashtra, Konkan & Goa, Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh, Bihar, 24 to 28°C over some parts of Jammu & Kashmir, Himachal Pradesh, Tamil Nadu, South Interior Karnataka, 32 to 36°C over remaining parts of the country.

Maximum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 24.10.2012



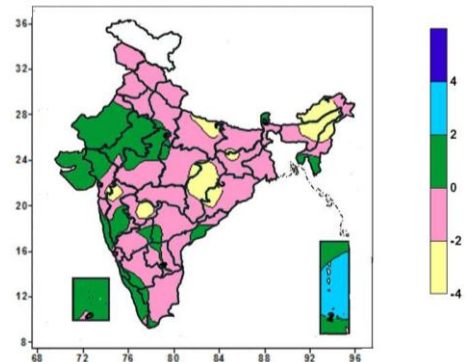
Actual Mean Maximum temperature anomaly ranged between -2 to 0°C over many parts of West Rajasthan, Punjab, Haryana, Delhi, Jammu & Kashmir, West Uttar Pradesh, Bihar, Jharkhand, Raylaseema, Tamil Nadu, Kerla, North & South Interior Karnataka, Vidarbha, Orissa, some parts of Uttar Pradesh, Chattisgarh, Madhya Pradesh, Madhya Maharashtra, Marathwada, Lakshadweep, Andaman & Nicobar Islands, -4 to -2°C over some parts of Haryana, West Rajasthan, Tamil Nadu, Kerla, 0 to 2°C over rest of the country.

Actual Mean Minimum Temperature ($^{\circ}\text{C}$) in India for the week ending 24.10.2012



Actual Mean Minimum Temperature ranged between 24°C and above over many parts of Lakshadweep Islands, some parts of Coastal Andhra Pradesh, Raylaseema, West Rajasthan, Andaman & Nicobar Islands, 20 to 24°C over many parts of Rajasthan, Saurashtra & Kutch, Bihar, Gangetic West Bengal, South India (except North Interior Karnataka), Andaman & Nicobar Islands, some parts of Haryan, Delhi, Gujarat, West Madhya Pradesh, Coastal Orissa, North Interior Karnataka, 12 to 16°C over many parts of Jammu & Kashmir, some parts of Himachal Pradesh, Punjab, Uttarakhand, Haryana, and between 16 to 20°C over remaining parts of the country.

Minimum Temperature ($^{\circ}\text{C}$) Anomaly in India for the week ending 24.10.2012



Minimum Temperature anomaly ranged above 2°C over many parts of Andaman Nicobar Islands, 0 to 2°C Rajasthan, Gujarat, Saurashtra & Kutch, Tripura, Konkan & Goa, Madhya Maharashtra, Kerala, Lakshadweep, some parts of Sikkim, Andhra Pradesh, Tamil Nadu, Coastal & South Interior Karnataka, Andaman & Nicobar Islands, -4 to -2°C over many parts of Arunachal Pradesh, Assam & Maghalaya, Chattisgarh, some parts of East Uttar Pradesh, East Madhya Pradesh, Jharkhand, Madhya Maharashtra, Marathwda, Orissa, East Madhya Pradesh, -2 to 0°C over remaining parts of the country.

Distribution of rainfall of the country during week ending on 24.10.2012

State/Districts	Actual	Dep (%)
Karnataka		
Coastal Karnataka		
Dakshin Kannada	50.7	14
Udupi	28.2	-33
Uttar Kannada	6.7	-75
North Interior Karnataka		
Bagalkote	12.9	-41
Belgaum	16.5	-35
Bidar	2.8	-84
Bijapur	18.2	-8
Dharwad	5.6	-79
Gadag	12.3	-55
Gulbarga	2.3	-87
Haveri	7.2	-71
Koppal	23.9	23
Raichur	0.0	-100
Yadgir	2.7	-87
South Interior Karnataka		
Bangalore Rural	11.1	-62
Bangalore Urban	12.4	-61
Bellary	16.4	-29
Chamarajnagar	22.7	-32
Chichballapur	24.9	-8
Chickmagalur	15.3	-56
Chitradurga	7.5	-66
Davangere	9.5	-58
Hassan	8.5	-72
Kodagu	14.1	-65
Kolar	39.1	56
Mandya	7.6	-74
Mysore	6.1	-79
Ramnagara	22.4	-32
Shimoga	20.9	-16
Tumkur	7.4	-72
Kerala		
Alappuzha	71.0	-4
Kannur	125.0	90

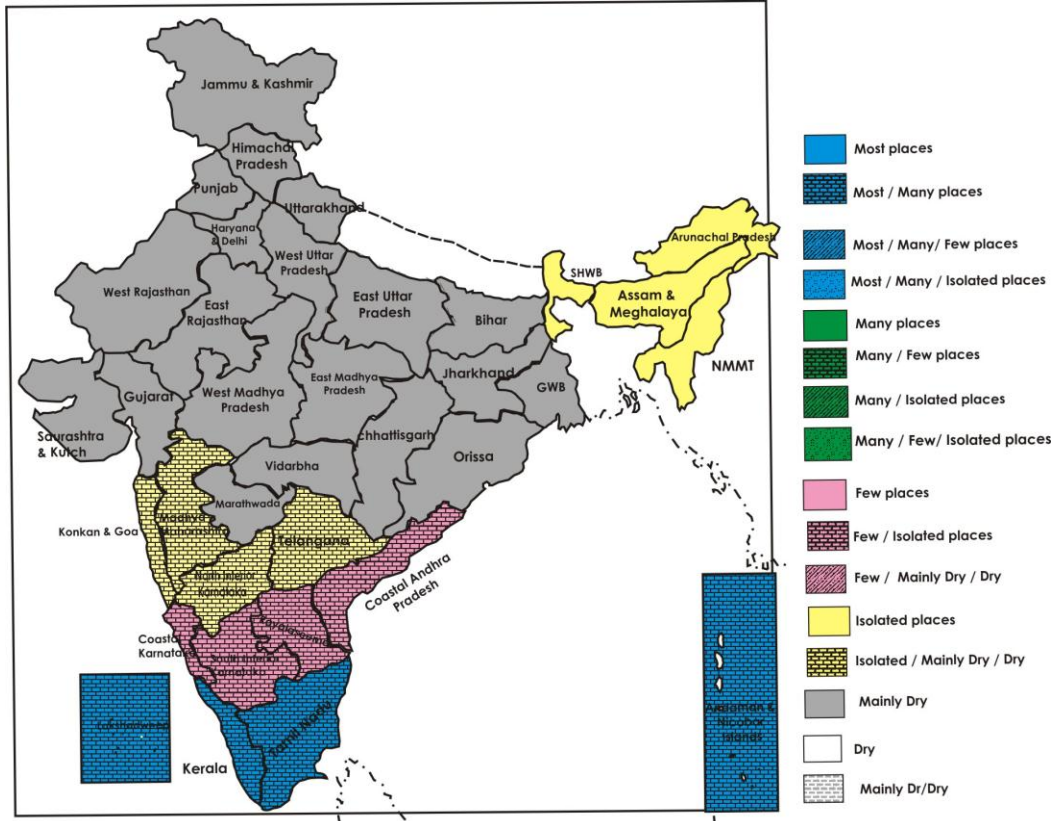
Legends:

Ernakulam	52.0	-42
Idukki	80.0	52
Kasaragod	80.0	72
Kollam	97.0	8
Kottayam	125.0	85
Kozhikode	133.0	136
Malappuram	23.0	-68
Palakkad	43.0	-30
Pathanamthitta	102.0	-17
Thiruvananthapuram	75.0	2
Thrissur	94.0	38
Wyanad	22.0	-59
Tamil Nadu		
Ariyalur	163.9	203
Chennai	244.2	186
Coimbatore	61.2	48
Cuddalore	310.7	370
Dharmapuri	50.7	23
Dindigul	92.2	87
Erode	43.7	12
Kanchipuram	194.7	180
Kanyakumari	117.7	62
Karikal	353.1	362
Karur	77.1	102
Krishnagiri	38.2	6
Madurai	78.5	39
Nagapattinam	281.9	255
Namakkal	44.7	18
Nilgiris	150.0	166
Perambalur	98.6	84
Puducherry	240.5	190
Pudukottai	149.2	228
Ramanathapuram	188.6	238
Salem	71.4	60
Sivaganga	173.0	241
Thanjavur	194.4	267
Theni	57.8	28
Tirunelveli	227.8	330
Tirupur	82.3	98

Tiruvallur	180.6	220
Tiruvannamalai	137.7	160
Tiruvarur	277.2	325
Toothukudi	135.9	175
Trichy	106.3	150
Vellore	95.8	149
Villupuram	222.2	328
Virudhunagar	96.6	90
Andhra Pradesh		
Coastal Andhra Pradesh		
East Godavari	6.3	-87
Guntur	35.4	0
Krishna	37.8	0
Nellore	130.1	65
Prakasam	71.1	59
Sirkakulam	0.0	-100
Visakhapatnam	4.3	-91
Vizianagram	2.0	-96
West Godavari	22.4	-49
Telangana		
Adilabad	0.0	-100
Hyderabad	7.6	-57
Karimnagar	0.3	-98
Khammam	17.3	4
Mehabubnagar	1.5	-90
Medak	7.2	-61
Nalgonda	11.2	-42
Nizamabad	1.7	-92
Rangareddy	6.8	-55
Warangal	4.3	-72
Royalaseema		
Anantapur	10.8	-49
Chittoor	78.8	102
Cuddapah	55.1	68
Kurnool	5.7	-73

	(20% or more) excess rainfall		(-60 to -99 %) scanty rainfall
	(-19 to +19%) normal rainfall		(-100%) no rainfall
	(-20 to -59%) deficient rainfall	**	Data not available

Weather Forecast (Valid upto 0830 hours of 28th October, 2012)



Major Feature of Weather Forecast up to 0830 hours IST of 28th October, 2012

- Rain/thundershowers would occur at most places over Andaman & Nicobar Islands, Tamilnadu, Lakshadweep and Kerala during next 48 hours and at many places thereafter.
- Rain/thundershowers would occur at a few places over south coastal Andhra Pradesh, Rayalaseema, south interior & coastal Karnataka during next 48 hours and at one or two places thereafter.
- Rain/thundershowers would occur at one or two places over Telangana, north interior Karnataka, south Konkan & Goa and south Madhya Maharashtra during next 48 hours and mainly dry weather thereafter.
- Rain/thundershowers would occur at one or two places over Sub-Himalayan West Bengal & Sikkim and northeastern states.
- Rain/snow would occur at one or two places over Jammu & Kashmir, Himachal Pradesh and Uttarakhand during next 24 hours and mainly dry weather thereafter.
- Weather would be mainly dry over rest of the country.
- Slight fall in night temperatures and rise in day temperatures over northwest India during next 2 - 3 days.

Weather Warning during next 3 days

- Heavy rainfall would occur at one or two places over Tamilnadu, Kerala and Lakshadweep during next 48 hours.
- Heavy rainfall would occur at one or two places over Andaman & Nicobar Islands during next 24 hours and heavy to very heavy during subsequent 48 hours.

Weather Outlook for subsequent 4 days up to 0830 hours IST of 1st November, 2012

- Rain/thundershowers at many places would continue over south peninsular India, Lakshadweep and Andaman & Nicobar Islands with heavy fall over coastal Tamilnadu.
- Mainly dry weather would occur over northwest, central and east India.

Zonewise Agromet Advisories

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

- **Realised Rainfall:** Weather remained mainly dry over the States of the region.
- **Rainfall Forecast:** weather will be mainly dry or rain / thundershowers would occur at one or two places over the states.
- **Advisories:**
 - Farmers are advised to apply irrigation to the standing crops over the States.
 - Farmers in Hill Zone of Assam are advised to undertake land preparation and nursery sowing of winter vegetables. 4-6 weeks aged seedlings may be transplanted to the main field. Planting of coconut can be done in this month in low lying areas with irrigation facilities.
 - Farmers in Lower Brahmaputra Valley Zone of Assam are advised to undertake nursery sowing of cauliflower, cabbage, knolkhol, winter brinjal and select well drained sandy loam soil for sowing of carrot. Farmers are also advised to prepare land for sowing of rapeseed and mustard and planting of potato.
 - Farmers in Upper Brahmaputra Valley Zone and North Bank Plain Zone of Assam are advised to undertake sowing of brinjal, knolkhol, cauliflower and cabbage. Farmers are also advised to undertake land preparation for sowing of rapeseed and mustard.
 - Farmers in North Bank Plain Zone of Assam are advised to undertake land preparation and sowing of rapeseed & mustard and planting of potato. Farmers are also advised to undertake sowing of cauliflower, cabbage, knolkhol, brinjal and tomato.
 - Farmers in Central Brahmaputra Valley Zone are advised to undertake nursery bed preparation for cole crops and winter brinjal. The seedlings of cole crops may be transplanted when they become 30-35 days old.
 - Farmers in Barak Valley Zone of Assam are advised to start planting seedlings of brinjal in the main field and select sandy loam soil for cultivation of potato. Farmers are also advised to undertake field preparation for planting of sugarcane (Autumn planting). Select upland sandy loam soil for the cultivation of cauliflower.
 - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to undertake nursery preparation and transplanting of the seedlings of late varieties of cauliflower, cabbage, broccoli and knolkhol and seedbed preparation of tomato and radish. Farmers are also advised to prepare field for sowing of maize and planting of potato and harvest pineapple on colour breaking stage.
 - In Mild Tropical Hill Zone of Mizoram, farmers are advised to harvest okra, bean, cowpea and chow chow and undertake land preparation for nursery sowing of tomato and cole crops.
 - In Mild Tropical Hill Zone of Nagaland, farmers are advised to harvest *jhum* rice. Farmers are also advised for land preparation and transplanting of the seedlings of tomato and cabbage.
 - Farmers in Sub Tropical Plain Zone of Manipur are advised to undertake land preparation and sowing of pea and zero tillage rapeseed and planting of potato just after the harvest of the rice crop and nursery raising of cabbage, cauliflower, broccoli, onion and capsicum. Farmers are also advised to harvest soybean, groundnut and blackgram.
 - In Temperate Sub Alpine Zone of Meghalaya, farmers are advised to undertake nursery raising of cole crops and other winter vegetables. Farmers are also advised to undertake sowing of *rabi* maize in low and medium altitude region.
 - In Mild Tropical Plain Zone of Tripura, farmers are advised to prepare seedbed for sowing of winter vegetable in the harvested *aman* rice field. Farmers are also advised to undertake sowing of *rabi* maize, toria, sesame and lentil.
 - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
 - In Hill Zone of Assam, infestation of rice blast and stem borer may occur in *sali* rice. To control rice blast, spraying of Hinosan @ 1 ml / litre of water and to control stem borer, spraying of Chloropyriphos (20%) @ 2 ml / litre of water may be carried out.
 - In Lower Brahmaputra Valley Zone of Assam, infestation of leaf folder, *Hipsa* and sheath blight is reported in *sali* rice; spray Chloropyriphos 20 EC or Monocrotophos 40 EC @ 1.5 ml per liter of water for *Hipsa* and Nuvacron @ 5 ml per litre of water for leaf folder. To control sheath blight,

spray Carbendazim @ 1 g / litre of water twice, first at the appearance of the symptoms and the other at 10 days after the first spraying.

- In Mid Tropical Hill zone of Mizoram, there is chance of attack of tikka disease in groundnut; spray Carbendazim @ 0.5 g / litre of water.
- Stages of major crops are mentioned in Annexure I.

- **Animal Husbandry**

- In North Bank Plain Zone and Bramhaputra Valley Zone of Assam and Sub Tropical Plain Zone of Manipur and Mid Tropical Zone of Tripura, farmers are advised to vaccinate cattle, pigs and buffaloes against FMD, HS, BQ.
- In Mild Tropical Hill Zone of Mizoram and Sub Tropical Plain Zone of Manipur, farmers are advised to deworm cattle against Fasciolosis and Endoparasite, vaccinate poultry against Ranikhet and Coccidiosis, deworm pigs and vaccinate against swine fever.

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

- **Realised rainfall:** No significant rainfall occurred in the State during last week.
- **Rainfall Forecast:** Rain / thundershower would occur at one or two places over sub-Himalayan West Bengal and Sikkim during the period. Weather would be mainly dry over the remaining parts of the region.
- **Advisories:**
 - Farmers are advised to apply irrigation to the standing crops over the States.
 - In South Bihar Alluvial Zone farmers are advised to prepare field for sowing of gram, lentil, peas, sunflower and mustard. Farmers are advised to provide irrigation and undertake intercultural operations like weeding/hoeing and top dressing of urea in early transplanted cauliflower, chilli, brinjal, tomato etc. Prepare nursery bed for sowing of tomato, cauliflower, chilies, palak, carrot, radish, khnolkhol, turnip, beet, garlic and cabbage.
 - Farmers in North East Alluvial Plain Zone of Bihar are advised for harvesting of early variety of rice. Prepare land for pulses, oilseeds and *rabi* vegetables.
 - In North West Alluvial Plain Zone of Bihar, farmers are advised to harvest matured rice crop. Undertake transplanting of cabbage and cauliflower and start field preparation for planting of potato. Farmers are advised to prepare the land for *rabi* crops. Temperature condition is favourable for cultivation of Oyster mushroom and sowing of pea.
 - Farmers of East and South Eastern Coastal Plain Zone of Orissa are advised to undertake sowing of rainfed mustard, rainfed groundnut and sunflower.
 - The farmers of Mid Central Table Land Zone of Orissa are advised to undertake propping of sugarcane.
 - Farmers of North Eastern Plateau Zone of Orissa are advised to undertake sowing of toria and start transplanting of winter vegetables like cauliflower, cabbage, chilli tomato, brinjal etc. Spray bioinsecticides like Halt or Delfin @ 1 g per litre of water to control different insects in cauliflower and cabbage.
 - In Central and North Eastern Plateau Zone of Jharkhand, farmers are advised to undertake sowing of short duration varieties of arhar, groundnut, jowar, soybean, turmeric and okra for inter cropping. Farmers are also advised to sow kulthi, potato, green pea and African marigold or French marigold.
 - In Western Plateau Zone of Jharkhand, farmers are advised to sow kulthi, green pea and grow African marigold or French marigold. After harvesting of moong and urad, undertake sowing of toria immediately utilising residual soil moisture. Farmers are advised to sow *rabi* crops like gram, lentil, linseed, pea, mustard, potato etc. Farmers are also advised to raise the seedlings of winter vegetables like cauliflower, cabbage, chilli, tomato and brinjal etc. and sow directly the seeds of radish, turnip, spinach, carrot etc. As dry weather is likely to prevail, farmers are advised to dry the cobs of maize in the open sun before storage.
 - In Coastal Saline Zone of West Bengal, farmers are advised to start intercultural operation like weeding and earthing up in winter vegetables (spinach, coriander, hybrid radish, tomato etc.) and also prepare land for sowing of mustard.

- In New Alluvial Zone of West Bengal, farmers are advised to undertake land preparation and seedling for late varieties of cauliflower and cabbage. Farmers are also advised to start land preparation for sowing of mustard, Autumn sugarcane and planting of pointed gourd.
- Farmers in Laterite and Red Soil Zone of West Bengal are advised to prepare main field for transplanting of winter vegetables like radish, broccoli, cabbage and cauliflower etc. Farmers are also advised to undertake harvesting of matured *aman* rice and sowing of onion and planting of potato.
- Farmers in Old Alluvial Zone of West Bengal are advised to start seedbed preparation for winter vegetables.
- Farmers in Terai Zone of West Bengal are advised to prepare main field for transplanting of cauliflower, cabbage, brinjal and tomato. Farmers are also advised for transplanting of gladiolus.
- Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
- Due to humid and wet weather in Terai Zone and Old Alluvial Zone of West Bengal, neck blast, BPH, GLH and sheath blight may be found in rice. For management of neck blast, spray Bavistin 1 g / litre of water. Spray Clothianidin 50 WDG @ 0.1% or Thiomathoxam 25 WG @ 0.2 g / litre of water to protect BPH and GLH. To prevent sheath blight, spray Validamycine @ 2 ml / litre of water or Carbendazim @ 1 g / litre of water.
- Due to favourable weather condition in Hill Zone of West Bengal, fruit borer and shoot borer may attack in brinjal, Okra, tomato and chilli; for the management of fruit borer and shoot borer, Dichlorvos may be sprayed @ 0.75 ml / litre of water. Aphids, lemon butterflies and powdery mildew may infest orange. For their protection spraying should be done with Endosulfan @ 2 ml / litre of water. For protection against powdery mildew wettable sulphur should be sprayed @ 2 g / litre of water.
- Under present hot and humid situation in Laterite and Red soil Zone of West Bengal, sheath blight may attack *aman* rice. Spray Carbendazim @ 1.5 g / litre of water. In case of stem borer attack, spray Carbosulfan 25 EC @ 2 ml / litre or Profenphos 40% + Cypermethrin 4% @ 1 ml / litre of water.
- Stages of major crops are mentioned in Annexure I.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Mainly dry weather prevailed during the period over the States during last week.
- **Rainfall Forecast:** Mainly dry weather is likely to prevail over the States of the region.
- **Advisories:**
 - As mainly dry weather is likely to prevail, farmers are advised to complete harvesting of matured *kharif* jowar, groundnut and early maturing and mid late rice variety. Undertake field preparation for *rabi* crops.
 - Farmers in Madhya Maharashtra, Marathwada and Vidarbha are advised to complete sowing of *rabi* jowar, maize and rainfed gram with the help of residual soil moisture. Undertake thinning in 15-20 old days *rabi* jowar.
 - As there was no significant rain in all the districts of the State during last week and no significant rain is expected during next 5 days, farmers are advised to apply irrigation to sugarcane and vegetables as per requirement.
 - As early maturing and mid late varieties of *kharif* rice are in maturity stage in Konkan, Kolhapur, Nashik and Pune division and mainly dry weather is likely to prevail, farmers are advised to complete harvesting of crop.
 - Rice in East Vidarbha region is in grain formation / maturity stage; farmers are advised to undertake harvesting of already matured crop.
 - Prevailing weather is favourable for cultivation of carnation flowers in Pune region.
 - Prevailing cold and dry weather is favourable for sowing of *rabi* gram and wheat. Farmers in Madhya Maharashtra are advised to undertake sowing of irrigated gram upto 10th November.
 - For sowing *rabi* jowar in Madhya Maharashtra select variety among Selection-3, Phule Mauli, Phule Anuradha in light soil, Phule Chitra, Phule Mauli, Maldandi-35-1 in medium soil and Phule Vasudha, Phule Yashoda, CSV-22 and Maldandi (M 35-1), Swati (SPV-504), Parbhani Moti (SPV-1411) for Marathwada region.
 - As cotton is at boll maturity stage in North Madhya Maharashtra and Marathwada region and mainly dry weather is expected during next 5 days, farmers are advised to continue picking of fully opened cotton bolls.
 - This is proper time for planting of pre seasonal sugarcane in Madhya Maharashtra and Marathwada.

- Farmers of Pune region are advised to undertake sowing of *rainfed* wheat.
- As weather was mainly dry and no rain is likely to occur in North Gujarat Zone, apply irrigation to castor and cotton. Make crop planning according to availability of irrigation water and arrange farm inputs for *rabi* sowing. Wait for sowing till the maximum temperature become down around 30°C. This is the most suitable time for preparing the land for transplanting of cabbage, brinjal, cauliflower and sowing of onion, radish and garlic after harvesting the *Kharif* crops.
- Undertake sugarcane plantation with setts having 2-3 buds and with sett treatment with Emisan and Malathion solution as this is the best time for plantation in South Gujarat Zone.
- Taking advantage of dry weather in middle Gujarat Zone, carry out threshing of dried bajra during noon hours and keep in protected shed. Farmers are advised to sow rapeseed. Drain out water from rice fields. Carry out harvesting of rice crop when it is yellow and at around 14% moisture in grains and undertake land preparation for the *rabi* crops like potato, onion, mustard etc. Undertake raising of onion nursery. Carry out picking of capsules in castor during early morning and sow sweet corn from 3rd week October to 1st week of November.
- Carry out hand weeding in vegetables in South Saurashtra Zone of Gujarat and apply irrigation in vegetables. Harvesting of castor may be carried out. Apply irrigation at regular interval in custard apple and harvest ripe fruits.
- Spray 5 ml NAA in 10 litres of water in cotton to prevent dropping of squares and flowers in North Saurashtra Zone. Give irrigation in alternate bed to cotton crop. Complete harvesting of early sown groundnut. Undertake sowing of gram, if 2-3 irrigation facilities are available. Carry out intercultural operation in lemon.
- Carry out sowing of *rabi* castor by using improved varieties and gap filling in early sown germinated crop in South Gujarat Heavy Rainfall Zone. Undertake sugarcane plantation with setts having 2-3 buds and with sett treatment with Emisan and Malathion solution. Carry out harvesting of *kharif* crops. Farmers are advised to continue sowing of mustard. In high temperature, select Gujarat Mustard 3 variety. Carry out intercultural operation and hand weeding in crops to conserve the soil moisture.
- Taking advantage of high temperature condition, prepare land for sowing of *rabi* crops, plough the harvested field to take advantage of solarization before sowing of winter crops in Bhal and Coastal Zone of Gujarat. Groundnut crop is at maturity stage; carry out harvesting in proper time. Carry out intercultural operation and apply regular irrigation in cotton.
- Stages of the crops are mentioned in Annexure I.
- Under prevailing weather incidence of leaf curl is observed in chilli in Marathwada region; spray Fipronil 5 % @ 20 ml in 10 litres of water.
- Due to change in weather there may be incidence of hoppers on new flush in mango in South Konkan; spray 25 % Cypermethrin @ 3 ml or 2.8 % Deltamethrin @ 9 ml or 20 % Fenvelarate @ 5 ml per 10 litres of water on whole tree.
- Prevailing weather is congenial for infestation of downy mildew in grapes in Pune region; spray Metalaxil-Mancozeb (0.2 %) or Cymoxanil-Mancozeb (0.2%), five times at 12 days interval.
- Pomegranate is at fruit (Mrigbahar fruit) development stage in Marathwada region. Under prevailing weather there may be infestation of oily spot, spray 1 % Bordeaux mixture or Copper oxy chloride @ 25 g in 10 litres of water.
- Varieties of *kharif* crops are mentioned in Annexure II.

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

- **Realised Rainfall:** Except Kumpwara region in Jammu & Kashmir, no significant rainfall occurred over remaining district of the States of the region.
- **Rainfall Forecast:** Mainly dry weather is likely to prevail over the States of the region.
- **Advisory:**
 - As no significant rainfall occurred over the States of the region and mainly dry weather is likely to prevail, farmers are advised to postpone irrigation at Kupwara region in Jammu & Kashmir and apply irrigation to the standing crops in the remaining regions of the State.

- Farmers in Flood Prone Eastern plain zone of East Rajasthan are advised to prepare field for sowing of *rabi* crops like wheat, mustard, potato and lentil and sow seeds in nursery for raising seedling of autumn vegetables.
- Farmers in Semi-arid Eastern plain zone of Jaipur of East Rajasthan are advised to continue field preparation for the sowing of *rabi* crops like wheat, barley, mustard, gram, rajmah, pea and fenugreek. Undertake raising of nursery of late cauliflower, cabbage & *rabi* onion. Sowing of carrot, radish & garlic may be started.
- In Arid Western Plain Zone Bikaner & Jodhpur of West Rajasthan, farmers are advised to undertake the harvesting of matured late sown *kharif* crops, also undertake sowing of gram and mustard and also undertake transplanting of tomato and sowing of cumin.
- In Transitional plain zone of Inland Drainage, farmers are advised to start for sowing of taramira, toria, pea rainfed gram and mustard and vegetables like carrot, spinach and radish.
- In northwestern plain zone of west Rajasthan, farmers are advised to start sowing of gram, mustard and barley with irrigation facilities. In sugarcane give regular irrigation at 10-15 days interval.
- In Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan, farmers are advised to undertake sowing of toria, taramira, mustard and gram for *rabi* season and undertake picking of mature cobs and harvesting of green gram and pulses.
- In Sub Humid Southern Plain and southern humid plain zone of Rajasthan, farmers are advised to start harvesting of *kharif* crops and prepare the field for sowing of *rabi* crops like mustard.
- In southeastern humid plain zone of East Rajasthan, farmers are advised to start field preparation for sowing of mustard and give irrigation to field of green fertilizers.
- In Intermediate zone of Jammu & Kashmir, farmers are advised to start sowing of wheat, gram, barley and continue the planting / sowing of potato, pole type beans, radish, carrot, turnip, garlic, methi and nursery sowing of cauliflower and cabbage, undertake sowing of toria with intercropped with gobi sarson, berseem crops and harvesting of moong, vegetables, maize, *kharif* fodder and early sown rice crops. Apply irrigation and hoeing and weeding may be done.
- In Central Plain Zone of Uttar Pradesh, farmers are advised to undertake harvesting of urad, mung and til crop and sowing of mustard and planting of potato and sugarcane.
- In Bundelkhand Zone of Uttar Pradesh farmers are advised to give irrigation to vegetable crops. Undertake sowing of wheat, gram, peas, lentil and mustard. Harvest fruit crops.
- In Sub-Montane & Low Hills Sub-Tropical Zone and Mild Hills Sub Humid Zone of Himachal Pradesh, farmers are advised to continue nursery sowing of early variety of pea, raddish, turnip, corriander, cabbage, Knol khol, broccoli, parsley, lettuce, fennel and cauliflower. It is optimum time for planting of wheat crop, oats and barley in high altitudes. Sowing of gram and lentil should be completed in lower areas of the district. Also undertake planting of potato in lower hills.
- In the Mild Hills Sub Humid Zone of Himachal Pradesh, attack of fruit borer is observed in bhindi and brinjal; for control spray Carbaryl 50 WP @ 2 g per litre of water or Endosulphan @ 1.5 ml per litre of water.
- In Barbar & Tarai region of Uttarakhand, due to expected dry weather during this week, farmers are advised to continue harvesting & threshing of timely sown rice crop, soyabean, finger millets. After harvesting keep on laying for 2-3 days in the open field and also advised to do weeding operations in earlier sown toria crop. Also continue sowing of Autumn sugarcane, mustard, yellow serson, karan Rai crop. They can also continue transplanting of rai seedlings grown earlier for vegetable purpose. In late transplanted rice at heading stage, it is the most sensitive stage of irrigation, thus apply mild irrigation.
- In Sub humid sub tropic of Uttarakhand, farmers are advised continue sowing of vegetable pea and mustard. Supplemental irrigation should be done after earthen up and weed remove in crops like brinjal, chilli, lady's finger. Ploughing of early planted fruit crop and other plant and after ploughing apply recommended fertilizer as per age of the plant.
- In Hill zone, Uttarakhand, farmers are advised to continue sowing of vegetable pea. Farmers are advised for sowing of high yielding variety of toria utilizing realized rainfall. Farmers are also advised to sow wheat, vegetables after harvesting of *kharif* crops.
- Present weather conditions in Delhi are suitable for planting of winter sugarcane. Keeping temperature in view sowing of mustard, pea, carrot, garlic and gram should be done in this week. Undertake

planting of potato. This is suitable time for sowing of sarson saag, bathua, radish, spinach, fenugreek, coriander, turnip. Transplanting of mature seedlings of cauliflower, cabbage, broccoli and tomato may also be done in raised bed. Nursery preparation should be started for late crop which mature in December or January. Keeping in view of temperature trend sowing of oat and barseem for fodder purpose can be done. Weather is suitable for sowing of *rabi* onion. Marigold should be transplanted in raised bed at the earliest. Sowing of gladiolus should be done in prepared fields.

- Farmers In Western Zone in Punjab are advised to complete harvesting of paddy crop as weather is expected to be dry in coming days. Continue picking of the cotton balls. Start sowing of raya. In order to get higher yields from first cutting, sow barseem or Lucerne in mixture with oats and sarson. This is the right time for transplanting of main season varieties of cauliflower and cabbage. Start sowing nursery of tomato and also sowing of radish, turnip and Carrot.
 - Farmers in Western Plain Zone in Punjab are advised to start sowing of wheat varieties, namely, PBW 621, DBW-17, PBW-502, PBW-343, WH-542, HD 2967 and durum wheat WHD 943, PDW 314, PDW 291, PDW-274 and PDW-233 under irrigated conditions and PBW-527, PBW-175 under rainfed conditions from last week of October. Give need based irrigation to sugarcane crop.
 - Farmers in Central Plain Zone in Punjab are advised to complete harvesting / threshing of rice crop. Continue picking of cotton bolls during these days. Complete the planting of sugarcane in the first fortnight of November. Intercropping of wheat, raya, toria, gobhi sarson, pea, gram, potato etc. can be done successfully. Berseem sowing should be completed during this period. This month is also ideal for sowing of lucerne, oats, senji.
 - Farmers in Eastern Zone in Haryana are advised to prepare field and start sowing of mustard crop with certified seeds. Do the Picking of cotton crop when the dew is dried up. Start harvest of matured Bajra and guar crop.
 - Farmers in Western Zone in Punjab are advised to harvest matured non scented paddy crop. Give irrigation to fodder crops as per requirement. Undertake sowing of winter vegetables.
 - In semi arid plain zone of east Rajasthan to control the blight in tomato spray Mencozeb @ 2 gm.
 - In Arid Western Plain Zone Bikaner of West Rajasthan, farmers are advised to prevent attack of termite in gram, apply Quinolphos 1.5% powder @ 25kg/ha at the time of last ploughing. To control soil borne diseases like wilt and root rot, apply Trichoderma @ 4kg/ha with FYM/compost after pre sowing irrigation.
 - In southeastern humid plain zone of East Rajasthan, farmers are advised to control painted bug in mustard; spray powder of Methyl parathion 2% @ 25 kg / ha. To control blast spray tricyclogel 0.1%.
 - Constant monitoring of ladies finger, chilli and cucurbitaceous crops against attack of mites, jassids and hopper is advised to farmers in Delhi. If insect population is more than ETL, spraying of Ethion 50 EC @ 1.5 - 2 ml per litre of water to control mites and spraying of dimethoate 30 EC @ 2 ml / litre of water against jassid and hopper is advised.
- **Animal Husbandry**
 - In Uttarakhand, farmers are advised to maintain proper cleanliness in animal sheds for avoiding incidence of diseases. Farmers are advised to use Iron case in poultry house for birds. It will give more eggs & will increase feed efficiency of birds. Proper care should be taken for cattles because the chance of Foot Mouth disease is more during rainy season. Green forages is more available at this time but it should be mixed with wheat straw in 30: 70 ratio for feeding. Proper vaccination of all cattles and hens/bird should be during this period.
 - In Western plain Zone of Punjab, farmers are advised to provide dry bedding to young calves.
- **Horticulture :**
 - In the Mild Hills Sub Humid Zone of Himachal Pradesh, for the control of Scab, pre-mature leaf fall, sooty-blotch & Fly speck and Alternaria blight diseases in apple, farmers are advised to spray 600 g Propineb (antracol) or 700 ml Mancozeb Flowable per 200 liters of water. Spray Ziram @ 600 g per 200 liters of water 20-25 days before fruit harvesting.
 - In intermediate zone (Pahalgam) of Jammu & Kashmir, farmers are advised to undertake planting of litchi.

- In valley temperate zone of Jammu and Kashmir, continue harvesting of apple and walnut. Maintain orchard sanitation.
- In Eastern Plain Zone of East Rajasthan, farmers are advised to sow seeds for raising nursery of autumn vegetables like tomato, brinjal, cauliflower, cabbage and radish.
- In 'Transitional Plain Zone of Inland Drainage' zone of east Rajasthan farmers are advised to control leaf curl & mosaic in Papaya; uproot & burn the affected plants and spray. Dimethoate 30 EC or Methyl Demeton 25 EC @ 1 ml per litre water.
- In Irrigated North Western Plain Zone of Rajasthan, farmers are advised to give regular irrigation to kinnow fruit.
- In arid western plain and semi-arid eastern plain zone of Rajasthan, farmers are advised to spray Dimethoate 30 EC / @ of lit water to control mosaic disease in papaya.
- **Apiculture**
 - In Intermediate zone of Jammu & Kashmir, provide ample space for queen bee by giving drawn comb. Week colonies may be provided sealed brood from strong one to equalize the strength of all the colonies. Stimulating feeding of sugar, syrup should be given for expansion of brood area, if needed at the start of the month. Queenless colonies should be united with strong ones. (Sulphur dusting should be avoided in temperate regions)
- **Floriculture**
 - In valley temperate zone of Jammu and Kashmir, regular check out the stored bulbs of tulip and other planting material to avoid damage. Mowing of lawn should be followed regularly. Sow the seeds of spring annuals as early as possible if not sown till now. Collect the seeds of summer annuals. Stop irrigation in gladiolus and liliun field. Preparation of land for spring flowering annuals should be followed.
 - Farmers of the Mid Hill Sub Humid Zone of Himachal Pradesh are advised to harvest the chrysanthemum and marigold flowers. Planting of Liliun bulbs in low and mid hills can also be done.

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

- **Realised Rainfall:** All districts in Tamil Nadu and Kerala and few districts in south Coastal Andhra Pradesh, East Godavari and West Godavari districts of North Coastal Andhra Pradesh, Chittoor and Cuddapah in Rayalaseema, Chamarajnar, Chickballapur , Kolar, Ramanagara and Shimoga in South Interior Karnataka and Dakshin Kannada and Udupi in Coastal Karnataka received good rainfall during last week. No significant rainfall occurred over remaining parts of the region.
- **Rainfall Forecast:** Rain / thundershowers would occur at a few places in Tamil Nadu and Kerala and at isolated places over the remaining States of the region.
- **Advisories:**
 - As all the districts in Tamil Nadu , Kerala, and few districts in south Coastal Andhra Pradesh, East Godavari and West Godavari districts of North Coastal Andhra Pradesh, Chittoor and Cuddapah in Rayalaseema, Chamarajnar, Chickballapur, Kolar, Ramanagara and Shimoga in South Interior Karnataka and Dakshin Kannada and Udupi in Coastal Karnataka received good rainfall during last week, postpone irrigation to the crops. Apply irrigation to the crops in the remaining parts of the region, as no significant rainfall occurred.
 - Farmers in the Eastern Dry zone of Karnataka are advised to take up intercultural operations in late sown crops and top dress with urea, take up normal agricultural operations for the standing crops.
 - Farmers in the North East Transition zone of Karnataka are advised to go for planting of sugarcane by taking 9 months old sugarcane sets
 - Due to light shower forecasted, farmers in the Coastal Zone of Karnataka are advised to undertake precautionary measures while harvesting paddy crop.
 - In North Dry Zone of Karnataka, farmers are advised to take up the sowing of sunflower, safflower, chickpea, wheat and *rabi* jowar. Sow the tall variety of *Rabi* jowar at the border of the chickpea field to control the pod borer pests. Also to treat the seeds of sunflower and sorghum with *Azospirillum* + PSB and Capton or Thiram or Carbandizeme at the rate of 2 gram per Kg of seeds or *Trichoderma* at the rate of 4 gram per Kg of seed before sowing for the better growth of crop and to avoid the

- diseases that may attack the crop. Harvesting of pearl millet (Bajra) may be taken up carefully since there is possibility of rain at some places. After harvest, sundry the grains and then store.
- In the North Transition zone of Karnataka farmers are advised to take up the sowing of sorghum, check pea, wheat and safflower as good soil moisture is available and immediately after sowing apply Herbicide of Atrazine @ 0.5 kg a.i. per ha to keep the field weed free for about 20-25 days..
 - In the Hill zone of Karnataka farmers are advised to take up the sowing of sunflower. Before sowing, soak every one kg of sunflower seeds in a solution prepared by dissolving 30 g of Calcium Chloride in 1.5 liter of water for 6 hours, shade dry and treat with Imidachloprid insecticide @ 5.0 g and *Azospirillum* at the rate of 40 g of per Kg of seed. This will improve the germination percentage, vigour of the seedlings and yield. In addition, it will induce drought resistance in the crop and also help to save 25 per cent Nitrogenrequirement of the crop.
 - In North East Dry zone of Karnataka, farmers may continue sowing of sorghum after treating the dry seeds with Sulphur 2 g/kg of seed before sowing to avoid black smut disease. Sowing of safflower, Bengal gram, horse gram can be done.
 - Since North East monsoon is going to intensify in the Problem Area Zone Of Kerala, harvesting has to be completed at the earliest for reducing lodging of paddy and subsequent economic loss. The harvested paddy should be properly covered with plastic sheet to protect form rainfall. In areas where crop is already harvested plan for taking next crop. The land should be ploughed thoroughly incorporating the crop residues and inundated water for decomposing. Mulch the coconut basins with green/dry leaves. This help to add organic matter to the soil and to reduce the soil temperature.
 - In the Northern Zone of Kerala farmers are advised to harvest the first crop of paddy quickly on days of clear sky. It is time to prepare nursery for the second crop. To get healthy seedlings apply dried and powdered farm yard manure @1Kg/sq. meter of the nursery at the time of final ploughing and incorporate thoroughly. To prevent diseases in early stages soak the seeds in Bavistin solution.
 - Since moderate rain fall is expected in next five days, farmers in the Cauvery Delta Zone of Tamil Nadu are advised to take up harvesting of matured kuruvai paddy with precaution and take up nursery sowing with short duration varieties like ADT 36, ADT 37, ADT 42, ADT 45, ADT 47, Co 47 and ASD 16 for samba season to avoid terminal drought as well as timely sowing of rice fallow pulses, postpone top dressing of fertilizer in samba and basal application for Thaladi paddy and apply fertilizer after the rains .
 - Farmers in the North Eastern Zone of Tamil Nadu are advised to drain out excess water from the paddy field.
 - Farmers in the Western Zone of Tamil Nadu are advised to take up seed treatment of sorghum 24 hours prior to sowing and apply fertilizers basally to cowpea before sowing. During booting stage continuous inundation of 5 cm and above leads to advancement in root decay and leaf senescence, and reduction in the number of filled paddy grains per panicle. Hence, farmers are also advised to provide adequate drainage facilities to drain excess water from the field.
 - Farmers in the South Zone of Tamil Nadu are advised to provide drainage to the fields for avoiding water stagnation. Apply crop residues in the inter-row space for preventing soil erosion. Undertake transplanting of chilli seedlings by utilizing high soil moisture due to heavy rains
 - Farmers in the North Western Zone of Tamil Nadu are advised to make use of power weeder machine to control the weeds and to increase the crop yield, weed formation increases due to rainfall.
 - As there has been enough rains during the past few days and also due to heavy rainfall forecast, Farmers in the High Altitude Hilly Zone of Tamil Nadu are advised are advised to ensure field sanitation and drainage.
 - Farmers in the High rainfall Zone of Tamil Nadu are advised undertake ploughing of fields and interspaces of perennial crops for effective harvesting of rain water, planting operation for banana, clove, nutmeg, black pepper and rubber, fertilizer application for banana and pepper, sow crops seeds between the interspaces of rubber and provide proper drainage facilities for vegetables and other horticultural crops should to avoid water stagnation.

- Farmers in High altitude tribal zone of Andhra Pradesh are advised to maintain 5 cm of standing water in rice crop. Crop should not face water stress at panicle initiation, flowering and milk stages. They are also further advised to harvest the millets crops on sunny days.
- Farmers in the Krishna Godavari zone of Andhra Pradesh are advised to complete the sowing of *rabi* blackgram/greengram/redgram. Farmers in the Prakasam district of Andhra Pradesh are advised to take up direct sowing of paddy with short duration varieties NLR 34449/ MTU 1010.
- Farmers in the North Coastal zone of Andhra Pradesh are advised to harvest the matured maize crop.
- In some of the mandals of Anantpur district of Scarce Rainfall zone of Andhra Pradesh ground nut crop which is at pod development stage in facing moisture stress. Farmers are further advised to continue sowing of Bengal gram by utilizing the residual soil moisture due to recent rainfall occurred. Before sowing seed should be treated with Mancozeb @3 gm/kg.
- Farmers in the Southern Telangana zone of Andhra Pradesh are advised to take up sowing of chickpea and safflower under residual moisture conditions in rainfed areas and *rabi* crops like groundnut, sunflower and maize under irrigated dry conditions.
- Farmers in the Northern Telangana zone are advised to harvest the matured sugarcane crop and wrapping and propping of canes should be done sugarcane crop which are 6-7 months old.
- Farmers of Eastern Dry zone of Karnataka are advised to spray of fungicide & pesticide (need based) if the incidence of pest and diseases exceeds threshold level of crops. For leaf roller pest spray Monocrotophos @ 1.5ml/litre or Quinalphos @ 2ml/litre of water. In redgram spray of pesticide Methomil 40 S.P 2.0gm/litre for control of leaf Webber/ folders. For the control of wilt, drench with carbendiazime 2gm/litre.
- At flowering stage, pod borer eggs in pigeon pea crop, paddy leaf folder, paddy hispa and case worm in paddy was noticed in the North East Transition zone of Karnataka. Farmers are advised to take up spraying of Quinolphos or Chloropyriphos 2ml/litre of water to control paddy leaf folder, paddy hispa and case worm and ovicidal insecticide such as Profenophos 2 ml or Thiodicarb 0.6g or Methomyl 0.6g per litre of water to control pod borer
- Farmers in the North Transition zone of Karnataka are advised to undertake plant protection measures to control leaf spot and rust in groundnut, mirid bug and pink boll worm attack in cotton, fruit borer in chilli/ tomato/ brinjal and root grub in sugar-cane. Rotting of early formed lower bolls is expected due to cloudy and drizzling conditions. Depending upon the severity of the disease, it is advised to spray the crop and developing bolls with Mancozeb 75 WP + Chlorothalonil 70 WP each @ 2 g/lit of water.
- In the Hill zone of Karnataka, where ever shoot fly damage is noticed on maize and jowar, farmers are suggested to remove the affected plants completely and apply carbofuran granules in to the whorls @ 5kg /acre. , where ever incidence of aphid and leaf minor noticed, farmers are advised to go for spray of Dimethoate (1.75ml /lt).
- Brown plant hopper and sheath blight noticed in rice crop in the North Coastal Zone of Andhra Pradesh. Farmers are advised to remove water and spray Acephate @ 1.5 g/l (or) Imidacloprid @ 0.25 ml/l (or) Buprofuzin @ 1.6 ml/l at the base of the base of the hill. Avoid spraying between 8 AM to 12 Noon where flowering was noticed and go for spraying in the evening hours for brown plant hopper and spray Hexacanzole@2ml/lt (or) Validamycin @ 2 ml/l for control of sheath blight. Further Scale insect and sucking pest are noticed in the sugar cane and cotton. For control of scale insect detrash dried leaves and spray malathion @ 2 ml/l and spray Acephate 1.5 g/l or Acetamiprid @ 0.2 g/l.
- Leaf spot and leaf fodder on the matured groundnut and leaf mite and panicle mite on rice is noticed in the Cuddapah district of Southern zone of Andhra Pradesh. Famers are advised to spray carbendazim 0.1% or mancozeb 0.2% or chlorothalonil 0.2%. on groundnut and prophanophos @2ml/lit on the crop .
- In the northern zone of Kerala, drying of inflorescence and dropping of immature nuts are wide spread in arecanut farms. Spray Contaf® (1ml dissolved in 1litre of water). Within a weak apply Bordeaux mixture also. Keep vigilance on appearance and spread of Mahali disease. Do not allow water stagnation anywhere in the fields, including drainage channels. Apply lime to the basins, not less than 500g per palm. To prevent disease onset, apply Bordeaux mixture on inflorescences. If disease appeared, spray Akomin® (3ml dissolved in one litre water).
- Stem weevil infestation in rainfed cotton is noticed in the Cauvery Delta Zone of Tamil Nadu. Farmers are advised to apply carbofuron 3G at 12 kg/ac on 20 DAS to control stem weevil infestation. Apply

100 kg of neem cake to samba paddy before transplanting to avoid insect and nematode attack, as light to moderate rainfall is expected in next five days.

- Farmers in the North Eastern Zone of Tamil Nadu are advised to apply propiconazole insecticide 2 ml per liter water for paddy crops affected with stem borer.
 - Due to high relative humidity and low temperature prevailing in the past week and the same weather expected in the coming days, the environment is conducive for the outbreak of rhizome rot incidence on turmeric. Hence, farmers in the Western Zone of Tamil Nadu are advised to drench the crop with 0.25 % copper oxy chloride.
 - Farmers in the Southern Zone of Tamil Nadu are advised to remove the affected maize seedlings from the field when it is in the initial stage, spray Mancozeb @ 1kg/ha to control downy mildew disease and rolling and twisting of upper leaves and undertake preventive measures to control sucking pests and whiteflies and aphid infection.
- **Livestock**
 - Farmers in the Eastern Dry zone of Karnataka are advised to take up silkworm and poultry rearing houses to maintain optimum room temperature. Care should be taken against the rapid increase in afternoon air temperature and decrease in relative humidity.
 - Due to sudden raise in temperature, farmers in the Coastal zone of Karnataka are advised to sprinkle water on cattle body, provide shade for maintaining temperature and maintain required amount of moisture in the vermicompost pits.
 - Since there will be chance for spreading of foliar diseases due to sudden high humidity, farmers in the High Rainfall Zone of Tamil Nadu are advised to undertake prophylactic spray of fungicide.
 - Farmers in the Southern and Northern Telangana zone of Andhra Pradesh are advised to vaccinate against ET and Hemorrhagic Septicemia in Cattle, Buffaloes and Black Quarter in Cattle
 - Farmers in the Scarce rainfall zone of Andhra Pradesh are advised to treat the cattle for Foot and mouth disease by applying potassium permanganate on lesions in the mouth and sulphur treatment.
 - Farmers in the High Rainfall Zone of Kerala are advised to undertake proper sanitation of the cattle shed with sodium bicarbonate/lime. Breeding of the mosquito has to be prevented around the shed. Store the feed from excess moisture to prevent fungal infestation.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** No rainfall occurred during last week in Madhya Pradesh and Chattisgarh.
- **Rainfall Forecast:** Weather would be mainly dry over the States of the region.
- **Advisories:**
 - Farmers in Madhya Pradesh and Chhattisgarh are advised to provide irrigation to the standing crops, as there was no rainfall during last week.
 - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised that if cracks occurred in the rice field, give irrigation as there is no forecasting of rainfall. They are also advised to harvest soybean, mung, and urd crops at this stage. To avoid loss of soil moisture, field should be immediately prepared for the planting of chickpea, lentil, mustard, and linseed crops. Seeds should be treated with fungicides before sowing. In pulse crops, seeds should be inoculated with Rhizobium bacteria. Also use recommended amount of fertilizers at the time of sowing in these crops. As minimum temperature decreasing this is proper time for sowing of pea, nursery preparation of cabbage, cauliflower and onion, planting of spinach, fenugreek, garlic and coriander.
 - Farmers in Gird Zone of Madhya Pradesh are advised to prepare fields for *rabi* crops. Conserve moisture in the field. This is proper time for planting / sowing of potato and mustard, nursery preparation of vegetables and coriander. Harvest urad, moong, bajara and soybean crops.
 - Farmers in Bundelkhand region of Madhya Pradesh are advised, in view of moisture availability in soil, to sow chickpea, lentil, linseed and mustard in already prepared field also treat the seed with fungicide Captan or thairum @ 2g/kg and there after use the rhizobium culture. They are also advised to use mulch to enhance germination after the sowing of coriander and garlic. They are also to advise to complete the sowing of early reddish, fenugreek, spinach, turnip, corianders and mustard for vegetable purpose in this week.

- Farmers in Nimar valley zone, Madhya Pradesh are advised to use pheromone trap in sugarcane field for the control of pyrilla and Shoot borer.
- Present weather conditions are suitable for sowing of nursery of early varieties of cabbage, tomato, brinjal, chilli etc. in a raised nursery of about 6 inch with proper drainage system in Chhattisgarh Plain Zone. Present weather conditions are suitable for sowing of niger, winter black gram and lobia, hence it is advised to complete the sowing at the earliest. Farmers are also advised for the preparation of the land where *rabi* crop is to be taken so that sowing of the crops can be done in October. After the harvesting of the rice crop sow gram and lathyrus. Farmers are advised to harvest the matured crop of soybean, groundnut.
- Farmers are advised for land preparation in the upland sloping fields in Chhattisgarh Plain Zone for sowing of horse gram during second fortnight of this month and transplanting of vegetables crops with proper drainage system.
- Farmers in Bastar Plateau Zone in Chhattisgarh are advised to prepare field and undertake sowing of cowpea and *kharif* vegetables like bottle gourd, bitter melon, okra and short duration beans, cabbage, cauliflower utilising the realised rainfall during last week. Farmers are also advised for planting of cassava, colocasia, ginger, elephant foot yam and dioscorea and support may be given by bamboo sticks.
- If the nursery of vegetables like chillies, brinjal and cucurbitaceous vegetables and other winter season vegetables is ready in Bastar Plateau Zone in Chhattisgarh, proper water drainage measures should be adopted from the beds and seedlings should be planted in the beds.
- In North Hill Zone of Chhattisgarh farmers are advised to prepare the land for sowing of wheat and sugarcane.
- Farmers in Malwa Plateau Zone of Madhya Pradesh are advised that there may be attack of leaf miner on vegetable crops apply rogor or confidore @ 1ml/ lit.
- In Jhabua hill zone of Madhya Pradesh, farmers are advised for control of sucking pest in cotton spray thiomethoxam 0.3 g/l (5.0g/pump) of water.
- Infestation of case worm in rice field may be observed in Bastar Plateau Zone in Chhattisgarh, spray Chlorpyrifos 20 Ec @ 2 ml/ litre of water. Attack of bacterial leaf blight is being observed in rice and minor millet crops spray Tricyclazole 3 grams+ Bavistin 15 grams and Kitazine 30 ml/ Sivic 9 grams fungicide.
- **Animal Husbandry & Poultry**
 - Farmers in Jhabua Hills of Madhya Pradesh are advised to vaccinate their cattle for FM disease. For control of Ranikhet disease in bird vaccinate them by F-1 or Lasota vaccine.
 - Farmers in Bundelkhand region of Madhya Pradesh are advised that onset of winter is likely to be started due to which chances of spread of mouth and foot disease will be there. Hence, vaccinate against the disease.

Annexure I

Major Crops

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

- Sugarcane (vegetative), *sali* rice (panicle initiation / flowering / grain formation), *Capsularis* and *Olitorius* jute for seed (vegetative), arhar (vegetative / flowering / pod formation), *kharif* sesame (capsule formation / maturity), groundnut (pod formation / maturity), black gram, green gram (vegetative / flowering / pod formation), cauliflower (nursery raising / transplanting), winter vegetables (nursery sowing) in Assam.
- WRC rice (grain formation / maturity), okra, cucurbitaceous vegetables (fruiting / harvesting), soybean (pod formation / maturity), sesame (capsule formation / maturity), cauliflower, cabbage (nursery raising) in Arunachal Pradesh.
- *Kharif* rice (flowering / grain formation), soybean, groundnut (pod formation / maturity / harvesting), cucurbits, chilli and okra (fruiting / harvesting), potato, pea (planting / land preparation), tomato (seedling / transplanting), cauliflower (nursery preparation / transplanting) in Manipur.

- *Kharif* rice (flowering / grain formation), maize (cob maturity / harvesting), groundnut (pod formation), tomato (flowering / fruiting / harvesting), cole crops (transplanting / vegetative), soybean (pod formation), turmeric, ginger (vegetative / rhizome formation) and *rabi* maize (sowing) in Meghalaya.
- Rice (flowering / grain formation), soybean (pod formation), groundnut (pod formation), *kharif* maize (maturity / harvesting), cauliflower, tomato (nursery preparation) and ginger / turmeric (vegetative / rhizome formation), okra, bean and cow pea (harvesting) in Mizoram.
- *Jhum* rice (harvesting), wet land rice (maturity stage), maize (maturity / harvesting), tomato, cabbage (nursery preparation), soybean (pod formation) in Nagaland.
- Upland rice (harvesting), *aman* rice (flowering / grain formation), groundnut (pod formation), *rabi* maize (sowing), *rabi* legumes (toria, sesame, lentil etc.), bitter gourd and pointed gourd (harvesting) in Tripura.

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

- Mustard, gram, peas, sunflower, maize (land preparation / sowing), sugarcane (vegetative), fodder crops like sorghum, bajra, meth, kalai, boda and dinanath grass (vegetative), *kharif* rice (grain formation / grain maturity), urad, arhar, bajra etc. (vegetative), mango, litchi, guava (early vegetative / vegetative), winter vegetables (sowing), in Bihar.
- Upland rice (grain formation / grain maturity), maize (harvesting), pigeon pea (flowering / pod formation), groundnut (pod formation / maturity), rice (grain formation / maturity), urad, jowar and soybean, til (pod formation / maturity), *kharif* vegetables like okra, beans, French bean, tomato (flowering / fruiting / harvesting), kulthi, African marigold, French marigold (sowing), urad, potato, green pea, toria, tomato, cauliflower, cabbage and bell pepper (land preparation / sowing), gram (land preparation / sowing), rapeseed, linseed and mustard (sowing) radish, turnip, spinach, carrot (sowing) in Jharkhand.
- Sugarcane (grand growth), banana (vegetative), maize (cob formation / maturity), sunflower (head formation), rice (flowering / grain formation / maturity), mustard, groundnut, cow pea (sowing) and fruit crops (planting / seedling) in Orissa.
- *Aman* rice (grain filling / maturity), *kharif* maize (cob formation / cob maturity), cauliflower (sowing / seedling / transplanting), marigold, Gladiolus (planting), bitter gourd and pointed gourd, cucurbits (fruiting / harvesting), betel vine (vegetative), winter vegetables (sowing), *kharif* vegetables (flowering / fruiting / harvesting), onion (sowing) in West Bengal.
- Ginger (germination / early vegetative), orange (transplanting / seedling), large cardamom (vegetative / primary flowering / secondary flowering), vegetables (vegetative), rice (grain formation) in Sikkim.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- Sugarcane (*adsali*) (elongation), sugarcane (new pre-seasonal) (elongation), sugarcane (new *suru*) (active tillering in Madhya Maharashtra and Marathwada), sugarcane (new *adsali*) (early tillering), sugarcane (new pre seasonal) (planting), *kharif* rice (grain maturity / harvesting in early maturing and mid late variety, grain formation/maturity in late variety in Konkan, Kolhapur division and grain formation / maturity in Nashik, Pune and East Vidarbha Division), cotton (boll formation / maturity / picking), groundnut (pod maturity / harvesting), bajra (grain maturity / harvesting in Madhya Maharashtra and Marathwada), red gram (secondary branching / flowering/pod formation), *rabi* jowar (sowing / germination/early vegetative in Madhya Maharashtra and Marathwada), safflower (sowing / germination/early vegetative in Madhya Maharashtra and Marathwada), maize (sowing / germination in Madhya Maharashtra and Marathwada), gram(sowing/germination) in Maharashtra.
- Cotton (boll formation / maturity / picking), groundnut (maturity / harvesting), *kharif* rice (grain filling / maturity / harvesting), sugarcane (vegetative / elongation), new sugarcane (planting), sesamum, castor (early) (flowering / pod formation / harvesting), castor (vegetative), new castor (sowing / germination), winter vegetables (sowing / transplanting), mustard (sowing), tobacco (nursery / transplanting) in Gujarat.

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

- Wheat, Oats, Barley (sowing), Vegetables [bhindi, cucurbits], mirch, brinjal (maturity/harvesting), Shimla mirch, and tomato (maturity/harvesting), apple(harvesting/new planting), radish, arbi, amaranthus, turmeric, dhaincha, chari, bajra, barley, red and white clover, bell pepper, garlic, ginger, coriander, knol khol, cabbage, cauliflower, lettuce (vegetative/maturity), maize (harvesting), pea, raddish, turnip, coriander, cabbage, Knol khol, broccoli, parsley, lettuce, fennel and cauliflower (sowing), lentil, gram (sowing) in Himachal Pradesh.
- Rice (grain filling stage), cauliflower, cabbage, broccoli and tomato (Transplanting), coriander, spinach and radish (vegetative), carrot, pea & garlic (sowing), gram, mustard (sowing) maize (cob formation), sugarcane (vegetative), cotton (boll formation), sugarcane (vegetative) in Delhi.
- Chilli, capsicum, cauliflower, broccolli (vegetative/fruited/harvesting), sugarcane (planting), papaya (planting), sunflower (early vegetative / vegetative), maize (Normal sown -reproductive stage, maize (cob maturity/harvesting), early sown- cob maturity/harvesting stage, very late sown- silking stage), lobia, sunnhemp, cowpea, jowar for green fodder (vegetative/1st cutting), garlic, cucurbits, okra(seedling), French bean, rice (flowering), rice: reproductive, rice: (Irrigated- maturity/harvesting), *kharif* pulses reproductive, potato (sowing), radish (sowing), cabbage, cauliflower (nursery sowing), carrot, turnip (sowing), knol-khol, cole crops (transplanting), toria (sowing/emergence), vegetables {Methi early bunching and kasuri methi, spinach}(sowing), *rabi* oilseeds (sowing/emergence), moong/mash: (Harvesting) in Jammu & Kashmir.
- Rice (maturity/harvesting), finger millets (grain maturity/harvesting), groundnut, sorghum, urad, moong, rajma(pod / grain maturity/ harvesting), arhar and ginger (vegetative), soybean (pod maturity/harvesting), maize(cob maturity/harvesting), autumn sugarcane, mustard, yellow serson, karan Rai, brinjal, chilli, lady's finger (sowing) in Uttarakhand.
- Rice (grain maturity/harvesting), sugarcane (vegetative growth/ripening), summer sugarcane (tillering/grand growth), cotton(flowering), soyabean (pod maturity/ harvesting), urd (maturity/harvesting), sunflower, jowar, bajra, (maturity/ harvesting), arhar(flowering), ,maize(cob maturity/harvesting), vegetables [cucumber, pumpkin, tomato, brinjal, cabbage, lady's finger, chilly, cucurbits] (vegetative/ fruited/ picking), groundnut (vegetative/ pegging), wheat, chana, pea, masoor, alsii, barseem, jai(sowing), onion, garlic, radish, carrot, coriander (sowing), in Uttar Pradesh.
- Rice (grain formation / maturity), spring sugarcane (sprouting/tillering), radish, carrot, turnip, (sowing / germination/vegetative), cauliflower (transplanting/vegetative), tomato, sunflower (early vegetative), cotton (fruiting), okra, chilli, brinjal (transplanting/early vegetative), maize, mung, mash, tur (early vegetative), toria (sowing), maize (cob formation) in Punjab.
- Rice (grain formation / maturity), sugarcane (grand growth) (early vegetative/vegetative), barseem (vegetative / last cut), fodder (maize + cowpeas) (vegetative/ 1st cutting)), moong, mash, pigeon pea (vegetative), cauliflower, cabbage, carrot, potato (transplanting), radish, cotton (flowering), turnip (sowing/seedling) in Haryana.
- Cauliflower, cabbage, onion (transplanting / germination), sugarcane (new planting/ vegetative), cotton (Desi kapas, B.T. kapas, soft kapas, American Cotton) (boll formation/maturity), pearl millet, jowar and bajra mixed with guar, Sudan grass, oats, sorghum etc. for green fodder (vegetative/fruited/1st cutting), maize (tasseling/cob formation), mirch, simla mirch, guar, vegetable (tinda, water melon, pumpkin, cucumber, coriander, bhendi, ridge gourd) (sowing/seedling), green gram, cowpea (pod formation/pod maturity) and groundnut (pod formation/pod maturity), short duration moth and guar (pod formation/pod maturity), moong (vegetative), kinnow (fruiting), Rice (reproductive), Oilseeds (Sowing/emergence) wheat, mustard, gram potato (sowing) in Rajasthan.

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

- Sugarcane (planting), rice (grain filling), Early planted Paddy (Harvesting), late planted paddy (maturity), sunflower (vegetative/flowering), groundnut (pod development), cowpea (vegetative), pigeon pea (flowering), bajra (maturity/harvesting), soybean (harvesting), maize (grain filling), desi cotton (vegetative), cotton (flowering/boll formation) and chilli (fruiting), *Rabi* crops- sorghum (sowing), Wheat (sowing), Bengal gram(sowing), safflower (sowing) in Karnataka.

- Sugarcane (June planted) (formative/grand growth/ cane formation), vegetables (all stages), rice (panicle initiation/flowering/ milking stage), ragi (maturity / harvesting), castor (capsule maturation/ Ist picking stage), late sown groundnut (Pod formation/pod filling), maize (maturity/ harvesting), red gram (vegetative), Bt. cotton (vegetative /flowering/boll development), millets (harvesting) and jowar (vegetative) in Andhra Pradesh
- Pepper (Berry development/new planting), coconut (flowering/nut development), irrigated banana (harvesting/ planting), cardamom (planting/harvesting), rubber (tapping), vegetables (harvesting/planting), virippu paddy (harvesting), mundakan paddy (transplanting/early vegetative), sugarcane (grand growth) in Kerala.
- Kuruvai rice (harvesting), Late Samba rice (nursery sowing), Samba rice (transplanting), rainfed maize (flowering), sorghum (sowing), cow-pea (sowing), rainfed groundnut (flowering), pulses (vegetative), cotton (vegetative) , new maize crop (seedling), vegetables (sowing/vegetative) in Tamil Nadu.

CENTRAL INDIA [M.P., CHHATTISGARH]

- Rice (harvesting), maize (harvesting), jowar, and soybean (harvesting) arhar (harvesting), *kharif* vegetables i.e. tomato, brinjal, chilli etc. (flowering/fruitletting/harvesting), ladies finger, cucurbits (vegetative/flowering), pea (sowing), *rabi* vegetables (nursery preparation), *rabi* maize (sowing), fodder crops (sowing) in Madhya Pradesh.
- Rice (flowering / grain formation / harvesting), sugarcane (planting/vegetative), groundnut (pod filling), sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), onion (planting), vegetables (transplanting / vegetative), millet (vegetative), tapioca, ginger, colocasia, dioscorea, elephant foot yam and cassava (planting), wheat, sugarcane (land preparation) in Chhattisgarh.

Annexure II

List of Varieties

Assam

Cauliflower: Early Kunwari, Pusa Katki, Pusa Deepali.

Cabbage: Golden Acre, Pride of India, Pusa Mukta (Sel – 8), Japanese, Pusa Synthetic, Pusa Snowball and for late maturing varieties- Snowball-16, Pusa Snowball, K-1 and Hissar 1 etc.

Tomato: Punjab Chhuhara, S-12, Punjab Kesri, Pusa Early Dwarf, Sioux, Pusa Ruby, VC- 48-1, Arka Abha (BWR-1).

Radish: Pusa Desi, Pusa Himani, Pusa Chetki.

Carrot: Nantes, Pusa Kesar and Chantenay.

Spinach beet: Jobner Green, All Green, S-23, Pusa Jyoti.

Onion: Pusa Red, Pusa Ratnar, Pusa white (Round), Pusa white (Flat), N-53, Agrifound Light Red, Punjab Red Round, Pusa Madhuri, Arka Niketan etc.

Winter brinjal: Pusa Kranti, Pusa Purple Long, Pusa Purple Round, Pusa Vairab, Pant Samrat etc.

Rapeseed and Mustard: M-27, TS- 36, TS-38.

Potato: Kufri Chandramukhi, Kufri Jyoti, Kufri Megha, Kufri Badshah, Kufri Sindhuri, Pukhraj.

Manipur

Cauliflower: White Shot.

Pea: Arkel, Azad Pea.

Meghalaya:

French bean: Arka Suvidha, Arka Anoop (bush type) and Naga local, RCMFB-1 (pole type).

Cabbage: H-139 and Pride of India.

Cauliflower: Pusa Meghna, Pusa Sharad and Meghalaya Local.

Broccoli: Puspa, Aiswarya and Fiesta.

Tripura:

Tomato: Trishul, Allrounder, T- 1408, T- 1458, Anup.

Cauliflower: CFL- 4048, Pusa Early Synthetic, Kamaya, Suhasihi.

Cabbage: BC- 76, Pusa Drum Head, Pusa Synthetic.

Broccoli: Everest, Ayeshwaria.

Pea: Arkel, Arka Ajit, TRC P- 8, 9.

Cowpea: Kashi Kanchan.

Rabi maize: HQPM- 1.

Sesame: T – 12, 4.

Lentil: WBL – 58.

Toria: TRC-T-1-1-5-1.

Orissa

Cowpea: SEB-2, Pusa Barsati.

Brinjal: Utkala Tarini, Utkala Madhuri, Blue Star, Green Star, Pusa Purple Cluster.

Green chilli: Pant C-1, Kala Suryamukhi, Utkala Ava, Utkala Ragini etc.

Tomato: BT-2, BT-10, BT-12, Niladri, Sadabahar, Madhuri, Maharathi, Rasmi, Naveen, etc.

Mustard: Parbhathi, Anuradha, TS-29 & M-27.

Groundnut: Smruti and JL-24.

Sunflower: Morden, Sunrise, Surya and Hybrid varieties like KBSH-1, KBSH-3 and MSFH.

West Bengal:

Cauliflower: Kanwari, Jowhar, Moti, Early Patna.

Tomato: Pusa Rubi, Pusa Early, S-2, Roma Super.

Onion: Agrani(B-54), Panchali (T.W.C.-3), B-9, Rai-5 and Bhagirothi (R.W.-351) etc.

Mustard: Agrani (B-54), Panchali (T.W.C.-3), B-9, Rai-5 and Bhagiroti (R.W.-351) etc.
Sugarcane : Co- 7218, Co- 527, Co- 1148, Co- 6203 etc

Jharkhand:

Okra: Pusa A-4, Prabhani Kranti, Arka Anamika, Versha Uphar & Hybrid varieties like Sonal and Sarika.

Potato: Kufri Ashoka, Kufri Puhkraj, Kufri Pushkar and Kufri Surya.

Toria: T-9, Panchali, Bhawani, PT-303.

Tomato: Pusa Ruby, Swarna Sampda, Swarn Lalima.

Cabbage: Golden Acre, Pride Of India, Early Drum Head.

Cauliflower: Pusa Depali, Patna Early, Hazipur Extra Early, Pusa Ketki.

Mustard: Shivani, Pusa Jaikisan, Pusa Bold, Vardan.

Rapeseed: Panchali, Bhawani, P.T.-303.

Linseed: Sweta, Shubhra, T-397.

Gram: Pusa-372, K.P.G.-59, K.W.R.-108 and for Kabuli gram are H.K.-94134 and Kak-2.

Pea: Arkel, Kashi Nandini, PE - 6 and Birsa Matar.

Bihar

Gram: Rajendra Chana, Uday, Pusa 256, RAU 52, SG2.

Peas: Ratna, Aparna, Harbhajan, Malbai, Malviya mator 15, Harbhajan, Arpana and Pusa Prabhat.

Lentil: BR 25, Pant L406, 639, Malika, Arun.

Cauliflower: Aghani, Early Snowball, Patna Main and Pusa Shuvra.

Rai: Baruna, Pusa Bold and Kranti.

Carrot: Pusa Keser, Pusa Meghali, Pusa Yamdagini, Desi Lal, Desi Kali, American beauty and Kalyanpur Yellow.

Sarson: Rajendra Sarson-1, Swarna etc.

Sunflower: Morden, Surya, Paradovic, KBSH 1, 44.

Maize: DHM117, Saktiman 1, 2, 3, 4; Laxmi, Rajendra Shankar Makka 1 and 2.

Potato : Kufri lalima, kufri Kuber, Kufri Alankaar khufri jyoti, khufri chandramukhi, Ranjendra aloo1, 2 and 3, khufri badshah.

Oyster mushroom: Sejour kaju, Florida.

Gujarat:

Gram: Gujarat Gram-2 or Gujarat Gram-3, Dahod Yellow or Chafa or ICCV-10 or PG-1 or Gujarat gram-1.

Mustard: Varuna or Gujarat Mustard-1, 2, 3.

Castor: GCH-7, GCH-6, GCH-4.

Chick pea: Gujarat Chick Pea-1 or 2, Dahod Pila, ICC-4.

Cauliflower: Pusa Early, Pusa Dipali, Pusa Kartiki, Early Kuvvari for early maturity and Pusa synthetic, Early Snowball, Snowball for medium duration, Jyayant Snowball, super Snowball, Snowball-13.

Carrot: Patan Local, Pusa Kesar and Pusa Chamdagni.

Onion: Talaja Red, Nashik Red, Pusa Red, Pusa White, N 53, H 48.

Cabbage: Kranti, Golden Acre Pride of India, Coppen Market.

Raddish: Pusa Hemadri, White ICL, Japanees White, Pusa Rashmi , Pusa Chetaki.

Brinjal: Guj. Brinjal-6, P.L.R. 1, Junagadh Lambagoal, Mahicco- 11,16.

Maharashtra

Rabi safflower: Bhima, Phule Kusuma, Sharda, Girna or DSH-129.

Rabi jowar: Phule Mauli, Phule Anuradha in light soil, Phule Chitra, Phule Mauli, Maldandi-35-1 in medium soil and Phule Vasuda, Phule Yashoda, CSV-22 in black soil.

Rainfed *rabi* jowar: Maldandi (M 35-1), Swati (SPV-504), Parbhani Moti(SPV-1411) for Marathwada region.

Rainfed wheat: Panchvati, N-5439 or N-8223.

Pre-seasonal sugarcane: CO-740, CO-7219, CO-88121, Co-8014, Co-86032, COM-0265 (Phule 265), CO-94012 and COC-671 for Madhya Maharashtra, Co-86032, COM-0265 (Phule 265), CO-94012 for Marathwada.

Carnation flowers: Sun Rise, Pink Dona, Domingo or Master.

Irrigated gram: Vikas, Vishwas, Phule G-12, Vijay, Vishal or Virat varieties for Madhya Maharashtra.

Rainfed gram varieties: Akash, Vikas, Vishwas for Madhya Maharashtra.

Irrigated gram varieties: Vishal and Dig Vijay variety for Marathwada region.

Rainfed wheat: Panchvati, N-5439 or N-8223 for Pune region.

Madhya Pradesh

Rice (harvesting), maize (harvesting), jowar, and soybean (harvesting) arhar (harvesting), kharif vegetables i.e. tomato, brinjal, chilli etc. (flowering/fruitletting/harvesting), ladies finger, cucurbits (vegetative/flowering), pea (sowing), rabi vegetables (nursery preparation), rabi maize (sowing), fodder crops (sowing) in Madhya Pradesh.

Rice (flowering / grain formation / harvesting), sugarcane (planting/vegetative), groundnut (pod filling), sesame (late vegetative), ginger, turmeric, papaya, mango and guava (vegetative), onion (planting), vegetables (transplanting / vegetative), millet (vegetative), tapioca, ginger, colocasia, diascoria, elephant foot yam and cassava (planting), wheat, sugarcane (land preparation) in

Chattisgarh

Maize: Proagro-4640, 4212, Pusa Hybrid -42, MH-10, MH-11, Navjyot, HM-9.

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

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

Karnataka-

Rabi

Sorghum– DSV-4, M 35-1 and Muguthi, DSH-4, M-35-1(rainfed and irrigated), Moguti(5-4-1), DSV-5 (rainfed and 1 or 2 protective irrigation)

Wheat– DWR-162, DWR-225, DWR-185, DWR-2006, DDK-1001 and DDK-1009.

Chick pea – Annigeri-1, ICCV-2,ICCV-10,BG-1105 and BGD-103

Safflower – A-1 , A-2 , A-300, NARI-6 (spineless variety)

Bengal gram- JG -11, Annigeri -1, ICCV-10

Kerala:

Banana: Robusta, Poovan, Njalipoovan, Palayankodan.

Tamilnadu:

Samba Paddy: ADT 36, ADT 37, ADT 42, ADT 45, ADT 47, Co 47 and ASD 16.

Andhra Pradesh:

Greengram- LGG 460,LGG 407, LGG-410, TM96-2, MGG 295, ML 267, LGG 450

Blackgram-LBG 752,PU 31,T9,LBG 20, LBG 645, LBG 685, LBG 709, LBG 623

Himachal Pradesh :

Wheat: HPW-89,147 VL-738 and HS-240

Barley: HBL-316 and Dolma

Oat: Palampur-1

Cauliflower: Pride of India, Shweta, Madhuri, Himrani.

Cucumber : Kiyam seedless/243, Matgaura, Malinisedded

Pea: Ageta – 6 or Arkal pea

Raddish :Japani white and early mino white

Turnip : PTWG-1,

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

Knol khol : White Bina,

Broccoli : Palm kanchan, Palam vichitra and palam samridhi.

Jammu & Kashmir

Potato : Kufri Badshah, K. Jyoti

Radish: P.Reshmi, Japanese White, Minowase

Carrot: Pusa Kesar, P. Yamdagani, Nantes, Chaman

Turnip: PTWG,

Garlic: Yamuna safed agrifound parvati,

Methi : Pusa early bunching and kasuri methi

Gobi sarson: GSS-1, GSL-2 & DGS -1.

Mustard: KOS-1, KS-101

Peas: Bonnevillea, AP-1, AP-3

Onion var. Pusa Red, Punjab Selection

Punjab & Haryana

Punjab :

Radish: Punjab Safed, Punjab Pasand and Japanese White .

Turnip: L-1

Carrot: Selection 21 and PC-34

Gram: PBG 5 and PBG-1

Peas: Punjab 87, Punjab 88, Punjab 89 and Mithi Phali.

Raya: PBR-210, RLM-619, PBR-91 under irrigated conditions and PBR-97 under rainfed conditions.

Gobhi sarson : GSC-5, GSL-1, GSL-2, PGSH-51, Hyola (PAC-401) should be sown from 10th of October to **end** of October.

Delhi

Mustard: Pusa Sarson-25, Pusa Sarson-26, Pusa Agrni, Pusa Taraka, Pusa Mahak

Carrot: Pusa Rudhira and Pusa Kesar.

Sarson Saag: Pusa Saag-1;

Bathua: Pusa Bathua-1

Radish: Japani White, Hill queen, French Radish;

Spinach: All Green, Pusa Bharti;

Coriander: Pant Haritama, Hybrids;

Turnip: Pusa Swati, Local Red variety.

Potato: Kufri Badshah, Kufri Bahar, Kufri Aanand, Chipsona-1, Chipsona-2, Chipsona-3.

Pea : Pusa Pragati, Arkel.

Fenugreek: Pusa Kasuri

Garlic: G-1, G-41, G-50, G-282. Gram: Kabuli type - Pusa 267, Pusa 1003, Pusa Chamatkar; local type - C235, Pusa 246, P.B.G. 1, Pusa 372.

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

Barseem : Vardan, Buland Barseem-1, Masakavi,

Rajasthan

Vegetables : Tomato: Pusa Ruby, Pusa Early and Vihar, Brinjal: Pusa long, Meghdoot, Arka Bahar, Pusa summer and prolific round, Cucumber: Balam, Pusa Sahyog, Radish: Japanese White and Hill Queen, Early cauliflower : Pusa hybrid-2, Improved Japanese and Pusa Himjyoti, Cabbage: Pusa Drum Head and Hybrid 10, Cauliflower: Pusa Snowball 1 and Hissar 1, - Taramira: Karan Tara, Narendra Tara, Mustard Early sown: NPJ112, EJ17, Pusa Mahak and Kanti Early Pea: Arkil, Hara bona, VL-3, Jawahar Matar-4, Matar Ageti-6

Normal sown (irrigated)-Maya, Rohini, Pusa Jai kisan, Varuna, RGN13, RGN73, like Bharat Sarson-1 (NRCDR-2), **Bharat Sarson-2** (NRCHB 101), Bharat Sarson-3 (NRCHB506), Laxmi and Pusa bold.

Normal sown (rainfed) -Arawali, RGN48, Geeta and PBR 97, Saline sodic soils - CS52, CS54, CS56, Narendra Rai 1. Yellow Sarson - NRCYS-05-02, YSH401

Potato- Kufri-Ashok and Kufri-Chandramukhi, Kufri-Anand, Chipsona-1, 2, Jyoti and Pukhraj.

Mustard: Jay Kisan (Bio-902), Rajat- P. C. R. -7 R.H. – 30, R.H.-819, G.M.-2, Uravashi, Pusa bold, Aravali- I.N. 393, R.N.505, Ashirwad – 48, R.G.N.- 145, R.G.N.-73, R.G.N.-13 Gobi sarson (GSL-1, DGS-1) Gram: G.N.G. 663 (Vardhan), G.N.G 469 (Samrat), G.N.G 1581 (Gangaur), Gram (Rainfed area): C-235, RSG-44, 945, 807, RSG-888, C-235, H-208 and GNG-146, K-468, Gourav and PBG-1 .

Early pea: Arkil, Hara bona, VL-3, Jawahar Matar-4, Matar Ageti-6., Pea: T-163, PG-2, Rachna, HFP-3

Kabuli Chana: G.N.G 1499 (Gauri) and G.N.G 1292

Uttar Pradesh

Rai : Narebdra rai 8301, Rohini, Vaibhav, Varuna(Ta 59)

Potato: kupri, ashok, kupri chandramuki, kupri jawahar.

Non-irrigated wheat :lok-1, sujata, gomati, Indira.

Wheat:VL616, 829, 802, 804, 738, 719 and HS277.

Chana : KWR-108, JG-16, JGK-1(kabuli)

Pea: Indira, JP-850.

Masoor: Bokar-2, 3, K-75, IPL-81

Alsi: bokar, Lakshmi-27, padmini, parvati

Sugarcane: CO-8436, 88230, 95255, 96268, 95436, 98321, 00235, CO J-64

Uttarakhand

Pea: VL Ageti Mater-7, Vivek Mater-10, Pant Subjee Mater-3, Azad Mater-3

Tomato: Pant

Bahar, Pusa Rubi, Navin

Toria: PT-303, PT-507.

Vegetable pea : VL Ageti Mater-7, Vivel Mater-10, Pant Subjee Mater-3, Azad Mater-3 and Arkel

Potato : Kufri Jyoti, Kufri Ashok or Kufri Anand.

Annexure III
Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 24.10.2012

