

Gadag district in North Interior Karnataka, Kanyakumari, Ramanathapuram, Sivaganga, Theni, Tirunelveli and Toothukudi districts in Tamilnadu and most of the districts in Kerala except Kannur, Kasargod and Kollam received rainfall during last week. No significant rainfall occurred over remaining parts of the region. Distribution of rainfall in different States of the country during last week is provided in Annexure I.

Weather would be dry or mainly dry all over the country except isolated rains is likely to occur over Manipur and Mizoram during next three days and isolated / scattered rains over Jammu & Kashmir after 24 hours. Weather forecast map is provided in Annexure – II.

Northeast monsoon was subdued over Southern peninsula during last week. However, due to the cyclone ‘Nilam’, heavy rains occurred in Tamil Nadu followed by low pressure resulting in heavy rainfall over north Coastal Andhra Pradesh. Crop damage was observed in these States and suitable measures were advised as mentioned below.

1. **Tamil Nadu:** Due to heavy rain during end of October, *samba* rice (direct sown / transplanted) was mostly flooded in the Cauvery Delta Zone. Farmers are advised to keep vigil and drain out excess water, if required, to prevent further damage. Farmers are also advised to undertake sowing of late season crops like sunflower and pearl millet under rainfed conditions and carry out hand weeding in rainfed crops.

2. **Kerala:** Monitor *mundakan* rice for rice bug incidence and undertake plant protection measures.

3. **Karnataka**

**Coastal Karnataka:** Harvest the already matured rice crop.

**South Interior Karnataka:** Significant rainfall occurred in all the districts during first week of November. Farmers are advised to undertake intercultural operation and top dressing with urea in the standing crops.

**North Interior Karnataka:** Significant rainfall occurred in most of the districts during first week of November. In North Dry Zone, sowing of sunflower, safflower, *rabi* jowar, chickpea and wheat may be undertaken. In North East Dry Zone, farmers may undertake sowing of *rabi* sorghum.

4. **Andhra Pradesh**

**Coastal Andhra Pradesh:** Due to heavy rain under the effect of cyclone “Nilam” in Coastal Andhra Pradesh during first week of November, crop fields were submerged causing lodging of rice, sugarcane, banana in certain pockets and sizeable extent of cotton and maize. Farmers are advised to drain out excess water from the fields as early as possible and undertake crop management practices to recover the crop health. Farmers are advised to undertake sowing of *rabi* groundnut, horse gram and Bengal gram. They are also advised to harvest the *kharif* groundnut when sufficient moisture is available in the root zone and cotton & castor crop on bright sunny days. If the cotton crop is completely inundated, farmers are advised to go for alternate crop like chickpea under residual moisture and maize / jowar where irrigation facility is available.

**Rayalaseema:** Farmers in the Cuddapah district are advised to undertake sowing of *rabi* Bengal gram and *rabi* groundnut utilizing the recent rainfall.

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## Executive Summary

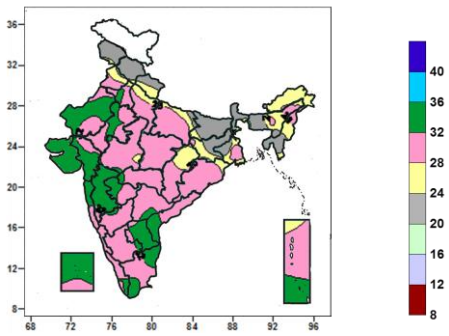
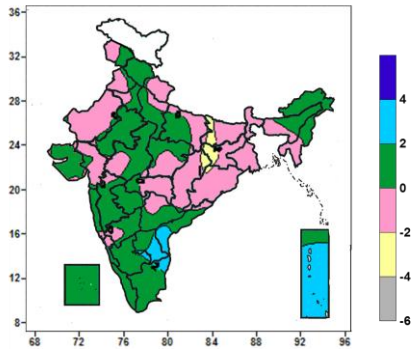
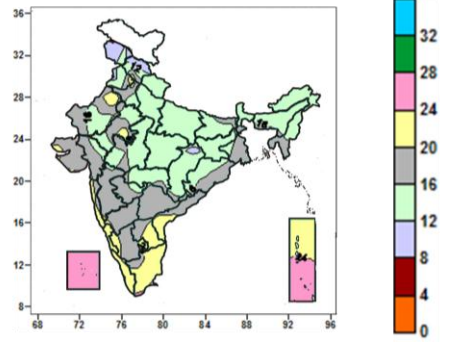
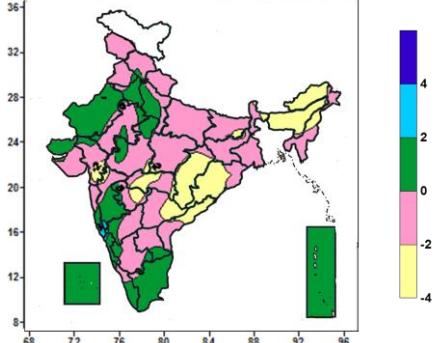
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In the remaining parts of the country mainly dry weather prevailed or no significant rainfall occurred during last week. All the *kharif* crops are at harvesting stage and sowing of *rabi* crops are undertaken. State wise details on crop information are mentioned below.

1. **Assam:** Farmers in Assam are advised to drain out the excess water from the rice field 10-15 days before harvesting and harvest the already matured rice crop. Undertake nursery raising of boro rice. Also complete land preparation and sowing of rapeseed and mustard, lentil, planting of potato and transplanting of 4-6 weeks old seedlings of winter vegetables like cauliflower, radish, tomato, brinjal, knol-khol, carrot and spinach in the main field.
2. **Arunachal Pradesh:** Farmers are advised to maintain proper moisture level in the cauliflower, cabbage, broccoli and knolkhol fields. Farmers are also advised to prepare seedbed of tomato and raddish.
3. **Mizoram:** Farmers are advised to harvest Khasi mandarin orange when colour changes and undertake preparation of nursery of cole crops, preferably in rain sheltered area.
4. **Nagaland:** Farmers are advised to harvest *jhum* rice and wetland rice. Farmers are also advised to undertake land preparation and transplanting of tomato and cabbage.
5. **Manipur:** Farmers are advised to undertake land preparation and sowing of maize, pea and zero tillage rapeseed and planting of potato. Farmers are also advised to undertake transplanting of cabbage, cauliflower, broccoli, onion etc.
6. **Meghalaya:** Farmers are advised to undertake nursery raising as well as transplanting of cole crops and other winter vegetables. Farmers are also advised to undertake sowing of *rabi* maize in low and medium altitude regions.
7. **Tripura:** Farmers are advised to start intercultural operation like thinning and weeding in *rabi* maize. Farmers are also advised to undertake sowing of toria and lentil in Tripura.
8. **West Bengal:** Farmers are advised to continue land preparation for sowing and transplanting of early cauliflower, onion, radish, broccoli, cabbage and planting of pointed gourd, potato and seasonal flower crops like gladiolus. Farmers are also advised to harvest maize and rice and continue sowing of mustard.
9. **Bihar:** Farmers are advised to harvest matured short duration rice crop and prepare field for sowing of *rabi* maize, gram, lentil, peas, rajmah, sunflower and mustard and planting of potato. Prepare nursery bed for sowing of autumn planted tomato, cauliflower, chilli, palak, carrot, radish, knol-khol, turnip, beet, garlic and cabbage. Also start sowing of wheat, oat and maize crop.
10. **Jharkhand:** Farmers are advised to prepare the land immediately for sowing of wheat, plough the land utilizing the available soil moisture and sow different *rabi* crops like gram, linseed, toria, mustard, lentil, pea with assured irrigation facilities. Harvest matured rice.
11. **Orissa:** Farmers in Orissa are advised to complete sowing of mustard and groundnut and also undertake sowing of sunflower, green pea, sesame, onion and garlic. Undertake raising of *rabi* vegetable crops in the nursery.
12. **Punjab and Haryana:** Continue sowing of wheat, pea, berseem, gram, lentil, onion, garlic and root vegetables upto last week of November. Give irrigation to sugarcane crop and undertake transplanting of gobhi sarson. Complete sowing of gram under rainfed conditions by this week as further delay in sowing results in reduction of yield. Undertake first cutting of Barseem and Napier bajra. Also it is right time for sowing of English varieties of radish, turnip and transplanting of 4 to 6 week old seedlings of cabbage, Chinese cabbage and late season cauliflower, chilli, brinjal, tomato and cole crops.
13. **Himachal Pradesh:** Farmers are advised to undertake sowing of barley in the high altitudes. Complete sowing of toria and continue sowing of pea, radish, turnip, coriander, cabbage, knol-khol, broccoli, parsley, lettuce, fennel, cauliflower in Sub-Montane & Low Hills Sub-Tropical Zone. In high hills complete picking of apple and pear.
14. **Jammu & Kashmir:** Start sowing of wheat, gram, barley, *rabi* oilseeds, pulses and vegetable crops like radish, carrot, garlic, spinach and methi without further delay and continue harvesting of rice. Also continue sowing of lentil, oat, pea, spinach, methi, oil seeds like toria, gobhi sarson, mustard, vegetables and fodder crops like barseem. Planting of garlic, transplanting of onion seedlings in well prepared land may be undertaken.

15. **Uttarakhand:** Continue sowing of wheat, sarson, gram, barley, oat, pea and chickpea, planting of sugarcane with intercrops like potato, lentil and transplanting of vegetable crops. Give light irrigation in early sown toria and mustard crops.
16. **Rajasthan:** Start sowing of wheat, barley, maize, taramira, toria, pea, rainfed gram, mustard, vegetables like carrot, spinach and radish. Undertake Autumn planting of sugarcane. Continue harvesting of bajra and *kharif* pulses.
17. **Uttar Pradesh:** Farmers are advised to complete land preparation and sowing of mustard, pea, lentil, gram, lucerne, oats and senji crops. Complete planting of potato and sugarcane along with intercrops like wheat, barley, raya, toria, gobhi sarson etc., vegetables like tomato, raddish, carrot, palak, cauliflower, cabbage etc. Apply irrigation to vegetable crops and already sown *rabi* crops. Complete harvesting of matured rice.
18. **Gujarat:** Farmers are advised to undertake sowing of coriander, cumin and wheat as temperature is decreasing. Undertake harvesting of groundnut and cotton and sowing of *rabi* maize, gram and mustard. Complete transplanting of cabbage, cauliflower and onion. Also undertake transplanting of brinjal, and sowing of onion, radish, garlic and fenugreek.
19. **Maharashtra:** As mainly dry weather is expected to prevail in Maharashtra during the period, farmers are advised to continue picking of fully opened cotton bolls. Also continue sowing of *rabi* jowar, maize and irrigated gram, wheat and short duration crops like cowpea, wal, kulthi utilising residual moisture in the harvested rice field; complete planting of pre-seasonal sugarcane and water melon on one side of the ridge.
20. **Madhya Pradesh:** Farmers in Madhya Pradesh are advised to undertake sowing of *rabi* crops like chickpea, lentil, mustard, linseed and pea. Continue sowing of *rabi* vegetables and planting of potato, sugarcane and garlic.
21. **Chhattisgarh:** Present weather conditions are suitable for sowing of wheat, sugarcane, cabbage, tomato, brinjal, niger, horse gram, lobia, chilli, gram, pea, mustard and linseed. Undertake transplanting of vegetables, planting of cassava, colocasia, ginger, elephant foot yam and dioscorea and provide support with bamboo sticks.

## Contour maps for Mean Maximum and Minimum Temperature and their anomaly for the week ending on 14.11.2012

<p><b>Actual Mean Maximum Temperature (°C) in India for the week ending 14.11.2012</b></p> 	<p><b>Maximum Temperature (°C) Anomaly in India for the week ending 14.11.2012</b></p> 
<p>Actual Mean Maximum temperature ranged between 32 to 36°C over many parts of West Rajasthan, Gujarat, Saurashtra &amp; Kutch, Konkan, Madhya Maharashtra, Raylaseema, Lakshadweep Islands, some parts of East Rajasthan, Haryana, Coastal Andhra Pradesh, Telangana, Marathwada, Tamil Nadu, Kerla, Andaman &amp; Nicobar Islands, 24 to 28°C over of many parts of Arunachal Pradesh, some parts Punjab, Haryana, Uttar Pradesh, Uttarkhand, Assam, Manipur, Mizoram, Bihar, Jharkhand, Gangetic West Bengal, Chattisgarh, West Madhya Pradesh, Andaman &amp; nicobar Islands, 20 to 24°C over of many parts of Jammu &amp; Kashmir, Himachal Pradesh, Bihar, Jharkhand, West Bengal &amp; Sikkim, Tripura, some parts of Uttarakhnd, Assam, Mizoram, 28 to 32°C over remaining parts of the country.</p>	<p>Actual Mean Maximum temperature anomaly ranged between 2 to 4°C over many parts of Raylaseema, Andaman &amp; Nicobar Islands, some parts of Coatal Andhra Pradesh, South Interior Karnataka, Tamil Nadu, 0 to 2°C over many parts of Jammu &amp; Kashmir, Utrakhnd, Punjab, West Rajasthan, Bihar, Jharkhand, West Bengal &amp; Sikkim, Tripura, Orissa, Chattisgarh, Vidarbha, Gujarat, Lakshadweep, some parts of Haryana, Uttar Pradesh, Assam &amp; Meghalaya, Mizoram, Madhya Pradesh, Goa, Coastal &amp; north Interior Karnataka, Andaman &amp; Nicobar Islands, -4 to -2°C over some parts of Chattisgarh, Orissa, Bihar, Jharkhand, -2 to 0°C over rest of the country.</p>
<p><b>Actual Mean Minimum Temperature (°C) in India for the week ending 14.11.2012</b></p> 	<p><b>Minimum Temperature (°C) Anomaly in India for the week ending 14.11.2012</b></p> 
<p>Actual Mean Minimum Temperature ranged between 24 to 28°C and above over many parts of Lakshadweep and some parts of Andhaman &amp; Nicobar Islands, 20 to 24°C over many parts of Raylaseema, Tamil Nadu, Kerala, Coastal Karnataka, some parts of Rajasthan, Saurashtra, Konkan &amp; Goa, South &amp; North Interior Karnataka, Coastal Andhra Pradesh, Andhaman &amp; nicobar Islands, 12 to 16°C over many parts of Uttarakhnd, Uttar Pradesh, Sub-Himalayan West Bengal &amp; Sikkim, Arunachal Pradesh, Assam &amp; Meghalaya, Nagalnd, Manipur, Central India, Vidarbha, some parts of Jammu &amp; Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan, Gujarat, Mizoram, and between 16 to 20°C over remaining parts of the country.</p>	<p>Minimum Temperature anomaly ranged above 0 to 2°C over many parts of West Rajasthan, Haryana, Delhi, West Uttar Pradesh, Tamil Nadu, Kerala, Coastal Karnataka, Goa, Madhya Maharashtra, Lakshadweep, Andaman &amp; Nicobar Islands some parts of Himachal Pradesh, Punjab, East Rajasthan, West Madhya Pradesh, Konkan, Marathwada, North &amp; South Interior Karnataka, Raylaseema, -4 to -2°C over many parts of Arunachal Pradesh, Assam &amp; Meghalaya, Nagaland, Orissa, Chattisgarh, some parts of Sub-Himalayan West Bengal, Bihar, Manipur, Vidarbha, Marathwada, Coastal Andhra Pradesh, Telangana, Gujarat, -2 to 0°C over remaining parts of the country.</p>

## Distribution of rainfall of the country during week ending on 14.11.2012

State/Districts	Actual (mm)	% Dep
<b>Arunachal Pradesh</b>		
Anjaw	**	**
Changlang	7.0	-10
Dibang Valley	16.0	132
East Kameng	0.0	-100
East Siang	3.5	-34
Kurung Kumey	**	**
Lohit	2.0	-74
Lower Dibang Valley	**	**
Lower Subansari	0.0	-100
Papumpara	1.9	-74
Tawang	0.0	-100
Tirap	0.5	-93
Upper Siang	36.2	269
Upper Subansari	1.0	-88
West Kameng	0.0	-100
West Siang	15.0	105
<b>Orissa</b>		
Angul	8.2	184
Balasore	1.4	-92
Bargarh	0.0	-100
Bhadrak	14.3	-4
Bolangir	1.0	-55
Boudh	0.0	-100
Cuttack	35.7	253
Deogarh	0.0	-100
Dhenkanal	3.2	-39
Gajapati	1.6	-92
Ganjam	4.9	-70
Jagatsingpur	11.8	-22
Jajpur	6.6	-41
Jharsuguda	0.0	-100
Kalahandi	0.0	-100
Kandhamal	5.5	-5
Kendrapara	73.8	139
Keonjhar	4.0	-42
Khurda	0.0	-100
Koraput	0.0	-100
Malkangiri	0.0	-100
Mayurbhanj	0.9	-92
Nawapara	0.4	-81
Nawarangpur	0.1	-92
Nayagarh	9.1	-25
Puri	0.2	-99
Rayagada	0.3	-94
Sambalpur	0.3	-90
Sonepur	0.0	-100
Sundargarh	0.0	-100
<b>Karnataka</b>		
<b>Coastal Karnataka</b>		
Dakshin Kannada	27.7	28
Udupi	14.3	-41
Uttar Kannada	4.6	-60

### Legends

<b>North Interior Karnataka</b>		
Bagalkote	6.1	18
Belgaum	13.9	69
Bidar	0.4	-93
Bijapur	3.5	-32
Dharwad	8.1	-28
Gadag	33.9	285
Gulbarga	1.2	-67
Haveri	4.6	-56
Koppal	0.9	-85
Raichur	0.0	-100
Yadgir	0.0	-100
<b>South Interior Karnataka</b>		
Bangalore Rural	0.0	-100
Bangalore Urban	0.0	-100
Bellary	13.1	57
Chamarajnagar	1.6	-90
Chichballapur	0.0	-100
Chickmagalur	12.6	-15
Chitradurga	0.1	-99
Davangere	10.7	8
Hassan	0.5	-97
Kodagu	3.0	-85
Kolar	0.0	-100
Mandya	0.0	-100
Mysore	0.0	-100
Ramnagara	0.5	-96
Shimoga	6.7	-37
Tumkur	0.0	-100
<b>Kerala</b>		
Alappuzha	62.8	22
Kannur	11.4	-47
Ernakulam	75.4	87
Idukki	91.5	81
Kasaragod	8.9	-54
Kollam	20.3	-67
Kottayam	101.7	127
Kozhikode	86.0	137
Malappuram	28.2	-15
Palakkad	32.2	-5
Pathanamthitta	79.2	33
Thiruvananthapuram	70.9	37
Thrissur	44.8	6
Wyanad	29.1	7
<b>Tamil Nadu</b>		
Ariyalur	0.8	-99
Chennai	0.5	-99
Coimbatore	8.0	-77
Cuddalore	2.2	-97
Dharmapuri	0.0	-100
Dindigul	1.5	-97
Erode	6.5	-77
Kanchipuram	1.7	-98
Kanyakumari	40.5	-33
Karikal	1.3	-99

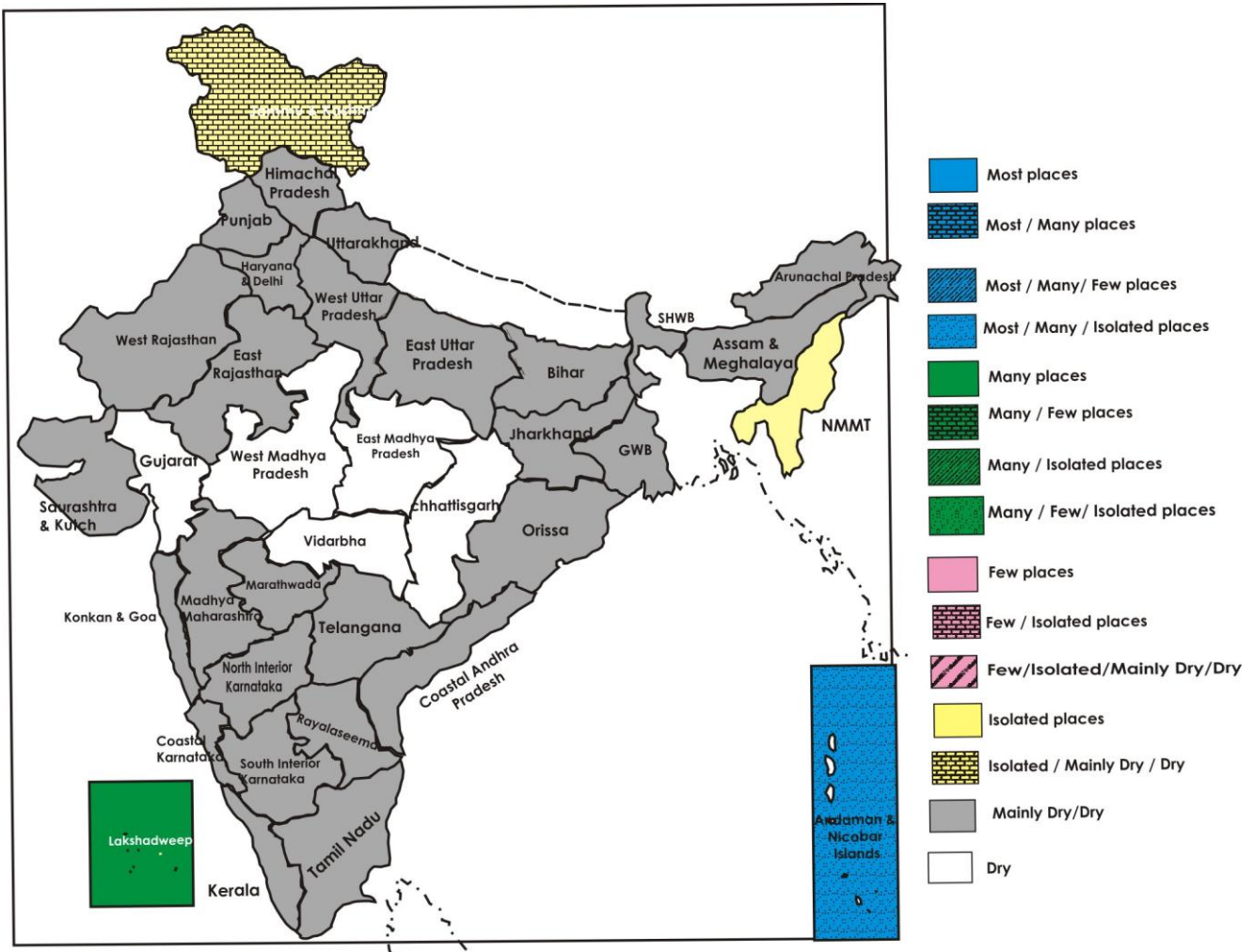
Karur	0.5	-99
Krishnagiri	0.0	-100
Madurai	2.7	-94
Nagapattinam	2.1	-98
Namakkal	0.3	-99
Nilgiris	18.0	-66
Perambalur	0.0	-100
Puducherry	0.0	-100
Pudukottai	3.4	-91
Ramanathapuram	28.8	-36
Salem	2.7	-91
Sivaganga	21.1	-45
Thanjavur	12.8	-76
Theni	33.9	-14
Tirunelveli	44.0	-25
Tirupur	0.7	-98
Tiruvallur	0.0	-100
Tiruvannamalai	0.0	-100
Tiruvarur	6.0	-92
Toothukudi	51.8	23
Trichy	0.0	-100
Vellore	0.0	-100
Villupuram	0.2	-99
Virudhunagar	13.5	-67
<b>Andhra Pradesh</b>		
<b>Coastal Andhra Pradesh</b>		
East Godavari	0.0	-100
Guntur	0.0	-100
Krishna	0.0	-100
Nellore	0.0	-100
Prakasam	0.0	-100
Sirkakulam	12.8	-17
Visakhapatnam	0.1	-99
Vizianagram	2.4	-76
West Godavari	0.0	-100
<b>Telangana</b>		
Adilabad	0.0	-100
Hyderabad	0.0	-100
Karimnagar	0.0	-100
Khammam	0.0	-100
Mehabubnagar	0.0	-100
Medak	0.0	-100
Nalgonda	0.0	-100
Nizamabad	0.0	-100
Rangareddy	0.0	-100
Warangal	0.0	-100
<b>Rayalaseema</b>		
Anantapur	0.0	-100
Chittoor	0.4	-99
Cuddapah	0.0	-100
Kurnool	1.5	-75

(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 18<sup>th</sup> November, 2012)



### Major Feature of Weather Forecast up to 0830 hours IST of 18<sup>th</sup> November, 2012

- Meteorological conditions are not favourable for development of large scale fog conditions over Indo-Gangetic plains till tomorrow. Thereafter, fog/shallow fog may occur over some parts of Punjab, Haryana, Delhi and West Uttar Pradesh.
- Rain/thundershowers would occur at most places over Andaman & Nicobar Islands during next 48 hours and at many places thereafter.
- Rain/thundershowers would occur at one or two places over Nagaland, Manipur, Mizoram & Tripura.

### Weather Warning during next 3 days

- Heavy rainfall would occur at one or two places over Andaman & Nicobar Islands during next 48 hours.

### Weather Outlook for subsequent 4 days up to 0830 hours IST of 22<sup>nd</sup> November, 2012

- Rain/Thundershowers may occur at one or two places over east coast.
- Isolated Rain/ snow at one or two places may occur over western Himalayan region.
- Mainly dry weather would prevail over rest parts of the country.
- Fall in maximum and minimum temperatures by 23°C over northwest India.

## Zonewise Agromet Advisories

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

- **Realised Rainfall:** Mainly dry weather prevailed over most of the districts of the States of the region during last week.
- **Rainfall Forecast:** Rain/thundershowers would occur at one or two places over Nagaland, Manipur, Mizoram & Tripura and mainly dry weather will prevail over the remaining States of the region.
- **Advisories:**
  - As there was no significant rain over most of the districts of the States of the region during last couple of weeks and no significant rain is likely to occur during the period, farmers are advised to apply irrigation to the standing crops.
  - Farmers in North Bank Plain Zone and Hill Zone of Assam are advised for nursery raising of *boro* rice. Also undertake land preparation and sowing of rapeseed, mustard and lentil, planting of potato and transplanting of the seedlings of winter vegetables. Undertake transplanting of 4-6 weeks old seedlings of vegetables in the main field.
  - Farmers in Lower Brahmaputra Valley Zone of Assam are advised to undertake land preparation and sowing of cauliflower, cabbage, knolkhol, *rabi* maize, rapeseed and mustard and planting of potato and improved varieties of tomato.
  - Farmers in Upper Brahmaputra Valley Zone of Assam are advised to undertake sowing of brinjal, knolkhol and transplanting of seedlings of cauliflower and cabbage. Farmers are also advised to undertake land preparation and sowing of rapeseed and mustard.
  - Farmers in Hill Temperate Zone of Assam are advised to drain out the excess water from the Sali paddy field at hard dough stage for proper maturity and harvest the already matured rice crop. Undertake land preparation and sowing of rapeseed and 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 of Assam are advised to undertake land preparation and sowing of *rabi* crops (kitchen garden, cole crops, rapeseed and mustard and wheat). The seedlings of cole crops may be transplanted when they become 30-35 days old. Farmers are also advised to prepare land and undertake planting potato.
  - Farmers in Barak Valley Zone of Assam are advised to undertake transplanting of seedlings of brinjal and planting of potato in the main field. Farmers are also advised to undertake field preparation and planting of sugarcane setts (autumn planting). Select upland sandy loam soil for the cultivation of cauliflower.
  - Farmers in Sub Tropical Hill Zone of Arunachal Pradesh are advised to maintain proper moisture level in cauliflower, cabbage, broccoli and knolkhol fields. Farmers are also advised to prepare seedbed of tomato and raddish.
  - In Mild Tropical Hill Zone of Mizoram, farmers are advised to harvest *Khasi* Mandarin orange when colour changes and undertake preparation for nursery of cole crops in rain sheltered area.
  - In Mild Tropical Hill Zone of Nagaland, farmers are advised to harvest *jhum* rice and wetland 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 maize, pea and zero tillage rapeseed and planting of potato. Farmers are also advised to undertake transplanting of the seedlings of cabbage, cauliflower, broccoli, onion etc.
  - In Temperate Sub Alpine Zone of Meghalaya, farmers are advised to undertake nursery raising as well as transplanting of cole crops and other winter vegetables. Farmers are also advised to undertake sowing of *rabi* maize in low and medium altitude regions.
  - In Mild Tropical Plain Zone of Tripura, farmers are advised to start intercultural operation like thinning and weeding in *rabi* maize. Farmers are also advised to undertake sowing of toria and lentil.
  - Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.
  - In Central Brahmaputra Valley Zone, Gundhi bug infestation is observed in *sali* rice; Apply Malathion 5% dust @ 20 kg / ha.
  - In Mid Tropical Hill zone of Mizoram, there is chance of attack of collar rot and rhizome rot in ginger and turmeric. Spraying with copper fungicide or combination of Metalaxyl + Mancozeb @ 2.5



g / litre of water or soil drenching with 1% Bordeaux mixture to control Collar rot and spraying with Copper Oxychloride @ 3 g / litre of water to prevent rhizome rot disease may be done.

➤ 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 as well as anthrax disease.

➤ In Mild Tropical Hill Zone of Mizoram and Sub Tropical Plain Zone of Manipur, farmers are advised to deworm cattle against Fascioliosis 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:** Significant rainfall occurred in Cuttuck and Kendrapara district of Orissa.

- **Rainfall Forecast:** Weather will be mainly dry / dry over the region during the period.

- **Advisories:**

➤ Farmers are advised to apply irrigation to the standing crops in Jharkhand, Bihar, West Bengal and Sikkim as there was no significant rainfall in most of the districts in States of the region and mainly dry / dry weather is likely during next three days.

➤ In South Bihar Alluvial Zone, farmers are advised to harvest matured short duration rice crop and to prepare field for sowing of gram, lentil, peas, sunflower and mustard. Prepare nursery bed with recommended dose of fertilizers for sowing of autumn planted tomato, cauliflower, chillies, palak, carrot, radish, knol khol, turnip, beet, garlic and cabbage. Prepare field for sowing of irrigated, non-irrigated wheat, oat and maize crop.

➤ In North West Alluvial Plain Zone of Bihar, farmers are advised to harvest matured rice crop and undertake planting of potato. Farmers are advised to continue sowing of *rabi* maize and other crops. Temperature condition is favourable for sowing of pea and lentil crop. Undertake sowing of gram and rajmah. Temperature condition is favorable for cultivation of Oyster mushroom.

➤ In North East Alluvial Zone of Bihar, farmers are advised to use broad spectrum fungicide in treatment of seed. Use bio fertilizer before sowing of *rabi* crop. Grow indigenous as well as improved fodder crop for production of green fodder.

➤ Farmers in Western Undulating Zone of Orissa are advised to prepare land to sow groundnut and mustard.

➤ Farmers of Western Undulating Zone are advised to prepare land for sowing of *rabi* oilseed like groundnut and mustard.

➤ Farmers of East and South Eastern Coastal Plain Zone of Orissa are advised to drain out water both from paddy and non-paddy field. Harvesting of paddy, pulses, sunflower, maize, mustard and groundnut may be continued. Go for sowing of garlic in irrigated upland and medium land, wheat sowing in inland districts, planting of potato, sowing of mustard under rainfed condition and sowing of irrigated groundnut.

➤ Farmers of North Central Plateau Zone of Orissa are advised that sowing of mustard and groundnut may be completed immediately. Weather is optimum for sowing of sunflower, onion and garlic in irrigated upland and medium land.

➤ Farmers of North Eastern Coastal Plain Zone are advised for planting of tomato, cabbage & cauliflower may be done. Land preparation for groundnut may be started in uplands.

➤ Farmers of Mid Central Table Land Zone of Orissa are advised to start sowing of sugarcane, blackgram and greengram.

➤ Farmers of North Eastern Plateau Zone of Orissa are advised to complete groundnut sowing before the end of the month in the water available area. Start transplanting of winter vegetables like cauliflower, cabbage, chilli tomato, brinjal etc with suitable seedlings. Spray bioinsecticide like Halt or Delfin @ 1 gm per litre of water to control different insects in cauliflower and cabbage.

➤ Farmers of North Eastern Ghat Zone of Orissa are advised for sowing of rainfed groundnut and green pea in the fallow uplands and sowing of sesame.

- Farmers of West Central Table Land Zone of Orissa are advised to go for land preparation for sowing of rainfed groundnut and sesame. Harvest the matured *kharif* groundnut, green gram and black gram.
- In Jharkhand, farmers are advised to plough the land immediately utilizing the soil moisture and sow the different *rabi* crops with assured irrigation facility.
- Farmers in Central and North Eastern Plateau Zone in Jharkhand are advised to undertake piara cropping, if there is sufficient moisture. Sowing of piara crop – gram, linseed, lentil and field pea may be sown in standing crop rice by increasing the seed rate by 1.5 times. Harvesting of matured rice may be done. Undertake sowing of improved varieties of gram as single crop or intercropping with linseed or mustard. Cultivate improved varieties of lentil, toria, mustard, green pea, tomato, cabbage, cauliflower, potato. Raise improved varieties of onion seedlings and prepare nursery bed.
- In Western Plateau Zone of Jharkhand, farmers are advised to prepare the land immediately after harvesting of rice and sow wheat crop. Farmers are advised to sow kulthi, green pea and African marigold or French marigold. Farmers are advised to sow *rabi* crops like gram, lentil, linseed, pea, mustard, barley etc. and undertake planting of potato.
- In Coastal Saline Zone of West Bengal, farmers are advised to start sowing of black gram in paddy field. Maintain proper aeration in the field of betel vine.
- In New Alluvial Zone of West Bengal, farmers are advised to harvest early transplanted *aman* rice and maintain proper drainage for mature rice field. Farmers are also advised to complete land preparation for potato sowing and apply 1.5- 2 ton cow dung manure or compost manure for a bigha before land preparation.
- Farmers in Laterite and Red Soil Zone of West Bengal are advised to start sowing of potato and before sowing seeds should be dipped in Bavistin solution for 10 minutes. In winter vegetables, apply 44 kg of urea and 50 kg of MoP, 21 days after sowing of seeds. Farmers are also advised to planting of winter season gladiolus.
- Farmers in Old Alluvial Zone of West Bengal are advised to undertake land preparation and sowing of wheat and mustard and start seedbed preparation for sowing of tomato.
- Farmers in Terai Zone of West Bengal are advised to prepare main field for planting cauliflower, cabbage, brinjal and tomato. Farmers are also advised for transplanting of winter seasonal flowers like gladiolus and harvest short duration *aman* rice.
- **Suitable varieties of the crops for sowing or transplanting are mentioned in Annexure II.**
- BPH and sheath blight occurrence is reported in Western Undulating Zone of Orissa during this period in some areas. For control of BPH, basal spraying of Buprofezin @ 1.5 ml / litre of water or Imidacloprid @ 1 ml / 4 litre of water may be carried out. Alternate wetting and drying of field should be done.
- Infestation of pod borer has been found and blister beetle may be severe in arhar. Farmers of North Eastern Ghat Zone (G.Udaygiri) of Orissa are advised to spray 200 ml Endosulphan along with 200 Neem based pesticides in 200 litre water for pod borer and spray 2 ml Neem oil along with 1 ml Endosulphan in 1 litre water thrice at an interval of one week in North Eastern Ghat Zone.
- Fruit and shoot borer has been found in brinjal in West Central Table Land Zone of Orissa, install pheromone traps. Alternately spray 4g Sevin and 2ml Malathion in one litre water in 7 days interval.
- Due to favourable weather condition, in New Alluvial Zone of West Bengal, there is chance of attack of fungal root rot disease in tomato and brinjal. Before transplanting dip the roots of seedling to the solution of Carbendazim 12% + Mancozeb 63% @ mixture (2 gm per litre of water).
- Gundhi bug and brown plant hopper has been found in rice in Coastal Saline Zone of West Bengal. Spray Imidachlorpid 17.8 S.L. @3ml/liter of water or Buptofezin 25 E.C.@2ml/liter of water to control attack.
- Under present hot and humid situation in Laterite and Red soil Zone of West Bengal, brown plant hopper or stem borer may attack in *aman* rice. Spray mancozeb 1.5ml per lit and Carbosulphan 25 EC@2 ml per lit of water to control attack.
- **Animal Husbandry**
- Foot and mouth disease has been observed in cows in North Eastern Plateau Zone of Orissa, farmers are advised to apply potassium permanganate on lesions in the mouth and sulphur treatment is recommended for foot lesions.

- Farmers of Western Undulating Zone of Orissa are advised to vaccinate cattle with intramuscular Qil Adjuvant FMD vaccine @2ml per one cattle and @1ml per one sheep or goat as a preventive against FMD during the winter season. The poultry should be vaccinated with R<sub>2</sub>b strain RD vaccine as a preventive against Ranikhet Disease and administered @0.5ml per bird subcutaneously.
- **Pisciculture**
- Farmers of North Eastern Plateau Zone of Orissa are advised that apply CIFAX 400ml/ha ml of water as prophylactic measures against diseases. Apply Lime @ 250kg/ha.
- Stages of major crops are mentioned in Annexure I.

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

- **Realised Rainfall:** Mainly dry weather prevailed over the States of the region.
- **Rainfall Forecast:** Dry or mainly dry weather would prevail over the States of the region.
- **Advisories:**
- As dry weather prevailed during last week and mainly dry weather is expected during next 5 days, farmers are advised to apply irrigation to sugarcane, vegetables, early sown jowar and maize in Madhya Maharashtra, Marathwada and West Vidarbha.
- Farmers in Konkan are advised to undertake sowing of short duration crops like cowpea, wal, kulthi on residual moisture in the harvested rice field of rice under '*vapsa*' condition. They are also advised to undertake sowing of water melon on one side of the ridge at a spacing of 4m x 1m.
- As late varieties of rice are in grain maturity stage, farmers are advised to complete harvesting of already matured crop.
- Prevailing cold and dry weather is favourable for sowing of *rabi* gram and wheat. Farmers in Madhya Maharashtra are advised to continue sowing of irrigated gram and wheat.
- Under prevailing weather farmers in Madhya Maharashtra and Marathwada are advised to complete the planting of pre seasonal sugarcane.
- As mainly dry weather is expected in maharashtra during next 5 days, farmers in Madhya Maharashtra, Marathwada and Vidarbha are advised to continue picking of fully opened cotton bolls. They are also advised to store cotton of first and second picking separately.
- As there are chances of decrease in temperature in North Gujarat Zone during coming week which provide favourable condition for *rabi* sowing, carry out sowing of *rabi* crops with assured irrigation facilities. Undertake transplanting of cabbage, brinjal, cauliflower and sowing of onion, raddish and garlic.
- Farmers in South Gujarat Zone are advice to give half dose of nitrogen and full dose of phosphorus and potash of recommended dose before sowing of wheat. They are also advised to make mulching in sugarcane crop with its leaves for control of stem borer and to conserve moisture in the field.
- Farmers in Middle Gujarat Zone are advised to sow wheat. Undertake sowing of spice crops like fenugreek, coriander and cumin. Undertake sowing of *rabi* maize, gram and harvesting of groundnut and cotton.
- Undertake sowing of gram in North Saurashtra Zone, if 2-3 irrigation facilities are available. Sowing of cumin and wheat may be carried out as temperature goes down. Complete harvesting of groundnut. Apply irrigation in alternate bed to cotton crop.
- Carry out sowing of wheat and mustard in Bhal and Coastal Zone of Gujarat. Complete the transplanting of cabbage, cauliflower and onion. Carry out intercultural operation or hand weeding in brinjal and tomato.
- Complete sowing of wheat in North West Zone of Gujarat. Apply light irrigation to cumin crop. Complete sowing of mustard if there is facility of irrigation.
- Stages of the crops are mentioned in Annexure I.
- As the atmosphere is favourable for mealy bug in cotton in South Gujarat Zone, farmers are advised to spray 50% wettable Carbaril @ 40 g or Profenphos 50 EC @ 10 ml or Quinalphos 20 EC @ 20 ml with 10 g detergent powder in 10 liters of water.
- Prevailing weather is congenial for incidence of oily spots on *mrigbahar* fruit of pomegranate in Marathwada region; spray Bordeaux mixture 1% or Copper oxychloride @ 25 g in 10 litres of water.

- There may be attack of tea mosquito bug, leaf miner and leaf cutting / eating beetle on cashew, which is in new flush and flowering stage in some parts of South Konkan; spray Monocrotophos 36 % @ 14 ml per 10 litres of water.
- There may be attack of pod borer in red gram in Pune Division; spray Heliokil @ 200 ml / acre in 200 litres of water.
- Under prevailing weather there may be incidence of blight and thrips in onion in Western Maharashtra Scarcity Zone; spray Chlorothalonil @ 25 g or Mancozeb @ 25 g plus Carbosulfan @ 10 ml or Fipronil + sticker @ 10 ml in 10 litres of water.
- Varieties of *rabi* crops are mentioned in Annexure II.

#### **Animal Husbandry:**

- Cut the beaks of birds in the poultry under age of 15 Weeks. Entry of visitors in poultry should be prevented. Rats in the poultry should be destroyed. Clean udder of milking Animals with insecticide, zinc oxide or boric powder in North West Zone of Gujarat.

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

- **Realised Rainfall:** No significant rainfall occurred over the States of the region.
- **Rainfall Forecast:** Mainly dry weather would prevail over the States in the region.
- **Advisory:**
  - As no significant rainfall occurred over the States of the region and mainly dry weather would occur during the period, farmers are advised to apply irrigation to the standing crops in the region.
  - Farmers in Flood Prone Eastern plain zone of East Rajasthan are advised to prepare field for sowing of rabi crops like wheat, mustard, barley, potato and lentil and sow seeds in nursery for raising seedling of autumn vegetables like tomato, brinjal, cauliflower, cabbage and radish.
  - Farmers in Semi-arid Eastern plain zone of Jaipur of East Rajasthan are advised to complete the sowing of mustard & gram at the earliest and start field preparation for the sowing of rabi crops like wheat, barley. Undertake planting nursery of late cauliflower, cabbage & rabi onion. Start sowing of fenugreek, cumin, Isabgol, ajwain, carrot, radish & garlic may be continued.
  - In Arid Western Plain Zone Bikaner of West Rajasthan, farmers are advised to undertake the harvesting of matured late sown kharif crops, also undertake sowing of barley and wheat.
  - In Arid Western Plain Zone Jodhpur of West Rajasthan, farmers are advised to complete the sowing of mustard and for sowing of wheat and barley field preparation may be undertaken and also sowing of vegetables.
  - In Transitional plain zone of Inland Drainage of Rajasthan, farmers are advised to start for sowing of taramira, toria, pea rainfed gram and mustard and vegetables like carrot, spinach and radish.
  - In irrigated northwestern plain zone of west Rajasthan, farmers are advised to continue sowing of wheat, gram and barley and complete the sowing of mustard.
  - In Sub Humid Southern Plain and southern humid plain zone of Rajasthan, farmers are advised to start preparation of field for sowing of rabi crops like wheat, barley and gram. Sowing of opium poppy should also be started during this week. Complete the planting of autumn sugarcane.
  - In southeastern humid plain zone of East Rajasthan, farmers are advised to start field preparation for sowing wheat, gram and mustard. Also advised to start sowing of winter maize in irrigated conditions. Autumn planting of sugarcane may be completed.
  - In sub tropical zone of Jammu & Kashmir, farmers are advised to do sowing of wheat, gram, barley, rabi oilseeds, pulses and vegetables like radish, carrot, garlic, spinach and methi without any further delay and continue harvesting of early maturity varieties of rice.
  - In Intermediate zone of Jammu & Kashmir, farmers are advised to start sowing of wheat, gram, barley, lentil, oat, pea, oil seeds like toria, gobi sarson, mustard, vegetables and fodder barseem.
  - In Valley Temperate Zone of Jammu & Kashmir, farmers are advised for land preparation and sowing of rabi cereal (wheat), pulses (pea and lentil), brown sarson, fodder(oat), also sowing of spinach and methi may be continued. Planting of garlic, transplanting of onion seedlings in well prepared land may be done.
  - In Barbar & Tarai region of Uttarakhand, temperature conditions is favourable for sowing of wheat from this week, farmers are advised to go for wheat sowing, also continue sowing of barley, Oat pea, chickpea

in Udham Singh Nagar district. In Nainital district, it is advised to continue sowing of wheat during this week. Farmers having irrigation facilities are advised to give light irrigation in early sown toria, mustard crops, top dressing, weeding & thinning operations for their better growth and also it is advised to do weeding operation in vegetables (coriander, spinach, radish, menthe). Mulching may be done in vegetable crops to conserve the soil moisture. Complete harvesting & threshing operations of late sown and matured soybean, finger millets etc. crops during this week as weather will remain dry during this week.

- In Sub humid sub tropic of Uttarakhand, farmers are advised continue sowing of vegetable pea, mustard and land preparation for sowing of wheat. 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. Planting of cauliflower, brinjal and chilies sapling may be continued.
- In Hill zone in Uttarakand, farmers are advised to complete sowing of vegetable pea. Also advised to continue sowing of high yield variety of toria, wheat, vegetables, mustard after harvesting of kharif crops.
- Farmers in Central plain Zone of Uttar Pradesh, are advised to continue sowing of wheat intercropping with raya, toria, gobhi sarson, pea, gram and potato etc. Also continue sowing of lucerne, oats and senji crop.
- In Bundelkhand Zone of Uttar Pradesh, farmers are advised to continue sowing of rabi crops like wheat, pea, masoor & gram after seed treatment and also irrigate already sown rabi crops like pea, toria and lahi.
- In North Eastern Zone of Uttar Pradesh, farmers are advised to complete sowing of mustard, pea, lentil, gram, maize.
- In Western Plain Zone of Uttar Pradesh, farmers are advised to continue sowing of wheat, potato, maize, pea, masoor, alsi, vegetables (like onion, tomato, raddish, carrot, palak, cauliflower, cabbage etc.) and planting of sugarcane, chilli and brinjal. Weeding operation may be done in turmeric.
- In Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh, farmers are advised to complete nursery sowing of early variety of pea, raddish, turnip, coriander, cabbage, knol khol, broccoli, parsley, lettuce, fennel and cauliflower and apply irrigation to vegetable crops. If the nursery of cabbage, cauliflower and broccoli is at 4-6 weeks stage, it may be planted in the fields directly. It is optimum time for nursery sowing of onion.
- Farmers of Mid hill sub humid zone of Nauni of Himachal Pradesh are advised to start coating of lime on the trunk of temperate fruits upto 2-3 ft from ground. Also, complete the sowing of early variety of pea and direct sowing of root crops may be continued. Cultivation of winter fodder crops like Berseem, Oats and Leucerne must be completed in this fortnight.
- Farmers in Delhi are advised to undertake sowing of wheat. Undertake sowing of oat and barseem for fodder purpose. Sowing of lentil can be done in this weather conditions. Sowing of pea should not be delayed as late sowing reduces the seed yield and exposes the crop to insect damage. Sowing of potato, Nantes group of carrot, European group of radish, Crimson Globe cultivar of beetroot and snowball cultivars group of turnip may be done in this week. This is suitable time for sowing of sarson saag, bathua, , fenugreek and coriander. Weather is suitable for sowing of rabi onion. Undertake transplanting of mature seedlings of cauliflower, cabbage, broccoli in raised bed. Transplanting of late marigold should be done in this week.
- In Western Zone in Punjab, farmers are advised to sow long duration varieties of wheat. Sowing/transplanting of gobhi sarson is more profitable than direct sowing. Complete sowing of varieties of gram under rainfed conditions by this week as further delay in sowing results reduction in yield. Take the first cutting of Barseem and Napier bajra. This is the right time for sowing of English varieties of Radish (Japanese White, white Icicle), Turnip (Golden Ball). Undertake transplanting of 4 to 6 week old seedlings of cabbage, chinese cabbage and late season cauliflower.
- Farmers in Western Plain Zone in Punjab are advised to sow wheat varieties recommended by PAU. Sowing should be completed up to last week of November. Give irrigation to sugarcane crop according to the need of crop. Sow Punjab 87, Punjab 88, Punjab 89 and Mithi Phali varieties of pea by the second week of November.



- Farmers in Undulating Plain Zone of Punjab are advised to complete the sowing of barseem as early as possible. Sow varieties PBG 5 and PBG-1 of gram which has resistance to gram blight. Starts sowing of recommended varieties of lentil, onion, garlic, and root vegetables. Undertake transplanting of chilli / brinjal / tomato and cole crops. Start sowing of recommended varieties of wheat.
- In Western Zone of Haryana, farmers are advised to sowing of recommended varieties of Wheat. Complete the harvesting of rice. Harvest sugarcane crop. Undertake sowing of barseem.
- In Eastern Zone of Haryana, farmers are advised to continue sowing of mustard and wheat crop. Continue picking of cotton. Complete harvesting of guar crop.
- In Arid Western Plain Zone Bikaner of West Rajasthan, humidity in atmosphere may increase, farmers are advised for control attack of painted bug in mustard, by dusting the crop with methyl parathion dust @ 25 kg/ha.
- **Animal Husbandry**
  - In Barbar and Tarai region of Uttarakhand, do proper chopping of maize, sorghum and other fodder and mix it in green fodder equally. Give them fresh water for drinking 2 times in a day. Since night temperature will fall further during this week, hence keep all types of small animals under the shed during the night. Put rice straw or dry leaves of sugarcane on the ground for their comfort sting during the night time.
  - In Western Plain Zone of Punjab, avoid animals from cold winds and keep them at dry places. Feed balanced fodder to the animals. In Western Zone of Punjab it is advised to regularly deworm the calves with piperazine liquid (4ml/kg body weight) first at 15 days of age, then 7 days later twice and then on 3 months of age and then 3 months after upto 1 year of age. Because of scarcity of green fodder during this month, give silage to the animals alongwith mineral mixture @ 50 g per animal per day and common salt @ 20 g per animal per day. Protect young calves from cold weather by providing dry bedding and clothing (Jhull). Keep poultry sheds clean, dry and warm. If paddy straw is available, the same can be put on the roof to protect the birds from cold during winter. Vaccinate the birds against Ranikhet disease and Fowl pox if not already done. Prepare curtains needed for coming winter for poultry sheds to avoid sudden downfall of temperature in the shed.
  - In Intermediate zone of Jammu & Kashmir, vaccination of animals against FMD advised. Weather is conducive for ticks and mites attack on animals. For control spray Butox@ 2.0 ml per litres of water. Ensure proper drainage in the surroundings of cowshed.
  - In Valley Temperate Zone, Jammu & Kashmir farmers are advised as the night temperature is reducing day by day proper arrangement should be done to provide warming to the livestock. During day time animals should not be moved out of sheds too early. Animals should be fed with a balanced diet containing higher amount of minerals and vitamins.
- **Horticulture :**
  - For control of leaf curl and Stigmia blight on peach, plum, apricot and almond, farmers in intermediate zone of Jammu & Kashmir are advised to spray copper oxychloride (0.3%) or captan (0.2%) before leaf fall.
  - In Valley Temperate Zone of Jammu & Kashmir, farmers are advised to start pruning in apple trees. Older trees should be pruned first as younger trees are more prone to winter injury. Cease all pruning operations well before any chance of a severe temperature drop.
  - In Semi Arid Eastern plain zone of East Rajasthan, mango, guava & pomegranate may be attacked by mealy bug insect. Hopper of this bug suck sap of tender leaves of these trees. To control this farmers are advised to mix quinalphos 1.5 % @ 50-100 gm per tree in soil at a depth of 10-25 cm.
  - In Transitional plain zone of Inland Drainage 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 Dimeton 25 EC @ 1 ml per litre water.
  - In Arid Western Plain Zone(Bikaner) in Rajasthan, farmers are advised to avoid heavy irrigation in ber to prevent fruit drop at this time of fruiting. Spray Monocrotophos 36 SL @ 0.04 % at the pea grain size stage of ber fruit.
  - In Arid Western Plain Zone(Jodhpur) as there is starting of fruiting stage of ber, farmers are advised to apply urea per plant as per the age of ber fruit and also apply irrigation.

- 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 at recommended dose 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).
  - In Sub Tropical Zone of Jammu & Kashmir, week colonies may be provided sealed brood from strong ones. Provide ample space to queen for eggs by giving drawn comb.
- **Floriculture**
  - In valley temperate zone of Jammu and Kashmir, farmers are advised to complete planting of tulip bulbs and spring annuals as early as possible. Harvesting of gladiolus corms should be completed as early as possible to avoid frost injury.
  - It is optimum time for raising the nursery of winter flowers like Calendula, arctotis, dog flowers, sweet pea, dianthus, petunia, stock and flox in fields in the Sub-Montane & Low Hills Sub-Tropical Zone of Himachal Pradesh.

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

- **Realised Rainfall:** Most of the districts in Kerala except Kannur, Kasargod and Kollam, Gadag in North Interior Karnataka and Kanyakumari, Ramanathapuram, Sivaganga, Theni, Tirunelveli and Toothukudi in Tamilnadu received rainfall during last week. No significant rainfall occurred over remaining parts of the region.
- **Rainfall Forecast:** Mainly dry weather is likely to prevail over the region during next three days.
- **Advisories:**
  - As most of the districts in Kerala except Kannur, Kasargod and Kollam, Gadag in North Interior Karnataka and Kanyakumari, Ramanathapuram, Sivaganga, Theni, Tirunelveli and Toothukudi in Tamilnadu received sufficient rainfall during last week, postpone irrigation to the standing crops.
  - Farmers in the Eastern Dry Zone of Karnataka are advised to take up inter cultural operations in late sown crops, take up normal agricultural operations for the standing crops and to make soak pits/trenches for perennial horticulture crops near the base of the crops to conserve moisture.
  - Farmers in the North Dry zone of Karnataka are advised to continuing sowing of chickpea, wheat (irrigated) and to avoid shortage of fodder to animals, priority should be given to fodder crops such as fodder sorghum or *rabi* sorghum which will give good quality fodder. Harvesting of pearl millet (bajra), groundnut and maize may be taken up carefully.
  - It is reported in the North East Dry Zone of Karnataka that in some parts there was no germination of *rabi* jowar because of dryness. Wherever sufficient rainfall and soil moisture build up is seen, farmers are advised to go in for resowing *rabi* jowar (both red and black soils) and bengal gram (black soil).
  - Farmers in the Problem Area Zone of Kerala are advised to complete harvesting of paddy. The harvested paddy should be properly covered with plastic sheet to protect from rainfall. The heaped paddy have to be uncovered and spread during day time to expose the grains to air in order to remove the excess moisture and avoid the development of fungus. This is to maintain the quality of the grains till procurement. 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. Stale seed bed technique has to be adopted in padasekharams where wild rice was a problem during the preceding additional crop season. 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 central zone of Kerala it is proper time for cultivation of intercrops. Cowpea can be cultivated as an intercrop in banana field. Incorporate the cowpea in to the soil 40 days after sowing. Repeat sowing of green manure crop. New planting in cool season vegetables is started. Manure can be applied in vegetables, planted in September or October. Fertilizers are applied in 15 days of interval. If bitter guard, snake guard and pumpkin are cultivated during this season, they will be free from mosaic disease.
  - Farmers in the Cauvery Delta Zone of Tamil Nadu are advised to go for top dressing with 35 kg urea + 10 kg MOP/acre and mix neemcake along with urea at 5:1 ratio for samba paddy.
  - Farmers in the North Western Zone of Tamil Nadu are advised to harvest groundnut crop, dry them and stack properly with polythene covering. It should be covered with high moisture as it may create aflatoxins, which in

turn will prove to be problem for animals like sheep, goats and large animals, leading to diarrhea and liver problems. Such dried ground nut haulms should be used during the period of summer when the greens and other fodder materials become short in availability.

- Farmers in the Scarce rainfall zone of Andhra Pradesh are advised to undertake sowings of *rabi* groundnut, horse gram and Bengal gram. They are also advised to harvest the *kharif* groundnut when sufficient moisture is available in the root zone and cotton & castor crop on bright sunny days.
- Farmers in the North Coastal zone of Andhra Pradesh are advised to harvest matured sugar cane crop as early as possible.
- Farmers in the Krishna Godavari zone of Andhra Pradesh are advised to complete sowing of chick pea. If the cotton crop is completely inundated, farmers are advised to go for alternate crop like chickpea under residual moisture, maize/jowar where irrigation can be given.
- Farmers in the in the Hill Zone of Karnataka are advised to undertake plant protection measures to control mealy bug infestation in papaya, shoot fly in maize and jowar and red hairy caterpillar, aphid and leaf minor in groundnut .
- Farmers in the North East Dry Zone of Karnataka are advised to follow suitable control measures as pod borer is noticed in early sown Bengalgram by spraying insecticides like Profenophos or Chlorpyrifos @ 2ml/liter of water.
- In the Southern Zone of Kerala farmers are advised to take steps to avoid water stagnation in the basins of the coconut palms. Water stagnation can aggravate the fungal disease – Stem Bleeding.
- Incidence of gall midge and leaf folder are noticed in samba paddy in the Cauvery Delta Zone of Tamil Nadu. To control, Spray Chlorpyrifos 20 EC @ 500 ml /acre in 200 litre of water.
- In the High Altitude Hilly Zone of Tamil Nadu, severe incidence of early and late blight seen in potato is noticed, which reduces yield upto 60 %. Farmers are advised to spray systemic and non- systemic fungicides alternatively once in 15 days to control the diseases.
- Leaf folder and Iron deficiency in rice and Flea beetles damage in black gram and green gram was noticed in the Nellore district of Southern zone of Andhra Pradesh. Farmers are advised to undertake plant protection measures.
- Farmers in the Krishna Godavari zone of Andhra Pradesh are advised to spray tricyclazole 0.6g/ kasugamycin 2.5ml/l of water on the rice crop as weather is congenial for attack of neck blast. Weather is congenial for sucking pest, whitefly and jassid on cotton crop. They are advised to spray 2ml triazophos or 2ml profenofos along with 5% neem oil per litre of water for control of whitefly and monocrotophos 1.6ml /acephate ml/ acetamaprid 0.4ml/ l of water for control of jassid.
- **Livestock**
- Due to the low temperatures in the North Western Zone of Tamil Nadu, farmers are advised to increase feeding intake lightly and not use feed ingredients containing more than 11 % moisture as it may create mycotoxins.

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

- **Realised Rainfall:** Dry weather prevailed over the region.
- **Rainfall Forecast:** Dry weather is likely over the region.
- **Advisories:**
  - Farmers in Madhya Pradesh are advised to provide irrigation to the standing crops as there was no rainfall during last week and no significant rainfall is likely during next three days.
  - Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to harvest rice crop. 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. Seedlings of cabbage, cauliflower and onion should be transplanted in the field. Also, broadcast urea in field after 30-35 days after transplantation.
  - Farmers in Jhabua Hills Zone of Madhya Pradesh are advised that this is suitable time for sowing of wheat and other *rabi* crops. Give irrigation in early sown wheat crop at 21 DAS for proper moisture. Also irrigate early sown gram & cotton crop. This is time of boll opening so keep field weed free and bolls has to be picked with clean. Apply fertilizers in chilli, capsicum, tomato, papaya, onion etc. and irrigate. This is suitable time for sowing of carrot, radish, pea, methi, palak and transplant tomato, brinjal, cauliflower and other vegetables etc. Framers are also advised to transplant onion and winter flowers and also undertake sowing of garlic. Sow barseem crop for green fodder.

- As temperature becomes favourable for sowing of wheat, farmers in Gird Zone of Madhya Pradesh are advised to prepare fields and sow *rabi* crops. This is proper time for sowing of wheat and linseed. Apply irrigation to toria, mustard and barseem crops.
- Farmers in Bundelkhand region of Madhya Pradesh are advised to sow mixed crops of mustard, chickpea and linseed in rainfed area. They are also advised to sow medium varieties of pea. In view of possibility of dry and clean weather condition during this week, farmers are advised to do hoeing and weeding and apply irrigation to vegetables crops. Also complete the sowing of potato and before sowing treat the seed with an appropriate fungicide.
- Farmers in Central Narmada Zone of Madhya Pradesh are advised to harvest paddy crop. They are also advised for sowing of gram, linseed, lentil, wheat and vegetable pea. Planting of winter sugarcane and garlic should be done. Transplant cabbage and cauliflower.
- In Chhattisgarh Plain Zone, present weather conditions and soil moisture are favourable for proper germination of gram, pea, mustard and lentil. Hence, farmers are advised for sowing of above crops as soon as possible. Before the sowing of pulse crops farmers are also advised for the seed treatment.
- Due to mainly dry weather condition, farmers are advised to harvest the matured rice crop and keep it in the field for proper sun drying only for 1-2 days. Farmers are also advised for proper sun drying of harvested crops.
- Farmers are advised for the transplanting of cauliflower, tomato, brinjal, chilli etc. in the main field during evening hours in Chhattisgarh Plain Zone. Farmers can also sow the leafy vegetables. Present weather conditions are favourable for the sowing of potato and garlic and also for raising seedlings of Onion. Farmers having proper irrigation facilities are advised for the sowing.
- Farmers are advised for land preparation in the upland slopy 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. Farmers are also advised for planting of cassava, colocasia, ginger, elephant foot yam and diascoria and support may be given by bamboo sticks. Colocasia and daag kanda harvesting may be done as per crop maturity.
- 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 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, there may be attack of leaf miner on vegetable crops. Apply rogor or confidor @ 1ml/ lit.
- Due to prevailing weather, green hoppers, white hoppers and brown plant hoppers may be observed in Bastar and Narayanpur districts in Chhattisgarh, spray Monocrotophos @ 2 ml or Imidachloprid @ 0.5 ml per litre of water.

#### **Animal Husbandry & Poultry**

- Farmers in Kymore Plateau and Satpura Hills region of Madhya Pradesh are advised to arrange vaccination of the animals to prevent from Foot and Mouth disease. Use potassium permanganate @ 5 ml per liter of water to clean the infected parts, as a precautionary measure.
- 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 (dough / maturity / harvesting), *boro* rice (nursery raising), arhar (pod formation / pod maturity), black gram, green gram (pod maturity / harvesting), cauliflower (nursery raising / transplanting / early vegetative), winter vegetables (nursery sowing / sowing / transplanting / early vegetative) in Assam.
- WRC rice (grain maturity / harvesting), okra, cucurbitaceous vegetables (fruiting / harvesting), soybean (pod maturity / harvesting), sesame (capsule maturity / harvesting), cauliflower, cabbage (nursery raising / transplanting) in Arunachal Pradesh.
- *Kharif* rice (harvesting), soybean, groundnut (pod maturity / harvesting), cucurbits, chilli and okra (fruiting / harvesting), potato (land preparation / planting), pea (land preparation / sowing), tomato (seedling / transplanting), cauliflower (nursery preparation / transplanting) in Manipur.
- *Kharif* rice (grain maturity / harvesting), maize (cob maturity / harvesting), groundnut (pod maturity / harvesting), tomato (flowering / fruiting / harvesting), cole crops (transplanting / vegetative), soybean (pod maturity / harvesting), turmeric, ginger (vegetative / rhizome formation) and *rabi* maize (sowing) in Meghalaya.
- Rice (grain maturity / harvesting), soybean (pod maturity / harvesting), groundnut (pod maturity / harvesting), *kharif* maize (maturity / harvesting), cauliflower, tomato (nursery preparation / transplanting) and ginger / turmeric (vegetative / rhizome formation), okra, bean and cow pea (harvesting) in Mizoram.
- *Jhum* rice (harvesting), wet land rice (maturity / harvesting), maize (maturity / harvesting), tomato, cabbage (nursery preparation / transplanting), soybean (pod maturity / harvesting) in Nagaland.
- Upland rice (harvesting), *aman* rice (grain maturity / harvesting), groundnut (pod maturity / harvesting), *rabi* maize (sowing), *rabi* legumes, toria, etc.(sowing), 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 maturity), urad, arhar, bajra etc. (grain formation), mango, litchi, guava (early vegetative / vegetative), winter vegetables, wheat (sowing) in Bihar.
- Rice (Upland) (Maturity/harvesting), maize (harvesting), pigeon pea (vegetative and flowering), groundnut (pod formation / maturity), urad, jowar and soybean, til (pod formation / maturity), *kharif* vegetables like okra, beans, French bean, tomato (vegetative/flowering/ fruiting and harvesting), kulthi, African marigold, French marigold (sowing), urad, potato, green pea, toria, tomato, cauliflower, cabbage and bell pepper (sowing to harvesting stage), gram (land preparation / sowing), rapeseed, linseed and mustard (sowing) radish, turnip, spinach, carrot (sowing), wheat (land preparation/sowing) in Jharkhand.
- Sugarcane (grand growth), banana (vegetative), maize (cob formation / maturity), sunflower (head formation), rice (grain formation / maturity), mustard, sunflower, sesame, groundnut, cow pea (sowing) and fruit crops (planting / seedling) in Orissa.
- *Aman* rice (grain filling / maturity / harvesting), *kharif* maize (cob formation / cob maturity), cauliflower (sowing / seedling / transplanting), marigold, Gladiolus (planting), potato (sowing), betel vine (vegetative), winter vegetables (sowing), *kharif* vegetables (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 / maturity) in Sikkim.

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

- Sugarcane (*suru*) (active tillering in Madhya Maharashtra and Marathwada), sugarcane *adsali* (elongation / cane maturity), sugarcane pre seasonal (elongation / cane maturity), sugarcane (new *adsali*)



(early tillering), sugarcane (new pre seasonal) (planting), *kharif* rice (grain maturity / harvesting), cotton (maturity / picking), red gram (flowering / pod formation), *rabi* jowar (early vegetative / vegetative), safflower (early vegetative / vegetative), maize (germination / early vegetative), gram (sowing / germination / branching), wheat (sowing / germination) in Maharashtra.

- Wheat, gram (sowing), cotton (harvesting), groundnut (harvesting), *kharif* rice (harvesting), sugarcane (vegetative / elongation), new sugarcane (planting), sesamum, castor (harvesting), new castor (sowing / germination), winter vegetables (sowing / transplanting), mustard (sowing / seedling) in Gujarat.

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

- Wheat, Oats, Barley (sowing), 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 (maturity/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.
- Sugarcane (planting), papaya (planting), sunflower (early vegetative / vegetative), maize (Normal sown - reproductive stage, early sown- harvesting stage, very late sown- silking stage/cob maturity), garlic, cucurbits, okra(seedling), *kharif* pulses(seed maturity/harvesting), potato (sowing), radish (sowing), cabbage, cauliflower (nursery sowing), carrot, turnip (sowing), knol-khol, cole crops (transplanting), mustard (sowing/emergence), barley, pulses (sowing), toria (vegetative), vegetables {Methi early bunching and kasuri methi, spinach}(sowing), *rabi* oilseeds (sowing/emergence), Wheat(sowing), Berseem (Sowing) in Jammu & Kashmir.
- Wheat (sowing), groundnut, sorghum, urad, moong, rajma (grain maturity/harvesting), arhar and ginger (vegetative), soybean (harvesting), maize(harvesting), autumn sugarcane, mustard, yellow serson, karan rai, brinjal, chilli, lady's finger, barley, oat, pea, chick pea, potato, lentil and vegetable (sowing/germination/vegetative) in Uttarakhand.
- Wheat (sowing), sugarcane (vegetative growth/ripening), cotton(boll formation/picking), arhar(harvesting), groundnut (harvesting), chana, pea, masoor, alsi, barseem, jai(sowing), vegetables like onion, garlic, radish, carrot, coriander (germination/ early vegetative), mustard, pea, lentil & gram, maize(sowing) in Uttar Pradesh.
- Rice (harvesting), 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 (harvesting), sugarcane (grand growth) (early vegetative/vegetative), barseem (vegetative / last cut), fodder (maize + cowpeas) (vegetative/ 1<sup>st</sup> 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 maturity/ picking), maize (maturity), mirch, simla mirch, guar, vegetable (tinda, water melon, pumpkin, cucumber, coriander, bhendi, ridge gourd) (sowing/seedling), green gram, cowpea (pod maturity/harvesting) and groundnut (pod maturity/harvesting), short duration moth and guar (pod maturity/harvesting), moong (vegetative), kinnow (fruiting), rice (maturity / harvesting), oilseeds (sowing/emergence), wheat, mustard, gram, potato (sowing) in Rajasthan.

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

- Sugarcane (planting), late planted paddy (harvest), sunflower (flowering), groundnut (pod maturity/ harvest), cowpea (vegetative), pigeon pea (flowering/pod formation), maize (grain filling/harvest), desi cotton (vegetative), cotton (boll formation/picking) and chilli (fruiting), *rabi* crops - sorghum (sowing), wheat (sowing), Bengal gram (branching), safflower (sowing), vegetables (fruit maturity), New vegetables (nursery sowing) in Karnataka.
- Sugarcane (June planted) (grand growth/ cane formation), vegetables (all stages), early sown rice (maturity/ harvest), late sown rice (panicle initiation/flowering), ragi (harvesting), castor (capsule maturation/ 1<sup>st</sup> picking stage), late sown groundnut (pod formation/pod filing), *rabi* maize (vegetative), red gram (flowering), Bt. cotton (flowering/boll development), sunflower (vegetative), black gram, green gram (early vegetative) and jowar (vegetative) in Andhra Pradesh

- Pepper (berry formation), coconut (flowering/nut development), cardamom (harvesting), rubber (tapping), vegetables (harvesting), *mundakan* paddy (tillering), banana /cardamom/vegetables (new planting) in Kerala.
- Late *samba* rice (transplanting / early vegetative), *samba* rice (tillering), *thaladi* (transplanting), rainfed maize (flowering), sorghum (germination / early vegetative), cowpea (germination / early vegetative), rainfed groundnut (flowering), pulses (vegetative), cotton (vegetative), new maize crop (vegetative), vegetables (vegetative) in Tamil Nadu.

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

- Rice (harvesting), ladies finger, cucurbits (vegetative/flowering), pea, potato, sugarcane (sowing), *rabi* vegetables (nursery preparation), *rabi* wheat, maize, gram (sowing/crown root), fodder crops (sowing), chickpea, lentil, mustard, linseed (sowing) in Madhya Pradesh.
- Rice (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, diascorea, elephant foot yam and cassava (planting), wheat, sugarcane (land preparation) in Chhattisgarh.

## Annexure II List of Varieties

### 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, M-27, Pusa Jaikisan, Pusa Bold

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

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

**Onion:** Nasik Red, Patna Red, Pune Red, Bellary Red, Pusa Ratnar, Pusa Madhavi, Arka Niketan , Arka Pragati, Agrifound light red, Agrifound dark, Punjab Selection, Patna white, Bombay white, Pusa white round.

**Sugarcane:** Early-CO-6907, CO7508

Medium-CO-7219, CO-86249

**Garlic:** Phawari, Rajalbadi, Jamnagar and G-282.

**Green Pea:** Rachana, Arkel. and T -163.

### West Bengal:

**Cauliflower:** Kanwari, Jowhar, Moti, Early Patna.

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

**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 Pushkar, Kufri Lalima and Kufri kanchan .

**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:** KAK-2, ICCC-2, HK94-134(Kabuli) and Pusa 256, Pusa 372, Pant G-114, KWR 108, ICCC 37.

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

**Lentil:** P.L.-406, P.L.-639, K.L.S-218 and K- 75.

### 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 L 406, 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.

**Wheat:** C306, HD2733, K9107.

### **Madhya Pradesh**

**Wheat:** Sujata, HW- 2004, HI-1500, HI- 1531, HD-2004, JWS- 17, HD-4672,

Timely sown: HI-8498, HI -1418, HI- 1479, HI – 1544, GW -273, GW- 322, GW – 366

**Gram:** JG-130, JG-11, JG-315, JG-16, Jaki – 9218, Kabuli kak-2, JG-412, Vijay, JG-226

**Lentil:** RVL-31, JL-2

**Maize:** JVM -421, JM-16,

**Pea:** Pusa pragati, Jawahar Pea 1, Jawahar Pea 2, Jawahar Pea 5 and Bonvile

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

### **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

### **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:** Kiyani seedless/243, Matgaura, Maliniseeded

**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:** Local, large segmented, Agrifound Paravati

**Onion:** Pusa Red ,N-53, Agrifound Dark Red & Agrifound Light Red,

**Knolkhol:** King of Market and White Vienna

**Spinach:** prickly seeded

**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 :** Pusa Red, Punjab Selection

**Barley:** Ratna, Jyoti, sonu

**Mustard:** RLM-514, 619, 198, Kranti, Varuna, Pusa Basant, Pusa Bahar, RH-30, RSPR-01, RL 1359

**Gram:** C-235, K-468, Gourav, PBG-1, SCS-3

**Wheat :** Irrigated- PBW-550, PBW-502, PBW-621-50, DBW-17, Raj-3077, RSP-303, HD-2967, HD-2687

Unirrigated: PBW-396 VL-738 and PBW-175 under the rainfed conditions. VL-738, VL-804, HS-240 under irrigated and rainfed areas. HD-1553, HS-277, VL- 616 & SKW-196.

**Lentil:** L-9/12 and PL-406, Pea: T-163, PG-2 and Rachna.

**Berseem:** Mescavi, Pusa Giant, BL-1 and Vardan

### **Punjab & Haryana**

#### **Punjab :**

Wheat: 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

**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

**Wheat:** H.D. 2687, H.D. 2851, H.D. 2894, H.D. 2967, D.B.W.-17.

**Carrot:** Pusa Rudhira and Pusa Kesar.

**Sarson Saag:** Pusa Saag-1;

**Bathua:** Pusa Bathua-1

**Radish:** Japani White, Hill queen, French Radish;

**Coriander:** Pant Haritama, Hybrids;

**Turnip:** Pusa Swati, Local Red variety.

**Potato:** Kufri Badshah, Kufri Bahar, Kufri Aanand, Chipsona-1, Chipsona-2, Chipsona

**Pea :** Pusa Pragati, Arkel, Azad Matar-3, Pant Matar-3 and Bournville

**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,

**Lentil:** Pusa Masoor -5 (L-4594).

**Pea:** Pusa Pragati, Arkel, Azad Matar-3, Pant Matar-3 and Bournville.

### 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 (NRCD-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), T-59, RGN- 48,

**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

**Wheat:** Raj-3077, Raj-3765, Raj-3777, Raj-1482 & Lok-1 Improved varieties : GW-273, GW-322, Raj-3777, Raj-3765, HI-8498, Raj 4037, Raj 4021, HD-2329, WH 147, PBW502 etc

**Barley:** R.D.-2035, 2552, 2592, 2052, 2660, 2035, 2503, 2508, RD-2052, RD-2503, RD-2035, RD-2592 & RD-2552.

**Garlic** (Ladva, Maleva), carrot (Nantis) and Ajwain. Labh Saleksha-1, Labh Saleksha-2 and RA-180,

**Cumin & Isabgol:** RMT-1, RMT-143 Fenugreek. RS-1, RZ-19, RZ-209,

### 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), pusa-256, radhe, PG-114, type-3, k-468, JD-1168, WR108.

**Pea:** Indira, JP-850, malviya matar-15, rachana malviya matar-2, panta matar-5, JP-885.

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

**Alsi:** bokar, Lakshmi-27, padmini, parvati, K-2, LC-2023, LC-54.

**Sugarcane:** GD1168, WR 108, Radhe, JG 315

**Wheat :** C-306, K-8027, K-8962, K-9465, K-9107, K-9006, Malviya-533, UP-2383, 2338, HD-3338, HD-2687, HD- 2888, HD-4713, HD-2894, HD-2851, HD 2781, PBW- 502, PBW-343, PBW-502, SCW 468, WH-147.



**Sarson:** Varun type-59, Rohini, Urvashi, Vaibhav, Maya, Narendra suvarna rai-8, Narendra agate rai-4.

### **Uttarakhand**

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

**Toria:** PT-303, PT-507.

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

**Barley :** Jyoti, Vijaya or Jagrati etc. ;

**Oat :** UPO-212, UPO-94, JHO-822, UPO-50 or Kent etc.

**Wheat:** irrigated UP-2572, UP-2584, UP-1109, VL-802, VL-804, VL-738, VL-719, VL-421, HS-240. un-irrigated: VL-616, HS-277, VL-829, UP-2382, UP\_2338, UP-2554, HD-2687, PBW-550, PBW-502 WH-542, PBW-343, PBW-154 etc.

**Masoor:** VL masoor-4, Panta masoor-5, VL masoor-1, VL masoor-203, PRB-502, PRB-507, PRB-701.

**Mustard:** Varuna, Vardan, Rohini etc and For Pea V.L.Ageti matar-7, Vivek Matar-3,

**Potato:** Kufri Chandramukhi, Kufri Jyoti, Kufri Anand, Kufri Jawahatr, Kufri Satlaj, Kufri Ashok etc.

### **Gujarat:**

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

**Wheat:** GW- 496, GW -503, GW -273, GW -322, GW-366, Lok-1

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

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

**Cumin:** Cumin Guj.- 4.

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

**Cauliflower:** Pusa Early, Pusa Dipali, Pusa Kartiki, Early Kuvari 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, Coppin Market.

**Raddish:** Pusa Hemadri, White ICL, Japanese White, Pusa Rashmi, Pusa Chetaki.

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

### **Maharashtra**

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

**Irrigated gram:** Vishal and Dig Vijay variety for Marathwada region and Jaki-9218, Chafa-816, Vijay, Kabuli Harbhara for East Vidarbha.

**Irrigated Wheat:** NIAW-301, NIAW-917, MACS-6122 and NIDW-295 for Madhya Maharashtra and HD-2189, AKW-1071, AKW-3722, MACS-2496 or MACS-2846 for East Vidarbha.

**Pre seasonal sugarcane:** CO-86032 (Neera), CO-94012 (Phule Savitri) or COM-0265(Phule 265).

### **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 Chuhara, 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

**Wheat:** Sonalika, UP 262, K 7410, WH 291 and HDR-77.

**Boro rice:** Mahsuri, IR-50, Bishnuprasad, Jyotiprasad, Kanaklata and Dinanath.

**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, TRCP- 8, 9.**Cowpea:** Kashi Kanchan.**Rabi maize:** HQPM- 1.**Lentil:** WBL – 58.

### Annexure III

## Contour maps for Relative Humidity, Cloud Amount and Wind speed for the week ending on 14.11.2012

