



***National Agromet Advisory Service Bulletin***  
***based on***  
***Extended Range Weather Forecast (ERFS)***

***Valid for 29<sup>th</sup> July to 11<sup>th</sup> August, 2016***

**Date of Issue: 29<sup>th</sup> July, 2016**

**Issued by**

**Earth System Science Organisation  
India Meteorological Department**

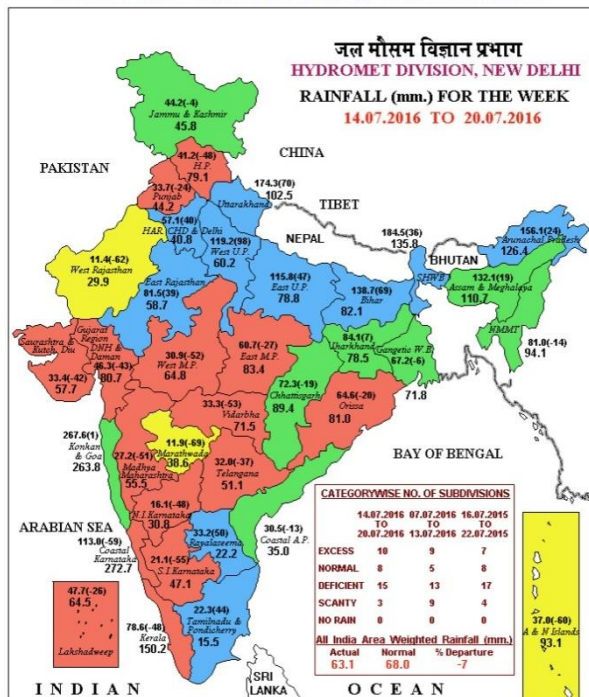
**&**

**Indian Council of Agricultural Research (ICAR)  
All India Coordinated Research Project on Agricultural Meteorology (AICRPAM),  
Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad**

\* National AAS Bulletin based on ERFS is available at <http://www.imdagrimet.gov.in/erfsview15>

## Realized Rainfall (14<sup>th</sup> to 27<sup>th</sup> July 2016)

### भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT

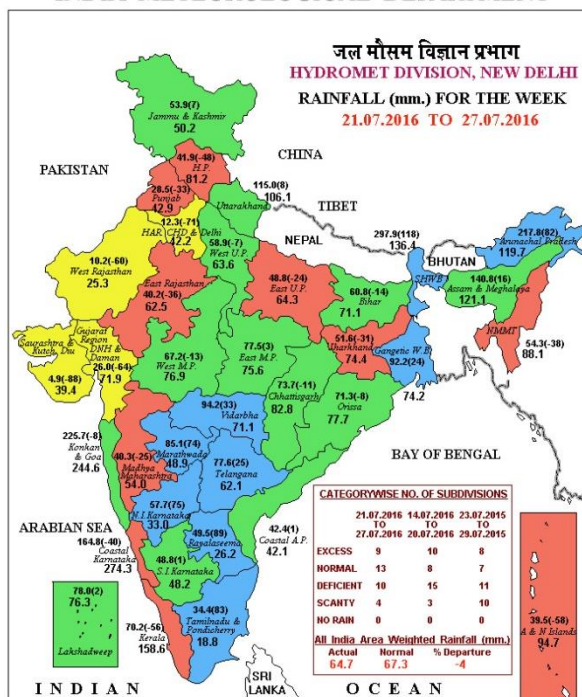


LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+19% TO -19%) ■ DEFICIENT (-20% TO -59%)  
■ SCANTY (-60% TO -99%) ■ NO RAIN (-100%)  NO DATA

**NOTES:**

[a] Rainfall figures are based on operational data.  
 [b] Small figures indicate actual rainfall (mm.), while bold figures indicate Normal rainfall (mm.)  
 Percentage Departures of Rainfall are shown in Brackets.

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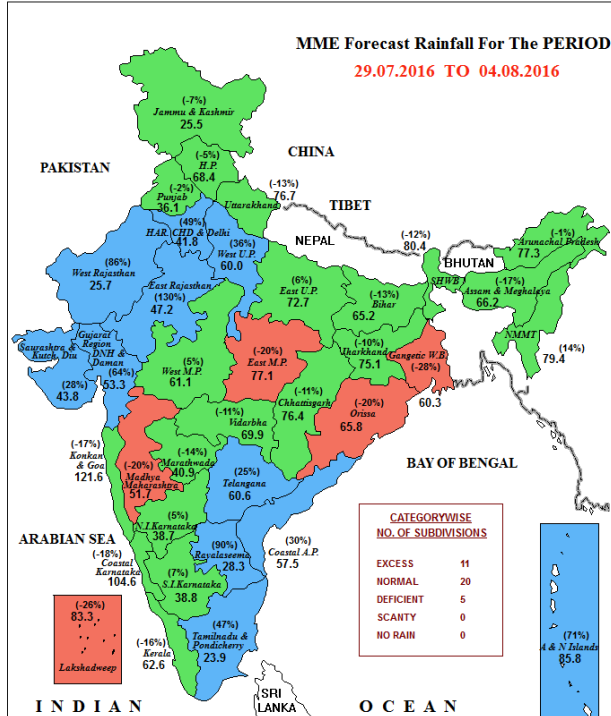
- Normal or above normal rainfall occurred during last two weeks in Jammu & Kashmir, Uttarakhand, West Uttar Pradesh, Arunachal Pradesh, Assam & Meghalaya, Bihar, West Bengal & Sikkim, Konkan & Goa, Chhattisgarh, Rayalaseema, Coastal Andhra Pradesh and Tamil Nadu.
- Normal or above normal rainfall occurred in either of the last two weeks in Haryana & Delhi, East Rajasthan, East Uttar Pradesh, Jharkhand, Odisha, Nagaland, Manipur, Mizoram, Tripura, Madhya Pradesh, Marathwada, Vidarbha, Telangana, South Interior Karnataka and North Interior Karnataka.
- Below normal rainfall occurred in the last two weeks in Himachal Pradesh, Punjab, West Rajasthan, Gujarat State, Madhya Maharashtra, Coastal Karnataka and Kerala.

## Extended Range Forecast System

### Subdivision wise rainfall forecast map for the next 2 weeks (IC =27 July)

**Rainfall forecast (mm/day) (29 July – 11 August, 2016)**

**भारत मौसम विज्ञान विभाग  
INDIA METEOROLOGICAL DEPARTMENT**

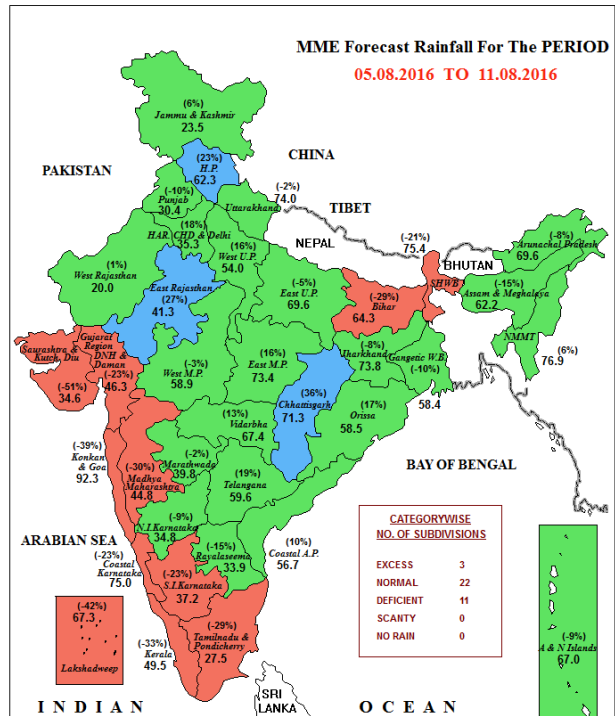


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- (c) Percentage Departures of Rainfall are shown in Brackets.

**भारत मौसम विज्ञान विभाग  
INDIA METEOROLOGICAL DEPARTMENT**



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- (a) Rainfall figures are based on MME Forecast.
- (b) Bold figures indicate Forecast Normal rainfall (mm.)
- (c) Percentage Departures of Rainfall are shown in Brackets.

- Normal or above normal rainfall is likely to occur during next fortnight over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, Rajasthan, Uttar Pradesh, Jharkhand, Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, West Madhya Pradesh, Chhattisgarh, Vidarbha, Marathwada, Coastal Andhra Pradesh, Rayalaseema, Telangana and North Interior Karnataka.
- Normal or above normal rainfall is likely to occur in either of the next two weeks over Bihar, Odisha, West Bengal & Sikkim, East Madhya Pradesh, Gujarat State, Konkan & Goa, South Interior Karnataka, Kerala, Tamil Nadu and Coastal Karnataka
- Below normal rainfall is likely to occur during the next two weeks over Madhya Maharashtra.

## Strategic Agricultural Planning based on rainfall during next two weeks till 11<sup>th</sup> August

- Monsoon will remain active over southern peninsula during the period 29 July-04 August and northwest parts of India during the period 29 July-11 August.
- Monsoon is expected to be weak over western coastal regions of India and southern peninsula, whereas, over the remaining region it is expected to be normal/slightly above normal during the period 05-11 August.

In view of the above, following advisories are issued. State-wise crop varieties are given in Annexure I.

### Major advisories for *kharif* crops

#### Kerala

Deficient rainfall occurred during previous fortnight. Normal rainfall is likely to occur during first week and deficient during second week of next fortnight.

- Continuation of direct sowing of rice (Uma, Jyothy, Vytila-6 varieties) in Alappuzha and Kottayam districts with realised rainfall.
- Maintenance of water level of 3-5 cm in transplanted rice.
- Paddy: leaf folder attack is reported in some parts of the state. Use *Trichogrammacards* @ 2cc per acre. Cut the card into small pieces and fix in different locations of the paddy field.
- Coconut: Spray neem oil – garlic emulsion (20 ml neem oil + 20 g garlic paste in 1 litre of water) as prophylactic measure against coconut eryophid mites. While spraying avoid the young inflorescence.
- Banana: Due to the changing weather pattern, there is a chance of sigatoka disease in banana. Spray *Pseudomonas* 10- 20g per 1 liter of water.
- Rubber: Take care of tapping panels in rain guarded plants. Pink disease in rubber can be controlled by chiseling out the affected bark and apply Bordeaux paste.

#### Karnataka

##### Coastal Karnataka

Deficient rainfall occurred during previous fortnight. Normal rainfall is likely during first week and deficient during second week of next fortnight.

- Continuation of transplanting of rice in Uttar Kannada district of Hill Zone with realised rainfall.
- Maintenance of 3-5 cm water level in transplanted rice.
- Intercultural operations / weeding in maize and cotton crop in Uttar Kannada district.
- Rain water harvesting.

##### South Interior Karnataka

Deficient rainfall occurred during first week and normal during second week of previous fortnight. Normal rainfall is likely to occur during first week and deficient during second week of next fortnight.

- Drain out excess water from crop fields in Bengaluru Rural, Bengaluru Urban, Chikaballapura, Shivamogga and Kolar districts.

- Completion of sowing of sunflower and sowing of short duration varieties of finger millet (Indaf-5, Indaf-9 and GPU-28, MR-01, MR-06 & ML-365) in Chitradurga, Davengere and Tumakuru districts of Central Dry Zone with realised rainfall. Intercultural operations and mulching in already sown crops to conserve soil moisture.
- Continuation of transplanting of ragi and rice in Chickamagaluru, Hassan and Shivamogga districts of Southern Transition Zone and also direct sowing of ragi. Intercultural operations in already sown maize, groundnut and red gram fields.
- Continuation of transplanting of rice and ragi in Kodagu, Mandya, Mysuru and Chamrajnagar districts of Southern Dry Zone. Intercultural operations in already sown cowpea and maize crops to control the weeds and to conserve soil moisture in Mandya, Mysuru and Chamrajnagar districts.
- In paddy field Zinc deficiency was noticed in Mandya, Mysuru and Chamrajanagara districts of Southern Dry Zone; to overcome, apply Zinc Sulphate @ 8 kg/acre without mixing with fertilizer. Remove excess water from rice fields.
- Completion of sowing of groundnut, maize, ragi, cowpea and castor in Bengaluru Rural, Bengaluru Urban, Ramnagara, Chikaballapura and Kolar districts of Eastern Dry Zone with realised rainfall.
- Intercultural operations in already sown crops to conserve soil moisture, earthing up operation wherever the long and medium duration crops like red gram, castor and maize have been sown and thinning for better availability of soil moisture to the reduced population of crop plants in Bengaluru Rural, Bengaluru Urban, Ramnagara, Chikaballapura and Kolar districts.

### **North Interior Karnataka**

Deficient rainfall occurred during first week and excess during second week of previous fortnight. Normal rainfall is likely to occur during next fortnight.

- Intercultural operations in already sown crops in Bagalkote and Gadag districts to conserve soil moisture. Prepare ridges and furrows and compartment bunds in the lands reserved for *rabi* sowing.
- Intercropping of bajra + red gram (2:1); maize + red gram (4:2), sorghum + red gram (5:1), red gram + sesamum (1:2 or 2:4); red gram + horse gram (2:1) or chilli + desi cotton is suggested.
- Continuation of transplanting of rice, completion of sowing of pigeon pea in Bidar district of North East Transition Zone with realised rainfall.
- Intercultural operations in already sown soybean, green gram, black gram, sorghum, maize, cotton and groundnut crops, application of irrigation in sugarcane crop once in 10 days in Dharwad, Belagavi and Haveri districts of North Transition Zone.
- Continuation of transplanting of rice in Kalaburgi, Koppal, Raichur, Yadgir and Ballari districts of North East Dry Zone with realised rainfall.
- Complete sowing of groundnut, bajra and red gram in Vijayapura, Bagalkote and Gadag districts of North Dry Zone.

### **Andhra Pradesh**

## Coastal Andhra Pradesh

Normal rainfall occurred during previous fortnight. Excess rainfall is likely to occur during first week and normal during second week of next fortnight.

- Completion of nursery sowing of rice and land preparation for transplanting of main field, sowing of maize, millets, red gram, black gram, green gram and cotton in Krishna, Prakasam, Guntur districts and in West Godavari district of Krishna Godavari Zone with realised and expected rainfall.
- Completion of transplanting of rice and ragi in East Godavari district of High Altitude Tribal Zone with realised and expected rainfall.
- Completion of nursery sowing and direct sowing of rice, undertake main field preparation and transplanting of seedling of proper age. Continuation of planting of rainfed sugarcane, sowing of groundnut, red gram, green gram and black gram in Srikakulam, Vizianagaram and Vishakhapatnam districts of North Coastal Zone with realised and expected rainfall. Pre-emergence spraying of Pretilachlor with safener @ 400 ml/acre within three days of sowing to control weed problem in direct sown rice.

## Rayalaseema

Excess rainfall occurred during previous fortnight which is likely to continue during first week, normal rainfall is likely during second week of next fortnight.

- Intercultural operations/weeding to conserve soil moisture in July first week sown groundnut, red gram, bajra, korra and castor crops in Anantpur district. Thinning in July first week sown castor and red gram.
- Continuation of sowing of red gram (L.R.G-30, L.R.G-41, T.R.G-22 varieties), either monocropping (@ 4-5 kilo seed/acre) or intercropping with red gram +groundnut in 7:1 ratio or 11:1 ratio in Chittoor district.
- Continuation of sowing of jowar or maize crops in 5-6rows around the groundnut field in Chittoor and Cuddepah districts.
- Rainwater harvesting whenever rain is received and storing it in reservoirs for future use.
- Utilizing the rainfall received during last two days and expected next three days, Farmers of Ananthapuramu district are advised to complete groundnut sowings by the end of this month as there will be reduction in yield if sown during August month.
- Farmers are advised to open dead furrows at 3.6 m interval in rainfed crops for in-situ conservation of rainwater.
- Incidence of *Helicoverpa* is also noticed in early sown groundnut crop. Spraying of Quinolphos @ 2ml/litre is recommended for control.

## Telangana

Deficient rainfall occurred during first week and excess during second week of previous fortnight. Excess rainfall is likely to occur during first week and normal during second week of next fortnight.

- Completion of sowing of short duration varieties of maize, red gram, groundnut and Bt. Cotton in Mahbubnagar, Nalgonda, Medak, Khammam, Rangareddy and Warangal districts of Southern Telangana Zone with realised and expected rainfall.
- Completion of nursery sowing of short to medium duration rice varieties (Telangana Sona (RNR 15048)and land preparation for transplanting of rice in Nizamabad, Khammam, Adilabad and Karimnagar districts of North Telangana Zone and in Mahbubnagar,

Nalgonda, Medak, Rangareddy and Warangal districts of Southern Telangana Zone with realised and expected rainfall.

- Drain out excess water from rice fields in Adilabad and Karimnagar districts.

### **Tamil Nadu**

Excess rainfall occurred during previous fortnight which is likely to continue during first week, deficient rain is likely during second week of next fortnight.

- Top dressing with 35 kg urea and 10 kg MOP/acre by keeping thin film of water in the field at active tillering stage of *Kuruvairicein* Ariyalur, Nagapattinam, Perambalur, Thanjavur, Thiruvarur and Trichy districts in clear weather.
- Completion of planting of tea seedlings in Nilgiris district.
- Weeding in groundnut in Chennai and Dindigul districts.
- Intercultural operation and mulching for conservation of soil moisture.
- Sow fodder sorghum + pulses (black gram/ green gram/ cowpea/ horse gram) to replace groundnut + pulses under red soil condition for Erode district.
- Sow fodder sorghum instead of dry rice / groundnut under laterite and red soils for Tiruvallur district.
- Fodder sorghum / minor millets / fodder / coriander in the place of groundnut + red gram under red, black and laterite soils for Tiruchy and Dharmapuri districts.
- Rainfed maize and short duration pulses to replace paddy under low land tank/ tube well canal irrigated black soil for Thoothukudi district.
- Pure crop of fodder sorghum / horse gram is suggested instead of groundnut + pulses intercropping under shallow red soils for Tiruppur district.

### **Maharashtra**

#### **Konkan**

Normal rainfall occurred during previous fortnight which is likely to continue during first week, deficient during second week of next fortnight.

- Maintenance of 2-3 cm water level in early transplanted rice.
- Thinning and weeding in rice field in Sindhudurg and Ratnagiri districts.
- Bunding of rice field and removal of weeds on the bund.
- Application of 2<sup>nd</sup> dose of Nitrogen 40 kg/ha to rice crop after one month of transplanting.

#### **Madhya Maharashtra**

Deficient rainfall occurred during previous fortnight which is likely to continue during next fortnight.

- In view of subdued rainfall activity which is likely to continue during next fortnight, following advisories are suggested:
  - Hoeing to create soil mulch and weeding to conserve soil moisture in earlier sown *kharif* crops.
  - Mulching to conserve soil moisture.
  - Protective irrigation to crops in areas where sowing has been completed.
- Continuation of planting of *adsali* sugarcane in Dhule, Nandurbar, Ahmednagar districts.

Recommended varieties: CO - 86032 (Nira) and Phule - 0265.

- Completion of transplanting of 28-30 days old finger millet seedlings in Pune and Ahmednagar districts.
- Completion of transplanting of rice in Nashik, Kolhapur, Pune and Ahmednagar districts during first week of August.
- Maintenance of 2-3 cm water level in transplanted rice field.

### **Marathwada**

Scanty rainfall occurred during first week and excess during second week of previous fortnight. Normal rainfall is likely during next fortnight.

- Continuation of planting of *adsali* sugarcane Aurangabad, Nanded districts. Recommended varieties: CO - 86032 (Nira) and Phule - 0265.
- Hoeing and two hand weedings in earlier sown crops like cotton, pigeon pea, green gram, black gram and cotton for effective weed control and moisture conservation.
- Monitoring of pest and diseases and taking plant protection measures.
- Rain water harvesting.

### **Vidarbha**

Deficient rainfall occurred during first week and excess during second week of previous fortnight. Normal rainfall is likely during next fortnight.

- Completion of transplanting of *kharif* rice during first week of August in Gondia, Chandrapur and Gadchiroli districts of Eastern Vidarbha Zone utilising realised rainfall.
- Intercultural operations in cotton, soybean, black gram and green gram in Buldana, Akola, Washim, Amravati, Wardha and Yeotmal districts.

Areas which are not sown so far can be accommodated with suitable crops/crop varieties (as mentioned below).

- Pigeon pea(AKT 8811 and Vipula with 60x30 cm spacing; PKV- Tara and BSMR-736 with 90x20 spacing).
- Intercropping systems include pigeon pea + soybean (1:2 / 2:4), sunflower + pigeon pea (2:1) or in soybean after every 6 or 9 rows one row of pigeon pea may be sown.
- Alternative crops include pearl millet (PKV Raj Shradha, Saburi), sesame (AKT64), sunflower (PKV SF-9, PKVSH-27, KBSH-1) and castor (AKC-1, GCH-4,5,6& DCH-117).
- Rain water harvesting.

### **Gujarat**

#### **Gujarat Region**

Deficient rainfall occurred during first week and scanty during second week of previous fortnight. Excess rainfall is likely to occur during first week and deficient during second week of next fortnight.

Improvement in rainfall activity is likely during first week of next fortnight compared to subdued rainfall during last fortnight over Gujarat Region.

- Completion of sowing of green gram, black gram in Navasari, Dangs and Valsad districts of South Gujarat Heavy Rainfall Zone utilising realised and expected rainfall. Carry out



weeding/other intercultural operations in rice and pulses.

- Completion of sowing of pigeon pea, castor, maize and bajra in Bharuch, Surat, Narmada and Tapi districts of South Gujarat Zone with realised and expected rainfall.
- Completion of transplanting of rice, completion of sowing of pearl millet(GHB-744 moderate duration and GHB- 538, GHB-719 for early maturity)with realised and expected rainfall in Dahod, Panchmahals, Anand, Kheda and Vadodara districts of Middle Gujarat Zone. Take green gram, pigeon pea, guar as intercrop in pearl millet. Carry out intercultural operation in cotton to conserve soil moisture.
- Completion of sowing of castor, pulses and sorghum (Banaskantha, Sabarkantha and Aravali districts), carry out gap filling in pulses and intercultural operations in groundnut, cotton, sesame, maize, pearl millet, pulses and established fruit crops to conserve soil moisture in Banaskantha, Mehsana, Gandhinagar, Patan and Sabarkantha districts. Take short duration pulse crops as intercrops in new orchards.
- Rain water harvesting for future use.

### **Saurashtra & Kutch**

Deficient/scanty rainfall occurred during previous fortnight. Excess rainfall is likely to occur during first week and deficient during second week of next fortnight.

Improvement in rainfall activity is likely during first week of next fortnight compared to subdued rainfall during last fortnight over Saurashtra & Kutch.

- Sowing of alternate crops like castor (GAUCH-2, GCH-5, GCH-6 and GCH-7) with expected rainfall, as normal crops could not be sown till now in Kachchh district.
- Intercultural operations, weeding and mulching to conserve soil moisture in Kachchh district.
- Completion of sowing of pigeon pea and castor in Junagadh and Porbandar districts of South Saurashtra Zone with expected rainfall. Intercultural operations, weeding and mulching to conserve soil moisture in the areas where sowing is completed. Intercropping with castor, 30 days after sowing of soybean.
- Soil moisture was insufficient for sowing of *kharif* crops in some part of Ahmedabad district. Continuation of transplanting of rice with expected rainfall, completion of sowing of pearl millet, groundnut, sesame in Bhavnagar and Ahmedabad districts with expected rainfall.
- Continuation of sowing of castor and pigeon in Amreli, Rajkot, Surendranagar and Jamnagar districts of North Saurashtra Zone with expected rainfall. Intercultural operations and mulching in pulses and pearl millet to remove weeds and to conserve soil moisture and thinning in pearl millet.
- Rain water harvesting.

### **Arunachal Pradesh**

Excess rainfall occurred during last fortnight and normal rainfall is likely to occur during next fortnight.

- Drain out excess water from the fields.
- Complete transplanting wetland rice.
- Undertake weeding in upland *Jhum* rice at tillering stage.

## Assam & Meghalaya

Normal rainfall activity was observed during last fortnight and is likely to continue during next fortnight.

### Assam

- Complete transplanting of *sali* rice in Karbi Anglong and North Cachar districts.
- Avoid transplanting of Sali rice seedlings in medium lowland or lowland areas of Dibrugarh district due to current flood and probability of getting rainfall in the coming 5 days.
- Complete sowing of arhar in Karbi Anglong district. Undertake weeding in 20-25 days old arhar crop.
- Complete land preparation and undertake sowing of sesame.
- Due to continuous rain in Barpeta district, there may be stagnation of water in *kharif* crop field. So provide adequate drainage to avoid water stagnation. To control yellowing and rhizome rot in turmeric and ginger provide drainage.
- Apply second and third doses of fertilizers in direct seeded Ahu rice at tillering stage in Hailakandi district.
- Undertake transplanting of *Sali* rice in Karimganj district.

### Contingency measures to be taken under flood

- Suitable paddy cultivar for flood prone area: Luit
- Suitable paddy cultivar for 15 days submergence tolerance: Swarna Sub-1, jalashree, Jalkunwari, Plaban
- Suitable paddy cultivar for delayed transplanting with aged seedling: Padumoni, Prafulla, Gitesh
- Suitable paddy cultivar for normal planting: Ranjit, Bahadur, Maniram, Kushal, Piolee, Pankaj, Lakhimi
- Suitable paddy cultivar with medium duration: Satyaranjan, Basundhara

### Post flood condition

- After receding of flood water go for wet seeding of sprouted rice where ever possible with short duration cultivars.
- In other case, plan for sowing of green gram, lentil, early *rabi* vegetables etc.

### Meghalaya

- Continue transplanting of *sali* rice in all the districts of Meghalaya. Maintain water level of 2-5 cm from transplanting to tillering stage.
- Harvest mature maize cobs and sundry before storing.
- Provide proper drainage system in potato field.

Normal to deficient rainfall occurred in last fortnight over Nagaland, Manipur, Mizoram and Tripura. Normal rainfall is likely to occur during next fortnight.

### Manipur

- In replanting flooding fields, transplant using 25-35 days old RC- Maniphou 7 seedlings if available. Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain. Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.
- Undertake weeding in *kharif* maize on a bright sunny day.

- Maintain proper drainage system in soybean to avoid water logging.

#### **Mizoram**

- Continue transplanting of *kharif* rice with two to three seedlings per hill.
- Remove unwanted plants by hand weeding in pre *kharif* rice.
- Ginger and turmeric is in vegetative stage. Remove unwanted plant near base of the plant and cut dead branches.
- In green gram, black gram and rajma, remove unwanted plant from the base of the plant.

#### **Tripura**

- Carry out weeding in *Aus* rice at panicle emergence stage.
- Complete transplanting of *aman* rice in all the districts of Tripura.
- Maintain optimum water level in *jhum* rice in panicle initiation stage.
- Carry out thinning, weeding and earthing up operations in maize field.

#### **Nagaland**

- Maintain proper drainage in maize field at silking stage.
- Undertake sowing of soybean.

#### **West Bengal**

Excess rainfall occurred in West Bengal and Sikkim during last fortnight. Normal to deficient rainfall is likely to occur during next fortnight.

- Drain out excess water from the fields.
- Continue transplanting of rice in Darjeeling and Bardhaman districts.
- Complete transplanting of rice in Bankura district.
- Continue transplanting of *aman* rice in East Medinipur district.

#### **Odisha**

Deficient rainfall occurred during first week and normal rainfall occurred in second week of last fortnight. Deficient rainfall is likely to occur in first half and normal in later part of next fortnight.

- Continue transplanting of rice seedlings in Kalahandi district.
- Continue transplanting *kharif* rice in Balasore, Bhadrak and Jajpur districts.
- Undertake sowing of cowpea, black gram and green gram in Cuttack district.
- Undertake weeding and hoeing in 3-4 weeks old groundnut crop.
- Sugarcane crop is at grand growth stage in Kalahandi district.. Postpone irrigation. Complete hoeing, weeding and earthing up operations. Complete wrapping and propping for protecting the crop from lodging due to rain and wind.
- Complete hoeing, hand weeding and earthing up operations in maize.
- Complete hoeing, weeding and 1<sup>st</sup> top dressing followed by earthing up at 3<sup>rd</sup> week stage.
- Complete hoeing, weeding and earthing up at three week stage arhar.
- As the soil is moist, undertake intercultivation in maize and pulses in Sundergarh districts.

#### **Bihar**

Excess / normal rainfall occurred during last fortnight. Normal rainfall is likely to occur in first

half and deficient in second half of next fortnight.

- In Begusarai, Darbhanga, East Champaran, Gopalganj, Samastipur, West Champaran of North West Alluvial Plain Zone, continue transplanting of *kharif*rice. Also continue sowing of pigeon pea.
- In Bhagalpur, Banka, Lakhisarai, Patna, Nalanda, Gaya and Bhojpur districts of South Bihar Alluvial Zone, continue transplanting of 20-25 days old rice seedlings.
- Drain out excess water from *kharif* maize and jute field in Madhepura district.

### **Jharkhand**

Normal rainfall occurred in first half and deficient in second half of last fortnight. Normal rainfall is likely to occur during next fortnight.

- In Deogarh, Dhanabad and Dumka districts, continue transplanting of 15 days old seedlings of rice.
- In Bokaro, Khunti, Ramgarh and Ranchi districts undertake weeding in groundnut, arhar, black gram, maize and green gram.
- Complete transplantation of finger millet in Bokaro district.
- In Saraikela, East & West Singhbhum districts in South Eastern Plateau, maintain proper drainage in maize field to avoid water logging.

### **Madhya Pradesh**

#### **East Madhya Pradesh**

Normal rainfall occurred in second week of last fortnight. Deficient rainfall is likely during first week and normal during second week of next fortnight.

- Carry out hand weeding in 22 to 25 days old maize crop in Chhindwara district.
- For controlling grassy weeds in soybean crop apply Quizalofop 50 gram active ingredient or Phenoxyprop 10 E.C 75 gram active ingredient per hectare must be mixed in 500-600 liter water and applied in the field with flat fan nozzle in Narsingpur district. In transplanted rice crop, application of combination of 2,4-D ethyl ester at 0.5 kg a.i./ha with Butachlor at 1 kg a.i./ha or Benthocarp at 1 kg a.i./ha or Anilophos at 0.3 kg a.i./ha within 4-6 days after transplanting is useful for controlling all types of weeds. i.e., grasses, sedges and broad leaved weeds.
- Carry out intercultural operations in soybean, urd, moong, groundnut, til etc. along with regular monitoring the crops against insect and pest in Chhatarpur and Tikamgarh districts.
- Complete transplanting of rice in Rewa, Satna, Panna, Jabalpur, Seoni, Siddhi, Katni, Shahdol, Umaria, Mandla, Dindori, Balaghat, Anuppur, Singraulidistrict of Kymore Plateau Zone. Continue sowing of green gram and black gram.

#### **West Madhya Pradesh**

Normal rainfall occurred in second week of last fortnight and is likely to continue in next fortnight.

- Carry out hand weeding in 22 to 25 days old maize crop in Betul district.
- For the control of weed in soybean use Imezathapyr 10 % @ 100 gram/ha in 600 litres of water and apply split dose of nitrogen in maize crop in Mandsaur, Ratlam, Ujjain, Dewas, Indore, Shajapur, Rajgarh and Neemuch districts of Malwa Plateau Zone. Carry out hand weeding in maize and soybean crop.

- Carry out inter culture operations in soybean, urd, moong, groundnut, til etc. along with regular monitoring the crops against insect and pest in Daria districts.
- For controlling grassy weeds in soybean crop apply Quizalofop 50 gm active ingredient or Phenoxyprop 10 E.C 75 gram active ingredient per hectare must be mixed in 500 -600 literwater and applied in the field with flat fan nozzle in Hoshangabad district. In transplanted rice crop, application of combination of 2,4-D ethyl ester at 0.5 kg a.i./ha with Butachlor at 1 kg a.i./ha or Benthocarp at 1 kg a.i./ha or Anilophos at 0.3 kg a.i./ha within 4-6 days after transplanting is useful for controlling all types of weeds. i.e., grasses, sedges and broad leaved weeds.

### **Chhattisgarh:**

Normal rainfall occurred in last fortnight and normal /excess rainfall is likely to occur in next fortnight.

- Complete transplanting of rice in North Hill Zone.
- Continue transplanting of rice and sowing of tuber crops, soybean, groundnut and til in South Chhattisgarh. In maize crop apply pre-emergence herbicide i.e. Atrazin @1.5kg a.i./ha.
- Complete transplanting of rice in Central Chhattisgarh. Continue sowing of red gram, sesame, soybean and maize. Undertake intercultural operations in rice, sugarcane and vegetables.
- To control weeds in line sown rice crop, apply pre-emergence herbicides like Pendimethalin @ 1.25 liter per ha dissolved in 500 litres of water within 3 days after sowing.

### **Jammu & Kashmir**

Normal rainfall occurred in last fortnight and likely to continue in next fortnight.

- In rice field, strengthen and raise the height of field bunds to retain rain water in Jammu, Kathua and Reasi districts of Sub Tropical Zone. In maize crop, do not allow rain water to stagnate in fields. Monitor crop for attack of cutworm but do not apply any spray. Apply 2<sup>nd</sup> dose of nitrogenous fertilizer when weather gets clear.
- Keep the field free of weeds by giving two hoeing or weeding i.e. first weeding and hoeing at 15 days after transplanting (DAT) and second operation after a fortnight in Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone.
- Arrange for drainage facility in crop fields in Jammu, Kathua and Reasidistrict.
- Due to prevailing weather condition the chances of early & late blight in tomato under such conditions spray the crop with Mancozeb @ 2.5gm/lit during clear weather.
- To control leaf curl, remove infected plants and deep buried in soil thereafter apply Imidacloprid @ 0.03% to control white fly in tomato during clear weather.

### **Uttarakhand**

Excess/normal rainfall occurred in last fortnight. Normal rainfall is likely to occur in next fortnight.

- Continue sowing of short duration Sankul variety of Maize like Kanchan, Gaurav, Surya, Vivek Sankul-11, 31, 35 and Prakash in Udhm Singh Nagar district of Bhabar and Tarai Zone. Carry out weeding and hoeing in the maize crop sown in the month of June after 15 and 30 days of sowing and dose of Nitrogen may be given as top dressing when crop attained the height of  $\approx$  2 feet.
- Carry out weeding and hoeing in the paddy field, sown in the last month in Nainital district of Bhabar and Tarai Zone. Apply 1.25 Kg/naliurea as top dressing in the Chetki/

Jethi variety of Paddy.

- In flooded and water logged areas undertake transplanting of rice with improved varieties such as Jalpriya, Jallahri, Madhukar, Chakia-49, etc. may be done in Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone. Undertake gap filling in transplanted rice. Make drainage channel in maize, rice, sugarcane and vegetable fields. Avoid stagnation of water in pulse crops.
- Drain out excess water from crop fields.

### **Himachal Pradesh**

Deficient rainfall occurred in last fortnight. Normal/excess rainfall is likely to occur in next fortnight.

- Complete transplanting of rice in Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone.

### **Haryana & Delhi**

Excess rainfall occurred in first week of last fortnight. Excess/normal rainfall is likely to occur in next fortnight.

#### **Haryana**

- Complete transplanting of rice seedlings in Western Zone. Undertake sowing of green gram. Carry out weeding/hoeing/ intercultural operations in cotton.
- Adopt chemical weed control in rice crop after transplanting in Eastern Zone. Carry out weeding and hoeing operation in sugarcane.

#### **Delhi**

- Apply nitrogen at the rate of 30-40 kg /ha in a transplanted paddy crop which is 20-25 days old.
- Undertake sowing of green gram and black gram.

### **Punjab**

Deficient rainfall occurred in last fortnight. Normal rainfall is likely to occur in next fortnight.

- Complete transplanting of rice in Moga, Bhatinda, Mansa, Muktsar, Sangrur and Barnala districts of Western Zone. In transplanted rice, apply second and third dose of 37 kg urea per acre each after 3 and 6 weeks of transplanting.
- For the control of broadleaf weeds, spray Algrip 20 WG 30 g or Sunrice 15 WDG 50 g or Londex 60 DF 40g or Segment 50 DF 16 g/acre in 150 litres of water after 20- 25 days of transplanting. Before spray, the standing water from the field should be drained out and irrigation may be applied one day after spray. The spray should be done on a clear and calm day.

### **Uttar Pradesh**

#### **East Uttar Pradesh**

Excess rainfall occurred in first week of last fortnight. Normal rainfall is likely to occur in next fortnight.

- Complete transplanting of rice in Allahabad, Fatepur, Chitrakut districts of Central Plain Zone. Complete sowing of green gram, black gram and sunflower. Undertake sowing of soybean.
- Undertake transplanting of scented rice and carry out weeding in transplanted rice in

Faizabad, Gorakhpur, Sultanpur districts of Eastern Plain Zone.

- Continue sowing of green gram and black gram in Kanpur, Sitapur, Unnao, Lucknow districts of Central Plain Zone.
- Complete sowing of pigeon pea, sesame, groundnut in Bahraich, Shravastinagar, Balarampur, Gonda, Kushinagar, Sidharthnagar and Maharajganj districts of North Eastern Plain Zone.

### **West Uttar Pradesh**

Excess/normal rainfall occurred in last fortnight and is likely to continue in next fortnight.

- Complete sowing of jowar, black gram, green gram, bajra, and til in Jhansi, Jalaun, Lalitpur, Mahoba and Hamirpur district of Bundelkhand Zone.
- Complete transplanting of rice in Meerut, Saharanpur, Muzaffarnagar, Bareilly districts of Western Plain Zone of Uttar Pradesh. Carry out weeding in maize, green gram, pearl millet, sorghum and pigeon pea.

### **Rajasthan**

#### **East Rajasthan**

Excess rainfall occurred in second week of last fortnight and excess rainfall is likely to occur in next fortnight.

- Complete sowing of *kharif* crops like bajra, jowar, guar, sesame and moong etc. In case of late sowing prefer early maturing varieties of pulses like green gram, moth bean and urd over cereals in Bharatpur, Alwar, Karauli districts of Flood Prone Eastern Plain Zone.
- Undertake sowing of short duration varieties of *kharif* crops along with intercropping like Maize-Urd (2:2), Maize-Moong/Cowpea (1:1) or Maize-Cluster bean (2:2) in Bilwara, Chittorgarh, Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone.

#### **West Rajasthan**

Scanty rainfall occurred in last fortnight. Excess/normal rainfall is likely to occur in next fortnight.

- Complete sowing of guar and castor in Sriganganagar and Hanumangarh districts of Irrigated North Western Plain Zone.
- Undertake hoeing & weeding in pearl millet, green gram, moth bean and sesame crop in Churu, Barmer, Jalore, Jodhpur and Pali districts of Arid Western Plain Zone. Give 20 kg nitrogen per hectare in pearl millet crop 20-25 days after sowing.

#### **Advisories for other crops**

### **Kerala**

- Planting of banana cultivars like Poovan, Palayankodan, Robusta in Kannur, Malappuram and Kozhikode districts.
- Continue crown cleaning, provision for proper drainage and regulation of shade to prevent mid-whorl yellowing in coconut.
- Continuation of tapping of rubber in Thiruvananthapuram district.
- Take care to avoid water logging at the base of banana plant especially in low lying areas in Kollam district.
- Arecanut: apply 1% Bordeaux mixture as a prophylactic measure to control mahali and bud rot

diseases.

- Banana: there is a chance of aphid infestation. Spray verticillium solution 5 ml/L as a control measure against aphid.

## **Karnataka**

### **Coastal Karnataka**

- Hand weeding in 25-35 days old maize and cotton crops in Uttar Kannada district.
- Completion of planting of pineapple, black pepper, arecanut; provide drainage in turmeric and ginger in Uttar Kannada district.

### **North Interior Karnataka**

- Completion of sowing of fodder sorghum, maize (African tall), cowpea and short duration bajra in Ballari, Kalaburgi, Koppal, Raichur and Yadgir district of North East Dry Zone.
- Completion of fresh plantation of fruit trees, teak, neem, tamarind, acacia or other trees on the bunds, uncultivated and marginal land in North East Dry Zone.

## **Andhra Pradesh**

- Earthing up for 120 days old sugarcane crop in Srikakulam, Vizianagaram and Vishakapatnam districts.
- Monitor for sucking pest incidence like leaf miner, thrips in groundnut, thrips in green gram, black gram and sucking pests in cotton.

## **Tamil Nadu**

- Continuation of grafting and cutting of horticultural crops, planting of rubber in Kanyakumari district.
- Completion of sowing of gourds with adequate drainage facility in Coimbatore, Tiruppur and Erode districts.
- Soil application of fertilizers in rice in clear weather.
- Mulching in tree crops in Kanyakumari district.
- Planting of pineapple, banana, cinnamon and ginger in Kanyakumari district.
- Avoiding waterlogging conditions in turmeric field in Coimbatore, Tiruppur and Erode districts to prevent rhizome disease.
- Crop rotation in Nilgiris district to avoid nematode infestation in carrot crop.

## **Maharashtra**

### **Konkan**

- Plantation of horticultural crops like mango and sapota. During plantation of Alphonso mango include 15 to 20 per cent grafts for Keshar, Ratna.
- Drain out excess water from mango, cashew, sapota, coconut and arecanut orchards.
- Maintenance of adequate drainage in vegetable crops (Bhindi and cluster bean).
- Completion of sowing of okra in ridges and furrow having spacing of 60 x 45 cm.

### **Madhya Maharashtra**

- Completion of cultivation of fodder sorghum, bajra, maize, cowpea and hybrid napier for livestock.

### **Marathwada**

- Gap filling in vegetable crops like brinjal, chilli, lady's finger and cluster bean in Nanded, Parbhani and Aurangabad districts.



- Completion of sowing of fodder crops like maize, jowar and bajra.

### **Vidarbha**

- Completion of cultivation of vegetables like bitter gourd, tinda, cluster bean, cowpea and gourds in Buldana, Nagpur, Akola, Washim, Amravati, Wardha and Yeotmal districts.

## **Gujarat**

### **Gujarat Region**

- Transplanting of vegetable crops like chilli and brinjal, sowing of bhindi, cluster bean and cowpea in Banaskantha, Mehsana, Gandhinagar, Patan and Sabarkantha districts. Continue planting of fruit crops.
- Completion of transplanting of chilli and brinjal in Navasari, Valsad and Dangs districts of South Gujarat Heavy Rainfall Zone.
- Completion of sowing of vegetable crops like bhindi, beans and cucurbits in Bharuch, Surat, Narmada and Tapi districts of South Gujarat Zone with realised rainfall.

### **Saurashtra & Kutch**

- Completion of transplanting of brinjal, chilli and early cauliflower in Amreli, Rajkot, Jamnagar and Surendranagar districts of North Saurashtra Zone.
- Continuation of transplanting/sowing of vegetable crops like chilli, brinjal, bhindi, cluster bean and cowpea under sufficient moisture condition in Kachchh district and transplanting of chilli, brinjal, in Ahmedabad and Bhavnagar districts.

### **Arunachal Pradesh**

- Maintain proper drainage and carry out earthing up practices in low land/plain areas to avoid water stagnation in fruit orchards.
- Undertake weeding and earthing up in ginger and turmeric in vegetative stage.
- Remove the male flower in banana bunches to attain better fruit size. Remove excess sucker from Banana in mother plant and give support in banana bunches to protect falling due to heavy weight or storm.

### **Assam**

- Carry out second earthing up in spring sugarcane in North Cachar Hills.
- In Barpeta district, use bamboo in sugarcane or tie together 4 to 5 stems of sugarcane plant with their leaf to control lodging.

### **Meghalaya**

- Undertake weeding and hoeing in tomato.
- Undertake first hand weeding in groundnut at flower initiation stage.
- Undertake weeding operations in ginger and turmeric field.

### **Manipur**

- Coriander may be sown as intercrop in Turmeric field.

### **Mizoram**

- Arrange proper drainage in okra to avoid water logging.

### **Tripura**

- Cloudy and humid weather is conducive for the attack of Leaf Curl disease in summer brinjal, chilly etc. To manage the attack, apply Imidachloprid @ 2ml per liter of water.

**Nagaland**

- Maintain proper drainage and carry out timely earthing up in ginger.
- Maintain proper staking in cow pea and undertake timely harvesting.
- Undertake harvesting of okra.

**West Bengal**

- Carry out weeding followed by earthing up in ginger and turmeric in Darjeeling district. Also drain out excess water from the fields in Jalpaiguri district.
- Keep the large cardamom field weed free and avoid stagnation of water in Darjeeling district. Also avoid water stagnation to manage collar rot in round chilli.
- Harvest gerbera flowers regularly.

**Odisha**

- Undertake early sowing of kharif vegetables like okra and cucurbits in Cuttack district.
- Complete sowing of pulses and oilseeds like sesame.

**Bihar**

- Undertake land preparation for transplanting of kharif onion in Darbhanga district.
- Undertake nursery sowing of chilli.
- Continue planting of mango saplings and healthy banana suckers in Darbhanga district.
- Undertake planting of mango, litchi, guava and papaya plants in Bhojpur district.
- Undertake earthing up in ginger and turmeric in Madhepura district. Also ensure a certain level of slope in the field so that water does not stagnate around the root zone. Undertake mulching with agro-waste like straw to arrest soil loss until the canopy cover of the crop increases.

**Jharkhand**

- Undertake sowing of black gram.
- Carry out weeding and earthing up in pigeon pea and maize.
- Undertake sowing of til.

**Madhya Pradesh****East Madhya Pradesh**

- Complete sowing of vegetables like- ladyfinger, bottle guard, cucurbits, sponge guard, bitter guard and beans in Chhatarpur and Tikamgarh districts.

**West Madhya Pradesh**

- Complete sowing of vegetables like- ladyfinger, bottle guard, cucurbits, sponge guard, bitter guard and beans in Datia districts.
- Continue transplanting of vegetables in field in Mandsaur, Ratlam, Ujjain, Dewas, Indore, Shajapur, Rajgarh and Neemuch districts of Malwa Plateau Zone. Prepare seedling for kharif vegetables. Seeds of Pumpkin, Bitter guard & Bottle guard must be sown in the back yard.
- To control of broad leaves weed in maize, spray 2, 4-D @ 1.25 to 1.50 l/ha with 600-700 lit. of water at 15-20 DAS when, sufficient moisture in the field in Jhabua, Dhar and Alirajpur in Jhabua Hills Zone.

**Chhattisgarh**

- Continue planting of papaya, mango, guava etc. in North Chhattisgarh. Continue nursery sowing of brinjal, early tomato, chilli and onion in the upland areas.

**Jammu & Kashmir**

- Provide staking with plastic string in tomato, bottle gourd, bitter gourd, sponge gourd and cucumber to prevent the fruit from rotting in Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone. To avoid wilting in chillies, tomato and brinjal farmers are advised to avoid water logging conditions in the field.

**Uttarakhand**

- Undertake transplanting of chilly in Udham Singh Nagar district of Bhabar and Tarai Zone.
- Farmers, who didn't sow the okra crop till date, it is advised to sow it at the earliest and weeding, hoeing and necessary arrangement of drainage should be done in okra crop sown in the last month. After 25-30 days of sowing of okra crop, Urea should be applied as a top dressing in the field.
- Proper drainage should be arranged in the field where early variety of Cabbage transplanted followed by weeding and hoeing.
- Undertake nursery sowing of mid variety of cabbage.

**Himachal Pradesh**

- If ginger, turmeric, calcocasia and elephant foot crops having age of 40-50 days, apply second dose of fertilizers. Ensure drainage in the fields in Bilaspur, Simla, Sirmaur and Solan districts of Mid Hills Sub Humid Zone. Undertake plantation of evergreen plants like mango, litchi, guava, citrus, laquat and amla.

**Haryana**

- Undertake planting of mango, banana, jamun, pomegranate, papaya, amla, phalsain Western Zone.

**Delhi**

- Continue transplanting of Chilli, Brinjal and Early Cauliflower.
- Rainy season onion should be transplant or direct sown in the prepared fields. Prepare marigold nursery (PusaNarngi) in net house.
- Undertake planting of mango, citrus and guava.

**Uttar Pradesh**

- Continue planting of Guava, Mango, Leechi, Anola, Jackfruit, Lime, Ber, Banana and Papaya as new orchard in Allahabad, Fatepur, Chitrakut districts of Central Plain Zone.
- Continue sowing of bhindi and lobia in Kanpur, Sitapur, Unnao, Lucknow districts of Central Plain Zone. Undertake transplanting of brinjal, chilli and cauliflower.

**Rajasthan**

- Continue planting of fruit crops like mango, plum and pomegranate in Jaipur, Ajmer, Tonk and Dausa districts of Semi-Arid Eastern Plain Zone.

**Annexure –I****State-wise Varieties of different crops for *Kharif* Season**

State	Subdivision	Crop	Varieties
<b>Karnataka</b>	<b>Coastal Karnataka</b>	<b>Rice</b>	for low land Intan, Abhilash and Hemavati, for upland Amrut or Prasanna
	<b>South Interior Karnataka</b>	<b>Red gram</b>	TTB-7, BRG-1, 2, 4, 5, Hyd-3c.
		<b>Groundnut</b>	TMV-2, JL-24, KCG-6
		<b>Ragi</b>	Indaf -9, ML-365
		<b>Cowpea</b>	TVX-944, KBC-1
		<b>Castor</b>	DCS-9 (Jyothi), DCH-177 & 32

		<b>Sorghum</b>	DSV-2,CSV-15, DSV-3, DSV-62, Hybrids – CSH-14, CSH-16, CSH-18, CSH-30, SSV- 74.
	<b>North Interior Karnataka</b>	<b>Pigeon pea</b>	BSMR 736, TS-3R
		<b>Soybean</b>	JS-335, DSB-1, DSB-21, JS 93-05.
		<b>Maize</b>	Hybrids –DMH-2, Arjun and Private hybrids, GH-0727, Renuka (G-25).
		<b>Groundnut</b>	Bunch type varieties GPBD-4, JL-24 and TMV-2, spreading type varieties: DSG-1 and JSP-39, Bunch type of varieties –GPBD-5 and G-2-52, R-2001-3 (Ajay), Spreading type of varieties – DSG-1 and JSP-39.
<b>Andhra Pradesh</b>	<b>Coastal Andhra Pradesh</b>	<b>Rice</b>	BPT-5204, vijetha, IR-64 and Bavapurisannaalu, MTU 1010, MTU 1075, NLR 34449, Pushyami, Sridruti, Sridruthi, Pushkala, Sri Satya.
		<b>Maize</b>	DCH-111, DCH-113, DCH-115, Maandhuri& Priya (sweet varieties), DHM 111, DHM 117, DHM-119, KH 510, Bio 9637, KH 9541, MCH 2, Kohinoor, Prabhal and Bisco 855.
		<b>Red gram</b>	LRG- 38, LRG- 41, laksmi, Abhaya, Asha, Maruthi and PRG-158, LRG 52.
		<b>Black gram</b>	LBG-752, LBG-20, T-9, LBG-623, PU-31, LB-402, LBG-709 and LBG-787 , TBG 1,GBG 104.
		<b>Green gram</b>	LGG-407, LGG-460, LGG-450, LGG-410, TM-96- 2.
		<b>Cotton</b>	Cotton Dorasannaalu
		<b>Ragi</b>	Bharati, Srichaitanya, Vaula.
		<b>Groundnut</b>	Kadiri-7 Bold, Kadiri-8, Bold, kadiri-6 Kadiri-9, KadiriHarithandra, KadiriAnantha.
		<b>Sesame</b>	Hima and Sarada (YLM 66)
	<b>Rayalaseema</b>	<b>Rice</b>	MTU 1010, Nellore Masuri in Nellore district.
		<b>Groundnut</b>	Narayani, Abhaya, Dharani, Grishma, TPT-4, Kadiri-6, Kadiri-9 and dharani.
		<b>Redgram</b>	L.R.G-30, L.R.G-41, T.R.G-22,LRG-41, PRG-158, PRG-176, Lakshmi, and Asha.
		<b>Bajra</b>	P.H.B-3, I.C.M.H-356, Dhanashakthi.
		<b>Korra</b>	Prasad,SIA-3085, Krishnadevaraya,Suryanandi, Narasimharaya, Srilakshmi and SIA 3156.

		<b>Castor</b>	PCH-111, PCH-222, Haritha, Kiran.
	<b>Telangana</b>	<b>Rice</b>	RNR15048, kuruvai, ADT 36, ADT 43, ADT 45 and ADT 47.
		<b>Maize</b>	DHM-101, 103,107 and other private hybrids
		<b>Red gram</b>	LRG 30, ICPL 8863, 332,87119, 85063.
<b>Maharashtra</b>	<b>Konkan</b>	<b>Groundnut</b>	KonkanGaurav and TrombayKonkan (Tapora), high yielding varieties: TG-26, TAG-24 and TPG-41.
	<b>Madhya Maharashtra</b>	<b>Soybean</b>	PhuleKalyani, PhuleAgrani (KDS 344), JS 335, MACS 11188, JS 335, PhuleKalyani (DS-228).
		<b>Sorghum</b>	Hybrid varieties: CSH 5, CSH 9, CSH 13, CSH 14, CSH 16, CSH 21, CSH 25. Improved varieties: SPV 462, CSV 13, CSV 15, CSV 17 and CSV 23.
		<b>Sweet sorghum</b>	SSV 84, CSV 24 SS, CSV 19 SS.
		<b>Groundnut</b>	PhuleMorana, PhulePragati, PhuleVyas, PhuleUnnati, Phule RHRG 6021, SB11, TPG41, TG26.
		<b>Pearl Millet</b>	Shraddha, Saburi, Phule Shanti or ICTP 8203, ICMV 155.
		<b>Pigeon pea</b>	ICPL 87, Vipula, BSMR-853, BSMR-736.
		<b>Sunflower</b>	EC 68414, SS 56, Bhanu.
	<b>Marathwada</b>	<b>Pigeon pea</b>	rainfed: BDN-2, BDN-708 (Amol), BDN-711 , BDN-716; irrigated: BSMR-853, BSMR-736)
		<b>Green gram</b>	BM-4, Kopargaon, BPMR-145, BM-2002- 01, BM-2003- 2.
		<b>Black gram</b>	BDU-1, TU-1
		<b>Groundnut</b>	JL-24, LGN-2 (Manjra), TLG-45, LGN-1, LGN-123
		<b>Maize</b>	early varieties: Paras, Arun, Kiran, Surya; mid late varieties: Navjot, Manjra, DMH-107, KH-9451, MHH, late varieties: Prabhat, Deccan-103, K-2492, Bio-9381, Maharaja  Fodder crops: African Tall, Ganga-5, Vijay and Manjari.
	<b>Vidarbha</b>	<b>Red gram</b>	ICPL- 87119 (Asha), C-11
		<b>Black gram</b>	PKV-15, TAU-1, TAU-2 and TPU-4.
		<b>Green gram</b>	PKV- green gold, PKV mug -8802, TARM-18

		<b>Sorghum</b>	early duration- CSH-14 and CSH-17, medium duration- CSH-9 SPH-388 and improved- SPV-669.
		<b>Cotton</b>	desi cotton: AKA-5, 7, 8, American improved varieties: AKH – 081, PKV-Rajat, AKH-8828, hybrid varieties: PKV-DH- 1
<b>Gujarat</b>	<b>Gujarat Region</b>	<b>Rice</b>	(NAUR-1, GNR-2 (Costal area), GNR-3 (N/V), GNR-4 (long duration), Jaya, Ghujari, GR-5, 7, 8, 9, IR-28 and GAR-13), GR-8,9 and Gurjari.
		<b>Groundnut</b>	semi-spread GG.20 or erect GG.2, GG.5, GG.7 and TG-26.
		<b>Pearl millet</b>	Late maturity GBH-558, GBH-732 and for moderate maturity GBH-744, GBH-905 and for early maturity GHB-757, GHB-719, GHB- 538.
		<b>Maize</b>	G.maize-1, 2, 4, 6, and Ganga safed-Ganga-11.
		<b>Cluster bean</b>	Gujarat Guar-2.
		<b>Green gram</b>	G.Mung-4 and K-851, Meha.
		<b>Black gram</b>	T-9, Guj. Udid-1.
		<b>Cow Pea</b>	G. Cowpea-4, G. Cowpea-5, PusaFalguni
		<b>Sunflower</b>	Modern, EC 68414
	<b>Saurashtra &amp; Kutch</b>	<b>Groundnut</b>	GG-20 & 22, GUG-10, GG-2,11,13, TAG- 24 & 37, TPG-41, TLG-45.
		<b>Cotton</b>	early: Bg-II GCH-8, Agritop-333, 777, 444, Jay, Beejdhan-2, Sarju, Atom, Bhakti, Medium Late: Bg-II GCH-6, Agritop-444, Solar-76, Swapna, Mallika.
		<b>Cow pea</b>	Gujarat Cowpea-1,2,4, PusaFalguni.
		<b>Black gram</b>	T-9, GU-1.
		<b>Green gram</b>	GM-4, K-85.
		<b>Pearl millet</b>	GHB-558, 77, 538, 719, 732,744.
		<b>Castor</b>	GAUCH-1, GCH-4,5,6,7, GC-2, 3.
		<b>Soybean</b>	Guj. Soya. 1, 2, 3.
		<b>Pigeonpea</b>	BDN-2, Vaishali, GTH-1, GT-100.
		<b>Sesame</b>	Guj.Til-1,2,3,10, GT-2 or GT-3.
<b>Assam</b>		<b>Sali Rice</b>	Ranjit, Bahadur, Peoli, Moniram, Pankaj, Kushal, for

			<p>typical lowland rice area,</p> <p>medium duration varieties: Satya and Basundhara T.T.B.-404, Mulagabharu, Kanaklata, Joymoti, IR-36, IR-64. for</p> <p>flood prone area: Luit, Jalashree, Plaban.</p>
<b>Meghalaya</b>		<b>Sali rice</b>	Shahsarang -1, Lampnah, IR 64, Ranjit, RCPL 1-412, RCPL 1-410, RCPL 1- 411 & local varieties like Mendri, Manipuri
<b>Tripura</b>		<b>Aman rice</b>	Gomati, Ranjeet, Swarna, Naveen
<b>Nagaland</b>		<b>Rice</b>	CAU R1, CAU R3, RCM-9 and RCM-1.
<b>West Bengal</b>		<b>Aman rice</b>	medium duration MTU-7029, MTU1001, Pratiksha and for long duration CR1017, CR1018,
		<b>dry seeded long duration rice</b>	Sabita Foundation, Swarna sub-1 certified, IR-64, Hira T.L.
<b>Odisha</b>		<b>Rice</b>	<p>Early varieties: Jogesh, Siddant, Hazaridhan, Mandakini, Jyotirmayee, Virendra, Sahabhazi,</p> <p>Medium varieties: Pratikshya, Manaswini, Tapaswini MAS, Konark, Surendra, Kharavela, Naveen, Abhisek,</p> <p>Late varieties: Varshadhan, Ranidhan, Pooja, Mrinalini, RGL-2837, Moti, Ketakijoha, Padmini, Kanchana, Mahanadi, Jagabandhu.</p> <p>Hybrid varieties: CR Dhan 701, NK 5251, JKRH 401, Ajay, Rajalaxmi, Arize 6444G.</p> <p>short duration varieties: Sahabhazi, Khandagiri, Udaigiri, Kalinga-3, Jyotirmayee, Mandakini etc.</p>
<b>Bihar</b>		<b>Rice</b>	Long duration rice- Rajshree, Rajendrasweta, RajendraMansuri, BPT-5204, Swarna, Satyam and Kishori), medium duration rice- Seeta, Santosh, Saroj, Rajshri, Prabhat, Rajendrasuvasni, Rajendrakasturi.
<b>Jharkhand</b>		<b>Rice</b>	Direct seeded upland rice; improved varieties: Vandana, BirsaVikasDhan -109 & BirsaVikasDhan - 110, medium land rice improved varieties: Anjali, Sahbhazi, Naveen, Lalat, Birsamati, Sugandha, BR-10, Pro-Agro 6444, IR-36, IR-64, low land rice improved varieties Swarna (MTU-7029), Rajshree, SambhaMahsuri (BPT-5204), BirsaDhan- 202, Birsamati, Pro-Agro 6444.
<b>Madhya Pradesh</b>		<b>Rice</b>	Very early maturing: JawaharDhan (JD) 75, Vandana. Early maturing: JD 201, JRH-5, JRH-8, Danteshwari, Sahbhazi. Medium duration: MR-219, WGL 32100, IR 36, IR 64, Kranti, Mahamaya, Pusa Sugandha-3, Pusa Sugandha-5, Pusa basmati-1, MTU 1010. Long

			duration: Mahsuri, Swarna
		Green Gram	JM-721, TARM-1, LAM-410, HUM-1, HUM-16
		Arhar	TJT-501, ICPL-87
<b>Chhattisgarh</b>		<b>Rice</b>	Upland: CR-40, Purnima, Danteswari, Shabagi, Midland: MTU1010, Samleswari, Rajeswari, Low land : MTU 1001, Suwarna ,Mahamaya, JalDube ,Hybrid : Arice 6444, US 312.
		<b>Soybean</b>	J.S. 335, Indira soya-9, J.S. 80-21, J.S. 93-05.
		<b>Groundnut</b>	SB -11 (J 11), ICGS-37, ICGS-44, T.A.G.-24, T.A.G.-28.
		<b>Til</b>	T.K.G. -21, T.K.G-22, T.K.G-55, and T.K.G - 8.
		<b>Tomato</b>	Pusa early dwarf, Sweet 72, Pusaarubi, PusaGurab, Mangala, Naveen, Laxmi 5005 & NS 815.
		<b>Brinjal</b>	Punjab Shadabahr, K S 331, P H 5, P H 6 ,KS 224 ,A R B H -543.
<b>Jammu &amp; Kashmir</b>		<b>Rice</b>	Basmati 370 and Ranbir Basmati
<b>Uttarakhand</b>		<b>Rice</b>	Sharbati, Pusa1121, Pusa1, Pusa44, NDR359 etc.
		<b>Pigeon pea</b>	Pant Arhar-3, Pant Arhar-291, UPAS-120, Pusa-992
		<b>Maize</b>	Tarun, Navin, Kiran, Navjot, Pratap maize-1, Pusa sankul-3& 4.
<b>Uttar Pradesh</b>		<b>Arhar</b>	Prabhat and UPAS-120 fast-ripening and late-ripening varieties- NarendraTur- 1 and Malviya -15
<b>Punjab</b>		<b>Rice</b>	Basmati 370 and Basmati 386; direct sowing: basmati variety Pusa Basmati 1121.
		<b>Maize</b>	PMH 1, PMH 2 and Parbhat.
		<b>Brinjal</b>	BH-2, PBH-3, Punjab Barsati, Punjab SadaBahar, Punjab Nagina and Punjab Neelam
		<b>Okra</b>	Punjab-8 and Punjab-7
		<b>Kharifonion</b>	Agrifound Dark Red
<b>Delhi</b>		<b>Rice</b>	Hybrid varieties: - K. R. H 2, PHB 71, Pant hybrid Dhan1, Narendra hybrid dhan 1, P R H 10, High yielding varieties- Pusa 44, Pant Dhan-4, Pant Dhan-10, Pusa-834, Pusa basmati-1, Pusa basmati-1509, Pusa, Improved basmati, Pusa sugandha-5, Pusa sughanda-4 (Pusa 1121), Ranvir basmati and Taravadi basmati
		Guar	PusaNavbahar, DurgaBahar
		Bajra	Pusa Composite-443, Pusa Composite-383, HSB -67
		Cluster bean	PusaKomal



		Beans	PusaSem 2, PusaSem 3
<b>Rajasthan</b>		<b>Pearl millet</b>	RHB-121, HHB-67, HHB-60, Raj-171, GHB-538, Pusa-605, RHB-177.
		<b>Maize</b>	HQPM-1, HQPM-5, PEHM-1, PEHM-2, Pratap Hybrid-1, Bio-9681, Bio-9637, Navjot, MahiKanchan, Pratap Makka-5.