



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

Valid for 2nd to 15th September, 2016

Date of Issue: 2nd September, 2016

Issued by

**Earth System Science Organisation
India Meteorological Department**

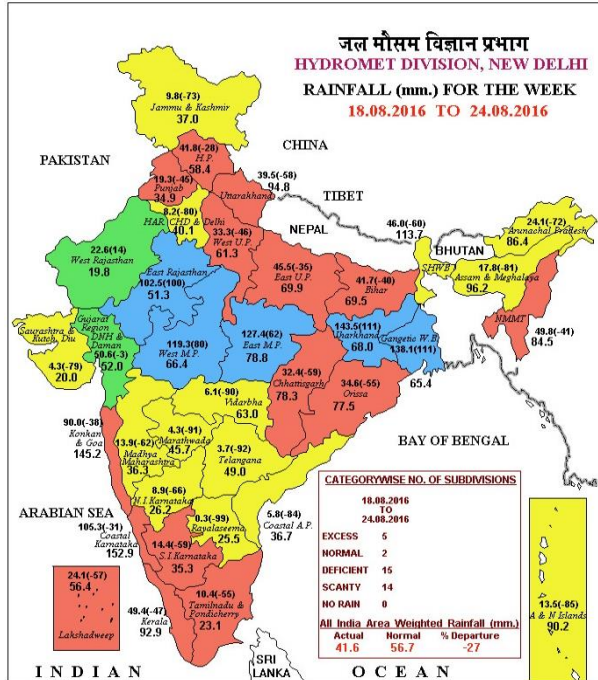
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**Indian Council of Agricultural Research (ICAR)
All India Coordinated Research Project on Agricultural Meteorology (AICRPAM),
Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad**

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

Realized Rainfall (18th to 31st August 2016)

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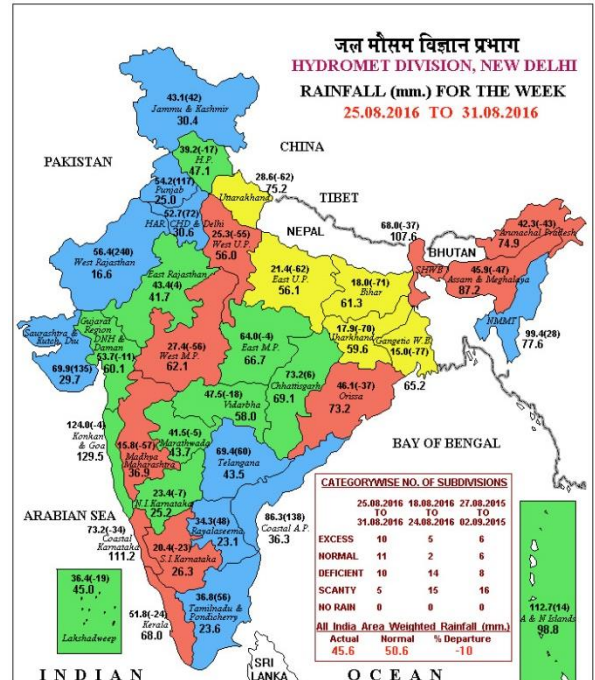


LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+19% TO -19%) ■ DEFICIENT (-20% TO -59%)
■ SCANTY (-60% TO -99%) ■ NO RAIN (-100%) ■ NO DATA

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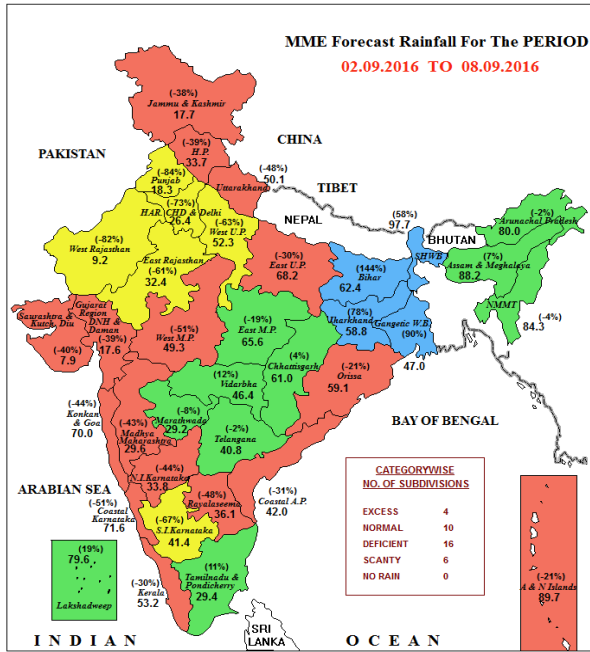
- Normal or above normal rainfall occurred during last two weeks in Gujarat Region, East Madhya Pradesh and Rajasthan.
- Normal or above normal rainfall occurred in either of the last two weeks in Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana & Delhi, Nagaland, Manipur, Mizoram, Tripura, Jharkhand,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

Extended Range Forecast System

Subdivisionwise rainfall forecast for the next 2 weeks (IC =31 August)

Rainfall forecast (02-15 September, 2016)

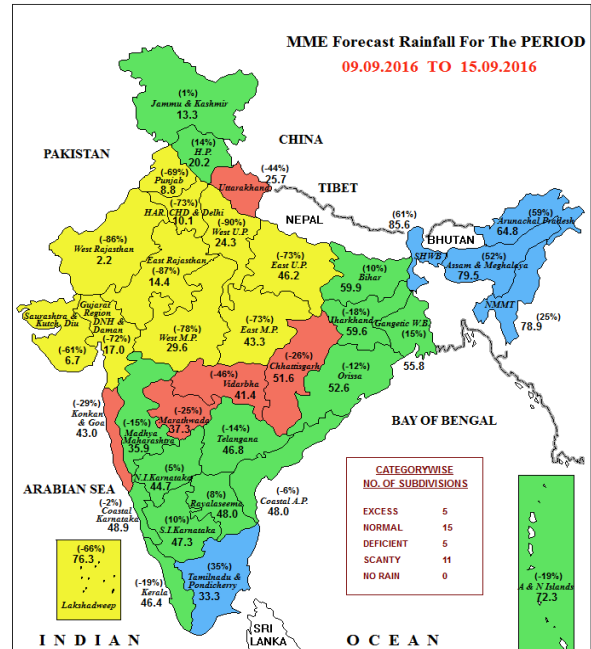
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LEGEND: [Blue] EXCESS (+20% OR MORE) [Green] NORMAL (+19% TO -19%) [Red] DEFICIENT (-20% TO -59%)
[Yellow] SCANTY (-60% TO -99%) [Grey] NO RAIN [-100%] [White] NO DATA

NOTES:
[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.

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

Strategic Agricultural Planning based on rainfall during next two weeks till 15th September

- During next fortnight (02-15 Sep.), rainfall activity is likely to be active (Normal/above normal) over Northeastern states and Bihar, Jharkhand and Gangetic West Bengal.
- During week 1 (02-08 Sep), some parts of east/central India covering Chhattisgarh, East Madhya Pradesh, Vidarbha, Marathwada and Telangana likely to get normal rainfall, whereas, the remaining region of India is expected to be below normal (North West, Central, South Peninsula and country as a whole is expected to be normal/slightly below normal).
- During week 2 (09 -15 Sep), the eastern coastal states and southern Peninsula is expected to be close to normal rainfall. Most parts of Northwest India/North India and northern parts of Central India is expected to be slightly below normal (North West, Central and country as a whole is expected to be normal/slightly below normal).
- State-wise crop varieties are given in Annexure I.

Maharashtra

In view of subdued rainfall activity over Madhya Maharashtra during last fortnight, which is likely to continue during first week of next fortnight, following advisories are suggested:

Madhya Maharashtra

- Application of protective irrigation to standing *kharif* crops like red gram, groundnut, jowar, cotton, soybean, vegetable crops and sugarcane in moisture stress condition.
- Maintenance of water level of 5-7 cm in transplanted rice fields in Western Ghat Region.
- Weeding in cotton and pigeon pea and other standing crops to conserve soil moisture.
- Avoid intercultural operations in groundnut and soybean crop at flowering stage.
- Mulching in crops with dry grass, field trash etc. to conserve moisture.
- Field preparation for early *rabi* crops like rainfed sorghum in Solapur, Satara, Sangli, Pune, Jalgaon, Dhule, Ahmednagar, Nandurbar districts, safflower and sunflower in Solapur district (sowing in second/third week of September) and irrigated onion in Nashik district (sowing in third week of September).
- New cultivation of pomegranate in Nashik district.

Marathwada

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

- Preparation of fields for early *rabi* crops like irrigated sorghum in Parbhani, safflower in Hingoli district; sowing in second/third week of September.
- Compartmental bunding to conserve soil moisture for taking *rabi* crops, wherever sowing is not carried out.
- Intercultural operations in *kharif* crops to conserve moisture.

- Rain water harvest for future use.

Vidarbha

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

- Early-*rabi* crops like pigeon pea (C-11 or ICPL 87119 (Asha)), early-*rabi* sesame (N-8), can be sown up to 15th September.
- Preparatory tillage in second week of September for sowing of irrigated safflower in Akola, Washim, Amraoti districts, sowing in 3rd week of September.
- Removal of excess water from crop fields in Gadchiroli and Gondia districts.
- Maintenance 5-7 cm water level in rice fields in Eastern Vidarbha Zone.
- Bunding in rice fields and removal of weeds on the bund.
- Avoid intercultural operations in soybean and groundnut at flowering stage.
- During last hoeing, open the furrow between two rows of cotton by tying the ropes to hoe tyne for effective *in-situ* conservation of rain water during remainder of rainy season.
- Subdued rainfall activity has increased sap sucking pest infestation in cotton, for control undertake application of Azadirachtin 300 ppm @ 50 ml or Acetameprid 20% SP @ 1.5g or Thiamethoxam 25 WG @ 2.0 g / 10 litres of water.
- Dry and cloudy weather caused incidence of army worm in rice crop in eastern Vidarbha districts. For control spraying with 10 EC Cypermethrin @ 6 ml/10 litres of water in the field is recommended.

Konkan

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

- Removal of excess water and maintenance of 7-8 cm water level in rice fields.
- Application of 3rd dose of Nitrogen @ 20 kg/ha to rice crop at flowering stage.
- Bunding of rice field and removal of weeds on the bund.
- Continuation of soft wood grafting for mango nursery.
- Drain out excess water from vegetable crops, mango, cashew, sapota, coconut and arecanut gardens.

Gujarat

Gujarat Region

Normal rainfall occurred in last fortnight. Below normal rainfall is likely to occur during next fortnight.

- Maintenance of water level of 5 cm in rice fields.
- Conserve rain water for future use.
- Carry out gap filling in fennel in North Gujarat Zone.
- Intercultural operations in early sown pulses, red gram, rice on a non-rainy day, to conserve soil moisture.
- Leaf spot disease can be prevented in groundnut by spray of Hexaconazole @ 10 ml or

Tebuconazole @ 7 ml in 10 liters of water under clear sky.

Saurashtra & Kutch

Below normal rainfall occurred in first week and excess rainfall occurred in second week of last fortnight. Below normal rainfall is likely to occur during next fortnight.

- Gap filling in castor in Kachchh district and gap filling, thinning in late sown pulses in Bhavnagar and Ahmedabad districts.
- Intercultural operations in pearl millet, sesame, cotton, early sown pulses, vegetable crops, sorghum etc. on a non-rainy day, to conserve soil moisture.
- Conserve rain water for future use.

Kerala

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

- Land preparation for sowing of *puncha* rice in Kottayam district.
- Maintenance of optimum water level in transplanted rice.
- Field surveillance to monitor the incidence of thrips and brown plant hopper in rice.
- Continuation of tapping of rubber in Thiruvananthapuram district.
- Ginger, Turmeric: During rainy season, there is a chance of rhizome rot. To control this dig out the affected plants and apply Kocide @ 2 g/litre of water.
- Cashew: Stem borer is seen in Cashew. To control the disease, chisel out the grubs and swab the tree trunk with Acephate @ 4 g/liter of water. Swabbing (adult trees only) with coal tar kerosene mixture at 1:2 proportion is also recommended.

Karnataka

Coastal Karnataka

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

- Maintenance of 5 cm water level in transplanted rice.
- Spraying of Planofix @ 0.25 ml/litre of water to reduce the flower drop in cotton in Uttar Kannada district.

South Interior Karnataka

Deficient rainfall occurred during last fortnight. Below normal rainfall is likely to occur during first week and normal rainfall is likely to occur during second week of next fortnight.

- Maintenance of 5 cm water level in transplanted rice.
- Intercultural operations in red gram, earlier sown maize to control the weeds and to increase the moisture availability to crops
- Completion of sowing of ragi in Eastern Dry Zone.
- Residue mulching in red gram, maize etc. to conserve soil moisture.

North Interior Karnataka

Below normal rainfall occurred during first week and normal rainfall occurred during second week of last fortnight. Deficient rainfall is likely to occur during first week and normal rainfall

is likely to occur during second week of next fortnight.

- Maintenance of 5 cm water level in transplanted rice.
- Adoption of moisture conservation techniques for dry land such as compartmental bunding, ridges furrow and scooping in fields spared for *rabi* sowing in North Dry Zone. This will help to conserve moisture in the soil profile and beneficial for *rabi* crops.
- Open conservation furrow after two rows in wider spaced crops and after every 8th row in narrow spaced crops to conserve soil moisture.
- Intercultural operation and earthing-up in crops like red gram, soybean, maize, cotton etc.
- Sowing of sunflower/maize in Ballari, Kalaburgi, Koppal, Raichur and Yadgir districts of North East Dry Zone.
- Sowing of sunflower in wider rows of 135 cm in medium black to deep black soils in Vijayapura, Bagalkote and Gadag districts of North Dry Zone with sufficient moisture condition.
- Continuation of sowing of dual purpose crop like Sunhemp which may be used as fodder or may be incorporated in soil as green manure may be taken up in the fields earmarked for *rabi* crops.
- Spraying of 2% urea in soybean crop (at 50% flowering stage), 2% DAP in black gram (at flowering/pod filling stage) and 12.5 kg of Nitrogen/ha in groundnut (at flowering stage) in Dharwad, Belagavi and Haveri districts of North Transition Zone.

Andhra Pradesh

Coastal Andhra Pradesh

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

- Drain out excess water from transplanted rice field and arhar, maize, green gram, black gram and orchards to avoid water stagnation in Guntur, Krishna and West Godavari districts.
- Continuation of sowing of direct seeded rice (MTU-1006) with gorru in Guntur district.
- Sowing of maize (varieties: LRG- 38, 41, Laksmi, Abhaya, Asha, Maruthi and PRG-158, LRG 52) in West Godavari district.
- Continuation of sowing of green gram, black gram and red gram in Prakasam, Krishna and West Godavari districts.
- Earthing up in 120 days old sugarcane crop.
- Keep the harvested sesame and pulses in safe place in Vishakapatnam, Vizianagaram and Srikakulam districts.
- Maintenance of 3-5 cm water level in transplanted rice fields.
- Due to rainfall forecast, there is possibility of discoloration in rice in Nellore district; to overcome, spray Propiconazole @1 ml/litre of water in clear weather.

Rayalaseema

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

- Continuation of sowing of crops like red gram, castor, green gram, cowpea, sorghum, bajra

and horsegram with expected rainfall in Chittoor and Cuddepah districts.

- Thinning in red gram by keeping plant to plant distance 15-20 cm and removing excess plants.
- Open dead furrows to retain the rain water.
- Take up hoeing to conserve soil moisture.
- Pink boll worm incidence is noticed in Ananthapuramu, Kurnool, Kadapa districts. It has crossed ETL level in Ananthapuramu district. The following measures are suggested for control of pink boll worm:
 1. Pheromone traps should be installed immediately at the field level for monitoring of the incidence levels on community basis.
 2. Observation of rosette flowers and sampling of green bolls should be done regularly for monitoring and intensity of the field incidence.

Telangana

Below normal rainfall occurred during first week and excess rainfall occurred during last fortnight. Normal rainfall is likely to occur during next fortnight.

- Drain out excess water from rice, cotton, red gram and vegetable crops in Nalgonda, Rangareddy districts.
- Also drain out excess water from maize, soybean fields to avoid water stagnation in the field.
- Maintenance of water level upto 3-5 cm in rice in Adilabad, Karimnagar, Khammam, Nizamabad districts of Northern Telangana Zone.
- Opening dead furrows to conserve soil moisture.
- Harvesting of rain water.
- Application of 15 kg urea/acre in castor at 30 and 60 days as top dressing by taking advantages of recent rains in Southern Telangana Zone.

Tamil Nadu

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

- Continuation of land preparation for transplanting of *Samba* rice (CR 1009 and ADT 50) in Ariyalur, Nagapattinam, Perambalur, Thanjavur, Thiruvarur and Trichy districts.
- Continuation of sowing of long duration varieties of *samba* rice like (CR 1009 and KCLR 1) in Karaikal and Pudducherry; use sprouted seeds for sowing.
- Nursery preparation for *Samba* rice utilizing the realized rainfall in Coimbatore, Tiruppur, Erode districts.
- Cultivation of sorghum, maize and minor millet crops in Salem, Dharmapuri, Namakkal and Krishnagiri districts utilizing the realized rainfall.
- Continuation of sowing of irrigated bajra in Coimbatore, Tiruppur, Erode districts.
- Land preparation for sowing of cotton and maize in Kanniwadi, the Southern Zone.
- Sowing of *rabi* horse gram in Krishnagiri district of North Western Zone and irrigated *rabi* maize in Pudukottai district of Southern Zone.
- Basin preparation for pepper, clove, nutmeg and cinnamon for better rain water harvest and

mulching the basins of fruit trees in Kanyakumari district.

- Spray 1% DAP on leaves of pepper plantation in Nilgiris district to prevent spike drop and to enhance yield.
- Basin of coconut may be harrowed upto 5 m distance from the root portion of the tree to conserve rain water in Dindigul district.
- Cover the root zone of horticulture crops with coir pith to conserve moisture.

Arunachal Pradesh

Below normal rainfall occurred during last fortnight. Normal rainfall is likely to occur during first week and excess during second week of next fortnight.

- Go for manual picking of Blister beetle in pulses without delay because the incidence of the pest during flowering stage cause huge loses in harvest.
- Avoid intercultural operations in groundnut field at pegging stage. Carry out hand weeding with care.
- Apply basal dose of fertilizers in ginger and turmeric fields after weeding and earthing up operation.

Assam & Meghalaya

Below normal rainfall occurred during last fortnight. Normal rainfall is likely to occur during first week and excess during second week of next fortnight.

Assam

- Undertake land preparation for sowing of pulses in Sonitpur district. The recommended varieties of green gram are T-44, Kopergaon, K-851, ML-56, ML-131 etc. Recommended varieties of black gram are T-9, T-27, Pant U-19 and T-122.
- Start sowing of seeds @8-10 gm/sq.m for early varieties of radish like Pusa Desi, Pusa Himani, Pusa Chetki from this week. Undertake seed treatment with Captan or Thiram 50 WP @ 3g/kg before sowing the seeds. 1 kg seed is required for sowing 1 bigha of land.
- Carry out one weeding at 20 days after sowing of sesame seeds by khurpi or hoe in Nagaon district. Carry out thinning operation simultaneously to maintain the required spacing within the rows.

Meghalaya

- Undertake weeding in ginger and turmeric fields in West Jaintia Hills district.
- Apply urea @ 35 kg/ha as top dressing in upland *Jhum* rice in West Khasi Hills district after hand weeding at 40-45 DAT.

Nagaland, Manipur, Mizoram and Tripura (NMMT):

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

Manipur

- Construct bunds/ridges in main *kharif* rice at panicle initiation stage to maintain optimum water level of 5-8 cm in Senapati district. Drain out excess water if accumulated due to rains. Carry out weeding. Apply 33 kg Urea/ha at panicle initiation stage after complete drainage of

water. Irrigate field after 48 hrs of top dressing and maintain water level at 5-8 cm.

- Undertake sowing of French bean for both bush and pole type.
- Undertake sowing of onion in the upland areas.

Tripura

- *Aman* rice transplanted at first fortnight of July is now at tillering stage in Gomati district. Spray 0.5% Zinc Sulphate for better tillering. Carry out weeding in the field. In SRI field maintain aerobic condition through proper drainage.

Nagaland

- Maintain proper drainage and carry out timely earthing up in soybean fields in Kohima district.
- Maintain good drainage in the ginger field to avoid rhizome rot.

West Bengal

Excess rainfall occurred during first week and below normal rainfall occurred during second week of last fortnight over Gangetic West Bengal. Excess rainfall is likely to occur during first week and normal during second week of next fortnight.

Below normal rainfall occurred during last fortnight over Sub-Himalayan West Bengal and excess rainfall is likely to occur during next fortnight.

- Maintain water 5 cm in *Aman* rice field in Howrah district. Increase the depth of stagnant water with age of crop. In case of timely sown crop, at 3 weeks after transplanting, apply top dressing (@ 4.5 kg per bigha. Mix the fertilizer thoroughly with soil after proper intercultural operations.
- Keep large cardamom field weed free and avoid stagnation of water in Darjeeling district as rather heavy to heavy rainfall has been forecasted.
- Avoid stagnation of water in turmeric field in Darjeeling district. Carry out weeding followed by earthing up.

Bihar

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

- Harvest rain water particularly in Northwest Alluvial plain zone, South Alluvial zone and Northeast Alluvial zone, as there are chances of rainfall during the fortnight.
- In flood affected districts, if severe damage is observed, undertake sowing of September pigeon pea, early tomato, toria and early cauliflower in the upland areas and in medium land situation, sowing of toria and sunflower is suggested.
- In Darbhanga, East Champaran, Gopalganj, Samastipur, West Champaran districts of North West Alluvial Plain Zone, undertake sowing of September pigeon pea, nursery sowing of cabbage and cauliflower. Undertake transplanting of early varieties of cauliflower.
- Undertake weeding in vegetables such as chilli, tomato, brinjal, *kharif* onion, bhindi, pumpkin, sponge guard and cucumber.

Jharkhand

Excess rainfall occurred during first week and below normal rainfall occurred during second week of last fortnight. Excess rainfall is likely to occur during first week and normal during

second week of next fortnight.

- Broadcast urea @ 10-12 kg /acre after weeding in 20-25 days transplanted finger millet crop in Dumka district.
- Carry out weeding, intercultural operations and earthing up in 30 days old maize crop followed by top dressing of urea @ 35 kg /acre.
- Carry out first weeding and intercultural operation in 20 days old black gram crop and second weeding in 40 days old crop.

Odisha

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

- Medium duration paddy is at panicle initiation stage in Kendrapara district. Apply 6- 8 kg Nitrogen per acre.
- Cotton crop is at 6-9 week stage. Carry out hoeing and weeding. Apply 16 kg each of N & K for HYVs and 24 kg each of N & K for hybrids followed by earthing up. Spray 10 ppm Planofix at 45 days old cotton.
- Complete sowing of pulses and oilseeds like sesame etc, in upland to best utilize the rainfall received during last week.
- Complete sowing of green gram, black gram and cowpea. Grow high yielding varieties like K-851, PDM-11, PDM-54 and OUM-11-5 for green gram, T-9, Pant U-11, Pant U-19 and Pant U-30 for black gram and SEB-2, and Pusa Barsati for cowpea. Use 8-10 kg/acre. Before sowing seeds are to be treated with 2 g Bavistin / kg seeds. Treat the seeds with the rhizobium culture @ 200 g culture/8-10 kg. Apply 8:16 kg NP/acre under rainfed condition. Sow the seeds in line 30 cm apart depending upon the duration with 15 –20 cm plant to plant distance.
- The weather is optimum for banana planting in Gajapati district. Grow Champa, Patakpara, Bantal, Robusta or Kabuli variety. Plant the seedlings in 0.5x0.5x0.5 m pit at 2.0x2.0m distance for Kabuli and Robusta and at 2.1x2.1m distance for Champa, Bantal and Patakpara varieties. Before planting apply two baskets of compost/pit.

Madhya Pradesh

East Madhya Pradesh

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

- Maintain upto 5 cm water level in transplanted rice fields as rice is at tillering stage in the flood affected Rewa, Satna, Damoh and Panna districts of East Madhya Pradesh districts.
- Drain out excess water from standing crop fields in Jabalpur, Narsinghpur and Seoni districts.

West Madhya Pradesh

Excess rainfall occurred during first week and deficient rainfall occurred during last fortnight. Below normal rainfall is likely to occur during next fortnight.

- Continue nursery preparation for cauliflower and transplanting of onion in Mandsaur, Ratlam, Ujjain, Dewas, Indore, Shajapur, Rajgarh and Neemuch districts of Malwa Plateau Zone.

Continue transplanting of brinjal, tomato, chilli, cauliflower and cabbage if seedlings are ready.

- Carry out weeding in brinjal, tomato and onion crops in Gwalior, Bhind, Morena, Shivpuri, Guna, Ashoknagar, Sheopur districts of Grid Zone.

Chhattisgarh

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

- In North Chhattisgarh, rice crop is at tillering stage, carry out weeding and apply first top dressing with urea (25 kg/acre.). Undertake sowing of crops like horsegram and Niger in uplands. Sowing of horsegram and niger would be done upto mid September. Continue intercultural operations in kharif crops on a non rainy day.
- Undertake sowing of crops like horsegram and niger in Central Chhattisgarh. In the transplanted rice field, maintain 5 cm water in rice fields.
- Undertake intercultural operations in rice and apply 2nd dose of Urea after current spells of rain in South Chhattisgarh. Continue field preparation and sowing of crops like niger, horse gram, black gram and green gram.
- Drain out excess water from standing crop fields in Bijapur, Kondagaon, Sukma and Narayanpur districts.

Rajasthan

East Rajasthan

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

- Undertake transplanting of papaya in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone. Broadcast 40 kg Nitrogen/hectare through urea in standing maize crop of 20-30 days.
- Undertake weeding and hoeing operation in maize, moong, urad crops.
- Raise nursery of cauliflower in Alwar, Bharatpur, Dhaulpur, Karauli, Sawai Madhopur districts of Flood Prone Eastern Plain Zone. Undertake nursery sowing of radish.
- Provide adequate drainage in heavy rainfall areas.
- Drain out excess rain water from field crops as soon as possible.
- Avoid top dressing of urea in maize and other cereals crop till rain water receded where heavy rainfall occurred.
- Procure improved varieties of fodder crops like cluster bean, pearl millet and sorghum for sowing in areas where the crops are damaged due to heavy rainfall as and when the field comes under condition.

West Rajasthan

Normal rainfall occurred during first week and excess rainfall occurred during second week of last fortnight. Below normal rainfall is likely to occur during next fortnight.

- Continue planting new seedlings of kinnow in already prepared pit in the field in Sriganganagar and Hanumangarh districts of Irrigated North Western Plain Zone.
- Continue preparation of nursery of vegetables like cauliflower, cabbage chilli and brinjal vegetables in Bikaner and Jaisalmer districts of Arid Western Plain Zone.

Jammu & Kashmir

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

- Continue nursery sowing of cauliflower, cabbage and KnolKhol in Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone. Undertake sowing of carrot and radish on ridges.
- Prevent water logging in the field of Chrysanthemum in Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone to protect young seedlings from rotting. Transplant the rooted cuttings at optimum soil moisture. Raise seedlings of Marigold on raised beds.

Uttarakhand

Below normal rainfall occurred during last fortnight which is likely to continue during next fortnight.

- Prepare field for early variety of spinach (palak) and sowing should be done in this month in Udham Singh Nagar district of Bhabar and Tarai Zone till end of this month. Continue grafting in mango, guava and leechi.
- Undertake transplanting of rai or snowball, cabbage and cauliflower if the seedlings are ready Nainital district of Bhabar and Tarai Zone. Undertake sowing of early variety of pea, radish and turnip in the mid hills.
- Continue transplanting of seedlings of brinjal and chilli in main field in Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone.
- Continue sowing of carrot, toria, pea and garlic in rainfed condition at mid to higher latitude of Tehri Garhwal, Chamoli, Champawat, Pithoragarh, Rudraprayag and Uttarkashi districts of Hill Zone. Undertake sowing of radish.

Himachal Pradesh

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

- Prepare field for sowing of radish, turnip, fenugreek and spinach in Bilaspur, Solan, Shimla and Sirmaur districts of Mid Hills Sub-Humid Zone.
- In mid hill region continue nursery sowing of Chinese cabbage and direct sowing of radish, carrot, broccoli and lettuce in Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone. Continue nursery sowing of cauliflower and transplanting of cabbage. In lower regions, undertake transplanting of Chrysanthemum, marigold and sowing of gladiolus on raised bed.

Haryana & Delhi

Below normal rainfall occurred during first week and excess rainfall occurred during second week of last fortnight. Below normal rainfall is likely to occur during next fortnight.

Haryana

- In Western Zone, undertake weeding in rice crop for removing the weeds in clear weather.
- Carry out weeding and hoeing for conserving the moisture and removing weeds in guar and bajra crop.

Delhi

- Continue transplanting of brinjal, tomato, chilli cauliflower and cabbage raised beds if seedlings are ready. Farmers are advised to do proper arrangement for drainage in the field. This is suitable time for preparation of nurseries of cauliflower for mid-season.
- Continue sowing of carrot (Pusa Vrishti), sarson saag (Pusa Saag-1), radish (Versa Kee Rani, Summer Long, Long Chetaki), spinach (All green) and coriander (Pant Haritama) on raised bed.
- Transplanting of Chrysanthemum, marigold and sowing of gladiolus should be done on raised bed.

Punjab

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

- Undertake sowing of Asiatic (*Desi*) varieties of radish, carrot and turnip in Moga, Bhatinda, Mansa, Muktsar, Sangrur and Barnala districts of Western Zone. Continue planting of *kharif* onion crop both with bulb sets as well as seedlings.
- Undertake planting of *kharif* onion crop both with bulb sets as well as seedlings in Ferozpur and Faridkot districts of Western Plain Zone.
- Continue transplanting of papaya seedlings in the fields in Central Plain Zone.
- Raise nursery of Cauliflower in Rupnagar, Patiala and Nawanshahar districts of Sub-Montane undulating Zone. Undertake hoeing and weeding in vegetable crops.
- Drain out excess water from standing crop fields in Kapurthala and Moga districts.

Uttar Pradesh

Below normal rainfall occurred during last fortnight which is likely to continue during next fortnight.

- Undertake sowing of toria in Allahabad, Fatepur, Chitrakut districts of Central Plain Zone.
- Continue nursery sowing of cauliflower, brinjal, tomato and planting of mango, guava and banana in Faizabad, Gorakhpur, Sultanpur districts of Eastern Plain Zone.
- Undertake nursery sowing / transplanting of mid-season brinjal, chilli, tomato, cabbage, cauliflower in Baharaich, Sarvasti, Balarampur, Gonda, Kushinagar, Sidharthnagar and Maharajganj district of Bundelkhand Zone of West Uttar Pradesh. Apply Urea @ 30 kg per hectare in late sown sesame crop.

Annexure –I

State-wise Varieties of different crops for *Kharif* Season

State	Subdivision	Crop	Varieties
Karnataka		Ragi	Indaf-5, Indaf-9, and GPU-28.MR-01,MR-06 & ML-365
Tamil Nadu		Samba rice	CR 1009, ADT 50, KKLR 1
Andhra Pradesh	Coastal AP	Maize	DCH-111, DCH-113, DCH-115, Maandhuri&Priya (sweet varieties)
		Black gram	LBG-752, LBG-20, T-9, LBG-623, PU-31, LB-402, LBG-709 and LBG-787,TBG 1,GBG 104
		Red gram	LRG- 38, LRG- 41, laksmi, Abhaya, Asha, Maruthi and PRG-158,LRG 52
	Rayalaseema	Sorghum	CSH-9, CSH-13,CSH-14, PSV-15,PSV-19
		Bajra	ICTP 8203,PBH 3
		Green gram	LGG 407, LGG 450, LGG 460, MGG 295, ML 267
		Field bean	TFB-1, TFB-5
		Cowpea	C 152, GC 3, CO-4, CO-5