



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

Valid for 23rd September to 6th October, 2016

Date of Issue: 23rd September, 2016

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**Earth System Science Organisation
India Meteorological Department**

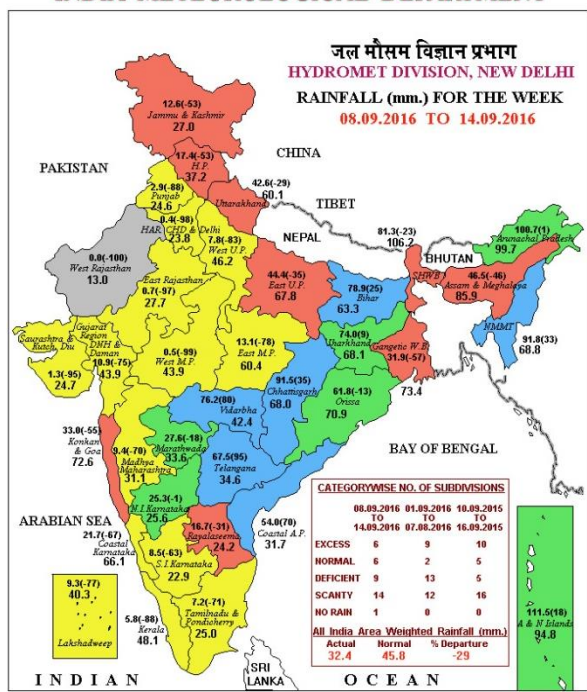
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**Indian Council of Agricultural Research (ICAR)
All India Coordinated Research Project on Agricultural Meteorology (AICRPAM),
Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad**

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

Realized Rainfall (8th September to 21st September 2016)

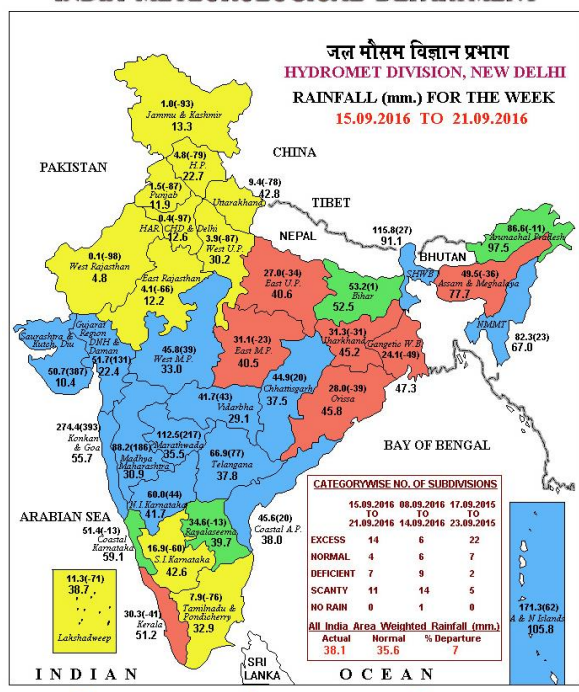
भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT



LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+15% TO -15%) ■ DEFICIENT (-20% TO -50%)
■ SCANTY (-60% TO -95%) ■ 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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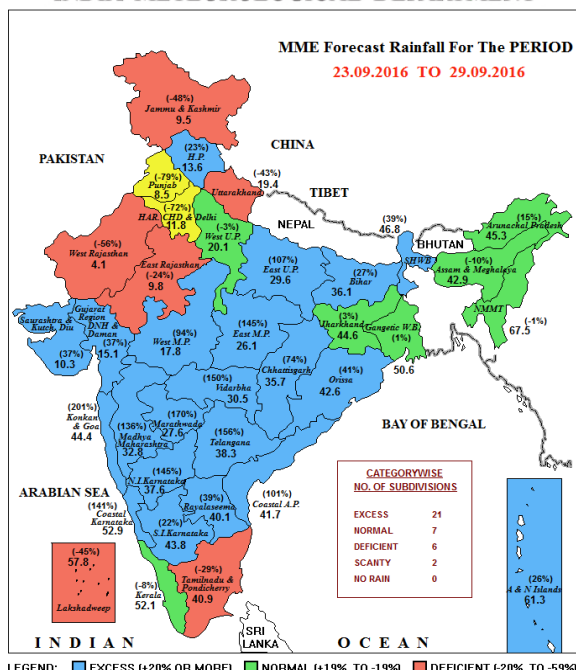
- Normal or above normal rainfall occurred during last two weeks in Bihar, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Marathwada, Vidarbha, Chhattisgarh, North Interior Karnataka, Telangana and Coastal Andhra Pradesh.
- Normal or above normal rainfall occurred in either of the last two weeks in Odisha, Jharkhand, Sub-Himalayan West Bengal & Sikkim, West Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Gujarat State, Coastal Karnataka and Rayalaseema.
- Below normal occurred in the last two weeks in Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana & Delhi, Uttarakhand, Uttar Pradesh, Gangetic West Bengal, Assam & Meghalaya, East Madhya Pradesh, South Interior Karnataka, Kerala and Tamil Nadu. No rainfall occurred during first week of last fortnight in West Rajasthan.

Extended Range Forecast System

Subdivisionwise rainfall forecast for the next 2 weeks (IC= 21st September 2016)

Rainfall forecast (23 September -06 October, 2016)

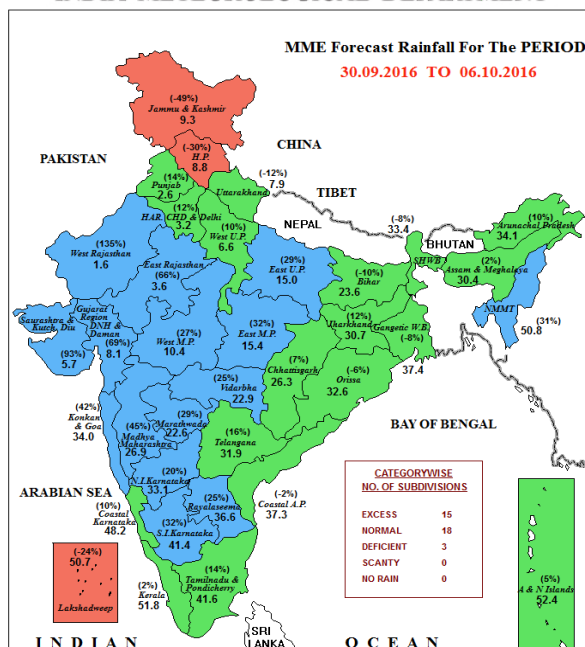
भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT



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 MME Forecast.
 (b) Bold figures indicate Forecast Normal rainfall [mm.]
 (c) Percentage Departures of Rainfall are shown in Brackets.

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

Strategic Agricultural Planning based on rainfall during next two weeks till 6th October

- During 1st week (23-29 Sept.), associated with the cyclonic circulation monsoon rainfall over most parts of India (except some parts of Northwest India) will be above normal. Quantitatively normal/above normal rainfall is expected over the country as whole and homogeneous regions of India.
- During 2nd week (30 Sept. – 06Oct.), rainfall is expected to be normal over most parts of India.

Maharashtra

Madhya Maharashtra

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

- Drain out excess water from standing crops (cotton, soybean, groundnut, red gram and vegetable fields and orchards of papaya and pomegranate) in Ahmednagar, Jalgaon and Nandurbar districts.
- Maintenance of water level of 7-8 cm in transplanted rice fields (panicle initiation/flowering stage) in Western Ghat Region.
- Completion of harvesting of already matured bajra and soybean in clear weather.
- Keep the already harvested produce of green gram, black gram, bajra and soybean in safer place.
- Preparatory tillage for sowing of *rabi* jowar and safflower in the harvested field of green gram and black gram.
- Rain water harvesting may be undertaken, so that it can be useful especially in those areas where *rabi* crops are taken.

Marathwada

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

- Drain out excess water from standing crops (red gram, groundnut, jowar, cotton and soybean) in Beed, Nanded, Osmanabad and Parbhani districts.
- Completion of harvesting of already matured bajra and soybean in clear weather.
- Keep the already harvested produce of green gram, black gram, bajra and soybean in safer place.
- Preparatory tillage for sowing of *rabi* jowar and safflower in the harvested field of green gram, black gram, bajra and soybean.
- Sowing of sorghum (Maldandi, Yashoda, Parbhani Moti) and safflower (Bhima, DCH-129, NAARI) with realised rainfall.
- Rain water harvesting may be undertaken, so that it can be useful especially in those areas where *rabi* crops are taken.

Vidarbha

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

fortnight.

- Maintenance of 7-8 cm water level in transplanted rice fields (panicle initiation/ flowering stage) in Nagpur, Bhandara, Gondia, Chandrapur and Gadchiroli districts.
- Completion of harvesting of matured soybean in clear weather.
- Keep the already harvested produce of green gram, black gram, soybean in safer place.
- Preparatory tillage for *rabi* crops in the harvested field of green gram, black gram and soybean.
- Sowing of rainfed safflower (Bhima, AKS-207, PKV-Pink) from 4th week of September to 1st week of October with realised rainfall.
- Taking advantage of adequate soil moisture due to recent rain events, early *rabi* sowing (from last week of September) of rainfed *rabi* crops like of chickpea (Jaki 9218, Vijay, Phule G- 5, ICCV- 2, PKV Kabuli 2 &4), Sorghum for grain & fodder (CSH-15R, CSH-19R, AKSV-13R, SPV- 504, CSV- 14R, CSV- 18R, SPV- 1359, Maldandi 35-1, Ringni) and sunflower (PKVSH- 27, KBSH- 1 & 44, DRS-1, PKVSF- 9, Morden, TAS- 82) is recommended.
- Use of bio-inoculants (Azatobacter/PSB) to promote plant growth and use of seed treatment with bio-fungicide Trichoderma to prevent seed borne diseases for better germination and plant stand be followed for *rabi* crop sowings.
- Drain out excess water; rain water harvesting wherever possible.

Konkan

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

- Provide adequate drainage in rice fields.
- Maintain water level upto 8-10 cm in rice fields (flowering/grain filling stage) by bunding the fields.
- There is a possibility for incidence of bacterial blight in paddy. Spray Copper –oxy-Chloride @ 25 g and Streptomycin Sulphate @ 5 g in 10 liters of water in clear weather.

Gujarat

Gujarat Region

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

- Continuation of land preparation for planting of sugarcane, maintenance of 7-8 cm water level in rice field; drain out excess water from pulses, rice fields in Navsari, Valsad and Dangs districts of South Gujarat Heavy Rainfall Zone.
- Drain out excess water from papaya, banana orchards in Surat, Tapi, Narmada and Bharuch districts. Nursery preparation of *rabi* vegetable crops like chilli, tomato and brinjal.
- Completion of harvesting of matured bajra, continuation of picking of matured pods of green gram in clear weather; keep harvested produce at safe places in North Gujarat Zone.
- Hand weeding and intercultural operations in urd bean, castor, fennel vegetable and fodder sorghum crops in North Gujarat Zone.
- Rain water harvesting.

Saurashtra & Kutch

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

- Drain out excess water from groundnut and in cotton in Amreli and Rajkot districts of North Saurashtra Zone, Bhavnagar district of Bhal and Coastal Zone and Gir Somnath district.
- Drain out excess water from groundnut, cotton, sesame, red gram, soybean, castor and vegetable crops in Junagadh district of South Saurashtra Zone. Continue harvesting of matured groundnut in clear weather.
- Carry out hand weeding and intercultural operations in vegetable crops in Kachchh district to conserve soil moisture.
- Rain water harvesting.

Kerala

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

- Maintenance of optimum water level in rice fields in Kasaragod, Kannur, Kozhikode and Malappuram districts of Northern Zone and in Central Zone.
- Continuation of planting of arecanut in Pathanamthitta district.
- Continuation of planting of cardamom and coffee seedlings in Idukki and Wyanad districts of High Altitude Zone.
- Field preparations for nursery sowing of second rice crop in Kollam district.
- Continuation of harvesting of viruppu rice in Kollam and Thiruvananthapuram district, vegetables and Nendran banana in Thiruvananthapuram district, sugarcane in Pathanamthitta district in clear weather.
- Continuation of sowing of *puncha* rice in Kottayam district.
- Continuation of tapping in rubber plants in Thiruvananthapuram district. Start arrangements for rain guarding. Subsequent tapping must be done after proper drying of tapping panel. To control bud rot in rubber plants, apply 1% Bordeaux mixture.
- Spraying of Copper-oxy-Chloride @ 4g per litre of water on new sprouts of newly planted Rubber plants in Thiruvananthapuram district.
- Apply light irrigation to standing crops in Thiruvananthapuram, Kollam, Alapuzha, Wyanad districts, if required, and carry out intercultural operations to conserve soil moisture where there was deficient rainfall.
- Adoption of proper control measures in banana, coconut in Thiruvanthapuram district.
- Field surveillance to monitor the incidence of rice bug in rice.
- Adoption of complete field sanitation in pepper gardens in Kottayam, Kasaragod, Kannur, Kozhikode and Malappuram districts. Spray Pseudomonas 10-15 g/litre of water. Planting of pepper cuttings in polythene bags. Incorporate VAM culture in potting mixture to provide disease resistance. Ensure proper drainage facility. Provide enough sunlight on the vines by pruning shade trees. Apply fertilizers @ 75 g urea, 160 g rock phosphate, 170 g potash per wine.

Karnataka

Coastal Karnataka

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

- Maintenance of 7 cm water level in transplanted rice in Coastal Zone.
- Spraying of Planofix @ 0.25 ml/litre of water in clear weather to reduce the flower drop in cotton in Uttar Kannada district of Hill Zone.
- Rain water harvesting.

South Interior Karnataka

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

- Maintenance of 7 cm water level in transplanted rice.
- Continuation of sowing of contingency crops like short duration cowpea (KBC-1, 2), foxtail millet and field bean (HebbalAvare) in Bengaluru, Rural, Bengaluru Urban, Ramnagara, Chikaballapura and Kolar districts of Eastern Dry Zone. Use short duration varieties of ragi like GPU 45, 48 and Indaf 9 for sowing with receipt of rain.
- Continuation of ploughing the land across the slope which is spared for sowing of *rabi* crops to facilitate better conservation of soil and soil moisture in Chamrajnagar, Kodagu, Mandya and Mysuru districts of Southern Dry Zone.
- Continuation of sowing of short duration crops like minor millets in Chamrajnagar, Kodagu, Mandya and Mysuru districts of Southern Dry Zone; sow the crops across the slope to facilitate better conservation of moisture in the soil. Give preference to fodder crops.
- Intercultural operations in red gram, maize in Eastern Dry Zone and in ragi in Southern Dry Zone to control the weeds and to increase the moisture availability to crops, residue mulch by using the residues of weeds, gliricidia and other green manure crops.
- Repairing of bunds and water retention structures.
- Rain water harvesting.

North Interior Karnataka

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

- Maintenance of 7 cm water level in transplanted rice.
- Drain out excess water in standing crops like pigeon pea, soybean crop fields in Bidar district of North East Transition Zone, in maize, sunflower, red gram, cotton, sugarcane and chilli crop fields in Raichur, Kalaburgi districts by providing proper drainage.
- Sowing of *rabi* sorghum (DSV-4, M 35-1 Muguthi, CSV-29R and SPV-2217) and safflower (A-1, A-2), land preparation and sowing (in October) of chickpea (Annigeri-1, BG-1105, BGD-103, JG-1, BGS-964) and wheat (DWR-162, DWR-225, DWR-185, DWR-2006, DDK-1001, DWR-137) in Dharwad, Belagavi and Haveri districts of North Transition Zone.
- Continuation of sowing of sunflower, *rabi* sorghum (BJV-44 variety), safflower, chickpea,

desi cotton and horse gram with realised rainfall in Vijayapura, Bagalkote and Gadag districts of North Dry Zone. Select short duration, charcoal and stem rot resistant varieties of *rabi* sorghum (Maldandi, Muguti, DSV-4, DSV-5, or Hybrid-DSH- 4), chickpea (A-1, GBS-964, JG-11, JG-11, BGD-103, GB-1105) and safflower (A-1, A-2, S-144).

- Continuation of sowing of sorghum (DSH-4, M-35-1, Muguthi, DSV-5) with seed rate of 2.5 to 3 kg/acre, safflower (A-1) with seed rate of 3 to 3.5 kg /acre, niger (No.71, RCR-18) with seed rate of 600 g /acre in Bidar district of North East Transition Zone. Drain out excess water from the ginger field and drench with 0.3% Copper-oxy-Chloride for effective control of stem rot.
- Completion of harvesting of black gram, green gram and bajra in clear weather in North East Dry Zone and black gram in Bidar district; keep harvested produce at safer places.
- Due to recent rains, flower drop is noticed in red gram, cotton in Raichur, Kalaburgi districts of North East Dry Zone; for control, take up spraying of 19:19:19 5 g and Planofix @ 0.25 ml dissolved in one liter of water. Yellowing of leaves is noticed in maize, sunflower, sugarcane and chilli; to control, spray 19:19:19 dissolved in one liter of water.
- Rain water harvesting.
- To overcome the shortage of fodder to live stock, give preference to *rabi* sorghum during *rabi* season and/or take up sowing of fodder crops in some area and/or grow Gini grass on the bunds of the farm in North Dry Zone (Raichur, Koppal, Kalaburgi districts). Sowing of fodder sorghum, fodder maze, fodder bajra, fodder cowpea in Bidar district.
- To overcome the failure of crops during drought situations instead of sowing sole crops recommended intercropping systems like *rabi* sorghum + chick pea (2:1), chick pea + safflower (4:2) or chick pea + linseed (4:2) may be taken up.

Andhra Pradesh

Coastal Andhra Pradesh

Excess rainfall occurred during last fortnight. Excess 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 rice, groundnut, sugarcane, maize, cotton and mesta fields in Vishakapatnam, Vizianagaram districts.
- Maintenance of 7 cm water level in transplanted rice fields.
- Strengthen the field bunds against the loss of water from the rice field through the eroded bunds due to recent rains in West Godavari, Krishna districts of Krishna Godavari Zone.
- To overcome present excess moisture condition in cotton, top dress the Nitrogenous fertilizers and adopt intercultivation, wherever possible in West Godavari, Krishna districts of Krishna Godavari Zone.
- For preservation of moisture in cotton fields, adopt intercultivation with gorru and guntaka in maize, cotton in West Godavari, Krishna districts of Krishna Godavari Zone.
- To control weeds in direct seeded rice apply namini gold 80-100 ml per acre in 200 litres of water in Prakasam, Guntur, Krishna and West Godavari districts.
- Rain water harvesting.

Rayalaseema

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

- Continuation of sowing of the contingency crops like sorghum, bajra, green gram, cowpea, horsegram and field bean in red soils and sowing of sorghum, green gram, sunflower, korra and field bean in black soils in Kurnool districts with realised rainfall and in Ananthapur district with expected rainfall.
- Continuation of sowing of red gram, castor, green gram, cowpea, sorghum, bajra and horsegram when there is enough moisture in the soil in Chittoor district and with realised rainfall in Cuddepah district of Southern Zone.
- Continuation of sowing fodder *jowar* (where harvesting of June sown korra and bajra has been completed) in Ananthpur and Kurnool districts.
- Thinning in red gram (solo crop or intercrop in groundnut) by keeping 15-20 cm distance between plant to plant and remove excess plants in Chittoor district.
- Completion of harvesting of korra and bajra (June sown) in Ananthpur and Kurnool districts in clear weather.
- Rain water harvesting.

Telangana

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

- Drain out excess water from crop fields of rainfed crops like rice, cotton etc, where very heavy/heavy rainfall is received (Medak, Rangareddy and Warangal districts).
- To avoid the incidence and further spread of Bacterial Leaf Blight (BLB) in rice in very heavy / heavy rainfall received areas like Rangareddy, Warangal, Mehbubnagar, Medak districts of Southern Telangana Zone, temporarily postpone (5-7 days) the application of Nitrogen fertilizers.
- Maintenance of water level upto 7 cm in rice in Adilabad, Karimnagar, Khammam, Nizamabad districts of Northern Telangana Zone.
- By taking advantage of recent rains, application of 30-35 kg urea and 10 kg Muriate of Potash per acre at 80 days after sowing of cotton and application of 15 kg urea per acre at 60 days after sowing of castor as top dressing in clear weather in Southern Telangana Zone.
- Opening of dead furrows to conserve soil moisture.
- Rain water harvesting.

Tamil Nadu

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

- In view of prevailing mainly dry weather conditions in Kanyakumari district, application of 8 litres of water daily in clove gardens by drip irrigation method, application of irrigation to vegetables to protect against high temperature; mulching in pineapple orchards and pepper (at pinhead stage) for moisture conservation.
- Foliar spraying of 5% Potassium Chloride solution (5g/litre of water) in cultivated rainfed crops like groundnut, green gram, black gram and red gram in Salem, Dharmapuri,

Nammakal and Krishnagiri districts to protect from the prevailing dry spell, which will close the leaf stomata and reduce evaporation.

- Application of irrigation to *Samba* nursery in Coimbatore, Tiruppur, Erode districts of Western Zone.
- Continuation of land preparation / transplanting of *Samba* rice (CR 1009 and ADT 50) in Ariyalur, Nagapattinam, Perambalur, Thanjavur, Thiruvarur and Trichy districts of Cauvery Delta Zone.
- Continuation of nursery sowing of Late samba/ Thaladi season rice (varieties ADT 38, ADT 46, ADT 49, improved white Ponni, TRY 3 and TKM 13) in Ariyalur, Perambalur, Thanjavur, Thiruvarur and Trichy districts of Cauvery Delta Zone.
- Completion of nursery sowing *Samba* rice with medium duration rice variety in Coimbatore, Tiruppur, Erode districts of Western Zone. In the absence of wet nursery, direct dry seeding of medium duration rice can be undertaken with sufficient rain for samba season.
- Continuation of main field and nursery bed preparation under dry land conditions for raising rainfed crops during the ensuing Northeast monsoon season in Thoothukudi, Virudhunagar and Tirunelveli districts of South Zone; select drought tolerant and pest and disease resistant varieties of cotton (KC 3 and PA 255), maize (CoH(M) 6), sorghum (K 8, K12), green gram (CO 6), sunflower (CO 4), pearl millet [CO (Cu) 9], gingelly (TMV 5), coriander (CO 4) and senna (KKM 1).
- Continuation of land preparation for sowing of cotton and maize in the Southern Zone (Kanniwadi); keep inputs ready for sowing during the ensuing North East monsoon season. Undertake land preparation for *Samba* Rice.
- Continuation / completion of cultivation of short duration crops like black gram (Co-6, Vamban-6, 8), green gram (Co-8), red gram (Co-7, VBN-3) in Salem, Dharmapuri, Nammakal and Krishnagiri districts.
- Harvesting of matured *Kuruvai* rice in Ariyalur, Perambalur, Thanjavur, Thiruvarur and Trichy districts of Cauvery Delta Zone, matured *Kar* season rice in Coimbatore, Tiruppur, Erode districts of Western Zone and maize and sunflower in Thoothukudi, Virudhunagar and Tirunelveli districts of South Zone in clear weather.

Arunachal Pradesh

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

- Undertake sowing of black gram and green gram and nursery sowing of winter vegetables.
- Carry out hand weeding with care in groundnut field at seed formation stage.
- Harvesting of *jhum* rice (at least 80% mature) after 1-2 bright sunny days.

Assam and Meghalaya

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

Assam

- In Black gram /Green gram carryout Intercultural operation in already sown crops, one weeding should be done at 20-25 days after sowing. The crop should be thinned out simultaneously to maintain the required spacing.

- Seedbed preparation in well-drained sandy-loam fertile soils for sowing of the seeds of tomato, brinjal, knolkhol *etc* may be started.

Meghalaya

- Sali/kharif rice is in vegetative stage, repair bunds to retain standing water. 1st hand weeding may be done at 20-25 DAT followed by top dressing of Urea @ 44 kg/ha.
- Soybean is in flowering stage hence provide good channels for removing excess water to avoid water stagnation in the field. First hand weeding at 15 DAS depending on the weed population.
- Harvest of brinjal.
- Green gram and black gram are in vegetative stage, one weeding at 20 days after sowing by khurpi or hoe is recommended. Thinning to maintain the required spacing within the rows.

Nagaland, Manipur, Mizoram and Tripura (NMMT):

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

Nagaland

- Soil around the ginger plants should be worked with the help of *khurpi* as it helps to break the fibrous roots and thereby supports new growth. Soil near the rhizomes becomes loose and friable and helps in proper development of rhizomes.
- To control gundhi bug in *Jhum* rice, undertake weed control and eradication of alternate hosts from *Jhum* rice fields and surrounding areas which can help prevent the multiplication of the bug. Mechanical control measures such as smoking the field, hand-picking of adults and nymphs have also been advocated.
- Earthing up in soybean fields in Kohima district.
- Harvesting of cowpea.
- Rain water harvesting.

Manipur

- Undertake weeding in main *kharif* rice and apply 33 kg Urea/ha at panicle initiation stage after complete drainage of water. Irrigate field after 48 hours of top dressing. Maintain water level of 5-8cm.
- In *kharif* rice there are chances of sheath blight/ sheath rot to avoid it spray Propiconazole @ 15 ml/ 15 litres of water after rains. Preferably, drain out water from field before the spray.
- Keep the soybean and groundnut fields clean to avoid hairy caterpillar. Maintain proper drainage system to avoid water logging.
- Land preparation for *rabi* vegetable wherever possible.
- Continue sowing of onion in the upland areas.
- Undertake nursery raising for cabbage/cauliflower/broccoli.

Mizoram

- Continue harvesting of *kharif* maize, *kharif* pulses, brinjal, banana and matured pods of cow pea and okra.

- Nursery sowing of tomato.
- Land preparation and sowing of soybean.

Tripura

- Continuation of nursery raising of early winter vegetables such as cabbage, radish, brinjal etc.
- *Aman* rice is at panicle emergence stage; top dressing with urea@ 10 kg per kani is advised. Give a foliar spray of Zinc Sulphate 0.5% (5 g per litre of water). For better grain filling, spray Boran @ 2 gm per litre of water. Weeding may be done.

West Bengal and Sikkim

Deficient rainfall occurred during last fortnight over Gangetic West Bengal. Normal rainfall is likely to occur during next fortnight over Gangetic West Bengal.

Deficient rainfall occurred during first week and excess during second week of last fortnight over Sub-Himalayan West Bengal. Excess rainfall is likely to occur during first week and normal during second week of next fortnight over Sub-Himalayan West Bengal.

West Bengal

- Undertake weeding in transplanted rice and maintain 2-3 cm of standing water in West Medinipur district.
- Brinjal Stop irrigation & application of N-fertilizer. If required apply irrigation water mixing with bleaching powder.
- Carry out earthing up and weeding operations in ginger and turmeric fields in Jalpaiguri district.
- To avoid vine rotting in betel vine, apply Carbendazim 2g + Chlorothalonil 1g or Bordeaux mixture 1% at the base of plant. Avoid water stagnation at the base.
- In South Dinajpur and Malda districts in Sub-Himalayan, continuation of nursery sowing of early cabbage and cauliflower.
- Continuation of sowing of black gram. Treat the seeds with fungicides and Rhizobium culture, 10-12 hours before sowing.
- To recover the loss due to irregular monsoon and flood, for *rabi* season, use good quality seeds only. Select early varieties of mustard (like *Panchali*, *Agrani*, *Biniyo*) so that after harvest of mustard, one can opt for *boro* rice.
- Prevailing cloudy weather is congenial for the incidence of downy mildew in vegetables; spray Metalaxyl 8% + Mancozeb 64% @ 2 g per litre of water.
- Due to humid and warm weather in Gangetic West Bengal, incidence of brown leaf spot in paddy is likely to increase; spray Validamycin @ 2 ml/litre of water.

Sikkim

- In rice, black gram and finger millet are in vegetative stage, maintain proper drainage for good tillering.

Bihar

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

fortnight.

- In Araria, Katihar, Kishanganj, Madhepura, Purnea, Saharsa and Supaul districts in North East Alluvial Zone, continue planting of pointed gourd.
- Undertake intercultural operation in rice, top dressing of 1/3 urea (44 kg/ha) after 1st hand weeding at 25-30 days after transplanting and apply remaining 1/3 urea (44 kg/ha) after 2nd hand weeding at 40-45 days after transplanting.
- Land preparation for rapeseed crop.
- Nursery sowing of cauliflower, cabbage and tomato.
- Rain water harvesting.

Jharkhand

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

- Undertake sowing of toria (T-9, B.R.-23 and P.T.-303) in Ranchi district.
- Undertake sowing of green fodder like maize (African tall or J-1006), lobia (UPC-4200) and berseem (Vardan).
- Raise the seedlings of winter vegetables like cauliflower, cabbage, chilli tomato, brinjal etc.
- In upland crops like horsegram, safflower, lobia, urd and moong bean, go for the intercultural operation 15 DAS.
- Potato and pea: Farmers who plan to cultivate early potato (Kufri Ashok and Kufri Kanchan) and green peas (Arkel, KashiNandini, PE-6, BirsaMatar) are advised to prepare their field and arrange planting material, fertilizers and manures etc.
- Harvesting of maize crop when husk turn yellow and grains are hard enough having less than 30% moisture and store when moisture is 8-10 %.

Odisha

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

- Sowing of niger, castor, sesame and pulses with high yielding varieties in Puri district.
- Transplanting of brinjal.
- Go for top dressing of fertilizers in already transplanted rice
- Medium duration rice is at panicle initiation stage. Apply 6- 8 kg Nitrogen/acre.
- Gap filling in direct seeded rice using seedling of same age or clonal tillers to have a uniform distribution of plant. Strengthen the field bunds and clog the holes to check seepage loss. Spray Chloropyriphos @ 2 ml /litre of water to control leaf minor in groundnut.
- Carry out weeding and cleaning of the base of coconut plants in Balasore district. Apply 1kg Urea, 2 kg SSP and 2kg MOP along with 5 kg Neem cake per plant by making a ring around the plant.
- Nursery raising of winter vegetables like tomato, cabbage and cauliflower for early planting.
- Completion of papaya (Honeydew, Koorg honeydew, Coimbatore-1, Coimbatore-2, Pusa Delicious, Pusa Majestic, Pusa Dwarf, Pusa Giant, Sholeyand Ranchi) planting.
- Rain water harvesting.

Madhya Pradesh

East Madhya Pradesh

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

- Undertake sowing of toria and pea and continue nursery preparation for cauliflower and cabbage in Jabalpur, Rewa, Satna, Panna districts.
- Prepare the field for sowing of radish, fenugreek, spinach, mustard, corianders and turnip in Chhatarpur and Tikamgarh districts of Bundelkhand Zone. Carry out weeding in the paddy crop and apply the recommended nitrogen fertilizer and also ensure the moisture availability. Prepare nursery for improved certified seeds of marigold flower like-Pusanarangi, Pusabasanti etc.
- Drain out excess water from crop fields.

West Madhya Pradesh

Below normal rainfall occurred during first week and excess during second week of last fortnight. Excess 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.
- Continue land preparation for sowing of toria and carry out weeding in brinjal, tomato and onion crops in Gwalior, Bhind, Morena, Shivpuri, Guna, Ashoknagar, Sheopur districts of Grid Zone.
- Prepare the field for sowing of radish, fenugreek, spinach, mustard, corianders and turnip in Datia district of Bundelkhand Zone. Carry out weeding in the paddy crop and apply the recommended nitrogen fertilizer and also ensure the moisture availability. Prepare nursery for improved certified seeds of marigold flower like-Pusanarangi, Pusabasanti etc.
- Drain out excess water from crop fields.

Chhattisgarh

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

- Continue sowing of crops like horsegram and niger in Central Chhattisgarh. Keep inputs ready for sowing of *rabi* crops like chickpea, wheat, linseed, toria etc.
- Sowing of toria in South Chhattisgarh.
- Continue intercultural operations in *kharif* crops in a clear weather in North Chhattisgarh,.
- Rain water harvesting.
- To control *Tikka* disease of groundnut apply two sprays of Hexaconazole (0.2 per cent) or Carbendazim (0.1 per cent) + Mancozeb (0.2 per cent) or Tebuconazole (0.15 per cent) or Difenconazole (0.1 per cent).

Jammu & Kashmir

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

- Sowing of *toria* (RSPT – 1 and RSPT -2), continuation of nursery sowing of cauliflower, cabbage and knolkhol in Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone. Continue sowing of carrot and radish on ridges.
- Apply irrigation to rice and maize. Undertake sowing of leafy vegetables like spinach, methi and coriander.
- Apply need based irrigation to vegetable crops, as there is no chance of rains in coming days.
- Continue sowing of *toria* in Jammu, Kathua, Samba and Reasi districts of Sub Tropical Zone. Apply irrigation to rice in uplands and also apply irrigation to maize as per requirement. Prepare raised seed beds for raising of nursery of onion and cole crops like cabbage, cauliflower, broccoli, knolkhol, kale etc. Prepare field for sowing of radish/turnip/carrot.

Uttarakhand

Below normal 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.

- Field preparation for planting of early variety potato and nursery sowing of tomato in Udham Singh Nagar district of Bhabar and Tarai Zone. Continue transplanting of mid-season cauliflower and sowing of knolkhol. Prepare field for sowing of garlic.
- Continue transplanting of rai, cabbage and cauliflower in Nainital district of Bhabar and Tarai Zone. Continue sowing of early variety of pea, radish turnip and French bean in the mid hills. Carry out weeding and hoeing to control the weeds in already sown, pea, raddish and turnip fields after germination.
- Continue sowing of *toria* and pea in Tehri Garhwal, Chamoli, Champawat, Pithoragarh, Rudraprayag and Uttarkashi districts of Hill Zone. Undertake transplanting of cabbage and broccoli.
- Apply the irrigation and do the weeding operation in paddy as per requirement of crop in Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone.

Himachal Pradesh

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

- Continue nursery sowing of cauliflower in Bilaspur, Solan, Shimla and Sirmaur districts of Mid Hills Sub-Humid Zone.
- Continue sowing of ageti peas in mid hill and low hill regions in Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone.
- In low hill areas, transplant mid-season cauliflower. Undertake planting of onion bulbs in 30x10 cm spacing for harvesting green onion in October. Undertake sowing of turnip and radish in lower rainfed areas are advised.
- Undertake field preparation for early mustard sowing.
- Maintain 5 cm water level in rice in Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone.
- Rain water harvesting.
- If maize cobs and stem color turns yellow, harvesting is advised. Since, light rainfall is

forecasted in all the districts of the state, weather outlook must be kept in mind before commencing harvesting.

- Field preparation for sowing of early sowing of mustard and wheat.
- Attack of fruit fly is expected in this weather in cucurbitaceous crops use of 'Methyl Eugenol' trap is advised. After detecting the symptoms, spraying of Dimethoate @ 2 ml / litre water at 50 litres / hectare is advised.

Haryana & Delhi

Below normal 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.

Haryana

- In Western Zone, complete harvesting and threshing of matured bajra crop. Apply irrigation in paddy as per requirement.
- In view of dry weather during the period farmers are advised to apply the irrigation in late sown cotton crop as per the requirement of crop.

Delhi

- Continue field preparation for early mustard (Pusa Sarson-25, Pusa Sarson-26, Pusa Agrni, Pusa Taraka, Pusa Mahak) and for early pea (Pusa Pragati, Pant matar-3, Arkil etc.).
- Continue transplanting of brinjal, tomato, chilli cauliflower and cabbage. Continue preparation of nurseries of cauliflower for mid-season.
- Continue sowing of carrot (Pusa Rudhira), sarsonsaag (Pusa Saag-1), radish (Versa Kee Rani, Summer Long, Long Chetaki), spinach (All green) and coriander (Pant Haritama) on raised bed.

Punjab

Below normal 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.

- Continue sowing of peas, palak and planting of early varieties of potato. Continue sowing of Asiatic (*Desi*) varieties of radish, carrot and turnip in Moga, Bhatinda, Mansa, Muktsar, Sangrur and Barnala districts of Western Zone. Continue transplanting of fully developed seedlings (4-6 weeks old) of main season varieties of cauliflower. Sowing of late season varieties of cauliflower i.e. Pusa Snow Ball-1 and Pusa Snow Ball K-1 can be started.
- Apply frequent light irrigation in rice at flowering stage for higher yield and stop irrigation two weeks before harvesting. To avoid the shedding of flowers and bolls, maintain optimum moisture in cotton crop during flowering and fruiting stages.
- Raise nursery of Cauliflower in Rupnagar, Patiala and Nawanshahar districts of Sub-Montane undulating Zone.

Uttar Pradesh

Below normal rainfall occurred during last fortnight over West Uttar Pradesh. Normal rainfall is likely to occur during next fortnight over West Uttar Pradesh.

Deficient rainfall occurred during last fortnight over East Uttar Pradesh. Excess rainfall is likely

to occur during next fortnight over East Uttar Pradesh.

- Undertake sowing of toria (TA-9, Bhawani and PT-507) in Allahabad, Fatepur, Chitrakut districts of Central Plain Zone.
- Undertake harvesting of green gram in Jalaun, Jhansi, Lalitpur, Mahoba, Banda and Hamirpur districts of Bundelkhand Zone. Apply irrigation to rice and groundnut. Undertake land preparation for sowing of radish, cabbage, carrot, coriander. Undertake nursery sowing of mid-season brinjal, chilli, tomato, cabbage, cauliflower
- Undertake nursery sowing tomato, cabbage and cauliflower in Faizabad, Gorakhpur, Sultanpur districts of Eastern Plain Zone. Undertake sowing of toria.
- Undertake sowing of toria in Kanpur, Unnao, Lucknow, Sitapur districts of Central Plain Zone Plain Zone.

Rajasthan

East Rajasthan

Below normal rainfall occurred during last fortnight.

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

- Undertake field preparation for sowing of Taramira, Mustard and early pea (Arkil, Hara bona, VL-3, Jawahar Matar-4, Matar Ageti-6 are improved varieties of early pea), in Jaipur, Ajmer. Tonk and Dausa districts of Semi Arid Eastern Plain Zone.
- Undertake weeding and hoeing operation in maize, moong, urad crops to conserve soil moisture.
- Undertake sowing of carrot and radish and continue nursery sowing of cauliflower in Alwar, Bharatpur, Dhaulpur, Karauli, Sawai Madhopur districts of Flood Prone Eastern Plain Zone.
- Undertake transplanting of mid-season cauliflower and cabbage in Udaipur, Sirohi, Bhilwara, Rajasmand and Chhitaugarh districts.

West Rajasthan

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

- Undertake field preparation for sowing of Taramira in Barmer, Churu, Jalore, Jodhpur and Pali districts of Arid Western Plain Zone. Apply irrigation in vegetables crops tomato okra, chilli etc and in groundnut crop as per requirement.
- Apply protective irrigation to *kharif* crops like groundnut, *guar* and pulses showing wilting symptoms in Bikaner and Jaisalmer districts of Arid Western Plain Zone. Late sown crops are at initial stage of grain formation. As there is no rains, farmers are advised to adopt contingent plans to save their crops which are at grain formation stage as given below
 - Remove the older/lower leaves or non-productive crop plants from the rows as per the severity of the drought.
 - Removed leaves and weeds should be used as mulch between the rows or it may be used as fodder for livestock.
 - If possible, apply life saving irrigation to *kharif* crops showing wilting symptoms. Try to conserve every drop of water for future use.

- Adopt foliar spray of urea @ 1% in standing crops.
- Apply irrigation to cotton, guar, rice, green gram and groundnut in Hanumangarh district of irrigated North Western Plain Zone.