



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

Validity: 02 August to 15 August 2019

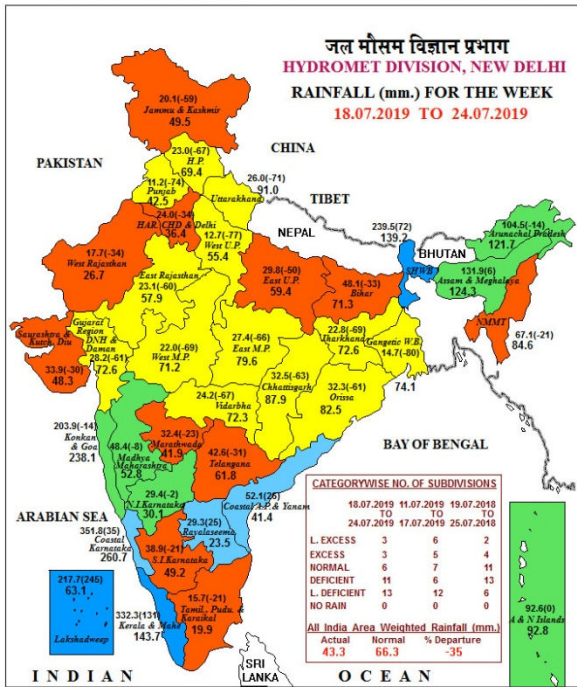
Date of issue: 02 August 2019

Issued by
Indian Council of Agricultural Research (ICAR)
All India Coordinated Research Project on Agricultural Meteorology (AICRPAM),
Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad.
&
Earth System Science Organization
India Meteorological Department

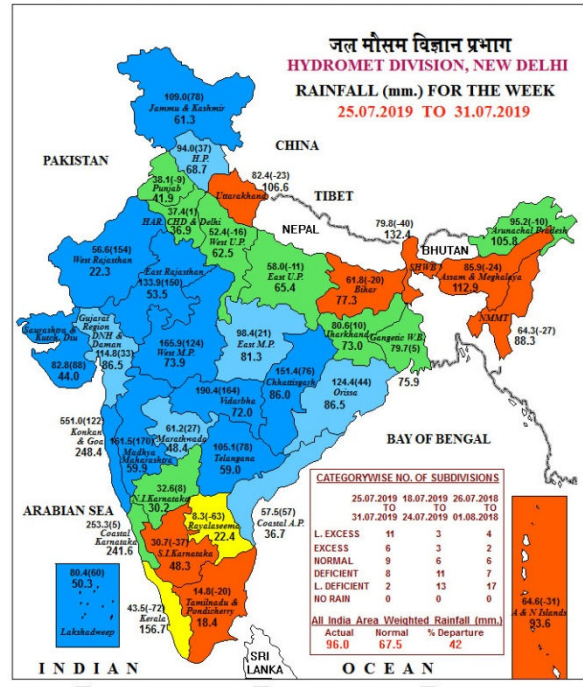
Realized Rainfall and Extended Range Forecast (Rainfall and Temperatures)

Realized Rainfall (18th to 31st July, 2019)

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT



भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT



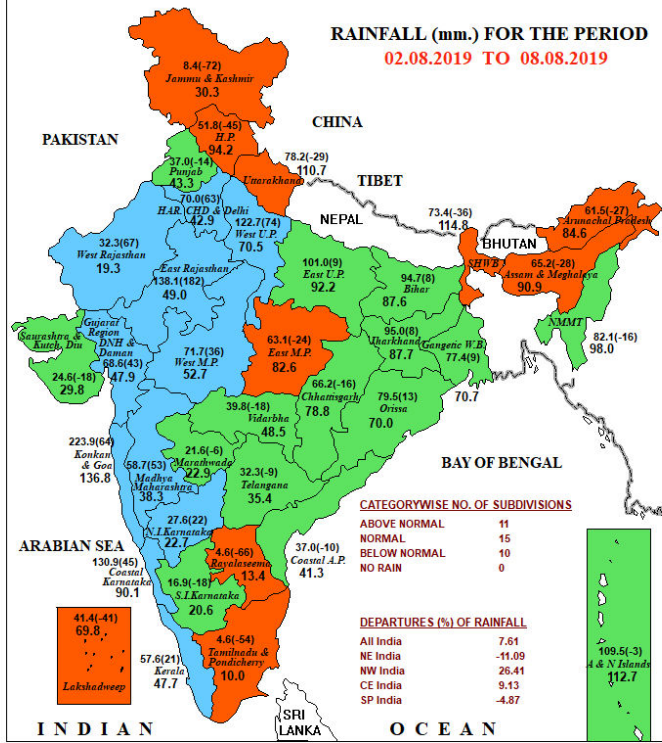
- Normal or above normal rainfall occurred in both the weeks in Arunachal Pradesh, Coastal Andhra Pradesh & Yanam, Konkan & Goa, Madhya Maharashtra, North Interior Karnataka, Coastal Karnataka and Lakshadweep.
- Normal or above normal rainfall occurred in either of the two weeks in Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Rajasthan, Saurashtra & Kutch, Gujarat Region, Madhya Pradesh, Chhattisgarh, Vidarbha, Marathwada, Sub-Himalayan West Bengal & Sikkim, Jharkhand, Gangetic West Bengal, Odisha, Assam & Meghalaya, Telangana, Rayalaseema, Kerala & Mahe and Andaman & Nicobar Islands.
- Below normal rainfall occurred in both the weeks in Uttarakhand, Bihar, Nagaland, Manipur, Mizoram & Tripura (NMMT), South Interior Karnataka and Tamil Nadu, Puducherry & Karaikal.

Extended Range Forecast System

Rainfall forecast maps for the next 2 weeks (IC – 31 July) (2nd to 15th August 2019)

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT

Rainfall Forecast Map - Normal RF Based Categories

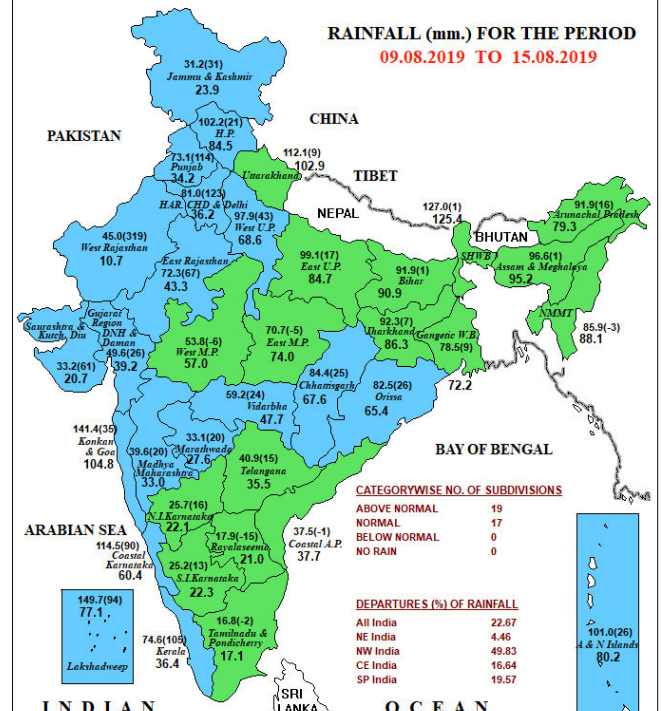


LEGEND: ■ ABOVE NORMAL (+20% OR MORE) ■ NORMAL (+19% TO -19%)
■ BELOW NORMAL (-20% TO -99%) ■ NO RAIN (-100%) ■ NO DATA

NOTES:
 (a) Rainfall figures are based on MME Forecast data.
 (b) Small figures indicate actual rainfall (mm.), while bold figures indicate Normal rainfall (mm.)
 Percentage Departures of Rainfall are shown in Brackets.

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT

Rainfall Forecast Map - Normal RF Based Categories



LEGEND: ■ ABOVE NORMAL (+20% OR MORE) ■ NORMAL (+19% TO -19%)
■ BELOW NORMAL (-20% TO -99%) ■ NO RAIN (-100%) ■ NO DATA

NOTES:
 (a) Rainfall figures are based on MME Forecast data.
 (b) Small figures indicate actual rainfall (mm.), while bold figures indicate Normal rainfall (mm.)
 Percentage Departures of Rainfall are shown in Brackets.

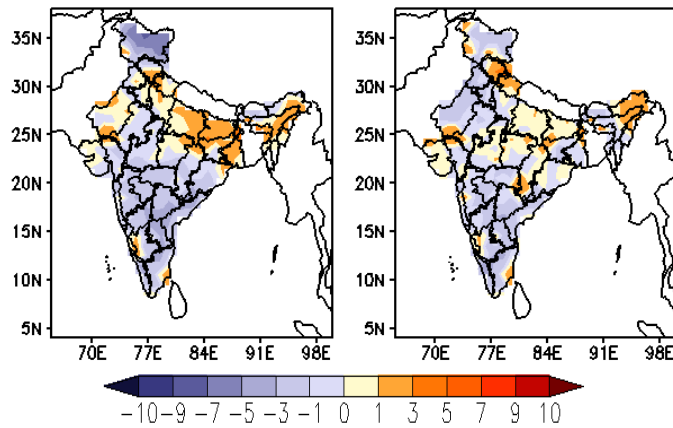
- **Week 1 (02.08.2019 to 08.08.2019):** Northwest India is likely to get above normal rainfall. The Central India is also expected to get normal to slightly above normal rainfall. However, the south peninsula and northeast India is likely to receive below normal rainfall.
- **Week 2 (09.08.2019 to 15.08.2019):** Rainfall is likely to increase from normal to above normal over most parts of India with above normal rainfall over the country as a whole.

**Maximum and Minimum temperature anomaly ($^{\circ}\text{C}$) forecast
for next 2 weeks (IC – 31 July)
(2nd to 15th August 2019)**

MME forecast Tmax anomaly (Deg C)

(Week1: 02Aug–08Aug)

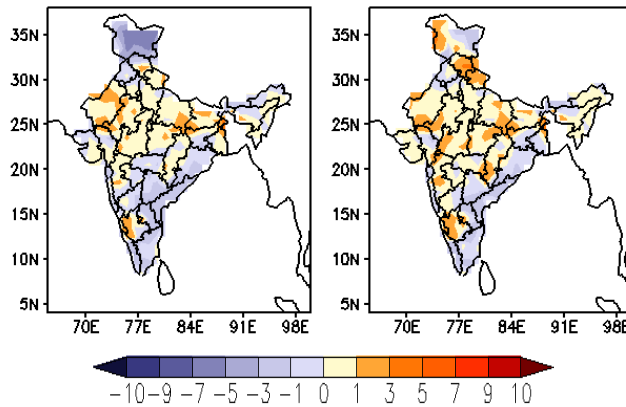
(Week2: 09Aug–15Aug)



MME forecast Tmin anomaly (Deg C)

(Week1: 02Aug–08Aug)

(Week2: 09Aug–15Aug)



Maximum Temperature (Tmax)

- **Week 1 (02.08.2019 to 08.08.2019) and Week 2 (09.08.2019 to 15.08.2019):** Tmax anomaly is likely to be positive over small parts of Indo-gangetic belts and parts of Northwest India, whereas the rest of the region will be with negative anomaly.

Minimum Temperature (Tmin)

- **Week 1 (02.08.2019 to 08.08.2019) and Week 2 (09.08.2019 to 15.08.2019):** Mainly over Northwest and Central India, above normal Tmin is likely, whereas, normal Tmin over rest parts of India during the period.

Strategic Agricultural Planning based on rainfall during next two weeks till 15th August 2019

Agromet Advisories

Kerala

Amount of rainfall received over Kerala during the period from 01 June to 01 August 2019 is 933.1 mm (32% deficit). The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is above normal for both the weeks.

- Since cloudy weather is prevailed, to control bacterial leaf blight in paddy, mix 20 g of cow dung in one litre of water and spray the cow dung slurry by mixing with 20g of pseudomonas in one litre of water.
- Apply fertilizers @ 250g Urea, 285g Rock phosphate, 350g Potash, 500 g MgSO₄ and 2 kg lime per plant in coconut. As a prophylactic measure to control bud rot, apply 1% Bordeaux mixture in the tender leaf axils.
- During the rainy season, there is a chance of mahali disease in Arecanut. The conidia of the fungus carried by wind and rainwater is favourable for disease spread. Prophylactic spraying of Bordeaux mixture (1%) or Copper oxychloride 50WP (2g/litre) with sticker is recommended.

Karnataka

Amount of rainfall received over North Interior Karnataka is 239.9 mm (4% excess), South Interior Karnataka is 269.4 mm (25% deficit) and Coastal Karnataka is 1783.7 mm (10 % deficit) during 01 June to 01 August 2019. The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) over north interior and coastal Karnataka is above normal and over south interior Karnataka is normal for week-1 and normal over north and south Interior Karnataka and above normal over coastal Karnataka for week-2.

South Interior Karnataka

- Due to high humidity (warm and humid weather), possibility of pest and disease build up is more in already sown crop. Take prophylactic measures depending on the crop.
- Wherever, the long duration crops like redgram and castor has been sown, undertake earthing up operations.

Tamil Nadu

Amount of rainfall received over Tamil Nadu is 92.4 mm (29 % deficit) during the period of 01 June to 01 August 2019. The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is below normal for week-1 and normal for week-2.

- In Prevailing weather condition, cotton aphid is noticed. To control, spray Dimethoate 30 EC@500ml/ha or Acetamiprid 20% SP @50 g/ha.
- Paddy stem borer incidence is noticed in the fields. Farmers are advised to spray Neem seed kernel extract to control stem borer or Azadirachtin 0.03% 1000 ml/ha or Chlorantraniliprole 18.5% SC 150 ml/ha.
- In the prevailing weather condition, sucking pest like thrips occurrence is noticed in sorghum. To control, spray Azadirachtin 0.15% W/W 1500-2500 g/ha or Thiamethoxam 25% WG 100 g/ha.

- In the prevailing weather condition, yellow mosaic virus is noticed in pulses. To control, spray Dimethoate 30 EC @500 ml / ha or Thiamethoxam 75 WS @1 g/ litre at rainless days.

Andhra Pradesh

Rainfall received over coastal Andhra Pradesh during the period of 01 June to 01 August 2019 is 236.0 mm (10 % deficit). The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) over coastal Andhra Pradesh is normal for both the weeks.

- Utilizing the available soil moisture from the rainfall received during the last week, farmers are advised to take up sowing of crops like direct sown rice, redgram, cotton, chilli direct sowing/nurseries, maize, castor, bajra, foxtail millet in Krishna, Guntur, Prakasam districts.
- Farmers are advised to go for transplanting of rice and sowing of direct sown rice, ragi, maize in Srikakulam, Vizianagaram and Vishakhapatnam districts after attaining optimum soil moisture for sowing.
- As the prevailing weather is favourable for incidence and spread of leaf miner and sucking pests in groundnut crop, farmers are advised to spray Monochrotophos@1.6ml/L or Chlorpyriphoa@2.5ml/L of water for control.

Maharashtra

Rainfall received over Madhya Maharashtra is 518.1 mm (30% excess), over Marathwada is 239.1 mm (25% deficit), Vidarbha is 428.9 mm (10% deficit) and Konkan region 2260.6 mm (29% excess) during 01 June to 15 August 2019. The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) over Vidarbha and Marathwada is normal and over Madhya Maharashtra and Konkan region is above normal for week-1 and above normal over all the sub divisions of Maharashtra for week-2.

Marathwada

- To control attack of leaf eating caterpillar and stem borer in soybean crop, take a spray of Profenofos 50% @ 20 ml per 10 litre water during clear weather condition.
- To control attack of stem borer in sorghum crop, soil application of Carbofuran 3 % @ 3 kg per acre should be done.
- Light hoeing should be done in germinated pearl millet crop for weed management and conservation of soil moisture from the field.
- For management of sucking pest in cotton crop take a spray of 5 % NSK or Thiamethoxam 25 % @ 2 g or Acetamiprid @ 2 g per 10 litre of water during clear weather condition. Symptoms of para wilt is observed due to sudden increase in rainfall after dry spell and high temperature.

Madhya Maharashtra

- To control the leaf eating caterpillars in *kharif* sunflower, greengram, blackgram, pigeonpea etc., spraying of Chloropyriphos or Quinolphos @ 15-20 ml + 10 litre of water + 5 ml sticker.
- Thinning should be carried out in *kharif* sown crops followed by one hoeing.
- Adsali sugarcane planting should be followed up to 15 August wherever the water availability is there with varieties like Co.86032 and Phule-0265.
- Prepare ridges and furrows or compartmental bunds of 6x6 meter size in the fallow land kept for *rabi* sowing. It will help to conserve more rain water during *kharif* and will help to increase yield of *rabi* Jawar.

Vidarbha

- Apply top dressing of nitrogen fertilizer after a spell of rains to earlier sown one month old cotton crop @ 40 kg N/ha for irrigated Bt cotton, 35 kg N/ha for irrigated hybrid cotton, 30 kg N/ha for rained Bt cotton and desi hybrid cotton and 20 kg N/ha for desi improved varieties.
- Undertake intercultural operations (hand weeding/hoeing) for timely control of weeds in earlier sown soybean crop, after current spell of rains.
- For remaining *kharif* sowing under prevailing late sown condition, alternate contingency crops/intercropping system include sesame (AKT-64), pearl millet (PKV Raj, Phule Adishakti, Phule Mahashakti), sunflower (TAS-82, LFSH-171), castor (AKC-1, GCH-4, GCH-5, Dipti (DCH-32), Deepak (DCH-177).

Konkan

During next five days, there is forecast for heavy rain, therefore,

- It is advised to postpone application of second split dose of nitrogenous fertilizers i.e. urea @ 87 kg/ha in rice crop at tillering stage. Apply fertilizer when intensity of rainfall is low.
- Make arrangement to drain out excess water from finger millet field.
- Postpone the 2nd spray of 1% bordo mixture for control of incidence of 'koleroga' disease in arecanut orchard and spray when the intensity of rainfall is low. Also mix stickers in bordo mixture solution at the time of spraying.
- Follow earthing up operation in Okra, Brinjal, Tomato, Chilli etc. vegetable crops. Also provide support to crop as there is forecast of high wind speed.

Jharkhand

Jharkhand received 333.3 mm rainfall which is 36 % deficit during 01 June to 01 August 2019. The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is normal for both the weeks.

- After 15 to 20 DAS, apply granular insecticide Furadon (10 to 15 granule in the apical leaf and 3 to 4 g around a plant) to control stem borer and leaf roller in maize. Weeding, interculture and earthing should be done on 30 days standing crop. Top dressings of urea @ 35 kg /acre is recommended at silking stage.
- Sowing of improved varieties of urd like Pant U -31, Birsa urd -1, WBU 109 should be done in upland with 3 ploughings. Apply FYM @ 2 tons before last ploughing and level the land. Open the furrow (row to row distance 30 cm) and apply Urea @ 17 Kg, SSP @ 100 Kg and MOP @ 14 Kg/acre.
- After intercultural operation, apply rest dose of Urea and give aerial support to cucurbits and facilitate drainage to prevent from fruit and vine rot. To control Fruit fly, maggots spraying with mixed 10 g jaggery plus Malathion 2 ml in one litre of water.

West Bengal

Rainfall received over Gangetic West Bengal during 01 June to 01 August 2019 is 314.9 mm (47 % deficit). The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is normal for both the weeks.

- Light to heavy rainfall is expected in coming days. Complete the transplanting operations in aman rice with sufficient irrigation. Ensure weed free seed bed and make proper drainage channel.
- Complete the harvesting operation of jute (four months old). At the time of harvesting, cut the leaves in the main-field itself and afterward mix the leaves with top soil by ploughing. In case of late sown crops, attack of Bihar hairy caterpillar and semilooper may be prevalent. For both insects, apply 1.5 ml Endosulphan per litre of water.
- In pumpkin, ridge-gourd, pointed gourd and cucumber, there is a chance of attack of Red-Pumpkin Beetle in the prevailing weather condition. To control the pest, apply Dimecron or Rogor (1ml per litre of water).

Bihar

Rainfall received over Bihar during 01 June to 01 August 2019 is 517.2 mm (normal). The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is normal for both the weeks.

- Priority should be given for transplanting of rice in low and medium land areas. Complete the transplanting at the earliest.
- Land preparation is advised for *kharif* onion. Application of 150-200 quintals of cow dung/hectare, 60 kg Nitrogen, 80 kg Phosphorus and 80 kg Potash is advised during land preparation. Transplanting of 45-50 days old onion seedlings is advised in raised seedbed at a distance of 15x10 cm. The size of seed bed may be 3x2m or 5x2 m.
- Bahar, Pusa-9, Narendra Arher-1, Rajendra Arher-1 and Maalvia-13 varieties of pigeon pea are recommended for sowing in North Bihar. Seed rate @18-20 kg/ha is suggested.
- Monitoring of sucking insect pests such as white fly, leaf hopper and aphid is advised in vegetable nursery. These insect-pests cause viral infections in nursery. For management, spraying of Imidacloprid @ 0.3ml/litre of water is advised in clear days.

Odisha

Rainfall received over Odisha during 01 June to 01 August 2019 is 446.8 mm (21 % deficit). The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is normal for week-1 and above normal for week-2.

- Go for SRI method of rice cultivation in irrigated medium lands, as 10 to 12 days is needed for raising seedlings.
- Complete sowing of sesame, greengram and blackgram, sowing of vegetables like lady's finger, cowpea and cluster bean, raise vegetable nurseries for cauliflower, brinjal, tomato and chillies in uplands.
- Maize is at 6 to 7 week stage (at tasseling stage). Go for weeding if required. Apply 8 kg Nitrogen/acre leaving 5 cm from the rows followed by earthing up. Drain out excess water if continuous rain occur.
- Early sown cotton, maize and groundnut crop is at 3 week stage, go for hoeing and weeding and provide dust mulching to conserve soil moisture.

Rajasthan

Amount of rainfall received over East Rajasthan is 342.1 mm (20% excess) and West Rajasthan is 121.4 mm (12% deficit) during 01 June to 01 August 2019. The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) over East and West Rajasthan is above normal for both the weeks.

- There is sufficient rainfall occurred in last week, hence transplanting of fruit plants may be done.
- Farmers are advised for sowing of guar, sesame and fodder crops.
- Top dressing of 55 kg/ha urea in maize crop is advised where the crop is at knee high stage.
- Avoid hoeing in groundnut where the crop is at pegging stage.
- Insect pest in *khariif* crops should be regularly monitored and take plant protection measures under the clear sky when the insect population is above ETL.
- In the paddy growing region, if top leaves of plants turned yellow and bottom leaves remained green, farmers may spray zinc sulphate solution (2.5kg zinc sulphate dissolved in 500 litres of water / ha).

Gujarat

Amount of rainfall received over Gujarat region is 378.8 mm (21% deficit) and Saurashtra & Kutch is 192.7 mm (33% deficit) during 01 June to 01 August 2019. The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) over Gujarat region is above normal in both the weeks and over Saurashtra & Kutch is normal for week-1 and above normal for week-2.

- As rain is forecasted, farmers are advised to postpone irrigation, application of fertilizer and plant protection measures to the crops.
- Drain out excess rain water from the field.
- Remove excess rainwater from nursery bed raised for seedlings of vegetable crops like tomato, chili, and tobacco.
- Farmers should provide proper support to the fruit crops like papaya and banana to reduce the damage by wind and water logging.

Haryana

Haryana received 150.7 mm rainfall (26% deficit) during 01 June to 01 August 2019. The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is above normal for both the weeks.

- Transplanting of 55-60 days old seedlings for late transplanting of short duration varieties and avoid deep planting for better crop establishment and fill up the gaps within a week. Maintain 5-6 cm standing water up to maximum tillering stage.
- Due to possibility of rain, farmers are advised to drain out the excess rain water in the cotton crop if required. Farmers are advised to withhold irrigation and spray.
- Farmers are advised to postpone irrigation in existing vegetable crops. Make arrangement to raise new orchard during monsoon season.

Punjab

Rainfall received during 01 June to 01 August 2019 over Punjab is 220.4 mm (3% deficit). The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is normal for week-1 and above normal for week-2.

- In view of rainfall, apply only need based irrigation to cotton crop. Apply remaining half dose of nitrogen at flowering stage. Eradicate the weeds like kanghi buti, peeli buti, puth kanda etc growing on cotton field bunds, waste lands, road side and irrigation channels/canals to avoid further spread of whitefly to cotton field.
- Do not allow the rain water to stand in the main maize crop as this crop is highly sensitive to standing water and promotes bacterial stalk rot.
- Drain out the stagnant rain water from vegetable fields.
- It is the right time for sowing of cucurbits, okra, rainy season tomato, brinjal, cowpeas and early varieties of cauliflower.
- Prevailing weather is favourable for the development and spread of fruit rot in chilli. Farmers are advised to give 3-4 sprays of Folicur @ 250 ml of Indofil M-45 or Blitox 50 WP @ 750 g/acre at 10 days interval during clear weather.

Himachal Pradesh

Rainfall received during 01 June to 01 August 2019 over Himachal Pradesh is 267.9 mm (28% deficit). The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is below normal for week-1 and above normal for week-2.

- Top dress one-third dose of urea in maize and rice immediately.
- Farmers who want to plant new horticultural plants are advised to dig pits and transplant saplings as per requirement.
- To control the mango hopper, spray Mascran or Nuacran @ 40 ml or 200 ml per 200 liters of water.
- In litchi, fruit borer is appearing. Spray Cypermethrin 10 EC @ 1 ml per litre of water at 15 days interval to control.
- Monitor lady finger crop against mite attack. If population is above threshold, then spray of Ethion @ 1.5-2 ml/litre of water is advised.

Jammu

Rainfall received during 01 June to 01 August 2019 over Jammu is 275.0 mm, which is 01% deficit. The extended range weather forecast for next two weeks (01 to 08 August and 09 to 15 August) is below normal for week-1 and above normal for week-2.

- Due to present rain and further chances of rainfall, farmers are advised to conserve fresh rain water in field. Postpone application of fertilizers as well as plant protection measures.
- Keeping in view the rainfall, make arrangements to drain out excess water from the fields. Postpone plant protection measures as well as application of fertilizers.
- Earthing up should be done in early sown maize to make proper support for the crop.

- Due to chances of moderate to heavy rainfall, avoid direct contact of cucurbits fruit with soil to save from rotting.

Disclaimer: *The predictability of weather depends on many factors which are dynamic in nature. The success of agromet advisories provided here depends on the accuracy of the forecasts. In no event will India Meteorological Department (IMD) and Indian Council of Agricultural Research (ICAR) be liable to the user or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit resulting from any use or misuse of the information on this bulletin.*