



National Agromet Advisory Service Bulletin

based on

Extended Range Weather Forecast

Valid for 1st to 14th August, 2014

Date of Issue: 1st August, 2014

Issued by

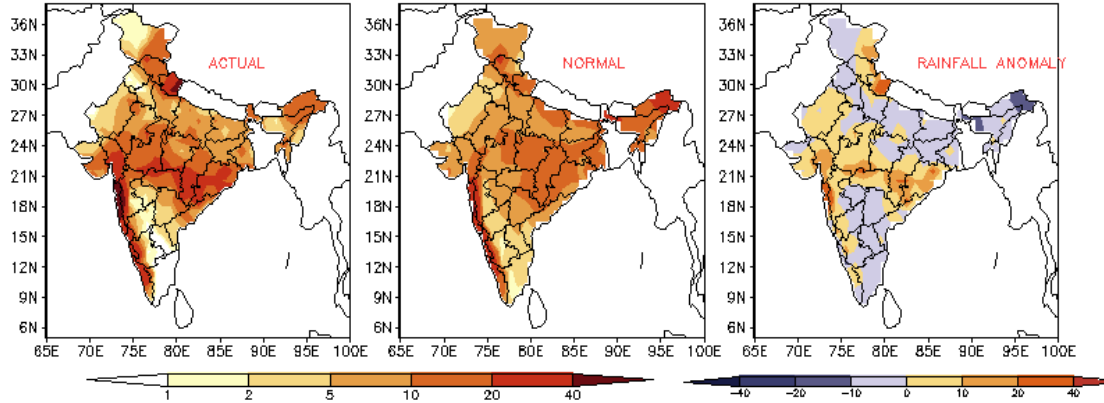
Earth System Science Organisation
Agricultural Meteorology Division
India Meteorological Department, Pune

Indian Institute of Tropical Meteorology (IITM), Pune

&

Indian Council of Agricultural Research
AICRPAM, CRIDA, Hyderabad

Realized Rainfall (17th to 30th July)



During the last two weeks, many parts of Konkan & Goa and some parts of Uttarakhand received an average rainfall of more than 40 mm/day. Many parts of Kerala, Coastal Karnataka, Gujarat region, Chhattisgarh and Odisha, some parts of Madhya Maharashtra and South Interior Karnataka received an average rainfall of 20-40 mm/day. Many parts of Saurashtra, Vidarbha, Madhya Pradesh, Himachal Pradesh, Arunachal Pradesh, Sikkim, some parts of Jammu & Kashmir, East Rajasthan, Assam and Nagaland received an average rainfall of 10-20 mm/day. Many parts of Uttar Pradesh, Bihar, Jharkhand, West Bengal, Mizoram and Tripura, some parts of West Rajasthan, Telangana, Coastal Andhra Pradesh received an average rainfall of 5-10 mm/day. Many parts of North Interior Karnataka, Rayalaseema, Marathwada, Kutch region and Meghalaya, some parts of Punjab received an average rainfall of 2-5 mm/day. Mainly dry/dry weather prevailed over rest of the country.

Monsoon Watch

Southwest monsoon was vigorous over Saurashtra & Kutch and north & south interior Karnataka and active over Odisha, Gujarat region, Konkan & Goa, Madhya Maharashtra, Chhattisgarh and coastal Karnataka on 1st August.

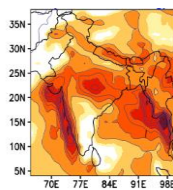
Extended Forecast System (based on CFS model)

Forecast based on IC = 30th July, 2014

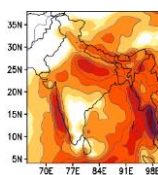
Rainfall forecast for the 3 pentads

Rainfall Forecast Actual (mm/day)

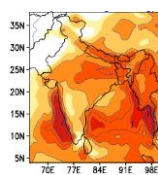
(P1:31 Jul-4 Aug)



(P2:05 - 09 Aug)

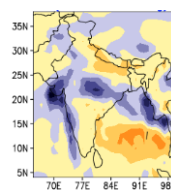


(P3:10 - 14 Aug)

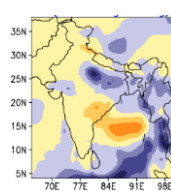


Rainfall Forecast Anomaly (mm/day)

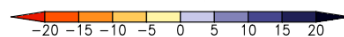
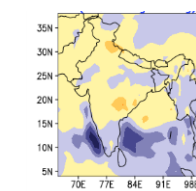
(P1:31 Jul-4 Aug)



(P2:05 Aug-09 Aug)



(P3:10 Aug-14 Aug)



P1, P2, P3: PENTADS

First pentad (31Jul-04Aug): Rainfall of about >40 mm/day is likely over many parts of Konkan & Goa and Coastal Karnataka, rainfall of about 20-40 mm/day is likely over many parts of East Madhya Pradesh, some parts of West Madhya Pradesh, Saurashtra and Vidarbha, rainfall of about 10-20 mm/day is likely over many parts of Kutch, Gujarat Region, Odisha, Jharkhand and Sikkim, some parts of Haryana, East Rajasthan, Manipur, Nagaland, Assam and Gangetic West Bengal, rainfall of about 5-10 mm/day is likely over many parts of Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Meghalaya, Mizoram, Tripura, Sub-Himalayan West Bengal, Bihar and Madhya Maharashtra, some parts of Jammu & Kashmir, Uttar Pradesh and Interior Karnataka, rainfall of about 2-5 mm/day is likely over many parts of Marathwada and some parts of Coastal Andhra Pradesh. Mainly dry weather would prevail over rest of the country.

Second pentad (05-9 Aug): Rainfall of about 20-40 mm/day is likely over many parts of Uttar Pradesh, some parts of Konkan & Goa, Coastal Karnataka, Manipur and Nagaland, rainfall of about 10-20 mm/day is likely over many parts of Uttarakhand, Sikkim, Tripura, Mizoram, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Odisha, and Gujarat Region, some parts of Assam & Meghalaya, rainfall of about 5-10 mm/day is likely over many parts of Himachal Pradesh, Arunachal Pradesh Madhya Maharashtra, Vidarbha and East Rajasthan, some parts of Jammu & Kashmir, Saurashtra & Kutch and Kerala, rainfall of about 2-5 mm/day is likely over some parts of West Rajasthan, Marathwada, Interior Karnataka, Coastal Andhra Pradesh, Telangana and Tamilnadu. Mainly dry weather would prevail over rest of the country.

Third pentad (10-14 Aug): Rainfall of about 20-40 mm/day is likely over many parts of Konkan & Goa, Coastal Karnataka, East Madhya Pradesh, West Bengal, Sikkim, Nagaland, Manipur and Mizoram, some parts of Assam & Meghalaya, Bihar and Jharkhand, rainfall of about 10-20 mm/day is likely over many parts of Uttarakhand, Arunachal Pradesh, Tripura, Odisha, West Madhya Pradesh, Chhattisgarh, East Rajasthan, Vidarbha and Gujarat Region and Coastal Andhra Pradesh, some parts of Uttar Pradesh, Kutch, South Interior Karnataka and Kerala, rainfall of about 5-10 mm/day is likely over many parts of Himachal Pradesh, Saurashtra, Marathwada, Telangana, Rayalaseema and Tamilnadu, some parts of Jammu & Kashmir, rainfall of about 2-5 mm/day is likely over many parts of Haryana and Madhya Maharashtra, some parts of West Rajasthan and North Interior Karnataka.

Strategic Agricultural Planning based on rainfall during next 2 weeks till 14th August

Current status

Southern India: In coastal area of Andhra Pradesh, rainfall was deficit by 33% and in Rayalaseema by 20%. In Telangana the deficit was 47%. In Andhra Pradesh about 42% of normal area (17.6 lakh ha) has been covered under different crops. In Telangana, about 26.1 lakh ha (65% of the normal kharif season area of 40.38 lakh ha) has been covered. With the receipt of rains at most of the places over Telangana and at many places over Coastal AP during the previous week, sowing of rainfed crops like cotton, soybean, redgram, maize, castor, sesame, jowar, bajra, greengram are in progress.

Western India: The rainfall over Gujarat region was deficit by about 24% and by 31% over Saurashtra & Kutch. Cereals in 37%, pulses in 39%, oil seeds in 55% and other crops in 77% of their normal area are sown and 62% of the total normal sowing area has been covered.

Central India: In Madhya Maharashtra rainfall was deficit by 16%, in Marathwada by 59%, in

Vidarbha by 17% and in Konkan & Goa by 16%. In Marathwada region, about 28.6 lakh hectares (65% of the normal area) is sown under different crops. In Vidarbha region, 59.6% in Nagpur division 46.4% of the normal area has been covered so far. In Western Maharashtra 52% of the normal area has been covered under different crops.

Northwest India: In west Rajasthan monsoon rainfall was deficit by 18% and in east Rajasthan by 23% and in Jammu and Kashmir rainfall was deficit by 47%. In Jammu region about 93.5% of the area and in Rajasthan about 60% of the area has been covered.

East and Northeast India: In Jharkhand the rainfall was deficit by 13% and in Bihar the deficit was 26%. In Jharkhand paddy over 30.5%, maize over 74.3%, pulses 42% and oil seed over 31.4% of the normal area have been covered. In Bihar 45% of the normal paddy area and 90% of the maize area has been covered.

Future Strategies

Southern India

Andhra Pradesh and Telangana

- Farmers are advised to take up gap filling in cotton and soybean and top dressing of fertilizers in cotton, maize, castor.
- Farmers of East and West Godavari, Krishna, Srikakulam, Warangal, Nizamabad, Mahabubnagar districts are advised to go for short and medium duration varieties of paddy instead of long duration varieties.
- In coastal AP farmers may transplant paddy up to 15th of August under canal commands.
- Direct seeding of rice can be taken up with short duration varieties under dry conditions and later converted to wet paddy after receipt of good rainfall.
- In NSP command areas of Nalgonda, Guntur, Krishna and Prakasam districts as there is less inflows into reservoirs and no release of water in canals, farmers are advised to take up rainfed crops like maize, cotton, redgram, greengram.
- Farmers of Kadapa district are advised to sow contingency crops like redgram (60 x 20 cm spacing), maize, tomato, cowpea, fieldbean (TFB 5), sunflower in red soils and redgram, jowar and sunflower in black soils instead of groundnut apart from fodder crops like pillipesara, horsegram and sunnhemp.
- In Krishna district, farmers are advised to go for sowing of cotton in heavy soils, rainfed crops like maize, greengram, redgram in light soils. Adopt closure spacing of 90 x 30 cm in heavy soils or 75 x 30 cm in light soils and top dressing of fertilizers at 20 days interval, when soil moisture is sufficient for application of fertilizers.
- In Prakasam district, farmers are advised to adopt closure spacing for cotton and redgram sole crops and form dead furrows for moisture conservation.

Rayalaseema

- Farmers of Rayalaseema should avoid sowing of groundnut from August onwards as the yields of groundnut will be reduced under delayed sowing. Instead, they may take up sowing of redgram (upto 15th of August), jowar, bajra, foxtail millet, cowpea, sunflower, greengram and fieldbean. Red gram may be intercropped with Korra in 5:1 ratio in the rainfed tracts in

Kurnool district. Sowing of rainfed castor and red gram, groundnut and bajra in Anantpur district may be continued. Mulching with groundnut shells is advised.

Karnataka

In Northern Karnataka farmers are advised to concentrate efforts on soil moisture conservation practices in already sown crop, rather than take chances for any further sowing particularly in Zone 1, Zone 2 and Zone 3 during the next week. Crops/varieties with low water requirement in the establishment stage and fodder-based crops may be preferred.

Farmers are also advised to keep the land fallow in areas where double cropping had been planned in medium to deep black soils. However, soil and moisture conservation techniques such as compartment bunding, ridges and furrows across the slope are suggested for medium and deep black soils spared for *rabi* sowings and it is advised to spare some land exclusively for fodder crops.

- Priority should be given to seed cum fodder crops like bajra, maize, cowpea, horsegram so as to avoid scarcity of fodder for live stock.
- Wherever sufficient wetting rainfall is received, onion, sesamum, maize, sunflower, niger, castor, bajra, groundnut (spreading), redgram, desi cotton, navane, horsegram, cowpea crops may be sown with the following seed treatment to induce drought resistance.
- Bajra: Soak the seeds in water for 10 hours and dry under shade. Take up sowing in wider row spacing up to 135 cm.
- Groundnut (Spreading type): Open conservation furrow after every 8th row for moisture conservation.
- Pigeonpea: Soak seeds in CaCl₂ solution (2%) for 1 hour and dry under shade for 7 hours and then treat seed with rhizobium @500g/10 kg seed.
- Niger: Soak the seeds in water for 6 hours and dry under shade, then treat seeds with thiram/captan @ 3g/kg seeds.
- Intercropping of pearl millet + pigeonpea (2:1), pearl millet + castor (2:1), kharif sorghum + redgram (5:1), redgram + sesamum (1:2 or 2:4); redgram + horsegram (2:1) is suggested to minimize the drought risk.
- Sow the crops in rows across the slope for better *insitu* conservation of rain water.
- Hand weeding and repeated inter-cultivation, removing excess and weak seedlings within the crop row is recommended to conserve soil moisture in areas where sowing has already been taken up.
- If there is no sufficient moisture in the soil, apply only 50% of the chemical fertilizer at the time of sowing and remaining 50 % as and when the sufficient wetting rainfall is received.

In major parts of South & North Interior districts, sowings are delayed due to inadequate moisture and following contingency crops plan and medium duration varieties are suggested up to August 15th.

- Finger millet - Indaf- 5, PR-202, GPU-28 and HR-911
- Maize - Ganga, Deccan, Vijaya composite and Composite NAC
- Sunflower: KBSH-42 and KBSH-44. Farmers may provide protective irrigation to the early sown red gram crop and take up inter cultural operations between rows.
- Spray 2% potassium chloride for crops experiencing moisture stress.

Western India

Gujarat: Castor and cluster bean growing farmers are advised to take up land preparation and procure seeds. As situation is ideal for transplanted crops, transplantings may be carried out immediately.

South and Middle Gujarat region

- In soybean, cv. Guj. Soybean1, 2, JS-335.
- Short duration oilseeds crops: sunflower (cv. Modern and EC-68414 and Guj-1) and Sesame (cv. Guj. Tal 1,2, 10) may be undertaken; Pulse crops like: Blackgram (cv. T-9, Guj. Udid-1), greengram (cv. GM-4, K-851, Meha), cowpea (cv. Guj. cowpea 1,2,4,Pusa Falguni); Grain Sorghum (cv. GJ-35,36 and 37) and Fodder sorghum (cv. S-1049,C-10-2, Gundari, GFS 4,5).
- Avoid sowing of maize and bajra crops for grain purpose.

North Gujarat Region

- Sesamum (cv. Guj. Tal 1,2, 10), Sunflower (cv. Modern, EC 68414), Fodder sorghum (cv. S-1049, C-10-2) may be sown.

Saurashtra region

- Blackgram- cv. T-9, Guj. Udid-1; Greengram-GM-4, K-851, Meha; Sorghum cv.CSH-6 and CFS-4 for fodder purpose; Guar-Guj. Gaur 1 and 2 specifically for Kutch region
- Sesame-Purva-1

Marathwada

- After receipt of sufficient rains (75-100 mm) pigeon pea, Hy. Bajra, castor, ragi, sesamum may be sown.
- Intercropping systems like Hy. Bajra + Pigeon pea, Castor + Pigeon pea etc are recommended.
- Farmers may take up intercultural operations like weeding/hoeing in already sown cotton, soybean, pigeon pea crops.
- Staking should be done in one year old fruit orchards to avoid lodging due to high winds.
- Apply 500 gm Nitrogen per tree to citrus, lemon and sweet orange (Mrug Bahar) orchards and also provide protective irrigation.

Madhya Maharashtra

On the receipt of sufficient rainfall during first fortnight of August farmers may take up sowing of sunflower, red gram, horse gram and castor. Prefer intercrop combinations like sunflower + red gram and castor + ridge gourd. Avoid sowing of blackgram, greengram, pearl millet and soybean.

Central India

Madhya Pradesh

Sowing of early maturing varieties of moong, urad and nursery sowing of vegetables is recommended. Transplanting of rice in east Madhya Pradesh may be taken up immediately. In west Madhya

Pradesh, sowing of early maturing varieties of maize (JVM 421, JM 12), red gram (UPAS 120, Pusa 9, TJT 501), sunflower (Modern, sesame variety TKG-8) and black gram (T 9, JU 86) is recommended.

Chhattisgarh

Planting of horticultural crops like papaya, mango and guava and transplanting of rice and sowing of maize, moong, urad and vegetables are recommended.

Vidarbha:

- In the unsown or delayed sowing areas, pigeonpea (AKT 8811, Vipula, PKV- Tara and BSMR-736) may be sown at a closer (45x20 cm) spacing.
- In the areas where sowings are delayed (up to first fortnight of August) alternative crops like sunflower (TAS 82, PKV SF-9, PKVSH-27, KBSH 1 and KBSH 44), Pearl millet (PKV Raj, Shradha and Saburi) Sesame (AKT-64 and JLT-7), Castor (AKC-1, GCH-4,5,6, DCH-117,32), and pearl millet + pigeonpea (2:1 or 4:2), sunflower + pigeonpea (2:1), sesame + pigeonpea (4:1) intercropping systems is suggested up to first fortnight of August.
- In paddy growing areas of eastern Vidarbha, transplanting may be taken up immediately.

Eastern India

Jharkhand

- In upland areas adopt inter cropping of maize + pigeon pea, pigeon pea + urd been, pigeon pea + jowar.
- In medium lands, direct seeding of paddy with cv.Sahbhagi is recommended.

West Bengal

- Transplanting of paddy may be avoided beyond 1st week of August as it would result in yield reductions.
- Provide drainage to vegetables and keep continuous vigil on disease infestation as prevailing warm and humid weather is very much congenial for disease growth. Take proper measures immediately if disease infestation is noticed.
- Vegetable and flower nurseries may be covered with polythene sheets.
- In Bankura and Purulia districts (Red & laterite soils, undulated land, shallow to moderately deep coarse loamy soils) follow staggered dry nursery/adopt dry seeding or drum seeding of paddy.

Bihar

- In upland areas, sowing of urd (cv. Navin) and arhar is recommended up to August.
- Direct seeding of short duration paddy varieties (Shabhagi, Riccharya, Turanta, Prabhat, NDR-97, Pusa 834) may be taken up in medium lands up to 15th August.
- Under low land conditions re-transplanting (Kharuhan) of medium and long duration paddy

varieties (Swarna Sub- 1, BPT5204, Rajendra Manasuri, Sambha Sub-1, Kasturi, Sudha, Vaidahi, Swarna) is suggested using 3-4 seedlings per hill up to 30th August.

- If plantings are delayed, farmers may use 45 days old seedlings of medium duration paddy varieties (Sita, Rajshree, Subhasini, Rajendra Kasturi, Rajendra Bhagwati) and 40-50 days old seedling of long duration paddy varieties (Swarna Sub-1, Rajendra Manasuri, Sambha Sub- 1 (BPT 5204), Kasturi, Vaidahi, Sudha, Rajshree) up to 15th August.

Northwest India

Rajasthan

- In maize crop, excess plants may be thinned out by keeping a plant to plant distance of 25 cm. Drain out excess rain water from fields where water logging conditions are prevailing due to heavy rainfall.
- In western parts (Jodhpur, Nagour, Barmer, Jaisalmer, Bikaner districts) and eastern parts (Jaipur, Alwar, Jhunjhunu, Sikar, Tonk districts), short duration varieties of bajra (HHB-67), Moth (RMO-40 and RMO-225), sesame (RT-125, RT-46), clusterbean (RGC-936) and fodder crop (Bajra) are recommended where sowings are yet to be completed.

Uttar Pradesh

As Uttar Pradesh received good rainfall during last fortnight and is likely to receive during next fortnight, agricultural activities like transplanting of rice and planting of fruit crops like mango, guava, litchi, amla, lemon, banana, papaya, etc. will be normal. Sowing of groundnut, arhar, jowar, urd, moong, maize and soybean is expected to be completed.

Haryana

Farmers may adopt crop diversification and grow short duration mung bean (MH 421, SML 668) or maize or fodder crops as per local demand/ market instead of paddy.

Due to deficit rainfall activity following agronomic measures are suggested.

- Intercropping of Pearl millet + Greengram / Mothbean (8:4/6:3)
- Sprinkler Irrigation
- Shallow irrigation of 4-5 cm depth
- Conjunctive use of canal and ground waters.
- Split application of fertilizer and organic manures
- Undertake straw mulching
- Marginal ground waters for life saving irrigation
- Short duration cultivars
- Adoption of plant protection measures like seed treatment with azotobactor/rhizobium
- Deep ploughing during kharif season
- Intercultural operation and earthing,
- Sowing of fodder crops such as jowar mixed with cowpea to increase the nutritive value and continuous supply of green fodder.

Punjab

- Short duration early maturing and drought tolerant varieties of crops including paddy (PR 115, PR 111, PR 121, PR 123, PR 113), maize (PMH2) and moong (PAU 911, ML 818) are suggested.
- Moong variety-ML-613 can be sown in rainfed areas in Gurdaspur, Hoshiarpur and Ropar. Moong– PAU -911 variety has been recommended for the whole state except Bathinda, Mansa, Faridkot, Muktsar and Ferozepur.

Jammu and Kashmir, Himachal Pradesh and Uttarakhand

Rainfall activity was normal over Jammu and Kashmir, Himachal Pradesh and Uttarakhand and there is probability of occurrence of good rainfall over these states the vegetative growth of rice, pulses like mash (var. Pant U-19, T-9) and moong (var.PDM-54, PS-16, PS-17, ML-131) in Jammu & Kashmir; rice in Himachal Pradesh; rice, soybean, groundnut, maize, pigeon pea in Uttarakhand will be normal.

- In Jammu, farmers may strengthen and raise the dike height of the bunds of paddy fields and plug the outlets to harvest the water of the expected rains and utilize it as a supplement of irrigation water for carrying out puddling and transplanting operations in basmati fields.
- Increase number of seedlings/hill specially in case of overaged (40-45 days) paddy seedlings to ensure good establishment and to compensate for low tillering.
- In rainfed areas as well as uplands in irrigated areas which are still to be sown farmers are advised to go for sowing of pulses instead of paddy when the soil reaches optimum moisture conditions. Sowing of pulses can be under taken latest up to Ist week of August and thereafter only cultivation of fodder (maize+cowpea+cherry) is suggested for these areas.
- In rainfed areas, mulching the inter row spaces with locally available vegetative material is suggested.
- Top dressing with nitrogen (urea) and earthing up as and when the maize fields (30-40 days crop) are at optimum moisture is suggested.

Northeast India

Arunachal Pradesh, Assam & Meghalaya, NNMT

As northeastern states received good rainfall during last fortnight and likely to continue in next fortnight, transplanting of *Kharif* rice in Arunachal Pradesh is expected to be completed; transplanting of medium duration (130-135 days) *sali* rice varieties like Satyaranjan, Basundhara, Jaya, IR 36 etc. is expected to continue till 15-20 August in Upper Brahmaputra Valley Zone of Assam and complete sowing of arhar, groundnut and sesame in Hill Zone of Assam; transplanting of *sali* rice is expected to be completed in Meghalaya and sowing of pigeon pea; transplanting of rice in Mizoram; transplanting of rice and sowing of soybean, groundnut and pulses like black gram, green gram in Nagaland; nursery raising of cole crops in Manipur; sowing of vegetables in Tripura are expected to continue.

In flood affected areas of Assam, direct wet seeding of paddy varieties (Luit, Anjali) is advised to save time taken in nursery raising.