National Agromet Advisory Service Bulletin

based on

Extended Range Weather Forecast

Valid for 14th to 27th August, 2014

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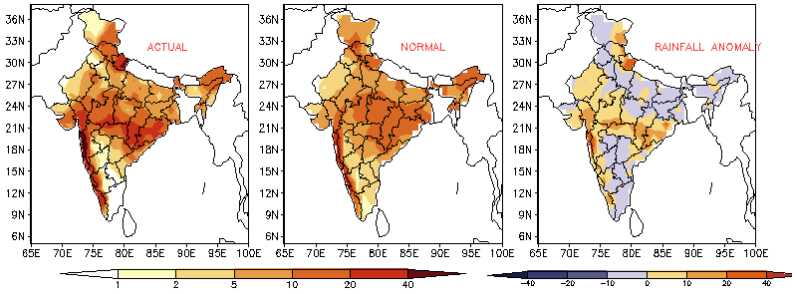
Realized Rainfall

(31st July to 13th August)



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

Monsoon Watch

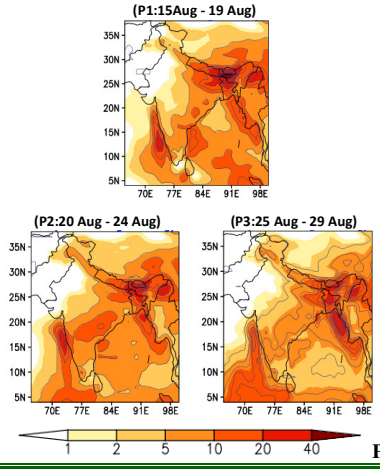
Southwest monsoon was vigorous over Arunachal Pradesh and active over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 13th August 2014.

Extended Forecast System (based on CFS model)

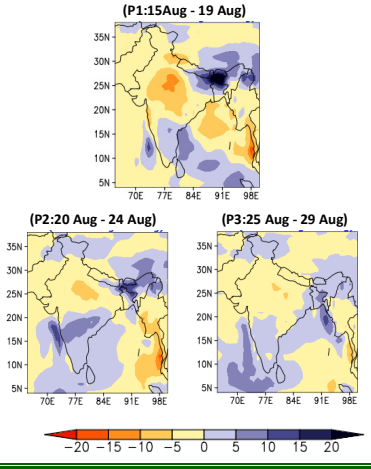
Forecast based on IC = 9th August, 2014

Rainfall forecast for 3 pentads

Rainfall Forecast Actual (mm/day)



Rainfall Forecast Anomaly (mm/day)



P1, P2, P3: PENTADS

First pentad (15-19 Aug):

Rainfall more than 40 mm/day is likely over some parts of Assam, rainfall of about 20-40 mm/day is likely over many parts of Sub Himalayan West Bengal and Sikkim and Meghalaya, rainfall of about 10-20 mm/day is likely over many parts of Bihar, East Uttar Pradesh and Arunachal Pradesh, Nagaland and Manipur, some parts of Gangetic West Bengal and Jharkhand, rainfall of about 5-10 mm/day is likely over many parts of Uttarakhand, Mizoram, Tripura, Chhattisgarh, Odisha , Konkan & Goa, Coastal Karnataka, South Interior Karnataka, Andhra Pradesh, Kerala, some parts of West Uttar Pradesh, Himachal Pradesh and East Madhya Pradesh, rainfall of about 2-5 mm/day is likely over many parts of Jammu & Kashmir, Vidarbha, North Interior Karnataka, some parts of Madhya Maharashtra, South Gujarat region and Tamil Nadu. Mainly dry weather would prevail over rest of the country.

Second pentad (20-24 Aug):

Rainfall of about 20-40 mm/day is likely over many parts of Sub-Himalayan West Bengal and Sikkim, some parts of Assam, rainfall of about 10-20 mm/day is likely over many parts Konkan & Goa, Telangana, Bihar, Arunachal Pradesh, Nagaland, Manipur, Tripura, Meghalaya, Odisha and some parts of Chhattisgarh, Madhya Maharashtra and Vidarbha, rainfall of about 5-10 mm/day is likely over many parts of Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Mizoram, Gangetic West Bengal, Jharkhand, Marathwada, Karnataka, Kerala, Rayalaseema and Coastal Andhra Pradesh and some parts of Jammu & Kashmir and East Madhya Pradesh, rainfall of about 2-5 mm/day is likely over some parts of East Rajasthan, Punjab and Gujarat region. Mainly dry weather would prevail over rest of the country.

Third Pentad (25-29 Aug):

Rainfall of about 10-20 mm/day is likely over many parts of West Bengal & Sikkim, Bihar, Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur and Tripura and some parts of Jharkhand, rainfall of about 5-10 mm/day is likely over many parts of Uttarakhand, East Uttar Pradesh, Mizoram, Odisha, Chhattisgarh, Konkan & Goa, Vidarbha, Andhra Pradesh, Karnataka and Kerala, some parts of Himachal Pradesh, Madhya Maharashtra, Marathwada and East Madhya Pradesh, rainfall of about 2-5 mm/day is likely over many parts of Jammu & Kashmir, West Uttar Pradesh, West Madhya Pradesh, Tamil Nadu and some parts of South Gujarat region. Mainly dry weather would prevail over rest of the country.

Strategic Agricultural Planning based on rainfall during next 2 weeks till 27th August

Current status

Southern India: The seasonal rainfall over Kerala has reached normal (-2%). The *Viruppu* paddy is in flowering stage in many places. The rainfall is deficit in North Interior Karnataka (- 25%); while it is normal in Coastal Karnataka (-3%) and South Interior Karnataka (16%). Rainfed sowing has resumed in parts of South & North Interior districts of Karnataka, which received sufficient rainfall. Rainfall is deficit in Coastal Andhra Pradesh (-36%) and Rayalaseema, (-29%). The total area sown in Andhra Pradesh is 23.13 lakh ha (55% of normal *kharif* sown area) as on 13 August 2014. Telangana

state also faces deficit rainfall (-52%). The total area sown in the state of Telangana is 31.5 lakh ha (78% of normal *kharif* sown area).

Western India: Marathwada region is facing scanty rainfall situation (-60%). Madhya Maharashtra and Konkan regions received normal rainfall (-16 and -9% respectively). In Gujarat, rainfall status is normal over Saurashtra and Kutch region (-18%), while deficit condition prevails in Gujarat region (-27%) of the state.

Central India: The rainfall status has changed from normal to deficit in Vidarbha (-24%), mainly due to poor rainfall during last week. But, the conditions are normal in East and West Madhya Pradesh (-12 and -4%, respectively).

Northwest India: The rainfall status is normal in both eastern (15%) and western Rajasthan (-4%). Torrential rains created flood like situation in Jaipur, Kota, Baran, Ajmer regions on 9-10 August. Punjab is facing scanty (-60%) rainfall conditions. Haryana, Chandigarh and Delhi regions are reeling under deficit rainfall condition (-57%). Similar conditions exist in Jammu and Kashmir (-49%) and Himachal Pradesh (-38%). East and West parts of UP is also facing deficit rainfall conditions (-33 and -49% respectively).

East & Northeast India: Odisha has experienced normal rainfall (17%) so far during the season. Normal rainfall conditions prevail over Jharkhand (-6%), Sub-Himalayan West Bengal (-18%) and Gangetic West Bengal (-13%). But the condition is deficit in Bihar (-27%). Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura are facing deficit rainfall condition.

Future Strategies

Southern India

Andhra Pradesh & Telangana: Farmers of Chittoor district are advised to go for spraying of 2% urea or DAP or KNO_3 to protect the rainfed groundnut crop from moisture stress. In Krishna, Guntur and Prakasam districts, farmers are advised to provide protective irrigation to cotton. In Kadapa district, sowing of contingency crops like redgram (60 x 20 cm spacing), maize, tomato, cowpea, field bean (TFB 5) and sunflower in red soils; whereas in black soils instead of groundnut crops like redgram, jowar and sunflower are suggested. In Krishna and Guntur districts, 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.

Karnataka: As inadequate soil moisture conditions has lead to delayed sowings in major parts of North Interior Karnataka, medium duration varieties are suggested in finger millet (Indaf- 5, PR-202, GPU-28, HR-911, GPU-48, GPU-26 and ML-365); maize (Ganga, Deccan, Vijaya composite and Composite NAC); sunflower (KBSH-41, KBSH-42 and KBSH-44) and pigeonpea (BRG-2 - for vegetable purpose).

Western India

Gujarat

- As there was good rainfall during last few weeks transplanting of rice and vegetables and sowing of castor and cluster bean may be continued in Gujarat. Planting of new orchards may be completed.
- Sowing of following contingency crops may be completed in North Gujarat Region and Saurashtra region.

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

- Black gram- 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

- As rainfall is deficient during earlier part of the season and there is also possibility of only light rain during the period, sowing of crops is not recommended during the period.
- Farmers may take up intercultural operations like weeding / hoeing in already sown cotton, soybean, and pigeon pea crops to conserve soil moisture and remove weeds. Apply supplementary irrigation to already sown crops.

Madhya Maharashtra

As there was subdued rainfall activity over Ahmednagar (deficit by 43%) and Solapur (deficit by 41%) districts, and there is also possibility of only light rain during the period, sowing of crops is not recommended during the period. Apply supplementary irrigation to already sown crops and undertake hoeing to preserve soil moisture. Also undertake mulching with crop residue or polythene mulch. In remaining districts of Madhya Maharashtra, sowing of sunflower, red gram, horse gram and castor may be continued and prefer intercrop combinations like sunflower + red gram and castor + ridge gourd. Avoid sowing of black gram, green gram, pear millet and soybean.

Central India

Madhya Pradesh

- Transplanting of rice and vegetables and sowing of early maturing varieties of moong, urad and nursery sowing of vegetables in East Madhya Pradesh and 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) in west Madhya Pradesh is expected to be completed.

Chhattisgarh

- Transplanting of rice and sowing of maize, moong and urad are expected to be completed.
- Intercultural operations for control of weeds in crops like rice, maize, redgram, blackgram and soybean is suggested on non-rainy days.

Vidarbha:

- Unsown/delayed sowing areas can be accommodated with sole pigeonpea (AKT 8811,
- Vipula, PKV- Tara and BSMR-736 with closer 45x20 spacing).
- Alternative crops include sunflower (TAS 82, PKV SF-9, PKVSH-27, KBSH 1 and KBSH 44), Pearlmillet (PKV Raj,Shradha and Saburi) Sesame (AKT-64 and JLT-7), Castor (AKC-1, GCH-4,5,6, DCH-117,32), and pearlmillet+pigeonpea (2:1 or 4:2), sunflower+pigeonpea (2:1), sesame+pigeonpea (4:1) intercropping systems.
- Early rabi pigeonpea (C-11, ICPL-87119 with closer spacing 45x20 cm) can be sown up to September 15.
- Early rabi sesame (N-8) can be sown up to September 15.

Eastern India

Jharkhand

Transplant paddy in low and medium lands. Transplanting of tomato, cauliflower, cabbage, brinjal and chilli may be taken up. Planting of mango, guava and litchi and sowing of horse gram and sweet potato may be taken up.

- In upland areas adopt inter cropping of maize + pigeon pea, pigeon pea + blackgram, pigeon pea + sorghum.
- In medium lands, direct seeding of paddy (c.v. Sahbhagi) is recommended.
- Planting of Custard apple, Banana and Papaya may be undertaken.

West Bengal

- Transplanting of *aman* rice and vegetables may be continued.
- In view of occurrence of good rainfall during the season and possibility of occurrence of rainfall during the period, it is suggested to postpone irrigation to the standing crops.

Bihar

- Take up sowing of yam bean, pigeon pea, sunflower, maize and vegetable crops in the upland areas.
- In upland areas, sowing of blackgram (cv. Navin) and red gram is recommended up to 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.
- Undertake sowing of short duration varieties of maize, black gram, moong if rice transplanting cannot be done due to limited irrigation facilities.
- Planting of onion and sowing of radish and pointed gourd may be continued.

Odisha

In the flood affected areas, the following contingent measures may be taken up after the flood water recedes;

- In direct seeded rice, if the entire crop is damaged, wet seeding with sprouted seeds should be done by taking 120-130 days duration varieties.
- Apply 50% N & K_2O and full dose of P_2O_5 at the time of sowing and rest dose at tillering stage.
- If loss in seedlings is less than 50%, go for distribution of clonal tillers with application of 50 % N and 50 % K_2O.
- In transplanted rice, in case of silt deposit, go for water spray in nursery areas.
- Avoid application of urea and go for spraying of 1% K_2SO_4.
- Go for clonal propagation if the loss in plant stand is less than 50%.
- Go for re sowing of paddy nursery with short duration paddy (90-110days) if the nursery has been damaged by recent flood. In main field gap filling with same age seedling should be done and put 3-4 nos seedling /hill with closure spacing.
- In upland if paddy has been damaged, go for oilseed crops like niger, groundnut and pulse crops like green gram and black gram by mid of August.

Northwest India

Rajasthan

- In maize crop, excess plants may be thinned out by keeping a plant to plant distance of 25 cm.
- In West Rajasthan, intercropping of Groundnut cv. JL-24, Pratap Mungphali-2 with sesame at 6:2 ratio is suggested.
- Perennial grasses like sewan, dhaman and moda dhaman grass etc. which grow naturally during rainy season can also be grown to use as a fodder.

Uttar Pradesh

- Sowing of sesame (T-4, 12, 18, 23, Shekhar, Pragati, Tarun), groundnut, soybean and vegetable and planting of fruit crops like mango, guava, litchi, amla, lemon, banana, papaya will be normal.
- Second top dressing in maize at silking stage is suggested.

Haryana

- As the rainfall was 57% deficit so far, crop diversification is advocated and short duration mung bean (MH 421, SML 668) or maize or fodder crops as per local demand/ market are suggested in place of paddy.
- Intercropping of pearl millet + greengram/moth bean (intercropping 8:4/6:3) is recommended. In case of poor plant population (<two-third), re-sowing may be done as and when rain resumes.
- Cluster bean can also be intercropped with pearl millet.
- Sowing of guar, bajra, pulses is expected to be completed

- Sowing of sesame should be avoided beyond mid August.

Punjab

- In Western Zone of Punjab, nursery sowing of tomato, transplanting of brinjal and planting of *kharif* onion crop both with bulb sets as well as seedlings can be carried out. Field preparation can be started for sowing of short duration hybrid maize (PMH 2) during second fortnight of August.
- Short duration early maturing and drought tolerant varieties of crops including 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.
- Adopt moisture conservation practices like hoeing, weeding, mulching in crops like sugarcane, maize, cotton to reduce the evapotranspiration losses and to conserve moisture for *rabi* crops.
- De-tasselling in maize is advised to reduce transpiration losses.
- Life-saving irrigation may be given, if available.
- In case of limited release of water in canals due to low rainfall, direct seeding of paddy and zero tillage sowing of Raya is recommended which saves 20-25% irrigation water.
- Bed planting of summer Moong (67.5×37.5 cm) which saves 20-30% irrigation water can be adopted.

Delhi

- Sowing of pigeon pea, pearl millet, cluster bean, spinach, amaranthus, okra, cucurbits, sweet corn and baby corn will be normal due to the available soil moisture.
- Making of higher and wider bunds for conserving rain water in the field is recommended.

Jammu and Kashmir, Himachal Pradesh and Uttarakhand

- Rainfall activity was normal over Jammu and Kashmir, Himachal Pradesh and Uttarakhand. The vegetative growth of rice, pulses like mash (var. Pant U-19, T-9), moong (var.PDM-54, PS-16, PS-17, ML-131), maize (Vivek-25,Vivek QPM-9 HM-5 and HQPM-1) in Jammu & Kashmir; rice in Himachal Pradesh; rice, soybean, groundnut, maize, pigeon pea in Uttarakhand will be normal.
- Continue transplanting of cole crops and apply second top dose of nitrogen @ 3.25 kg urea per kanal in rice after 38-42 days of transplanting and complete second top dose of nitrogen @ 3.25 kg urea per kanal in maize in Jammu & Kashmir.

Northeast India

Arunachal Pradesh, Assam & Meghalaya, NNMT

As northeastern states received good rainfall during last fortnight and likely to receive rainfall in next fortnight, transplanting of *kharif* rice in Arunachal Pradesh is expected to be completed; transplanting of medium duration (130-135 days) *sali* rice with varieties like Satyaranjan, Basundhara, Jaya, IR 36 etc. is expected to continue till 15-20 August in Upper Bramhaputra Valley Zone of Assam, sowing of red gram, groundnut and sesame in Hill Zone of Assam; transplanting of medium duration (130-135 days) *sali* rice and sowing of arhar and sesame may be continued in Central Bramhaputra Valley Zone of Assam. Transplanting of *sali* rice is expected to be completed in Meghalaya. Sowing of pigeon pea and transplanting of rice in Mizoram, transplanting of rice and sowing of soybean,

groundnut and pulses like black gram, green gram in Nagaland, transplanting of *kharif* rice and nursery raising of cole crops in Manipur and sowing of vegetables in Tripura are expected to continue.

In flood affected areas of Lower Bramhaputra Valley Zone of Assam, the following contingency measures may be adopted for *sali* rice:

- Raising of community nursery for late transplanting with old seedlings of the varieties like Profulla and Gitesh (if damage is more than 50%).
- Nursery raising of the photo insensitive short duration variety like Luit for replanting (in case of total damage).
- Wet seeding of sprouted seeds (@75-80 kg/ha) of short to medium duration varieties like Disang, Luit, (100 days) Kapili, Kalong (120 days).
- Adoption of submergence tolerant varieties like Jalashree and Jalkuwari for repeat flood prone areas.
- In partially affected fields, drain out excess water and apply 1/2 N + 50% K_2O as top dressing during tillering stage.