

**ICAR-Central Research Institute for Dryland Agriculture
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**Status of monsoon and agromet advisories/ contingency plans for some deficit/excess
rainfall areas**

Southwest monsoon was vigorous over Gujarat, Rajasthan, Jharkhand and Gangetic West Bengal during last week. Marathwada, Vidarbha regions in Maharashtra, Kerala, Telangana and coastal Andhra Pradesh, Chattisgarh, East Madhya Pradesh, West Uttar Pradesh, Punjab, Haryana, and Delhi received 'scanty' rainfall during 27 July - 2 August. During 1 June - 2 Aug 2015, the country as a whole received 444 mm rainfall, which is 6% less than the normal (472 mm). The region-wise Southwest Monsoon rainfall status is: East and Northeast India (7% deficit), Northwest India (9% excess), Central India (6% deficit) and South peninsula (21% deficit). Out of 36 meteorological sub divisions in the country, 19 are facing deficit rainfall condition; 10 are under normal rainfall condition and 7 are with excess rainfall condition. Districts which received rainfall less than 50% of normal during 1 June to 29 July were identified and depicted in figure 1. The following is the amount of rainfall received during June 1 - 2 August and contingency measures that are to be followed for the crops/cropping systems in the states mentioned.

A) Excess rainfall areas

1. Gujarat

Rainfall situation: incessant heavy rainfall during last week has caused flood in many parts of the state. The worst hit districts are:

- 1) Banaskantha (649 mm rainfall during 23-29 July)
2. Patan (499 mm rainfall)
3. Gandhi nagar (447 mm)
4. Mahesana (460 mm)

Progress in kharif sowing: the total area sown in the state of Gujarat is 54.79 lakh ha (as on 28 July 2015) and this accounts for 64 % of the normal *kharif* season area of 85.53 lakh ha. Patan and Kutch district recorded lowest sowing (10 and 15 % of normal sown area).

Crop contingency plans

- Drain out excess water from the fields
- Withhold application of plant protection chemicals (spray)
- Transplanting of paddy can be undertaken, as sufficient moisture is available in the field.

2. Rajasthan

Rainfall situation: West Rajasthan received 114% excess rainfall, while East Rajasthan received 31% excess rainfall compared to the normal so far from 1 June to 2 August.

Progress in *kharif* sowing: About 90-95 % area have covered so far under *kharif* crops in the state against the targeted area. However, crops were damaged due to heavy rainfall in Jalore district.

Crop contingency plans:

- Drain out the excess rain water from crop field where water logging conditions prevailed due to heavy rainfall.
- Top dress the remaining dose of nitrogen fertilizer in maize, sorghum and pearl millet crops where the crop has attained 25-30 days as adequate soil moisture is available after wide spread rainfall.
- Gap filling is to be done in sorghum where plant wilted due to prolonged dry spell as the present soil moisture conditions are quite favourable due to receipt of good rainfall during last 6-7 days.

3. West Bengal

Rainfall situation: Excess rainfall situation prevails in Gangetic West Bengal, which has caused flood in many parts of the state. Deficit rainfall conditions prevail in sub-Himalayan West Bengal.

Progress in *kharif* sowing

Transplanting of Aman rice has been completed in more than 70 % of area under rice cultivation. In Burdwan District, about 300 thousand ha land is transplanted, while in Nadia 70 thousand ha land is transplanted. After recent flood, about 100 ha rice field has been inundated, mainly in Birbhum).

Crop contingency plans:

- In the flood affected area: Go for replanting in the flood affected area (after flood water recedes) with short duration cultivars of rice. Farmers can choose PNR-519 and Satabdi (IET-4786).
- In flood prone area (those who have not yet planted the crop): Opt for submergence tolerant rice cultivar (e.g. Jaladhi, Jalashree, Plaban).
- Plants deficient in potassium are less resistant to excess water. Hence apply required amount of potassium fertilizer (if the land is prepared recently).
- In vegetable fields, proper drainage facility must be provided. Provision of Polythene cover should be assured for seedbed of early cabbage/ cauliflower (which are harvested in November).

B) Deficit rainfall areas

1. Karnataka

North Interior Karnataka

Rainfall situation: during 24.07.2015 to 30.07.2015, North Interior Karnataka received 5.6 mm rainfall against the normal rainfall of 33.5 mm (83% deficit). During the kharif season, NIK received 127 mm rainfall against the normal of 230 mm (45% deficit).

Progress in kharif sowing: the total area sown in North Interior Karnataka is 23.75 lakh ha (As on 27 July 2015) and this accounts for 77% of the normal sowing area of 29.57 lakh ha. The following districts recorded lowest sowing so far: Raichur (32% of normal sown area), Yadgir (46% of normal sown area) and Ballari (47% of normal sown area).

Crop contingency plans:

- Due to the severe drought conditions caused by deficient/scanty rainfall in North Interior Karnataka, the following interventions are recommended:
- There is no scope for taking up any sowing operation in view of rainfall forecast of poor rainfall
- Thinning operation by removal of weak seedlings in each row
- Spraying of 0.5 per cent KNO₃
- Repeated inter-cultivation
- Keep the crops free from weeds
- Open conservation furrow after two rows in wider spaced crops and after every 8th row in narrow spaced crops

2. Maharashtra

Rainfall situation: Marathwada region is reeling under severe drought conditions with 57% deficit in rainfall. Madhya Maharashtra, Konkan & Goa and Vidarbha regions are facing 27%, 25% and 22% deficit, respectively.

Progress in kharif sowing: 78% of normal *kharif* sown area is covered so far in the entire state under all crops as on 31 July. Cereal crops have covered only 49% of normal *kharif* sown area; Pulses: 68%, Sugar crops: 42.5% , Oil seeds : 106% and Cotton: 107% compared to the normal.

Crop contingency plans:

Marathwada

Due to deficit rainfall in region, following measures are recommended

- Undertake light hoeing, mulch with crop residue to conserve soil moisture.
- Apply protective irrigation (drip or sprinkle method) to earlier sown crop like cotton in view of prevailing water stress condition.
- Irrigation can be applied by drip/ sprinkler method to increase water use efficiency.

Vidarbha

- Delayed/unsown areas can still be accommodated with adopting suitable crops/crop varieties (as mentioned below).
 - ✓ Pigeonpea (AKT 8811, Vipula, PKV- Tara and BSMR-736 with closer 60x20 cm spacing).
 - ✓ Intercropping systems include pigeon pea + soybean (1:2 / 2:4), sunflower + pigeon pea (2:1) or in soybean after every 6 or 9 rows one row of pigeon pea may be sown.
 - ✓ Alternative crops include pearl millet (PKV Raj Shradha, Saburi), sesame (AKT64), sunflower(PKV SF-9, PKVSH-27, KBSH-1) and castor (AKC-1, GCH-4,5,6 & DCH-117).
- Undertake weeding/hoeing in early sown crops.
- Top dressing of fertilizers to earlier sowings at adequate soil moisture condition.
- Undertake transplanting of rice in East Vidarbha utilizing the realized rainfall.
- Priority should be given for *in situ/ex situ* rainwater harvesting during the remaining part of the season.

Madhya Maharashtra

- Maintain plant population or decrease plant population if wilting occurs.
- Organic mulching with crop residues in case of newly plant orchards.
- Hoeing is recommended to conserve soil moisture

3. Bihar

The state as a whole has received 29% deficit rainfall so far. The district which faces highest rainfall deficit are: Sitamarhi (76%), Sheohar (68%), Purba Champaran (65%) and Madhubani (63%).

Crop contingency plans:

- Upland: transplanting of rice should be avoided. Black gram, sesame, pigeon pea and vegetables will be more profitable in this condition.
- Medium & low land: transplant 30-35 and 40-45 days old seedlings of medium and long duration varieties, respectively.

4. Uttar Pradesh

Rainfall situation: Easter UP has received 30% deficit rainfall compared to the normal, while Western UP received 21% deficit rainfall. Districts facing highest rainfall deficit are: Ambedkar angar (84%), Kaushambi (72%) and Agra (68%).

Progress in kharif sowing: 82% of the normal sowing area (95.18 lakh ha) is covered up to 28 July.

Crop contingency plans:

- If transplanting of rice seedlings is not done, then sowing of short duration drought resistant varieties such as NDR-97, NDR-2064, Pant Dhari-4 and Shusk Samrat are recommended

- Spray 2% urea solution to increase the drought resistance of crops
- Undertake gap filling to maintain optimum plant population
- Give preference to pearl millet, black gram, sesame and oil seeds
- Apply life saving irrigation, wherever possible

Note: The above is a general overview for the states. However, ICAR (CRIDA) has prepared district level contingency plans (covering all farming situations within the district) and placed in the websites of the Ministry of Agriculture & Cooperation, Government of India (www.agricoop.nic.in) and CRIDA (www.crida.in) for further details.

- The following figure was generated by AICRPAM,CRIDA, Hyderabad to identify the districts experiencing more than 50% deficit condition.

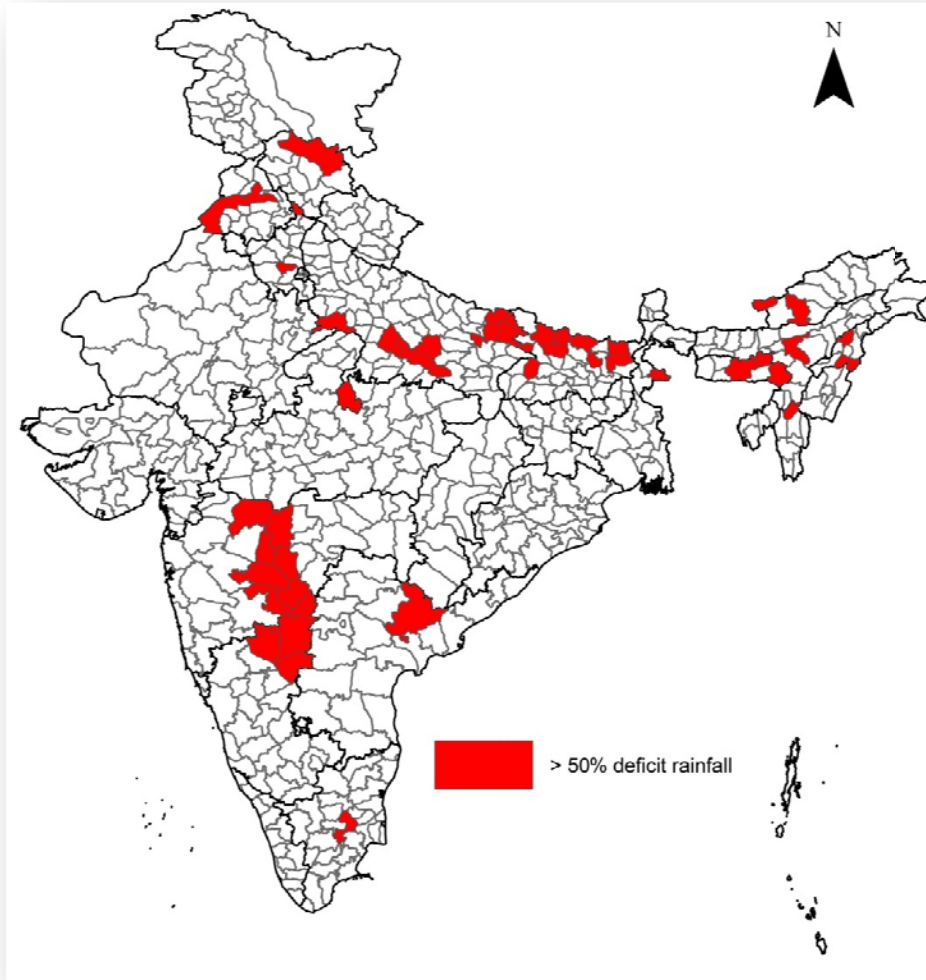


Figure 1: Districts experiencing more than 50% rainfall deficit (From 1 June - 29 July, 2015)

Table 1 depicts the details of districts experiencing more than 50% rainfall deficit

Table 1. Details of the districts experiencing more than 50% rainfall deficit from 01 June to 29 July 2015

State	District	Rainfall departure (%)
Andhra Pradesh	Khammam	-57
Arunachal Pradesh	East Kameng	-72
	Tawang	-60
Assam	Nagaon	-52
Bihar	Araria	-53
	Bhojpur	-54
	Madhubani	-63
	Muzaffarpur	-53
	Purba Champaran	-62
	Purnia	-59
	Saharsa	-60
	Sheohar	-67
	Sitamarhi	-76
	Siwan	-54
Haryana	Panchkula	-51
	Rohtak	-52
Himachal Pradesh	Lahul & Spiti	-67
Karnataka	Bidar	-53
	Bijapur	-68
	Gulbarga	-52
	Raichur	-69
Maharashtra	Bid	-67
	Buldana	-52
	Jalgaon	-53
	Jalna	-52

Maharashtra	Latur	-67
	Osmanabad	-64
	Parbhani	-67
Meghalaya	Ri Bhoi	-57
	Jaintia Hills	-63
	West Khasi Hills	-53
Mizoram	Kolasib	-71
Nagaland	Mokokchung	-81
	Phek	-79
Punjab	Firozpur	-52
	Jalandhar	-59
Tamil Nadu	Tiruchirappalli	-54
Uttar Pradesh	Agra	-68
	Ambedkar Nagar	-84
	Deoria	-54
	Fatehpur	-76
	Gorakhpur	-51
	Kanpur Dehat	-63
	Kanpur Nagar	-52
	Kaushambi	-72
	Kushinagar	-72
	Lalitpur	-51
	Maharajganj	-59
Rae Bareli	-53	
West Bengal	Dakshin Dinajpur	-55