

**ICAR-Central Research Institute for Dryland Agriculture**  
**Hyderabad**

**Status of monsoon and agromet advisories/ contingency plans for some deficit/excess rainfall areas**

Southwest monsoon was vigorous over East & Northeast India during last week. During 1 June - 23 Aug 2015, the country as a whole received 589 mm rainfall, which is 10% less than the normal (598 mm). The region-wise Southwest Monsoon rainfall status is: East and Northeast India: 6% deficit, Northwest India: 3% deficit, Central India: 13% deficit and South peninsula: 19% deficit. Out of 36 meteorological sub divisions in the country, 12 are facing deficit rainfall condition; 21 are under normal rainfall condition and 3 are with excess rainfall condition. Districts which received rainfall less than 50% of normal during 1 June to 23 August were identified and depicted in figure 1. Rainfall received during June 1 - 23 August, progress in *kharif* sowing and contingency measures that are to be followed for deficit/excess rainfall conditions and the crops/cropping systems in different states/regions are mentioned as under:

**A) Deficit rainfall areas**

**1. Maharashtra**

Rainfall status: Marathwada region is reeling under drought conditions with 48% deficit rainfall. Madhya Maharashtra, Konkan and Vidarbha regions are also facing deficit rainfall of 38%, 33% and 12%, respectively.

Progress of *kharif* sowing: As on 22 August, 88% of normal *kharif* crop area of the state has been sown under different crops. Cotton and oil seed crop recorded highest sowing of 114 and 115%, respectively (compared to normal sown area) and sugarcane recorded the lowest (45%) sowing due to deficit rainfall conditions.

**Agromet advisories**

**Marathwada**

Due to deficit rainfall in the region, following measures are recommended,

- Use fodder cutter (chaff cutter) to avoid wastage of fodder for animal feeding.
- Continue weeding in cotton and soybean.
- Undertake light hoeing or mulching with crop residue to conserve soil moisture in long duration crop like cotton.
- Undertake sowing of contingent crops like fodder crops i.e. maize (African tall) after receipt of sufficient rainfall.

- Farmers are advised to undertake foliar spray of 8% Kaolin in orchard crops. Also apply mulch with crop residue.

### **Vidarbha**

- Semi-*rabi* pigeon pea (C-11 or ICPL 87119 (Asha) ) or semi-*rabi* sesame (N-8) can be sown up to September 15.
- Provide adequate drainage to crop fields and orchards that are waterlogged.
- Priority should be given for in situ/ex situ rainwater harvesting during the remainder of the season.

## **2. Karnataka**

### **North Interior Karnataka**

Rainfall status: the region has received 43% deficit rainfall so far. Among the districts, Vijayapura (63% deficit), Raichur (59% deficit), Bagalkot (51% deficit) and Yadgir (51% deficit) continue to be the most affected.

Progress of kharif sowing: Total area sown in North Interior Karnataka is 27.57 lakh ha (As on 12<sup>th</sup> August 2015) and this accounts for 80% of the normal sowing area of 32.48 lakh ha till the date.

### **Agromet advisories**

- There is no scope for taking up any sowing operation in view of forecast of poor rainfall.
- Thinning may be done by removing alternate rows, as the moisture stress is severe.
- Take up repeated inter-cultivation and earth up the rows.
- Top dressing may be kept in abeyance till soil moisture conditions improve.
- Keep the crops free from weeds.
- Open conservation furrow after two rows in wider spaced crops and after every 8<sup>th</sup> row in narrow spaced crops.
- Fodder crops should be given preference over regular crops.
- In view of the exceedingly low rainfall so far, it is essential to conserve soil moisture before the start of *Rabi* season. Compartment bunds, ridges-furrows and conservation furrows may be taken up in these soils.

## **3. Uttar Pradesh**

Rainfall status: Both East & West UP are facing a rainfall deficit of 34% & 28%, respectively.

Progress of kharif sowing: : Total area sown in Uttar Pradesh is 95.91 lakh ha as on 14 August against 95.17 lakh ha.

### **Agromet advisories**

Due to deficit rainfall in the region, following measures are recommended

- Gap filling in transplanted paddy crop if plants are died.

- Spraying of 2% Urea in transplanted paddy under below normal rainfall region.
- Undertake intercultural operation and mulch with crop residue to conserve soil moisture
- Apply protective irrigation in standing crops in view of water stress condition.
- Undertake weeding in green gram and black gram.

#### 4. Telangana

Rainfall status: The state has received 23% deficit rainfall so far.

Progress of kharif sowing: the total area sown in the state is 31.5 lakh ha against the seasonal normal area of 41.4 lakh ha (76% of normal sown area is covered).

#### Agromet advisories

- Sowing of contingency crops like Pigeon pea (Maruti, Lakshmi, PRG 158 etc.) and castor can be taken up; sowing of medium duration varieties of pigeon pea with closer spacing 120 x 20 cm in black soils and 90 x 20 cm in red soils in Southern Telangana Zone is recommended.
- Maintenance of 5 cm water level in rice fields.
- Mulching in early sown sorghum, soybean, green gram and black gram for conservation of soil moisture is recommended.

#### B) Excess rainfall areas

##### 1. West Bengal

Rainfall status: Gangetic West Bengal has received 30% excess rainfall so far. But, Sub-Himalayan West Bengal is facing 12% deficit rainfall.

Progress of kharif sowing: Transplanting/re-transplanting of Aman rice has been completed in more than 90 % of area under rice cultivation. 12 districts in Bengal is flood-hit with heavy rain hitting the state in July and early August. Total area under cultivation damaged by the flood is 12 lakh hectares and over 80% of the damaged farmland is under *kharif* rice (aus and aman). Widespread damage to standing paddy crops occurred in Bardhaman, Murshidabad, East and West Midnapore districts. Total 243 blocks have been affected due to the floods.

#### Contingency crop plans

- Adopt double transplanting of rice (flood prone areas) of short duration or photosensitive rice varieties.
- Transplant extra early duration rice varieties (75-80 days) like Kalyani, Kalinga, Hira etc. or early duration rice varieties (100-115 days) like Rasi, Goentra Bidhan-1 and Satabdi (IET-4786) in up and medium lands.
- Take up transplanting/re-transplanting of deep-water rice varieties in lowlands (extra or extended water submergence varieties).

- Where transplanting is not possible due to deep water stagnation, wait for drain out of such water and prepare the field for early mustard and black gram cultivation.
- In worst flood affected areas and those fields where rice crop cultivation is not possible, farmers can cultivate gai mung or maize, cow peas, for fodder as substitute for paddy straw.
- Jute farmers who have rice seedlings in the field are advised to harvest jute crop and prepare main field for transplanting operation. Transplanting should not go beyond first week of September.
- In up and midlands, farmers can grow early vegetables like; cauliflower, tomato, brinjal, chilli and leafy vegetables where rice crop is not at all in this season.

## 2. Assam

Rainfall status: The state as a whole has received 8% deficit rainfall so far. But, many parts of the state are flood affected.

Progress of kharif sowing: Transplanting of *Sali* rice has been completed in almost all the districts of Assam. Crop is in tillering stage.

### Crop contingency plans

- If the need arise, share the seedlings among the community members.
- Repair the bunds in paddy field to retain standing water.
- Perform weeding to check excessive/unnecessary loss of water.
- Apply life saving irrigation from farm ponds.
- Apply mulching material in upland crops to reduce evaporative loss of soil moisture.
- Suitable paddy cultivars
  - ✓ For flood prone area: Luit
  - ✓ Suitable paddy cultivar for submergence tolerance of 15 days: Swarna Sub-1, Jalashree, Jalkunwari, Plaban
  - ✓ Suitable paddy cultivar for delayed transplanting with aged seedling: Padumoni, Prafulla, Gitesh
  - ✓ Suitable paddy cultivar for normal planting: Ranjit, Bahadur, Maniram, Kushal, Piolee, Pankaj, Lakhimi
  - ✓ Suitable paddy cultivars with medium duration: Satyaranjan, Basundhara
- As time is not yet over for sowing/transplanting of *Sali* paddy, go for replanting in the flood affected areas with medium to short duration cultivars of rice.
- If *Sali* paddy is in active tillering stage (30-35 days after sowing) go for 1<sup>st</sup> split application of nitrogenous fertilizer.

### 3. Madhya Pradesh

Rainfall status: While West Madhya Pradesh has received 32% excess rainfall, East Madhya Pradesh has received 17% deficit rainfall so far.

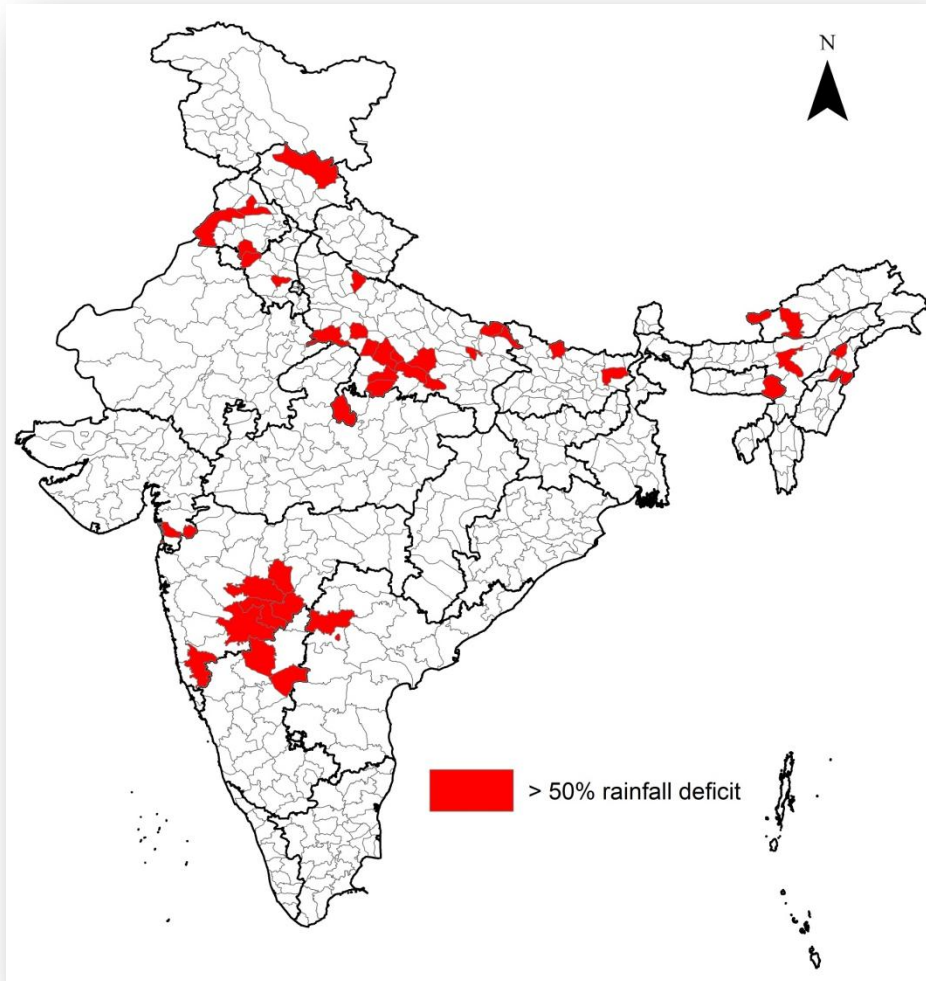
Progress of kharif sowing: In the state as a whole, 126 lakh ha area has been sown so far, compared to the target of 141 lakh ha. 100% of targeted area has been sown under green gram, black gram, sesame; soybean and paddy (85 %).

Agromet advisories

- Soybean: It is in flowering stage. In case of attack of white flies with a mosaic disease. spray of imidacloprid 17.8 sl at 200 ml/ha. For controlling hairy caterpillar, spray of triazophos 40 EC at 800 ml/ha on soybean plants. rogue out mosaic plants.
- Maize: For controlling corn shoot borer, spray of chlorpyrifos 20 ec at 2 ml/litre water on maize plants.
- Fruit crops: Guava, citrus and pomegranate plants: apply nitrogen fertilizer application as per the recommendations. also spray insecticide for control of leaf eating caterpillars.
- Vegetables: transplanting of seedlings from nursery of solanaceous crops. stacking needed for cucurbit crops.
- Sesame: Sowing should be practiced in north Madhya Pradesh where rain is still deficient. For already emerged plants, spray of insecticide for controlling sucking pests.
- Pulse crops: Remove excess water by opening field bunds for proper drainage.
- Rice: Post-emergent weed control in rice with a combination of whipsuper at 250 ml/acre with almix (1 bag). Prepare bunds for checking drainage water from the field.

***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](http://www.agricoop.nic.in)) and CRIDA ([www.crida.in](http://www.crida.in)) for further details.***

- The following map was generated by AICRPAM, CRIDA (with the data provided by IMD), Hyderabad to identify the districts experiencing more than 50% deficit condition.



**Figure 1: Districts (43) experiencing more than 50% rainfall deficit (From 1 June - 23 August, 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 23 August 2015**

S.No	State	District	Actual (mm)	Normal (mm)	Deficit (%)	Category
1.	Arunachal Pradesh	East Kameng	307.2	897.6	-66	S
2.		Tawang	778.0	1868.8	-58	D
3.	Assam	Nagaon	382.8	825.8	-54	D
4.	Meghalaya	Jaintia Hills	1659.0	3603.4	-54	D
5.	Nagaland	Mokokchung	316.0	1344.0	-76	S
6.		Phek	135.0	960.8	-86	S
7.	Mizoram	Lunglei	673.0	1342.2	-50	D
8.	Bihar	Purnia	364.3	926.4	-61	S
9.		Sitamarhi	339.7	822.7	-59	D
10.	Uttar Pradesh	Ambedkar Nagar	93.0	646.2	-86	S
11.		Fatehpur	94.8	580.3	-84	S
12.		Kanpur Nagar	195.8	500.9	-61	S
13.		Kanpur Dehat	156.5	528.4	-70	S
14.		Kaushambi	135.9	544.0	-75	S
15.		Kushinagar	229.6	831.9	-72	S
16.		Maharajganj	357.4	905.0	-60	S
17.		Rae Bareli	209.3	528.2	-60	S
18.		Agra	175.6	498.4	-65	S
19.		Auraiya	213.6	497.2	-57	D
20.		Hamirpur	275.5	570.4	-52	D
21.		Lalitpur	314.8	679.1	-54	D
22.		Mahoba	227.8	561.9	-59	D
23.		Mainpuri	218.3	471.1	-54	D
24.		Rampur	304.7	676.9	-55	D
25.	Haryana	Fatehabad	97.9	214.1	-54	D
26.		Rohtak	185.5	389.1	-52	D
27.	Punjab	Firozpur	87.0	261.6	-67	S

28.		Jalandhar	136.5	408.9	-67	S
29.		Mansa	83.9	247.6	-66	S
30.	Himachal Pradesh	Lahul & Spiti	87.8	324.4	-73	S
31.	Daman and Diu	Daman	504.5	1757.9	-71	S
32.	Gujarat	The Dangs	688.2	1450.5	-52	D
33.		Navsari	656.6	1404.6	-53	D
34.	Maharashtra	Kolhapur	709.4	1468.0	-52	D
35.		Solapur	120.8	275.3	-56	D
36.		Bid	144.3	360.7	-60	S
37.		Latur	210.9	526.3	-60	S
38.		Osmanabad	176.5	396.2	-55	D
39.		Parbhani	188.9	529.5	-64	S
40.	Andhra Pradesh	Hyderabad	215.0	436.8	-51	D
41.		Medak	214.8	536.8	-60	S
42.	Karnataka	Bijapur	100.7	249.7	-60	S
43.		Raichur	110.5	283.1	-61	S

*D- Deficit; S- Scanty*