

**All India Coordinated Research Project on Agrometeorology (AICRPAM)
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Status of monsoon, Progress in *kharif* Sowing and Agromet Advisories for Some Deficit/Excess Rainfall Areas

1. Status of southwest monsoon

Southwest monsoon has set in over Kerala on 30 May 2017. As on today, the monsoon has covered almost all parts of the country, except few areas viz., Punjab, parts of Western Rajasthan and Haryana. During 1 June – 9 July, country as a whole received 238 mm rainfall, which is 2% less than the normal rainfall of the country for the same period (242.5 mm). Districts which received rainfall less than 50% of normal during June 1- July 9 were identified and depicted in Figure 1, Table 2 & 3.

2. Progress in *kharif* sowing (Source: Press Information Bureau and Ministry of Agriculture and Farmers' Welfare, Govt. of India)

The total sown area of major crops as on 7th July, 2017 (as per reports received from states), stands at 404 lakh hectare as compared to 371 lakh hectare, as on this date last year (Table 1).

Table 1: Progress in *kharif* sowing in India as on 30th June 2017 (Area in Lakh hectare)

Crop	Area sown in 2017	Area sown in 2016
Rice	79.81	75.28
Pulses	44.11	35.88
Coarse Cereals	80.78	70.11
Oilseeds	72.87	69.74
Sugarcane	47.93	45.22
Jute & Mesta	6.95	7.27
Cotton	71.82	67.89
Total	404.27	379.39

3. Agromet Advisories

A. Flood/excess rainfall condition

Assam

The state has so far received 614 mm rainfall, which is 11% deficit, compared to the normal rainfall for the same period (688 mm). However, flood situation prevails in many parts of the state. Nine Districts of the state have been affected by flood in which Karimganj district being the worst hit. Other flood hit districts are Lakhimpur, Sivasagar, Golaghat, Jorhat, Sonitpur, Hojai and Cachar.

Contingency measures to be taken under flood

- Suitable paddy cultivars for flood prone area: Luit
- Suitable paddy tolerant to 15 days submergence: Swarna Sub-1, Jalashree, Jalkunwari, Plaban
- Suitable paddy cultivars for delayed transplanting with aged seedling: Padumoni, Prafulla, Gitesh
- Suitable paddy cultivars for normal planting: Rajjit, Bahadur, Maniram, Kushal, Piolee, Pankaj, Lakhimi
- Suitable medium duration paddy cultivars: Satyaranjan, Basundhara

Post-flood condition

- After receding of flood water, go for wet seeding of sprouted rice, wherever possible, with short duration cultivars.
- Otherwise, plan for sowing of green gram, lentil, early rabi vegetables etc.

Jammu & Kashmir

The state has received 173 mm rainfall (67% surplus) so far.

- Farmers are advised to prepare bunds in their paddy fields for *in situ* storage of rain water for utilizing the same for puddling.
- Continue transplanting of paddy cultivars IET-1410, Ratna, PC-19, SJR-5 & Jaya
- Sowing of the Maize (cv. Vivek-25, Vivek QPM-9 HM-5 and HQPM-1) and Pearl millet (cv. HHB-60, HHB-67) can also be undertaken.

B. Deficit rainfall condition

Karnataka

South Interior Karnataka has received 137 mm (34% deficit), North Interior Karnataka received 147 mm (5% surplus) and Coastal Karnataka received 1098 mm (9% deficit) of rainfall during June 1- July 9.

South Interior Karnataka

- Since there is a deficit rainfall during this month, protective irrigation may be given for the crop sown with the pre-monsoon showers.
- The following crops are suggested for sowing in this month

Under monocropping the long duration crops:

- Pigeon pea : TTB-7, BRG-1,2,4&5
- Castor: DCS-9 (Jyothi), DCH-177&32

Under double cropping, the short duration crops:

- Ragi : Indaf -8, ML-365 , MR-1,2 and 6,GPU-48&66
- Maize: Ganga-11, Deccan -103, Vijaya composite, Composite NAC-6004 & 6002, Hybrid-Nityashree (NAH-2049)
- Groundnut: TMV-2, JL-24, KCG-6 & 2
- Black gram: Karagao-3, T-9, Rashmi (LBG-625)

- Agro forestry on the bund involving *Melia dubia* (Hebbevu), Silver oak and Causurina is recommended for sustainable income under abnormal extreme rainfall events.

Kerala

The state so far has received 711 mm rainfall, which is 20% deficient compared to the normal (891 mm).

- Paddy: Transplanting of *virippu* paddy is over. In order to control sheath blight in one month old crop, spray *Pseudomonas* culture 10 g/ 1 litre of water
- Arecanut: Provide proper drainage facilities. Spray 1% Bordeaux mixture as a prophylactic measure to control mahali and bud rot diseases.
- Banana: Due to the monsoon showers, there is chance of Sigatoka disease in banana. As a precaution, spray *Pseudomonas* 20g/L. In case of severe attack, spray 1 g Bavistin by mixing it with gum in 1 litre of water on lower surface of leaves.
- Cashew: Root and stem borer - Chisel out the grubs and swab the tree trunk with Acephate 2g/l of water. Swabbing (adult trees only) with coal tar kerosene mixture at 1:2 proportion is also recommended.

Maharashtra

Rainfall received in major meteorological sub-divisions of the state are as follows:

Vidarbha – 194 mm (24% deficit); Marathwada – 194 mm (1% surplus); Madhya Maharashtra- 239 mm (12% deficit) and Konkan- 1065 mm (3% surplus)

Vidarbha

- For cotton in areas with delayed sowing condition (up to 15 July), prefer early varieties of American and Deshi cotton, use 20 % more than recommended seed rate and reduce intra-row spacing. Early *Bt* cotton varieties may also be preferred.
- Reduce the area under sole green gram and blackgram OR include as intercrops with slightly higher seed rate.
- For sorghum use early to mid-late varieties and use 20-25% more seed rate.

West Bengal

Gangetic West Bengal has received 275 mm rainfall (20% deficit) so far, while Sub-Himalayan West Bengal received 614 mm rainfall (9% deficit).

- Maintain proper drainage channel for vegetable and jute field as good amount of rainfall received during last couple of days and also rainfall forecast is there for coming five days.
- Transplanting operation of kharif rice should be completed as early as possible.
- Due to humid and warm weather, infestation of blight in vegetable crops is likely to increase; spray Mancozeb @ 2 g per liters of water, if the weather is sunny.
- Water harvesting tank can be made in low lying regions for facilitating the jute retting with the harvested rain water.

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 Department of Agriculture Cooperation & Farmers' Welfare, Government of India (www.agricoop.nic.in) and CRIDA (www.crida.in) for further details.

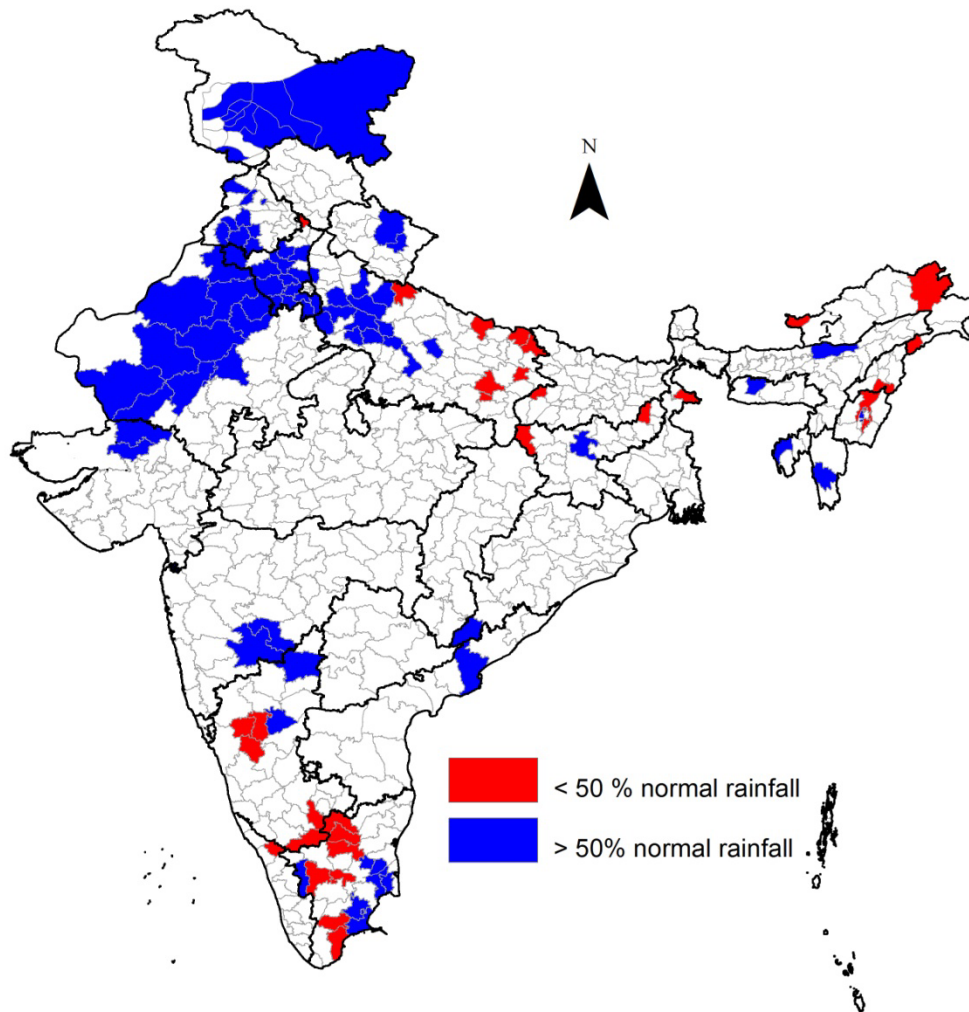


Figure 1: Districts received > 50% deficit and excess rainfall compared to normal during 1 June - 9 July 2017 (Prepared by AICRPAM based on the data provided by IMD)

Table 2: Districts which received more than 50% deficit rainfall compared to normal (1 June to 9 July 2017) (Source: IMD)

S NO	Subdivision	Met. Subdivision/ut/state/district	ACTUAL (mm)	NORMAL (mm)	% DEP.
1	Arunachal Pradesh	Dibang valley	69	482.2	-86
2		Tawang	84	888.8	-91
3		Tirap	348.8	857.3	-59
4	NMMT	Phek	99	410.1	-76
5		Wokha	292	587.9	-50
6		Senapati	75	477.4	-84
7		Thoubal	53	376.6	-86
8		Saiha	154	513.1	-70
9	West Bengal	Dakshin dinajpur	197.8	402.6	-51
10		South 24 parganas	226.4	452.9	-50
11	Jharkhand	Garhwa	61.9	187.9	-67
12		Gooda	100.1	254.9	-61
13	Bihar	Buxar	80.6	184	-56
14	East UP	Jaunpur	72.1	170.7	-58
15		Kushinagar	112.9	279	-60
16		Maharajganj	109.8	291.6	-62
17		Mau	66	189.7	-65
18		Santravidasnagar	32	146.2	-78
19		Pilhibhit	64.1	196.5	-67
20	Haryana Chandigarh Delhi	Panchkula	58.8	184.7	-68
21	Chhattisgarh	Balarampur	136	272.7	-50
22		Surajpur	136.2	288.2	-53
23	Tamilnadu	Dharampuri	16.3	71.6	-77
24		Karur	12.2	28.2	-57
25		Krishnagiri	21.1	75.6	-72
26		Salem	32.1	91.3	-65
27		Tiruppur	13.6	30.7	-56
28		Tuticorin	1.2	10.5	-88
29		Virudhunagar	10	30.8	-68
30	NI Karnataka	Dharwad	77.1	158.5	-51
31		Gadag	46.7	102	-54
32		Haveri	77.5	167.6	-54
33	SI Karnataka	Chamarajanagar	18.5	83.7	-78
34		Ramnagar	40.7	93.1	-56
35	Kerala	Wayanad	421.2	1085.6	-61

Table 3: Districts which received more than 50% surplus rainfall compared to normal (1 June to 9 July 2017) (Source: IMD)

S NO	Subdivision	Met. Subdivision/ut/state/district	ACTUAL (mm)	NORMAL (mm)	% DEP.
1	Arunachal Pradesh	Lower dibang valley	1242.1	482.2	158
2	Assam & Meghalaya	Sonitpur	820	481.5	70
3		East garo hills	1129.8	648.6	74
4	NMMT	Dimapur	515.1	259.4	99
5		Imphal west	863.9	408.3	112
6		Lunglei	1243	623.8	99
7		West tripura	868.5	540.3	61
8	Odisha	Malkangiri	483.8	307.7	57
9	Jharkhand	Hazaribagh	407	259.2	57
10	East UP	Farrukhabad	193.4	129	50
11		Kannauj	284.3	116.4	144
12		Kanpur	200.3	112	79
13		Lacknow	248	144.7	71
14		Sahuji maharaj nagar	257	169.5	52
15	West UP	Aligarh	256.6	96.3	166
16		Badaun	206.5	131.1	57
17		Baghpat	200.6	86.2	133
18		Bareilly	252.1	164.6	53
19		Bulandsahar	170.9	105.1	63
20		Etah	237.6	102.8	131
21		Firozabad	199.7	113.1	77
22		Kanshiramnagar	321	105.1	205
23		Mainpuri	241.4	112	116
24		Mathura	135.8	84.7	60
25	Moradabad	265.2	165	61	
26	Uttarakhand	Bageshwar	332.3	208.6	59
27		Chamoli	278.6	175.8	58
28	Haryana Chandigarh Delhi	Bhiwani	115.6	57.9	100
29		Faridabad	236	81.1	191
30		Gurgaon	142.3	72.7	96
31		Hisar	148	61.1	142
32		Jhajjar	270.8	66.5	307
33		Jind	157.8	77.9	103
34		Kaithal	130.9	66.2	98
35		Karnal	199.8	113.5	76
36		Mahendragarh	203.1	72	182
37		Mewat	186.7	74.9	149
38		Palwal	113	66.3	70
39	Rewari	186.3	57.7	223	

S NO	Subdivision	Met. Subdivision/ut/state/district	ACTUAL (mm)	NORMAL (mm)	% DEP.
40		Rohtak	139.8	86	63
41		Sirsa	80.9	45.9	76
42		Sonipat	158.7	84	89
43		New delhi	258	106.4	142
44		North delhi	193.3	106.4	82
45	Punjab	Amritsar	180.3	91.7	97
46		Barnala	181	64.6	180
47		Bathinda	141.8	58.3	143
48		Faridkot	133.6	64.6	107
49		Kapurthala	222.5	75.5	195
50		Mansa	126.9	54.3	134
51		Moga	184.6	62.1	197
52		Muktsar	184.9	57.6	221
53	Jammu & Kashmir	Anantnag	150.9	86.1	75
54		Badgam	74.3	45.5	63
55		Bandipore	110	39.7	177
56		Baramula	169	78.2	116
57		Doda	221.6	98	126
58		Ganderwal	108.2	49.3	119
59		Jammu	209.3	129.1	62
60		Kargil	24.2	11.1	118
61		Kulgam	153	58.1	163
62		Leh and ladakh	19.6	7.4	164
63		Pulwama	100.4	34.4	192
64		Ramban	194.5	87.4	122
65		Riasi	443.5	200.5	121
66		Shopian	123	59	108
67		Srinagar	99.1	49.3	101
68	West Rajasthan	Barmer	93	50.4	84
69		Bikaner	97	47.9	103
70		Churu	110.2	65	70
71		Hanumangarh	96.4	57.3	68
72		Jalor	146.7	77.9	88
73		Jodhpur	134.5	52.2	158
74		Nagaur	179	68.5	161
75		Pali	148.7	84.9	75
76		Ajmer	140	75.6	85
77		East Rajasthan	Jhunjhunun	123.4	80.6
78	Sikar		131.3	79.6	65
79	Gujarat	Banaskantha	195.4	124.7	57
80		Patan	268.5	115.8	132
81	Sourashtra	Dadar & nagar haveli	1013	580.9	74

S NO	Subdivision	Met. Subdivision/ut/state/district	ACTUAL (mm)	NORMAL (mm)	% DEP.
82	& Kutch	Morbi	286.6	142	102
83	Madhya Maharashtra	Solapur	227.4	125.6	81
84	Marathwada	Osmanabad	259.9	173.2	50
85	Chhattisgarh	Sukma	616	282.8	118
86	Coastal Andhra Pradesh	East godavari	290.5	191.6	52
87	Tamilnadu	Ariyalur	127.4	65.4	95
88		Coimbatore	89	48.2	85
89		Perambalur	80.1	42.1	90
90		Ramanathapuram	37.4	21.6	73
91		Sivaganga	158.3	58.9	169
92		Teni	58.9	31.8	85
93		Thanjavur	94	56.6	66
94		Thiruvarur	96.8	49.5	96
95	NI Karnataka	Gulbarga	247.9	151.1	64
96		Koppal	138.5	85.9	61