

**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 of Punjab and Western Rajasthan. During 1 June – 16 July, country as a whole received 308 mm rainfall, which is exactly equal to the normal rainfall of the country for the same period. Districts which received rainfall less than 50% of normal during June 1- July 16 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 14th July, 2017 (as per reports received from states), stands at 563 lakh hectare as compared to 522 lakh hectare, as on this date last year (Table 1). Area under pulses, coarse cereals and cotton has increased substantially during the current year compared to last year.

Table 1: Progress in *kharif* sowing in India as on 14th July 2017 (Area in Lakh hectare)

Crop	Area sown in 2017	Area sown in 2016
Rice	125.77	120.32
Pulses	74.61	60.28
Coarse Cereals	113.06	98.79
Oilseeds	103.92	115.75
Sugarcane	47.94	45.22
Jute & Mesta	6.98	7.51
Cotton	90.88	73.93
Total	563.17	521.80

3. Agromet Advisories

A. Flood/excess rainfall condition

Assam

The state has so far received 699 mm rainfall, which is 14% deficit, compared to the normal rainfall for the same period (811 mm). However, severe flood situation prevails in many parts of the state.

Contingency measures to be taken under flood

- Suitable paddy cultivars for flood prone area: Luit

- Suitable paddy cultivars tolerant to submergence for 15 days: Swarna Sub-1, Jalashree, Jalkunwari, Plaban
- Suitable paddy cultivars for delayed transplanting with aged seedling: Padumoni, Prafulla, Gitesh
- Suitable paddy cultivars for normal planting: Ranjit, 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.

Gujarat

Many places in districts of Morbi, Surendranagar, Jamnagar, Rajkot and Kutch witnessed flood like condition with receipt of average district rainfall of 107 mm, 97 mm, 66 mm, 54 mm and 28 mm, in respective districts during 13-15 July. Gir Somnath, Jamnagar districts have recorded more than 100 mm rainfall and Kachchh district has received 99 mm rainfall yesterday. Some of the contingency measures/advisories are:

- Drain out excess water from fields.
- In case of damage or loss of *kharif* crops due to flood, re-sowing is recommended. Sowing of pulses and below listed crops is advised.
 - Sorghum (grain purpose): GJ-38, GJ-39, GJ-40, GJ-41
 - Sorghum (fodder purpose): CSH-6, GFS-4, GFS-5, GAFS-11
 - Sunflower: EC-68414, Modern GS-1, 2 & 3
 - Sesame: Gujarat sesame -1, 2, 3 & 4
 - Castor: GAUCH-1, GCH-2, GCH-4, 5, 6 & GCH-7
- Transplanting of paddy is recommended. In case of non-availability of seedling and beds are filled with water, broadcasting of pre-germinated paddy is recommended after puddling.

B. Deficit rainfall condition

Karnataka

South Interior Karnataka has received 160 mm (37% deficit), North Interior Karnataka received 163 mm (3% deficit) and Coastal Karnataka received 1287 mm (12% deficit) of rainfall during June 1- July 16.

South Interior Karnataka

- Make use of farm pond water and this may be used for protective irrigation during the prevailing dry spell.
- Since there is a deficit rainfall during this month, protective irrigation may be given for the crop sown with the pre-monsoon shower.
- Undertake inter-cultural operations to control the weeds.
- Agro forestry on the bund involving *Melia dubia* (Hebbevu), Silver oak and Causurina is recommended for sustainable income under below normal rainfall events.

Kerala

The state so far has received 793 mm rainfall, which is 25% deficient compared to the normal (1052 mm).

- Paddy: There is a chance of case worm infestation in rice fields. To control this pest, 25 kg sawdust or rice husk ash mixed with 1 litre kerosene can be spread per acre, after draining the field for.
- Cowpea: Apply tobacco decoction or 2% neem oil-garlic-soap emulsion for control of aphids
- Cardamom: Take necessary phyto-sanitary measures to manage capsule rot (Azhukal disease) and spray 1% Bordeaux mixture (500-1000 ml/plant). As a prophylactic measure to control rhizome rot, drench the soil with 2-3 liters of copper oxychloride (0.25%) solution.

Maharashtra

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

Vidarbha – 248 mm (24% deficit); Marathwada – 212 mm (7% deficit); Madhya Maharashtra- 306 mm (14% surplus) and Konkan- 1317 mm (4% surplus)

Vidarbha

- Application of protective irrigation (sprinkler) is advisable in areas, where crops are under moisture stress showing midday wilting symptoms due to continuance of subdued rainfall activity during past weeks.
- Reduce the area under sole green gram and blackgram OR include as intercrops with slightly higher seed rate.
- For sorghum use early to mid duration varieties and use 20-25% more seed rate.
- Feasible risk minimizing intercropping systems include: cotton + greengram/blackgram (1:1), pigeon pea + greengram / blackgram/soybean (2:4) , sorghum + greengram/pigeonpea (3:3) and cotton + sorghum+ pigeonpea+sorghum (3:1:1:1), cotton+soybean+pigeonpea+soybean (3:2:2:2). Also in soybean, after every 6 or 9 rows one row of pigeonpea may be sown.

Tamilnadu

The state has received 68 mm rainfall (12% deficit) so far

- In Cauvery delta zone, Maize/sunflower/groundnut can be sown instead of dry seeded rice under laterite and red soil conditions.
- In high rainfall zone (Kanyakumari district), banana planting with Rasakathali, Poovan, Nendhran, Matti and Red banana varieties is advocated.

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.

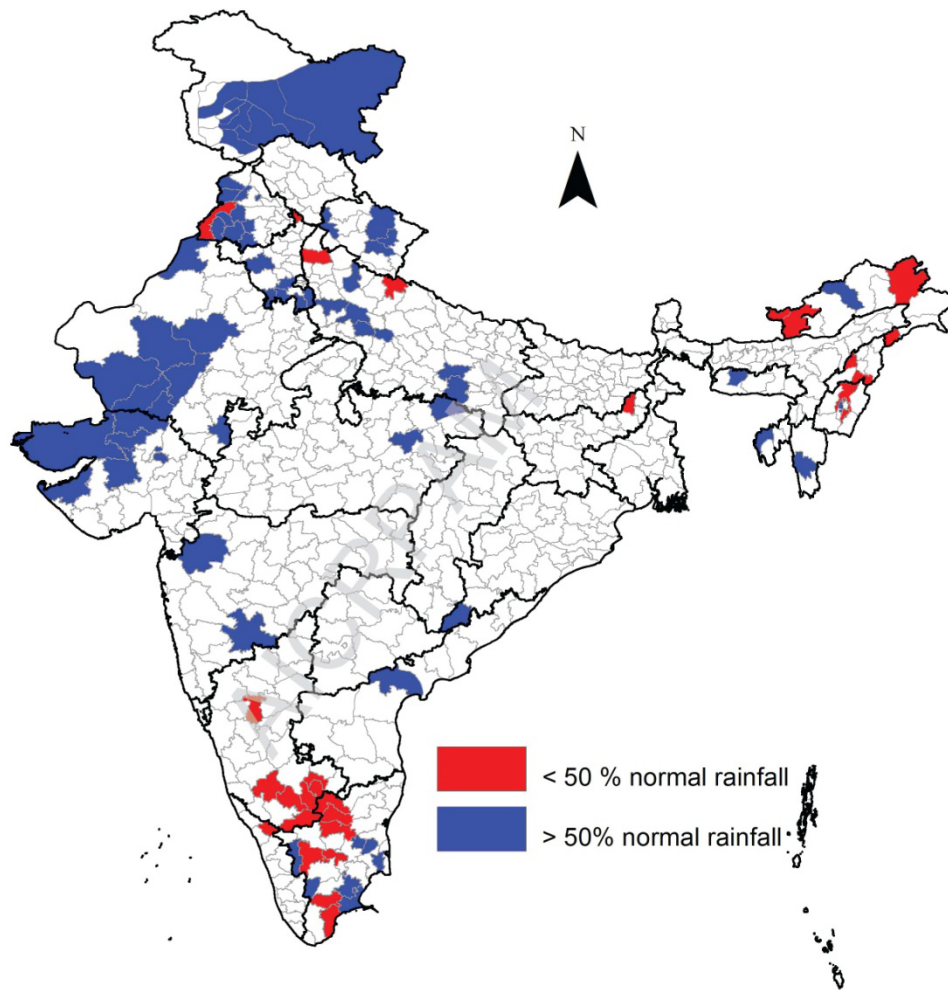


Figure 1: Districts received > 50% deficit and excess rainfall compared to normal during 1 June - 16 July 2017 (Prepared by AICRPAM based on the data provided by IMD)

Table 2: Districts which received more than 50% deficit rainfall compared to normal (1 June to 16 July 2017) (Source: IMD)

Meteorological Sub-division	District	ACTUAL (mm)	NORMAL (mm)	% DEP.
Arunachal Pradesh	Dibang valley	69	526.9	-87
	Tawang	84	1098.7	-92
	Tirap	411.6	1049.3	-61
	West kameng	551.4	1098.7	-50
NMMT	Phek	99	490.4	-80
	Wokha	328	718.7	-54
	Senapati	75	561.3	-87
	Thoubal	53	427.7	-88
	Saiha	154	612.1	-75
Jharkhand	Garhwa	72.4	254	-71
	Goda	156.8	334.7	-53
West UP	Muzafarnagar	86	208.9	-59
	Pilibhit	99.3	271.3	-63
Har Cha Del	Panchkula	82.6	259.2	-68
	Firozpur	38	93	-59
Jammu & Kashmir	Samba	91	216.6	-58
Chhattisgarh	Baloda bazar	178.7	360.3	-50
Tamilnadu & Puducherry	Dharampuri	27.5	88.5	-69
	Karur	12.2	37.4	-67
	Krishnagiri	22.8	91.8	-75
	Salem	33.2	112.3	-70
	Tiruppur	14.3	36.7	-61
	Tuticorin	2.9	12.6	-77
	Virudhunagar	10.2	38.7	-74
NI Karnataka	Gadag	53.4	119.1	-55
	Banglore urban	52.7	114	-54
	Chamarajanagar	23.8	95.9	-75
	Hassan	117.7	235.1	-50
	Mandhya	35	71.1	-51
	Ramnagar	44.1	108.2	-59
Kerala	Wayanad	495.3	1316.4	-62

Table 3: Districts which received more than 50% surplus rainfall compared to normal (1 June to 16 July 2017) (Source: IMD)

Meteorological Sub-division	District	ACTUAL (mm)	NORMAL (mm)	% DEP.
Arunachal Pradesh	Lower dibang valley	1425.3	526.9	171
	Upper subansiri	781.4	369.5	111
Assam & Meghayala	East garo hills	1249.4	754	66
NMMT	Dimapur	629	317.9	98
	Imphal west	981.7	465.1	111
	Lunglei	1318	757.6	74

Meteorological Sub-division	District	ACTUAL (mm)	NORMAL (mm)	% DEP.
	West tripura	978.5	636.5	54
Odisha	Malkangiri	588.8	393.6	50
Bihar	Drabhanga	497.3	314.4	58
East UP	Allahabad	361.5	215.5	68
	Kannauj	309.9	186.9	66
	Pratapgarh	386.5	225.9	71
	Sahuji maharaj nagar	418.2	231.2	81
West UP	Aligarh	262.9	150.8	74
	Etah	249.3	155.4	60
	Kanshiramnagar	325	165.4	96
	Mainpuri	260.4	168.3	55
	Moradabad	347.1	231.2	50
Uttarakhand	Almora	443.1	276.5	60
	Bageshwar	525.7	276.5	90
	Chamoli	393.7	243.2	62
	Dehradun	829.6	499.5	66
Har Cha Del	Faridabad	249.3	141.5	76
	Hisar	149	89.6	66
	Jhajjar	284.4	114.4	149
	Mahendragarh	209.1	114.2	83
	Mewat	203.9	123.8	65
	Rewari	198.1	99.8	98
	New delhi	301	170.6	76
Punjab	Amritsar	283.2	138.9	104
	Barnala	187	98.7	89
	Bathinda	156.8	85	84
	Faridkot	153.6	90.4	70
	Kapurthala	285	116.5	145
	Mansa	139.3	83.3	67
	Moga	188.4	96.5	95
	Muktsar	185.6	87.9	111
	Tarn taran	121	78.7	54
Jammu & Kashmir	Anantnag	168.4	107.4	57
	Bandipore	135	53	155
	Baramula	188.6	95.6	97
	Doda	297.4	135.9	119
	Ganderwal	131	64.1	104
	Kargil	24.4	11.9	105
	Kulgam	179.2	80.3	123
	Leh and ladakh	21.3	9.1	134
	Pulwama	122	46	165
	Ramban	237.9	123.4	93
	Riasi	740.2	301.9	145
	Shopian	156	81.2	92

Meteorological Sub-division	District	ACTUAL (mm)	NORMAL (mm)	% DEP.
	Srinagar	124.2	64.1	94
	Udhampur	434	285.2	52
West Rajasthan	Barmer	125.3	72.2	74
	Jalor	215	113.7	89
	Jodhpur	179.4	78.3	129
	Nagaur	198.6	103.3	92
	Pali	217.2	124	75
	Sirohi	351.3	221.4	59
East MP	Katni	471.1	293.1	61
	Rewa	529.6	266.4	99
Gujarat	Banaskantha	271	174.8	55
	Gandhinagar	341.9	218.1	57
	Patan	326	164.1	99
	Dadar & nagar haveli	1298.3	765.8	70
Sourashtra & Kutch	Jamnagar	346.2	192.6	80
	Kachchh	206.9	121.1	71
	Morbi	502.2	184.6	172
	Surendranagar	393.9	175.9	124
	Diu	496.6	326.6	52
Madhya Maharashtra	Nasik	501.3	311.6	61
	Solapur	231.4	146.4	58
Chhattisgarh	Sukma	726.1	372.2	95
Coastal AP	Guntur	243.7	157.2	55
Tamilnadu & Puducherry	Ariyalur	129.6	79.8	62
	Coimbatore	98	57.7	70
	Perambalur	80.1	50.9	57
	Ramanathapuram	48.2	26.8	80
	Sivaganga	192.6	73.9	161
	Teni	62	37.5	65
	Thiruvarur	97.9	61.6	59