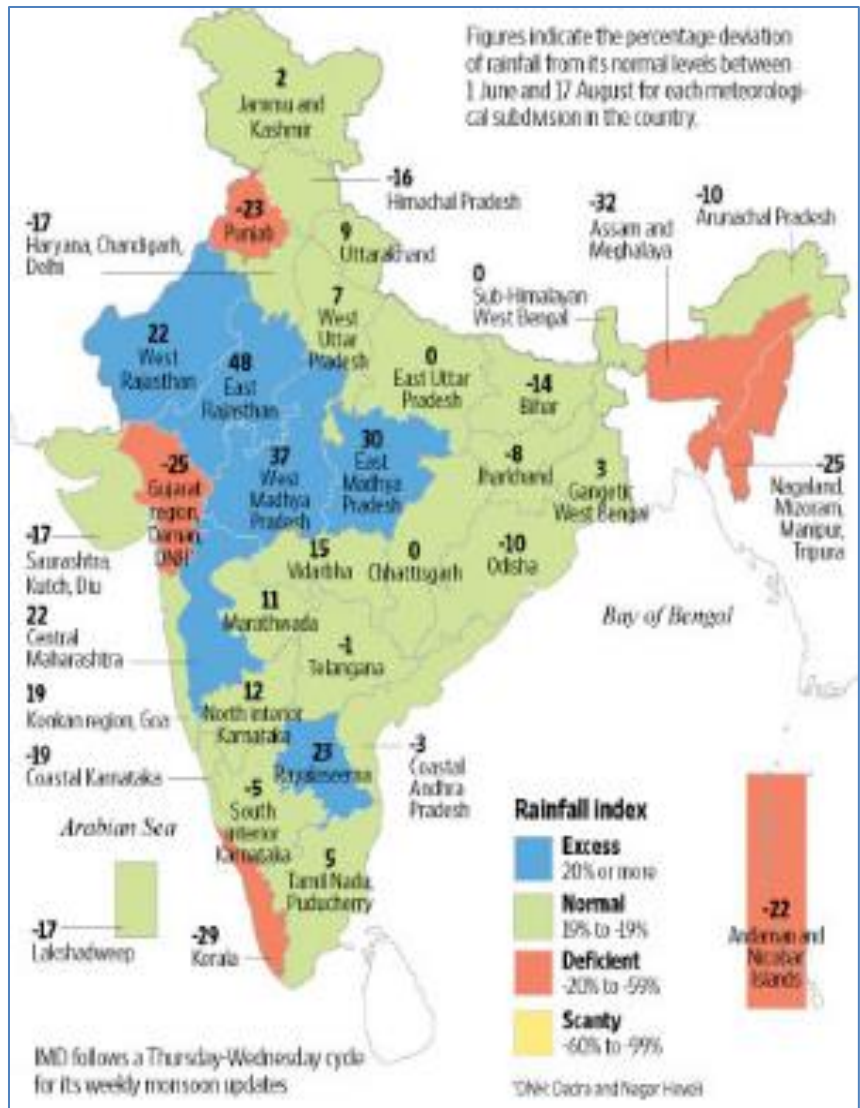


Indian Monsoon Dynamics

Recent Weather Development

- The June-to-September monsoon has been normal so far as per India Meteorological Department (IMD). Since the monsoon season started in June, 89% of the country has received normal to excess rains, while 11% of India has a deficit. Rain-deficit parts mainly include Kerala, Gujarat, Dadra and Nagar Haveli, Daman, Punjab and some of the north-eastern states. North-west and central India have received 8% and 10% more rainfall than the 50-year average while the southern peninsula has recorded a deficit of 8%, the forecaster said. The shortfall in eastern and north-eastern regions is at 16%. Jharkhand and east Uttar Pradesh have experienced heavy rains in the past week.
- Southwest Monsoon has been active over East India for the last few days. Central India also came under the purview of successive Monsoon systems developing in the Bay of Bengal. Moderate to heavy showers, with isolated places receiving extremely heavy rains, have been observed over Uttar Pradesh, Madhya Pradesh, Jharkhand, Gangetic West Bengal and Chhattisgarh for the last few days.
- The deep depression over East India moved in a northwest direction during last 12 hours. It has now weakened into a depression lying over extreme southeast Uttar Pradesh and adjoining northeast Madhya Pradesh. The system can be seen about 200 km east-northeast of Satna and 240 km east-southeast of Banda.
- Rain occurred at most places over East Madhya Pradesh, Jharkhand, Coastal Karnataka and Lakshadweep; at many places over Uttarakhand, Haryana, Chandigarh & Delhi, Uttar Pradesh, West Madhya Pradesh, Bihar, Chhattisgarh, Konkan & Goa, Kerala and Andaman & Nicobar Islands; at few places over Himachal Pradesh, East Rajasthan, West Bengal & Sikkim, south Madhya Maharashtra and North Interior Karnataka and at isolated



places over Jammu & Kashmir, Punjab, West Rajasthan, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Odisha, Saurashtra & Kutch, Vidarbha, Telangana, Rayalaseema, South Interior Karnataka & Tamil Nadu.

Seasonal Rainfall (in mm) from 1 June to 18 August, 2016

Region	Actual	Normal	% Departure from Long Period Average
East & Northeast India	849.8	997.7	-15%
Northwest India	456.7	424.5	8%
Central India	741.6	681.0	9%
South Peninsula	443.2	488.9	-9%
All India	612.6	614.9	0%

Source: IMD, Govt. of India

- Minimum temperatures are above normal (1.6°C to 3.0°C) at many places over Coastal Andhra Pradesh and at isolated places over Himachal Pradesh, Punjab, Sub-Himalayan West Bengal, Assam & Meghalaya, Odisha and Tamil Nadu. They are below normal (0.6 °C to -3.0°C) at isolated places over East Madhya Pradesh, Gangetic West Bengal and Madhya Maharashtra and near normal over rest of the country.
- Maximum temperatures were appreciably above normal (3.1°C to 5.0°C) at most places over Coastal Andhra Pradesh; at few places over Rayalaseema and Tamil Nadu and at isolated places over Assam & Meghalaya, Telangana and Vidarbha; above normal (1.6°C to 3.0°C) at most places over Uttarakhand, Marathwada and North Interior Karnataka; at many places over Gujarat; at a few places over Konkan & Goa and South Interior Karnataka and at isolated places over Punjab, West Rajasthan, West Madhya Pradesh, Madhya Maharashtra, Coastal Karnataka and Kerala. They were Markedly below normal (0°C or less) at isolated places over Himachal Pradesh; appreciably below normal (0°C to -5.0°C) at many places over Jharkhand and at isolated places over East Madhya Pradesh and Gangetic West Bengal; below normal (0.6 °C to -3.0°C) at many places over Odisha; at a few places over Chhattisgarh and at isolated places over East Rajasthan and near normal over rest of country.
- The Central Water Commission monitors the live storage of 91 important/major reservoirs, having capacity at Full Reservoir Level (FRL) of 157.80 billion cubic meters (BCM), which is about 62% of total reservoir capacity in the country. Water stock in 91 major reservoirs increased to 85.32 BCM from the previous week's level of 71.56 BCM. Current storage is higher than the last year's position of 83.93 BCM and lower than the average of last 10 year's storage of 86.33 BCM.
- Incidence of Pink bollworm on early sowing irrigated cotton crop has been reported in trace to low intensity in Sourashtra Region in Amreli, Rajkot, Junagarh and Bhavnagar districts of Gujarat covering area about 50000 to 60000 hectares. Incidence of white fly on cotton crop has been reported in trace to moderate intensity in general, where as in Fazilka district at Danger Kheda and Killian Wali, intensity near the kinnow orchards where it was reported in severity in few isolated fields. Severe infection of sooty mould was also reported in few scattered fields in Punjab. Cotton leaf curl virus was also reported at many locations in Fazilka district. Population of green jassids has also been reported trace to low level in isolated field.
- As per latest information available on sowing of Kharif crops, around 90% of the normal area under Kharif crops has been sown upto 12.08.2016. Total area sown under Kharif crops in the country as on 12.08.2016 has been reported to be 954.18 lakh hectares as compared to 895.91 lakh hectares last year. This year's area coverage so far is higher by 58.3 lakh ha than normal as on date. Area coverage under Rice is higher by 21.4 lakh ha than the last year and 27.5 lakh ha than normal as on date. Area coverage under Pulses is higher by 32.5 lakh ha than the last year and by 37.1 lakh ha than normal as on date. This is due to higher coverage in Tur, Urad and Moong. Area coverage under Kharif coarse cereals is higher by 9.8 lakh ha than last year and by 6.7 lakh ha normal as on date. This is due to higher coverage in Maize. Area coverage under total Kharif Oilseeds is higher by 8.4 lakh ha than the last year and by 6.7 lakh ha than normal as on date. This is due to higher coverage in Groundnut and Soyabean. Area coverage under Sugarcane is lower by 4.0 lakh ha than the last year and by 0.7 lakh ha than normal as on date. Area coverage under Cotton is lower by 9.6 lakh ha than the last year and by 13.3 lakh ha than normal as on date. The details of the area covered so far and that covered during this time last year are given in the following page.

Kharif Sowing Progress (up to 12.08.2016)

All India Crop Situation - Kharif (2016-17) as on 12.08.2016							
(In lakh hectares)							
Crop Name	Normal Area for whole Kharif Season	Normal Area as on date	Area sown reported			Absolute Change over (+/-)	
			This Year 2016	% of Normal for whole season	Last Year 2015	Normal as on date	Last Year
Rice	392.67	298.62	326.08	83.0	304.71	27.5	21.4
Jowar	25.33	20.07	18.37	72.5	17.59	-1.7	0.8
Bajra	81.63	64.31	62.63	76.7	64.73	-1.7	-2.1
Maize	73.50	70.77	81.29	110.6	71.62	10.5	9.8
Total Coarse Cereals	199.70	166.90	173.56	86.9	163.75	6.7	9.8
Total Cereals	592.37	465.52	499.64	84.3	468.46	34.1	31.2
Tur	40.05	32.66	48.87	122.0	32.31	16.2	16.6
Urad	24.39	22.38	31.56	129.4	24.78	9.2	6.8
Moong	23.59	21.02	30.15	127.8	22.05	9.1	8.1
Kulthi	2.51	0.31	0.46	18.3	0.26	0.2	0.2
Others	17.06	16.66	19.14	112.2	18.31	2.5	0.8
Total Pulses	107.59	93.03	130.17	121.0	97.70	37.1	32.5
Total Foodgrains	699.96	558.55	629.81	90.0	566.16	71.3	63.7
Groundnut	43.77	35.78	42.69	97.5	32.42	6.9	10.3
Soyabean	106.36	110.00	112.35	105.6	111.96	2.3	0.4
Sunflower	2.61	1.48	1.41	54.0	0.75	-0.1	0.7
Sesamum	18.24	13.22	12.66	69.4	14.68	-0.6	-2.0
Nigerseed	3.15	0.84	0.48	15.2	0.66	-0.4	-0.2
Castorseed	11.48	4.27	2.67	23.3	3.37	-1.6	-0.7
Total Oilseeds	185.60	165.58	172.25	92.80	163.84	6.7	8.4
Cotton	120.34	112.31	99.03	82.3	108.67	-13.3	-9.6
Sugarcane	49.96	46.21	45.54	91.1	49.51	-0.7	-4.0
Jute & Mesta	8.57	8.12	7.66	88.2	7.73	-0.6	-0.2
All- Crops	1064.42	890.78	954.18	89.6	895.91	63.4	58.3

Source: Crops & TMOP Divisions, DAC

Note: Area figures are as per eye assessment of State Agriculture Departments

State wise Development in Rainfall Activity

S NO	MET. SUBDIVISION/UT/STATE/DISTRICT	Day:18-08-2016				Period:01-06-2016 To 18-08-2016			
		ACTUAL (mm)	NORMAL (mm)	%DEP.	CAT.	ACTUAL (mm)	NORMAL (mm)	% DEP.	CAT.
REGION : EAST AND NORTH EAST INDIA									
1	ARUNACHAL PRADESH	0.4	10.6	-97%	S	1115.0	1245.7	-10%	N
2	ASSAM	9.3	9.5	-3%	N	821.5	1088.3	-25%	D
3	MEGHALAYA	1.4	17.8	-92%	S	1079.8	2056.2	-47%	D
4	NAGALAND	0.0	9.1	-100%	NR	634.9	958.3	-34%	D
5	MANIPUR	2.0	12.8	-85%	S	829.9	1019.4	-19%	N
6	MIZORAM	18.1	14.4	26%	E	1012.9	1151.3	-12%	N
7	TRIPURA	22.8	11.6	96%	E	786.2	1089.1	-28%	D
8	SIKKIM	6.1	18.0	-66%	S	1101.5	1232.4	-11%	N
9	WEST BENGAL	34.5	11.3	205%	E	977.1	933.8	5%	N
10	JHARKHAND	71.6	9.4	662%	E	726.8	729.7	0%	N
11	BIHAR	10.5	9.2	14%	N	586.6	682.0	-14%	N
REGION : NORTH WEST INDIA									
1	UTTAR PRADESH	9.4	10.1	-7%	N	567.7	555.9	2%	N
2	UTTARAKHAND	5.8	13.6	-57%	D	931.1	865.8	8%	N
3	HARYANA	1.6	4.8	-67%	S	258.0	314.3	-18%	N
4	CHANDIGARH (UT)	0.0	6.6	-100%	NR	351.2	598.5	-41%	D
5	DELHI (UT)	0.5	6.4	-92%	S	431.8	440.6	-2%	N
6	PUNJAB	1.2	5.8	-80%	S	262.8	346.7	-24%	D
7	HIMACHAL PRADESH	10.3	8.4	22%	E	497.7	588.2	-15%	N
8	JAMMU & KASHMIR	2.0	5.3	-61%	S	385.7	380.4	1%	N
9	RAJASTHAN	2.9	5.3	-45%	D	406.1	296.0	37%	E
REGION : CENTRAL INDIA									
1	ODISHA	11.1	11.4	-3%	N	694.9	773.9	-10%	N
2	MADHYA PRADESH	8.5	10.9	-22%	D	855.1	644.1	33%	E
3	GUJARAT	0.2	6.5	-97%	S	366.5	478.1	-23%	D
4	DADAR & NAGAR HAVELI (UT)	2.1	15.7	-87%	S	2243.9	1688.1	33%	E
5	DAMAN & DIU (UT)	1.3	12.8	-90%	S	1369.7	1281.5	7%	N
6	GOA	3.0	16.5	-82%	S	2469.7	2487.5	-1%	N
7	MAHARASHTRA	1.1	7.8	-86%	S	845.8	722.7	17%	N
8	CHHATTISGARH	8.0	10.4	-23%	D	792.0	795.9	0%	N
REGION : SOUTH PENINSULA									
1	ANDAMAN & NICOBAR (UT)	1.7	14.2	-88%	S	833.8	1075.3	-22%	D
2	ANDHRA PRADESH	0.0	4.0	-100%	NR	307.9	297.1	4%	N
3	TELANGANA	0.0	6.9	-99%	S	493.1	507.3	-3%	N
4	TAMIL NADU	0.5	2.9	-83%	S	162.7	157.4	3%	N
5	PONDICHERRY (UT)	1.0	3.1	-67%	S	119.8	183.6	-35%	D
6	KARNATAKA	3.7	6.5	-43%	D	551.6	603.2	-9%	N
7	KERALA	18.7	14.8	26%	E	1185.3	1649.3	-28%	D
8	LAKSHADWEEP (UT)	0.8	7.6	-89%	S	610.8	741.6	-18%	N
COUNTRY :		7.2	8.1	-11%		612.6	614.9	0%	

Source: IMD, Govt. of India

For the country as a whole, cumulative rainfall during this year's from 1st June 2016 to 18th August 2016 has been at par with normal. The details are given in the table above.

Major Updates & Forecast for the Coming Week and Ahead

- Rains will now decrease over most parts of East India, only to increase after about 2 to 3 days. A fresh weather system is brewing up over Northeast Bay of Bengal. This weather system will be responsible for enhancing rains over the East India once again.
- According to an IMD forecast, there will be an increase in rainfall activity over the peninsular India from the last week of August. Above-normal rainfall activity will occur over many parts of central India till 29 August. North-west India will experience an increase in rainfall activity from 25 August.
- A deep depression is forming over south-west Bihar, Jharkhand and south Uttar Pradesh, which will gradually weaken in the next 24 hours and move in a west and north-western direction. This will lead to rain in Chhattisgarh, east Madhya Pradesh and parts of Uttar Pradesh. There will also be rain in western Madhya Pradesh and eastern Rajasthan.
- Overall, across the country, the soil moisture is adequate for crops, but for the next five days, Rayalaseema, north interior Karnataka and Telangana will be dry. Farmers are advised to provide irrigation to crops in these regions until the next spell of monsoon.
- The deep depression which is prevailing over East India is likely to weaken into a depression and will further move in a northwest direction during next 24 hours. Tomorrow the system will be seen over Northeast Madhya Pradesh and adjoining South Uttar Pradesh. Moreover, there is a cyclonic circulation over West Uttar Pradesh. The axis of the Monsoon trough will also be running along the foothills of Himalayas via Uttar Pradesh, Chhattisgarh, Odisha and further towards east-central Bay of Bengal.

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