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SOUTH-WEST MONSOON WRAPUP 2019

Monsoon rainfall 10% above normal; flooding in various states raises concerns for kharif output, rural sentiment

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Aditi Nayar
+91 124 4545 385
aditin@icraindia.com

Soumyaditya Pal
+91 124 4545 848
soumyaditya.pal@icraindia.com

Medha Sinha
+91 124 4545 399
medha.sinha@icraindia.com

With a late surge in rains, the cumulative volume of the south-west monsoon rainfall in the current year stood at 110% of the long-period average (LPA), as on September 30, 2019. This substantially overshot the upper bound of the IMD's First Stage Forecast (96% of LPA+/-5%) as well as Second Stage Forecast (96% of LPA+/-4%). Moreover, at 110% of LPA, the magnitude of precipitation was above-normal and stood at a 25-year high.[1] However, the distribution of rainfall was uneven, with considerable geographical and temporal disparities. Although the kharif sowing gap relative to last year has virtually closed, the episodes of flooding in many regions may impact kharif output, agricultural growth, and rural sentiment and incomes in the coming months. While the monsoon season has technically ended, the magnitude of rainfall has remained substantial in the recent days, with a considerable delay in the withdrawal of the monsoon, which is likely to result in a postponement of harvesting activities. However, the replenishment of ground water levels and the significant YoY rise in reservoir levels across most regions is encouraging, which would support a brisk pace of rabi sowing, once it commences.

Monsoon Rainfall: The 2019 monsoon recorded an unsatisfactory start, with a delayed onset over the Indian subcontinent and sub-par precipitation in the initial few weeks. The volume and progress of the south-west monsoon recorded a gradual improvement in the subsequent weeks. While the overall rainfall in June 2019 recorded a significant shortfall (33% below the LPA), precipitation in July 2019 stood at a healthy 105% of the LPA. On a cumulative basis, rainfall was 9% below the LPA at end-July 2019.

Subsequently, the volume of the south-west monsoon rainfall was substantially higher than normal during the second half of the season. The rainfall in August 2019 stood at 117% of the LPA, with excess rainfall during the month in Central India (157% of LPA) and Southern Peninsula (142% of LPA), resulting in flooding in several parts of the country, particularly, in Maharashtra, Punjab, Kerala and Karnataka. This is expected to adversely affect the agricultural output of these states for crops such as sugarcane, cotton, paddy, and plantation crops such as coffee, tea, cardamom and rubber. In addition, large states such as Tamil Nadu, Madhya Pradesh, Gujarat and Andhra Pradesh have also been adversely impacted by floods.

The cumulative precipitation in September 2019 stood at an even higher 148% of the LPA. In line with the trend in August 2019, excess rainfall was recorded in Central India (196% of LPA) and the Southern Peninsula (149% of LPA) in September 2019, which also led to flood-like conditions and damaged the standing crops in various states. Overall, the cumulative rainfall on a pan-India basis at the end of monsoon season stood at 110% of the LPA, which is equivalent to 88 mm above normal (refer Exhibit 1). Notably, the cumulative magnitude of rainfall in June-September 2019 stood at a 25-year high, and exceeded the LPA after a gap of five years.

Cumulatively, Central India (129% of LPA) and South Peninsula (116% of LPA) received an excess magnitude of precipitation in the south-west monsoon season in 2019 while the total rainfall was normal in the case of North-West India (98% of LPA) (refer Exhibit 2). In contrast, the magnitude of precipitation was deficient in East and Northeast India (88% of LPA), as per the IMD's classification.

At the sub-divisional level on a cumulative basis, 19 out of the 36 sub-divisions received normal rainfall[2], whereas 10 sub-divisions recorded excess precipitation and two sub-divisions posted large excess rainfall. In contrast, five sub-divisions (Nagaland, Manipur, Mizoram and Tripura; Gangetic West Bengal; West Uttar Pradesh; Haryana, Chandigarh and Delhi; and Jammu and Kashmir) received deficient rainfall, which is likely to adversely affect agricultural output and incomes in those regions. Moreover,

[1] On a pan-India basis, rainfall between 96% and 104% of the LPA is considered to be normal. The other classifications are deficient (below 90% of LPA), below-normal (90-96% of LPA), above-normal (104-110% of LPA) and excess (more than 110% of LPA).

[2] On a disaggregated basis, the classification is as follows: Large Excess: above 160% of LPA; Excess: 120%-159% of LPA; Normal: 81%-119% of LPA; Deficient: 41%-80% of LPA; Large Deficient: 0%-40% of LPA.

the temporal breakup of the rainfall recorded over the 36 sub-divisions during the 17 weeks of the monsoon season, reveals a somewhat low proportion of normal rainfall (~20%; refer Exhibits 3 and 4).

Further, at the district level, only 48% received normal monsoon rainfall in 2019. While 9% and 19%, respectively, of districts were classified as large excess and excess, as many as 21% of the districts received deficient rainfall. In addition, 2% of the districts were classified as large deficient on a cumulative basis in 2019 (information is not available for the balance 1% of districts).

Sowing and Estimated Production: While the low initial rainfall had led to a delay in kharif sowing, the heavy rainfall in August-September 2019 has led to a virtual closing of the gap relative to 2018; the area sown under kharif crops stood at 106.27 million hectares as on September 27, 2019, only marginally lower than the 106.32 million hectares sown under kharif crops as on September 27, 2018 (Source: 'All India Crop Situation, dated September 27, 2019, Department of Agriculture cooperation and Farmers Welfare, GoI). On a crop-wise basis, kharif sowing lagged year-ago levels for rice (-1.2%), pulses (-1.7%), sugarcane (-5.5%), and jute and mesta (-5.0%), whereas the area sown under cotton, coarse cereals and oilseeds posted a YoY rise of 5.5%, 1.7% and 0.1%, respectively (refer Exhibit 5).

The First Advance Estimate (AE) of crop production released on September 23, 2019, has estimated a YoY rise in kharif output of coarse cereals (+3.3%), oilseeds (+5.2%), cotton (+12.4%), and jute and mesta (+1.9%), relative to the Fourth AE (released on August 19, 2019) for the previous year. In contrast, the kharif output is estimated to decline in FY2020 relative to FY2019 for rice (-1.7%), pulses (-4.2%), and sugarcane (-5.6%). However, the subsequent heavy rainfall may have damaged the standing crops. Higher moisture content in the standing crops may affect quality and yields, and the delay in the withdrawal of the monsoon could result in a postponement in the timing of the harvest activities, which may delay the sowing of the rabi crop.

Reservoir Storage: After recording a seasonal drawdown to 16% of FRL as on June 27, 2019, the reservoir storage levels have risen considerably during the monsoon season. Reservoir storage on a pan-India basis stood at a healthy 87% of the FRL on September 26, 2019, substantially higher than the year-ago level of 76% as well as the level in FY2017 (76% of FRL; refer Exhibit 6).

Moreover, the geographical distribution of reservoir storage is favourable, with storage exceeding year-ago levels in the western (91% vs. 56%), central (86% vs. 81%) and southern (84% vs. 74%) regions as on September 26, 2019 (refer Exhibit 7). However, reservoir levels are marginally lower than year-ago levels in the northern (89% vs. 90%) and eastern (83% vs. 86%) regions, as on September 26, 2019. Overall, the replenishment of ground water as well as the YoY rise in reservoir levels across most regions would support a brisk pace of rabi sowing, once it commences.

Outlook: While the gap in kharif sowing has virtually closed, the flooding in the last two months in various states has emerged as a major concern in terms of damage to standing crops. At present, we do not expect the pace of agricultural growth in Q2-Q3 FY2020 to exceed the 2.0% recorded in Q1 FY2020. However, the delayed withdrawal of the monsoon and replenishment of reservoirs bodes well for rabi sowing, as well as agricultural growth and rural sentiment in Q4 FY2020. Benefitting from the latter, we expect agriculture, forestry and fishing to record a growth of 2.9% in FY2020, in line with the pace in FY2019.

Exhibit 1: Pan-India Weekly and Cumulative Monsoon Deviation

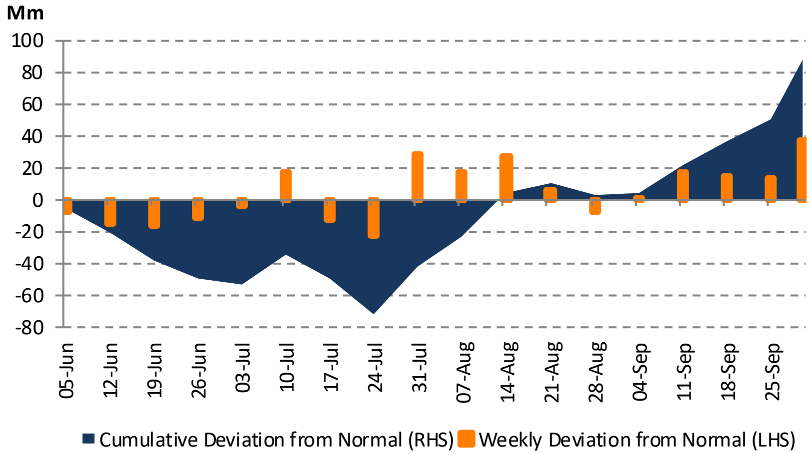
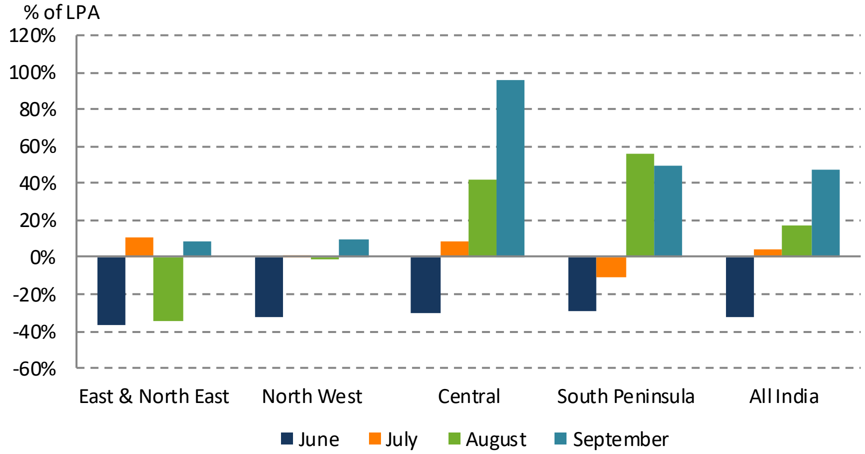
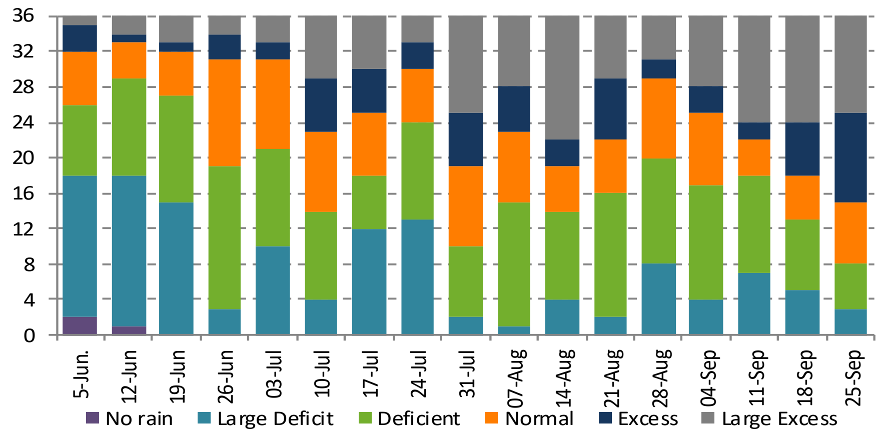


Exhibit 2: Region-wise Comparison of Monthly Rainfall Deviation from LPA in 2019



Source: IMD; CEIC; ICRA research

Exhibit 3: Weekly Distribution of Rainfall across 36 Sub-Divisions

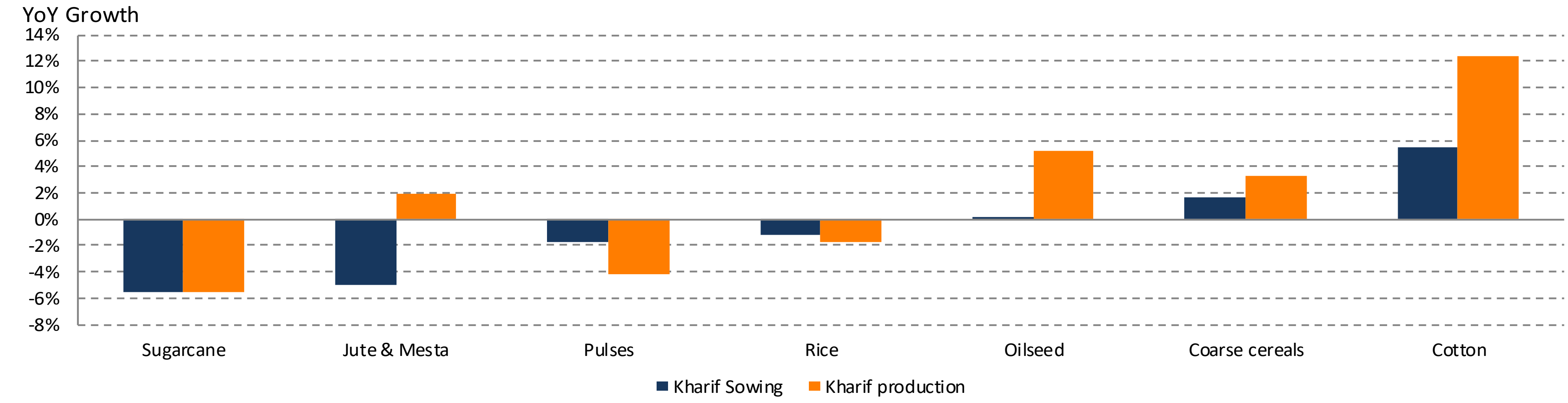


Source: IMD; CEIC; ICRA research

Exhibit 4: Distribution of Rainfall Over 36 Sub-Divisions during 17 Weeks

Category	% of LPA	Distribution	% of Total
Large Excess	above 160	115	18.8%
Excess	120-159	68	11.1%
Normal	81-119	120	19.6%
Deficient	41-80	180	29.4%
Large Deficient	0-40	126	20.6%
No Rain	0	3	0.5%
Total (17 weeks X 36 sub-divisions)		**612**	**100.0%**

Exhibit 5: Trend in YoY Growth in FY2020 of Kharif Sowing and Kharif Production (First AE for FY2020 relative to Fourth AE for FY2019)



Source: Ministry of Agriculture, GoI; ICRA research

Exhibit 6: Trends in Reservoir Storage

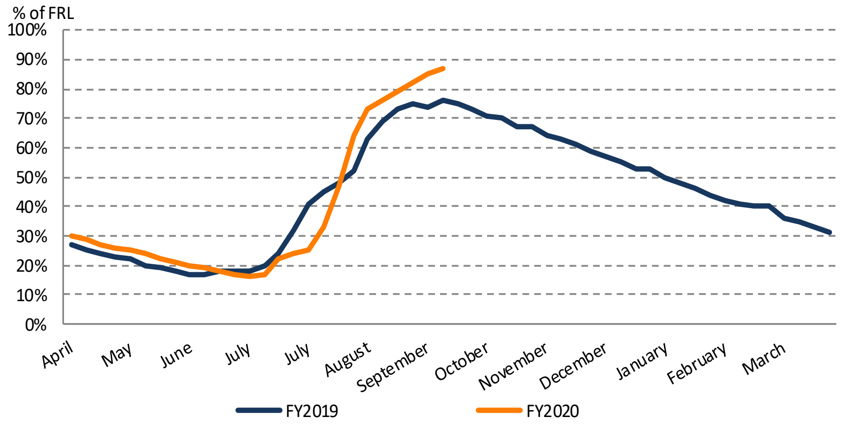
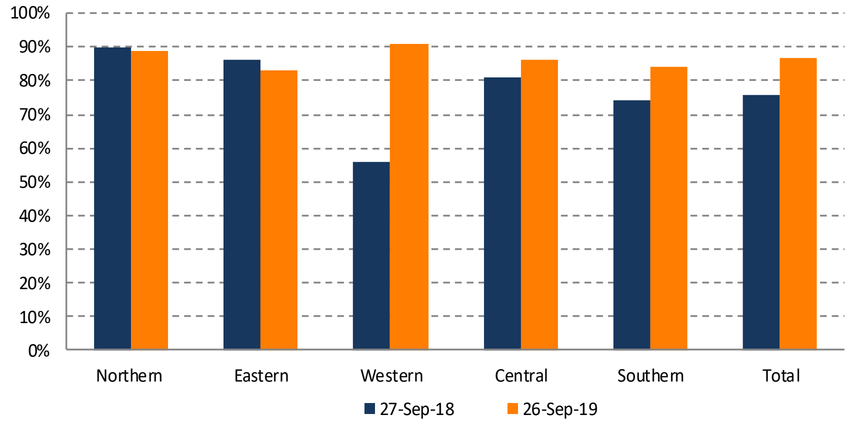


Exhibit 7: Sub-Region Distribution of Reservoir Storage



**Till September 26, 2019; #Total number of reservoirs in India has increased to 113 from 91*
Source: IMD; Central Water Commission (CWC); CEIC; ICRA research

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ICRA

Business Contacts

Mr. L. Shivakumar
E-mail: shivakumar@icraindia.com
Tel: +91 22 6114 3406 / +91 98210 86490

Mr. Jayanta Chatterjee
E-mail: jayantac@icraindia.com
Tel: +91 80 4332 6401/ +91 98450 22459

Media and Public Relations

Ms. Naznin Prodhani
E-mail: communications@icraindia.com
Tel: +91 124 4545 860

Registered Office:

1105, Kailash Building, 11th Floor,
26, Kasturba Gandhi Marg,
New Delhi - 110 001
Tel: + 91 11 2335 7940-45

Corporate Office:

Building No.8, 2nd Floor,
Tower A, DLF Cyber City Phase II,
Gurgaon- 122 002
Tel: +91 124 4545300

Ahmedabad

1809-1811, Shapath V,
Opposite Karnavati Club
S.G. Highway, Ahmedabad - 380015
Tel: +91 79 4027 1500/01

Bengaluru 1

'The Millenia', Tower- B, Unit No. 1004,
10th Floor,1 & 2 Murphy Road,
Bengaluru - 560 008
Tel: +91 80 4332 6400

Bengaluru 2

2nd Floor, Vayudooth Chamber,
15-16, Trinity Circle, M.G. Road,
Bengaluru - 560 001
Tel: +91 80 4922 5500

Chennai

5th Floor, Karumuttu Centre,
634, Anna Salai, Nandanam
Chennai - 600 035
Tel: +91 44 4596 4300

Hyderabad 1

No. 7-1-58, 301, 3rd Floor, 'CONCOURSE',
Above SBI-HPS Branch, Ameerpet,
Hyderabad - 500 016
Tel: +91 40 4920 0200

Hyderabad 2

4A, 4th Floor, SHOBHAN,
6-3-927, A&B Somajiguda,
Raj Bhavan Road,
Hyderabad – 500082
Tel: +91 40 40676500

Kolkata

A-10 & 11, 3rd Floor,
FMC Fortuna 234/3A,
A.J.C. Bose Road,
Kolkata -700 020
Tel: +91 33 7150 1100/01

Mumbai

3rd Floor, Electric Mansion
Appasaheb Marathe Marg,
Prabhadevi,
Mumbai - 400 025
Tel: +91 22 6169 3300

Pune

5A, 5th Floor, Symphony,
S. No. 210 CTS 3202 Range Hills Road,
Shivajinagar,Pune - 411 020
Tel: +91 20 2556 0194, 020 6606 9999

Email: info@icraindia.com
Helpdesk: 9354738909
Website: www.icra.in/ www.icraresearch.in