Quickonomics

September 5, 2023

Rain trail
### Monsoon playing truant

Worrying spectre

- After recovering in July, the southwest (SW) monsoon witnessed its driest spell in 123 years in August, taking the cumulative deficiency for the season to 10%. By September 4, cumulative deficiency rose to 11%.

- Distribution has been skewed. Rainfall was 3% surplus in northwest India, where the irrigation cover is good. However, it was below the long period average (LPA) by 17% in south and east and by 10% in northeastern and central India, where irrigation cover is lower

- CRISIL's deficient rainfall impact parameter (DRIP) highlights Jharkhand, Karnataka, Maharashtra, Bihar and West Bengal as vulnerable states. It also highlights pulses, some coarse cereals, rice and oilseeds as vulnerable crops facing some duress due to deficient rains and a low irrigation cover

- The key concern is weak rains could hurt agriculture output at a time when recovery in the rural economy is weak. Any impact on crop output could increase upside pressure on the Consumer Price Index (CPI)-based food inflation, which is already hovering in double digits

- The key hope now, as indicated by the Indian Meteorological Department (IMD), is that a catch-up in September will partially offset the impact of scanty rains so far

Monsoon has again veered towards inadequacy. This is worrying, especially for states that have a low irrigation cover.

CRISIL's DRIP, which has been tracking rains for nearly two decades now factors in the cumulative impact of rains, as well as the irrigation cover. DRIP, thus, highlights vulnerability at both, the state and crop levels.
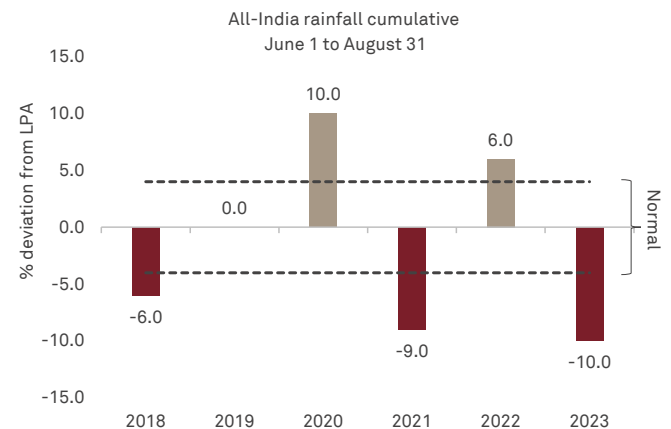
The higher the CRISIL DRIP score, the more adverse the impact of deficient rains.

Chart 1: Not so august
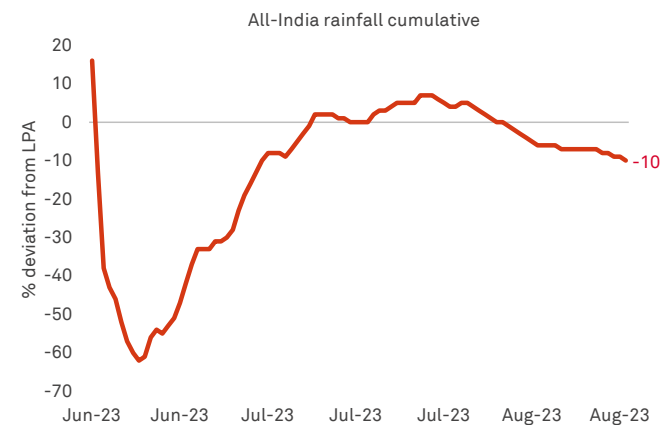
Source: Indian Meteorological Department (IMD), CEIC, CRISIL

Chart 2: A reason to worry

Source: IMD, CEIC, CRISIL

Research

Table 1: Uneven rain patterns reminiscent of the past

	Rainfall cumulative (% departure from normal)				Agri GDP growth
	June	July	August	September	
2015	24	-3	-12	-14	0.6
2016	-12	0	-3	-3	6.8
2017	0	5	-3	-5	6.6
2018	-5	-6	-6	-9	2.1
2019	-33	-9	0	10	6.2
2020	18	0	10	9	4.1
2021	10	-1	-9	-1	3.5
2022	-8	8	6	6	4.0
2023	-10	5	-10	N/A	N/A

■ Deficit ■ Normal ■ Excess

Source: IMD, CEIC, CRISIL

The damage so far

This season, rains have swung from deficit (-10% in June) to surplus (+5% in July), and back into deficit (-10% in August).

Region-wise, northeast has seen a consistent rainfall deficit this season, while central India and the southern peninsular region have swung from deficit to surplus and back into deficit. Northwest, in contrast, has seen excess rains throughout.

With one more month of monsoon to go, all hopes are now pinned on a recovery in rainfall in September.

Rains alone not enough to track crop impact

At the all-India level, rainfall is considered deficient if it is 4% below the LPA. But at the state level, rainfall is considered deficient when it is 19% below the LPA.

Based on these metrics, the rainfall was normal in 12 (accounting for ~73% of kharif output[1]) of the 15 major kharif-producing states (*table 2*) and deficient in three (accounting of ~13% of kharif output) at end-August.

Adequacy of rains based on irrigation cover is also critical for assessing the impact on crops. For instance, about five of the 15 states have less than 50% cropped area under irrigation. Crop-wise irrigation cover, too, varies across states.

---
[1]*Average of agriculture years 2016-17 to 2020-21*

Research

Table 2: Where rains caught up, where they didn't

	2023			Irrigation (% of cropped area)
	June	July	August	
Jharkhand	-43	-46	-37	10.3
Bihar	-48	-48	-27	75.2
Karnataka	-53	4	-22	27.4
Andhra Pradesh	-31	4	-17	63.4
Uttar Pradesh	-19	-16	-16	84.9
Madhya Pradesh	14	3	-15	67.1
Odisha	-22	-12	-14	28.9
West Bengal	-9	-22	-13	53.7
Tamil Nadu	5	-1	-2	56.2
Maharashtra	-46	14	-11	19.1
Punjab	21	38	-3	98.8
Haryana	48	56	8	95.0
Telangana	-50	56	9	81.8
Rajasthan	185	78	12	34.4
Gujarat	107	76	13	67.6

■ Deficit ■ Normal ■ Excess

Source: IMD, Ministry of Agriculture, CRISIL

## DRIP highlights stress in eight states…

Of the 15 major kharif producing states, eight have adverse DRIP scores, or higher than the average of the past five years (*see chart 3*).

Of these, the highest DRIP scores are in five states: Jharkhand, Maharashtra, Karnataka, Bihar and West Bengal.

In Jharkhand, Karnataka and Bihar rain deficiency has been high (*see table 2*). In Maharashtra and West Bengal, rains were deficient for most of the season despite the recent spike.

Among these, Jharkhand is a major producer of pulses. Maharashtra and Karnataka are diverse producers of pulses, coarse cereals, sugarcane and cotton. West Bengal and Bihar are major rice producers.

Market Intelligence & Analytics

Chart 3: Eight states indicate higher risk

CRISIL DRIP score (until August 23)
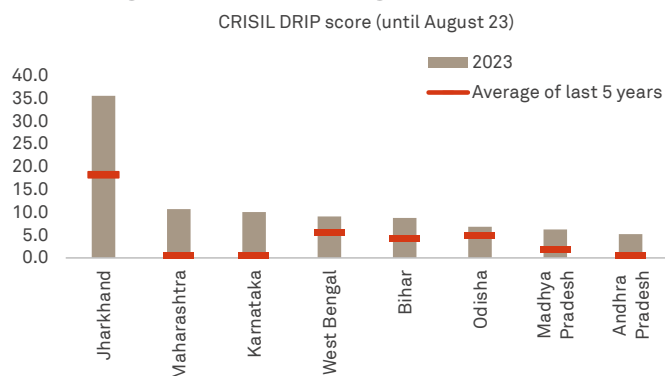
Note: The higher the DRIP score, the worse the impact.
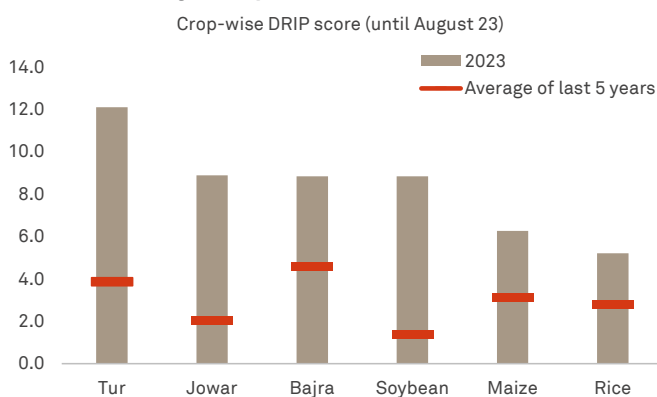*Source: IMD, Ministry of Agriculture, CRISIL*

…and six major crops

We also extend our DRIP analysis to crops based on the rain-irrigation and crop production patterns across states.

We identify six crops – namely tur, jowar, bajra, soybean, maize, and rice – as vulnerable. The CRISIL DRIP scores of these crops are worse than their past five-year average (*see chart 4*).

The stress on pulse output is also evident as sowing was -11% lower on-year as on September 1. Overall, total kharif sowing rose 4.6% on-year, with rice sowing 14.3% higher at the all-India level, but lagging in states such as Karnataka and Andhra Pradesh. Sowing fell 2.6% for tur, 5% for urad and 2.6% for moong with lower acreage mainly reported in Madhya Pradesh, Karnataka and Maharashtra.

Chart 4: Six major crops under duress

Crop-wise DRIP score (until August 23)

Source: IMD, Ministry of Agriculture, CRISIL

Downside to growth and an upswing in food prices the key concerns

Several crops believed to be under duress are already facing inflationary pressures (*see table 3*).

CPI inflation data in July indicated ~13% inflation in the prices of rice and pulses. Within pulses, inflation was the highest at 34.1% for tur, followed by 9.1% for moong and 7.9% for urad. Inflation in the coarse cereals category too has been firming up for a few months now. In July, coarse cereals inflation was at 11.5%, with the highest inflation recorded at 16.8% for jowar and 9.6% for maize. The price of maize also influences animal feed costs and milk and meat prices could go up if it remains high.

Overall, rising food prices have caused an unexpected hump in CPI inflation this year. Though some food price pressure (mainly from vegetables) is likely to be transient, food inflation could stay high for a couple of months, pinching the average consumer's pocket. Government intervention (releasing food stocks, facilitating imports, and restricting hoarding) and fresh crop arrivals should provide some relief. But, rain-related havoc can limit the downside to inflation.

Given this food inflation hump, CRISIL recently raised its CPI inflation forecast to 5.5% for this fiscal (from 5% estimated earlier).

Table 3: Food inflation fury

CPI inflation (%, y-o-y)	May 2023	June 2023	July 2023
Rice	11.5	12.0	13.0
Tur	16.8	27.5	34.1
Moong	5.8	7.5	9.1
Urad	5.0	6.7	7.9
Jowar	15.4	15.4	16.8
Maize	11.8	9.9	9.6

Source: National Statistics Office, CEIC, CRISIL

Meanwhile, the impact on agricultural income is a concern. Rural incomes have been witnessing a slow recovery after the pandemic and given the gradual normalising of rural spends incurred by the government during the pandemic. In this scenario, any significant hit to agriculture output could affect rural demand.

CRISIL has maintained the GDP growth forecast for this fiscal at 6%. A key assumption of the forecast is that rains will catch up in September and support agricultural output.

Research

A swing in September and crop resistance to patchy southwest monsoon, the hope

The IMD's latest monsoon update offers some respite, as it expects rainfall to recover in September.

Typically, rains in July and August are crucial for the kharif crop. However, techniques such as delayed sowing, harvesting of certain crops, usage of higher-yielding and weather-resistant seeds have enabled farmers to partly offset the impact of uneven rainfall.

For instance, the southwest monsoon was 9% deficient at the end of August (*see table 1*) in 2021, but it caught up in September, reducing the overall deficiency for the season to just 1%. And that year, agriculture GDP grew remarkably at 3.5%. Hence, rains in September will remain a key monitorable this year as well.

Agricultural GDP growth has been healthy in the past four years despite uneven monsoon (*see table 1*). Foodgrain production has been rising steadily and is estimated to have hit a record high in 2022-23. Farmers seem to be adjusting sowing patterns over time according to monsoon conditions.

The key concern this fiscal is the impact of El Niño, which did not occur in the previous five years. The IMD expects the El Niño phenomenon to be strong until December 2023, which raises the risk of weak rainfall in September as well.

Moreover, the risk to food production is at a time when inflation is already elevated.

Conclusion

With monsoon back in the limelight, the next few weeks will be crucial for the Indian economy.

Rainfall will not merely determine the inflation trajectory, but also the monetary policy response to any sustained inflationary pressure.

Any adverse impact on crop production can also put pressure on rural income, which is already sluggish.

Analytical contacts

Dharmakirti Joshi
Chief Economist
dharmakirti.joshi@crisil.com

Dipti Deshpande
Principal Economist
dipti.deshpande@crisil.com

Pankhuri Tandon
Senior Economist
pankhuri.tandon@crisil.com

Meera Mohan
Economic Analyst
meera.mohan@crisil.com

Media contacts

Aveek Datta
Media Relations
CRISIL Limited
M: +91 99204 93912
aveek.datta@crisil.com

Riddhi Savla
Media Relations
CRISIL Limited
M: +91 98199 57423
riddhi.savla1@crisil.com

Roma Gurnani
Media Relations
CRISIL Limited
M: +91 78754 32131
roma.gurnani@ext-crisil.com

About CRISIL Market Intelligence & Analytics

CRISIL Market Intelligence & Analytics, a division of CRISIL, provides independent research, consulting, risk solutions, and data & analytics. Our informed insights and opinions on the economy, industry, capital markets and companies drive impactful decisions for clients across diverse sectors and geographies.

Our strong benchmarking capabilities, granular grasp of sectors, proprietary analytical frameworks and risk management solutions backed by deep understanding of technology integration, make us the partner of choice for public & private organisations, multi-lateral agencies, investors and governments for over three decades.

About CRISIL Limited

CRISIL is a leading, agile and innovative global analytics company driven by its mission of making markets function better.

It is India's foremost provider of ratings, data, research, analytics and solutions with a strong track record of growth, culture of innovation, and global footprint.

It has delivered independent opinions, actionable insights, and efficient solutions to over 100,000 customers through businesses that operate from India, the US, the UK, Argentina, Poland, China, Hong Kong, UAE and Singapore.

It is majority owned by S&P Global Inc, a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide.

For more information, visit www.crisil.com

Connect with us: LINKEDIN | TWITTER | YOUTUBE | FACEBOOK | INSTAGRAM

CRISIL Privacy

CRISIL respects your privacy. We may use your personal information, such as your name, location, contact number and email id to fulfil your request, service your account and to provide you with additional information from CRISIL. For further information on CRISIL's privacy policy please visit www.crisil.com/privacy.

CRISIL
An **S&P Global** Company