

Quickonomics

August 2, 2023

Red-hot food, wild weather and global risks

What they mean for India's food economy and inflation this fiscal

Key messages

- Factors other than the monsoon have been increasingly shaping food inflation. These include extreme weather events, domestic policy and geopolitical developments. Food inflation can be high even when the monsoon is normal. A case in point is the 6%+ print in three of the past four normal monsoon years
- Uneven monsoon and El Nino are seen as key risks to food inflation this fiscal.
 - The current risk emanates from excess rain-led damage to vegetables and crops in the well-irrigated north and west India
 - The prices of cereals, pulses and, in the near-term, vegetables, remain a key monitorable. Cereals inflation has been sticky in double digits over the past six months. Looking at the current production trends, pulses are in a vulnerable position.
 - El Niño's impact has not been visible till now, and past data shows not all El Niño years are associated with high food inflation. However, it is a global risk that could hit international production and prices of commodities such as rice and edible oils
- The concern on food inflation is evident in the pre-emptive steps the government is taking, such as banning some types of rice exports, imposing stocking limits on wheat, and market intervention to improve supplies

Dark clouds hover for India's food economy. Food inflation, accounting for a sizeable 39% of the headline consumer price index (CPI), is showing signs of pressure.

Monsoon has swung from deficit in June to normal in July, bringing spells of excess rains for major crop-producing states.

Then there is the likely impact of El Niño on domestic and global food supply.

How will these actuate inflationary pressures?

We look the vulnerabilities facing India's food economy at present and assess how they may turn the inflation dial.

Table 1 gives a summary of current inflationary pressures, with the impact the monsoon has had on major crops so far.

Table 1 : How the monsoon's impact stacks up with vulnerabilities across major crops

Category	Latest inflation	Past production	Monsoon impact so far	Rain dependence
	CPI inflation, June 2023 (y-o-y %)	2022-23 (y-o-y %)	Area sown under kharif crop till 28 July 2023 (y-o-y %)	Unirrigated area (% of total)
Cereals – Rice	11.8	4.7	1.9	35.03
Pulses	10.5	0.7	-11.3	76.9
Coarse cereals	11.7	7.1	1.6	81.5^
Oilseeds	-18.1*	8.0	2.0	68.15
Total	4.8	4.7	-0.3	43.04

Adverse Neutral Benign

Note: *Refers to edible oils; ^Average of jowar, bajra and maize
Source: National Statistics Office (NSO), Ministry of Agriculture, CEIC, CRISIL

What are the present stress points in agriculture?

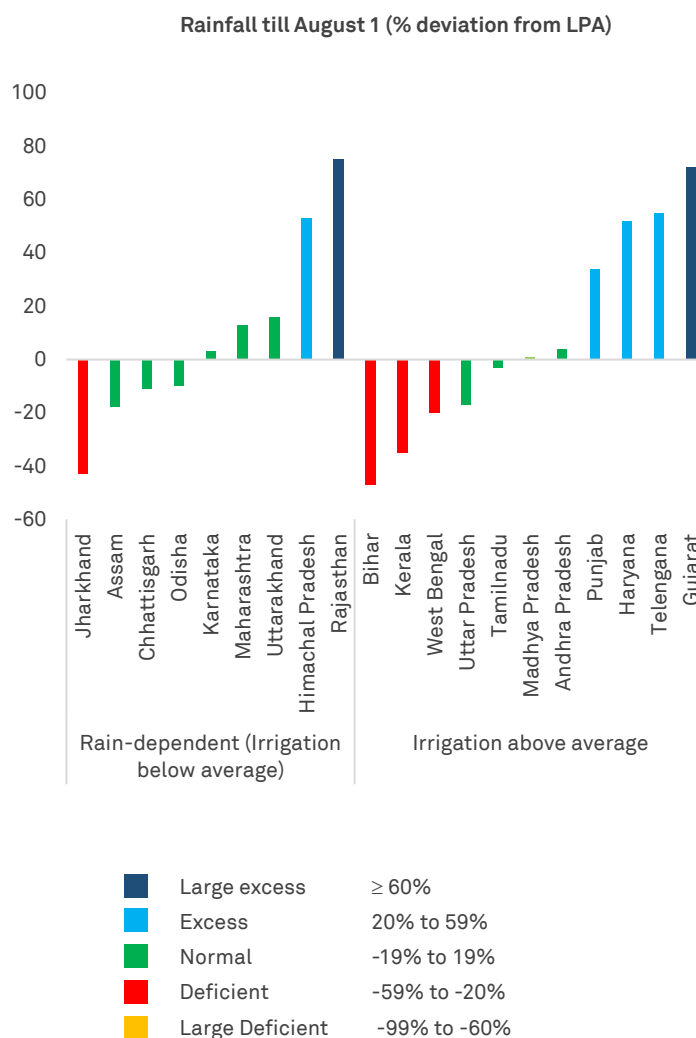
- **Inflation is showing renewed signs of pressure:** Inflation rose to 4.8% in June after falling in the previous four months and is projected to rise further in July
- **Foodgrains have been the sore point:** Wheat, rice and coarse cereals have sustained double-digit inflation over the past six months. While pulses inflation has been lower on average, recent months have seen a sharp uptick, with it reaching 10.5% in June. Notably, rice, coarse cereals, and major pulses (e.g., tur, urad and moong) are majorly produced in the kharif season between June and October
- **Further rise in food prices in July,** according to the daily prices published by the Department of Consumer Affairs. While rice, wheat, pulses, milk, and sugar prices continued on an uptrend; vegetables – that held down inflation in the past few months – also rose sharply in July
- **Government buffer stocks remain adequate:** Stocks of rice and wheat with the Food Corporation of India (FCI) remain above stipulated norms as of July. However, the stocks of rice were 22.4% lower on-year this month while wheat stocks were 5.7% higher

What has been the monsoon's impact so far?

- **Monsoon catching up:** The southwest monsoon started with a delay and stayed in deficit in June. However, it caught up well in July, and currently stands at normal (4% above long-period average, or LPA) as of August 1 (see chart 3 in Appendix)
- **Yet, it is highly volatile and uneven:** Monsoon's volatility has been higher this year compared with the normal (historical average) and the past five years (chart 4 in appendix).
- There is also a wide disparity across states. While rainfall was normal in fourteen states, it was deficient in seven, excess in five, and large excess in another two as on August 1

- **Most rain-dependent states have received adequate rainfall:** Through chart 1, we identify rainfall patterns in rain-dependent states (i.e. states having less than 50% of area under irrigation); and better irrigated states (over 50% area under irrigation)¹. Only one of the rain-dependent states (Jharkhand) is suffering from deficit rains. While Bihar, Kerala and West Bengal have deficient rainfall, they have above-average irrigation cover

Chart 1: Most of the rain-dependent states have received adequate rainfall



Note: % deviation from LPA as on August 1. Irrigation data is only available for states given in the chart.
Source: Ministry of Agriculture, IMD, CEIC, CRISIL

¹Data not available for states excluded in the chart

- **Excess rains a bigger concern right now:** This monsoon season, northwest India saw spells of intense rainfall in July. These included major crop-producers such as Punjab (among the top three producers for paddy), Rajasthan (pulses, coarse cereals and oilseeds), and Gujarat (oilseeds).
- Since excess rains happened at the onset of sowing, farmers seemed to have delayed sowing to drain excess water². It is likely to have damaged the sown crops, though official estimates on damages are awaited. According to initial estimates by the Punjab Agriculture Department, floodwater has submerged nearly 237,000 hectares of paddy fields³
- **Sowing hit by uneven rains:** As on July 28, total sowing of kharif crops was 0.3% lower on-year. While sowing for rice, oilseeds, coarse cereals and sugarcane has increased relative to the previous year, it remains 11.3% lower on-year for pulses

What are the present risks?

Monsoon's progress and distribution remain critical in the coming two months for food production and inflation. In addition, food inflation may be determined by the following swing factors this year:

- **Impact of El Niño:** The World Meteorological Organization (WMO) declared the onset of El Niño conditions in July.

El Niño has usually led to deficient rainfall in India. Since 1991, there have been six occurrences, and rainfall was deficient in five (see table 2) The last El Niño event was in 2015.

However, its impact on growth and inflation is less clear. Of the six El Niño years since 1991, agricultural gross domestic product growth has been negative in four, and retail inflation was above 6% in a mere three. As pointed out in a recent Reserve Bank of India study⁴, factors such as Indian Ocean Dipole, extreme weather events, global commodity prices, and local supply disruptions also influence agriculture and inflation outcomes

²The IMD issued an advisory to delay crop sowing: <https://www.livemint.com/news/india/agromet-advises-farmers-to-delay-kharif-crop-sowing-amid-heavy-rains-in-north-india-1168907732377.html>

³Flooded paddy fields in Punjab, Haryana to depress crop yields: <https://www.livemint.com/news/india/paddy-farmers-in-punjab-and-haryana-face-distress-as-heavy-rains-cause-submergence-of-fields-11689788765664.html>

⁴Ghosh, S. and Kaustabh (2023). *Weather Events and Their Impact on Growth and Inflation in India*. RBI bulletin, June 2023

Table 2: Mapping El Niño years with major parameters for the Indian food economy

El Niño year	Rainfall (% departure from LPA)	Agri GDP growth (y-o-y %)	Food inflation (y-o-y %)
1991	-9.0	-2.0	15.6
1997	2.0	-2.6	5.1
2002	-19.0	-6.6	2.4
2004	-13.0	0.2	2.2
2009	-23.0	-0.9	15.0
2015	-14.0	0.6	6.2

■ Adverse ■ Neutral ■ Benign

Note: Food inflation data before 2015 is based on the Consumer Price Index for Industrial Workers (CPI IW)

Source: NSO, Ministry of Agriculture, Reserve Bank of India, CEIC, CRISIL

- **Extreme weather events:** Extreme weather events such as unusual rains and heatwaves are growing 'known-unknown' risks. Last fiscal, despite a normal monsoon, food output was hit by a heatwave in March 2022 and unseasonal rains in October 2022 in March 2023. In this fiscal so far, excess rains already delayed sowing in the beginning of the kharif season. Any more such incidents risk damaging standing crop and yields
- **Global food supply:** Global food supplies face risks from weather and geopolitical developments.

El Niño is a risk to crops in other major global producers such as palm oil in Indonesia and Malaysia and rice in Thailand and Vietnam. Among these, palm oil are major imports for India

Trade restrictions on agriculture remain a risk for international food prices, with countries focusing on ensuring domestic food security. India – the largest exporter of rice and second largest of sugar – has imposed a ban on exports of broken rice and continues curbs on wheat and sugar for ensuring its food security. Russia pulling out of the Black Sea grain deal has also raised inflationary risks since Russia and Ukraine are the world's largest suppliers of wheat and sunflower oil.

Inflation remained a worry despite growing food production in past 5 years

Monsoon has been normal/above-normal at an all-India level over the past four years. Predictably, foodgrain

production has risen in these years. Even then, food inflation, as measured by CPI, remained above 6% in three of these four years (see chart 2).

This suggests factors other than monsoon are significantly influencing inflation outcomes:

- Vegetables are the most volatile component of inflation. These are affected more than cereals by extreme weather events, local supply disruptions and wastage
- Pulses inflation has been elevated in fiscal 2020 and 2021, but is less volatile and peaking at lower levels than before⁵. It is highly dependent on monsoon since only 23% of its area is under irrigation in India⁶
- Other factors such as international commodity prices, domestic policies and the lagged impact of previous year's production influence final inflation outcomes. For instance, the sharp rise in international wheat and edible oil prices post the Russia-Ukraine conflict contributed to surging inflation last fiscal

Conclusion

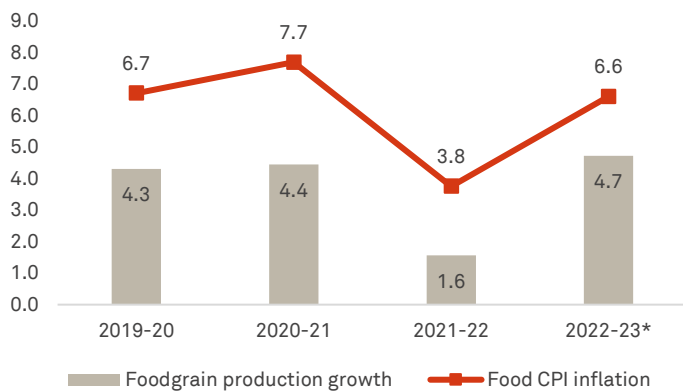
After a weak start, rains have caught up well at an all-India level, improving sowing. Yet, significant risks are on the anvil since (1) the impact of El Niño is yet to play out, (2) extreme weather events are a growing unpredictable risk, and (3) global food prices remain vulnerable to trade restrictions.

Even as the monsoon has turned normal this year, it is important to remember that food inflation was high in three of the past four years of normal monsoon. Extreme weather events, even if brief, can cause wild food price swings, especially for vegetables. Government policies and geopolitical developments are increasing their influence on domestic inflation in recent years.

Hence, a wider set of factors in addition to the monsoon's progress need to be taken into account to assess inflationary pressures in the economy.

Fingers crossed, therefore.

Chart 2: Looking back at the past four years of normal monsoon: Production grew, but inflation was elevated



Note: Crop production is for agriculture years, while inflation figures are for the respective fiscal years; *according to third advance estimates by Ministry of Agriculture
Source: NSO, Ministry of Agriculture, CEIC, CRISIL

⁵For detailed analysis refer to CRISIL Quickenomics: Taking the pulse: July 2023
⁶As on 2019-20

Appendix

Chart 3: Rainfall caught up well in July after a deficient June

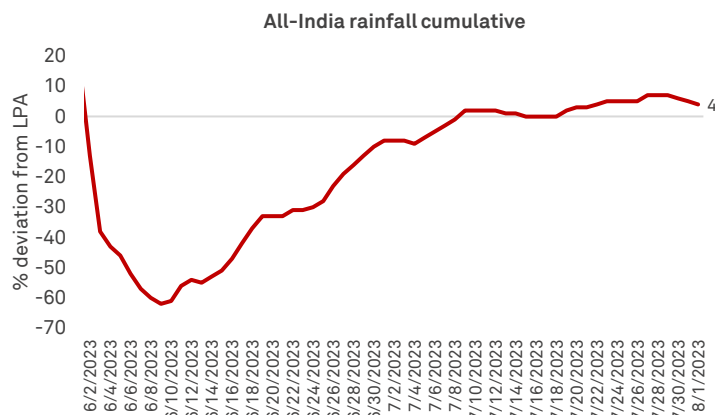
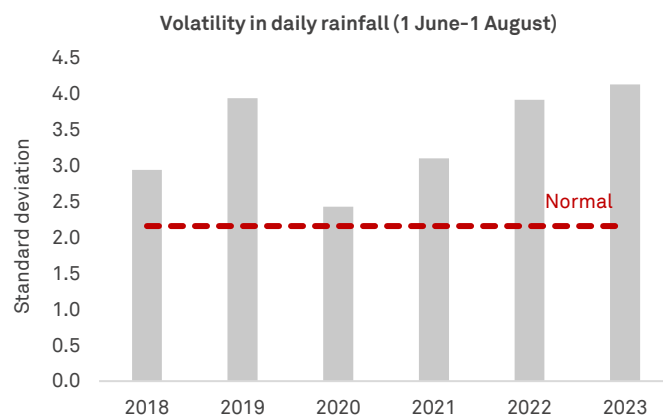


Chart 4: Rains have been more volatile this year



Source: IMD, CEIC, CRISIL

Analytical contacts

Dharmakirti Joshi
Chief Economist
dharmakirti.joshi@crisil.com

Pankhuri Tandon
Senior Economist
pankhuri.tandon@crisil.com

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