

BoB Forecasts of kharif production

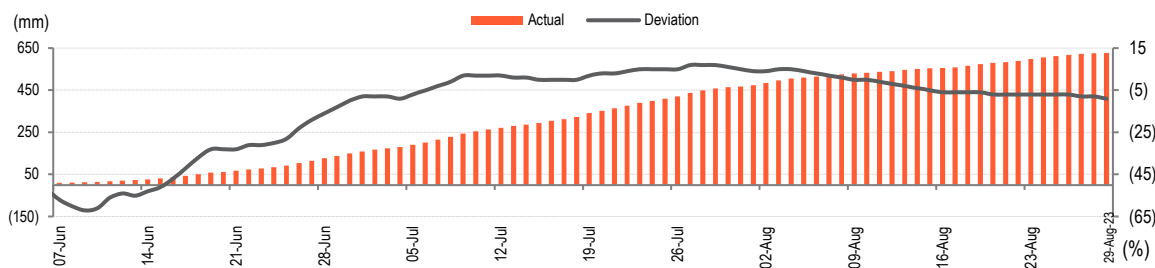
Past data indicates that over 90% of kharif sowing is completed by August end. Based on this data point we have estimated the kharif production for this year under certain assumptions, and the picture emerging from this analysis is mixed. A pickup in rice sowing has ensured that rice output is likely to improve marginally this year. This will be a relief as cereals inflation has been a concern in the last few months. On the other hand, production of pulses is estimated to fall as it looks unlikely that the sowing area will change significantly going ahead. In case of oilseeds and cash crops such as sugarcane, production is estimated to be only slightly higher than last year. This has also been reflected in domestic prices, with prices of almost all major commodities witnessing upward momentum. Swift supply side interventions from the government have helped in keeping price pressures from spiraling, but risks remain from de-anchoring of inflation expectations. We continue to maintain our inflation forecast for FY24 at 5.5%, but do see upside risks.

The foregoing analysis first looks at the state of the monsoon which is a major factor driving agricultural production. Next, the stocks of rice with the government is analyzed as it has a bearing on the price sentiment in the market which in turn gets reflected in the cereals inflation picture. At the third stage, the price movements are analyzed with focus on changes over May, which is just before the monsoon arrives. This is important as the market provides some signals on the state of the output for various crops. When there are expectations of shortfalls, it gets reflected in the spot prices even though the present stock levels are comfortable. In a way, the market prices signal expected output on most occasions given that production was normal/higher last year. Last, we provide our forecasts of kharif crops this year based on certain assumptions.

Rainfall deficit increasing which is a concern and adds to negative sentiment:

The monsoon this year has played truant and after a rather satisfying month in July dropped off in August with the overall cumulative deficit now being at around 10% of LPA. The monsoon pattern has been quite erratic and while 10 met divisions have recorded deficient rainfall so far, the spread across districts has been uneven. Heavy rains in Jul’23 have been followed by arid conditions in Aug’23, and hence the crop prospects could have been affected. It is assumed here that there has been no adverse effects as that can be known only after a survey is undertaken.

Figure 1: Progress of monsoon has lost momentum

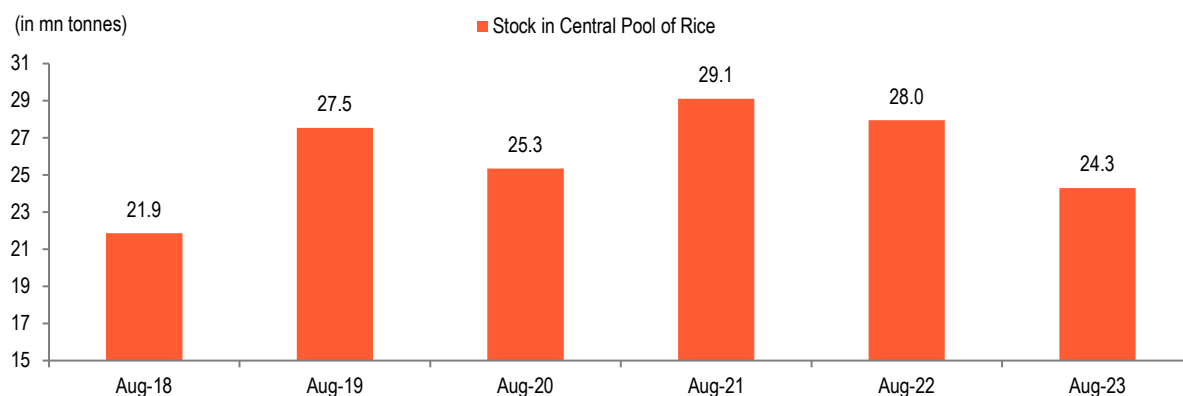


Source: CMIE, Bank of Baroda Research

Stocks of rice with the FCI steady, but lower than in the past:

What poses a concern is that though rice stocks are comfortably above the buffer norms, it is still the lowest in past 5 years (Figure 2.). The level of 24.3 mn tonnes though higher than the buffer stock norms is the lowest in the last 5 years as of August 2023. The Centre has tried to ensure that supplies remain comfortable by invoking a series of measures. These include imposing a ban on export of non-basmati white rice with effect from 20 Jul 2023, not allowing exports of basmati rice below the value of US\$1,200 per tonne and imposing a 20% export duty on parboiled rice. But as of now, the domestic prices are reflective of these ongoing tensions.

Figure 2: Rice stocks are at the lowest in past five years



Source: Department of Food and Public Distribution, Bank of Baroda Research

What signals on output come from market prices?

Prices of kharif crops do indicate to an extent output expectations. The table below gives the average domestic monthly prices of some of the leading kharif crops for the past few months.

The price picture show considerable degree of strain. We have tried to see how prices of different crops have fared both compared to last year and also since the onset of monsoon. One thing which clearly emerges is that prices have broadly moved in tandem with production. We have used the CMIE polled prices of commodities, which can be used as domestic prices and in turn gives a forward signal to capture the price-production dynamics. Following points stand out:

- For pulses, there is a clear upward pressure in prices across all categories. Within this:
 - The sharpest increase is visible in case of Tur, for which prices have increased by 37.1% in Aug'23 on a YoY basis. Since May'23 i.e. the onset of monsoon, prices have increased by 14.7%. Even the sown area till 25 Aug 2023 at 4.36 mn hectare is lower compared with 4.62 mn hectare seen last year. Further, with close to 97% sowing already completed, any sharp improvement in acreage is unlikely. This in turn might result in further increase in prices.
 - For urad and moong, considerable increase in market prices is visible, showing that the price rise in pulses is broad based. For these two categories production drop is expected to be the sharpest in 2023-24.
- In case of rice as well, price has risen considerably, noting a 9.1% jump on YoY basis and a 7% increase since the onset of monsoon. Here, production is still expected to be moderately better compared to last year, as sowing till date has been higher at 38.4mn hectare compared to 36.76 in the same period of last year. The higher prices can be linked more to the existing stocks in the market. In fact, any trade intervention by the government in the form of ban on

exports tends to generate negative sentiment on prices which then continue to increase. It can be expected that once the new crop comes in, prices would mean revert.

Table 1: Domestic price of major Kharif crops (polled mandi prices)

Crop, Rs/ Quintal	Aug-22	May-23	Jun-23	Jul-23	Aug-23	YoY Change, Aug-23	Change since monsoon: August over May
Cereals							
--Rice	2,993	3,046	3,060	3,139	3,264	9.1	7.1
--Coarse cereals							
--Maize	2,140	1,895	1,868	1,976	2,154	0.6	13.7
--Bajra	2,154	2,230	2,148	2,152	2,140	(0.6)	(4.0)
--Jowar	2,438	3,101	3,317	3,585	3,663	50.2	18.1
Pulses							
--Tur	6,493	7,765	8,427	8,531	8,903	37.1	14.7
--Urad	6,534	7,355	7,542	7,516	7,893	20.8	7.3
--Moong	6,379	7,470	7,324	7,369	7,715	20.9	3.3
Oilseeds							
--Soybean	5,696	4,850	4,779	4,726	4,776	(16.1)	(1.5)
--Groundnut	6,015	6,429	6,384	6,876	6,750	12.2	5.0
--Sesamum	10,349	12,993	12,751	14,306	14,485	40.0	11.5
--Castor	6,964	5,550	5,414	5,871	6,021	(13.5)	8.5
Cotton*	8,659	7,190	6,790	6,651	6,920	(20.1)	(3.8)
Sugarcane	4,223	294	300	310	-	(92.7)	5.5
Jute	5,842	5,287	5302	5350	5263	(9.9)	(0.4)

Source: CMIE polled prices, Bank of Baroda Research | Note: Data points in Red highlight increase in prices, *Raw cotton

- For other cereals, such as maize and Jowar, despite an expected improvement in production, prices have seen an increase primarily led by demand push inflation as well as the end of season syndrome where prices increase before the new crop comes in. Oilseeds are another area of concern where barring soybean, prices have increased across all categories. On production front, sowing has only moderated for Groundnut. However, for all other crops it remained broadly stable.

There has been some concern on availability of food products for domestic consumption due to lower production. Uneven rainfall and the threat of El-Nino has only compounded these concerns. As a result, the government has preemptively announced measures to improve domestic accessibility. These include:

- Restrictions have been placed on some categories of wheat and rice exports.
- Sugar exports too have been capped.
- On the other hand, to meet domestic demand, imports of pulses has increased by more than 100% in both value as well as volume terms in Q1FY24. Most of these imports have come from Myanmar and Australia. Small African countries such as Mozambique and Sudan have also been supplying pulses to meet India's consumption demand for the same.

Under these conditions how would the kharif crop fare?

It has been seen that the end of August accounts for around 94% to 99% of final area under cultivation for all major crops as per the trends seen in the last 3 years. It is hence possible to conjecture the final

crop on the basis of the area under cultivation based on this assumption. While the monsoon formally ends in September, there could be still some sowing taking place in September. However, past trends do indicate that the sowing has almost been completed for most crops which is a reasonable assumption to make here in this exercise.

The forecasts of crop output for various kharif products has been presented in Table 2. The trends in final area under cultivation for all crops has been extrapolated based on the progress made till August end (as of 25 Aug 2023). Further, the productivity levels have been reckoned for these crops based on past trends and juxtaposed on the current data set to have an idea of possible crop output numbers.

It is assumed that there would be no crop damages either due to excess rainfall or other extraneous factors at the time of harvest. Further, the output ranges are on the basis of static or reasonable improvement in productivity for some crops. It has been seen that the productivity levels have been range bound in the past and hence have been averaged out. For certain crops there are assumptions made on limited productivity improvements based on market information. Based on these assumptions we project the following output levels for the kharif crops. *The ranges that are provided give the conservative and optimistic limits.*

Table 2: Estimated kharif production

Crop	Production in 2021-22 (in mn tonnes)	Production in 2022-23 (in mn tonnes)	Production in 2023-24 E (in mn tonnes)
Total foodgrains (1+2)	155.36	155.12	157.2-160.7
1. Cereals	147.13	147.27	150.4-153.4
--Rice	111.00	110.03	112.7-114.2
--Coarse cereals	36.13	37.24	37.7-39.2
--Maize	22.68	23.49	24.0-25.0
--Bajra	9.78	10.27	10.8-11.0
--Jowar	1.60	1.49	1.6-1.7
--Other coarse cereals	2.07	1.99	1.3-1.5
2. Pulses	8.24	7.85	6.8-7.3
--Tur	4.22	3.43	3.22-3.27
--Urad	1.87	1.81	1.5-1.6
--Moong	1.48	1.72	1.5-1.6
--Other pulses	0.67	0.89	0.6-0.8
3. Oilseeds	23.97	25.94	26.0-27.0
--Soybean	12.99	14.98	15.5-16.0
--Groundnut	8.43	8.50	7.9-8.2
--Sesamum	0.79	0.36	0.41-0.45
--Castor	1.62	1.87	2.2-2.3
--Other oilseeds	0.01	0.02	0.02
4. Cotton*	31.12	34.35	33.6-34.0
5. Sugarcane	439.43	494.23	500.3-500.5
6. Jute\$	9.76	9.11	8.7-8.8

Source: CEIC, Bank of Baroda Research | E: Bank of Baroda Estimates | *Production in mn bales of 170 kgs, \$: production in mn bales of 180 kgs

Following observations can be made from the above table: (*growth numbers here may not tally with table as numbers have been rounded off in the table*)

- Total foodgrains production in the country is expected to be higher by around 1.2-3.1%.
- The increase in foodgrains production is led by cereals, especially rice.
- Rice production is expected to increase to 112.7-114.2 mn tonnes. This represents an increase of about 2.4-3.8% over last year.
- Production of coarse cereals is also expected to be higher. Within this, production of Bajra and Jowar is likely to see the highest increase in the range of 5-14%. Maize production, which has been showing positive sowing momentum is also expected to be higher by around 2-6%.
- For pulses, the progress in sowing has been much lower than last year and it remains a key concern area. As of 25 Aug 2023, kharif sowing for pulses was lower by 8.3% over the same period last year. Based on this, we estimate pulses production to be lower by ~12% which is the worst case scenario. A more optimistic scenario accounting for higher productivity, places overall production for pulses about 7% lower than last year.
 - Within major pulses, production of urad is expected to show the maximum decline.
 - Moong production is estimated to be 11-15% lower this year.
 - Output of tur, which is most consumed in India, is likely to be lower by 5-6%. It is to be noted here that since tur is a rain intensive crop, its production could be even lower due to deficient rains in key cultivating states.
- Production of oilseeds is likely to see a moderate increase to 26-27 mn tonnes. Within this, while output of soybean, Sesamum and castor seeds is expected to be higher, production of groundnut is likely to be lower than last year.
- For cash crops, cotton sowing has been trailing the levels of last year. We expect this deficit to reflect in the production numbers as well. This holds true for jute as well.
- On the other hand, output for sugarcane is likely to improve marginally by ~1%.

So, what is the inflation outlook?

The price-production dynamics are likely to have an impact on India's inflation trajectory. In Aug'23 prices are showing some degree of moderation, especially vegetables, which imparted a considerable shock to the Jul'23 CPI print. Government's supply side interventions have played out well in this regard. However, what poses a concern is the strain from lower production may seep into inflation expectations.

Our inflation forecast for FY24, in the base case stands at 5.5%, with Q2 at 6.7%, Q3 at 5.9% and Q4 at 4.9%. Risks remain tilted to the upside. However, major deviation is not anticipated as in previous episodes (FY16, FY17) where pulses inflation have been in double digits, headline inflation was comforted by a range bound core, which in the current scenario seems more favourable.

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