

# SOUTH-WEST MONSOON OUTLOOK 2023

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IMD's 2nd LRF indicates normal monsoon in 2023 season; pick-up in rainfall in July 2023 crucial for timely kharif sowing

MAY 2023





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*IMD's second LRF indicated a normal monsoon rainfall of 96%+/-4% of LPA in Jun-Sep 2023*

*Given below-normal rainfall forecast for June 2023, a healthy pick-up of rains in July 2023 is crucial to support timely sowing of kharif crops*

*ICRA expects agri GVA growth at 2.5% in FY2024, with development of El Nino posing downside risks*



- The India Meteorological Department's (IMD's) second long range forecast (LRF) for the 2023 South-West monsoon season indicated a normal rainfall at 96% +/- 4% of the Long Period Average (LPA), with an upward revision in the forecast probability for normal rainfall vis-à-vis the 1st LRF.
- Given the forecast of below-normal rains in June 2023 (<92% of LPA), the IMD implicitly expects the rainfall in July-September 2023 to exceed 97% of LPA to attain a normal rainfall of 96% in the entire season, in spite of concerns related to development of El Nino conditions.
- While the reservoir storage recorded a mild YoY dip to 31% of live capacity at Full Reservoir Level (FRL) on May 25, 2023, it remains above the historical average of 25% in the last 10 years, which can mitigate the slightly late onset of monsoon and below-normal rains expected in June 2023.
- The non-irrigated area in the country constitutes ~49% of the net sown area, which is essentially dependent upon monsoon. Accordingly, a timely pick-up in rainfall in July 2023 (important month for sowing) is crucial to support the sowing of rain-fed crops such as rice, pulses, cotton, etc.
- Interestingly, the rabi output for most major crops (barring pulses) were revised upwards in the 3rd Advance Estimates (AE) vis-à-vis the 2nd AE for 2022-23 despite the unseasonal heavy rainfall in March 2023 that was expected to have dampened yields and/or quality of the output.
- ICRA projects the GVA growth of agriculture, forestry and fishing at ~2.5% in FY2024, with unseasonal rains seen in April-May 2023 and potential El Nino posing key downside risks. ICRA estimates a downside of upto 50 bps to our GDP growth forecast of 6.0% for the current fiscal.
- The CPI-food and beverage inflation may soften to 4.5% in Q1 FY2024 from 5.8% in Q4 FY2023, supported by a high base. However, the possibility of sub-par rainfall in the coming months could affect kharif yields and winter sowing, thereby exerting upside risk to food inflation in H2 FY2024.

# IMD's 2nd LRF predicts normal rainfall at 96% +/-4% of LPA in 2023 monsoon season

EXHIBIT: IMD's forecasts for monsoon seasonal (June-September) rainfall

Year	IMD April Forecast	IMD June Forecast	Actual Rainfall (% of LPA)
2016	106% +/- 5% of LPA	106% +/- 4% of LPA	97%
2017	96% +/- 5% of LPA	98% +/- 4% of LPA	95%
2018	97% +/- 5% of LPA	97% +/- 4% of LPA	91%
2019	96% +/- 5% of LPA	96% +/- 4% of LPA	110%
2020	100% +/- 5% of LPA	102% +/-4% of LPA	109%
2021	98% +/- 5% of LPA	101% +/-4% of LPA	99%
2022	99% +/-5% of LPA	103% +/-4% of LPA	106%
2023	96% +/- 5% of LPA	96% +/-4% of LPA	

LPA rainfall over country as a whole on data of 1971-2020 is 87 cm; Source: IMD; ICRA Research

EXHIBIT: Probability forecasts for monsoon seasonal rainfall

Category	Rainfall Range (% of LPA)	Forecast Probability (%)	
		1st LRF	2nd LRF
Deficient	<90	22	20
Below Normal	90-95	29	25
Normal	96-104	35	43
Above Normal	105-110	11	11
Excess	>110	3	1

Source: IMD; ICRA Research

- Notwithstanding concerns regarding the development of El Nino conditions, the IMD's second stage forecast for the South-West monsoon rainfall for 2023 (June-September) has placed the volume of rainfall at 96% +/- 4% of the LPA, indicating a normal monsoon (96%-104% of LPA as per IMD's classification). This is in line with the IMD's 1st LRF for the Southwest monsoon season released in April 2023, wherein it had predicted the rainfall at 96% +/-5% of LPA.
- In terms of the forecast probability, the IMD has revised the likelihood of a normal rainfall upwards to 43% (from 35% predicted earlier in the 1st LRF), while that for excess and deficient rainfall has been reduced to 1% (vs. 3%) and 20% (vs. 22%), respectively. In addition, the probability of above-normal rainfall has been retained at 11%.
- The IMD's Monsoon Mission Climate Forecast System (MMCFS) depicts high probabilities for the development of El Nino conditions during the upcoming monsoon season of 2023. Nevertheless, while Indian Ocean Dipole (IOD) conditions are neutral over the Indian Ocean at present, the latest Climate models forecast indicates the development of positive IOD conditions during June-September 2023, which could be favourable for the South-West monsoon rainfall.

# Below-normal rainfall expected in June 2023; spatial distribution in SW monsoon season quite uneven

EXHIBIT: IMD's forecasts over homogenous zones of the country in 2023

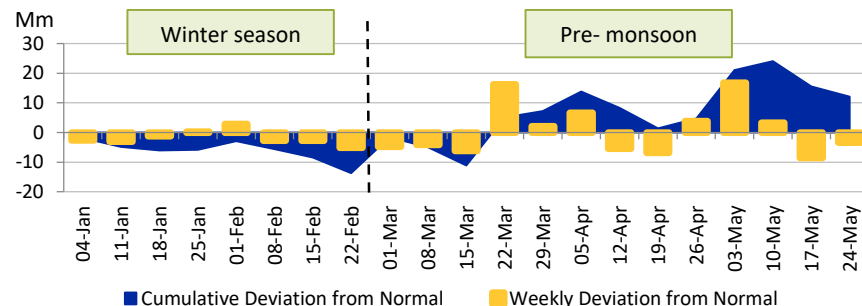
Rainfall Category	North-West India		Central India		South Peninsula		North-East India		Monsoon Core Zone (MCZ)*	
	Range (% of LPA)	Forecast Probability (%)	Range (% of LPA)	Forecast Probability (%)	Range (% of LPA)	Forecast Probability (%)	Range (% of LPA)	Forecast Probability (%)	Range (% of LPA)	Forecast Probability (%)
Below Normal	<92	50	<94	34	<94	28	<94	30	<94	34
Normal	92-108	30	94-106	37	94-106	42	94-106	38	94-106	36
Above Normal	>108	20	>106	29	>106	30	>106	32	>106	30

\*MCZ comprises most of the rainfed agriculture areas in the country; Source: IMD; ICRA Research

- The IMD has predicted rainfall to be below-normal in June 2023 (<92% of LPA), amidst below-LPA rainfall over most the country. In contrast, some areas of the South peninsula, Northwest India, extreme North India and Northeast India are projected to receive normal to above-normal rainfall during that month.
- Moreover, the outlook for the spatial distribution of rainfall during Jun-Sep 2023 appears to be quite uneven. Several areas of North-west India, adjoining East Central India, and Northern parts of the peninsular India are projected to witness normal to below-normal rainfall during the season. However, most areas of South Peninsular India, some areas of East Central India as well as many areas of North-east and extreme north India are likely to receive normal to above normal rainfall.
- **The below normal projection of rainfall in June 2023 implies that the IMD implicitly expects rainfall to exceed 97% of LPA during July-September 2023, in spite of concerns related to development of El Nino conditions. Given that July is the most important month for sowing, rainfall in that month would be critical, notwithstanding the expectations of the sub-normal rainfall in June. The non-irrigated area in the country constitutes around 49% of the net sown area, which is essentially dependent upon monsoons; accordingly, a timely pick-up in rainfall in July 2023 is crucial to support the sowing of rain-fed crops such as rice, pulses, cotton, soyabean, etc., particularly in the Monsoon Core Zone, which comprises most of the rainfed agriculture areas in the country.**

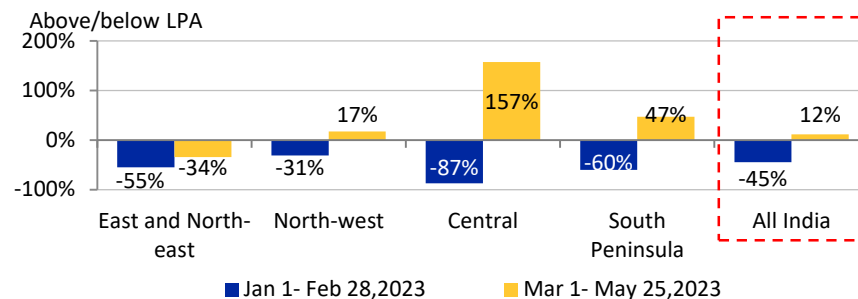
# Excess unseasonal rainfall witnessed during April-May 2023

EXHIBIT: Cumulative and weekly rainfall deviation from normal



Source: IMD; CEIC; ICRA Research

EXHIBIT: Region-wise rainfall distribution of winter and pre-monsoon seasons

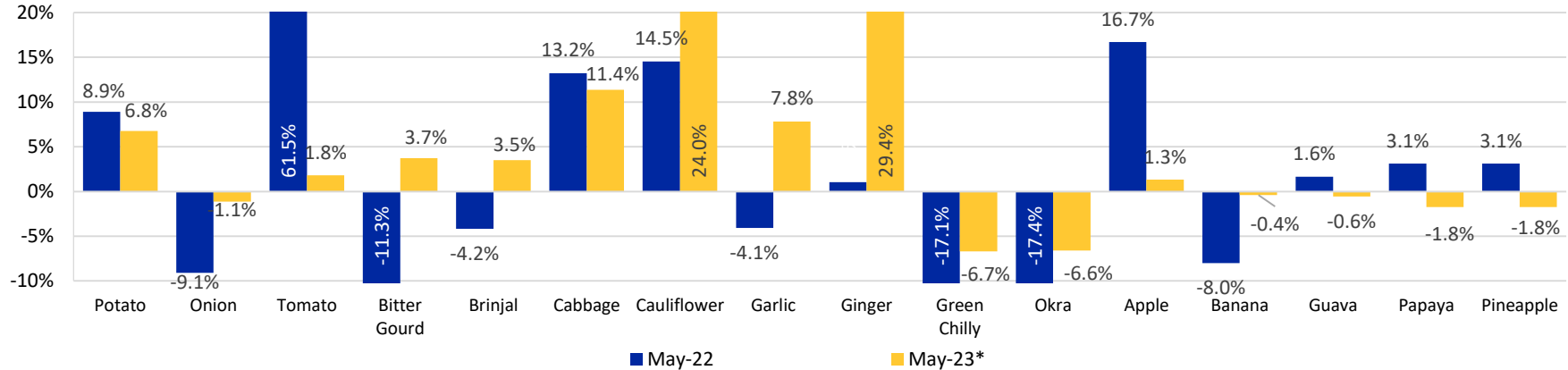


Source: IMD; CEIC; ICRA Research

- After witnessing deficient rainfall during the winter season (Jan-Feb 2023), at just 55% of the LPA, India has received excess rainfall at 112% of LPA during the pre-monsoon season (Mar-May) so far (till May 25, 2023), as per the IMD's classification. This led to a moderation in temperatures during this period.
- In terms of the region-wise distribution, all the sub-regions (apart from East and North-east: 66% of LPA; deficient) witnessed above-LPA rainfall during this period, with Central India recording significantly excess rainfall at 257% of LPA so far (till May 25, 2023), followed by the South Peninsula (147% of LPA) and North-west India (117% of LPA).
- On a monthly basis, above-LPA rainfall was recorded in April 2023 (105% of LPA), after a gap of two years. Moreover, the actual rainfall during April 2023 was within the IMD's forecast range of 88-112% of LPA. The IMD had predicted rainfall to be normal at 91-109% of LPA during May 2023, and it currently stands closer to the upper range of the forecast (at 108% of LPA) up to May 25, 2023.

# Consequently, MoM uptick in prices of perishables has been moderate in May 2023, amidst lower-than-normal temperatures

EXHIBIT: MoM trends in retail prices of perishables

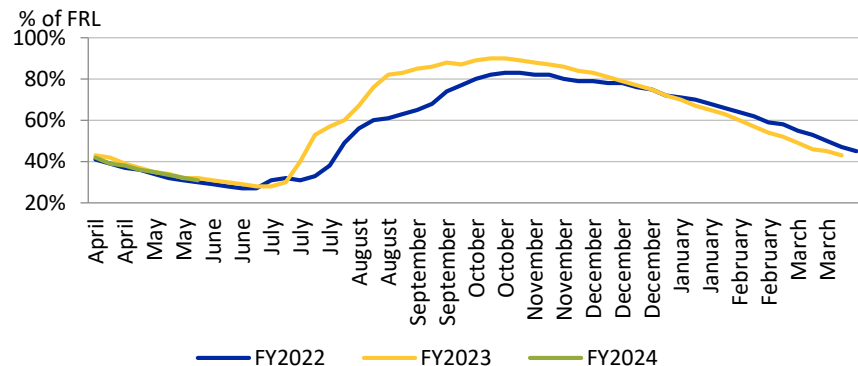


\*Till May 25, 2023; Source: DCA; CEIC; ICRA Research

- As per the early data for May 2023, the uptick in the average retail prices of some perishable items such as vegetables (potato, tomato, cabbage, etc), fruits (apples, mango, pineapple, etc.), milk, etc. has been moderate, as compared to May 2022, owing to the excess rainfall and lower-intensity heatwaves recorded in the month so far (till May 25, 2023).
- Based on these trends, the YoY CPI food inflation is likely to have eased in May 2023, aided by the sustained high base (+8.0% in May 2022).

# Reservoir storage remains above historical levels, auguring well for timely onset of kharif sowing

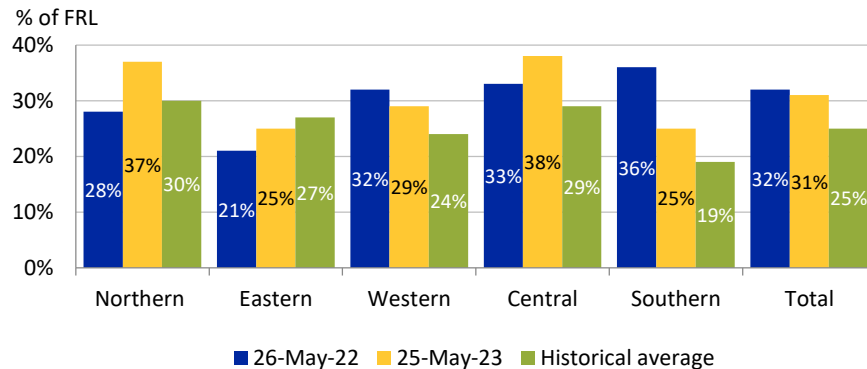
**EXHIBIT: Reservoir storage levels as percentage of Live Capacity at Full Reservoir Level (FRL)**



Source: Central Water Commission (CWC); CEIC; ICRA Research

- The all-India reservoir storage levels stood at 31.0% of the live capacity at FRL as on May 25, 2023, mildly below the year-ago level of 32.0% of FRL.
- However, the levels remain comfortably above the historical average of the last 10 years (25% of FRL), which augurs well for the timely onset of kharif sowing activity, especially as El Nino conditions may develop only around the second half of the monsoon season.

**EXHIBIT: Region-wise reservoir storage levels**

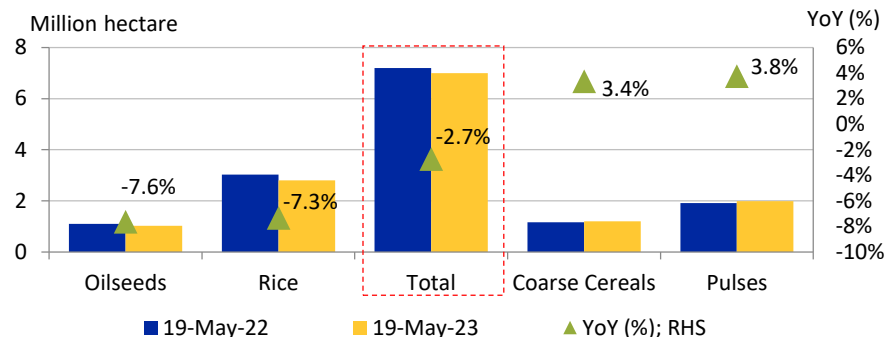


Source: CWC; CEIC; ICRA Research

- The region-wise distribution is mixed, with storage being lower than the year-ago levels two of the five sub-regions as on May 25, 2023, including the western (29% vs. 32%) and southern (25% vs. 36%) regions. In contrast, the storage in the northern (37% vs. 28%), eastern (25% vs. 21%) and central (38% vs. 33%) regions were higher vis-à-vis the year-ago levels.
- Barring the East, all other regions recorded higher reservoir storage relative to their respective historical levels as on May 25, 2023.

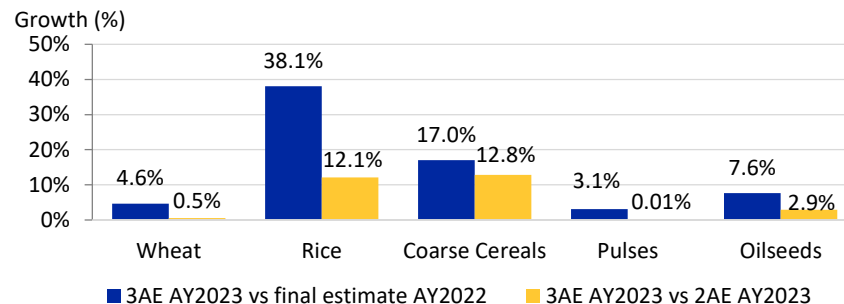
# Rabi output estimates revised upwards as per third advance estimates despite unseasonal rains in March 2023

EXHIBIT: YoY trends in summer sowing



Source: Department of Agriculture, Cooperation and Farmers Welfare, ICRA Research

EXHIBIT: Trends in rabi output\* as per 3rd AE of crop production for AY2023



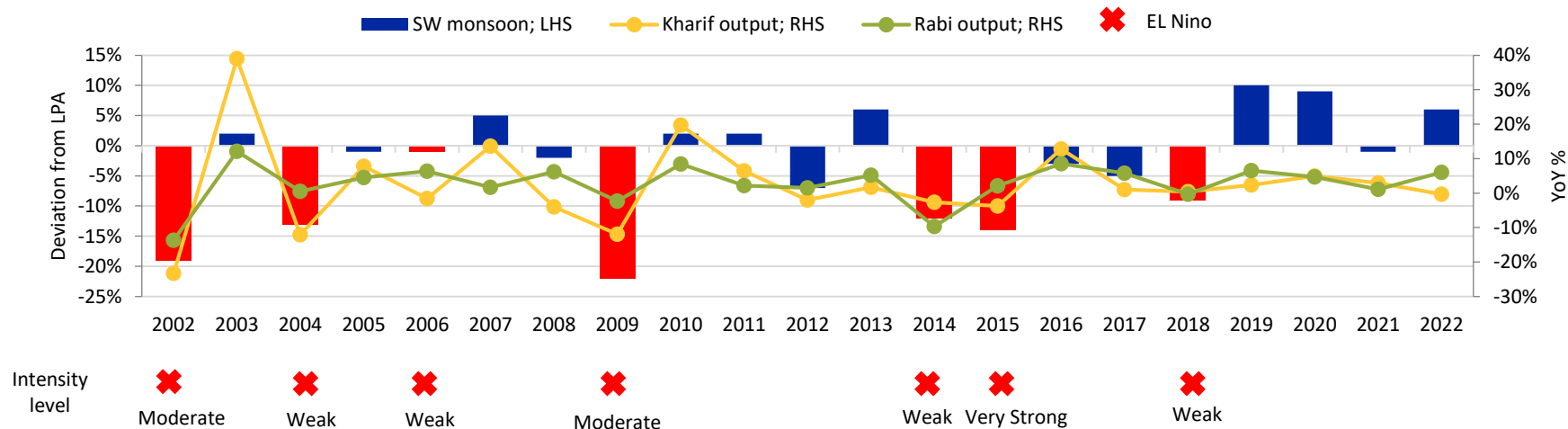
Agricultural Year (AY) runs from July 1 to June 30; \*includes data for summer crops; Source: Department of Agriculture, Cooperation and Farmers Welfare, ICRA Research

- The cumulative area sown under summer crops has declined by 2.7% YoY so far in May 2023 (till May 19, 2023), led by a YoY dip in oilseeds (-7.6%) and rice (-7.3%), while coarse cereals (+3.4%) and pulses (+3.8%) have exceeded the year-ago levels
- Moreover, the 3rd AE of crop production for the Agricultural Year 2023 (AY2023) indicated a robust trend in the production of rabi crops (including summer crops) relative to the Final Estimates for AY2022. The output of oilseeds (+7.6%), pulses (+3.1%), wheat (+4.6%), rice (+38.1%; record-high production) and coarse cereals (+17.0%) are expected to exceed the year-ago level.
- Notably, the rabi output for most major crops (barring pulses) has undergone an upward revision in the 3rd AE vis-à-vis the 2nd AE for AY2023, including rice (+2.7 MT), coarse cereals (+2.0 MT), wheat (+0.6 MT), and oilseeds (+0.4 MT). **This is quite surprising given that the unseasonal heavy rainfall and hailstorms across parts of North and Central India in March 2023 were expected to have dampened yields and/or the quality of the output.**



# 20-year trends suggest negative impact of El Nino on monsoons irrespective of intensity level

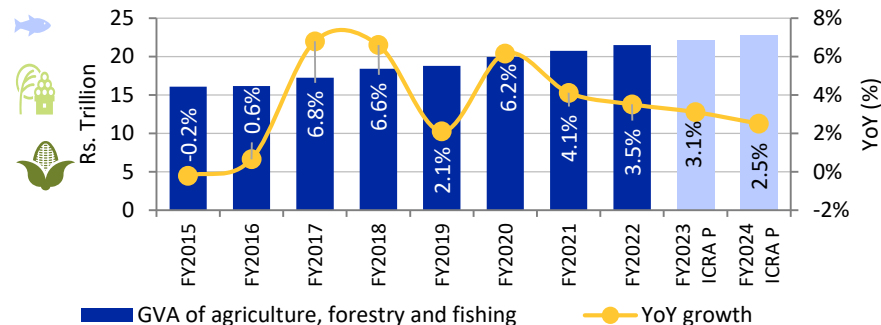
EXHIBIT: Vulnerability of Monsoon during El Nino years, and consequent impact on kharif and rabi production



- Over the last two decades, India has witnessed El Niño conditions in seven years (2002, 2004, 2006, 2009, 2014, 2015 and 2018) with varied intensity levels.
- The deficit rainfall from LPA in the South-west monsoon ranged between 1% to as high as 22%, which resulted in a YoY decline in the kharif output (foodgrains + oilseeds) in the El Niño years in the range of 1.6% (2006) to 23.3% (2002). Moreover, rabi output (foodgrains + oilseeds) contracted in four of such seven years particularly in 2002 (-13.7%), 2009 (-2.3%), 2014 (-9.7%) and 2018 (-0.3%) on a YoY basis.
- Even if weak El Niño conditions develop in the second half of the season, the likelihood of a sub-par South-West monsoon rainfall in 2023 appears high, based on trends for the last 20 years, which could weigh on the eventual crop yields and output.**

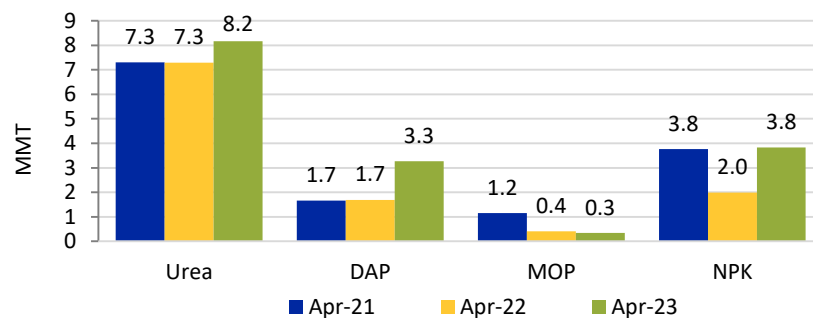
# El Nino poses downside risks to ICRA's agri GVA growth estimate of 2.5% in FY2024

EXHIBIT: Annual GVA of agriculture, forestry and fishing at 2011-12 prices



Source: NSO; ICRA Research

EXHIBIT: Trend in availability of key fertilisers in India

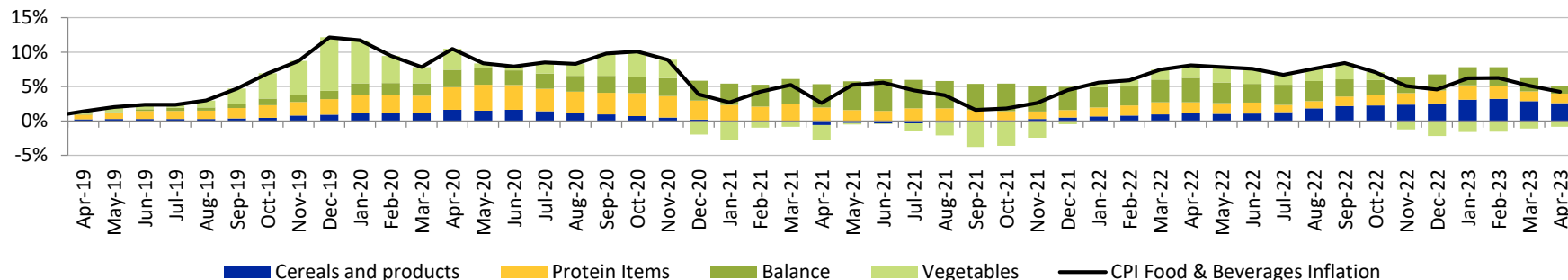


Source: DoF; ICRA Research

- As per the IMD's forecast released on May 16, 2023, the monsoon onset over Kerala is likely to be on June 4, 2023, which is slightly later than the normal date of arrival. Subsequently, the IMD has indicated the monsoon rainfall to be normal at 96% of LPA +/-4% in June-Sep 2023 in its second LRF, with below 92% of LPA rains in June 2023.
- While a slightly late onset and below-normal rainfall in June 2023 can be mitigated by the seasonally healthy reservoir levels, a normal distribution of rainfall in July 2023 will be critical to ensure timely sowing of kharif crops over the majority of the country. Moreover, the development of El Nino conditions during the season may impact the overall trends of rainfall, agricultural output and rural income.**
- The unseasonal heavy rainfall seen in Apr-May 2023 so far and the advent of potential El Nino conditions during Aug-Sep 2023 pose key downside risks to the agri GVA in FY2024. ICRA projects the agri GVA growth at 3.0% in H1 FY2024, followed by a lower 2.0% rise in H2 FY2024. This is likely to translate into a full-year growth of 2.5% in the GVA of agriculture, forestry and fishing in FY2024.**

# Upside risks to food inflation in H2 FY2024 on account of El Nino

EXHIBIT: Composition of food and beverages inflation (YoY)



Source: NSO; CEIC; ICRA Research

- While food inflation may soften in Q1 FY2024, supported by a high base (+7.8% in Q1 FY2023), the possibility of a sub-par monsoon rainfall and its impact on kharif yields and winter sowing pose upside risks to the CPI inflation trajectory over the next few quarters. **Overall, ICRA expects the average CPI inflation to moderate to a four-year low of 5.3% in FY2024 from 6.7% in FY2023.**
- By the time the MPC meets at its next scheduled meeting in June 2023, the monsoon rains would be underway, giving a little more clarity into the likely outcome for the first half of the monsoon season. This information would feed into whether the MPC's CPI inflation projection of 5.2% for FY2024 needs to be modified. While the moderation expected in the CPI inflation during Q1 FY2024 would support a reduction in the MPC's inflation forecast for FY2024, concerns about the monsoon may dissuade the Committee from the same.



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# Analytical Contact Details

Name	Designation	Email	Contact Number
Aditi Nayar	Chief Economist, and Head- Research and Outreach	<a href="mailto:aditin@icraindia.com">aditin@icraindia.com</a>	0124- 4545 385
Rahul Agrawal	Senior Economist	<a href="mailto:rahul.agrawal@icraindia.com">rahul.agrawal@icraindia.com</a>	022 – 6114 3425
Aarzoo Pahwa	Senior Associate Economist	<a href="mailto:aarzoo.pahwa@icraindia.com">aarzoo.pahwa@icraindia.com</a>	0124 – 4545 835
Tiasha Chakraborty	Senior Associate Economist	<a href="mailto:tiasha.chakraborty@icraindia.com">tiasha.chakraborty@icraindia.com</a>	0124- 4545 848
Anusha Jindal	Associate Economist	<a href="mailto:anusha.jindal@icraindia.com">anusha.jindal@icraindia.com</a>	0124 – 4545 399





ICRA

# Business Development/Media Contact Details

Name	Designation	Email	Contact Number
L Shivakumar	Chief Business Officer	<a href="mailto:shivakumar@icraindia.com">shivakumar@icraindia.com</a>	022-61693304
Neha Agarwal	Head – Research Sales	<a href="mailto:neha.agarwal@icraindia.com">neha.agarwal@icraindia.com</a>	022-61693377
Rohit Gupta	Head Business Development - Infrastructure Sector	<a href="mailto:rohitg@icraindia.com">rohitg@icraindia.com</a>	0124-4545340
Vivek Bhalla	Head Business Development - Financial Sector	<a href="mailto:vivek.bhalla@icraindia.com">vivek.bhalla@icraindia.com</a>	022-61693372
Vipin Saboo	Head Business Development – Corporate Sector - West & East	<a href="mailto:vipin.saboo@icraindia.com">vipin.saboo@icraindia.com</a>	022-61693348
Shivam Bhatia	Head Business Development – Corporate Sector - North & South	<a href="mailto:shivam.bhatia@icraindia.com">shivam.bhatia@icraindia.com</a>	0124-4545803
Naznin Prodhani	Head – Media & Communications	<a href="mailto:communications@icraindia.com">communications@icraindia.com</a>	0124-4545860





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