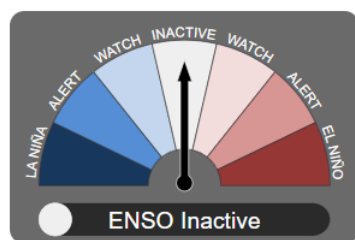


Agriculture



Source: Australian BOM

El Nino left a scare on Indian Agri sector; La Nina possibility to lift hope

The prediction of La Nina (above normal monsoon) in FY25 offers hope for the revival in the agricultural income and consequently the rural economy, following the onset of El Nino in FY24, as cautioned in our [Mar'23 report](#). In this report, we have highlighted the possibility of a La Nina event in FY25 and its positive impact on agriculture and related companies. We also discussed the damage done by the occurrence of El Nino.

- IMD has indicated weakening of El Nino conditions and further highlighted the likely development of La Niña conditions during the second half of the monsoon season. The 2024 southwest monsoon is expected to be 106% of LPA.
- Historically, La Niña has bolstered India's Kharif and Rabi production through enhanced rainfall and rising reservoir levels, leading to notable increases in production. Consequently, leading to better farm profitability
- Improved monsoon forecasts typically drive higher revenue and increased volumes in the agrochemical and fertilizer business. La Niña events historically correlate with better revenue growth during those years. Also, consumer companies with higher rural salience witnessed a healthy growth during this period.
- El Nino manifested in FY24, resulting in below-normal monsoon (down 5.6% of LPA) conditions, low reservoir levels (at 35% of total capacity), decreased crop production, and a rise in food inflation.

LA Nina with above-normal monsoon in offing...

- La Nina, or "little girl" in Spanish, is characterized by cooler than average sea surface temperatures in the central and eastern equatorial Pacific Ocean. It is typically associated with stronger monsoons in India.
- Nonetheless, the ENSO movement (El Niño-Southern Oscillation) alone does not define the Indian monsoon; other indications, such the Indian Ocean Dipole (IOD), are also necessary. Stronger monsoons are known to be favored by Positive IOD conditions, wherein the western Indian Ocean is warmer than the eastern Indian Ocean.
- IMD has indicated **weakening of El Nino conditions** and further highlighted the **likely development of La Niña conditions** during the second half of the monsoon season.
- As per IMD, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean and the latest Climate model forecasts indicate that the positive IOD conditions are likely to develop during the latter part of the southwest monsoon season.
- IMD forecasted the **2024 southwest monsoon** seasonal rainfall over the country as a whole to **be above normal at 106%** of LPA, with a model error of $\pm 5\%$. The LPA for the seasonal rainfall over the country as a whole for the period 1971-2020 is 87 cm.

...to ease out El Nino's impact on Indian Agriculture

- As discussed earlier, La Nina leads to above normal monsoon, which bodes well for the Indian agriculture industry.
- Historically, during moderate to strong La Nina forecasts, the kharif production in India has witnessed an increase ranging from high single digits to high teens. A similar trend is observed for Rabi production, with a notable increase, driven by rising reservoir levels following La Nina conditions.
- For instance, Kharif crop production in strong La Nina years of FY71/FY76/FY89/FY08/FY11 witnessed a production increase of 10%/20%/17%/8%/12%. Similarly, for Rabi crops, production for FY71/FY76/FY89/FY08/FY12 registered a growth of 5%/6%/11%/4%/7%.
- Extrapolating the similar trend, this year, with the onset of La Nina, we expect a healthy crop production growth in the Kharif and Rabi season, thereby uplifting farm income post the weak season in FY23.
- Over the last seven decades, La Nina occurred in 24 years till FY22, of which, 46% was under weak category, followed by Strong (29%) and moderate (25%).
- We have taken six key crops into our sample size to evaluate the change in production during the La Nina years. Six crops include rice, wheat, pulse, groundnut, cotton, and sugarcane.
- On an aggregate, more than 33% of the years experienced over 10% production growth, with groundnut witnessing the highest number of such years (14). The overall positive production growth mix over the 24 years was 69%, demonstrating a strong correlation with La Nina's above-normal monsoon characteristics and a favorable agriculture scenario. (refer Exhibit 8).
- This will in turn result in easing of food and cost inflation, improvement in crop production, and thereby, the overall farm profitability.
- A better farm profitability scenario will drive more purchases of fertilizers and agrochemicals, thereby boosting the company's growth in these sectors.

La Nina's boon to domestic agrochemical and fertilizer companies

- A better monsoon forecast generally leads to robust revenues and increased volumes for the agrochemical and fertilizer business. Historically, the La Nina event has led to a better revenue growth during the La Nina year.
- We analyzed the domestic business of agrochemicals companies such as UPL, Coromandal International (CRIN), PI Industries (PI), Rallis India, Godrej Agrovet (GoAgro), Insecticide India, Bayer, and Dhanuka Agritech.
- During the La Nina years, the agrochemical companies have witnessed a healthy double-digit growth. For instance, FY11/FY12/FY21/FY22 witnessed revenue growth of 26%/12%/19%/14%.
- The fertilizer companies have performed much better during the La Nina years. For instance, CRIN and Chambal Fertilizers (CHMB), on an aggregate, grew by 29%/45%/30%/21% in FY11/FY12/FY19/FY22.
- We expect a similar kind of revenue growth for FY25, considering that the previous year was challenging for agrochemicals/fertilizers due to factors such as El Nino, a global inventory glut for agrochemical companies, raw material volatility, and reductions in subsidy for fertilizer companies.

Consumer companies with high rural salience to benefit

- Improving farm profitability will have a positive correlation with consumer companies that have a significant presence in rural areas.
- We have analyzed companies with higher rural salience such as DABUR, Britannia (BRIT), Colgate-Palmolive (CLGT), Emami (HMN), HUL (HUVR), and Tata Consumer (TATACONS). As the numbers suggest, these companies reported healthy revenue growth during the last few La Nina years such as in FY11/FY12/FY18/FY19/FY21/FY22, which witnessed a growth of 14%/16%/7%/10%/16%/11%. (Refer Exhibit 11)
- HUVR in its 4QFY24 result commentary has also indicated an optimistic mid-term outlook, led by better monsoons and improving macro-economic indicators

El Nino and its impact in India

- As we cautioned in our [Mar'23 Agriculture report](#), El Nino caused India's southwest monsoon to be among the lowest/weakest in the previous five years (down 5.6% of LPA), with unequal rainfall distribution.
- August'23 witnessed record monthly rainfall deficiency (-36% of LPA), while other monsoon months such as June/July/Sep'23 received 91%/113%/113% rainfall of LPA.
- Out of 36 subdivisions in India, 7 subdivisions received deficient rainfall, i.e., less than 20% of LPA. These subdivisions include parts of Karnataka, Kerala, Uttar Pradesh, Bihar, Jharkhand, West Bengal, and North East India.
- This has impacted the country's water reservoir level to decline to almost 35% of the total storage capacity. The Southern region was majorly impacted, where six major reservoirs have gone dry and another 20 are at single-digit capacity.
- The El Nino phenomenon has also adversely impacted the food grains production, declining by 1% (a decline after eight years). The last decline occurred in FY16 (last El Nino period), with a decrease of 2.3%. Crop production experienced a decline on a broader level, with exceptions such as Rice (0.9% up YoY), Jowar (4.5%), and Small Millets (11.7%), which saw an increase.
- [According to the meteorological agency](#), temperatures in most parts of the nation will be above average from April through June. This, coupled with depleting water reservoir levels, will have a negative impact on the current rabi harvest, especially in southern areas, as well as summer crops in UP, Bihar, West Bengal, Chhattisgarh, Andhra Pradesh, Karnataka, and Tamil Nadu.
- However, there is light at the end of this tunnel, as both the IMD and global meteorological agencies predict the weakening of El Nino in the equatorial Pacific Ocean and an increasing likelihood of La Nina during the the second half of Monsoon CY24, i.e., August to September-24.

View

- Should the La Nina event in FY25 result in above-normal monsoons, it would bring relief to the Indian agriculture sector. The probabilities by the agencies and their forecasting accuracies based on historic trend (recent prediction of El Nino in FY24 which materialized) suggest a possible occurrence of the event in FY25.

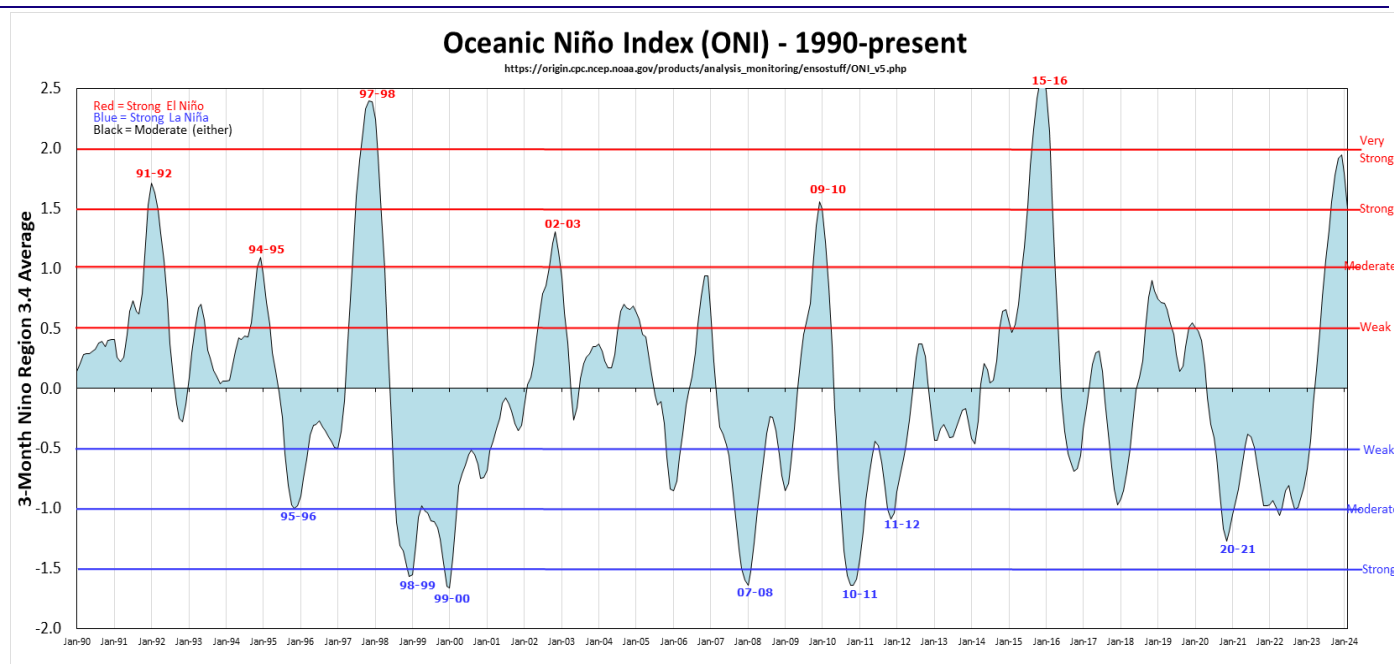
- The Indian agrochemical and fertilizer companies may witness healthy growth, led by higher sowing and production of crops supporting the demand. FY24 was a muted year for these companies with lower gross margins and volume. So, the favorable impact of La Nina can lead to appreciation in the prices of these companies. We believe this will be an opportunity to look into fundamentally strong companies.
- PI/CRIN are our top picks in the agrochemical/fertilizer space and any negative impact on the performance of the company can be a good opportunity to build positions in both the companies.
- In the Fertilizer space, we have a BUY rating on CRIN. In the Agrochemicals space, we have a BUY rating on PI and a Neutral rating on UPLL and GOAGRO.

Exhibit 1: El Nino and La Nina event years and intensity since 1951-52

El Niño - 27				La Niña - 25		
Weak - 11	Moderate - 7	Strong - 5	Very Strong - 4	Weak - 11	Moderate - 6	Strong - 7
1952-53	1951-52	1957-58	1972-73	1954-55	1955-56	1973-74
1953-54	1963-64	1965-66	1982-83	1964-65	1970-71	1975-76
1958-59	1968-69	1987-88	1997-98	1971-72	1995-96	1988-89
1969-70	1986-87	1991-92	2015-16	1974-75	2011-12	1998-99
1976-77	1994-95	2023-24		1983-84	2020-21	1999-00
1977-78	2002-03			1984-85	2021-22	2007-08
1979-80	2009-10			2000-01		2010-11
2004-05				2005-06		
2006-07				2008-09		
2014-15				2016-17		
2018-19				2017-18		
				2022-23		

Source: [GGWeather](#), MOFSL

Exhibit 2: Oceanic Niño Index historic trend



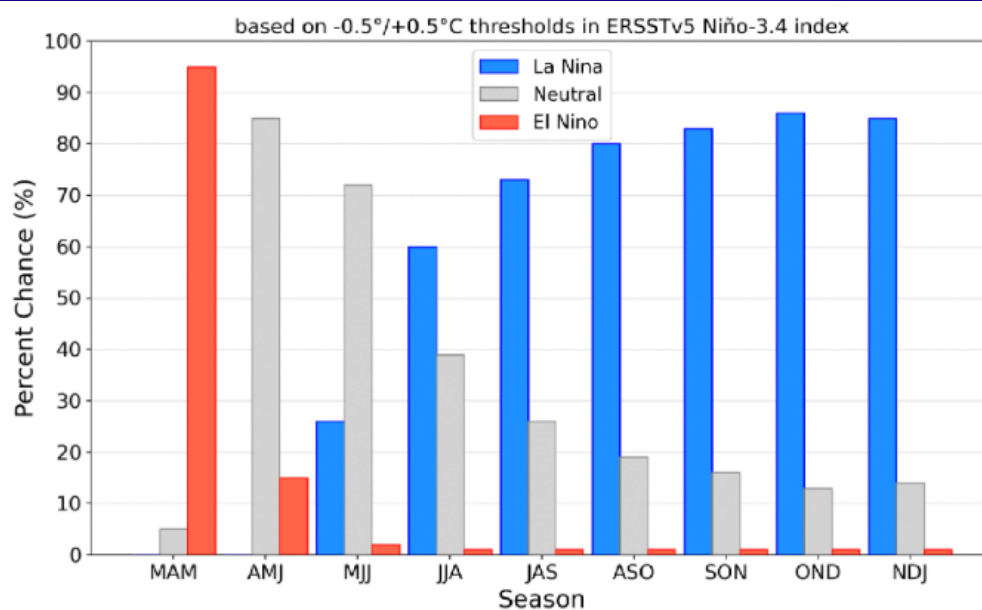
Note: The ONI has become the de-facto standard that NOAA use for classifying El Niño and La Niña events in the eastern tropical Pacific.

Source: NOAA, MOFSL

Exhibit 3: Droughts and Flood during El Nino and La Nina Events

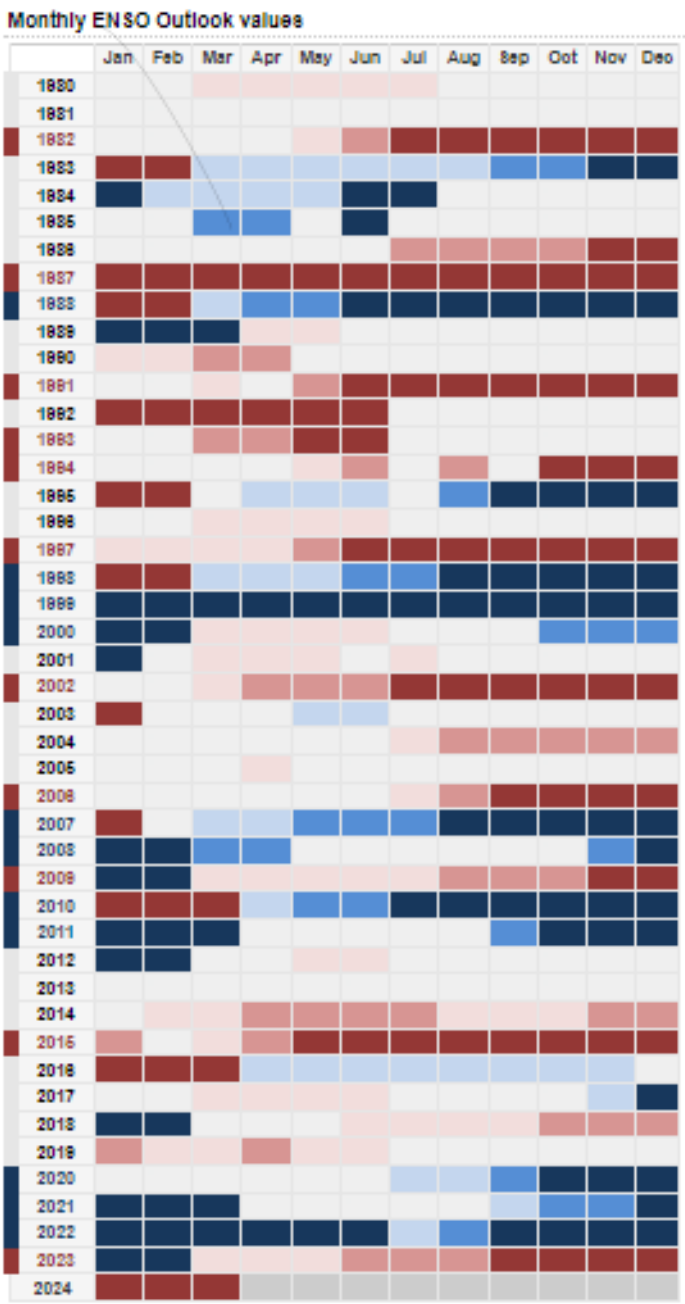
El Nino years	Event	La Nina years	Event	Neutral years
1969-70		1970-71	Floods	1966-67
1972-73	Drought	1971-72	Floods	1967-68
1977-78		1973-74		1968-69
1982-83	Drought	1974-75		1976-77
1987-88	Drought	1975-76	Floods	1978-79
1991-92		1988-89	Floods	1979-80
1992-93	Drought	1996-97		1980-81
1993-94		1998-99		1981-82
1994-95		1999-2000	Floods	1983-84
1997-98		2000-01		1984-85
2002-03	Drought	2007-08	Floods	1985-86
2004-05	Drought	2008-09	Floods	1986-87
2006-07		2010-12		1989-90
2009-10	Drought	2016-17		1990-91
2014-16	Drought	2017-18		1995-96
2018-19		2020-21		2001-02
2023-24		2021-23		2003-04
				2005-06

Source: Research Paper by R. Bhatla (Institute of Science, Banaras Hindu University)

Exhibit 4: Official NOAA CPC ENSO Probabilities (issued in Apr'24)

Source: NOAA, MOFSL

Exhibit 5: Australian BOM Monthly ENSO Forecast value



Legends

	El Niño WATCH
	El Niño ALERT
	EL NIÑO
	INACTIVE
	La Niña WATCH
	La Niña ALERT
	LA NIÑA

Verification of the ENSO Forecast system found that for El Niño and La Niña events:

1. About 50% of the time a WATCH was reached, an ENSO event subsequently occurred; and
2. About 70% of the time an ALERT was reached, an ENSO event subsequently occurred.

Source: Australian BOM

Exhibit 6: Kharif crops production was healthy during La Nina years

Year	Kharif				Rabi				Total			
	Area	Production	Yield	Δ production %	Area	Production	Yield	Δ production %	Area	Production	Yield	Δ production %
1970-71	82.36	68.92	837	10%	41.96	39.5	941	5%	124.32	108.42	872	8%
1973-74	84.12	67.84	806	8%	42.42	36.83	868	-7%	126.54	104.67	827	2%
1975-76	83.15	73.89	889	20%	45.03	47.14	1047	6%	128.18	121.03	944	15%
1983-84	84.14	89.23	1,060	20%	47.02	63.14	1343	4%	131.16	152.37	1162	12%
1988-89	82.03	95.64	1,166	17%	45.64	74.28	1628	11%	127.67	169.92	1331	13%
1995-96	73.6	95.12	1,292	-4%	47.42	85.3	1799	-3%	121.02	180.42	1491	-4%
1998-99	73.99	102.91	1,391	2%	51.18	100.69	1967	8%	125.17	203.6	1627	5%
1999-00	73.24	105.51	1441	4%	49.87	104.29	2091	6%	123.11	209.8	1704	5%
2000-01	75.22	102.09	1357	-6%	45.83	94.73	2067	-1%	121.05	196.81	1626	-5%
2007-08	73.58	121	1644	8%	50.49	109.77	2174	4%	124.07	230.78	1860	6%
2010-11	72.42	120.9	1669	12%	54.25	123.6	2278	3%	126.67	244.5	1930	7%
2011-12	72.08	131.27	1821	9%	52.67	128.01	2430	7%	124.75	259.29	2078	8%
2020-21	72.44	150.58	2079	2%	57.35	160.17	2793	2%	129.8	310.74	2394	2%
2021-22*	72.99	156.04	2138	3%	57.54	159.68	2775	-1%	130.53	315.72	2419	1%

*Fourth Advance Estimates

Source: Agricoop, MOFSL

Exhibit 7: Productions of key crops during LA Nina years

La Nina	Rice		Wheat		Pulses		Groundnut		Cotton		Sugarcane	
Years	Production	YoY Δ %	Production	YoY Δ %	Production	YoY Δ %	Production	YoY Δ %	Production	YoY Δ %	Production	YoY Δ %
1970-71	42.22	4%	23.83	19%	11.82	1%	6.11	19%	4.76	-14%	126.4	-6%
1971-72	43.07	2%	26.41	11%	11.09	-6%	6.18	1%	6.95	46%	113.6	-10%
1973-74	44.05	12%	21.78	-12%	10.01	1%	5.93	45%	6.31	10%	140.8	13%
1974-75	39.58	-10%	24.1	11%	10.02	0%	5.11	-14%	7.16	13%	144.3	2%
1975-76	48.74	23%	28.84	20%	13.04	30%	6.76	32%	5.95	-17%	140.6	-3%
1983-84	60.1	28%	45.48	6%	12.89	9%	7.09	34%	6.39	-15%	174.1	-8%
1984-85	58.34	-3%	44.07	-3%	11.96	-7%	6.44	-9%	8.51	33%	170.3	-2%
1988-89	70.49	24%	54.11	17%	13.85	26%	9.66	65%	8.74	37%	203	3%
1995-96	76.98	-6%	62.1	-6%	12.31	-12%	7.58	-6%	12.86	8%	281.1	2%
1998-99	86.08	4%	71.29	7%	14.91	15%	8.98	22%	12.29	13%	288.7	3%
1999-00	89.68	4%	76.37	7%	13.42	-10%	5.25	-42%	11.53	-6%	299.3	4%
2000-01	84.98	-5%	69.68	-9%	11.08	-17%	6.41	22%	9.52	-17%	296	-1%
2005-06	91.79	10%	69.35	1%	13.38	2%	7.99	18%	18.5	13%	281.2	19%
2007-08	96.69	4%	78.57	4%	14.76	4%	9.18	89%	25.88	14%	348.2	-2%
2008-09	99.18	3%	80.68	3%	14.57	-1%	7.17	-22%	22.28	-14%	285	-18%
2010-11	95.98	8%	86.87	8%	18.24	24%	8.26	52%	33	37%	342.4	17%
2011-12	105.3	10%	94.88	9%	17.09	-6%	6.96	-16%	35.2	7%	361	5%
2016-17	109.7	5%	98.51	7%	23.13	42%	7.46	11%	32.58	9%	306.1	-12%
2017-18	112.76	3%	99.87	1%	25.42	10%	9.25	24%	32.81	1%	379.9	24%
2020-21	124.37	5%	109.59	2%	25.46	11%	10.24	3%	35.25	-2%	405.4	9%
2021-22*	130.29	5%	106.84	-3%	27.69	9%	10.11	-1%	31.2	-11%	431.8	7%

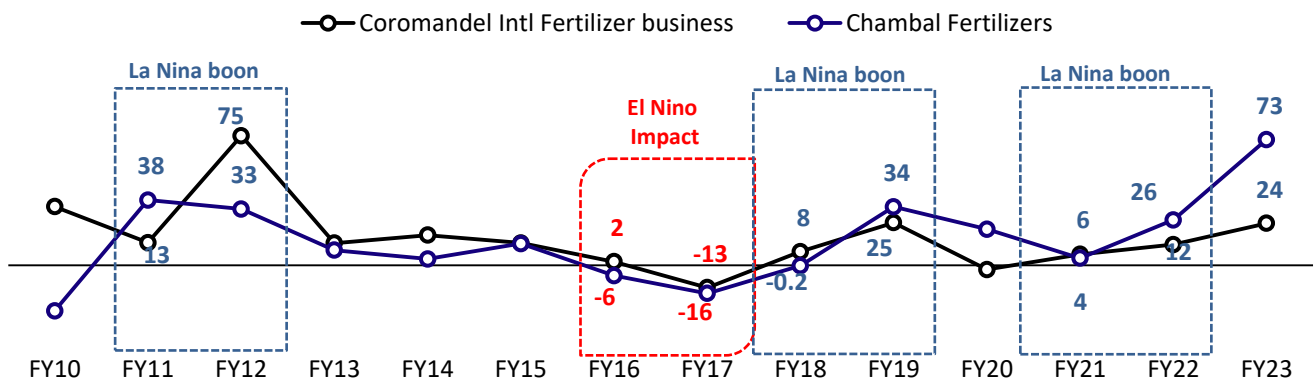
*Fourth Advance Estimates

Source: Agricoop, MOFSL

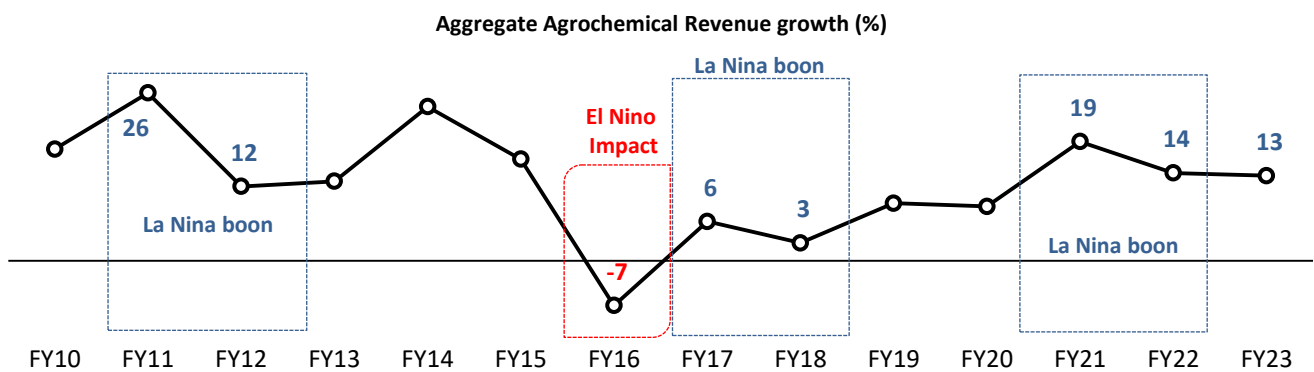
Exhibit 8: Crop-wise change in production trend over the last 24 years of La Nina Event

% Δ in production> Crops (year count)	>10%	5-10%	0-5%	-5-0%	<-5%	>10%	5-10%	0-5%	-5-0%	<-5%
Rice	5	5	9	1	4	21%	21%	38%	4%	17%
Wheat	7	6	5	3	3	29%	25%	21%	13%	13%
Pulse	7	3	7	1	6	29%	13%	29%	4%	25%
Groundnut	14	0	2	1	7	58%	0%	8%	4%	29%
Cotton	8	5	2	1	8	33%	21%	8%	4%	33%
Sugarcane	6	3	6	4	5	25%	13%	25%	17%	21%
Total	47	22	31	11	33	33%	15%	22%	8%	23%
						69%			31%	

Source: MOFSL

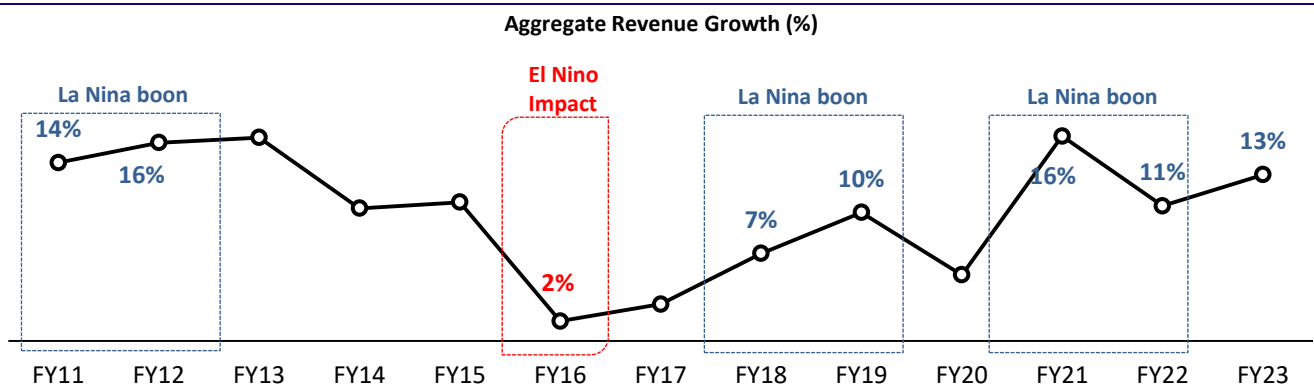
Exhibit 9: Healthy Revenue growth (%) for Indian Fertilizer companies during La Nina

Source: MOFSL

Exhibit 10: Revenue growth (%) for Indian Agrochemical companies increased during La Nina events

Note: Aggregate includes India business of companies such as UPL, CRIN (CP), PI (CP), Rallis, GoAgro, Dhanuka, Bayer, and Insecticide India.

Source: MOFSL

Exhibit 11: Revenue growth (%) for Consumer companies with high rural salience increased during the La Nina event

Note: Aggregate includes companies such as DABUR, BRIT, CLGT, HMN, HUVR, TATACONS

Source: MOFSL

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Explanation of Investment Rating	
Investment Rating	Expected return (over 12-month)
BUY	>=15%
SELL	< - 10%
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UNDER REVIEW	Rating may undergo a change
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Nainesh Rajani

Email: nainesh.rajani@motilaloswal.com

Contact: (+65) 8328 0276

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Grievance Redressal Cell:

Contact Person	Contact No.	Email ID
Ms. Hemangi Date	022 40548000 / 022 67490600	query@motilaloswal.com
Ms. Kumud Upadhyay	022 40548082	servicehead@motilaloswal.com
Mr. Ajay Menon	022 40548083	am@motilaloswal.com

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