REPORTS & SERVICES OFFERING

1) REPORTS

-DAILY , WEEKLY ,BI-WEEKLY & MONTHLY PRICE OUTLOOK REPORTS FOR THE BELOW COMMODITIES

- EDIBLE OILS & OILSEEDS
  - SOY ,MUSTARD,SUN, PALM OIL
- GRAINS
  - CORN, WHEAT, BARLEY
- SOFTS
  - SUGAR,COCOA
- DAIRY
  - MILK,MILK POWDER

2) SERVICES

- CROP SURVEY
- MARKET INTELLIGENCE FOR ABOVE C0MMODITIES
- RISK MANAGEMENT POLICY
- HEDGING POLICY
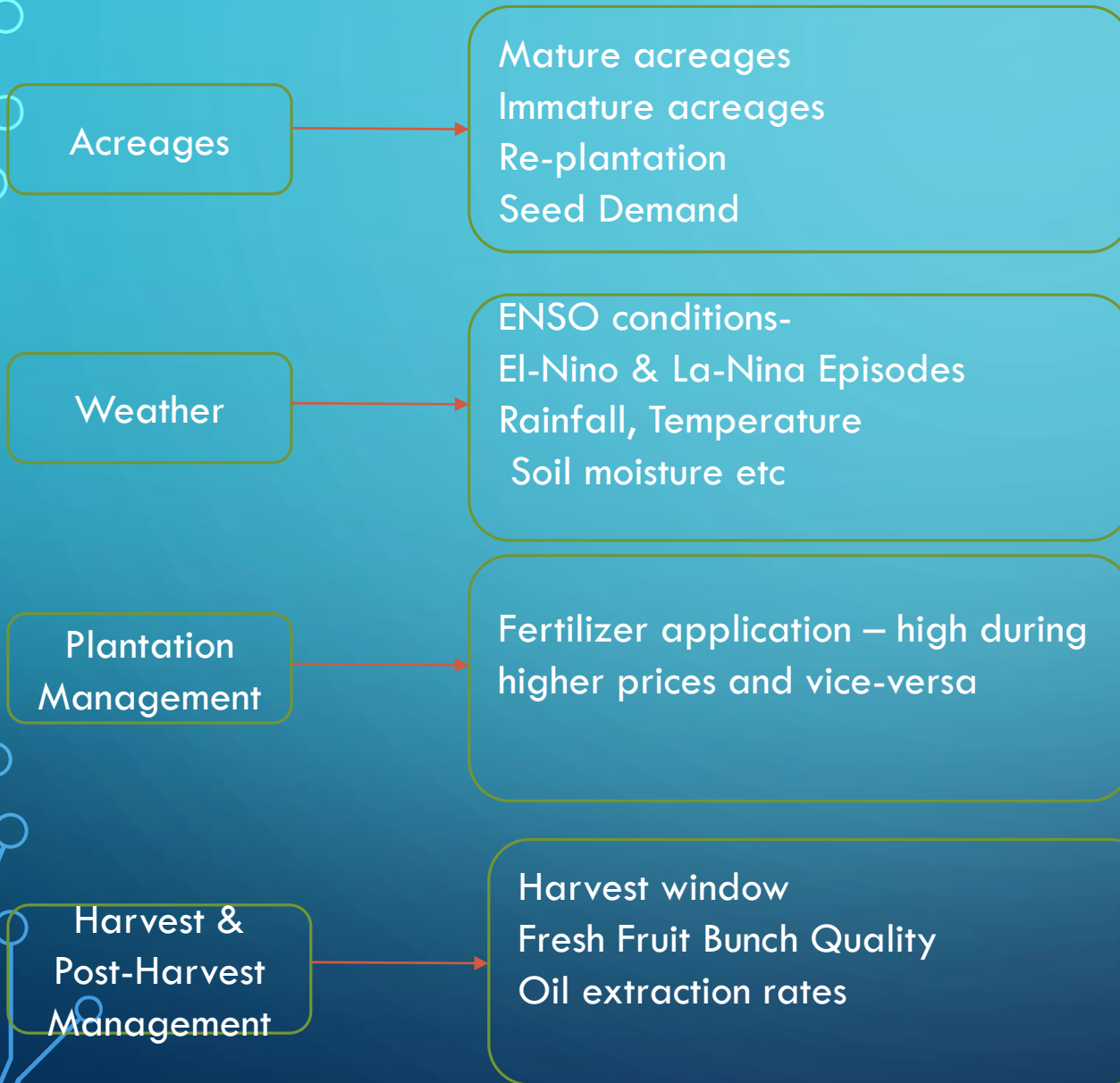
3) ONE TIME PROJECTS RELATED TO AGRI-BUSINESS

ANALYSIS OF FUNDAMENTALS IN VEG OILS WITH FOCUS ON PALM OIL

CONTENTS

- Drivers of Supply & Demand

- Malaysian AYP and numbers

- Indonesian AYP and numbers

- Action in other oils

- Price Outlook

DRIVERS OF SUPPLY IN PALM OIL

Acreages

Mature acreages
Immature acreages
Re-plantation
Seed Demand

Weather

ENSO conditions-
El-Nino & La-Nina Episodes
Rainfall, Temperature
 Soil moisture etc

Plantation Management

Fertilizer application – high during higher prices and vice-versa

Harvest & Post-Harvest Management

Harvest window
Fresh Fruit Bunch Quality
Oil extraction rates

Other Factors:

-Government Policy

DRIVERS OF DEMAND IN PALM OIL
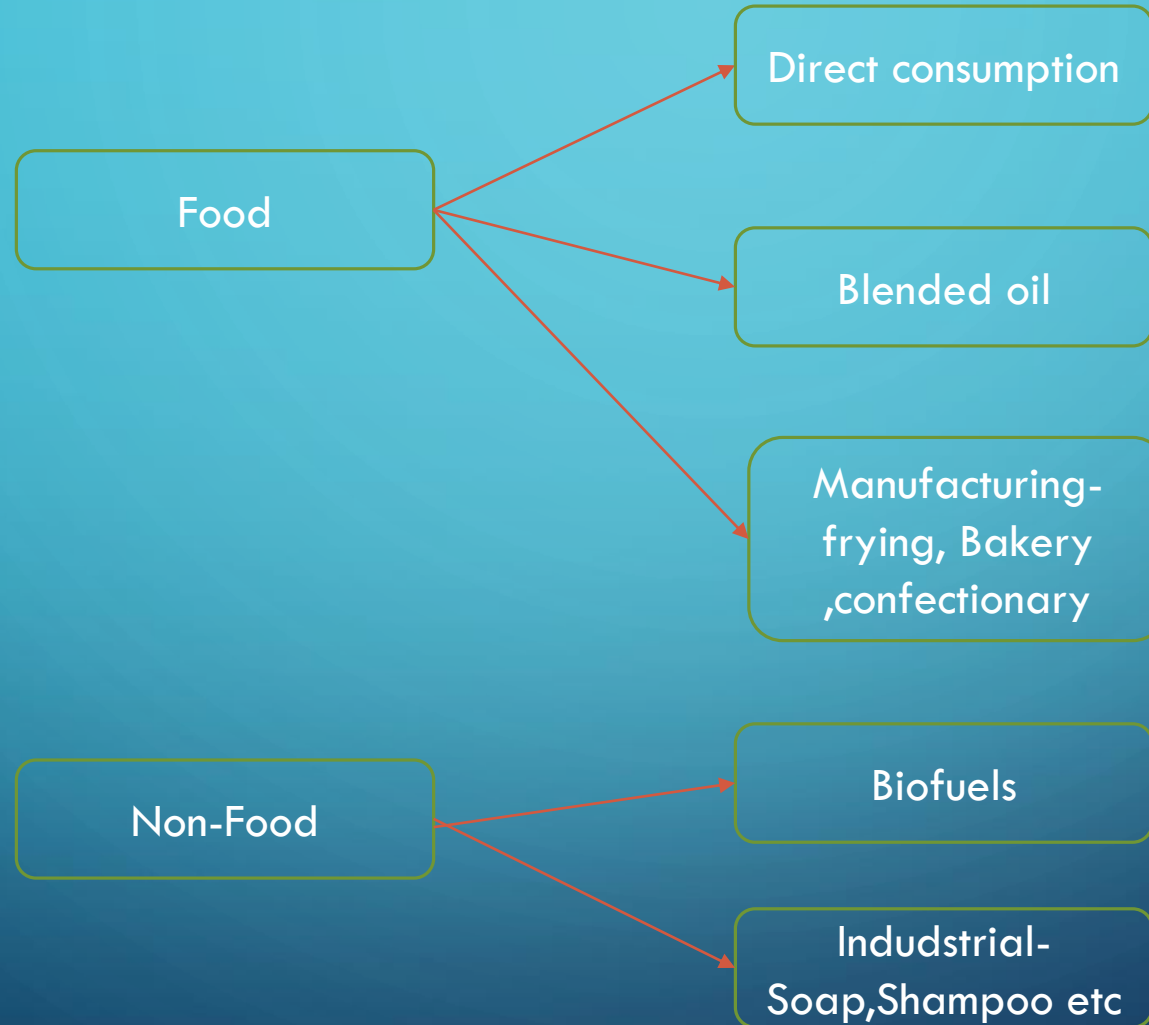
Food

- Direct consumption
- Blended oil
- Manufacturing-frying, Bakery ,confectionary

Non-Food

- Biofuels
- Indudstrial- Soap,Shampoo etc

CRUDE PALM OIL FUTURES (CONTINUOUS: CURRENT CONTRACT IN FRONT) · 1M · MYX   ● D   O 4151 H 4425 L 3500 C 3706 −436 (−10.53%)

Palm Oil Price-MYR per MT- Monthly Avg

Parameters	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021/22
Weather	WL	ME	SL	ML	Neutral	Neutral	WE	SE	WL	WL	WE	Neutral	ML	ML
Area Harvested (Mln Ha)	15.19	16.00	17.00	18.00	18.63	19.54	20.37	21.37	22.08	22.84	23.41	24.10	24.51	25.18
Production (Mln MT)	44.32	46.22	49.22	52.31	56.29	59.13	62.00	58.85	65.17	70.56	74.17	73.04	73.08	73.83
Stocks(Mln MT)	6.25	6.42	8.27	9.48	9.48	9.61	10.84	8.80	10.22	12.87	14.90	15.86	15.16	16.82

WL-Weak La-Nina, ML-Moderate La-Nina,SL-Strong La-Nina, WE-Weak El-Nin , SE-Strong El-Noino ,ME-Moderate EL-NIno
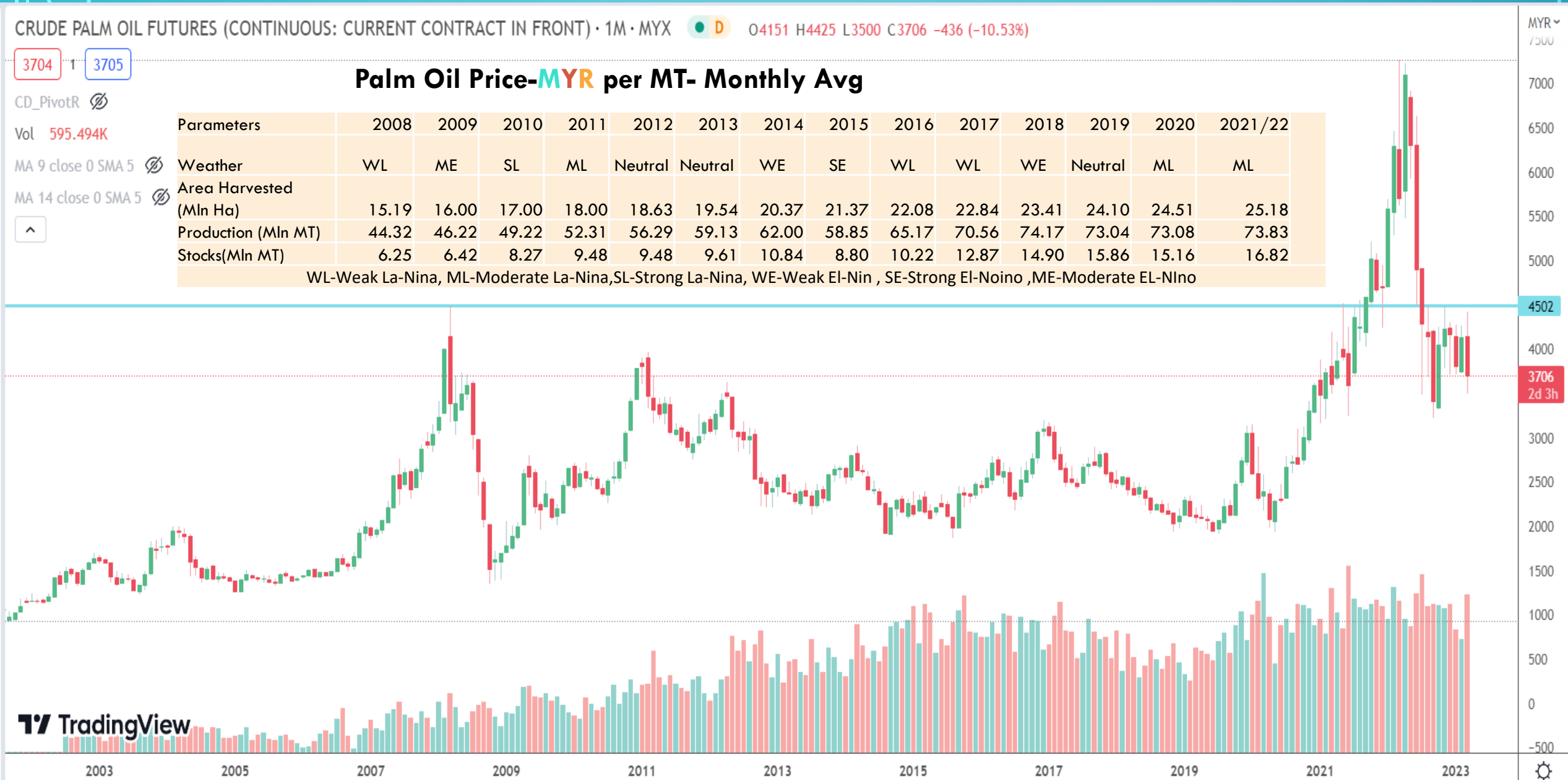
CRUDE PALM OIL FUTURES (CONTINUOUS: CURRENT CONTRACT IN FRONT) · 1M · MYX   ● D   O 4151 H 4425 L 3500 C 3703 −439 (−10.60%)

- Price action was bearish or weak between 2008 to 2019
- Price forming lower highs and higher lows since 2008 resulting in a triangle formation
- Prices tried to break upside in Nov'2019 . However, Pandemic halted the move partially but the bull move continued through out
- Steady rise in volume indicates improved participation in the form of Hedgers, Speculators and explosion of Derivative instruments for Hedging

MALAYSIA AYP

Year	Mature Acreage in the beginning of the year (Million Ha)	Total Year Production (Milion MT)	Yield (MT/ha)
2013	4.28	19.22	4.41
2014	4.35	19.67	4.35
2015	4.53	19.96	4.26
2016	4.69	17.32	3.56
2017	4.86	19.92	3.98
2018	5.00	19.52	3.82
2019	5.11	19.86	3.83
2020	5.19	19.14	3.67
2021	5.22	18.10	3.46
2022	5.23	18.45	3.59
2023	5.14	?	?

Year	Mature Acreages share	Immature Acreages Share	
2013	86.55%	13.45%	
2014	86.96%	13.04%	**Mature acreages are going up where as immature acreages going down showing signs of slowdown in acreage expansion in Malaysia `**
2015	86.11%	13.89%	
2016	87.16%	12.84%	
2017	87.95%	12.05%	
2018	88.72%	11.28%	**Sustainability enforcement by governments preventing aggressive expansion**
2019	88.42%	11.58%	
2020	89.20%	10.80%	
2021	89.25%	10.75%	
2022	90.35%	9.65%	

OIL EXTRACTION RATES
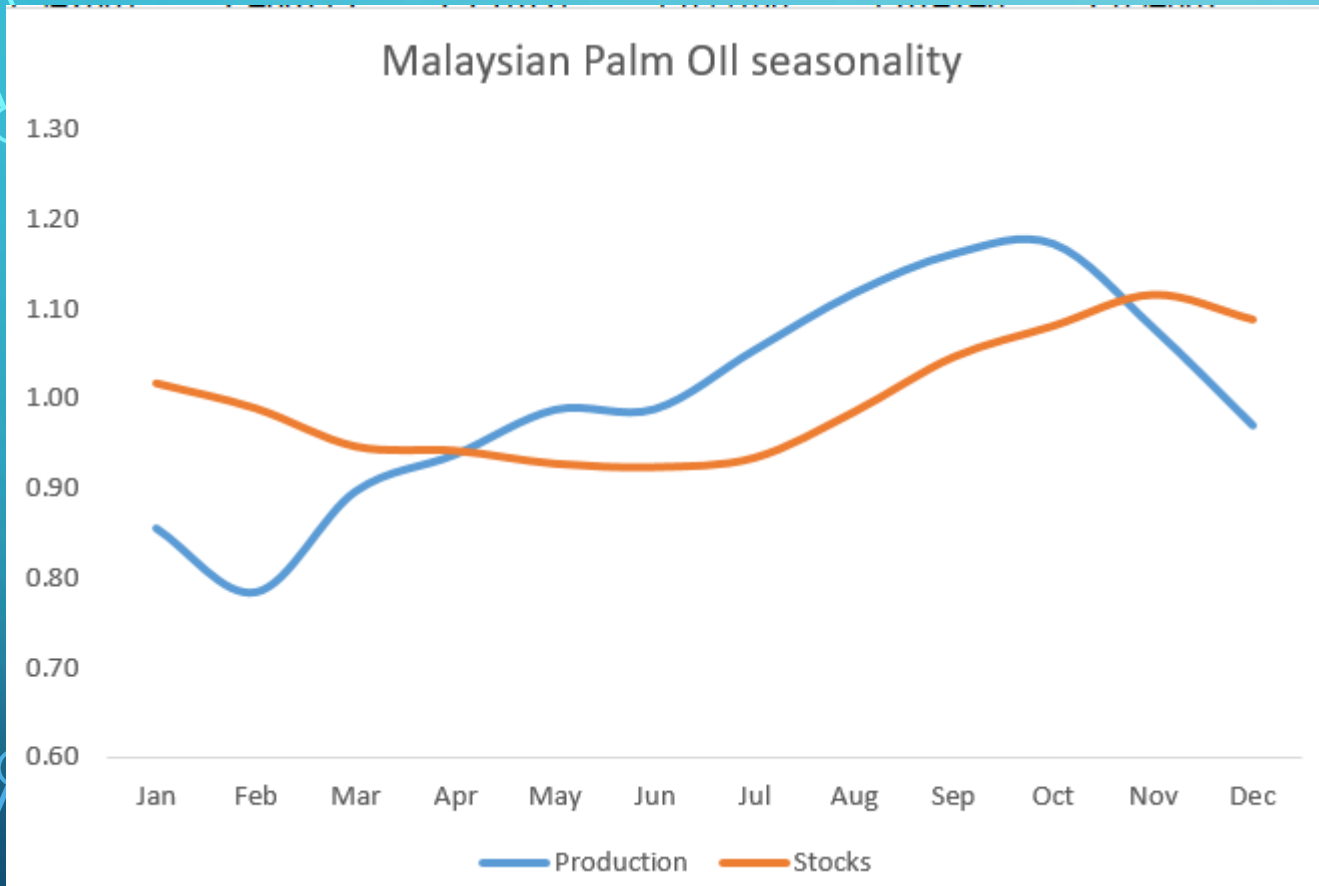

Oil Extraction rate Vs Rainfall
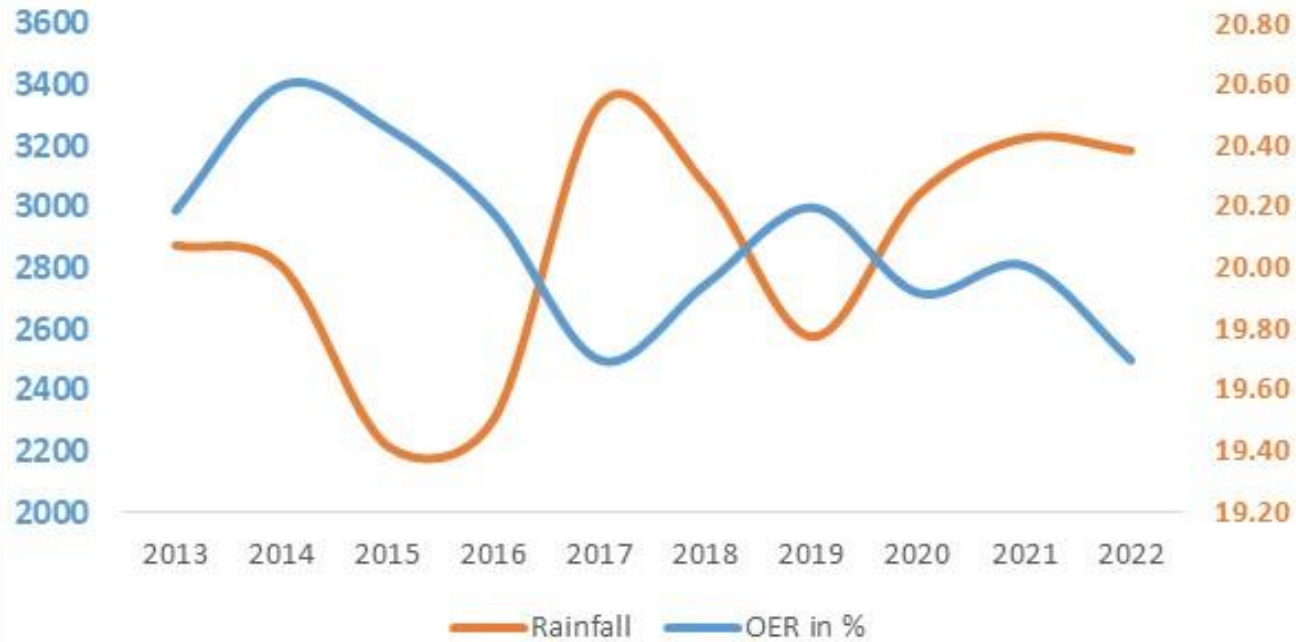
Inverse relation ship between rainfall and OER

Due to onset of El-Nino in the later part of the year, we will see gradual improvement in OER thus offsetting any loss in FFB yields owing to dryness

Source:MPOB

HIGHER PRODUCTION SEASONALITY TO BEGIN IN SOUTHEAST ASIA

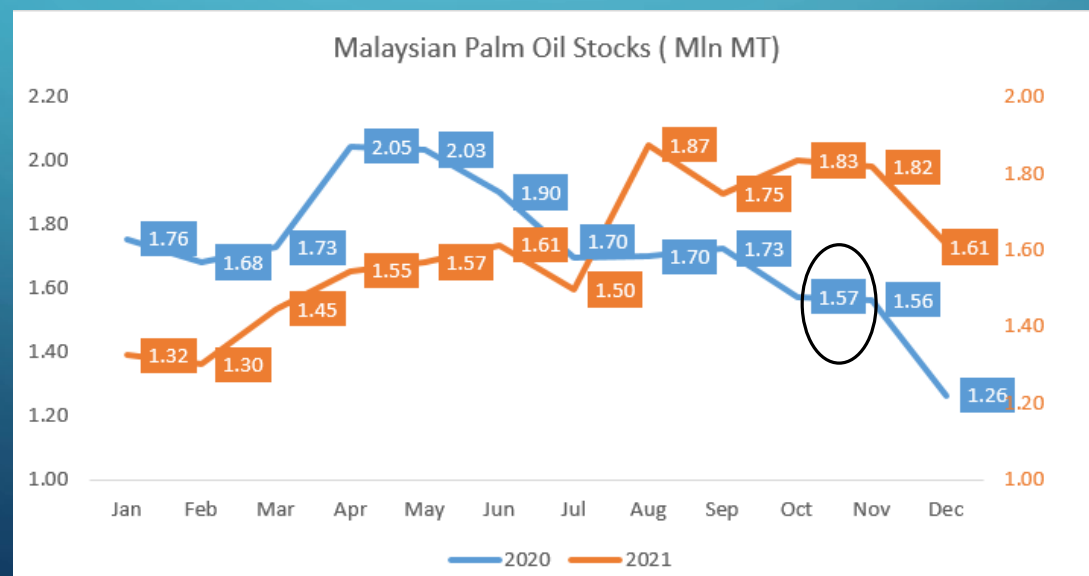Malaysian Palm Oil seasonality

Higher production likely to keep palm oil supplies higher in the coming 6 months

Stocks to stay around 2 million Ton (+ or -5%) for the rest of the year

However, lower soy crop expectations like to prevent aggressive drop in prices

Source:MPOB

THRESHOLD EFFECT OF MALAYSIAN STOCKS

Malaysian Palm Oil stocks (Million MT) — 2013, 2014

Malaysian Palm Oil Stocks(Million MT) — 2016, 2017

Malaysian Palm Oil Stocks (Mln MT) — 2020, 2021
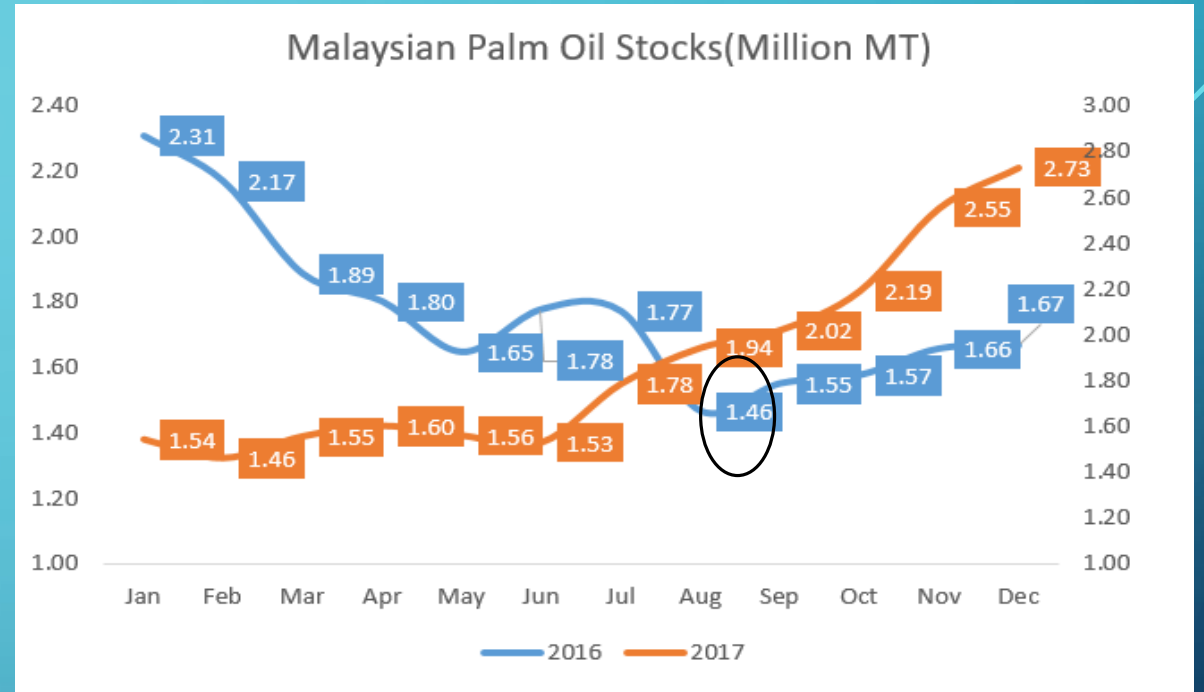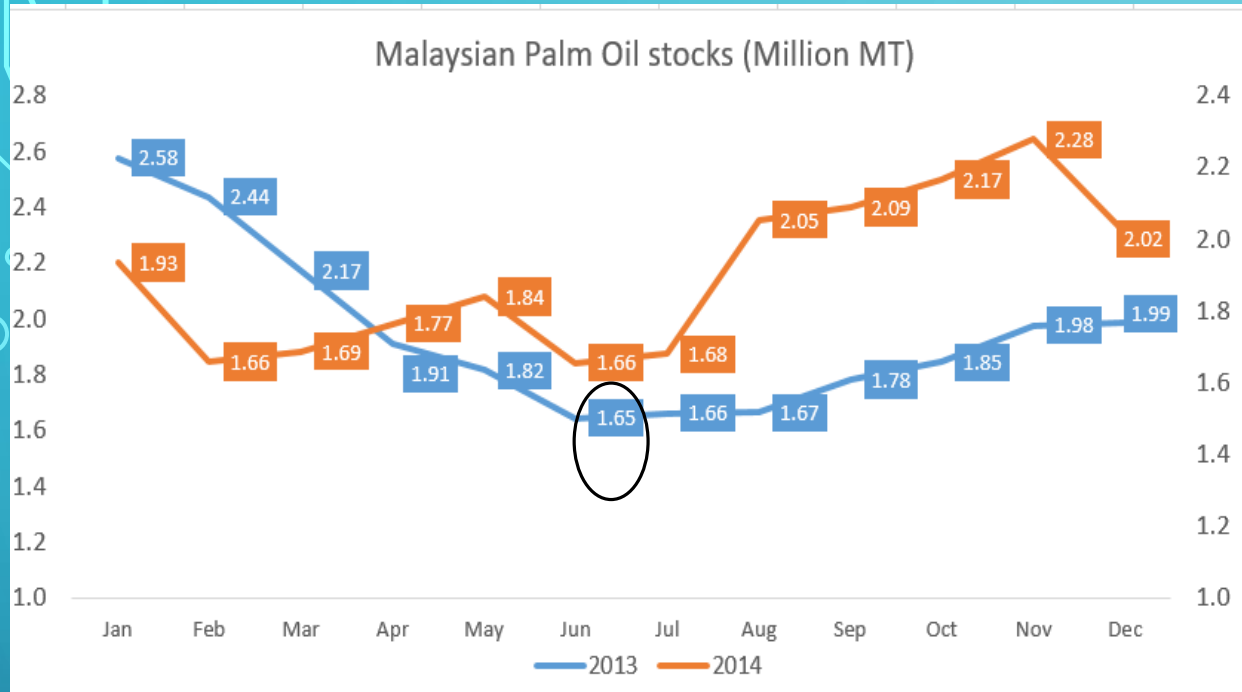
Malaysian Stocks falling below 1.6 MT would take atleast 12-15 months to recover above 2 million MT , thus supporting prices for an year

Currently stocks are above 2 million ton,thus keeping Supply balanced

INDONESIA AYP

	Area	Production	Yield
2012/2013	8.43	28.50	3.38
2013/2014	8.96	30.50	3.40
2014/2015	9.52	33.00	3.47
2015/2016	10.20	32.00	3.14
2016/2017	10.60	36.00	3.40
2017/2018	11.00	39.50	3.59
2018/2019	11.30	41.50	3.67
2019/2020	11.75	42.50	3.62
2020/2021	11.95	43.50	3.64
2021/2022	12.30	43.20	3.51
2022/2023	12.50	?	?
Area – Milion Ha, Production – Million MT, Yield –MT/Ha			

Mature Acreages Share	Immature Acreages Share
75.12%	23.44%
75.14%	23.40%
75.09%	23.43%
79.00%	17.78%
75.94%	22.67%
81.76%	15.31%
82.01%	14.74%
83.64%	13.33%
83.54%	13.47%
83.45%	13.60%

Source: USDA ,GAPKI

MAJOR PALM OIL ORIGINS

Source:USDA

ONI TABLE
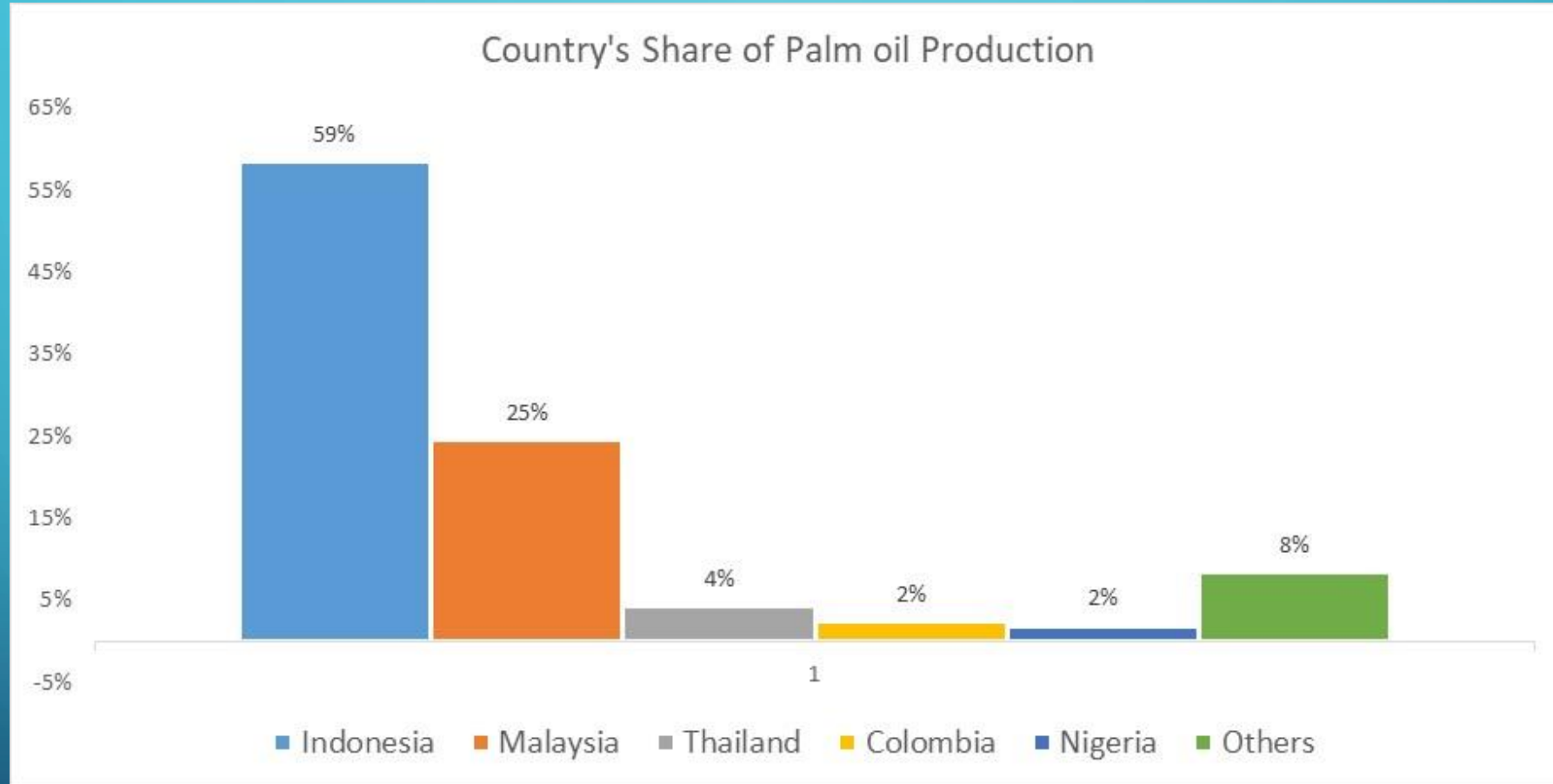
CPC Probabilistic ENSO Outlook
Updated: 9 March 2023

ENSO-neutral is expected to persist through the Northern Hemisphere early summer 2023. A transition to El Niño is favored by July-September 2023, with chances of El Niño increasing through the fall.
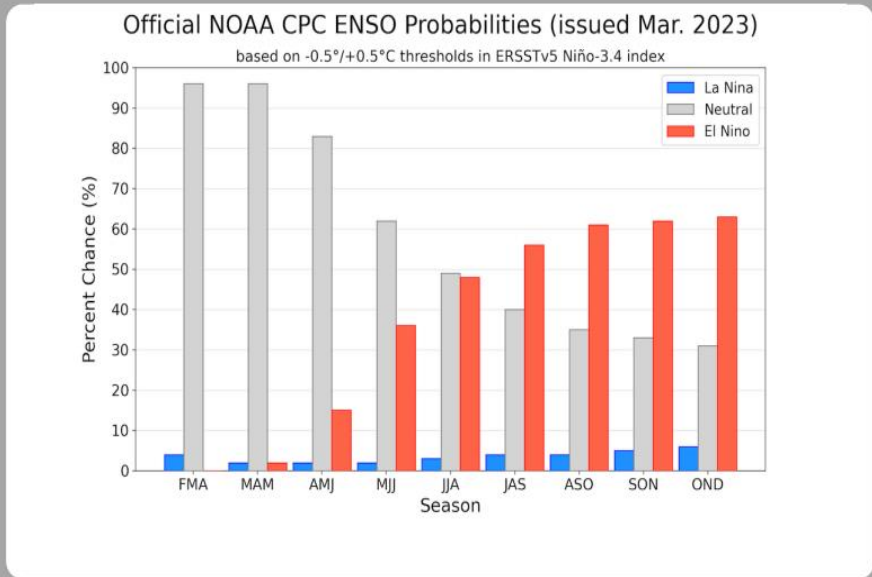
Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2013	-0.4	-0.4	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.3
2014	-0.4	-0.5	-0.3	0.0	0.2	0.2	0.0	0.1	0.2	0.5	0.6	0.7
2015	0.5	0.5	0.5	0.7	0.9	1.2	1.5	1.9	2.2	2.4	2.6	2.6
2016	2.5	2.1	1.6	0.9	0.4	-0.1	-0.4	-0.5	-0.6	-0.7	-0.7	-0.6
2017	-0.3	-0.2	0.1	0.2	0.3	0.3	0.1	-0.1	-0.4	-0.7	-0.8	-1.0
2018	-0.9	-0.9	-0.7	-0.5	-0.2	0.0	0.1	0.2	0.5	0.8	0.9	0.8
2019	0.7	0.7	0.7	0.7	0.5	0.5	0.3	0.1	0.2	0.3	0.5	0.5
2020	0.5	0.5	0.4	0.2	-0.1	-0.3	-0.4	-0.6	-0.9	-1.2	-1.3	-1.2
2021	-1.0	-0.9	-0.8	-0.7	-0.5	-0.4	-0.4	-0.5	-0.7	-0.8	-1.0	-1.0
2022	-1.0	-0.9	-1.0	-1.1	-1.0	-0.9	-0.8	-0.9	-1.0	-1.0	-0.9	-0.8
2023	-0.7											

CORRELATIONS BETWEEN MALAYSIAN RAINFALL & PRODUCTION

Impact of rainfall in the same year		
Parameters	Simple Correlation	Rolling Correlation
Rainfall Vs Yield	-26.85%	39.63%
Rainfall Vs Production	2.93%	39.44%
Impact of Previous year rainfall		
Parameters	Simple Correlation	Rolling Correlation
Rainfall Vs Yield	-4.48%	20.85%
Rainfall Vs Production	19.79%	18.34%

However, if there is stress in the previous year, the yields would drop sharply in the subsequent year.

IMPACT OF ENSO CONDITIONS ON YIELDS

Year	ENSO	Yields (MT/Ha)	Rainfall (mm)	% Change in Yield	% Change in Rainfall
2013	NEUTRAL	4.41	2875		
2014	NEUTRAL	4.35	2806	-1.56%	-2.40%
2015	WE	4.26	2215	-2.05%	-21.07%
2016	VSE	3.56	2305	-16.27%	4.09%
2017	WL	3.98	3339	11.74%	44.87%
2018	WL	3.82	3071	-4.12%	-8.05%
2019	WE	3.83	2574	0.23%	-16.16%
2020	NEUTRAL	3.67	3041	-4.16%	18.13%
2021	ML	3.46	3227	-5.71%	6.13%
2022	ML	3.59	3186	3.71%	-1.28%
2023	WE	?	?		

REGRESSION ANALYSIS – RAINFALL VS YIELDS IN MALAYSIA

Regression Statistics	
Multiple R	0.27
R Square	0.07
Adjusted R Square	-0.04
Standard Error	0.35
Observations	10.00

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	4.574	0.872	5.245	0.001	2.563	6.586	2.563	6.586
Rainfall	-0.0002381	0.000	-0.788	0.4531965	-0.001	0.000	-0.001	0.000
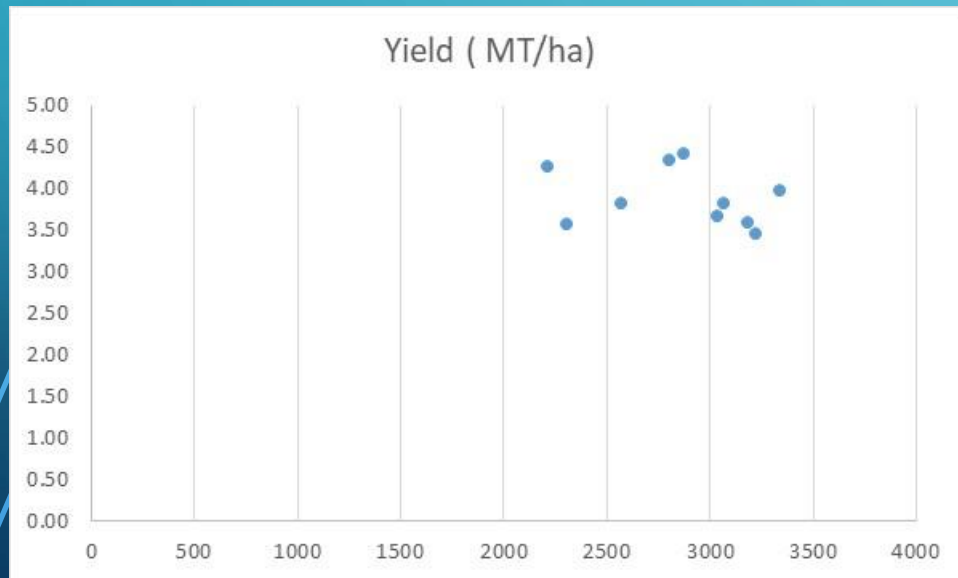
Yield (MT/ha)

Prediction at Rainfall (Mm)	Point prediction	t-value	St error	Margin of Error	Lower bound	Upper bound	interval	Average of Upper bound & Lower Bound
3100	3.84	1.86	0.38	0.70	3.14	4.54	1.40	3.84
3000	3.86	1.86	0.37	0.69	3.17	4.55	1.38	3.86
2900	3.88	1.86	0.37	0.69	3.20	4.57	1.37	3.88
2800	3.91	1.86	0.37	0.69	3.22	4.60	1.38	3.91
2600	3.96	1.86	0.39	0.72	3.24	4.67	1.43	3.96

ASSUMPTIONS FOR MALAYSIAN YIELD NUMBER

Weak El-Nino likely to commence from second half of the month , thus impacting North east monsoon
Rainfall likely to get affected due to El-Nino conditions during Sep –Dec'23 months

Henceforth, Malaysian Rainfall likely to remain lower by 400 mm in 2023 from the previous year rainfall of 3186 mm in 2022

Considering 2800 mm of Rainfall , the regression analysis throws an yield number of 3.91 .
However, aging tress in Malaysia need to be considered and this number needs to be trimmed by another 2%.
Additionally taking 2015 year in to consideration, Another 2% needs to be reduced which totals to 4% from the projected Yield number

Lastly, higher prices would have led to better plantation management ,thus reducing chances of poor productivity

Likely Yield number to be considered would be 3.75

Year	Acreage (Million Ha)	Production	Yield
2022	5.23	18.45	3.59
2023	5.14	19.29	3.75
Change	-1.72%	3.48%	3.47%

CORRELATIONS BETWEEN INDONESIAN RAINFALL & PRODUCTION

Impact of rainfall in the same year		
Parameters	Simple Correlation	Rolling Correlation
Rainfall Vs Yield	-30.75%	-61.9%
Rainfall Vs Production	-9.55%	-60.76%
Impact of Previous year rainfall		
Parameters	Simple Correlation	Rolling Correlation
Rainfall Vs Yield	20.67%	51.05%
Rainfall Vs Production	0.84%	36.22%

However, if there is stress in the previous year, the yields would drop sharply in the subsequent year.

IMPACT OF ENSO CONDITIONS ON YIELDS

Year	ENSO	Yields (MT/Ha)	Rainfall (mm)	% Change in Yield	% Change in Rainfall
2013	NEUTRAL	3.38	3417		
2014	NEUTRAL	3.40	2804	0.71%	-17.94%
2015	WE	3.47	2288	1.78%	-18.40%
2016	VSE	3.14	3135	-9.45%	37.02%
2017	WL	3.40	3086	8.23%	-1.57%
2018	WL	3.59	2628	5.73%	-14.84%
2019	WE	3.67	2409	2.27%	-8.33%
2020	NEUTRAL	3.62	3189	-1.51%	32.40%
2021	ML	3.64	3212	0.64%	0.71%
2022	ML	3.51	2922	-3.52%	-9.03%
2023	WE	?	?		

REGRESSION ANALYSIS – RAINFALL VS YIELDS IN INDONESIA

Regression Statistics	
Multiple R	0.31
R Square	0.09
Adjusted R Square	-0.02
Standard Error	0.16
Observations	10.00

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.871	0.429	9.017	0.000	2.881	4.861	2.881	4.861
Rainfall	0.000	0.000	-0.914	0.387	0.000	0.000	0.000	0.000
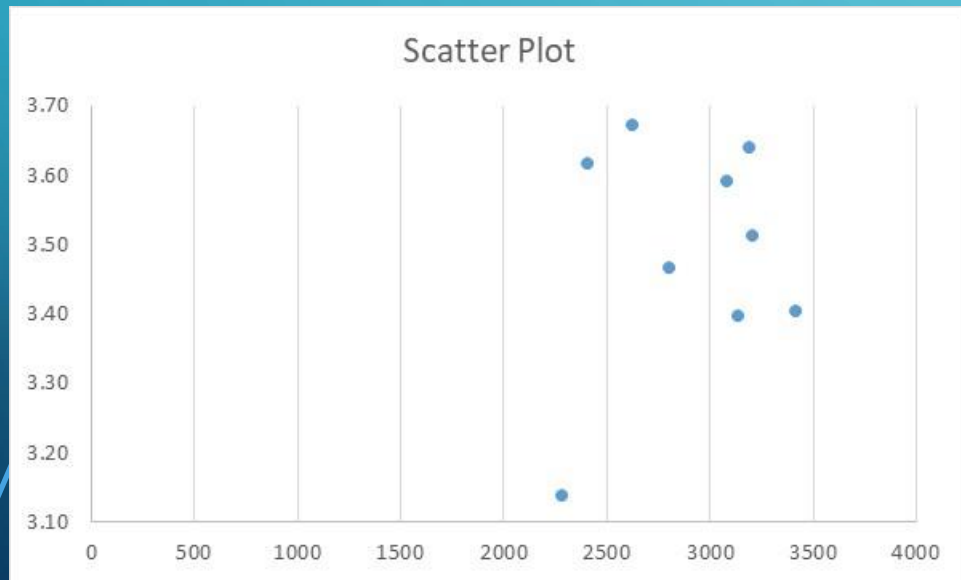
Scatter Plot

Prediction at Rainfall (Mm)	Point prediction	t-value	St error	Margin of Error	Lower bound	Upper bound	interval	Average of Upper bound & Lower Bound
3100	3.46	1.86	0.17	0.32	3.13	3.78	0.64	3.46
3000	3.47	1.86	0.17	0.32	3.15	3.79	0.64	3.47
2900	3.48	1.86	0.17	0.32	3.17	3.80	0.64	3.48
2800	3.50	1.86	0.17	0.32	3.18	3.82	0.64	3.50
2600	3.52	1.86	0.18	0.34	3.18	3.87	0.69	3.52

ASSUMPTIONS FOR INDONESIA YIELD NUMBER

Considering 2800 mm of Rainfall , the regression analaysis throws an yield number of 3.50 .
However, Indoneian plantations are young and can are less dormant than Malaysian plantations.
Henceforth, by taking 2015 year in to consideration , the yield are likely to stay slightly higher by 1.5% which bring the yields to 3.56

Year	Acreage (Million Ha)	Production	Yield
2021/2022	12.30	43.20	3.51
2022/2023	12.50	44.56	3.56
Change	1.63%	3.15%	1.50%

Global palm oil supplies likely to rise by 3.00% in 2023

Country	2021/22	2022/23	%Change
Indonesia	43.20	44.56	3.15%
Malaysia	18.45	19.29	4.55%
Thailand	3.15	3.20	1.50%
Colombia	1.75	1.78	1.80%
Nigeria	1.40	1.42	1.60%
Others	5.88	6.00	2.00%
Total	73.826	76.24	3.28%

DEMAND

<u>INDIA</u>

- Imports 9 million ton of CPO and 2.5 million ton Refined Palm olein
- Usage mainly for Blending in other oils ,Bakery & confectionary
- Import parities along with refining margins play a key role in import commitments
- Competitiveness with other oils like Soy & Sun define the volume of imports
- Local oil supplies along with winters & festivals can swing demand either side , thus playing a key role in international trade
- Government policy on import duties, Tariffs & any other key decision on import regulations can bring huge swings in the price volatility
- El-Nino can put stress on the local crops thus keeping the demand ticking upside in the later half of the year

<u>European Union</u>

- Imports 6 million ton of palm oil
- Used mainly in Bio-fuels & Heating purposed (about 80%) , rest of the oils gets in to Cooking & Industrial a applications
- Biofuel margins in Europe with respect to Brent crude play an important role in biofuel uptake
- Palm competes with Rapeseed oil in the biofuel segment in EU
- EU had been instrumental in bringing strict measures on sustainability in South east asia, thus preventing aggressive acreage expansion in South east asia

DEMAND

CHINA

- Imports 6 million ton of CPO
- Usage mainly for cooking & industrial products
- Governed majorly by soybean imports and Canola stocking policy
- Competitiveness with oil like Soy & Canola is key
- Covid situation remain critical for uptake of palm oil in the coming future

MIDDLE EAST & NORTH AFRICA

- Price Sensitive market
- Stable demand of 5 -6 million ton
- No major swings witnessed in these markets in terms of international trade
-

United states

- Import demand of 2 million MT
- Competes with Soy oil in Biofuel demand
- Industrial application is also higher in this market
- Very much influenced by EPA regulations & RFS standards

BIOFUEL DEMAND

- Indonesia moving towards B35 this year is going to be a major swing factor in biofuels space
- Expectations of large uptake of palm as part of B40 in Indonesia would continue to keep the trade on tenterhooks
- Allocation for 13.15 billion litres which is likely to consume about 12.5 million metric tons of Palm oil.However, current margins are negative and need to be watched out on the blending space

Date	Singapore Gas oil prices	Singapore Gas oil prices	Indonesia FOB CPO	Indonesia CPO Ex-Mill Prices	PME cost	Singapore gas oil-PME
Units	USD/BL	USD/Tons	USD/Tons	USD/Tons	USD/T	USD/T
28-09-2022	103	**791**	788	**723**	**813**	-21

US BioFuel Targets(Billion Gallons)					
Year	Cellulosic Biofuel	Biomass-Based Dieselh	Advanced Biofuel	Total Renewable Fuel	Supplemental Total Standard
2018	0.288	2.10	4.29	19.29	N/A
2019	0.418	2.10	4.92	19.92	N/A
2020	0.51	2.43	4.63	17.13	N/A
2021	0.56	2.43	5.05	18.84	N/A
2022	0.63	2.76	5.63	20.63	0.25

US Soy oil usage in biofuel for 2022-23 is currently pegged at 5.26 million ton up from 4.69 million Ton last year

Brazil is going to continue their B10 program till this month end and moving towards B12 program in 2023 which is likely result in consumption of 0.8 million ton of soy oil

Source:EPA

CRUDE OIL SCENARIO

Price summary (historical and forecast)

	2021	2022	2023	2024
WTI Crude Oil[a] *dollars per barrel*	68.21	94.91	*77.10*	*71.57*
Brent Crude Oil *dollars per barrel*	70.89	100.94	*82.95*	*77.57*
Gasoline[b] *dollars per gallon*	3.02	3.97	*3.36*	*3.11*
Diesel[c] *dollars per gallon*	3.29	5.02	*4.17*	*3.73*
Heating Oil[d] *dollars per gallon*	3.00	4.65	*3.92*	*3.61*
Natural Gas[d] *dollars per thousand cubic feet*	12.21	14.82	*13.51*	*13.07*
Electricity[d] *cents per kilowatthour*	13.66	15.12	*15.63*	*15.66*

[a]West Texas Intermediate.
[b]Average regular pump price.
Note: Italics indicate forecast.
Data source: Short-Term Energy Outlook

[c]On-highway retail.
[d]U.S. Residential average.

Source:EIA

GLOBAL PALM OIL BALANCE SHEET

Global Palm oil Balance Sheet			
Attributes	2021/2022	2022/2023	% Change
Opening Stocks	15.16	16.82	10.92%
Production	73.83	76.24	3.27%
imports	42.74	44.53	4.20%
Supply	131.73	137.59	4.45%
Exports	43.82	45.44	3.70%
Industrial Consumption	22.12	23.34	5.50%
Food & Feed cosumption	48.97	50.68	3.50%
Total demand	114.91	119.46	3.96%
Ending stock	16.82	18.13	7.80%
S/C ratio	14.63%	15.17%	
All units in Million MT			

BMD CPO PRICE OUTLOOK

CRUDE PALM OIL FUTURES (CONTINUOUS: CURRENT CONTRACT IN FRONT) · 1M · MYX   ● D   O4151 H4425 L3500 C3704 −438 (−10.57%)
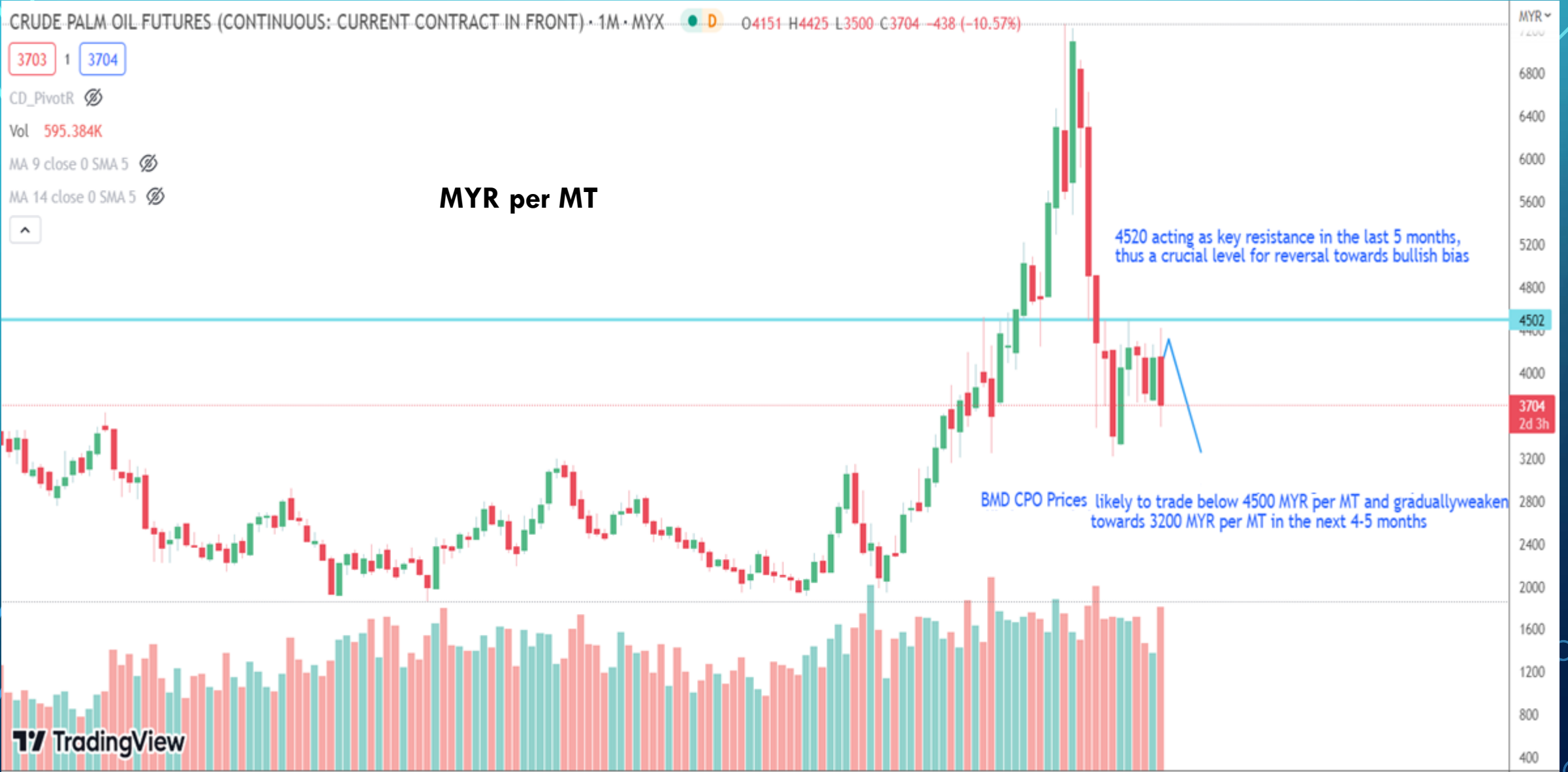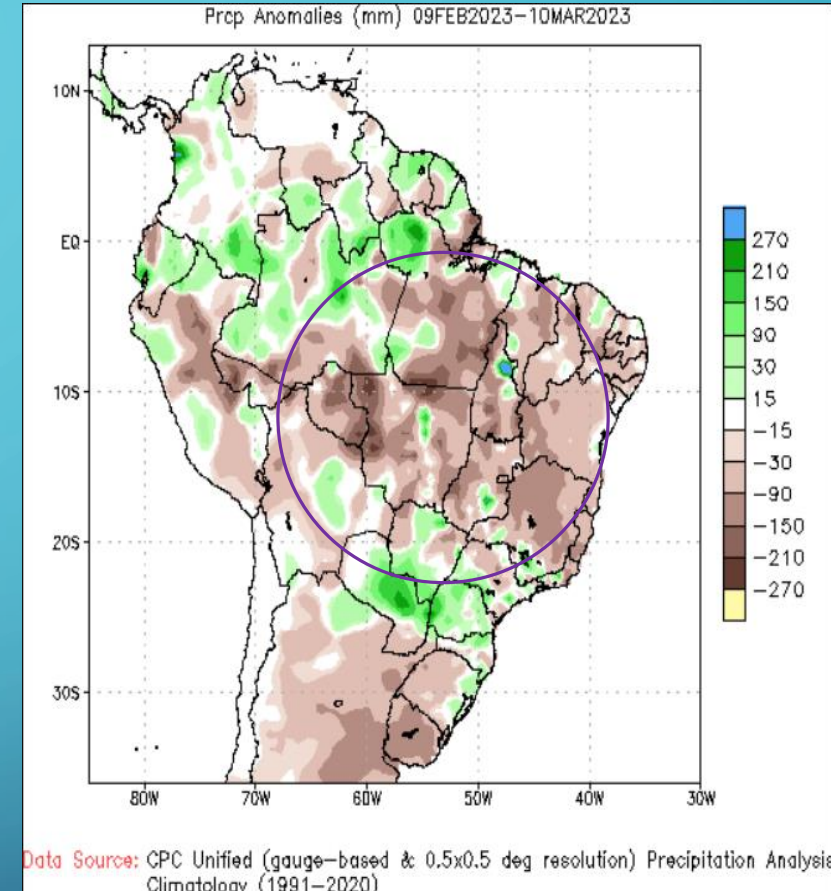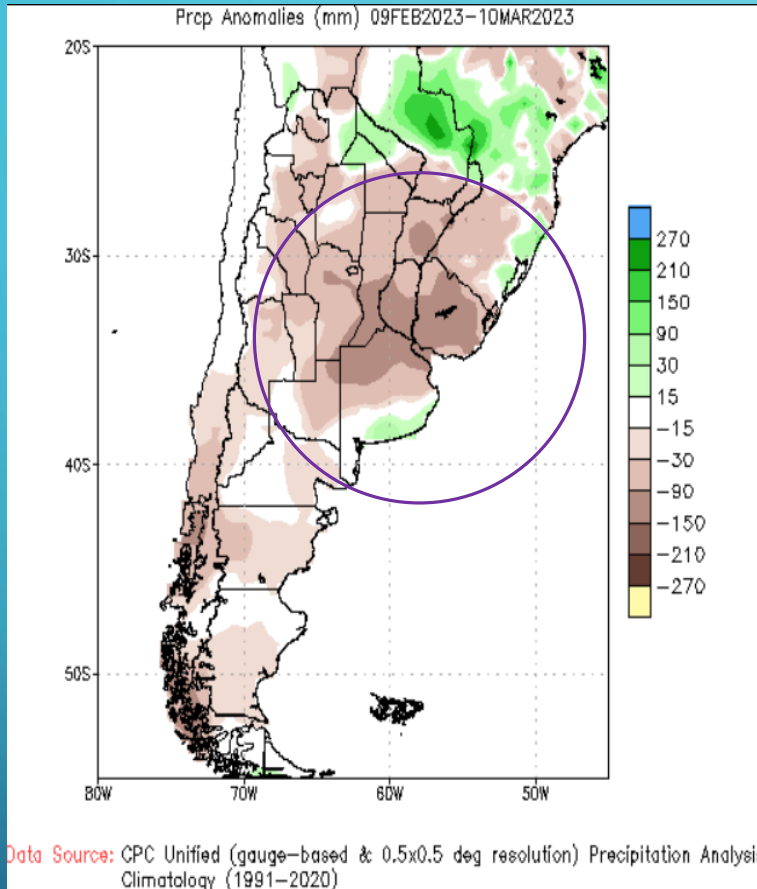
MYR per MT

4520 acting as key resistance in the last 5 months, thus a crucial level for reversal towards bullish bias

BMD CPO Prices likely to trade below 4500 MYR per MT and graduallyweaken towards 3200 MYR per MT in the next 4-5 months
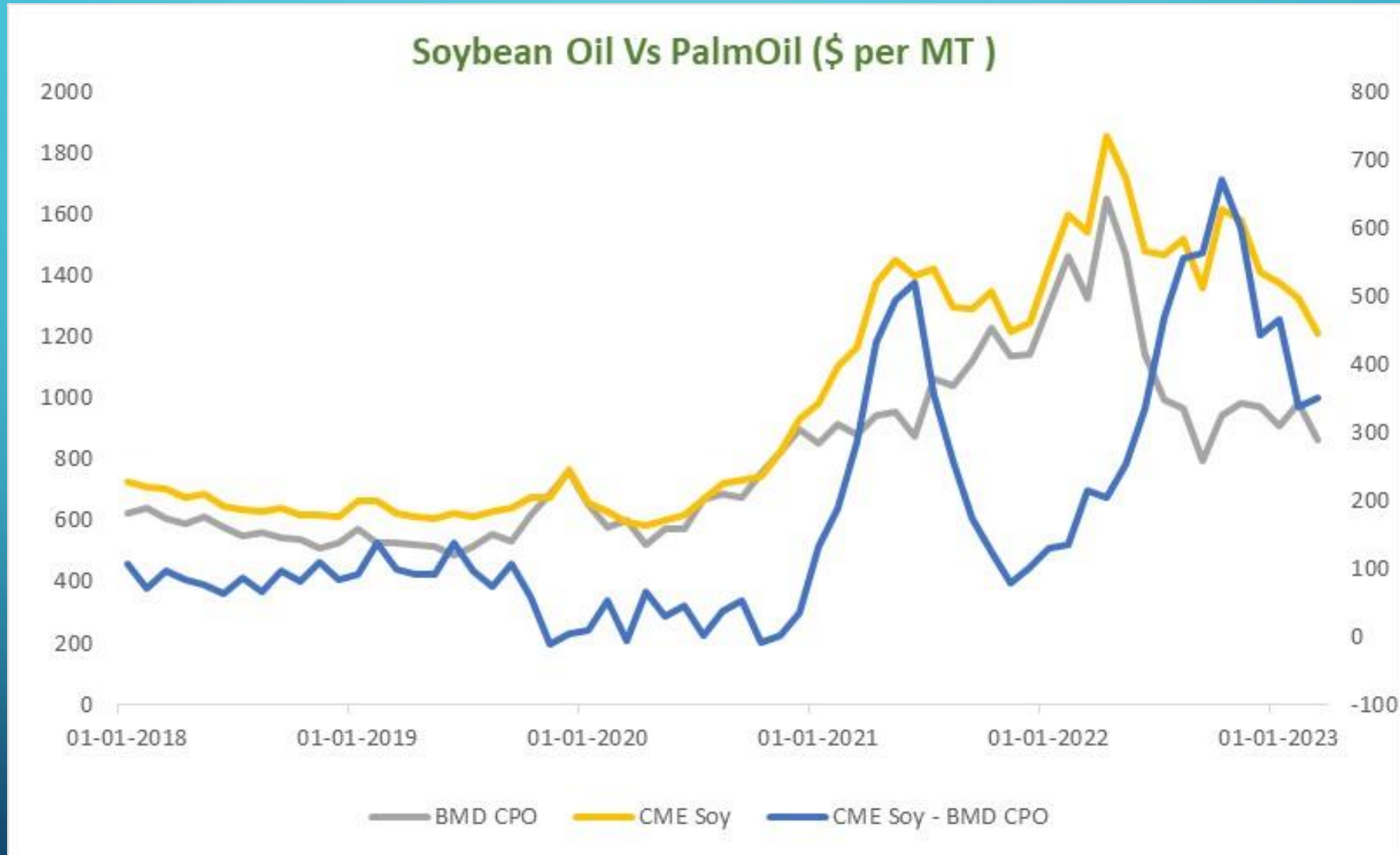
ACTION IN OTHER OILS
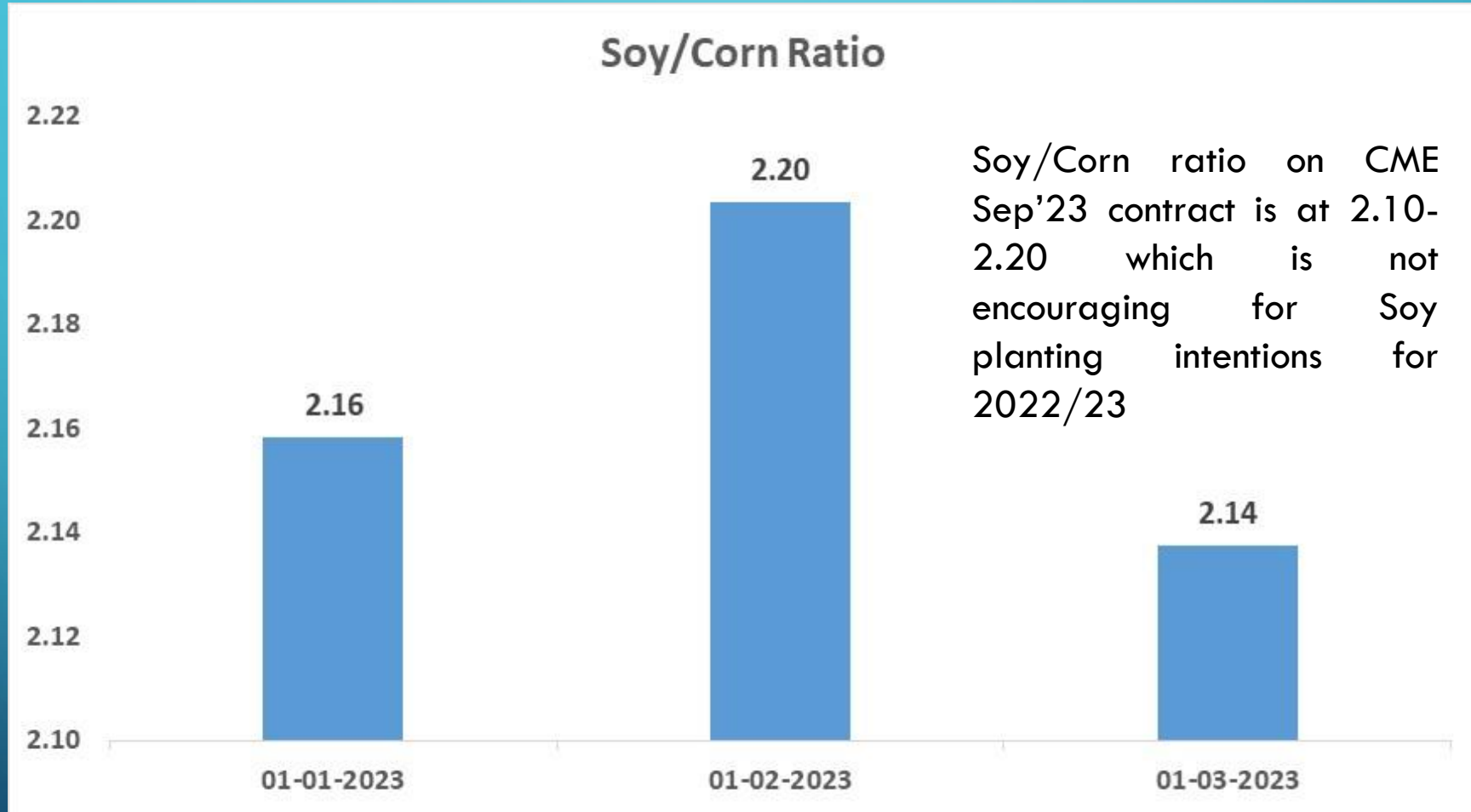
WEATHER AT MAJOR SOY ORIGINS

Lower precipitation likely to keep Argentina Soy crop lower by 10-12 Million Ton . However, strong growth in Brazil soy crop by 20 million ton likely to offset losses in Argentina

Argentina needs to source soybeans from Brazil in the upcoming season

Soybean Oil Vs PalmOil ($ per MT)

ONCOMING US SOY PLANTING IN 2022/23

Soy/Corn Ratio

Soy/Corn ratio on CME Sep'23 contract is at 2.10-2.20 which is not encouraging for Soy planting intentions for 2022/23

SUNFLOWER & CANOLA CROPS

Sunflower Oil production (Million MT)

2021/2022 | 2022/2023
- Russia: 5.82 | 6.24
- Ukraine: 4.64 | 4.39
- European Union: 4.39 | 4.61
- Argentina: 1.50 | 1.46
- Turkey: 0.92 | 1.22
- Others: 2.55 | 2.67
- Global production: 19.84 | 20.58

Canola Oil Production (Million MT)

2021/2022 | 2022/2023
- European Union: 9.16 | 10.16
- China: 6.40 | 6.63
- India: 3.67 | 3.88
- Canada: 3.57 | 4.35
- Japan: 0.94 | 1.04
- Others: 5.10 | 6.05
- Global production: 28.83 | 32.11

STOCKS TO CONSUMPTION RATIO IS LIKELY TO STAY STAGNANT, THUS PRICE ACTION IS GOING TO BE VOLATILE AND IS LIKELY TO BE DRIVEN BY WEATHER, GEOPOLITICS & MONTHLY STOCK MOVEMENT IN MALINDO REGION

Attributes	Palm oil		Soy oil		Sunflower oil		Rapeseed oil		4 Major Oils	
	2021/2022	2022/2023	2021/2022	2022/2023	2021/2022	2022/2023	2021/2022	2022/2023	2021/2022	2022/2023
Beginning Stocks	15.16	16.82	5.27	4.43	1.87	2.32	3.38	2.81	25.68	26.37
Production	73.83	76.24	59.04	60.21	19.84	20.58	28.83	32.11	181.54	189.14
Imports	42.74	44.53	11.46	10.94	9.53	10.08	5.15	6.56	68.87	72.11
Total Supply	131.73	137.59	75.76	75.58	31.24	32.97	37.36	41.47	276.09	287.61
Exports	43.82	45.44	12.13	11.82	11.05	11.70	5.27	6.64	72.27	75.61
Industrial Dom. Cons.	22.12	23.34	11.87	12.53	0.99	0.97	8.06	8.57	43.04	45.41
Food Use Dom. Cons.	47.43	49.14	47.27	46.74	16.79	17.83	21.18	23.11	132.68	136.81
Feed Waste Dom. Cons.	1.53	1.55	0.07	0.08	0.08	0.08	0.05	0.00	115.11	119.64
Demand	114.91	119.47	71.34	71.18	28.92	30.57	34.55	38.32	363.10	377.46
Ending Stocks	16.82	18.12	4.43	4.40	2.32	2.40	2.81	3.15	26.37	28.07
S/C Ratio	14.63%	15.16%	6.20%	6.18%	8.01%	7.84%	8.13%	8.23%	7.26%	7.44%

All units in Million Ton

PRICE OUTLOOK

CME SOY OIL PRICE OUTLOOK

SOYBEAN OIL FUTURES (CONTINUOUS: CURRENT CONTRACT IN FRONT) · 1M · CBOT · D · O60.20 H62.15 L56.10 C56.61 −3.43 (−5.71%)
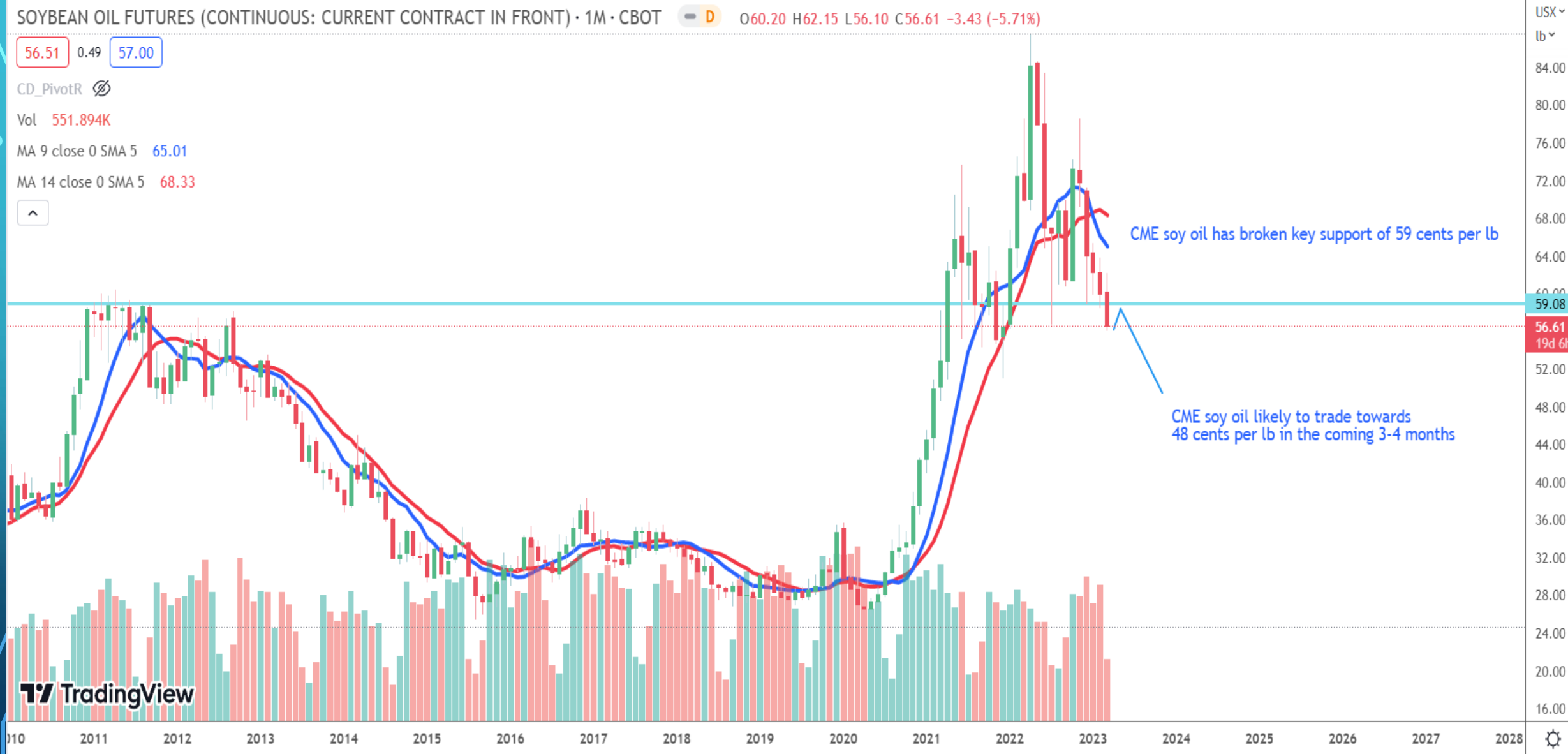
56.51   0.49   57.00

CD_PivotR

Vol 551.894K

MA 9 close 0 SMA 5   65.01

MA 14 close 0 SMA 5   68.33

CME soy oil has broken key support of 59 cents per lb

CME soy oil likely to trade towards 48 cents per lb in the coming 3-4 months

59.08

56.61
19d 6h

TradingView

DOLLAR LIKELY TO STAY RANGEBOUND

US Dollar likely to trade in a range bound note between 90-105 thus leaving commodity prices to their S&D's in the coming months

THANK YOU