

EL NINO AND LA NINA – DOUBLE JEOPARDY FOR THE PALM OIL INDUSTRY?

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KUALA LUMPUR, MPOB)

WEATHER IS ONE OF THE KEY DRIVERS IN THE PRODUCTION AND SUPPLY OF ALMOST ALL OILSEEDS AND PALM OIL AND A MAJOR CATALYST FOR PRICE MOVEMENT

ABSTRACT

Global weather is greatly influenced by the El Nino-Southern Oscillation (ENSO) – a climate phenomenon that originates in the central equatorial Pacific Ocean due to the warming and cooling of the ocean water and comprises of warm El Nino, cool La Nina and neutral cycles. These cycles in turn can alter the normal weather patterns and cause major disruption to the world's agricultural production and supply.

Weather is one of the key drivers in the production and supply of almost of all oilseeds and palm oil and a major catalyst for price movement. This paper examines the havoc created by the recent El Nino phenomenon on the palm oil industry. Will an El Nino-La Nina sequel bring joy or double jeopardy to the Industry?

The 2015 El Nino is one of the strongest events recorded in history since 1950 and has disrupted the normal rainfall patterns in South East Asia and caused widespread and severe droughts in Indonesia, Malaysia and Thailand (key palm oil producing countries which account for some 88% of the global palm oil supply). The historic droughts had stunted palm tree growth and crimped production in 2016. Is the impact of this 'super El Nino' really over or will continue to disrupt supply?

Most climate models indicate that the El Nino has ended and is now in the neutral ENSO condition and there is a chance that La Nina weather conditions may develop by end of 2016.

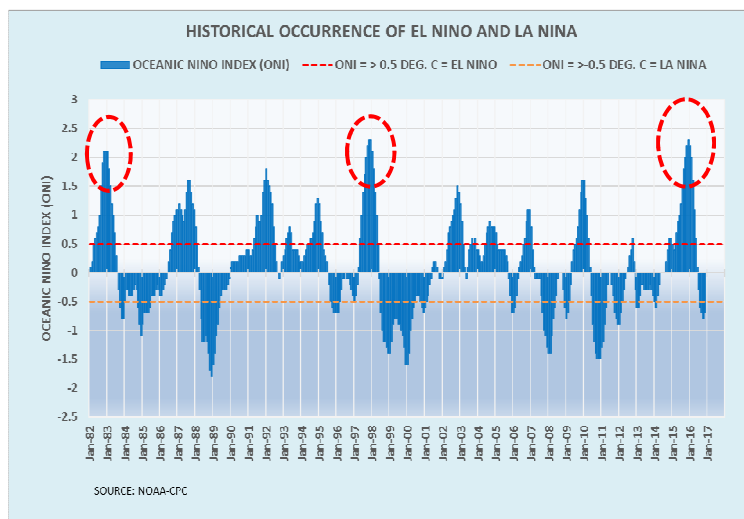
The likely effects of this El Nino- La Nina sequel on palm oil yield and supply were analyzed (using the Ganling weather-based forecasting model). What is the likely impact of a La Nina on palm and soy oil prices?

The implications of the upcoming El Nino- La Nina transition or sequel on the overall palm oil industry will be discussed.

PRESENTATION OUTLINE

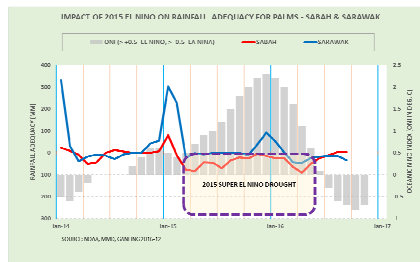
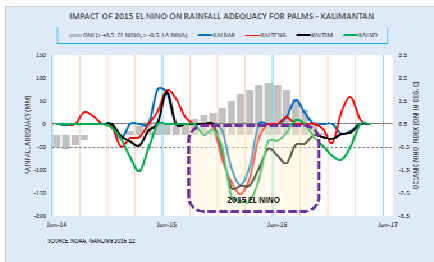
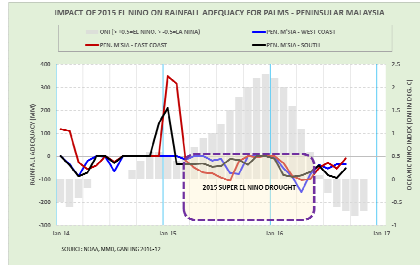
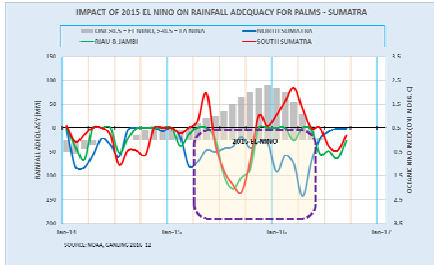
- End of the strongest El Nino in history – its impact and lingering effects
- Is the supply disruption really over?
- Transition to La Nina or neutral ENSO?
- Impact of El Nino-La Nina sequel on global palm oil and soybean supplies
- Implications for the palm oil market and outlook for 2017

END OF THE STRONGEST EL NINO – its impact and lingering effects



- 2015 El Nino is one of the **strongest in history** since 1950
- Brought record high temperatures and historic droughts to India, East Africa, Australia and S.E. Asia
- Disrupted normal rainfall patterns and brought widespread and severe droughts to key oil palm growing regions in S.E. Asia

SPREAD AND SEVERITY OF THE 2015 EL NINO DROUGHTS IN INDONESIA AND MALAYSIA



- WIDESPREAD: ALL KEY OIL PALM GROWING REGIONS IN INDONESIA AND MALAYSIA
- PROLONGED: 6 TO 12 MTHS DROUGHTS (VERSUS NORMAL 1-3 MTHS) WERE UNPRECEDENTED
- RECORD RAINFALL DEFICITS - MORE SEVERE IN INDONESIA THAN MALAYSIA
- RAINFALL IN RECENT MONTHS HAVE RETURNED TO NORMAL

SEVERE IMPACT OF THE 2015 EL NINO ON PALM TREE GROWTH



- DELAYED OPENING OF LEAVES (6-8) OBSERVED IN MANY PARTS OF SUMATRA, KALIMANTAN, SABAH, PAHANG AND JOHOR (JUL-OCT 2015)
- MASSIVE AND WIDESPREAD FROND COLLAPSE OR 'HAWAIIAN SKIRT OR SARONG' EFFECTS - NOTED ESPECIALLY IN OLDER PALMS (OCT- DEC 2015)
- PROLONGED MALE FLOWERING CYCLES (JAN-AUG 2016)

2015 EL NINO HAS ALREADY IMPACTED GLOBAL PALM OIL PRODUCTION AND SUPPLY IN 2016

3Q 2016 VS 3Q 2015 FFB PRODUCTION - 2015 EL NINO				
IDN COMPANIES	3Q15 T'000	3Q16 T'000	Y-O-Y %CHG	Y-O-Y VOL '000
GSM	1344	1254	-6.7	-90
GBU	1079	964	-10.7	-115
GWM	3247	2611	-19.6	-636
GGR	5592	4531	-19.0	-1061
GFR	1862	1601	-14.0	-261
GDS	965	641	-33.6	-324
GKA	402	293	-27.1	-109
GAA	4148	3206	-22.7	-942
GAJ	564	472	-16.3	-92
GSA	691	455	-34.2	-236
GBW	949	817	-13.9	-132
GLS	999	815	-18.4	-184
IDN GROUP	21842	17659	-19.1	-4183
	3Q15 T'000	3Q16 T'000	Y-O-Y % CHG	Y-O-Y VOL '000
PEN MSIA	8027	6428	-19.9	-1599
SABAH	4180	3567	-14.7	-613
S'WAK	2563	2598	1.4	35
MALAYSIA	14770	12593	-14.7	-2177

SOURCES: MPOB, COMPANY DATA, GANLING 2016-10

- The impact has been very severe, double-digits declines
- 1H 2016:
 - 21% for IDN
 - 16% for MYS
- Latest 3Q 2016:
 - 19% for IDN
 - 15% for MYS
- New “yield-weather benchmarks” were established

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PALM OIL SUPPLY FORECAST FOR 2016 – unprecedented decline!

GANLING WEATHER-BASED CPO FORECASTS FOR 2016:

- STRONG 2015 EL NINO IS EXPECTED TO REDUCE INDONESIAN CPO OUTPUT BY **-4.2 MN T (TO 28.0 MN T)** OR -13% (Y-O-Y) AND MALAYSIAN OUTPUT BY **-2.8 MN T (TO 17.2 MN T)** OR -14% (Y-O-Y)
- GLOBAL SUPPLY IS ESTIMATED TO SHRINK BY **-6.8 MN T** (TO 55.1 MN T) INSTEAD OF A NORMAL GROWTH OF +2.8 MN T
- INDICATING A COLOSSAL SUPPLY LOSS OF **9.6 MN T** IN 2016 – UNPRECEDENTED!
- 1st MAJOR NEGATIVE PRODUCTION GROWTH IN DECADES
- TIGHT SUPPLY HAS LED TO A STRONG PRICE RALLY BESIDES OTHER DEMAND FACTORS
- STRONG IMPACT HAVE CREATED HAVOC TO THE PLANTATION SECTOR AND AFFECTED EARNINGS OF MOST PLANTATION COMPANIES

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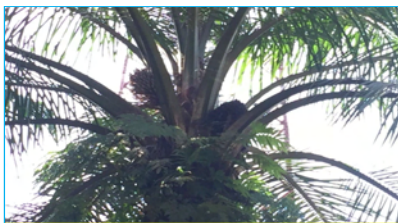
FULL IMPACT OF THIS 'MONSTER EL NINO' IS NOT OVER YET – supply disruption to continue into Q2 2017

OUR LATEST FORECAST INDICATES:

- BELOW NORMAL PRODUCTION TO CONTINUE IN BOTH INDONESIA AND MALAYSIA UNTIL Q2 2017
- PRODUCTION TO RISE IN LATE 3Q 2016 TO PEAK IN Q4 2016 – MINI RECOVERY IN LINE WITH THE SEASONAL TREND
- PRODUCTION IN 3Q AND 4Q 2016 WILL STILL BE BELOW THE SAME PERIOD 2015
- PRODUCTION WILL SEE ANOTHER SHARP DECLINE IN 1Q 2017 IN MALAYSIA AND 2ND & 3RD Q IN INDONESIA
- CONTINUING TIGHT SUPPLY WILL LIMIT ANY ANTICIPATED RISE IN INVENTORIES AND SUPPORTIVE OF PRICES

LINGERING EFFECTS OF 2015 EL NINO – EXPECT SHARP DECLINE IN PRODUCTION AGAIN IN Q1 2017

➤ Based on Ganling Palm Fruit Survey (GPS) in NOV - DEC 2016 AND JAN 2017



SABAH – NOV 2016



PERAK – DEC 2016



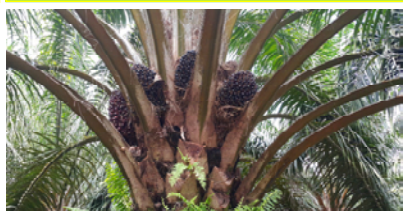
PAHANG – DEC 2016



SOUTH KALIMANTAN – Oct 2016



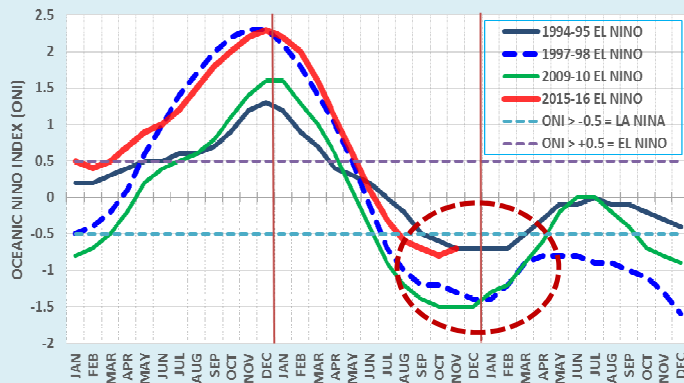
EAST KALIMANTAN – DEC 2016



WEST KALIMANTAN – JAN 2017

EMERGENCE OF LA NINA IN 4Q 2016?

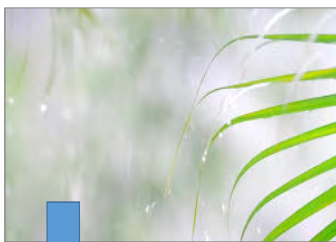
THE 2015-16 EL NINO IS COMPARABLE TO THE 1997-98 EVENT (WHICH IS ONE OF THE STRONGEST IN HISTORY). EL NINO EVENTS ARE USUALLY FOLLOWED BY LA NINA



SOURCES: NOAA, GANI ING 2016-17

- EL NINO IS FREQUENTLY FOLLOWED BY LA NINA
- 5 OUT 8 TIMES IN LAST 25 YEARS
- LATEST CPC/IRI REPORT INDICATES THAT LA NINA CONDITIONS ARE PRESENT BUT NOT FULLY DEVELOPED AND WILL TRANSITION TO NEUTRAL ENSO BY Q1 2017
- **UNLIKE THE PREVIOUS LA NINA FOLLOWING THE 1997-98 AND 2009-10 EL NINO, THIS LA NINA IS RELATIVELY WEAK AND SHORT-LIVED**

HOW LA NINA CONDITIONS AFFECT PALM OIL AND OILSEED PRODUCTION?



SOUTH EAST ASIA – INDONESIA AND MALAYSIA:

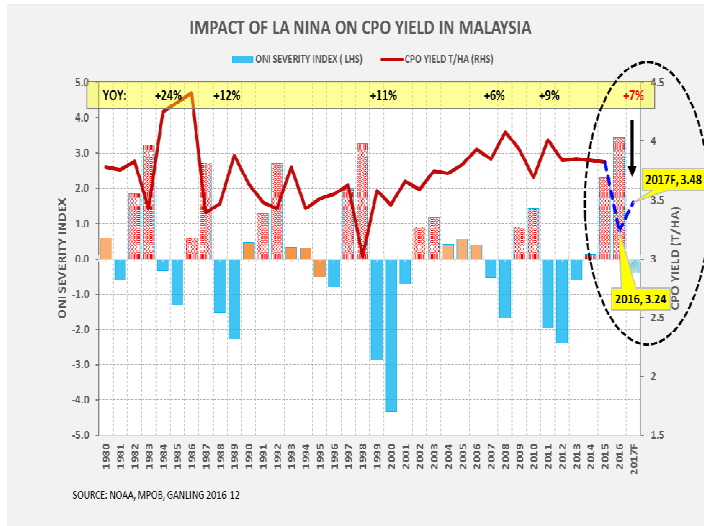
- USUALLY BRING ABUNDANT OR ABOVE AVERAGE RAINFALL
- FAVOURABLE FOR OIL PALMS

NORTH & SOUTH AMERICAS:

- HOT WEATHER AND BELOW AVERAGE RAINFALL OR DROUGHT
- NEGATIVE FOR SOYBEANS



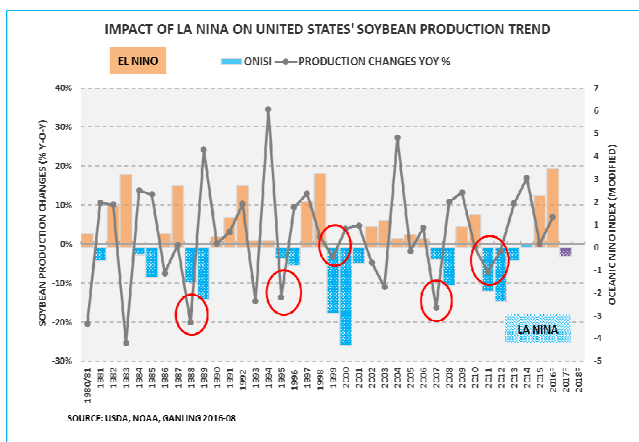
IMPACT OF LA NINA ON PALM OIL SUPPLY - favourable



- LA NINA USUALLY BRING ABUNDANT RAINS TO S.E. ASIA
- LA NINA FOLLOWING AN EL NINO IS POSITIVE FOR YIELD: +6% to +24%
- LA NINA MAY CAUSE SHORT-LIVED DISRUPTION TO HARVESTING AND FRUIT SET BUT USUALLY NOT VERY SIGNIFICANT
- HISTORICALLY, LA NINA FOLLOWING EL NINO USUALLY ASSIST IN YIELD RECOVERY
- OUR LATEST WEATHER-BASED CPO FORECASTS FOR 2017:
 - INDONESIA +18% Y-O-Y
 - MALAYSIA +9% Y-O-Y

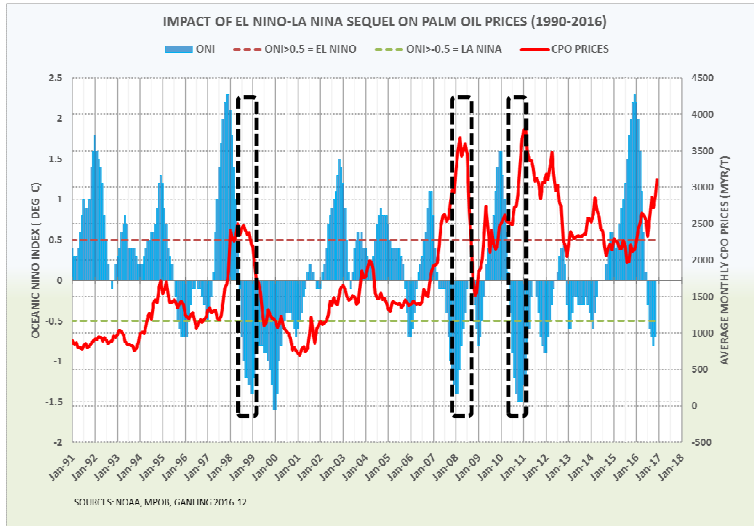
LA NINA HAS A MUCH GREATER IMPACT ON COMPETING SOYBEAN PRODUCTION

HISTORICALLY, LA NINA TENDS TO BRING HOT AND DRIER WEATHER TO KEY SOYBEAN GROWING REGIONS IN USA, BRAZIL AND ARGENTINA



- SOYBEAN PRODUCTION DECLINE IN 5 OUT OF 6 LA NINA YEARS IN THE UNITED STATES SINCE 1980 (-3% to -20%).
- SIMILAR OBSERVATIONS IN SOUTH AMERICA
- A MODERATE/STRONG LA NINA IN Q4 2016 MAY AGAIN DISRUPT SOYBEAN SUPPLY IN 2017 BUT DO NOT APPEAR TO BE THE CASE THIS TIME
- A WEAK LA NINA OR NEUTRAL ENSO SEQUEL WILL POSE LESS WEATHER RISKS TO SOYBEAN SUPPLY GROWTH

IMPACT OF EL NINO - LA NINA SEQUEL ON PALM OIL PRICES



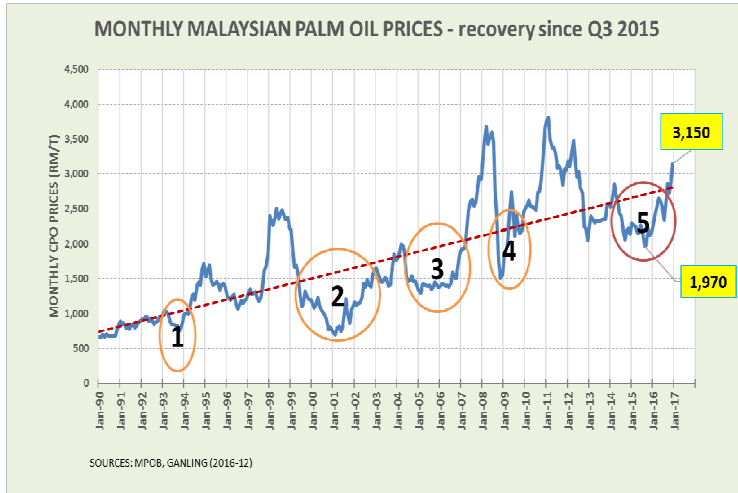
- AN EL NINO EVENT IS USUALLY FOLLOWED BY A SPIKE IN PALM OIL PRICES (5% TO 112%).
- THE 2015-16 EL NINO HAS RESULTED IN PRICE INCREASE (+58%)
- HISTORICALLY, LA NINA FOLLOWING AN EL NINO CAN CAUSED FURTHER PRICE INCREASE (+3% TO +53%)
- DUE TO ITS INDIRECT IMPACT ON SOYBEAN SUPPLY
- A CLOSE EL NINO-LA NINA SEQUEL WILL BE SUPPORTIVE OF PALM OIL PRICES

IMPACT OF LA NINA ON SOY OIL PRICES

OUR RECENT STUDY ON THE IMPACT OF LA NINA ON SOY OIL PRICES SHOW:

- IN THE LAST 25 YEARS, 7 OUT OF 9 EL NINO EVENTS RESULT IN SPIKES IN SOY OIL PRICES (+17% TO +51%)
- PALM OIL PRICES ALSO MOVE IN TANDEM FROM +8% TO +59%
- LA NINA FOLLOWING AN EL NINO (LIKE IN THE 2003/04, 2006/07 AND 2009/10 EVENTS) CAN DISRUPT AND CRIMP SOYBEAN PRODUCTION IN NORTH AND SOUTH AMERICA AND PRESSURE PRICES TO MOVE HIGHER
- A CLOSE EL NINO-LA NINA SEQUEL WILL BE SUPPORTIVE OF FURTHER PRICE INCREASE IN THE VEGETABLE OIL COMPLEX
- WHILE A WEAK LA NINA OR NEUTRAL ENSO SEQUEL MAY SEE A MORE BEARISH OUTLOOK IN THE 2ND HALF 2017 (UNLESS A NEW LA NINA DEVELOPS IN 3Q 2017)

PALM OIL MARKET OUTLOOK 2017 - end of the El Nino led bull run?



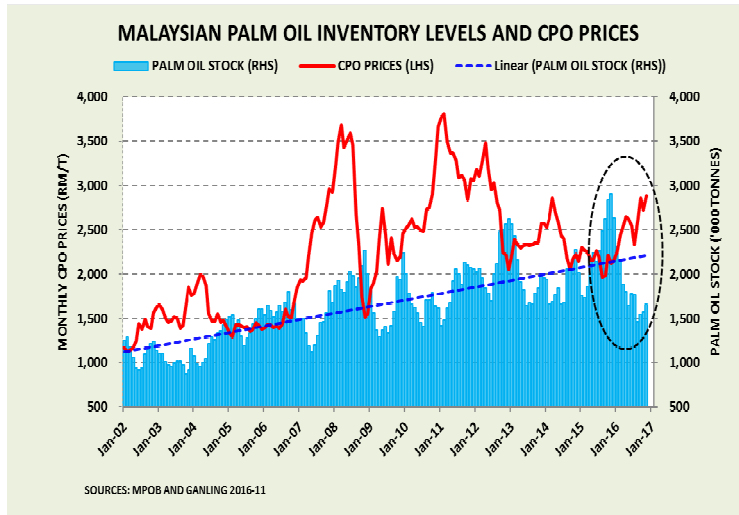
- Prices are cyclical and major weather event like El Nino/La Nina can change the supply-demand equation and trigger a major price movement
- The 2015 'super El Nino' has triggered a strong price recovery to-date (+57%)
- Will an El Nino-La Nina sequel push prices up further or otherwise?

SUPPLY: PALM OIL PRODUCTION FORECAST FOR 2017

GANLING WEATHER-BASED CPO FORECASTS FOR 2017: MALAYSIA + 9% AND INDONESIA +18% Y-O-Y

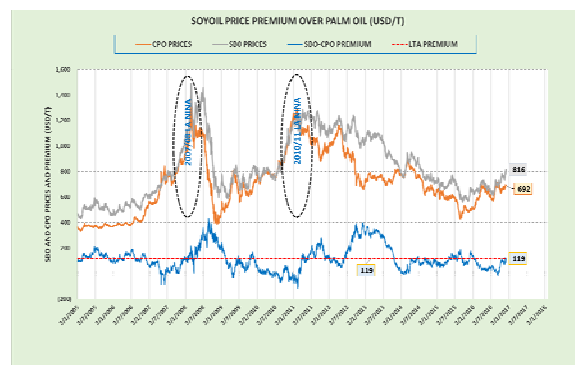
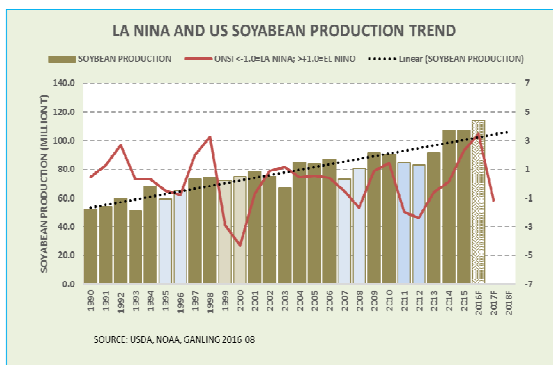
SEE YOU AT THE SEMINAR

PALM OIL INVENTORIES ARE STILL LOW – tight supply to continue in Indonesia & Malaysia



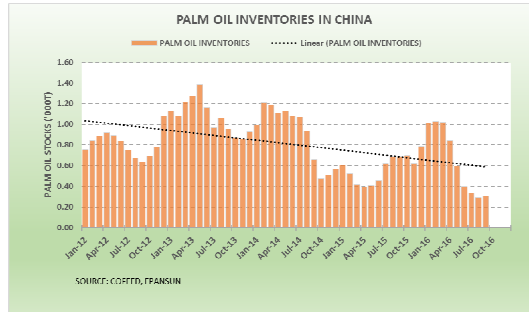
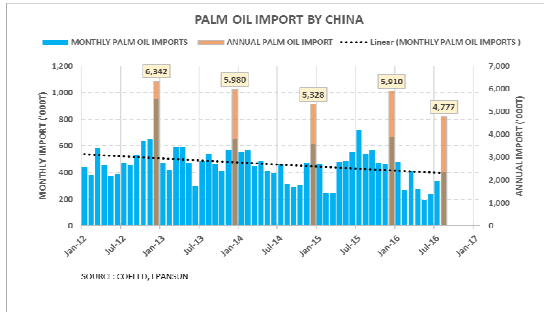
- MALAYSIA: 1.6 MN T - TO REMAIN BELOW 2.0 MN T INTO Q1 2017
- INDONESIA: 2.2 MN T - WELL BELOW 3.0 MN T
- CHINA STOCK: LOW AT 0.3 MN T – NEED TO RE-STOCK
- LINGERING EFFECTS OF 2015 EL NINO UP TO 1Q 2017 TO CAP EXCESSIVE STOCK BUILD-UP
- LOW INVENTORIES SHOULD BE POSITIVE FOR PRICES

AMPLE SOYBEAN SUPPLY MAY CONTINUE – with weak La Nina and neutral ENSO



- Record soybean supplies - 2013 to 2016 in US, Brazil, Argentina
- SBO prices trading 7-year low - little/no sign of price recovery yet
- Present SBO premium over CPO is USD 119/T, near the 10-year average
- Ample soybean supply into 2017 will continue to affect demand for palm oil especially in the China market

LOWER PALM OIL IMPORT BY CHINA



- Palm oil import by China have been declining steadily since 2013, from 6.3 MN T to below 5.0 MN T in 2016. Lower imports due to:
 - Release of rapeseed oil reserve. Estimated 4.0 million T still in the reserve which when release can influence PO imports
 - Ample global soybean supplies since 2013 and possibly into 2017 may continue to affect demand for palm oil especially in the China market and also to a lesser extent the Indian market

• DOMESTIC BIODIESEL MANDATES IN INDONESIA – INCREASE DEMAND AND SUPPORTIVE OF PRICES

TABLE 2: INDONESIA BIODIESEL MANDATE AND DEMAND PROJECTION

YEAR	2015-H1	2015-2H	2016	2020P
% BLENDING	10	15	20	30
TRANSPORTATION (PSO)	10	15	20	30
TRANSPORTATION (NON-PSO)	10	15	20	30
INDUSTRY	10	15	20	30
ELECTRICITY	25	25	30	30
(MILLION KILOLITRE)				
DIESEL FUEL DEMAND	18.4	18.4	39.7	54.0
BIODIESEL REQUIRED	1.8	2.8	7.9	16.2
CPO REQUIRED FOR BIODIESEL	1.7	2.5	7.1	14.6
IDN CPO PRODUCTION	33.3	33.3	32.4	44.0
BIODIESEL DEMAND (% CPO)	5.0	7.4	22.1	33.1

PSO: Public Sector Obligation and refer to subsidised fuel
Sources: Indonesia Min. of Energy and Mineral Resources, APROBI, UOBKH & Ganling estimates

TABLE 3: MALAYSIAN BIODIESEL MANDATE AND DEMAND PROJECTION

BLENDING %	B5	B7	B10	B15
YEAR	2014	2015	2016P	2020P
MYS DIESEL CONSUMPTION (MN T)	12.0	12.0	12.0	12.0
BIODIESEL REQUIRED (MN T)	0.6	0.8	1.2	1.8
CPO REQUIRED FOR BIODIESEL(MN T)	0.5	0.8	1.1	1.6
MYS CPO PRODUCTION (MN T)	19.7	19.6	19.2	21.0
BIODIESEL DEMAND (% OF CPO)	2.7	3.9	5.6	7.7

Sources: MPOB, UOBKH & GANLING Estimates

- ❑ **INDONESIAN AND MALAYSIAN MANDATES TO SOAK UP AN ESTIMATED 8.2 MN T OF CPO (IF IMPLEMENTED FULLY)**
- ❑ **SUPPORTIVE MEASURES FROM INDONESIAN GOVT:**
 - ❑ Introduce export levy to fund the biodiesel subsidy – USD 50/MT for CPO and 20/MT FOR RBDPO (CPO SUPPORT FUND)
 - ❑ Mandatory blending being raised to B15 for 2015 and B20 for 2016
 - ❑ Good progress to-date = 2.9 MN T awarded vs 0.7 MN T in 2015
 - ❑ CPO Support Fund Collection to increase to USD 950 million in 2017
- ❑ **MALAYSIA: B7 = 575,000 mt**
 - Plan to increase to B10 in 2016 = 750,000 mt – not yet implemented
- ❑ **Need to grow and sustain domestic demand**

PALM OIL PRICES - 2016



- The strong El Nino has triggered a strong price recovery. Prices have responded to the sharp decline in production in 2016 in both Malaysia and Indonesia and improving demands and weak RM/USD.
- Prices in the BMD (3rd Month) have responded aggressively to touch RM 3160/T (USD 710 /T) - up 75% from August 2015.
- 2016 Average Price: RM 2650/T

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PRICE OUTLOOK 2017

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Thank you



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Details of these forecasts can be obtained from "OIL PALM QUARTERLY REPORT 2016 - INDONESIA & MALAYSIA" LMC INTERNATIONAL (in association with Ganling Sdn Bhd)

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