DRIVERS & CHALLENGES IN THE PLANTATION INDUSTRY IN THE NEXT DECADE

Presentation by
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MALAYSIAN PALM OIL COUNCIL (MPOC)
Presentation

1. Prospects of plantation agriculture (oil palm & rubber)
2. Opportunities
3. Challenges
4. Possible solutions to challenges
5. Conclusions
**Superior productivity & revenue from tropical versus temperate agriculture for vegetable oil production**

**Economic biomass and sales revenue from palm oil in 5 major producing countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>CPO (t/ha/yr)</th>
<th>Kernel oil (t/ha/yr)</th>
<th>Palm kernel cake (t/ha/yr)</th>
<th>Total economic biomass products (t/ha/yr)</th>
<th>Total Sales Revenue (USD/ha/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>4.42</td>
<td>0.50</td>
<td>0.56</td>
<td>5.48</td>
<td>5,924.68</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3.94</td>
<td>0.42</td>
<td>0.52</td>
<td>4.88</td>
<td>5,246.02</td>
</tr>
<tr>
<td>Thailand</td>
<td>2.39</td>
<td>0.22</td>
<td>0.29</td>
<td>2.90</td>
<td>3,120.58</td>
</tr>
<tr>
<td>Columbia</td>
<td>3.55</td>
<td>0.32</td>
<td>0.40</td>
<td>4.27</td>
<td>4,607.93</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2.00</td>
<td>0.53</td>
<td>0.61</td>
<td>3.14</td>
<td>3,265.21</td>
</tr>
<tr>
<td>Mean</td>
<td>3.26</td>
<td>0.40</td>
<td>0.48</td>
<td><strong>4.14</strong></td>
<td><strong>4,432.88</strong></td>
</tr>
</tbody>
</table>

*Source: Oil World 2011*

Tropical agriculture from oil palm cultivation produces **2.8 x** more economic biomass and **4.2 x** more revenue on **1 ha of land**, compared to temperate agriculture planted with rapeseed. This does not consider other biomass like EFB, palm trunks which is now beginning to be utilized to generate income.
Productivity & revenue from temperate agriculture for vegetable oil production is much inferior to tropical oil palm

Economic biomass and sales revenue from rapeseed in 5 major producing countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Rapeseed oil (t/ha/yr)</th>
<th>Rapeseed meal (t/ha/yr)</th>
<th>Total economic biomass products (t/ha/yr)</th>
<th>Total Sales Revenue (USD/ha/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-27</td>
<td>1.32</td>
<td>1.79</td>
<td>3.11</td>
<td>2,272.88</td>
</tr>
<tr>
<td>China</td>
<td>0.70</td>
<td>1.13</td>
<td>1.83</td>
<td>1,255.09</td>
</tr>
<tr>
<td>Canada</td>
<td>0.45</td>
<td>0.58</td>
<td>1.03</td>
<td>765.74</td>
</tr>
<tr>
<td>India</td>
<td>0.34</td>
<td>0.53</td>
<td>0.87</td>
<td>602.83</td>
</tr>
<tr>
<td>Australia</td>
<td>0.19</td>
<td>0.28</td>
<td>0.47</td>
<td>338.70</td>
</tr>
<tr>
<td>(Mean)</td>
<td>0.60</td>
<td>0.86</td>
<td>1.46</td>
<td>1,047.05</td>
</tr>
</tbody>
</table>

Source: Oil World 2011

Economic biomass & sales revenue of temperate vegetable oil is so much more inferior to tropical oil palm
Plantation agriculture can contribute significantly to revenue in tropics

- Malaysia: Plantation agriculture contributed to 15% of GNP in 2011
- With palm oil industry’s contribution of RM 82 billion or 10%
- With rubber industry’s contribution of 5%
- Palm oil industry top revenue earner among commodity crops and rubber second
- Such good returns from both crops make many developing countries receptive of local & foreign investment in plantation agriculture of oil palm & rubber
- Malaysian companies going abroad
- Recently prices of both crops have retreated from the highs but still profitable
1. **Source of food (global food security):** 80%
2. **Oleochemicals:** 15%
3. **Biofuel:** 2%
4. **Renewable energy source:** Potential Remains Largely Untapped through Palm Biomass
5. **Palm wood furniture (Heveawood furniture success story)**

Palm Oil Currently Accounts for 28% of Global Oils & Fats Supply
The world population is projected to grow from 7 billion in 2011 to 9 billion by 2043, an increase of 29 percent. Food production must meet this rate of increase.
Fighting Hunger Worldwide

The cost of hunger to developing nations is an estimated US$450 billion per year.

It takes only 25 US cents for WFP to give a hungry schoolchild a cup of food with all the nutrition needed for the day.

The number of undernourished people worldwide is just under 1 billion – equivalent to the population of North America and Europe combined.

Hunger Map 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Incomplete data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undernourished</td>
<td>&lt;5%</td>
<td>5-9%</td>
<td>10-19%</td>
<td>20-34%</td>
<td>≥35%</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Extremely low</td>
<td>Very low</td>
<td>Moderately low</td>
<td>Moderately high</td>
<td>Very high</td>
<td></td>
</tr>
</tbody>
</table>

Source: The State of Food Insecurity in the World 2011, Food and Agriculture Organization of the United Nations. Please note that the data in some cases dates back to 2001, so it may not always reflect the present situation in individual countries.

© 2011 World Food Programme

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World’s growing dependence on palm oil will boost demand further in the future

Source: Oil World
## Short supply of palm oil in future

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount /demand of palm oil (million tonnes)</th>
<th>Palm oil contribution as % of total oils &amp; fats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>4.6</td>
<td>8</td>
</tr>
<tr>
<td>1990</td>
<td>11.0</td>
<td>14</td>
</tr>
<tr>
<td>2000</td>
<td>21.9</td>
<td>21.9</td>
</tr>
<tr>
<td>2010</td>
<td>45.9</td>
<td>45.9</td>
</tr>
<tr>
<td>2011</td>
<td>50.4</td>
<td>50.4</td>
</tr>
<tr>
<td>2012</td>
<td>52.3</td>
<td>52.5</td>
</tr>
<tr>
<td>2020</td>
<td>78.0</td>
<td></td>
</tr>
</tbody>
</table>

Thomas Mielke (POTS KL 2012)

In 2020 world will be short of 25.7 million tonnes of palm oil if production of palm oil is not increased from level of 2012.
Malaysia is second most important exporter of Oils and Fats in world (2011)
Population growth needs more oils & fats but among the oil seed crops, only palm oil can use dwindling land efficiently

<table>
<thead>
<tr>
<th>Year Population (billion)</th>
<th>2025</th>
<th>2040</th>
<th>2080</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.9</td>
<td>8.5</td>
<td>9.1</td>
</tr>
<tr>
<td>Projected Additional Palm oil to be supplied by Malaysia (m MT)</td>
<td>2.7</td>
<td>5.3</td>
<td>7.7</td>
</tr>
<tr>
<td>Estimated Additional land needed for palm oil cultivation in Malaysia (m ha)</td>
<td>0.7</td>
<td>1.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Additional land needed to cultivate <strong>Rapeseed</strong> to offset this oil palm cultivation (m ha)</td>
<td>4.5</td>
<td>9.0</td>
<td>13.4</td>
</tr>
<tr>
<td>Additional land needed to cultivate <strong>Sunflower</strong> to offset oil palm cultivation (m ha)</td>
<td>5.7</td>
<td>11.3</td>
<td>17.0</td>
</tr>
<tr>
<td>Additional land needed to cultivate <strong>Soybean</strong> to offset oil palm cultivation (m ha)</td>
<td>7.2</td>
<td>14.4</td>
<td>21.6</td>
</tr>
</tbody>
</table>

- 7-11 times more land needed if other oil crops were to substitute Malaysian palm oil to meet future demand.
- 21.6 m ha of land needed for soybean cultivation in 2080 is equivalent to 2/3 of land area of Malaysia.
## High Land Productivity of Oil Palm Yield – Palm Oil vs Other Oilseeds

<table>
<thead>
<tr>
<th>Oilseed</th>
<th>Productivity (Kernel Oil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean Oil</td>
<td>0.36</td>
</tr>
<tr>
<td>Sunflower Oil</td>
<td>0.42</td>
</tr>
<tr>
<td>Rapeseed Oil</td>
<td>0.59</td>
</tr>
<tr>
<td>Palm Oil</td>
<td>3.68</td>
</tr>
</tbody>
</table>

Productivity of oil palm is:
- **11x** more than soyabean
- **10x** more than sunflower
- **7x** more than rapeseed

Source: * FAO  ** Oil World  *** MPOB
Some quick facts about Malaysian rubber industry

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planted area (ha)</td>
<td>1,020,380</td>
<td>1,022,780*</td>
</tr>
<tr>
<td>Production (tonnes)</td>
<td>939,241</td>
<td>996,210</td>
</tr>
<tr>
<td>Average yield (kg/ha/yr)</td>
<td>1,480</td>
<td>1,500</td>
</tr>
<tr>
<td>Earnings (Exports + rubberwood furniture)</td>
<td>RM33.85b</td>
<td>RM40.42b</td>
</tr>
<tr>
<td>Contribution to Malaysia’s economy</td>
<td>2nd position after palm oil</td>
<td></td>
</tr>
<tr>
<td>NR producer</td>
<td>3rd in world</td>
<td></td>
</tr>
<tr>
<td>NR exporter</td>
<td>3rd in world</td>
<td></td>
</tr>
<tr>
<td>Rubber gloves</td>
<td>World’s largest supplier</td>
<td></td>
</tr>
<tr>
<td>Latex thread &amp; cord</td>
<td>World’s 2nd largest supplier</td>
<td></td>
</tr>
<tr>
<td>Nitrile butadiene rubber</td>
<td>World’s largest supplier</td>
<td></td>
</tr>
</tbody>
</table>

Source: Ang Chai Seng (MRB) & MRB website  
* Estimated
Usage of Malaysian Natural Rubber

- 70.7% compounds
- 13.1% others
- 6.8% tyres & tubes
- 8.9% thread
- 0.4% gloves

Source: MRB (Dec 2011)
Projected increasing demand for both vegetable oils and rubber has also stirred interest in two crops

Sources: OECD (2008), Legge (2008)

1. World’s requirements of vegetable oils for food & biofuels to reach 262.7 million tonnes in 2030
2. World’s consumption of rubber to reach 36.7 million tonnes in 2030; with NR being 16.4 m tonnes & SR 20.3 m tonnes
3. Palm oil’s high land productivity makes it very competitive to other oilseed crops
4. Natural Rubber has less competitors. Major competitor is Synthetic Rubber. Price of synthetic rubber linked to fuel price

Sources: rubberasia, IRSG
Pallid economic outlook will impact demand

- Contagion effect of Eurozone crisis may lead to lower demand for both palm oil and rubber
- Palm oil will be less affected since it is an affordable (cheap) source of oils and fats
- Recently palm oil price has retreated very much due to Indonesia’s export duty restructuring
- Rubber will be affected more by world economy as demand for automobiles will slacken and less tyres needed
2. OPPORTUNITIES
Keen interest to acquire oil palm and rubber plantations

German investors eye rubber plantations in Indonesia

German investors have expressed interest in developing rubber plantations in Bangka-Belitung province in east Indonesia, local Investment Coordinating Board Chairman, Zakaria said. He further said that the potential of rubber plantation development and the rubber processing industry was promising as there were a lot of vacant plots that could be turned into productive land. "Rubber produced by the farmers in Bangka reaches 93,000 tonnes per year," he said.

Zakaria pointed out that German investment in rubber plantations and in the rubber processing industry would surely raise the price of the commodity on local markets, thereby encouraging rubber farmers to work even harder.

-The Jakarta Post, 10 Mar

Interest is broad based. Even companies who have no previous experience with oil palm or rubber are interested to get involved.
CHALLENGES: Scarcity of competent manpower to run plantation operations

• Lack of plantation workers and reliance on foreign labour is well known
• Not often emphasized is the lack of competent managers, assistant managers and assistants for field and factory operations
• Also the lack of expertise e.g. agronomists, breeders
• Problem more serious in rubber industry with many present day managers having no “rubber” experience
• Grave consequences as high yield potential not realized
• Lower returns to investment
Scarcity of good agricultural land

• Land is a scarce resource
• Good agricultural land is an even scarcer resource with the rapid expansion to plant oil palm and rubber
• Investors content with less suitable areas (poorer soils, harsher climate conditions or both)
• Oil palm cultivation preferred to rubber as latter need more labourers & lack of expertise for rubber
• Overall effect:- Growing oil palm (more demanding crop in terms of soil & climate) in less suitable areas
• Result: Lower productivity & profitability
Expanding overseas requires a new business culture mentality

• Companies venturing abroad
• Some companies with no previous encounters or experiences in palm oil or rubber trade
• Feasibility studies need to know more than just soil suitability and climate suitability
• Need to understand, learn and adapt to new cultures in order to be successful
A need to increase yield productivity for oil palm

In 2007, oil palm industry players had a round table discussion on elevation of national average FFB yield to 35t/ha and OER to 25% to obtain 8.75 t CPO /ha/yr. KEY: replant with good materials + best agro-management practices
Getting high land productivity for oil palm is achievable

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (ha)</th>
<th>Highest CPO (t/ha) obtained by estate for the year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>5,425</td>
<td>6.85</td>
</tr>
<tr>
<td>2003</td>
<td>32,089</td>
<td>7.45</td>
</tr>
<tr>
<td>2004</td>
<td>22,410</td>
<td>7.10</td>
</tr>
<tr>
<td>2005</td>
<td>73,859</td>
<td>8.23</td>
</tr>
<tr>
<td>2006</td>
<td>72,436</td>
<td>7.74</td>
</tr>
<tr>
<td>2007</td>
<td>69,407</td>
<td>7.82</td>
</tr>
<tr>
<td>2008</td>
<td>80,021</td>
<td>7.77</td>
</tr>
</tbody>
</table>

Source: IOI Annual Reports as cited by Matthews & Foong (2010)
Land productivity of rubber has been on uptrend since 1995

Yield increase has been through implementation of better technologies e.g. gaseous stimulation methods. Shows the importance of R & D efforts.
SOLUTIONS: Mechanization

• Tackle labour shortage

• Good progress made in mechanization

• Mechanized harvesting tool for oil palm: CANTAS

• Mechanized harvesting tool for rubber: ARTS
  (Mechanized Rubber Tapping System)

• Mechanized field transport vehicles

• Mechanized fertilizer pocketing system for rubber
  (Bronze award at ITEX 2012)

• Next: To find solutions for weaknesses found in mechanized tools & equipment

• Cost must be affordable
Remove stigma of working in plantations

• Age old problem
• Hire & train locals to work in oil palm plantations as part of CSR duties (Honorable Minister of MPIC’s call to plantation industry captains at Palm Industry Labour Seminar in 2010)
• Real challenge which needs innovative actions
Solving bottlenecks that limit yield

• High yielding varieties of oil palm & rubber normally require more inputs
• Two large requirements for oil palm are fertilizers & water
• Fertilizer requirements well taken care of
• Water will be a limiting growth factor
• Particularly evident since plantation agriculture going into areas with longer drought periods e.g. parts of Cambodia & Myanmar
• Innovative solutions need not be high tech all the time
• Combining smart irrigation + manuring
Trapping water in field

Source: TH Plantations

Much water lost as runoff. Reduce runoff as much as possible.
## Results from experiments on irrigating oil palm

<table>
<thead>
<tr>
<th>Situa</th>
<th>FFB Yield (t/ha/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysian National Yield (1975-2010)</td>
<td>18.94</td>
</tr>
<tr>
<td>MPOB (DG’s plot)</td>
<td>32</td>
</tr>
<tr>
<td>Felda (irrigated)</td>
<td>46</td>
</tr>
<tr>
<td>Felda (lysimeter with maximum inputs of fertilizers &amp; water)</td>
<td>60</td>
</tr>
<tr>
<td>India (irrigated)</td>
<td>32</td>
</tr>
<tr>
<td>India (non-irrigated)</td>
<td>8</td>
</tr>
</tbody>
</table>
Positive response from irrigation in field trials on oil palm

<table>
<thead>
<tr>
<th>Experiment details</th>
<th>Results reported</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drip or furrow irrigation of oil palms (non effluent)</td>
<td>30% yield increase from irrigation &amp; mulching</td>
<td>Chan K.W et al (1985)</td>
</tr>
<tr>
<td>Flat bed irrigation on oil palm (non effluent)</td>
<td>11% yield increase with irrigation</td>
<td>Lee C.T et al (2011)</td>
</tr>
<tr>
<td>Furrow application of rubber effluent on oil palm</td>
<td>4-40% yield increase with irrigation</td>
<td>Mohd Nazeeb et al (1983)</td>
</tr>
</tbody>
</table>

- **Plantations should relook at this option to reach the yield potential.**
  - Start small by irrigating a 20 hectares block.
  - With experience & success obtained, expand by repeating experience in parcels of 20 hectares.

- **Irrigate during dry season only.**
- **Combination of smart irrigation + fertilizer use expected to give some dramatic yield increase**
Solutions for *Ganoderma* treatment & prevention urgently needed

- This is obviously one of the biggest concerns of the palm oil industry

- Industry looking to Ganoderma Research Institute for solutions in near future
Two Short Term Problems faced by the palm oil industry in
Managing a duopolistic (oligopolistic) market

Problem No 1

• Indonesian duty structure encourages their exporters to undercut prices in the market
• In an oligopolistic supplier market, undercutting by Indonesia will force Malaysian exporters to lower prices and/or to pile up stocks
• Over the last one year, price lowering has taken place despite the world shortage of oils & fats, and stocks have built up lately leading to a further sharp price decline despite lower annual production in Malaysia.
Based on supply and demand factors, the price of palm oil should be RM3,400 but is currently trading at RM2,450. The price is artificially pushed down by undercutting of prices.
Malaysian stocks have increased to record levels despite lower yearly production compared to last year.

Price has decreased by RM1,000 per MT and with each country exporting 20 million MT of palm oil products, RM20 billion would vanish from the revenue of each country if the low prices were to prevail for 1 year.

Impact of Mis-Managing a duopolistic market
Value Recovery Activities

• Malaysia can reduce 300,000 MT of supply by incentivizing the cutting of 100,000 hectares of old oil palm for replanting, within a short period of implementation.

• Malaysia can increase biodiesel usage by extending blending to the whole of Peninsula Malaysia from existing central region with 4 states participating. Blending could also be extended to the non-subsidised industry fuel sector, which can utilise up to 300,000 MT per year.
Value Recovery Activities (Cont'd)

• In the near term duty free CPO can be exported more efficiently once tank farms (now full) are organized to allow CPO clear passage for loading onto ships for exports. Some 2.5 million MT per year is exportable.

• till 1 Jan 2013 when Malaysian duty is reduced to 4.5% from 8% range. CPO will be in demand by local and foreign buyers and price will recover.
• Indonesia could also undertake all similar measures to be undertaken by Malaysia. They need to help prevent the RM20 billion potential loss in revenue.

• Lesson learnt: unilaterally raising the stake (favourable duty structure) or playing a win-lose strategy was a painful mistake; it backfired in a duopoly market, resulting in a lose-lose outcome.
Problem No 2: Action By Duopolistic partner: RSPO NGO supporters

- RSPO and Non-RSPO palm oil also form a duopoly supply chain
- ENGOs who campaign negatively against non-RSPO palm oil are raising a unilateral stake, and it is a mistake.
- A win-lose strategy will backfire and result in a lose-lose outcome for both suppliers.
Short Term Strategies
Value Destruction of Palm Oil

• Environmental NGOs (ENGO) anti palm oil campaigns destroy value of palm oil
• Discriminatory labeling increases cost to both palm oil users and non palm oil users, and to consumers
• Negative campaigns destroy demand in general, as the oils & fats are oligopolistic markets. If palm oil prices fall, it will drag the prices of other oils & fats downwards, leading to value destruction for all producers
Some French manufacturers and supermarkets are displaying “no palm oil” labels on their food products. This means that RSPO certified palm oil is also excluded.

Certified RSPO is touted by ENGOs as the environmentally friendly way for manufacturers in the EU to use it in their products. RSPO NGO supporters should oppose the campaign by French NGOs and food manufacturers to discriminatorily label palm oil.

ENGOs like WWF who initially introduced RSPO should make their stand clear. They should not support boycott of palm oil as this will also exclude RSPO certified palm oil from being used.
Action to overcome the predicament: Introduce Responsible Palm Oil and Deforestation Free Palm Oil From Malaysia

• All Malaysian palm oil is responsibly produced
• Malaysia follows the deforestation standard set by developed countries but does not exceed the percentage of any developed country
• All Malaysian palm oil is relatively deforestation free.
Distribution of forest in Malaysia versus other countries

Average 23%
Average 51%
Malaysian Deforestation Free (MDF) Palm Oil Can be Certified With 100% Compliance

• All plantations are licensed to operate on legitimate agricultural land and this is strictly enforced by Malaysian Palm Oil Board (MPOB)

• Plantation is part of agriculture sector which is benchmarked to use less land in percentage compared to standard set in developed countries (Even though the country is still developing and has not yet fully developed its land assets)
Malaysia commits to conserve a higher percentage of forest than the benchmark set in developed countries (presently 50%)

Malaysia reports regularly to the UNFCC the negative carbon footprint of the oil palm industry (Oil palm plantations are net remover of CO2 from the atmosphere)
Impact of Oil Palm Forest on CO2 emission
MALAYSIAN GREENHOUSE GAS EMISSION AND REMOVAL

Total CO2 Emission 292.9
Total CO2 Removal By Forest and plantation 247

- Forest
- Palm Plantation
- Emission by Energy Sector
- Emission by Others
- Emission by LULUCF + Agriculture (Rice) Sectors

Land Use, Land Use Change and Forestry (LULUCF) is made up of Forestry and (Oil Palm) Plantation Sector
Greenhouse gas emission

• The Malaysian Palm oil industry has negligible carbon foot print of 0.015 % of global total GHG emission.

• Doubling the planted area does not cause any significant increase in emission.

• Durban climate change meeting did not achieve any immediate GHG reduction commitments. Canada withdrew from Kyoto protocol to reserve its right to mine tar sand and continue to generate GHG

• Why must palm oil be penalized now with GHG reduction commitments through RSPO, RED, and EPA’ s RFS2, when the world will only talk seriously on GHG emission in 2020?

• Green protectionism?
Future for both palm oil & rubber industries remains bright
This is despite the prices of both crops coming down from their recent highs
For palm oil, action by Indonesia (principally) has led to current price decline and profit erosion
Palm oil will be in short supply by 2020 if production is not increased
Expect more investments in both these industries in the future
Preference will be given to oil palm over rubber
Plantation industry already going abroad
Some of the new investors are new to the palm oil & rubber industries
With rapid expansion, shortage of competent personnel to run the businesses will become critical
Coupled with planting on less suitable areas due to dwindling availability of good agricultural land, maximum yield potential may not be realized
This will lead to lower returns on investment
Conclusions

• Good progress in mechanization solutions for both oil palm & rubber industries but further progress needed
• Need more work to make them really practical & affordable
• Urgent need to find good solutions to *Ganoderma* disease for oil palm
• Imminent need to introduce Responsible Palm Oil & Deforestation Free Palm Oil from Malaysia
• Plantation industry will continue to be a sunrise industry
• Yield stagnation has to be overcome
• With so many new players and rapid pace of expansion, success is not guaranteed
• Victors will be investors who have done their homework well, are risk takers & prepared to pay good remunerations to employ & retain competent personnel who can manage the daily chores in the plantations well
THANK YOU