WORLD PALM OIL SUPPLY, DEMAND, PRICE AND PROSPECTS:

FOCUS ON MALAYSIAN AND INDONESIAN PALM OIL INDUSTRY

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(MPOB)

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BACKGROUND

Production and consumption of world's oils and fats increased at almost the same rates in the past. Any differences between them will indicate either an oversupply or shortage situations; oversupply occurred when production exceeded consumption and shortage when otherwise. For instance,, there was a shortage of oils and fats in 1976 when their production of 45.9 million tonnes was less than their consumption of about 47.3 million tonnes while they were at equilibrium in 2009 as they equaled at about 163.9 million tonnes (Oil World, 2010). This translated to about a 4% annual increase each in production and consumption for the past 32 years.

Among 17 oils and fats, palm oil emerged as the significant player that helps expansion in world's production and consumption of oils and fats. From production of only 1.6% consumption of 6% in1976, palm oil production and consumption had grown to 28% in 2009 to become the world's largest produced and consumed oil. It recorded the fastest increase in global production and consumption due to the significant contributions by Malaysia and Indonesia. Meanwhile, the increase in its consumption is mainly due to its techno-economic advantages over other oils and fats, especially its main competitor, soybean oil.

Global oils and fats market has grown accustomed to the ever increasing availability of palm oil to meet the rising demand for edible oils. Due to the importance of palm oil, this paper attempts to highlight the world supply of palm oil by focusing on the two main producers, Malaysia and Indonesia. Its performance and prospects in 2010 will also be included. After dealing with the supply, this paper will highlight the palm oil consumption globally as well as its prospects in 2010. Finally, the paper discusses about the palm oil price performance and prospects in 2010.

[1] Malaysian Palm Oil Board

WORLD PRODUCTION OF PALM OIL

Palm oil, in general, is produced from a perennial crop and is the most reliable in supply. This is due to the fact that the crop when once planted, it will be in production for 25 years or more. The oil palm fruit produces two distinct oils, which are palm oil, obtained from the mesocarp and palm kernel oil, obtained from the kernel or endosperm of the oil palm fruit. Due to the long-life of the trees, the supply of both products can be easily assured. In comparison, productions of oil from other perennial crops such as coconut and olive, however, have been fluctuating. On the other hand, productions from annuals are affected by factors such as uncertain weather conditions, demand, supply and prices of other substitutes. Their planting intentions can be altered very fast.

Oil palm has the highest average productivity compared to other major crops. It is the most efficient producer of oil among the oil crops. It is capable of producing 4,080 kg of palm oil and 456 kg of palm kernel oil giving a total of 4,536 kg of palm oil products per year from a hectare of land (Table 1). It is about 10 times more productive than soybean since only 403.3 kg of soybean oil can be obtained from a hectare of soybean crop.

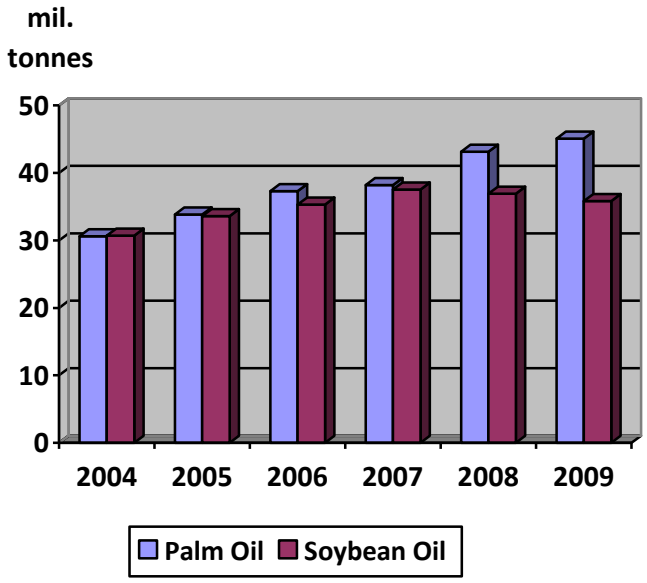
The preceding paragraphs explain why world palm oil saw a phenomenal increase in production in the past. From an average of 1.26 million tonnes during 1958 to 1962 period, its production surged to about 17.9 million tonnes during the period 1996 to 2000 and then to 45 million tonnes in 2009. This consequently increased its ranking from the 10^{th} position to a more comfortable position, second and then first in the ranking of oils and fats production, as shown in Table 2. It also outperformed soybean oil production since 2005 (Figure 1). While it witnessed a meteoric rise in production, some animal fats, such as butter, tallow and lard, observed only a mild increase in production, thus recording a drop in their rankings. Butter dropped to the 7^{th} place in the ranking order while tallow and lard fell to fifth and sixth place respectively (Table 2).

Table 1: Average Productivity of Major Oil Crops

	2007/2008 [p] Oilseeds Yield Kg/ha/yr	Oil Conversion Factor (%)	Oil Equivalent Per ha/yr (kg)
Soybean	2180	18-19	403
Cottonseed	1300	18-20	247
Groundnut	1060	45-50	504
Sunflower seed	1350	40-50	608
Rapeseed	1840	40-45	782
Sesame seed	460	45-50	219
Palm Oil	-	20	4080
Palm Kernel Oil	960	45-50	456
Copra	560	65-68	372

Note: Preliminary ([p])

Sources : Oil World Annual 2009
Oil World Monthly May & June, 2008
Fuels and Chemicals from Oilseeds



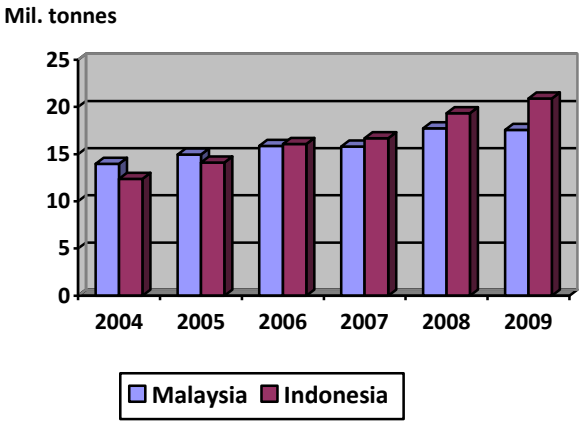
Source: Oil World, various issues
Figure 1: World Production of Palm Oil and Soybean Oil

Table 2: Average Annual production of Major Oils and Fats

	1958 - 1962		1996 - 2000		2009	
	Rank Order	Mil. tonnes	Rank Order	Mil. tonnes	Rank Order	Mil. tonnes
Total		29.16		103.45		163.94
Butter	1	4.21	7	5.75	7	7.12
Tallow	2	3.39	5	7.65	5	8.43
Soyabean	3	3.20	1	22.84	2	35.81
Lard	4	3.19	6	6.21	6	7.77
Groundnut	5	2.65	8	4.62	10	4.12
Cottonseed	6	2.26	9	4.00	8	4.69
Sunflower	7	1.90	4	9.14	4	12.97
Coconut	8	1.85	10	3.10	11	3.22
Olive	9	1.30	11	2.42	12	2.92
Palm	**10**	**1.26**	**2**	**17.93**	**1**	**45.06**
Rapeseed	11	1.13	3	12.56	3	21.34
Linseed	12	0.92	12	0.73	16	0.58

Source: 1958 – 1962 and 1996 – 2000 data is from Gunstone (Inform, 2000), and 2009 data from Oil World

The main contributors of palm oil are Malaysia and Indonesia and their proportions together constituted about 85% of the world production of palm oil and 23% of the world oils and fats production. Production from both countries had increased over time; Indonesia increased from 12.38 million tonnes in 2004 to 20.9 million tonnes in 2009, expanding at 11.8% annually while Malaysia from 13.98 to 17.56 at 6.1% (Figure 2). The faster growth of Indonesia's land expansion had allowed the country to overtake Malaysia's production since 2006 to become the world's largest producer of palm oil.

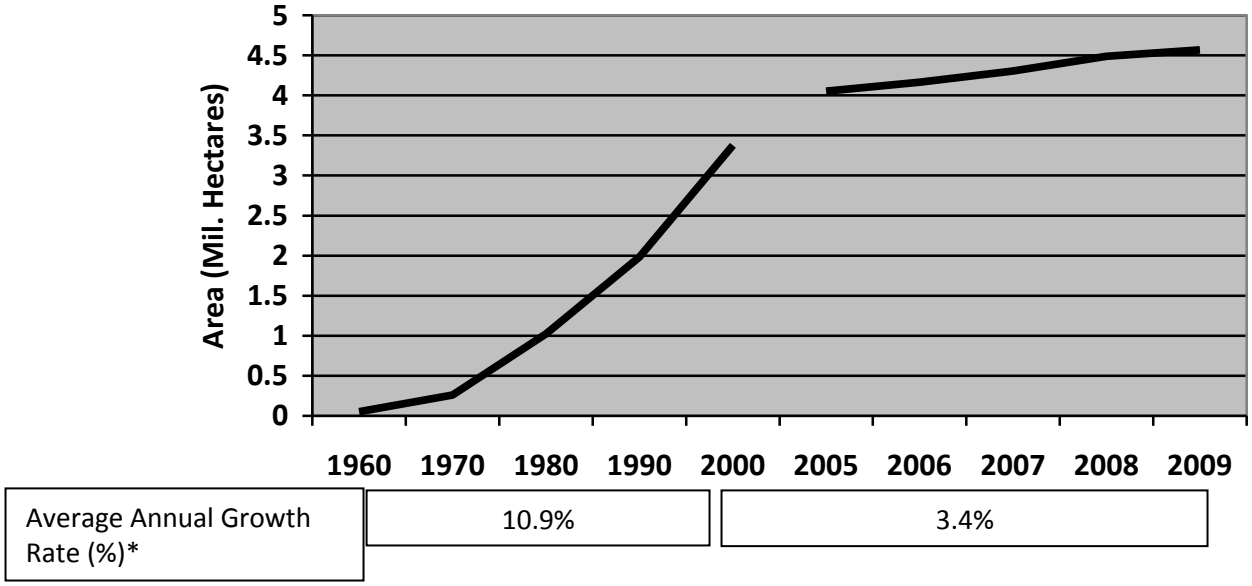


Sources: MPOB and Oil World
Figure 2: Palm Oil Production: Malaysia and Indonesia

a) MALAYSIAN OIL PALM INDUSTRY

i) Oil Palm Areas

Malaysian total planted area under oil palm in 1960 was only 55,000 hectares (ha) (Figure 3). Since then, it expanded rapidly under the government's agricultural diversification programs to overcome the country's economic reliance on rubber and tin. Due to that, the area recorded an increase to 261,000 ha in 1970, then to almost one million ha in 1980, and to 3.38 million ha in 2000. This expansion reflects the annual growth rate of 10.9% from 1960 to 2000. The rapid expansion was achieved as a result of the successful conversion of existing rubber plantations into oil palm estates as well as the opening up of new land areas under the government land schemes. These oil palm plantations are run mainly under the estates management system and organized small-holders scheme, through which the industry will be able to utilize resources properly and economically, and to correctly apply advanced management, planting techniques and high yielding materials. The country was successful in managing the plantations due to its experience in rubber industry.



Note: * - compounded average growth rate
Source: MPOB

Figure 3: Oil Palm Planted Areas in Malaysia

The areas then continued to expand from 3.38 million ha in 2000 to 4.567 million ha in 2009, giving an annual growth rate of 3.4% (Figure 3). The area appeared to grow at slower annual growth rates during the millennium compared to the period prior to the millennium. This indicates that the oil palm industry started to face land constraint in the country presently and it will be further acute in the future. Oil palm has to compete with other crops for the balance of agricultural land in the country.

The oil palm areas in Malaysia were owned by four different categories of ownership, namely smallholders, organized smallholders (FELDA, FELCRA, RISDA), states and private companies. Among these, the private owners represented the largest proportion and their areas increased from 2.48 in 2006 to 2.81 million hectares in 2009 (Figure 4). The areas owned by smallholders also increased from 0.45 to 0.61 million hectares. The areas belonged to organized smallholders were more or less stagnant during the period.

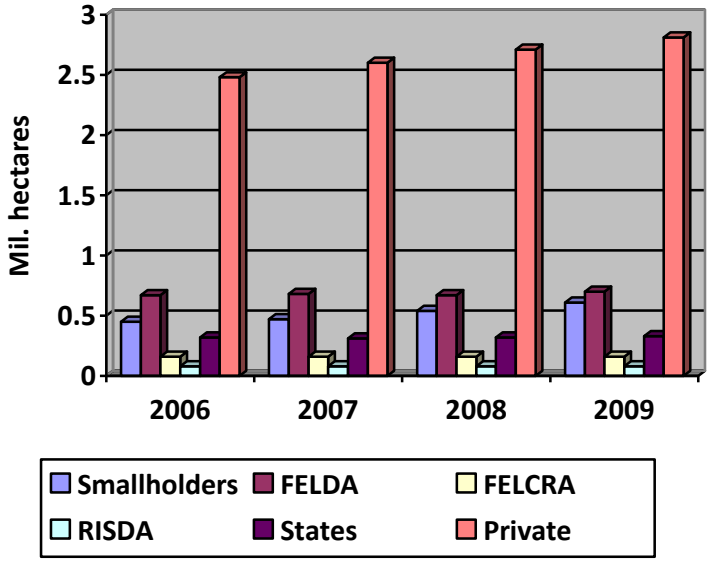


Figure 4: Oil Palm Planted Areas by Category

ii) Oil Palm Yield

Yields of fresh fruit bunch (FFB), CPO and palm kernel (PK) did not show much improvement (Figure 5). FFB yield declined from 19.6 in 2006 to 19.2 tonnes per hectare in 2009 and CPO maintained at 3.93 tonnes per hectare during the two years. The decline in the yields led to the decline in CPO production. In 2009, CPO production declined to 17.56 million tonnes from 17.73 in the previous year. The year 2009 was a stress year for oil palm after over-produced in 2008.

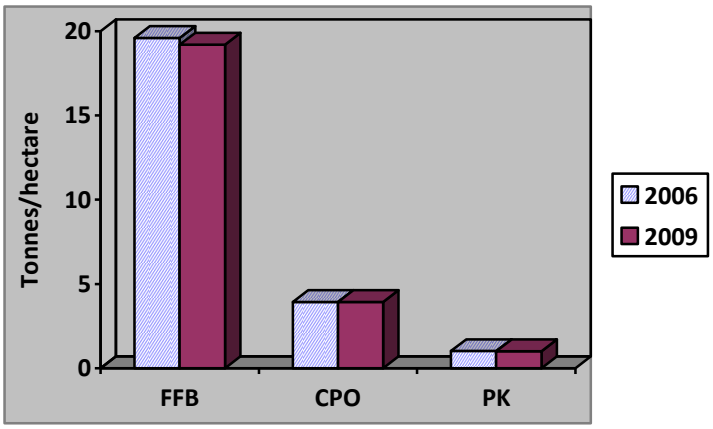


Figure 5: Oil Palm Yields

iii) **Malaysian CPO Production**

In tandem with the increase in areas, CPO production in Malaysia had increased significantly from 92,000 tonnes in 1960 to 17.6 million tonnes in 2009 (Figure 6). The production increased annually in most of the years during the period except in some years in which it dropped due to the stress of the trees. After the stress, the trees recovered with production usually rebounded. The annual growth rate of CPO production was high at 16.7% in the 60s and increased at the highest rate in the 70s at 19.6%. The high rates were mainly due to the trees which were in majority at the young age with increasing yield. After the 70s, the growth rates started to decline which means that the area increased at decreasing rate; 9% in the 80s, 5.9% in the 90s and 4.9% in the millennium.

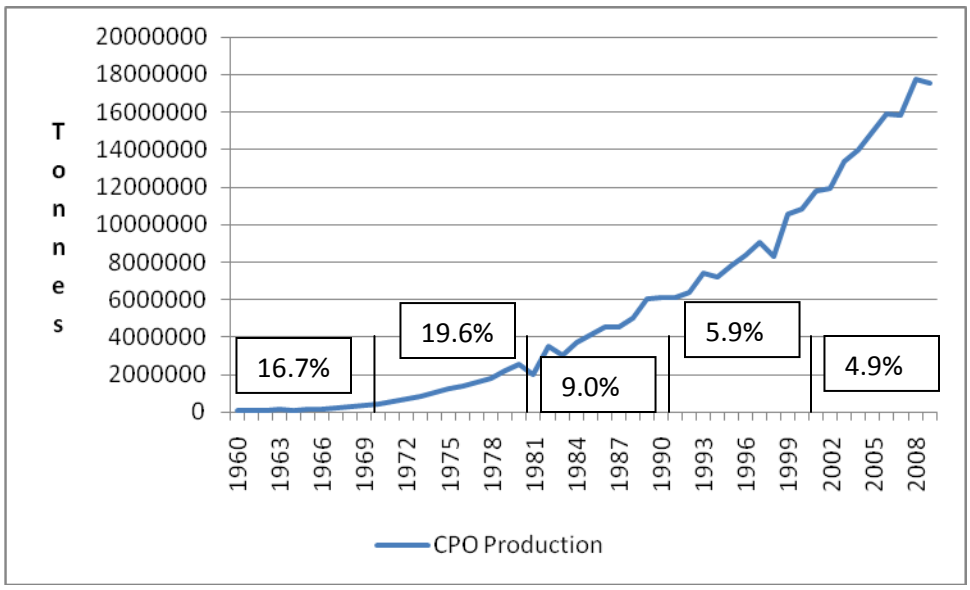


Figure 6: Malaysian CPO Production and Its Annual Growth Rates

It is interesting to record here that CPO production exhibited seasonality pattern monthly. The production pattern was being analysed for the period of 1989 until 2009 which shows a unique

pattern which repeats every year (Figure 7). The production will usually decline in February from January to form the lowest production level of the year with the seasonality of 0.77 (Figure 8). Thereafter, it will uptrend until September which then forms the peak month of the year with the seasonality index of 1.22. The production will then de-trend until December with the index of 0.94.

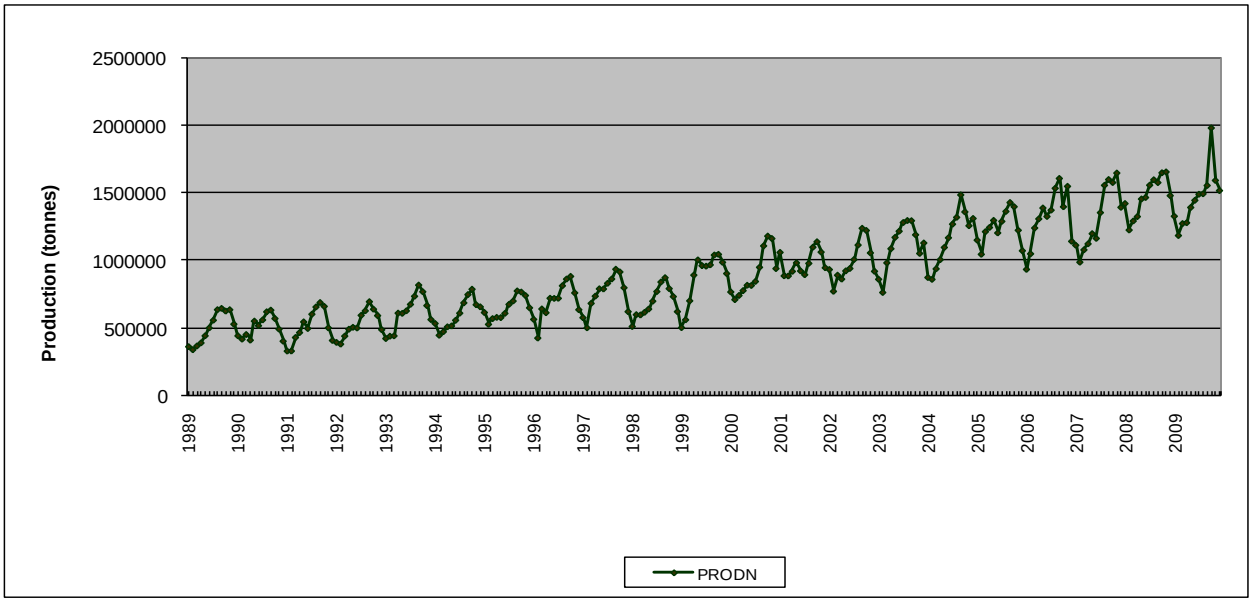


Figure 7: Monthly CPO Production Cycles in Malaysia

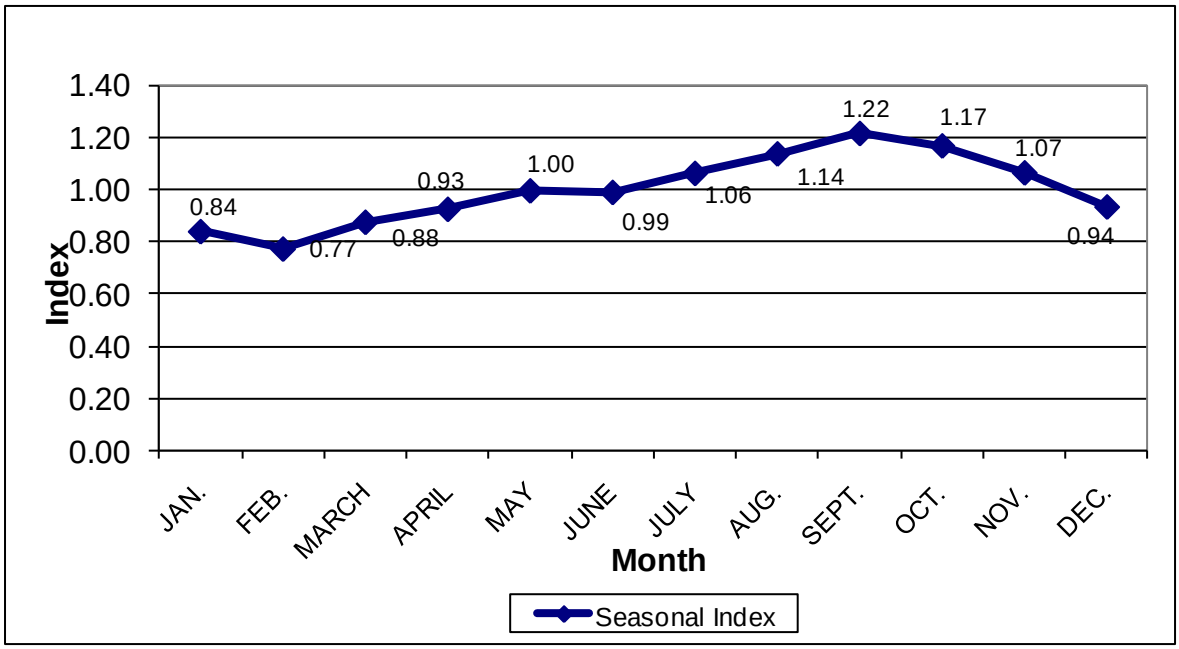
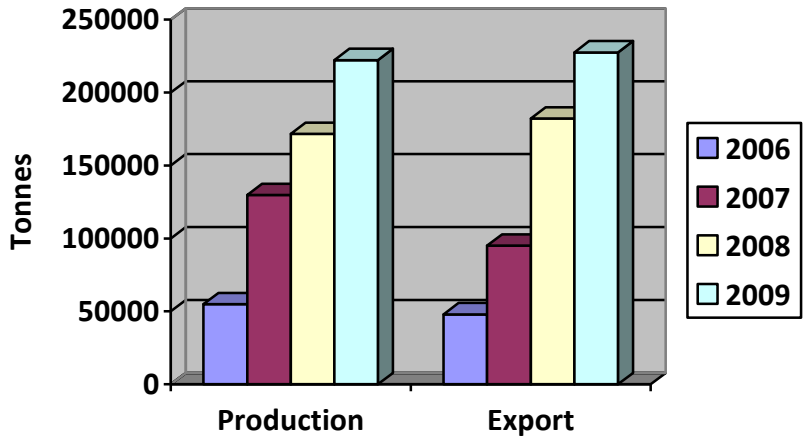


Figure 8: Seasonality Index Pattern of Malaysian CPO Production

iv) Malaysian Production of Biodioesel

Malaysian oil palm industry has entered a new era investments into production of 54,981 tonnes of palm methyl ester (PME) in 2006 (Figure 9). It increased further to 130,000 tonnes in 2007, 172,000 tonnes in 2008 and 222,000 tonnes in 2009. The surge in biodiesel production implied that there is an additional usage of palm oil.

A few relevant factors had led to the development of biodiesel in Malaysia. It started in 2006 when price of crude petroleum was high above USD 60 per barrel. Due to this, many countries, including Malaysia, started looking for its alternatives such as a renewable energy from vegetable oils, including palm oil. These countries include Europe, the USA, China, Australia, Thailand, Philippines, Indonesia, and South Korea. Europe had its biofuels directive established in which it will enforce 5.75% of biofuels in 2010 which is equivalent to 10.2 million tonnes of production. This created high demand for PME in the EU market. The USA introduced its Program 20 in 10 where it will attempt to achieve 20% displacement of petroleum with biofuels in 10 years (2017). China used non-edible feedstock in the biodiesel production while Australia used tallow. Thailand has mandated for B2 in diesel pool as of April 2008 and B5 nationwide beyond 2009 and will move towards B10.



Note: 2006 started in August
Figure 9: Production of Palm Methyl Ester (PME) in Malaysia

Low price of CPO in 2006 had made the biodiesel industry viable. CPO is the feedstock for this industry, thus the cheaper the feedstock the more profitable is the biodiesel industry. However, when the CPO price surged to a higher level, the industry will face various levels of profits. From August 2006 until June 2007, the price of CPO was low and the biodiesel industry made high profits. Thereafter, the industry recorded a thin profit margin as the CPO price was at high level. Presently, the industry experienced a loss in this business.

The consumption of biodiesel in Malaysia is quite minimal. Consequently, majority of the PME produced was exported. About 48,000 tonnes (87%) were exported from the total production of 55,000 tonnes in 2006 (Figure 10). A lesser percentage of 73% of PME produced in 2007 was exported while in 2008 and in 2009 the export volumes exceeded the production volume of PME.

Figure 10 shows the export destinations for Malaysian PME. It is clear from Figure 11 that EU is the biggest importer of the Malaysian PME. The export volumes from Malaysia surged significantly for the past four years from 12,500 tonnes in 2006 to 119,000 tonnes to the EU in 2009. China is the smallest importer of Malaysian PME

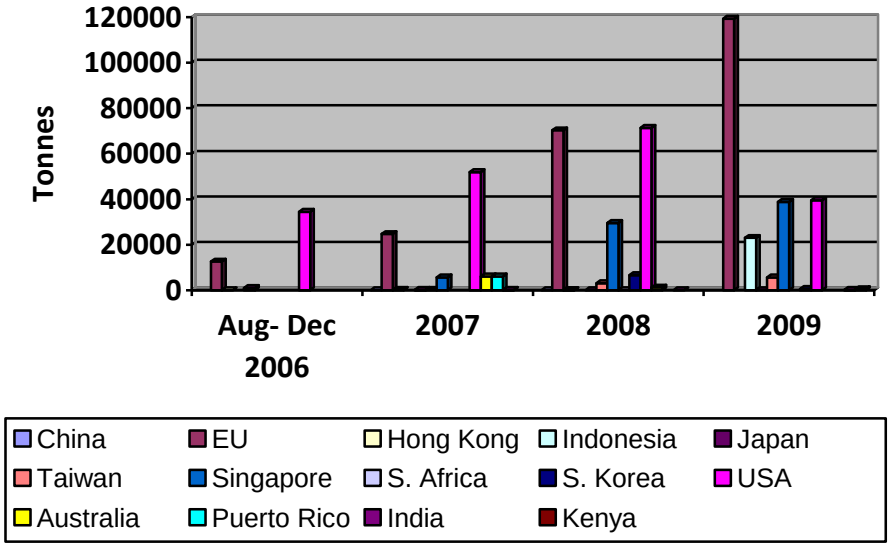


Figure 10: Export Destinations of Malaysian PME

v) Outlook for Malaysian CPO Production

Malaysian CPO production in 2009 declined to 17.56 million tonnes from 17.73 million tonnes in 2008. This was due to the stress of the trees after heavy production in the 2008 which registered a sharp increase of 12.1% from 2007. Now, it is the question of 2010 CPO production which is expected to face many uncertainties. One of them was the El Nino which was speculated to happen in Malaysia at the beginning of year and many analysts forecasted varying figures for CPO production in Malaysia from 17 million tonnes to 18.5 million tonnes.

Will El Nino happen in 2010? It is a fact that oil palm FFB yield can be affected by its occurrence because of the low rainfall periods, the severity is largely determined by the number of months with less than 100 mm rainfall. Since 2007, the number of months with less than 100 mm of rainfall has been very low, i.e. less than or equal to one month per year. Therefore, base on the current monthly weather situation, the reduction in FFB yield from the current El Nino event is expected to be minimal.

The major effects of drought on oil palm yield are usually observed 10 months and 24 months later. In this respect, a continuously low rainfall (<100 mm) for more than two months will have significant effects on the palm yield, as what was experienced in the past severe El Nino events such as in 1997-98.

Thus, the effect of El Nino is very minimal in 2010 and this makes the outlook for Malaysian palm oil to be bullish. During January to May, 2010, actual production was about 6.6 million tonnes, which is about 1.3% higher than that of the corresponding period of 2009. From June until December 2010, production is expected to amount to 11.25 million tonnes, compared to 11.09 million tonnes to the same period last year. Thus, Malaysian palm oil production for 2010 is expected to reach 17.8 million tonnes, about 1.4% higher than that of the 2009 production (Table 3). The increase is mainly attributed to the increase in total planted area, expected to be about 4.82 million hectares in 2010, representing an increase of 2.8%. Out of this, matured area is projected at 4.2 million hectares, representing a 2.6% increase. OER is projected at 20.5%, while FFB yield is 19.26 tonnes per hectare compared to 20.49% and 19.2 tonnes per hectare in 2009.

Table 3. Projected Palm Oil Balance in Malaysia in 2010

	Year	CPO Production (i)	PO Export (ii)	E. Stock (iii)	Local Disap (iv)	PO Import (v)	CPO Production (vi)
2010	Jan	1,248,208	1,461,747	2,003,175	***177,806***	155,803	**1,321,304**
		1,149,269	1,295,038	1,789,194	***132,303***	64,091	**1,156,814**
	Mac	1,301,369	1,396,949	1,655,748	***88,004***	50,138	**1,387,234**
		1,374,842	1,285,467	1,622,580	***232,999***	110,456	**1,306,228**
	May	1,479,467	1,362,056	1,562,323	***292,065***	114,397	**1,385,424**
		1,470,615	1,410,400	1,462,538	250,000	90,000	1,470,615
	July	1,578,402	1,490,000	1,390,940	250,000	90,000	1,578,402
		1,689,112	1,480,000	1,440,052	250,000	90,000	1,689,112
	Sept	1,804,800	1,515,000	1,569,852	250,000	90,000	1,804,800
		1,734,383	1,490,000	1,654,235	250,000	90,000	1,734,383
	Nov	1,581,485	1,400,000	1,675,720	250,000	90,000	1,581,485
		1,388,053	1,300,000	1,603,773	250,000	90,000	1,388,053
Total		17,800,004	16,886,657		2,673,176	1,124,885	17,803,855

Note: Cells shaded with gray color contain forecast figures
Cells shaded with diagonal lines contain assumed figures
Column (i) - CPO production forecast for the whole year
Column (vi) - CPO production using forecasts for June to December and actual for January to May
Bold and italic figures are estimated (column (iv))

CPO Production Forecast (2010):

1) Forecasts the whole year = 17.8 million tonnes (column (i))
2) Forecasts only for June - Dec and combine with actual figures for Jan - May = 17.804 million tonnes (column (vi))

b) INDONESIAN OIL PALM INDUSTRY

i) Oil Palm Areas

Indonesia and Malaysia both have similar type of soils and climate, Thus, Indonesia too can plant oil palm, in addition to coconut trees, rubber and cacao. The country started its oil palm cultivation commercially in 1911 on the East coast of Sumatra Island. In 1969, production by this country was 180,000 tonnes of CPO and 40,000 tonnes of palm kernel. Prior to 1974, plantations were mostly run by smallholders because of easy marketing.

In 1974, Indonesian government responded to the attractive high prices of palm oil in the international market which then followed by the initiative to form state owned plantations (Nucleus Estates Schemes). As a result, oil palm areas began to expand in 1975 from Sumatra to Kalimantan and to Irian Jaya (Papua) with areas increasing from 295,000 ha. in 1980 to 1.6 million ha. in 1995 and from 4.2 million ha. in 2000 to 6.07 million ha. in 2006 (IPOB, 2007) (Figure 11). In 2006, total growing area is distributed among three groups, which include government holdings, private companies and small holders. According to Indonesia Bureau of Statistics (BPS) in 2006, 45% of total palm area is owned by private companies, followed closely at 43 % by small holders, and the government comprising the remaining 12%. Small holders are frequently part of partnership scheme with private companies (USDA, 2007).

Over the past few years, the pace of Indonesian palm oil production had dominated other producing countries and rose steadily. This continued increase in production is a result of area expansion. It is the availability of land on Borneo and other previously non-developed areas that had allowed Indonesia to become the top producer. From 180,000 tonnes in 1969, Indonesia expanded its production to 7 million tonnes in 2000 and in 2009, it was about 21 million tonnes. The islands of Sumatra, Borneo, Sulawesi and West Papua have opened up their regions in recent years and have added significant areas that only now are coming on-stream in terms of production. In addition to new areas of land developed, another reason for the growing production numbers is that the surge in planting activity during the past ten years is now beginning to be realized. There is a several years lag time when palms are initially planted on the plantation until the first production of fruit bunches. Data on actual area planted to oil palm is not easily obtained. Where government data does exist, many in the industry believe that the

government data is not as complete as it might be, often having production estimates lower than those of the industry. One proxy source of area data is oil palm seed sales. Data presented at the International Palm Oil Congress 2007 on seed sales reveals a rapid increase in demand, so much that seed producers have had difficultly keeping up with demand.

Indonesian palm oil has the potential to expand in the future due to large land bank. Currently the potential land availability for oil palm in Indonesia is about 26 million ha. scattering from Acheh to Papua (Irian) (Hasibuan, 2006). In line with such potentiality, Indonesian government has set a target to expand by 3 million ha. to produce additional 10 million tonnes of palm oil for domestic and export market. However, this effort needs a huge amount of investment of about USD 8.4 billion to USD10.5 billion for the 3 million ha expansion. Recently, China was interested to invest in oil palm in Kalimantan border.

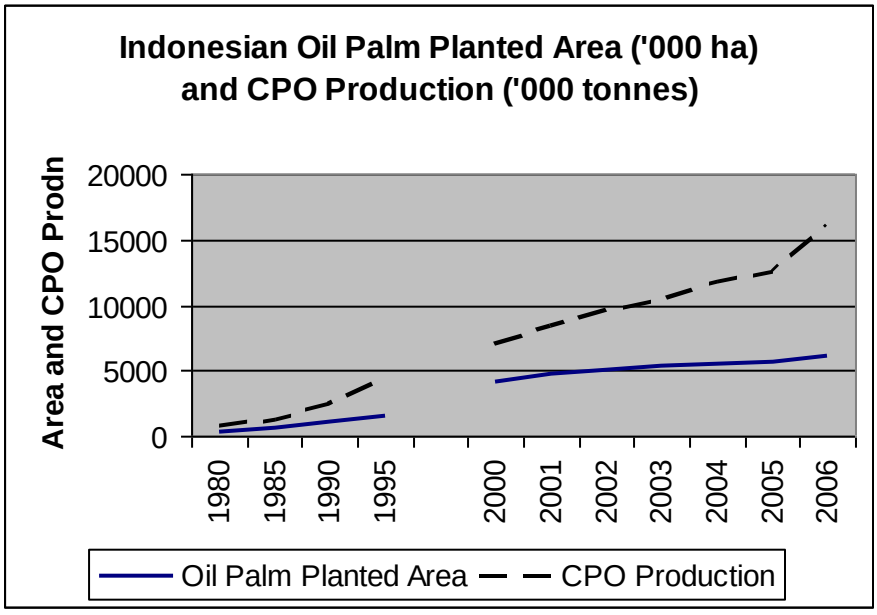


Figure 11: Indonesia Oil Palm Areas for 1980 – 1995 and for 2000 – 2006
Source: Direktorat Jenderal Perkebunan, Buku Statistik Perkebunan 2006

ii) Oil Palm Productivity

Indonesian oil palm productivity in 2006 varied among producers. Smallholders' productivity were low at 2.34 tonnes of palm oil per ha. per year. This is because they can get 13 tonnes of FFB with an oil extraction rate (OER) of 18%. Small companies harvested 16 tonnes of FFB

with an OER of 19%, giving a productivity of 3.04 tonnes of palm oil per ha per year. Big companies, due to good management practice, can get 23 tonnes of FFB per ha per year with an OER of 24%. With this, their productivity was high at 5.52 tonnes of palm oil.

iii) CPO Production

Production of CPO in the country had increased as area expanded (Figure 11). However, the rate of increase is faster for production than that of area. Production was about three quarter of a million tonnes in 1980 and grew to about 4.2 million tonnes in 1995. In another portion, production was about 7 million tonnes in 2000 and rose to about 20.9 million tonnes in 2009 (MPOB,2010).

Production of CPO is always larger than domestic consumption needs. The gap between the two, however, was smaller in 1999 but widened by year towards 2009. This is because the production expands more rapidly compared to that of domestic consumption. In 2008, the production had reached about 19.2 million tonnes while domestic consumption was slightly higher than 4.5 million tonnes and it is expected that the proportion of domestic consumption will stay constant at around 23% in the future. Based on this development, Indonesia has a great potential as a big exporting country of CPO in the world. In 2009, Indonesia had overtaken Malaysia as the biggest palm oil exporter. In addition to excess supply of CPO, exports also depend on the world market opportunity and capability of the Indonesian industry to make good use of this opportunity.

iv) Palm Oil Demand

From the total domestic demand, a portion was allocated for domestic cooking oil to cater the need for 220 million people in the country. The per capita consumption of cooking oil per year is about 12 kg, comprising of 10.5 kg per capita of RBD palm olein and 1.5 kg per capita of coconut oil. Based on this, 2.31 million tonnes of palm cooking oil is needed or an equivalent of 3.2 million tonnes of CPO per year.

Similarly with Malaysian palm oil, other forms of demand for palm oil in Indonesia are soap making and oleo-chemicals. A total of about 200,000 to 500,000 tonnes of CPO will be needed each year. As such, total domestic demand for palm oil amounted to 3.4 to 3.7 million tonnes per year.

In term of total export of palm oil, Figure 12 shows that export volumes of palm oil increased significantly since 1998; however that of CPO is less significant. Palm oil exports rose from 2.2 million tonnes in 1998 to 15.9 million tonnes in 2009, an increase by seven times. Indonesia has more than 100 export destinations.

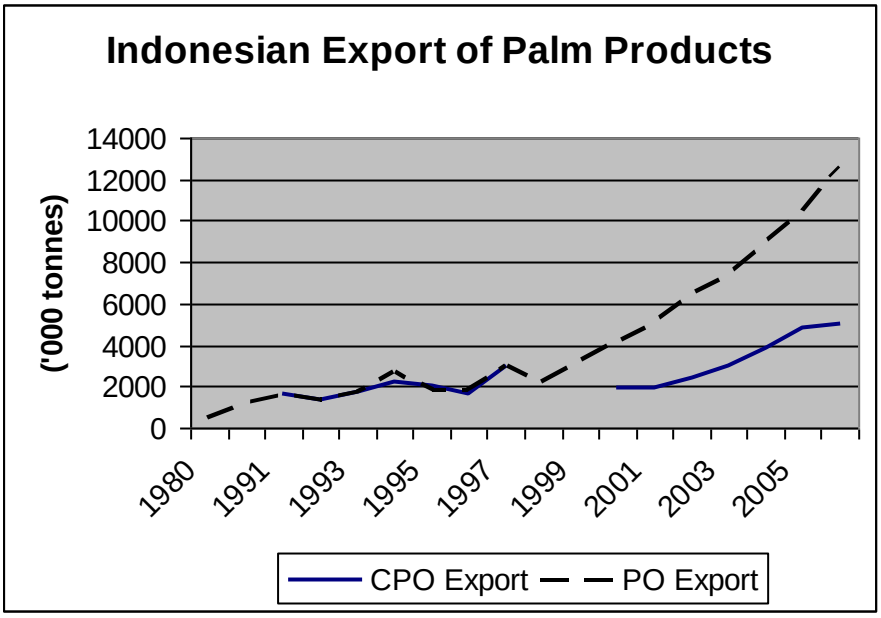


Figure 12: Export of Palm Products

v) Outlook for Indonesian CPO production

Indonesia performed significantly well since 2000 in term of CPO production. Figure 13 shows its trend protruding upwards in a straight line, compared to Malaysian production which formed

a less steep slope. Indonesia has a good infrastructure and land availability, so there is a great chance for the country to continue its production growth momentum in short-term. However, as mentioned earlier, Indonesian data is a problem. Thus, in projection it is important to mention the sources of the data. Hence, based on the land availability and past performance of the oil palm areas, forecasts are made using various scenarios and comparisons were made with other sources (Table 4 and Table 5).

Indonesia is forecasted to have its planted areas growing to about 7.91 million ha. in 2010 from about 7.55 mil ha in the previous year (Table 4). Out of this, 6.01 million ha. (5.73 million ha. from Oil World) are matured areas in 2010. As such, CPO production in the country is projected to reach about 22.91 million tonnes in 2010 (Table 5).

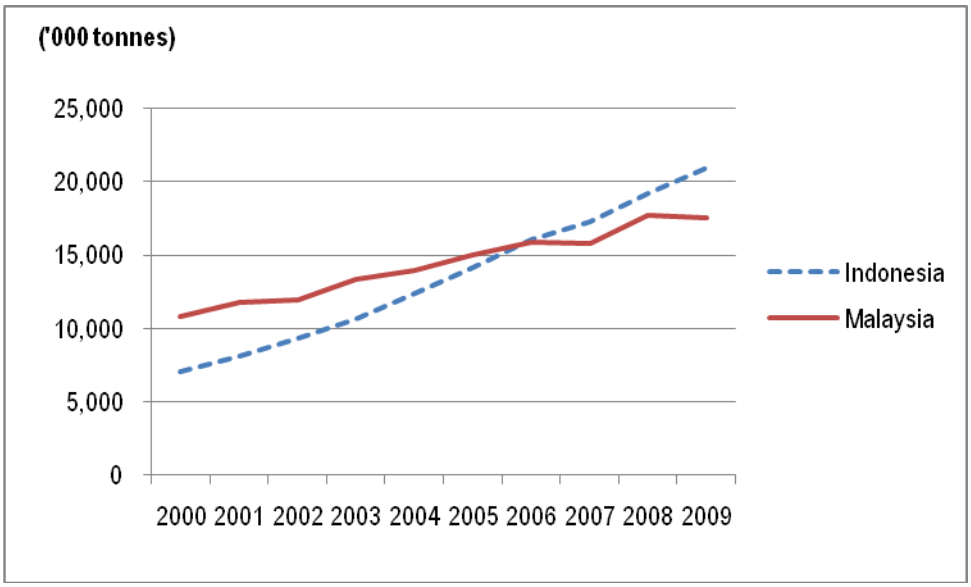


Figure 13. Malaysian and Indonesian CPO Production

Table 4. Past Performance and Prospects in 2010 of Indonesian Oil Palm Areas

Year	Planted Areas		Matured Area from (mil. ha)	
	Mil. ha	Source	MPOB	Oil World
2006	6.07	IPOB	4.01	-
2007	6.91	MPOB	4.3	4.54
2008	7.20	MPOB	5.01	4.95
2009	7.55	MPOB	5.47	5.35
Forecasts				
2010	7.91	MPOB	6.01	5.73

Note : IPOB – Indonesian Palm Oil Board

Table 5. Past Performance and Prospects in 2010 of Indonesian CPO Production

	Indonesian CPO Production from (mil. tonnes)	
Year	MPOB	Oil World
2007	18.5	17.3
2008	19.3	19.23
2009	20.9	21.14
Forecasts		
2010	22.91	22.3

WORLD DEMAND FOR PALM OIL

a) Demand Factors

The popularity of palm oil can be due to the fact that palm oil is so flexible and versatile that advanced technology had been able to increase its areas of application. Presently, it can be used in either in food or non-food applications or either used as it is or in fractionated forms to produce a wide variety of products. Domestic consumption in both countries, Indonesia and Malaysia, are very low, but globally, it is being consumed all over the world. However, the demand for palm oil depends on various factors as follows:

i) World Population

It is a well known fact that world population significantly affects demand (exports and domestic consumption) for oils and fats. Both variables had increased in the past; the population increased from 5.5 billion people in 1993 to 6.3 billion in 2006 and demand from 116 million tonnes to 170 million tonnes during the same period. Developing and less developing countries are expected to have greater population growth than developed countries in future. Thus greater demand growth can be expected to come from these two categories of countries.

ii) World Income

Another important factor that will shape future demand pattern is the income of the world population. It is expected that income from the developing countries will grow at much faster rates than that of the developed countries. This in effect will increase the per capita consumption of oils and fats, especially palm oil.

iii) Additional Application in Biodiesel

Another avenue that will increase demand for palm oil is its usage in biodiesel applications. The world is looking for alternative energy source due to rising concern over the environment and escalating petroleum prices. As such, edible oils source is the best alternative. This is a new application where palm oil is feasible to be used in future. Malaysia will allocate some of its

production to this application and usage for edible purposes will be reduced. However, Malaysia will make sure that the supply for edible uses will be sufficient by controlling the licenses issued for this business.

iv) Exchange Rate

Exchange rate between two currencies specifies how much one currency is worth in terms of the other. For example an exchange rate of RM3.50 to the United States dollar (USD, $) means that RM3.50 is worth the same as USD1. The exchange rate plays an important role in determining the volume of palm oil to be purchased which may ultimately have an indirect effect on price later on. Depreciation (appreciation) of RM will lower (increase) the USD value, thus enabling more demand for the commodity.

An example will illustrate this better. Since palm oil is traded in international market, its price is quoted in USD. Let say price of palm oil is say RM2,000 per tonne and exchange rate is RM3.50 to USD1.00. An equivalent price in USD is USD571 per tonne. If RM depreciates to RM4.00 to USD1, this gives USD500 per tonne of palm oil. Depreciation will lead to more palm oil can be purchased by importers, thus increasing demand. As a result, as more palm oil is demanded, stock will reduce at the end of a period (year) which will then affect the price. That means there is a lag effect of rate on price of palm oil.

b) Outlook for Global Demand for Palm Oil

The demand for palm oil increased due to the wide applications and availability of the products. Due to this, palm products are being exported to all over the world either in big volumes or small volumes. Figure 14 shows total export volume of palm oil and of oils and fats from all over the world from 2000 to 2009. It is clear from the figure that export of palm oil represented the major component of oils and fats exports and the increase in the latter is mainly due to the increase in the former. As mentioned earlier, palm oil is mainly exported by Malaysia and Indonesia since their local consumptions are very low.

Whatever being exported to the world market will usually being consumed. This volume plus the local consumption in all producing countries will total up to become global consumption of palm oil. From Figure 14, total consumption, as depicted by total disappearance, of palm oil increased since 2000 in tandem with total consumption of oils and fats. Although the proportion is small, less than 50%, it formed the major component of oils and fats consumption.

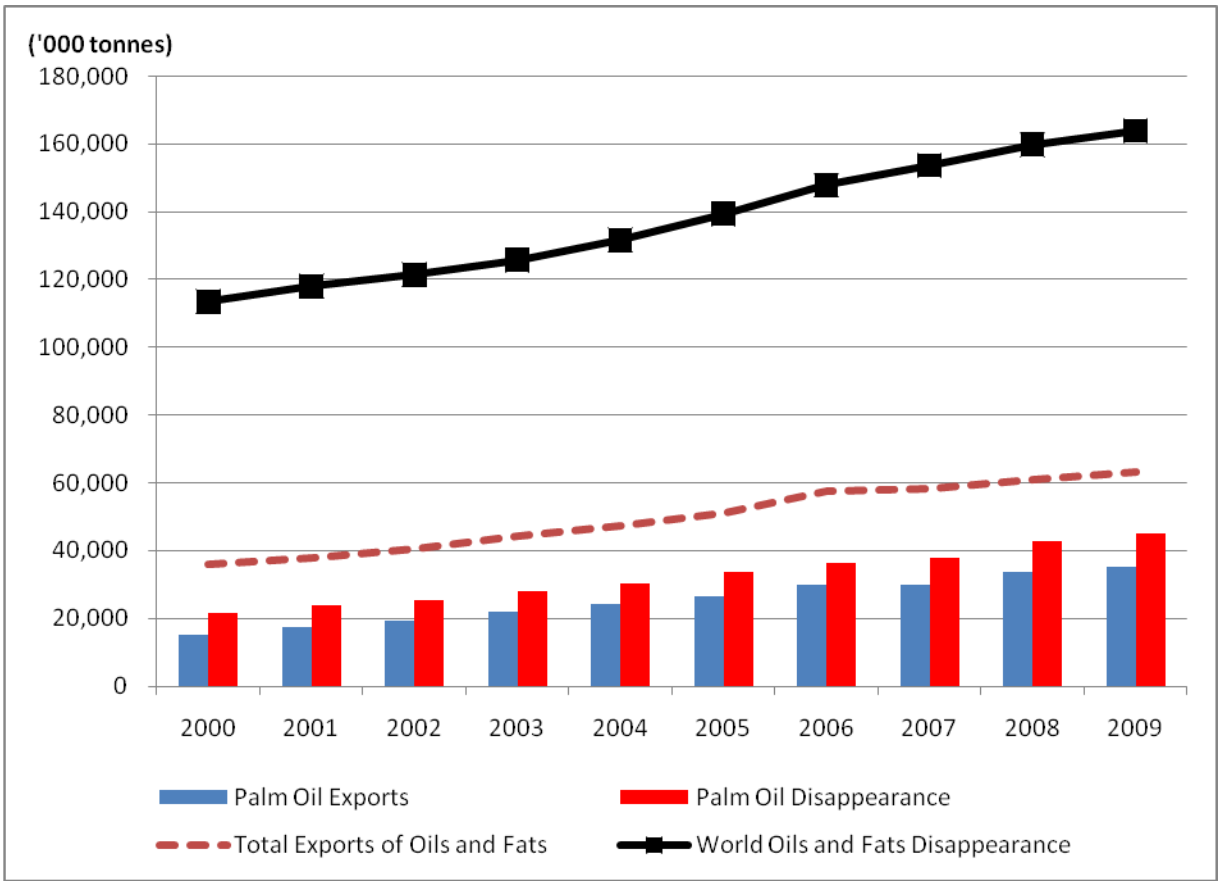


Figure 14. Global Export, and Disappearance of Palm Oil and Total Oils and Fats

It is no doubt to say here that based on the past trends of palm oil export and consumption (taking also into consideration most of the demand factors mentioned above), palm oil will continue expanding in volumes for both its export and consumption sectors. In 2010, palm oil exports globally will increase to 38.82 million tonnes out of which Malaysian and Indonesian exports are expected to be about 16.9 and 17.9 million tonnes. Total exports of oils and fats are projected at 66.82 million tonnes (Table 6). Meanwhile palm oil consumption globally will

increase further to 48.90 million tonnes and total consumption of oils and fats at 171 million tonnes.

Table 6. Export and Consumption of World Palm Oil ('000 tonnes)

Countries	**Exports of Palm Oil**		**Palm Oil Consumption**	
	2009	**Forecast for 2010**	**2009**	**Forecast for 2010**
Malaysia	15,881	16,887	Not done	Not done
Indonesia	15,910	17,900	Not done	Not done
Others	3,361	4,033	Not done	Not done
TOTAL PALM OIL	**35,152**	**38,820**	**45,188**	**48,980**
Other Oils and Fats	27,038	28,000	118,700	122,000
TOTAL OILS AND FATS	**63,090**	**66,820**	**163,888**	**171,000**

PRICES OF PALM OIL VERSUS PRICES OF OTHER SELECTED OILS AND FATS

CPO is traded locally as well as internationally. The CPO prices in both markets are inter-related. In the international market, the increasing trade and continuous demand and availability of palm oil at global market have made the prices of high quality palm products from Malaysia to be very competitive with other oils and fats. Due to this competition, they had moved in tandem in the past while establishing a very common feature of volatility (Figure 15). The prices fluctuated depending on the supply and demand factors and other relevant factors. Soybean oil price and stock are two common factors affecting the CPO price. They had been used by many analysts in analyzing CPO price because soybean oil and CPO are two close substitutes while stock reflects availability of palm oil in the market. In the latest scenario, crude petroleum price is also relevant to be considered in determining CPO price. The development in the petroleum price has caused many countries to consider using alternative renewable energy from vegetable oils. Consequently, this created additional demand for these oils, including palm oil.

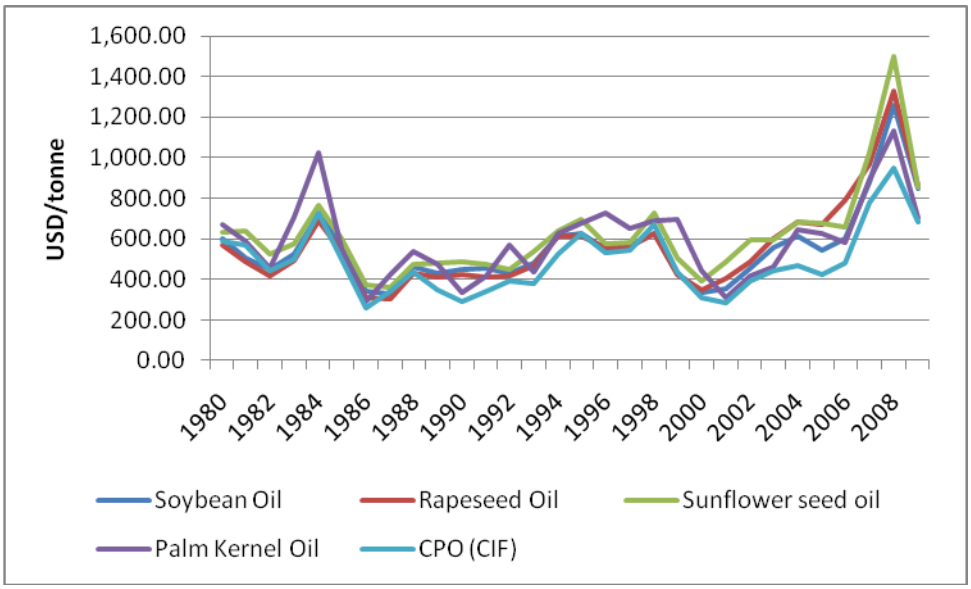


Figure 15: Prices of Selected Oils and Fats

In comparing the oils and fats prices, it should be remembered that the palm products could be processed products while the other selected oils are in the crude form. Furthermore, these prices

can be either on Free on board (FOB) or Cost, Insurance and Freight (CIF). As a rule of thumb that can be used in bringing FOB prices to CIF would be to add the following to the FOB prices:

a) US$60 per tonne freight charges
b) 1% of FOB value for insurance
c) 2% of FOB value as arrival loss

(It is important to note that freight cost also depends on the size of the consignment).

Having known the CIF prices of selected oils and fats, one can easily compare them. Thus for comparative purposes, the average CIF landed prices for oils and fats in say, the EU, in 2008 are illustrated in Table 6. These landed prices had taken into consideration the common custom tariff specified for each oil or fat. Palm products such as RBD palm olein, RBD palm oil, CPO, were sold at a discount to soybean oil, cottonseed oil, rapeseed oil, sunflower seed oil, and groundnut oil in the EU. The biggest discount was with ground nut oil while the smallest discount was with soybean oil, its close competitor.

It has become the tradition that RBD palm olein was always being discounted by soybean oil. In Figure 16, there were only three months (May and June 2007 and December 2009) in which palm olein was sold at a premium to soybean oil. In other months, palm olein was discounted in the range of USD50 to USD150 per tonne during the past three years. Thus, although one may think that RBD palm olein is very expensive, price of its substitute, soybean oil, is even more expensive.

In comparison, prices of oils and fats with different characteristics did not associate very well. For example, soybean oil, coconut oil and tallow prices moved independently in the international market (Figure 17). These oils and fats have different characteristics and being used in different applications as they are not substitutes. As a result, their prices are not closely associated.

Table 6: Average CIF Prices for Oils and Fats and Premium/Discounts to Palm Oil Products, 2008

Name of Oils/Fats	Average CIF Prices (US$/ tonne)	CCT for edible Oils (%)	Landed Price	Premiums/Discounts				
				RBD Palm Olein	RBD Palm Oil	Crude Palm Oil	RBD Palm Stearin	Palm Kernel Oil
RBD Palm Olein	1067	9	1163	-	NR	NR	NR	NR
RBD Palm Oil	1006	9	1097	NR	-	NR	NR	NR
Soybean Oil	1258	9.6	1379	-216	-282	-397	NR	NR
Cottonseed Oil	1553	9.6	1702	-539	-606	-720	NR	NR
Rapeseed Oil	1329	9.6	1457	-294	-360	-474	NR	NR
Sunflower seed Oil	1499	9.6	1643	-480	-546	-661	NR	NR
Groundnut Oil	2109	9.6	2311	-1148	-1215	-1329	NR	NR
Palm Kernel Oil	1130	10.9	1253	NR	NR	NR	NR	NR
Coconut Oil	1224	10.9	1357	NR	NR	NR	NR	-104
RBD Palm Stearin	891	10.9	988	NR	NR	NR	NR	NR
Tallow Fancy Bleached	885	6.4	942	NR	NR	NR	46	NR
Palm Oil, Crude	949	3.8	982	NR	NR	-	NR	NR

NR - Not Relevant, CCT = Common Customs Tariff

Premiums are indicated by a positive sign; the other figures are all discounts, (based on landed price)

Sources: Oil World Annual 2009; Official Journal of the EC
Oil World Monthly-March, 2009

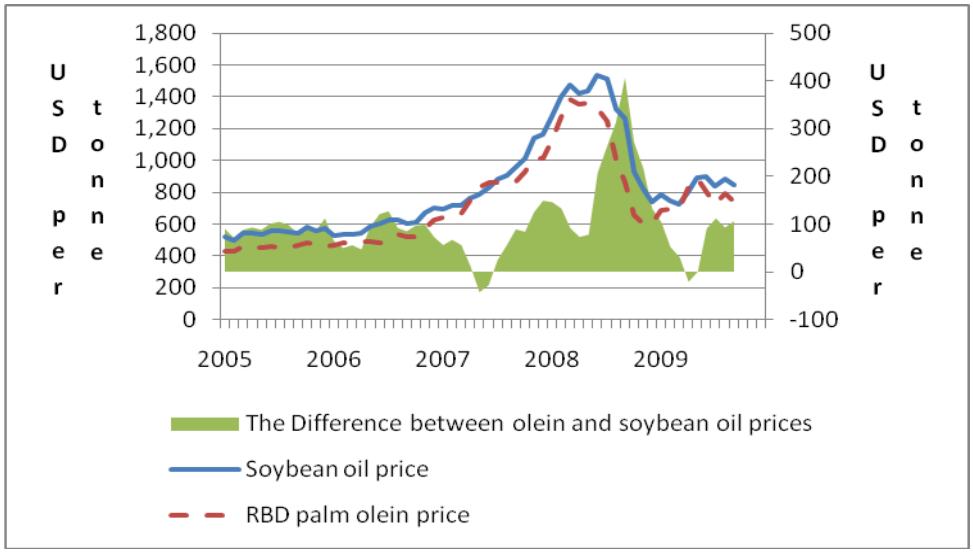


Figure 16: Prices of Oils and Fats with Similar Characteristics

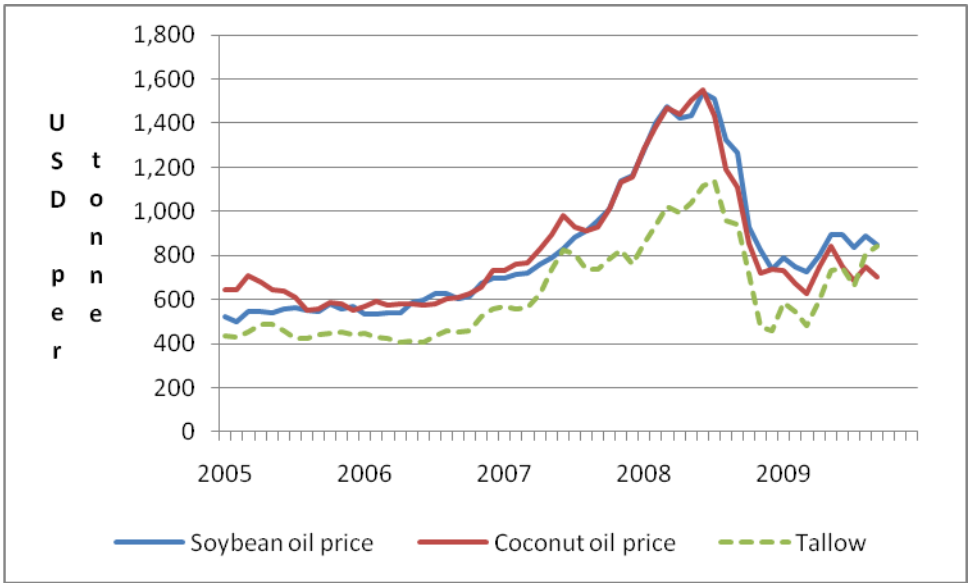


Figure 17: Prices of Oils and Fats with Different Characteristics

Outlook for Palm Oil Price

World palm oil industry is fast catching up and its production has already overtaken production of soybean oil to be the world leader. Palm oil will continue to maintain at the premier position in future with Malaysia and Indonesia being the major suppliers. However, Malaysia would likely face shortage of land for oil palm cultivation. Despite this, Malaysia has the edge of producing high yielding planting materials which will increase its production. Researches help the industry to grow, be competitive and sustainable in future. Most important of all, Malaysia has a long-term experience in the industry with products bonded by the internationally known Palm Oil Refiners Association of Malaysia (PORAM) specifications and has an effective controlling and research and development (R & D) agency like MPOB. This makes the quality of Malaysian palm products are of much high quality. Indonesia, on the other hand, will also continue expanding its palm oil as the country has much land availability and labour.

Thus, there will be a continuous and increasing supply of palm oil in future. One can thus be assured of supply availability in future either from Malaysia or from any other producing country such as Indonesia.

Forecasting price is quite a challenging effort as its behaviour is very unpredictable in nature. In future, many factors are unpredictable in nature too, such as weather, war, and world supply and demand factors. In the case of weather, no one can say exactly when drought, El Nino or La Nina will take place. However, as mentioned above the effect of El Nino is very minimal in 2010.

The relevant factors to be considered in forecasting price of palm oil are the stock-usage ratio of oils and fats, price of soybean oil, and the price of crude petroleum oil which indirectly effect on the availability of palm oil for edible purposes. Using these factors, forecasts for palm oil prices show that palm oil price in 2010 is expected to be in the range of RM 2400 to RM2800 (or USD706 to USD824 at USD1 = RM3.40) per tonne. Beyond this year, price of palm oil can be expected to be stabilized at RM2,400 per tonne due to the additional effect of biodiesel. It is worth mentioning here that price of soybean oil will also increase undoubtedly in the future. Nevertheless, these forecasts can be used as guidance in making trades for palm oil.

CONCLUSION

Palm oil is one of the most produced and traded commodities. Compared to other oils and fats, it has positive and better economic advantages. It is also very versatile and flexible that advanced technology can increase its areas of applications that lead to wide uses in food or non-food applications, thus increasing its demand.

Malaysia as a big producer and exporter of palm oil in the world will continue increasing its output and exports in future. This is due to the fact that Malaysia has the ability to do that based on the resources available in the country. China will continue to be Malaysian partner in consuming palm oil and relationship between the two countries will be maintained.

Research activities are still being carried out in Malaysia to find new uses of palm oil. This is the main thrust of Malaysian Palm Oil Board. It is hoped that the current uses and future applications

of palm oil will create more consumers in future, thus increasing demand from all over the world, especially China and other consuming countries.

Generally it be safely said that prospect for palm oil in future is very bright.