

# Challenges faced by the palm oil industry in malaysia



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Palm oil is comestible oil that is derived from the flesh of fruit of the palm oil tree which is named as *Elaeis Guineensis*. Apart from palm oil, it also produces palm kernel oil which is derived from the seed of the oil palm. Palm oil is naturally reddish in color due to the high content of carotene. The oil rapidly loses the carotene and turn into a pale creamy color when the oil is exposed to heat through processing and cooking. Producers of palm oil can sell the pure oil, or use a fractional distillation process to extract various components of the oil, which have a variety of uses.

There are two main species of oil palm tree which are named as *Elaeis guineensis* and *Elaeis oleifera*. Both species of oil palm trees are grown in the countries that have tropical regions such as Ghana in Africa, Colombia in South America, New Guinea in the Pacific, Malaysia and Indonesia in Southeast Asia. Oil palm trees have developed following their introduction to Southeast Asia, especially in our country which is Malaysia, but at the same time in Indonesia and Papua New Guinea. At the same time, both countries, Indonesia and Malaysia are account for 85% of global production of palm oil.

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Yet, the palm oil plantation establishment has now become the main driver of deforestation in Southeast Asia.

The palm oil tree is native to West Africa. It was first introduced to the British colony of Malaya in the early 1870s. In 1917, the first commercial planting took place at the Tennamaran Estate in Selangor with seeds sourced from Indonesia. This initial plantation laid the foundation for subsequent oil-palm plantations and the later development of a palm oil industry in Malaysia. The development of the palm oil industry in Malaysia can be divided into several phases, beginning with the experimental phase from the late 1800s until 1916. The colonial private estates and plantation phase commenced in 1917 and lasted until 1960 (three years after Malaya became an independent nation in 1957). The third phase started in the 1960s in response to the Government of Malaysia's diversification policy to reduce the national economy's dependence on rubber. Following a recommendation of a World Bank mission in 1955, the Government started promoting the planting of oil-palm. From the late 1970s, producers began to integrate palm oil refineries with plantations, further to government decisions to penalize the export of crude palm oil (CPO) with high export taxes, forcing its price downwards to improve the profitability of the refining sector. The government continued to promote increased processing of palm oil for different end uses and export diversification as production of CPO increased. The emphasis since the late 1980s has been characterized by an effort to diversify into the production of higher value-added products. The government had introduced various incentives and disincentives to achieve these objectives.

The virgin palm oil is full of carotenoids which can be defined as vitamin A, tocotrienols and tocopherols which can be described as vitamin E. It is cholesterol-free, which is the same as all the vegetable oils and it contains no trans fatty acids too. However, it is one of the few that is high in saturated fats which are derived from the fruit of the oil palm tree which is used in agricultural production of palm oil. It is usually very close to solid at room temperature, unless it is specially treated. The high saturated fat also makes palm oil the better choice of cooking oil, due to its ability to endure high temperature, and it would not break down or change when heated. Nevertheless, this also makes the palm oil a less ideal choice of oil, which for health wise, the saturated fat is believed to be harmful to our human body when it is consumed in huge amounts.

Palm oil is considered as the second largest comestible oil and accounts for approximately 23 per cent of the world's fats and oil supply. Since 80 percent of palm produced is used in food - its nutritional properties are of extremely importance. It is a familiar cooking ingredient in the torrid zone of Africa, Southeast Asia and parts of Brazil. Its rising usage in the commercial food industry in other parts of the world is boosted by its low cost and the high oxidative steadiness of the refined product when used for frying. There are several types of processed foods which contain palm oil, which is perceived as cheap, effective, and extremely stable oil by food manufacturers. A broad range of scientific literature exists on palm oil's effects on different aspects of human health. Furthermore, palm oil can also be used in a number of industrial processes. It is utilized as a cheap replacement instead of those which are more expensive natural oils in goods

such as soaps and moisturizers produced by cosmetics companies. Palm oil brings about the desired structure without the disbursement, in spite of it lacking in many of the useful mixtures which make those the products good for our skin.

The government's first intervention in the Malaysian palm oil industry was in the 1960s through the Federal Land Development Authority (FELDA), established in 1956 to develop plantation land for the rural and landless poor. Beginning in the late 1970s, state-owned enterprises began to take over many of the private colonial plantation houses such as Guthrie, Sime Darby and Harrisons & Cross field. The next intervention was the establishment of the Palm Oil Registration and Licensing Authority in 1974 and the Kuala Lumpur Commodity Exchange in 1980. The establishment of the Commodity Exchange shifted the price setting and hedging from London to Kuala Lumpur. Research and development (R&D) in palm oil breeding and production began when the Malaysian Government established an exchange program under the Department of Agriculture with Western African nations and four private palm oil plantations. Together these entities formed the Oil-palm Genetics Laboratory. The government also established the Kolej Serdang, which later expanded into Universiti Pertanian Malaysia (Agriculture University of Malaysia). The Agriculture University of Malaysia specialized in training graduates to work and undertake research in the agricultural sector. The government set-up and financed the Palm Oil Research Institute of Malaysia (PORIM) in 1979. The government introduced an export tax in 1976 to stimulate the processing of CPO into processed palm oil (PPO). Excess capacity was prevented by capping the number of licenses. Financial

incentives designed to stimulate palm oil refining were provided under the Pioneer Industry Ordinance 1958 and later under the Investment Incentives Act, 1968. These incentives were extended to most kinds of palm oil processing-including neutralization, bleaching or deodorization-to stimulate the production of PPO. The incentives were removed by the early 1980s as the industry matured. The government provided incentives for processed palm oil through the Investment Incentives Act 1968, which included according it “ pioneer status,”<sup>13</sup> and investment tax credits. Tax holidays were granted to manufacturing firms on the basis of export orientation and the New Economic Policy<sup>14</sup> criteria established through the Industrial Coordination Act 1975. The Export Credit Refinancing Scheme offered loans with preferential interest rates to export-oriented firms.

Two other key policies that assisted downstream actors in the palm oil industry were the Industrial Masterplan, introduced in 1986, and the Industrial Masterplan II, introduced in 1995. Under the First Industrial Masterplan, palm oil refineries were provided with tax reductions proportionate to their export earnings. The Export Credit Refinancing Scheme was continued under the Industrial Master Plan. Other measures included incentives to stimulate R&D activities and training. The Industrial Masterplan II aimed to establish Malaysia as the international centre for the production of edible oils and fats, by continuing to encourage diversification of the industry. It encouraged the domestic production of machinery and equipment that had previously been imported. The Industrial Master Plan II called for the expansion of value-adding activities in Sabah and Sarawak. For example, Palm Oil Industrial Cluster (POIC) Sabah, fully owned by the state

government of Sabah, is embarking on a 15 year Masterplan (2006-2021) to develop 4 000 hectares of land in Lahad Datu to process palm oil. The aim of the project is to promote Lahad Datu as a regional hub and export gateway for palm oil and other vegetable-oil-based products.

From the above introduction, palm oil is similar with the vegetable oil, which can be used to create biodiesel. The real process used to produce biodiesel throughout the world is different among countries and the requirements of different markets. Next-generation bio-fuel production processes are also being tested in relatively small trial quantities. However, the Malaysian government is promoting the production of bio-fuel feedstock and the building of palm oil biodiesel plants as a main producer of palm oil. Yet, Malaysia has changed it from biodiesel to bio-fuels in year 2008, internally which comprised the drafting legislation that will make the switch mandatory.

First generation biodiesel production from palm oil is in demand globally. Palm oil is considered as a primary substitute for rapeseed oil in Europe, which is experiencing new demand for biodiesel purposes also. The producers of palm oil are investing heavily in the refineries needed for biodiesel. However, the companies which stated in Malaysia have been consolidating, buying others out and forming leagues to acquire the economies of scale needed to operate the high costs because of increased feedstock prices.

Ultimately, there in the year 2009 study conducted by scientists at Malaysian Science University, who concluded that palm oil is a healthy source of

comestible oil compared to other vegetable oils. Meanwhile, it's usable in quantities that can fulfill the global demand for biodiesel. Nevertheless, the oil palm planting and the palm oil consumption can obviate the dispute between food and fuel due to it is able to satisfy both demands at the same time.

## **Literature Review**

### **Economy**

Malaysia is now the global leader in producing palm oil and basic oleo chemicals industry. A RM49.6 billion in exports and a contribution of RM17.0 billion or 3.3% to Gross Domestic Product (GDP) of Malaysia in the year 2009, by the palm oil industry. Even though there is an increase in the plantation and growth of palm oil in Malaysia, but our country still faces issues that are related to the low productivity among smallholders, with the increasing cost of production and over dependant on foreign labour in upstream activities, whereas downstream activities are confined to intermediate processing. Significant opportunities exist for the growth of the sectors, particularly in downstream activities, which generates high value. In the Plan, Malaysia target to increase the production output of the palm oil industry to GDP to RM21.9 billion with export earnings of RM 69.3 billion. (Tenth Malaysia Plan, 2010)

Development of Malaysia is expected to grow, as bio-diesel industry contributes greatly. Advantages of introducing bio-diesel industry in Malaysia have been outlined in the National Bio fuel Policy (S. Sumathi et al., 2008):

Justifying the effects towards the economy of petroleum price escalation.

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By reducing imports on petroleum diesel, foreign exchange cost can be saved.

Reduction of greenhouse gases is an environmental friendly source of energy.

Able to increase and create new demand for palm oil.

Petroleum and palm oil sectors gain beneficial effects mutually.

Socio-economic safety net can be achieved.

Raw materials are efficiently utilized.

With the advancement in producing pulp and paper from oil palm biomass, can be used in products such as, cigarette paper and bond papers for writing. By having this advancement, Malaysia need not import pulp from other countries, which helps save import costs (S. Sumathi et al., 2008).

In Malaysia companies have been merging, buying others out and forming alliances to obtain the economies of scale needed to handle the high costs caused by increased feedstock prices. New refineries are being built across Asia and Europe (The palm-oil-biodiesel nexus Grain, 2007).

There is an increase in Foreign Direct Investment in Malaysia as there is currently a company that is a renewable energy power plant developer in Malaysia, called “ Bumibiopower” by Mitsubishi Securities Co., Ltd, which is a Japanese company (S. Sumathi et al., 2008).

Sustainable oil palm cultivation provides a win-win situation, as it provides direct and indirect employment amounting to 860, 000 people, excluding other multiplying effects and spin-offs activities. An increase in higher standard of living through direct and indirect employment corresponds with a surge of oil palm plantations from the 1980s (Malaysian Palm Oil Board, 2007). In order to reduce rural poverty, Malaysian plantation management is highly developed and government has set up Federal Land Development Authority (FELDA) has been planting economic crops such as palm oil (Malaysian Palm Oil Council, 2006). Oil palms that are exported are reasonable, healthy, nourishing, and high-yielding Malaysian palm oil, feeds around 1. 3 billion of people in 150 countries (Malaysian Palm Oil Board, 2007). Oil palm is indeed a ' life' promoting energy.

With the increasing growth of production and trading activities of palm oil in the global market, palm oil has now become an attractive and ideal candidate for biodiesel production, which helps the growth of economy.

### Cost system

In view of challenging environment, the oil-palm enterprises in Malaysia must refine their cost systems to provide the needed information for management to sustain their competitive position in the vegetable oil market. The dearth of empirical evidence with regard to the efficacy of cost system design in the palm oil industry has motivated this study to examine the relationship between cost-system functionality and performance of oil-palm enterprises. Unlike the previous studies based on firms from diverse industries, the operational homogeneity of the oil-palm enterprises enables

the effects of cost-system functionality on performance to be examined in a more controlled environment. As the impact of information on decision making is dependent on its perceived usefulness, the mediating effect of manager's perceived usefulness of cost information on the cost-system functionality-performance relationship is also investigated (Soon-Yau Foong and Neilson Anak Teruki, 2009).

## **Market**

First generation biodiesel production from palm oil is in demand globally. Palm oil is also a primary substitute for rapeseed oil in Europe, which too is experiencing new demand for biodiesel purposes. Palm oil producers are investing heavily in the refineries needed for biodiesel.

In 2008, Malaysia produced 17.7 million tonnes of palm oil on 4,500,000 hectares (17,400 sq mi) of land, and was the second largest producer of palm oil, employing more than 570,000 people. (World Growth Palm Oil Green Development Campaign: "Palm Oil – The Sustainable Oil A Report by World Growth", September 2009). Malaysia is the world's second largest exporter of palm oil. About 60% of palm oil exports from Malaysia are shipped to China, the European Union, Pakistan, United States and India. They are mostly made into cooking oil, margarine, specialty fats and oleochemicals

In December 2006, the Malaysian government started merger of Sime Darby Berhad, Golden Hope Plantations Berhad and Kumpulan Guthrie Berhad to create the world's largest listed oil palm plantation player. In a landmark deal valued at RM31 billion, the merger involved the businesses of eight

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listed companies controlled by Permodalan Nasional Berhad (PNB) and the Employees Provident Fund (EPF). A special purpose vehicle, Synergy Drive Sdn Bhd, offered to acquire all the businesses including assets and liabilities of the eight listed companies. With 543, 000 hectares of plantation in a land bank, the merger resulted in an oil palm plantation entity that could produce 2. 5 million tonnes of palm oil or 5% of global production in 2006. A year later, the merger completed and the entity was renamed Sime Darby Berhad (The Star, 2007).

Yusoff (1988), Au and Boyd (1992), Shamsudin and Arshad (1993) and Talib and Darawi (2002) had accomplished the earlier work of Malaysian palm oil market. Causes influencing palm oil prices and forecasting palm oil prices are studied as a research using various techniques (Arshad and Ghaffar, 1986; Shamsudin et al. 1988 and Shamsudin et al. 1994). Yusoff (1988) integrated export tax and exchange rate in his work. By using all the factors influencing palm oil in Malaysia, a study by Abdullah et al. (1993) conjures up the Malaysian palm oil market. Shamsudin et al. (1994) extended the previous works on palm oil model by make a distinction between supply response of estate and smallholder sectors and diversify nature of export market. Alias et al. (1999) have done a model study of the influence of liberalization of crude palm oil imports from Indonesia. Talib and Darawi (2002) had done the description of the national model on Malaysian palm oil market between 1970 and 1999 by identifying the important factors that affecting the market. The local features as well as imports and exports are included to determine its performance in the international trade. Some other

simulation studies in the Malaysian palm oil market were done by Alias et al. (2006), Shri Dewi et al. (2007) and Talib et al. (2007).

Biodiesel now can be produced by using palm oil, and by being the potential source for producing biodiesel, it helps increase its own market value. Palm oil being very resourceful is able to produce not only biodiesel, but also food harvest. Annually, 500, 000 tonnes of bio-fuel is produced in Malaysia, and for the years to come, the government hopes to increase the number of production. As the world's population is growing rapidly, the increase in demands for economical and valuable vegetable oil to feed the growing population is urgent. There is also an urge to locate renewable energy, in order to substitute for non-renewable fossil fuels (K. T. Tan et al., 2009). The most potential substitute for conventional diesel fuel is palm bio-diesel. As the non-renewable fossil fuels supply is limited, the increase in petroleum prices has lead to the growth in bio-diesel business. Therefore, in order to accomplish sustainable progress, an improved supervision of palm oil production is needed.

From the year 2005-2009, there is an increase in crude palm oil production by 17. 4% to 17. 6 million tonnes, and also an increase in plantation by 15. 8% to 4. 69 million hectares. (Tenth Malaysia Plan, 2010)

## **Policy**

In the 1960s, research and development (R&D) in oil palm breeding began to expand after Malaysia's Department of Agriculture established an exchange program with West African economies and four private plantations formed the Oil Palm Genetics Laboratory (Hartley, C. W. S., 1988). The government

also established Kolej Serdang, which became the Universiti Pertanian Malaysia (UPM) in the 1970s to train agricultural and agro-industrial engineers and agro-business graduates to conduct research in the field.

In 1979, following strong lobbying from oil palm planters and support from the Malaysian Agricultural Research and Development Institute (MARDI) and UPM, the government set up the Palm Oil Research Institute of Malaysia (Porim). B. C. Sekhar was instrumental in helping Porim recruit and train scientists to undertake R&D in oil palm tree breeding, palm oil nutrition and potential oleo chemical use. Sekhar, as founder and chairman, pushed Porim to be a public-and-private-coordinated institution. As a result, Porim (renamed Malaysian Palm Oil Board in 2000) became Malaysia's top research entity commercializing 20% of its innovations, compared to 5% among local universities.

The industry of palm-oil in Malaysia prospers in means that it has never before, as to being the world's leader for production of palm oil. Research and development efforts are resulting in a wider diversify of by-products, which are turning downstream manufacturing into a business. This allows Malaysia to remain robustly above competitors.

Research and development done in Malaysia based on the country's current level of technology and application are:

Establishment of research institutes

With the establishment of Palm Oil Research Institute of Malaysia (PORIM), there are more research institutes for palm oil industry. In the Governing

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Board of PORIM, members who are experts in their own field of research are appointed by the Board; Program Advisory Committee. The Board consist of representatives from palm oil industry and government.

### Adequate legislation and implementation of research activities

Through an imposition if an industrial cess, adequate legislation and implementation of research activities get financed. Adequate legislation and implementation of research activities help to ensure proper and sustainable development for the palm oil industry. Those in the industry has a right in the decision of management for the funds collected, using funds for market development manners and for the benefit for research and development. In Malaysia, Palm Oil Registration and Licensing Authority (PORLA) are in charge of handling licensing and enforcement (Malaysian Palm Oil Board, 2006).

### National Policies

Development and utilization of renewable energy stated in the Plan period of Malaysian national policies, the Ninth Malaysian Plan (Ninth Malaysian Plan 2005-2010, 2006). In order to make Malaysia a world leader and hub for palm oil, efforts to promote renewable source of energy using palm oil to produce bio fuel have been undertaken during the Ninth Malaysia Plan.

In the Tenth Malaysia Plan, it is stated that the government hopes to increase the production of palm oil. Some initiatives that were stated or suggested in the plan are as follow (Tenth Malaysia Plan, 2010)

#### 2. 1

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Attract foreign investments by promoting Malaysia as a global hub in producing palm oil, and having the preferred destination for investment in areas such as, oleo chemicals based products, bulking facilities, and research and development.

## 2. 2

In order to promote downstream activities such as bio fuel, oleo chemicals, bio fertilisers, specialty food products, biomass products, nutraceutical, and pharmaceuticals, the need to develop Palm Oil Industrial Clusters into integrated sites is needed.

## 2. 3

Smallholders, agronomic management and mechanisation need to have encouragement to have good agriculture practices.

## 2. 4

For the sake for smallholders, centralising procurement of agricultural inputs costs are lowered, such as fertilisers and pesticides.

In 2004, in order to promote the growth and usage of sustainable palm oil through the co-operation within the supply chain and open dialogue between its stakeholders, the Roundtable on Sustainable Palm Oil (RSPO) was established. It was the first non-profit organization that has the target to produce sustainable palm oil worldwide. Palm oil mills and the management of oil palm plantations are applicable to the RSPO's Principles and Criteria (K. T. Tan et al., 2009). In order for a palm oil company to be certified as a



sustainable palm oil producer, which their products are certified by RSPO, they need to adhere to the RSPO Principles and Criteria (K. T. Tan et al., 2009). As stated below:

Principle1. Adequate information regarding the social, environmental, and legal issues that are related to the company must be presented by oil palm growers and millers. The purpose of this act is to ensure that companies adhere to the rules and regulations, especially towards the environment.

Principle2. Regulations, local, and international laws must be adhere by palm oil companies.

Principle3. Palm oil companies need to have good management planning to guarantee that they have and meet long-term economic and financial goals, which is essential to determine their commitment towards the palm oil industry.

Principle4. The need of operating procedures being documented, monitored, and implemented.

Principle5. Palm oil companies are responsible for the environment, such as natural resources and biodiversity. They need to identify negatives impacts that plantation of palm oil gives on natural habitats, which will endanger other species. This need to be taken into considerations in management and operations plans. Wastage must be disposed off in an environmentally and socially manner, after it has been used efficiently for renewable sources by reducing, recycling and reusing.

Principle6. Meeting the basic needs of individuals by making sure the industry minimum standards are met. Those employees and communities that are affected by the increasing of oil palm plantations and mills are under the responsibilities of the companies in this industry. By implementing these approaches, low salary of workers, discrimination of workers, and aboriginal people through land abuse by palm oil companies can be solved.

Principle7. Before establishing new plantings, all social and environmental impact estimation must be undertaken.

Principle8. Companies need to have continuous progress in key areas of activity, to show their commitment for advancing and improving. It is to ensure production of palm oil is in a sustainable manner, by monitoring and reviewing current management and operation.

Malaysian Palm Oil Association (MPOA), Federal Land Development Authority (FELDA), Golden Hope Plantation Bhd and United Plantation Bhd are government agencies and private companies that Malaysia has always been active in; such as Roundtable on Sustainable Palm Oil (RSPO). These agencies and private companies play important roles and positions in RSPO organization (K. T. Tan et al., 2009).

From 2007, all diesel sold in Malaysia must contain 5% palm oil. Malaysia is emerging as one of the leading biofuel producers, with 91 palm oil plants approved and a handful now in operation (Forbes, 2009).

## **Challenges**

There are some challenges faced by palm oil industry, as stated below:

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According to Hanim Adnan (2010), there is a negative margin of return on the investment because government is slow in action.

According to Naveen Thukral (2007), Malaysia's biodiesel industry will not expand fast due to the rising feedstock costs, slumping oil prices and uncertain government support.

According to Naveen Thukral (2007), only large plantations with secured raw materials will survive in this industry because biodiesel plants cannot live without long term suppliers and sales contracts.

According to Karl (2010), Malaysia's crude palm oil production has to meet its target of 17.8 million tons this year.