

# VISION 2020: PROSPECTS AND CHALLENGES FOR THE MALAYSIAN PALM OIL INDUSTRY

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## INTRODUCTION

**V**ision 2020 essentially calls for the industrialisation of Malaysia where the nation will enjoy a standard of living comparable to that of the developed countries. To fulfil the vision, all sectors of the economy and all social segments of the nation must be developed in a rapid but harmonious way. Vision 2020 provides us the direction for our future development and we should systematically identify the needs and challenges and develop appropriate strategies.

## THE ROLE OF THE AGRICULTURAL AND MANUFACTURING SECTORS

When the palm oil sector is placed in the context of Vision 2020, we have to first visualise the role to be played by the agricultural sector in an economy where the manufacturing sector will undergo a rapid growth. Given the projected rapid growth of the manufacturing sector, it has been projected that the agricultural sector will inevitably experience a declining share of the country's GDP.



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Within the agricultural sector it is already quite clear that oil palm cultivation will continue to dominate other crops or commodities. Alternative competing crops such as rubber and cocoa have faced major problems owing to labour shortages and depressed prices, thus affecting the commodities future viability. It is rather disturbing that there appears to be no alternative major crops that could be utilised for diversification purposes in the plantation industry so as not to be too overdependent on oil palm except of course by converting the plantation land for industrialisation projects.

It is well known that the economic contribution of the agricultural sector in the developed countries such as the EEC amounts to only 3% of their GDP. The share of the agricultural sector is so small that it is often feasible for the developed countries to subsidise their agricultural sector without causing a major drain to the overall economy. In Malaysia, the agricultural sector is still about 19% of its GDP. It would not be feasible to subsidise the agricultural sector. On the other hand the agricultural sector is needed to contribute significantly to the national income and growth. A large segment of the population still depend on agriculture for their living.

The national long term plan is to allow the agricultural sector to decline in its share of the GDP from 19% in 1992 to 13% in 2010. This can be interpreted to mean that the relatively rapid growth of the manufacturing sector will continue to erode the share of the agricultural sector in the national economy as often seen when a developing country becomes developed. It could also mean that the agricultural sector is not capable of expanding rapidly enough in line with the projected high growth rate required to achieve Vision 2020.

Industrialisation through manufacturing activities is an attractive option to achieve the status of the developed economy. It is easily visualised how ten acres of land under agriculture such as oil palm can only employ one person to generate RM 20 000 of gross revenue, but the same size of land if used for manufacturing activities can employ hundreds of people and can generate many times more revenue than that for agriculture. There is no doubt that to achieve the standard of living and to attain the income level of the developed countries, turning to manufacturing may be the shortest route to success, provided there is sufficient market for the manufactured products.

## THE STRENGTH OF THE AGRICULTURAL SECTOR



Before we gladly accept the projected diminished role to be played by the agricultural sector as seen in the developed economies, we have to pause to ask whether we do indeed have to follow

the model of the agricultural sector currently experienced in the developed countries. After all, we have still time to develop our own model. Our agricultural sector has many unique features which could be exploited to our advantage. For instance many of the agricultural commodities are produced for export. They have not been subsidised but rather they are levied export tax which contributes as a source of revenue to the government. Yet some commodities such as palm oil have remained competitive against competing oils and fats which are produced with substantial subsidies. Another unique feature is that our agricultural sector is self-sufficient in energy. The agricultural sector consumes about 6.1% of the total energy demand of the country but it also contributes more than six percent of the total power supply nationally. Palm oil production for instance uses energy

generated from the burning of its own waste products, and there is substantial excess which can be used for other applications.

Our climatic conditions are very suitable for the cultivation of tropical crops and this again presents a unique advantage which is not often available in some other countries. Oil palm and rubber for example give very high yield when planted in Malaysia largely because of the right climatic condition.



## THE STRENGTH OF THE PALM OIL INDUSTRY

The many positive attributes for our agricultural sector are mostly contributed by the oil palm industry which is now the major crop being planted in the country. This suggests that palm oil industry will have to play a major role in sustaining maximum contribution of the agricultural sector in fulfilling Vision 2020. Fortunately, palm oil can contribute towards a very versatile industry as it can be easily included in many manufacturing activities, and in expanding the oil palm sector we are also able to contribute directly to the expansion of the manufacturing sector.

Being a highly competitive and profitable industry, oil palm will continue to expand its planted area in the future. This will help the agricultural sector to maintain a reasonable growth rate, projected at 3% per year overall. In Peninsular Malaysia, where jungle land is

scarce, existing agricultural land used for other crops are still plentiful. It is projected that oil palm will increasingly replace other crops such as rubber, cocoa or rice. In Sabah and Sarawak where there is still plenty of land for agriculture, oil palm is projected to be the major crop to be planted. Malaysian palm oil production is projected to increase to 8.75 million tonnes in the year 2000 from 6.37 million tonnes produced in 1992.

The projected expansion of palm oil production in Malaysia could face a problem since other countries such as Indonesia are also trying to expand their palm oil production, thus increasing the possibility of creating excess supply in the international market. Fortunately, the projected expansion in demand for oils and fats is rather big because of continuing growth in world population. Consequently, the projected increased production of palm oil in the next ten years can be expected to be easily marketed. We are



also fortunate that other oilseed producers are not expanding their future production as rapidly as we do, and this will mean less competition and favour the growth of the palm oil sector.

Despite this optimistic scenario for the oil palm industry, it is necessary to prepare for possibilities that less favourable conditions may prevail. We have to continue looking for alternative market outlets, improving the competitiveness of palm oil production and diversifying the uses of palm and palm oil products. These become the challenges which must be addressed by our R & D efforts.

## MAJOR CHALLENGES

### a) Increasing Value Added

The first challenge confronting the palm oil industry as it approaches the future is to shift the activities more towards manufacturing. Such efforts will increase value added, increase income of the sector, lead to better competitiveness of the industry and these will augur well for Vision 2020. Fortunately, a large component of the industry is already involved in manufacturing or processing activities. Extraction of oil, refining and production of cooking oil, margarine and shortenings and production of oleochemicals are essentially processing or manufacturing activities. In other words, the oil palm sector has already provided a high degree of resource-based industrialisation. It has been estimated that the investment in agricultural aspect of planting of oil palm of about RM 8 billion is matched by an equally big amount of investments in the construction of a total of 270 mills, 40 refineries, and 10 oleochemical plants. In addition, tank and port facilities have also attracted large investments to cater to the palm oil industry. Clearly, palm oil industry contributes not only to agriculture but also to the manufacturing sector. Even before Vision 2020 was announced, the palm oil industry has already subscribed to the concept of Vision 2020 with regard to increased industrialisation activities.

Currently, the major traditional products from the oil palm industry are palm oil and palm kernel oil. These are used for making cooking oil, margarine, shortenings and for non-edible applications such as soaps. The Industrial Master Plan in 1985 encouraged the expansion in the production of oleochemicals. The Industrial Master Plan target has been successfully achieved as Malaysia is now a major oleochemical producer and exporter. The search for improving the value added component of various palm oil products continues. Converting palm oil into oleochemicals is only the first step. Oleochemicals have numerous applications in industrial processes and consumer products which fetch a high value. Other minor components of

palm oil such as the Vitamin A and E are also high value products which must be exploited commercially. At present, most of our palm oil products are sold in bulk in semi or fully refined form to the importing countries. Most of the subsequent processing and further manufacturing is carried out in the importing countries. Only about 25 % of the final value of palm oil at the consumers end is retained in Malaysia to benefit the producers. The remaining value added benefits the manufacturers in the importing country. This situation could be changed to favour our economy if value added is increased through manufacturing locally.

It is inevitable that as the palm oil industry evolves to play a greater role in meeting the challenges of Vision 2020, it will have an impact on the economy, on the employment sector, and on the manpower requirement. It is a challenge for the scientists and engineers to use palm oil as a renewable resource to increase its value added through local processing and manufacturing processes before the products are exported. The increase in product value should not be through



manufacturing activities alone. Marketing will also enhance the value of a product. For example, olive oil is selling at ten times the price of palm oil even though the physical, chemical and nutritional properties of the two oils are very similar. If our export of palm oil can fetch a value five times that of the present, it will improve the GDP contribution of the agricultural sector tremendously. Again skilled human resources with scientific, engineering or marketing background are needed to perform technical marketing and technical advisory services to enhance the value of palm products to a desirable level in the international market.

#### b) Developing Large Scale Applications

A second major challenge confronting the palm oil industry is to find new applications which will be capable of utilising large volume of the palm oil being produced.

If the market for the cooking oil is weak, there must be sufficient opportunity to market palm oil in the non-edible sector. The move to expand the oleochemical sector is al-

ready initiated successfully. The opportunity to use oleochemical in detergent and cosmetic applications is very large indeed and the concern for increasing use of environmentally friendly and biodegradable products will help palm oil oleochemical tremendously and more research is needed to realise this potential. Our technologists have not entered the cosmetic industry in a big way and yet cosmetics are the second largest users of oleochemicals.

The application of palm oil as fuel is becoming more viable with the passage of time. Since the volume of palm oil produced is very small compared to the fuel demand of the world, many people are sceptical at assessing the vegetable oil fuel as an alternative to petroleum fuel. At national and regional levels however, the potential supply of palm oil for fuel is quite adequate to match the local need. A national fuel strategy could be devised to enable palm oil fuel to be utilised thus giving a major outlet for mopping up any excess supply of palm oil in the traditional market.

The technical feasibility of using palm oil as fuel is very promising. Palm oil could be converted into palm methyl esters known as palm diesel to replace petroleum diesel in normal diesel engines. This application has been shown to be technically feasible but economically the palm diesel price is largely influenced by the price of palm oil which is currently 25% higher than the price of petroleum diesel. Processing cost is negligible and can be offset by the value of by-products generated from the production of palm methyl ester but still the project is not so viable economically.

A more recent move is to use crude palm oil directly in modified special diesel engines. This approach could potentially be more viable than the palm methyl ester route. A car (Mercedes Benz) fitted with the special diesel engine could be supplied with fuel for its yearly running from the production of one acre of oil palm plantation. A ratio of one car to one acre of oil palm for fuel supply can be quite comforting as Malaysia has about 5 million acres of oil palm at present compared to a car population of about 1.2 million, and the oil palm



acreage will continue to expand in the future. Since palm oil is a renewable commodity, we can claim that Malaysia has the capability to be self-sufficient in diesel fuel even if petroleum based diesel are not easily available in the future.



harvesting of the palm fruit bunches, we see a large potential for Malaysia to become a major supplier of furniture using totally renewable raw materials. At present, the fronds are left to rot in the interrows of the oil palm plantations giving some economic value by providing organic matter and preserving the soils against erosion. There are many other examples of possible applications of the oil palm wastes including the manufacture of coir products, and even in making pulp and paper. The development of these applications at a commercial level is still not fully successful and it is a challenge to the scientists, engineers and entrepreneurs.



### c) Developing Improved Competitiveness

The third major challenge is to continue to improve productivity and competitiveness for the palm oil industry. This will mean more research in ways of reducing cost of production, improving yield and reducing dependence on extensive use of labour. The palm has the potential to increase yield from five tonnes of oil per hectare at present to 12 tonnes oil per hectare per year. Mills can improve extraction rates, and there are vast opportunities to utilise by-products from the mills to help generate more revenue for the industry. A 10% saving from extraction rate alone *i.e* from 20% to 22% would contribute RM 600 million of extra revenue. The fruit bunch is known to contain 24% to 30% palm oil, and our industry unfortunately is only able to obtain 20% or even as low as 17% extraction rates at times.

There is still a lot of waste products which are underutilised from the economic point of view. The first one metre of the fronds or stocks of the palm leaves can be made into high quality but less expensive table tops and chair seats or chair backs through the chip-board process. A student table top needs only three of such fronds to provide the raw material in the table top manufacturing process. Considering that there are 300 million fronds harvested monthly during the process of

The scope for generating new products from the palm oil industry is truly very great. The challenge is for the scientists, engineers and entrepreneurs to evolve the research results and turn them into commercial reality. Current studies indicate that palm oil can be a valuable raw material in the lubricating industry and there are many special applications where palm oil can substitute existing materials such as in candle making, in the manufacture of drilling mud for petroleum exploration, in printing ink, and in making polymers and polyurethanes.

### d) Developing Expanded Trade

A fourth challenge is to foster trade growth since the growth of the palm oil industry and the manufacturing sector as desired in the Vision 2020 will require market outlets for our products. The government has already embarked on many trade missions overseas to develop

and strengthen trade ties not only with the developed countries but also with the developing Third World countries. Diversification of trading partners is important to ensure that recession in the developed countries would not have a major negative effect on our economy. Market development efforts continue to be made by sending technical experts to the consuming countries. The GATT negotiations are important to Malaysia since a successful conclusion to the GATT talk would facilitate trade and this will help Malaysian exports particularly palm oil. If subsidies on agricultural production including oilseed can be removed in EEC and USA, palm oil will be even more competitive than it is today.

A typical example of our concern in protecting our trade is to improve consumers acceptance of our products through nutritional research on palm oil. Lack of research on palm oil nutrition made the palm oil industry vulnerable to attack by competitors such as the American Soyabean Association (ASA) which mounted an anti palm oil campaign in 1987. Since then, we have



fought back by undertaking extensive research into the nutritional value of palm oil in food. We funded researchers around the world to undertake such studies. Some 75 research projects on nutrition have been commissioned by PORIM since the break of the anti palm oil campaign, and the results have shown quite conclusively that there is nothing wrong with palm oil nutritionally and the smear campaign was truly without scientific basis. The beauty of research is that others became curious and started their own research into the nutritional effects of soyabean oil. It turned out that it

is the hydrogenated or hardened soyabean oil found in shortenings and margarines which is shown to be responsible for raising cholesterol and raised the risk for coronary heart diseases. Because of this adverse finding, we do not hear any more aggressive smearing of our oil by the competitors and we do not expect them to do any more smear campaign on palm oil.

## CONCLUSION

In conclusion, we could view the palm oil industry as very promising in terms of contributing towards Vision 2020. Although oil palm is agricultural based, most of the subsequent activities are manufacturing or processing in nature and these contribute towards increasing value added and in income generation for the country.

Many of the potential applications of palm products await to be fully developed and commercialised. Many processes need to be developed to improve value added, to reduce wastage or reduce cost and extensive



use of labour. The role of skilled researchers, engineers and entrepreneurs in the further development of the palm oil industry is very critical. As Vision 2020 stresses on developing the manufacturing sector, export markets must be developed even though we have been a major exporting country in the past. Our government has led the export drive by developing export capability such as the establishment of MATRADE recently. Our resource people *i.e* the scientists and engineers should similarly develop the vision of wanting to develop the export trade so that the high value added products generated from the palm oil industry can be successfully marketed. Along with the demanding requirement to fulfil the needs of Vision 2020, the scientists and engineers must also develop a broad base training and education to develop the necessary multi-disciplinary skills required.

As in any long term development plan, the palm oil industry has its defensive strategy in the possibility of developing the use of palm oil as fuel. This will ensure that there is always a market for palm oil. The price of palm oil as fuel is higher than the production cost of the oil and the palm oil industry can claim to have a threshold floor price which is remunerative to producers but since the food industry market is willing to offer a higher price for palm oil at the moment, the producers do not mind enjoying a slightly higher profit. A much higher income or profit could be achieved if the potential development that have been outlined above can be realised as we fulfil the aspirations of Vision 2020.

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