



THE PALM OIL INDUSTRY IN MALAYSIA

From Seed to Frying Pan

Prepared for WWF Switzerland

by

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November 2002

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Executive Summary

Growing global demand for edible oils and animal proteins in the last decade or two had resulted in a tremendous increase in the areas under oil crops cultivation, particularly of soybean and oil palm. In the last six years, the four main soybean growing countries comprising Brazil, Argentina, Bolivia and Paraguay recorded a 92% increase in production and 66% increase in planted area. World production of palm oil, the most widely traded edible oil, has also seen significant leaps in production and planted areas; production had almost doubled from 1990 to 2001, with Malaysia and Indonesia contributing to most of the increased production. The rapid expansion of both crops had resulted in the conversion of High Conservation Value Forests¹ (HCVFs) in South America, including parts of the Amazon and in South-East Asia. As world production of palm oil and soyoil is expected to continue to increase at the current pace, there is a growing concern that this expansion would result in conversion of a large proportion of the remaining HCVFs in the tropics.

In order to provide a better understanding of various issues pertaining to forest conversion and the edible oils sector, a study was undertaken on the supply chain of the palm oil industry in Malaysia. The study is divided into two sections, Part A gives an overview of the palm industry and the players in the supply chain while Part B provides detailed information on the various players.

The major players in the industry can be grouped into clusters covering upstream producers, downstream producers, exporters and importers, customers, Government agencies and other players such as NGOs. Among these, upstream producers and customers, particularly institutional buyers and investors would be of more direct relevance to the issue of conversion of HCVFs. Of the 3.38 million hectares of oil palm planted in Malaysia in 2000, 60% were under private ownership, particularly by plantation companies, 30.5% were under Government land schemes while the remaining 9.5% are individual smallholders. The largest upstream player is the Federal Land Development Authority (Felda) which was established in 1956 with the socio-economic mandate of developing agricultural land for the rural poor and landless. Felda accounts for 17.7% of the total planted area and 20.6% of the palm oil produced in Malaysia in 2001.

Plantation companies vary considerably in size, from a few hundred hectares to more than 100,000 hectares. The five largest companies in terms of planted area are Kumpulan Guthrie Berhad, Golden Hope Plantations Berhad, IOI Corporation Berhad and Sime Darby Berhad. Many present day plantation companies have their beginnings in the colonial era at the turn of the 20th century when English and other European entrepreneurs transformed forest land into tea and coffee and rubber estates. Amongst the 'old' companies are Kumpulan Guthrie Berhad, Golden Hope Plantations Berhad, Sime Darby Berhad, Kuala Lumpur Kepong Berhad and United Plantations Berhad. Since the 1970s, several 'home grown' companies have entered the industry, the most notable example being IOI Corporation Berhad which started from zero base in 1983 to become one of the largest plantation companies today.

The equity of plantation companies in the country is largely under Malaysian ownership, the largest investors being the national equity corporation, Permodalan Nasional Berhad (PNB) and the Employees Provident Fund (EPF). PNB has

¹ High Conservation Value Forests (HCVFs) are defined by the Forest Stewardship Council as forests of outstanding and critical importance due to their environmental, socio-economic, biodiversity or landscape values.

substantial holdings in seven major plantation companies while EPF which provide retirement benefits for its members has made substantial investments in more than 14 plantation companies listed on the Kuala Lumpur Stock Exchange. Only a few companies have substantial or controlling foreign shareholding, notable examples being United Plantations Berhad and Pamol Plantatins Sdn Bhd which is Unilever's plantation interest in Malaysia. However, the latter had recently announced to dispose all its plantations in the Malaysia.

Besides production of crude palm oil, many companies are also involved in downstream production activities along the supply chain, such as palm oil refining, production of edible oil and palm-based products and manufacture of basic oleochemicals. The larger companies have also expanded their downstream operations offshore by establishing palm oil refineries in consuming countries such as India, Bangladesh, Pakistan, China and Egypt. Recently, two plantation companies established their presence in edible oils in Europe; Golden Hope Plantations Berhad acquired Unilever's Unimills BV which is second largest processor of edible oils in Europe while IOI Corporation Berhad took control of Loders Croklaan BV, a global producer and supplier of specialty oils and fats. Moving in the opposite direction, several companies have ventured into establishment of oil palm plantations off-shore, particularly in Indonesia to take advantage of the availability of land and workers and lower cost of production. The biggest player in this context is Kumpulan Guthrie Berhad which acquired about 200,000 hectares in Minamas Plantations in 2001.

The diverse interests of upstream and downstream producers of palm oil and palm-based products and their derivatives are represented by a number of industry organisations. The principal organisations are the Malaysian Palm Oil Association (MPOA), the Malaysian Palm Oil Board (MPOB) and the Malaysian Palm Oil Promotional Council (MPOPC). MPOA is the plantation owners' association which has more than 100 members with more than 1.4 million hectares planted under oil palm. This amounts to 70% of the area under private ownership. MPOA's mission is to ensure the long term profitability and growth of the Malaysian palm oil industry.

MPOB is the public sector establishment responsible for undertaking research and development and for regulatory and licensing functions for the industry. Its upstream and downstream research and development are built on a three-prong strategy to raise income through higher oil palm productivity, target for zero waste by maximising the utilisation of biomass and to increase the value chain of palm based products for various uses. The R & D activities of MPOB are supported by a research cess collected for every tonne of palm oil or palm kernel produced.

MPOPC's primary role is to promote Malaysian palm oil; its activities are focused on marketing communications, technical marketing and market promotion locally and in several edible oil consuming countries. MPOPC's operations are supported by contributions from the industry, based on volume of palm oil production, to the Palm Oil Promotion Fund.

There are strong linkages among the various industry players, formally and informally. Formal inter-relationships are reflected in the representation of the main industry organisation in the Board of MPOB and the Board of Trustees of MPOPC.

In view of increasing pressures from stakeholders on environmental issues, the industry has recently formed two national committees to address the concerns raised. MPOA has set up the Working Committee on Environment while MPOPC has established the Palm Oil Task for on the Environment. By virtue of its organisational

mandate, MPOPC's Task Force is expected to focus on production of communication materials to project the positive attributes of the industry with regard to the environment and sustainable development. The MPOA committee has a broader scope of work, which includes the development, and promotion of best management practices. , One of the terms of reference of the Working Committee is establish and maintain linkages with public and private sector organisations as well as NGOs related to the environment.

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LIST OF ABBREVIATIONS

ASEAN	Association of South East Asian Nations
AVOC	ASEAN Vegetable Oils Club
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
CPKO	Crude Palm Kernel Oil
CPO	Crude Palm Oil
DOE	Department of Environment Malaysia
ECD	Environment Conservation Department, Sabah
EFB	Empty Fruit Bunches
EIA	Environmental Impact Assessment
EMPA	East Malaysia Planters Association
EMS	Environment Management System
ENGO	Environmental Non-Governmental Organisation
EPF	Employees Provident Fund
EQA	Environment Quality Act
EQC	Environment Quality Council
ESOS	Employees/Executive Share Option Scheme
FELCRA	Federal Land Consolidation & Rehabilitation Authority
FELDA	Federal Land Development Authority
FFB	Fresh fruit bunches
FOSFA	Federation of Oils, Seeds and Fats Associations
FY	Financial year
GHPB	Golden Hope Plantations Berhad
IASC	International Association of Seed Crushers
IOI	IOI Corporation Berhad
IPM	Integrated Pest Management
ISP	Incorporated Society of Planters
JKAS	Jabatan Konservasi Alam Sekitar
KER	Kernel extraction rate
KGB	Kumpulan Guthrie Berhad
KLK	Kuala Lumpur Kepong Berhad

KLSE	Kuala Lumpur Stock Exchange
LSE	London Stock Exchange
MEOA	Malaysian Estate Owners Association
MEOMA	Malayan Edible Oil Manufacturers' Association
MNS	Malaysian Nature Society
MOMG	Malaysian Oliochemicals Manufacturers Group
MOPGC	Malaysian Oil Palm Growers Council
MoU	Memorandum of Understanding
MAPA	Malaysian Agricultural Producers' Association
MITI	Ministry of International Trade and Industry
MOF	Ministry of Finance
MOSTE	Ministry of Science, Technology and Environment
MPI	Ministry of Primary Industries
MPOA	Malaysian Palm Oil Association
MPOB	Malaysian Palm Oil Board
MPOPC	Malaysian Palm Oil Promotion Council
NACRA	National Annual Corporate Reports Award
NASH	National Association of Smallholders
NIOP	National Institute of Oil Seeds Products
NREB	Natural Resources and Environment Board
OER	Oil Extraction Rate
PfW	Partners for Wetlands
PK	Palm Kernel
PNB	Permodalan Nasional Berhad (National Equity Corporation)
POMA	Palm Oil Millers Association
POME	Palm Oil Mill Effluent
POPF	Palm Oil Promotional Fund
PORAM	Palm Oil Refiners Association of Malaysia
POTFE	Palm Oil Task Force on Environment
PPBOP	PPB Oil Palms Berhad
RGA	Rubber Growers' Association
RISDA	Rubber Industry Smallholders Development Authority
RM	Ringgit Malaysia
SALCRA	Sarawak Land Rehabilitation and Consolidation Authority

SLDB	Sabah Land Development Board
TQEM	Total Quality and Environment Management
UNEP	United Nations Environment Programme
UPAM	United Planting Association of Malaysia
UPB	United Plantations Berhad
UPM	Universiti Putra Malaysia
WWFM	World Wide Fund for Nature Malaysia

THE PALM OIL INDUSTRY IN MALAYSIA: From seed to frying pan

1. INTRODUCTION

1.1 Background

Growing global demand for edible oils and animal proteins in the last decade or two had resulted in a tremendous increase in the areas under oil crops cultivation, particularly of soybean and oil palm. In the last six years, world production of soybean had increased 47% to satisfy the market for animal feed (soybean meal) and edible oils. Most of the increased production came from countries in South America. The four main soybean growing countries comprising Brazil, Argentina, Bolivia and Paraguay recorded a 92% increase in production and 66% increase in planted area in the past six years. The current area under soybean cultivation is about 30 million hectares (AIDEnvironment and Profundo, 2002). World production of palm oil, the most widely traded edible oil, has also seen significant leaps in production and planted areas; production had almost doubled from 1990 to 2001, with Malaysia and Indonesia contributing to most of the increased production. This had been achieved mainly by opening of new land for oil palm plantations. In Malaysia, the area planted with the crop had increased from 2.03 million hectares in 1990 to 3.50 million hectares in 2001, an increase of 172%. In Indonesia, 1.8 million hectares have been planted with oil palm from 1990 to 1999 (Wakker, 2000). The rapid expansion of both crops had resulted in the conversion of High Conservation Value Forests (HCVFs) in South America, including parts of the Amazon and in South-East Asia. It has been estimated that about an average of 200,000 hectares of forestland had been converted annually from 1990 to 1999 in Indonesia, the actual rate varying from about 150,000 to more than 250,000 hectares per year (Wakker, 2000).

As world production of palm oil and soyoil is expected to continue to increase at the current pace, there is a growing concern that this expansion would result in conversion of a large proportion of the remaining HCVFs in the tropics. Several studies have been undertaken to gain a better understanding of the issues pertaining to forest conversion and the edible oils sector. This study focuses on the supply chain of the palm oil industry in Malaysia.

1.2 Objective and Scope

The objective of this study is to provide an overview of the palm oil industry in Malaysia, identifying the major players in the supply chain, from the upstream producers to the customers, and their organisational relationships and linkages in their effort in sustainable development of the industry. The study is divided into two sections, Part A gives an overview of the palm industry and the players in the supply chain while Part B provides detailed information on the various players. The structure of the study report is as follows:

Part A

- Introduction to the palm oil industry
 - Historical background
 - The oil palm
 - Characteristics of palm oil
 - Food and non-food applications of palm oil
 - World production of palm oil
 - Production of palm oil in Malaysia
- Key processes in the production and refining of palm oil
 - Production of fresh fruit bunches
 - Production of crude palm oil
 - Production of refined palm oil
- The supply chain of the palm oil industry in Malaysia
 - Introduction
 - Upstream producers
 - Downstream producers
 - Exporters/Importers
 - Industry organisations
 - Other players
 - Customers
 - Linkages among major players in the palm oil supply chain
 - Profiles and performances of major plantation companies

Part B

- Profiles of major players in the supply chain of the palm oil industry in Malaysia
 - Plantation companies
 - Industry organisations
 - Government agencies
 - Other players

1.3 Approach

The study was largely based on published or public domain information, a major source was recent corporate annual reports of the plantation companies that are listed on the Kuala Lumpur Stock Exchange. Useful information was also obtained from websites of plantations and industry organisations. Statistics on the palm industry, including information palm oil and other edible oils published in *Oil World* were obtained mainly from the website of the Malaysian Palm Oil Board (www.mpob.org.my)

During the course of writing the profiles of plantation companies and industry organisations, written and/or verbal communication was exchanged with a number of organisations to seek clarification on some of the published information. The final draft of the profiles the 12 selected companies was sent to the respective companies to ensure accuracy of the information used.

The Malaysian currency, *Ringgit Malaysia* (RM) was used through the report. It is currently pegged to the US Dollar at the rate of RM 3.80 to the US\$. The rate with respect to the Swiss currency is RM 2.59 for one CHF (as of 28.11.02).

In this report, 'oil palm' refers to the palm, *Elaeis guineensis* Jacq. which produces two types of oil; 'palm oil' from the fibrous mesocarp and 'palm kernel oil', a lauric oil from the palm kernel. Depending on the context, the industry has been called the 'oil palm industry' or the 'palm oil industry'. As this study is focused on the edible oil product, the term 'palm oil industry' has been used through the report.

PART A: From Seed to Frying Pan

2. Introduction to the Palm Oil Industry

2.1 Historical Background.

The oil palm, *Elaeis guineensis* Jacq. is indigenous to West Africa where the main palm belt ran from Sierra Leone, Liberia, the Ivory Coast, Ghana and Cameroon to the equatorial regions of the Republics of Congo and Zaire. (Hartley, 1988). The development of oil palm as a plantation crop started in the South East Asia; the first introduction of the African oil palm was four seedlings from Mauritius and Amsterdam that were planted in the Botanic Gardens in Bogor in 1848. The first commercial oil palm plantation was established in Sumatra, Indonesia by M. Adrien Hallet, a Belgian agronomist with interests in the Belgian Congo (Zaire). The development of the industry in Malaysia is attributed to Frenchman, Henri Fauconnier and his association with Hallet. In 1911, Fauconnier visited Hallet's oil palm development in Sumatra and had purchased some oil palm seeds and these were planted at his Rantau Panjang Estate in Selangor. He returned to Sumatra the following year to obtain seeds that he had selected together Hallet from Tanjong Morawa Kiri Estate for further planting. With seedlings obtained from the 1911 and 1912 importation, Fauconnier established the first commercial oil palm planting at Tennamaram Estate, to replace an unsuccessful planting of coffee bushes (Tate, 1996).

In their analyses of the palm oil industry in Malaysia, Gray (1969) and Harcharan Singh (1976) classified the development of the industry in Peninsular Malaysia into three distinct phases, starting with the experimental phase from the late 1800s early 1900 to 1916 while the plantation development phase commenced in 1917 with Tennamaram Estate until about 1960. The expansion phase from the 1960s was the response to the Government's diversification policy to reduce the dependence of the national economy on natural rubber, which had faced declining prices and competition from synthetic rubber. Following the recommendation of the World Bank Mission in 1955, the Government decided to promote the planting of oil palm. A key driver for this effort was the Federal Land Development Authority (Felda) which was established in 1956 with the socio-economic responsibility of developing plantation land for the rural poor and landless.

The palm oil industry has since undergone two further phases, from 1970 with the expansion of large scale planting in Sabah and Sarawak and from around 1995 when Malaysian extended their upstream operations off-shore, particularly to Indonesia where there is adequate supply of workers and availability of land for plantation development and cost of production is lower than in Malaysia.

2.2 The Oil Palm

Elaeis guineensis Jacq. which is commonly known as the oil palm is the most important species in the genus *Elaeis* which belongs to the family Palmae. The second species is *Elaeis oleifera* (H.B.K) Cortes which is found in South and Central America and is known as the American oil palm. Although significantly lower in oil-to-bunch content than its African counterpart, *E. oleifera* has a higher level of unsaturated fatty acids and has been used for production of interspecific hybrids with *E. guineensis*.

The oil palm is an erect monoecious plant that produces separate male and female inflorescences. Oil palm is cross-pollinated and the key pollinating agent is the weevil,

Elaeidobius kamerunicus Faust. In the past, oil palm was thought to be wind pollination and owing to the low level of natural pollination, assisted pollination is a standard management practice in plantations. However, this practice was discontinued following the discovery that oil palm was insect pollinated and the introduction of *E. kamerunicus* from the Cameroons, West Africa in 1982 (Syed *et al*, 1982). Harvesting commences about 24 to 30 months after planting and each palm can produce between eight to 15 fresh fruit bunches (FFB) per year weighing about 15 to 25 kg each, depending on the planting material and age of the palm (Plate 1). Each FFB contains about 1000 to 1300 fruitlets; each fruitlet consists of a fibrous mesocarp layer, the endocarp (shell) which contains the kernel (Plate 2). Present day planting materials are capable of producing 39 tonnes of FFB per ha and 8.6 tonnes of palm oil and actual yields from good commercial plantings are about 30 tonnes FFB per ha with 5.0 to 6.0 tonnes oil (Henson. 1990). At the national level, the average FFB yield in 2001 was 19.14 tonnes while palm oil productivity was 3.66 tonnes per ha.

Cultivars or races of *E. guineensis* can be differentiated by their fruit pigmentation and characteristics; the most common cultivars being the *Dura*, *Tenera* and *Pisifera* which are classified according to endocarp or shell thickness and mesocarp content. *Dura* palms have 2-8mm thick endocarp and medium mesocarp content (35%-55% of fruit weight), the *tenera* race has 0.5-3mm thick endocarp and high mesocarp content of 60%-95% and the *pisifera* palms have not endocarp and about 95% mesocarp (Latiff, 2000).

The four palms that were planted in the Botanic Gardens in Bogor in 1848 were *duras*; their seeds were the origin of the famous Deli *dura* palms that were established in Deli district in Sumatra in 1881 (Hartley,1988). The Deli *duras* provided the foundation for development of planting materials used by the industry in Malaysia and other oil palm growing countries. As *pisifera* palms are predominantly female sterile, they cannot be exploited for commercial planting. They are instead used for crossing with the *dura* palm to produce the *tenera* (DxP) hybrid (Plate 3) after M. Beirnaert discovered the single gene inheritance of shell thickness in 1939 in the then Belgian Congo (Zaire) (Hartley, 1988). This discovery was the cornerstone for the industry and it paved the way for breeding and selection and production of high yielding DxP planting materials.



Plate 1: Fresh fruit bunches (FFB)

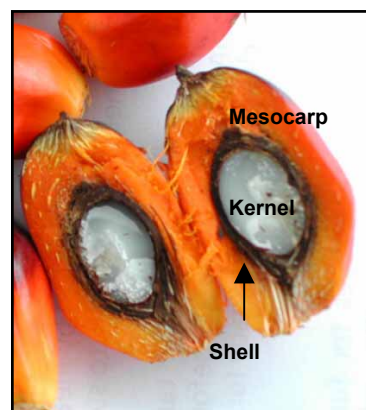


Plate 2: Cross section of a fruitlet

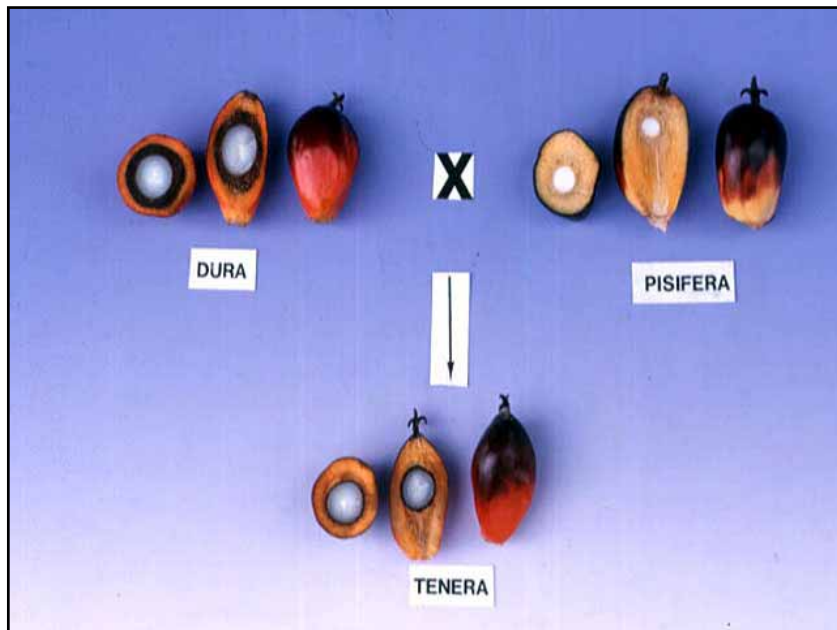


Plate 3: Production of *tenera* (DxP) planting material

Traditionally, breeding of oil palm has focused on yield improvement, in terms of FFB and oil content, slow height increment, oil quality and disease tolerance. Currently, the industry is has placed emphasis on the production of the following types of planting materials to meet industry and market needs (Rajanaidu *et al*, 2000):

- Development of dwarf palms (PS1 type) – to reduce the palm height increment and significantly extend the economic cropping cycle.
- Breeding for high unsaturated oil (High iodine value) (PS2 type) – to produce materials with higher proportions of unsaturated fatty acids by crosses with high iodine value Nigerian *duras* and *E guineensis* x *E. oleifera* hybrids.
- Breeding for high lauric oil (PS3 type) – using high yielding Nigerian *dura* palms with high kernel contents
- Breeding for high carotenoid content (PS4 type) – using selected Nigerian *duras* and *pisiferas* as well as hybridisation with *E. oleifera*.

As current DxP planting materials derived from seeds have a high level of variation, several companies undertook research on production of clonal palms in the 1980s. This research was based on the premise that yields can be increased by about 30% with clones derived from elite palms in a DxP population (Hardon *et al*, 1987). However, commercial production of clones was hampered by the discovery of abnormal flowering behaviour (Corley *et al*, 1986) and the research effort was diverted to overcoming the occurrence of abnormalities in palm clones. A few companies have planted clonal palms on a commercial and one of them, PPB Oil Palms Berhad had obtained very encouraging results. Their earliest clonal planting had produced a 31% increase in FFB per ha and 54% improvement in oil yield compared to conventional DxP materials during the initial seven years of production (Siburat *et al*, 2002).

The palm oil industry has also embarked on genetic engineering work; the primary strategy of the Malaysian Palm Oil Board (MPOB) is to produce transgenic oil palm with high oleic oil content (Cheah, 2000, Yusof, 2001). Although MPOB has made significant progress in this endeavour, it may take many years before genetically-modified (GM) palms become available for commercial planting. Estimates for commercialisation ranged from 15 years (Corley, 1999) to 30-40 years (Pushparajah, 2001). The latest projection indicates that transgenic high oleic acid palms could be available for field testing from 2007-2010 and commercial planting could commence around 2015 (Ravigadevi *et. al.*, 2002).

2.3 Characteristics of palm oil

The oil palm produces two types of oils, palm oil from the fibrous mesocarp and lauric oil from the palm kernel. In the conventional milling process, the fresh fruit bunches are sterilised and stripped of the fruitlets which are then digested and pressed to extract the crude palm oil (CPO). The nuts are separated from fibre in the press cake and cracked to obtain palm kernels which are crushed in another plant to obtain crude palm kernel oil (CPKO) and a by-product, palm kernel cake which is used as an animal feed. Fractionation of CPO and CPKO in the refinery produces the liquid stearin fraction and a solid stearin component. The fatty acid compositions of the palm oil products, compared with coconut oil and soyoil are presented in [Table 1](#). Palm oil has a balanced ratio of saturated and unsaturated fatty acids while palm kernel oil has mainly saturated fatty acids which is broadly similar to the composition of coconut oil. Compared to soyoil, palm oil has a higher amount of saturated fatty acids but this makes it more stable and less prone to oxidation at high temperatures

Table 1: Fatty Acid Compositions of Palm Oil Products, Soy Oil and Coconut Oil

Fatty Acids	Weight Percentage						
	Palm Oil	Palm Olein	Palm Stearin	Palm Kernel Oil	Palm Kernel Olein	Coconut Oil	Soy Oil
C6:0				0.3	0.4	0.2	
C8:0				4.4	5.4	8.0	
C10:0				3.7	3.9	7.0	
C12:0	0.2	0.2	0.3	48.3	41.5	48.2	
C14:0	1.1	1.0	1.3	15.6	11.8	18.0	
C16:0	44.0	39.8	55.0	7.8	8.4	8.5	6.5
C18:0	4.5	4.4	5.1	2.0	2.4	2.3	4.2
C18:1	39.2	42.5	29.5	15.1	22.8	5.7	28.0
C18:2	10.1	11.2	7.4	2.7	3.3	2.1	52.6
Others	0.8	0.9	0.7	0.1	0.1		8.0
Iodine Value	53.3	58.4	35.5	17.8	25.5	9.5	133.0

Source: Salmiah Ahmad, 2000

2.4 Food and non-food uses of palm oil

Palm oil and palm kernel oil have a wide range of applications, about 80% are used of food applications while the rest is feedstock for a number of non-food applications (Salmiah, 2000). Among the food uses, refined, bleached and deodorised (RBD) olein is used mainly as cooking and frying oils, shortenings and margarine while RBD stearin is used for the production of shortenings and margarine. RBD palm oil (i.e. unfractionated palm oil) is used for producing margarine, shortenings, *vanaspati* (vegetable ghee), frying fats and ice cream. Several blends have been developed to produce solid fats with a zero content of *trans*-fatty acids (Berger, 1996). (*Trans*-fatty acids, which may have an adverse effect on health, are produced when unsaturated fats are partially hydrogenated to obtain solid fat products such as margarine.). In the production of ice cream, milk fats are replaced by a combination of palm oil and palm kernel oil. A blend of palm oil, palm kernel oil and other fats replaces milk fat for the production of non-dairy creamers or whiteners. [Plate 4](#) provides examples of a number of palm-based food applications.



Plate 4: Variety of palm oil-based food products

A relatively new product is the Red Palm Olein which is refined under a special mild process to retain most the natural carotenes - precursors of Vitamin A (Berger, 1996). Palm oil and palm kernel oil are also ingredients for production specialty fats which include cocoa butter equivalents (CBE) and Cocoa Bitter Substitutes (CBS) and general purpose coating fats. CBE and CBS have physical properties that are similar to cocoa butter (De Man and de Man, 1994) and are widely used for production of chocolate confectioneries ([Plate 5](#)). The suitability of various palm oil products for a range of food applications is given in [Table 2](#).



Plate 5: Confectionery products containing palm-based cocoa butter substitutes

Table 2: Food Uses of Palm Oil Products

Product	Palm Oil	Palm Olein	Stearin (Soft)	Palm Stearin (Hard)	Hardened Palm Oil	Double Fractionated Palm Oil	Palm Mid Fraction	Palm Kernel Oil
Shortenings	***	***	***	**	***	×	*	*
<i>Vanaspati</i>	***	***	***	*	***	×	*	×
Margarines	***	***	***	*	***	×	*	***
Frying Fats	***	***	**	×	**	***	*	×
Cooking Oil (Hot Climate)	×	***	×	×	×	***	×	×
Specialty Fats for Coatings	×	×	***	×	×	×	*	***
Ice Cream	***	×	×	×	**	×	×	***
Cookies	***	×	**	*	**	×	×	×
Crackers	***	*	**	*	*	×	×	***
Cake Mixes	***	×	**	*	*	×	×	×
Icing	**	×	*	×	*	×	**	×
Instant Noodles	***	***	**	×	***	×	×	×
Non-Dairy Creamer	*	×	*	×	*	×	×	***
Biscuits	***	*	**	*	**	×	×	***
Dough Fat	***	×	***	***	***	×	×	×

*** Highly suitable **Suitable * Minor application only × Not suitable
 Source: MPOPC, 1996

Non-food uses of palm oil and palm kernel oil are produced either directly or through the oleochemical route. Direct applications include the use of CPO as a diesel fuel substitute, drilling mud, soaps and epoxidised palm oil products (EPOP), polyols, polyurethanes and polyacrylates (Salmiah, 2000). Research results have shown that crude palm oil can be used directly as a fuel for cars with suitably modified engines. In drilling for oil, palm oil has been found to be a non-toxic alternative to diesel as a base for drilling mud.

Oleochemicals are produced by the hydrolysis or alcoholysis of oils and fats; the traditional raw materials being tallow and coconut oil to produce C16 - C18 and C12 - C14 chain lengths oleochemicals respectively. From the 1980s, palm products, particularly palm kernel oil have become major feedstocks for the oleochemical industry. The production of palm-based basic oleochemicals by Malaysia in year 2000 was 1.2 million tonnes which was equivalent to 19.7% of the total production in the world. The basic oleochemicals are fatty acids, esters, alcohols, nitrogen compounds and glycerol; their major applications are summarised below (Salmiah, 2000).

- Fatty acids
 - Medium chain triglycerides for use in the flavour and fragrance industries
 - Processing aids for rubber products, for softening and plasticising effect
 - Production of candles
 - Manufacture of cosmetic products from myristic, palmitic and stearic acids
 - Production of soaps via a neutralisation process
 - Production of non-metallic or non-sodium soaps

- Fatty esters
 - Production of pure soap – better quality than soaps from fatty acids
 - Alfa-sulphonated methyl esters as active ingredients for washing and cleaning products (anionic surfactants)
 - Palm-based methyl esters as a substitute for diesel fuel for vehicles and engines

 - Fatty alcohols
 - Fatty alcohol sulphates (anionic surfactants)
 - Fatty alcohol ethoxylates (nonionic surfactants)
 - Fatty alcohol ether sulphates (anionic surfactants)
- } Production of washing and cleaning products
- Fatty nitrogen compounds
 - Imidazolines with good surface active properties (rust prevention)
 - Esterquats as softeners

 - Glycerol (Monoglycerides and Diglycerides)
 - Wide range of applications such as a solvent for pharmaceutical products, humectant in cosmetics and tobacco, stabilisers, lubricants, antifreeze, etc

2.5 World production of palm oil

In 2001, the world's production of palm oil was 23.18 million tonnes or 19.8% of the total production of 17 oils and fats, making it the second most important oil after soyoil. Palm oil has achieved impressive growth in production and exports in the last few decades; production had doubled from 1990 to 2001 (Table 3). In terms of exports, palm oil is the most widely traded oil, accounting for 45.6% of the world's exports of 17 oils and fats in 2001 (www.mpob.gov.my/). Malaysia is the largest producer of palm oil, contributing about 11.80 million tonnes or 50.9% of total production, while Indonesia produced about 7.5 million tonnes or 32.3%. Malaysia is also the world's largest exporter of palm oil, accounting for about 61.1% or 10.62 million tonnes of the total exports of 17.37 million tonnes in 2001 (Table 4).

Table 3: World Production of Palm Oil ('000 tonnes)

Country of Origin	1990	1995	1999	2000	2001
Malaysia	6,095	7,811	10,554	10,800	11,804
Indonesia	2,413	4,480	6,250	6,900	7,480
Nigeria	580	660	720	740	750
Colombia	226	387	500	516	547
Cote d'Ivoire	270	285	282	290	275
Thailand	232	354	475	510	535
Ecuador	120	180	230	215	240
Papua New Guinea	145	223	260	281	325
Others	786	1,097	1,339	1,699	1,226
Total	10,867	15,477	20,610	21,951	23,182

Source: Oil World and MPOB (cited in www.mpob.gov.my/)

Table 4: World Major Exporters of Palm Oil ('000 tonnes)

Country	1990	1995	1999	2000	2001
Malaysia	5,727	5,613	8,914	9,056	10,618
Indonesia	1,163	1,856	3,319	4,140	4,800
Papua New Guinea	143	220	254	282	320
Cote d'Ivoire	156	120	105	110	124
Singapore	679	399	292	293	259
Hong Kong	51	275	94	132	187
Others	276	790	837	909	1,063
Total	8,195	10,173	13,815	14,922	17,371

Source: Oil World (cited in www.mpob.gov.my)

World production of palm oil was projected to double from 2000 to 2020 with a total production exceeding 40 million tonnes (Table 5). The main growth is expected from Indonesia, which could become the world's leading producer by 2015. However, in view of the political and socio-economic turmoil that followed the Asian financial crisis, it is uncertain if the projected targets could be achieved.

Table 5: Projected Production of Palm Oil (2000–2020) (million tonnes)

Year	Malaysia	Indonesia	World Total
Annual Production			
2000	10,100 (49.3%)	6,700 (32.7%)	20,495
2001	10,700 (48.1%)	7,720 (34.7%)	22,253
2002	10,980 (48.4%)	7,815 (34.5%)	22,682
2003	11,050 (47.7%)	8,000 (34.6%)	23,149
2004	10,900 (45.6%)	8,700 (36.4%)	23,901
2005	11,700 (45.6%)	9,400 (36.6%)	25,666
Five-year Averages			
1996–2000	9,022 (50.3%)	5,445 (30.4%)	17,932
2001–2005	11,066 (47.0%)	8,327 (35.4%)	23,530
2006–2010	12,700 (43.4%)	11,400 (39.0%)	29,210
2011–2015	14,100 (40.2%)	14,800 (42.2%)	35,064
2016–2020	15,400 (37.7%)	18,000 (44.1%)	40,800

Source: Oil World 2020

(%) = % of world total

Table 6 lists the major importing countries of palm oil, the largest importer is India which accounted for 20.2% of the world's imports in 2001. Other major importers are China PRC and Pakistan; collectively China and countries in the Indian sub-continent account for more than 40% of the world's imports of palm oil. Countries in the European Union were buyers for 17.2% of the world's imports in 2001. In terms of production, the EU used about 12.9% of the world's production of palm oil last year. The consumption of palm oil by non-European

OECD countries had been relatively insignificant; USA import's was about 1% and Japan's share was 2.2% of total imports in 2001.

Table 6: Major Importers of Palm Oil ('000 tonnes)

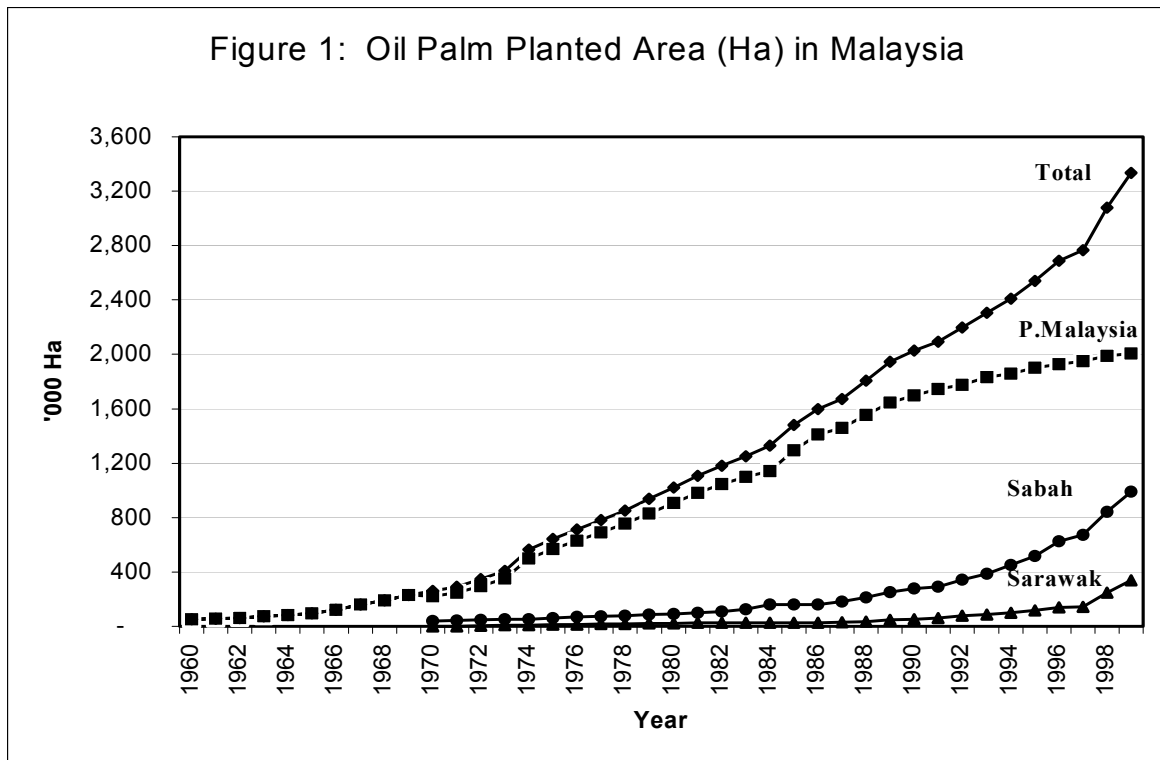
Country	1990	1995	1999	2000	2001
China	1,133	1,595	1,373	1,764	2,049
EU	1,556	1,738	2,059	2,414	2,985
Pakistan	683	1,122	1,114	1,107	1,229
Egypt	NA	353	373	524	564
India	668	863	1,672	3,677	3,507
Japan	276	351	357	373	376
Malaysia	NA	38	86	57	116
Turkey	182	201	166	204	257
South Korea	217	156	151	200	220
Myanmar	134	305	249	202	227
USA	130	102	116	165	171
Bangladesh	82	53	93	226	320
Indonesia	27	55	25	7	7
South Africa	NA	128	160	195	290
Saudi Arabia	128	169	178	206	244
Kenya	158	177	178	213	218
Ex-USSR	202	57	68	142	202
Other Countries	3,052	2,882	2,451	3,576	4,386
Total	8,628	10,345	10,869	15,252	17,368

Source: Oil World (cited in www.mpob.gov.my)

2.6 Palm Oil Production in Malaysia

2.6.1 Planted Area under Oil Palm

Although commercial planting of oil palm in Malaysia began in 1917, large-scale cultivation did not take off until the 1960s following the Government's crop diversification thrust strategy to reduce the country's dependence on rubber, which hitherto had been one of the two pillars of the Malaysian economy. The growth of the industry, in terms of planted area since then has been very rapid as seen in [Figure 1](#) and [Table 7](#). In 2001, the total area planted with oil palm was 3,499,012 hectares, 59.9% or 2,096,856 hectares being in Peninsular Malaysia, 29.4% or 1,027,329 hectares in Sabah and 10.7% or 374,828 hectares in Sarawak. The last decade had seen rapid expansion in the cultivated area in Sabah and Sarawak; while planting in Peninsular Malaysia had slowed down because of diminishing availability of new land for the crop.



.Malaysia: Peninsular Malaysia
 Source: MPOB (data from www.mpob.gov.my)

Table 7: Growth in Area Planted with Oil Palm in Malaysia

Year	Total Planted Area (ha)	Growth Rate (%)
1960	54,638	
1970	261,199	478% (1960/70)
1980	1,023,306	392% (1970/80)
1990	2,029,464	198% (1980/90)
2000	3,376,664	166% (1990/00)

The geographical distribution of oil planting is given in Table 8, in 2001, the largest oil palm growing states were Sabah, Johor and Pahang, accounting for about 63% of the total planted area. The rate of planting in Sabah has been impressive, considering that commercial planting in the state only commenced in 1970. In view of the limited availability of new areas for plantation agriculture in Peninsular Malaysia, future expansion of oil palm would be mainly in Sabah and Sarawak., It has been forecast that oil palm area in Sarawak would increase to one million hectares by the year 2010 (Abang Helmi, 1998).

Table 8: Distribution of Oil Palm Area by State (hectares)

State	1980		1990		1995		1999		2000		2001	
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)
Johor	288,883	(27.0)	532,866	(26.3)	587,686	(23.1)	612,708	(18.4)	634,716	(18.8)	636,782	(18.2)
Kedah	11,211	(1.1)	29,296	(1.4)	37,166	(1.5)	52,558	(1.6)	57,375	(1.7)	63,789	(1.8)
Kelantan	18,238	(1.7)	60,490	(3.0)	70,834	(2.8)	80,407	(2.4)	72,065	(2.1)	77,220	(2.2)
Melaka	12,184	(1.1)	26,856	(1.3)	36,278	(1.4)	39,596	(1.2)	43,859	(1.3)	41,894	(1.2)
N. Sembilan	49,337	(4.6)	86,523	(4.3)	103,887	(4.1)	118,781	(3.6)	123,343	(3.7)	134,427	(3.9)
Pahang	276,464	(25.8)	439,663	(21.7)	498,417	(19.6)	542,855	(16.4)	514,710	(15.3)	532,500	(15.2)
P. Pinang	8,116	(0.8)	14,149	(0.7)	15,174	(0.6)	13,968	(0.4)	14,665	(0.4)	14,821	(0.4)
Perak	122,610	(11.5)	236,385	(11.6)	265,427	(10.5)	303,089	(9.2)	303,533	(9.0)	309,056	(8.8)
Selangor	100,875	(9.4)	149,489	(7.4)	148,242	(5.8)	132,149	(4.0)	135,467	(4.0)	130,429	(3.7)
Terengganu	67,589	(6.3)	122,781	(6.0)	140,060	(5.5)	155,484	(4.7)	145,767	(4.3)	155,939	(4.5)
Peninsular Malaysia	955,507	(89.3)	1,698,498	(83.7)	1,903,171	(74.9)	2,051,595	(61.9)	2,045,500	(60.6)	2,096,856	(59.9)
Sabah	90,000	(8.4)	276,171	(13.6)	518,133	(20.4)	941,322	(28.4)	1,000,777	(29.6)	1,027,329	(29.4)
Sarawak	24,000	(2.3)	54,795	(2.7)	118,783	(4.7)	320,476	(9.7)	330,387	(9.8)	374,828	(10.7)
East Malaysia	114,000	(10.7)	330,966	(16.3)	636,916	(25.1)	1,261,798	(38.1)	1,331,164	(39.4)	1,402,156	(40.1)
MALAYSIA	1,069,507	(100.0)	2,029,464	(100.0)	2,540,087	(100.0)	3,313,393	(100.0)	3,376,664	(100.0)	3,499,012	(100.0)

Source: MPOB (cited in www.mpo.gov.my)

2.6.2 Production

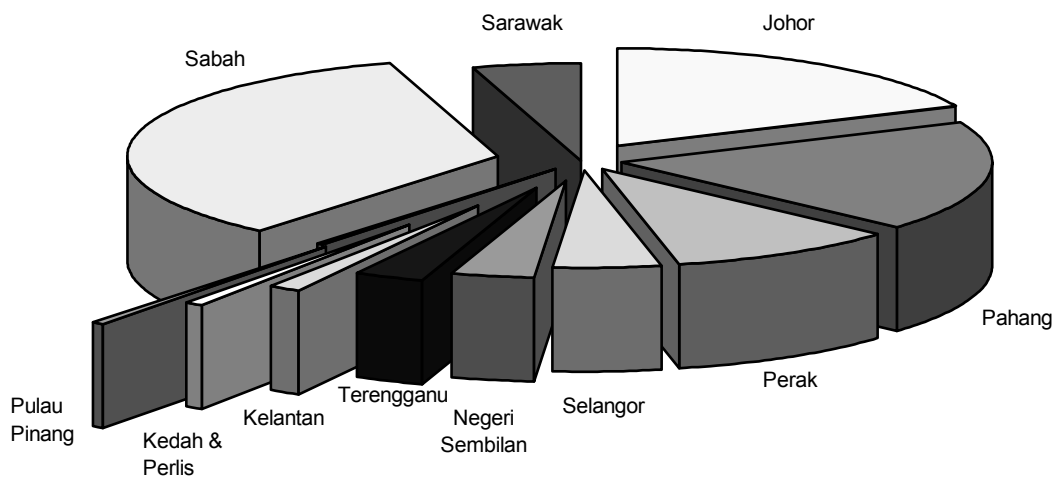
With the rapid expansion in the planted area, the annual production of palm in Malaysia had increased significantly in Malaysia; the crude palm oil (CPO) produced in 2001 was 11.8 million tonnes which was 4.6 times the volume produced in 1980 (Table 9). The increase in production in Sabah was particularly impressive, reflecting the aggressive planting policy in the state and it became the largest CPO producer in 1999. In 2001, Sabah accounted for 31.5% of the national production. Other major CPO producing states are Johore, Pahang and Perak in Peninsular Malaysia. (Figure 2)

Table 9: Production of Crude Palm Oil in Malaysia (Tonnes)

Region	1980	1990	1995	1999	2000	2001
P. Malaysia	2,394,324	6,094,622	6,094,560	7,427,838	7,221,539	7,477,338
Sabah	156,471	678,995	1,493,623	2,664,516	3,110,320	3,716,168
Sarawak	22,378	107,651	222,363	461,564	520,236	610,282
Total	2,573,173	6,881,268	7,810,546	10,553,918	10,852,095	11,803,788

Source: MPOB (cited in www.mpob.gov.my)

Figure 2: Production of Crude Palm Oil by States in 2001

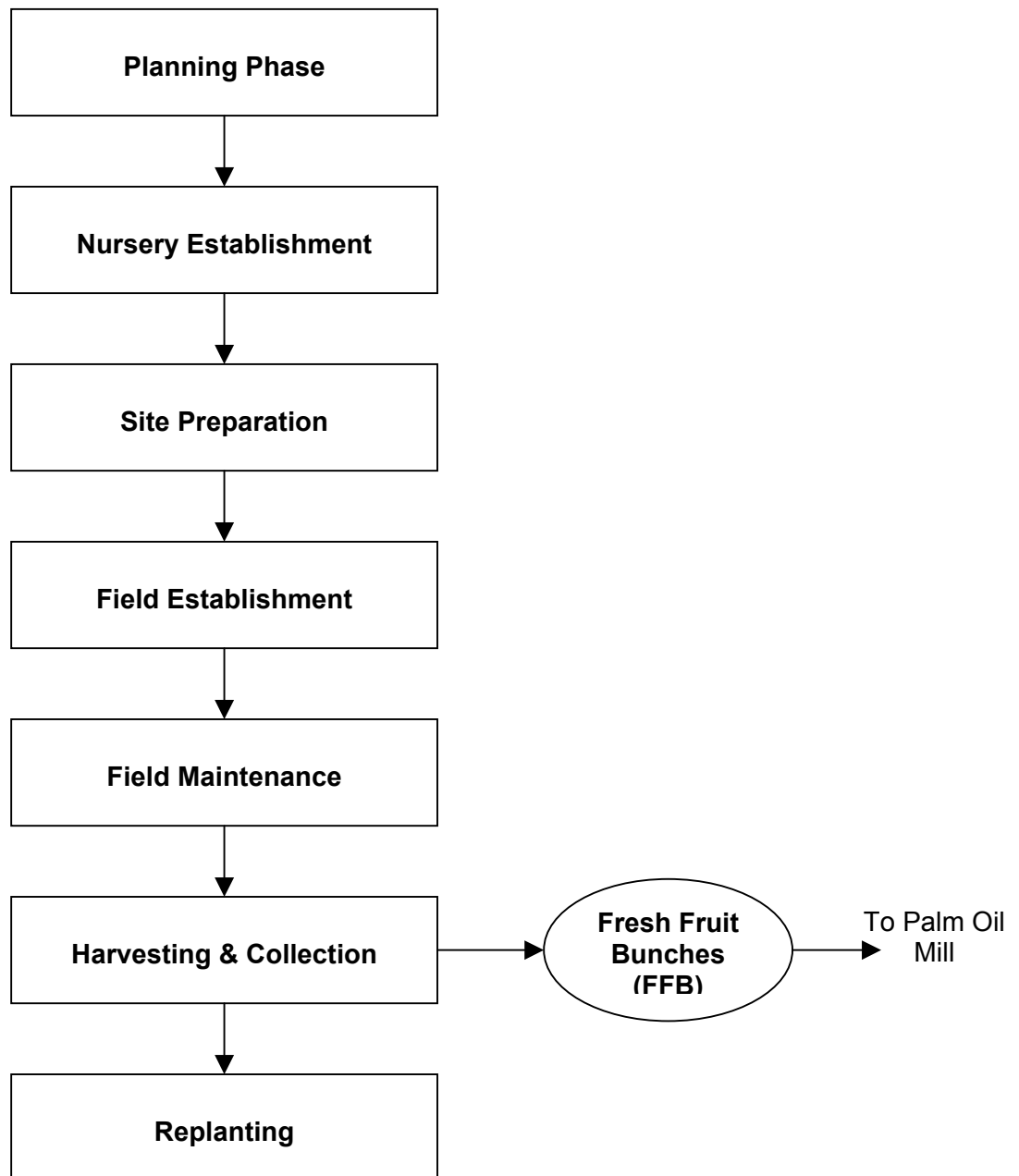


3. Key Processes in the Production of Palm Oil

3.1 Production of Fresh Fruit Bunches (FFB)

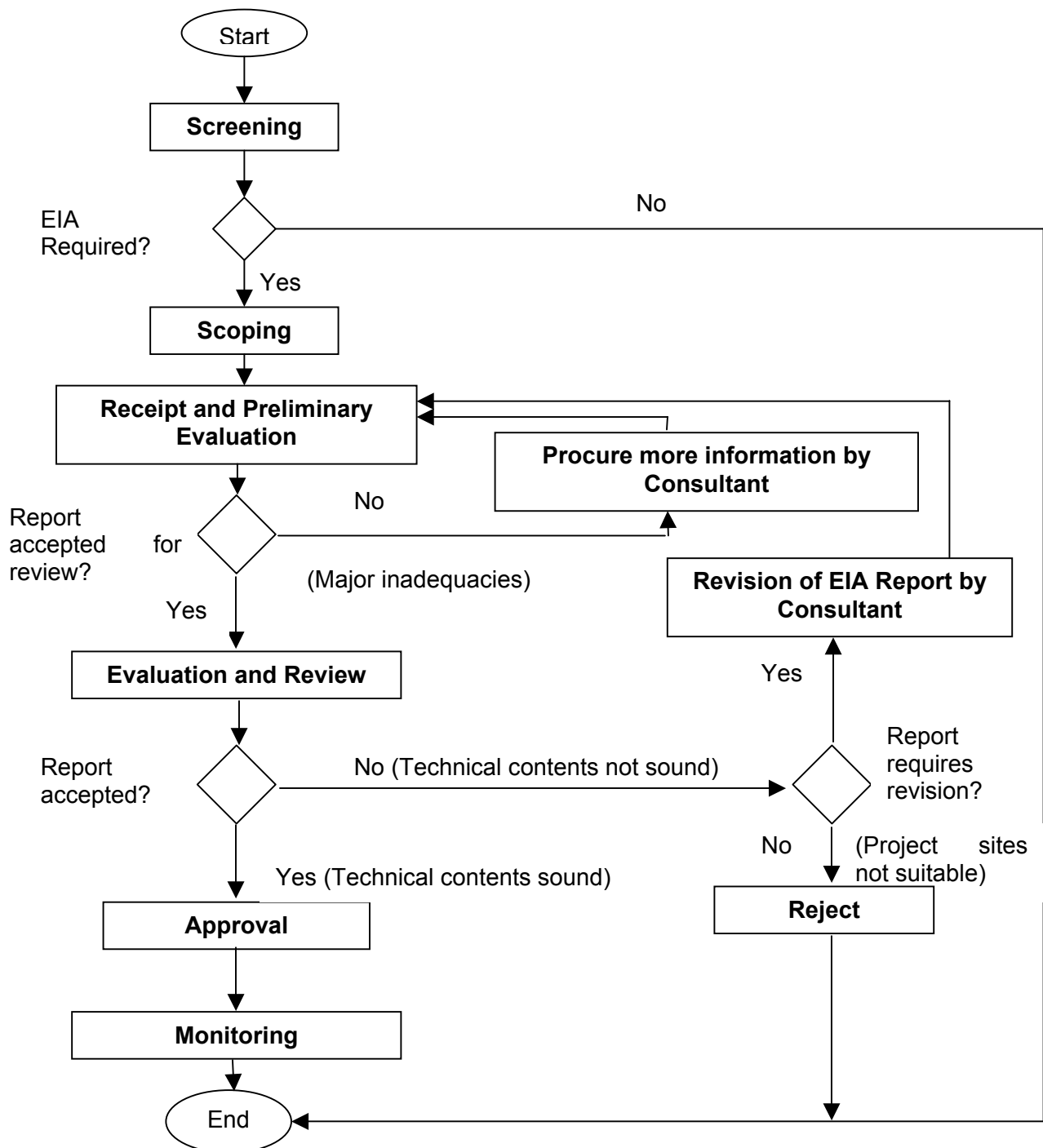
The key sub-processes involved in the development of plantations for the production of fresh fruit bunches (FFB) are shown in Figure 3 and the main activities for each step are summarised below:

Figure 3: Processes in the Production of Fresh Fruit Bunches



Planning Phase for the development of new plantations would involve the conduct for feasibility studies and an environment impact assessment (EIA) if the area to be developed is primary or secondary forest in excess of 500 hectares. An EIA is also required if the development involves changes in the types of agricultural use of land in excess of 500 hectares.

Figure 4: NREB's EIA Process



The EIA study would facilitate the identification potential environmental and social impacts and development of management plans to mitigate the adverse effects. The process for the

approval of EIA reports is shown in Figure 4 which is based on the approach adopted by the Natural Resources and Environment Board, Sarawak.

Nursery Establishment commences as soon as the land is found to be suitable and approved by the respective agencies for development to proceed. Good quality DxP seedlings are raised in a polybag nursery for about 12 months. Good nursery practices such as adequate watering, manuring and culling of seedlings with undesirable characteristics are essential for the production of vigorous planting materials. A culling rate of up to 25% is commonly practised in well managed nurseries.

Site Preparation include land survey, clearing of existing vegetation, establishment of a road and field drainage system, soil conservation measures such as terracing, conservation bunds and silt pits and sowing of leguminous cover crops. From the early 1990s, the zero burning technique for land clearing, from logged-over forest areas and replanting from various plantation crops.

Field Establishment activities are lining, holing and planting of polybag oil palm seedlings at density of 136 to 148 palms per ha, depending on the soil type. It is important that effort is made to obtain full ground coverage by leguminous cover crops such as *Pueraria javanica* and *Calopogonium caeruleum* to minimise soil loss through runoff as well as to improve the soil properties through nitrogen fixation. (Plate 6)



Plate 6: Immature oil palm with full cover of leguminous cover crops.

Field Maintenance operations include weeding, water management, pruning, pest and disease management and manuring. Integrated pest management involving a mix of cultural, physical, chemical and biological control approaches to minimise crop losses to pests is commonly adopted in plantations. Examples of biological control measures applied include the use of baculovirus and *Metarhizium anisopliae* to control the rhinoceros beetle (*Oryctes rhinoceros*), control of leaf-eating bagworms and nettle caterpillars by their natural predators and parasitoids and the use of barn owls (*Tyto alba*) (Plates 7 and 8) as the biological agent to control rats. (Golden Hope Plantations Berhad, 1997). As the cost of fertilisers is the major

component of field upkeep expenditure, plantation companies generally undertake soil and foliar analyses of individual fields regularly to assess their nutritional status and determine the appropriate types and quantities of fertilisers required for optimal palm development and production.



Plate 7: Barn owls for rat control

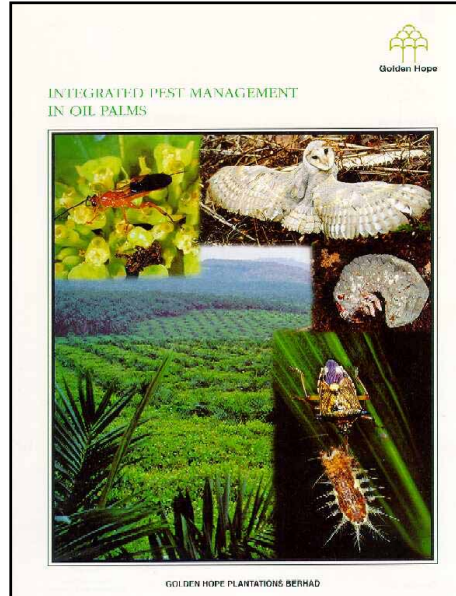


Plate 8: Stakeholder advisory booklet on integrated pest management

Harvesting and Collection

Harvesting of FFB commences between 24 to 30 months after field planting, depending on the soil type and agronomic and management inputs. Harvesting is done manually, using a chisel in young palms and a sickle mounted on a bamboo or aluminum pole in taller palms (Plate 9)



Plate 9: Harvesting of FFB

Various systems for in-field collection of FFB and transportation to the palm oil mill. In view of increasing shortage of workers as well as the need to increase worker productivity, mechanised approaches have been adopted by plantations, an example being the tractor-mounted 'grabber' (Plate 10).

Replanting. The economic cycle of the oil palm is about 25



Plate 10: Tractor mounted 'grabber'

years, after which the old stand is replanted. The zero burning technique of replanting is now common commercial practice. However, in some situations, plantations consider underplanting, whereby new seedlings are planted under the old palms which are thinned out progressively to allow the development of the new stand.

3.2 Production of Crude Palm Oil (CPO) and Palm Kernel (PK)

After harvesting, it is important that the fresh fruit bunches (FFB) are processed as soon as possible to prevent a rapid rise in free fatty acids (FFA) which could adversely affect the quality of the crude palm oil (CPO). Palm oil mills are generally located in the plantations to facilitate timely transportation and effective processing of FFB. In 2001, there were 352 palm oil mills in Malaysia (Table 10), of which about 70% were located in Peninsular Malaysia.

Table 10: Number of Oil Mills, Refineries and Palm Kernel Crushing Factories in Operation in 2001 in Malaysia

Region	Oil Mills		Refineries		Crushing Factories	
	No	Capacity ¹	No	Capacity ²	No	Capacity ³
P. Malaysia	244	45,373,720	38	10,952,900	30	3,254,600
Sabah	89	18,750,600	9	4,596,500	8	1,057,500
Sarawak	19	3,620,400				
Malaysia	352	67,744,720	47	15,549,400	38	4,312,100

Source: MPOB

Capacity:

1. Tonnes FFB / year
2. Tonnes CPO / year
3. Tonnes Palm Kernel /year

The palm oil milling process (Figure 5) involves the physical extraction of palm products namely, crude palm oil and palm kernel from the FFB. The process begins with sterilisation of the FFB. The fruit bunches are steamed in pressurised vessels up to 3 bars to arrest the formation of free fatty acids and prepare the fruits for subsequent sub-processes.

The sterilised bunches are then stripped of the fruitlets in a rotating drum thresher. The stripped bunches or empty fruit bunches (EFB) are transported to the plantation for mulching while the fruitlets are conveyed to the press digesters.

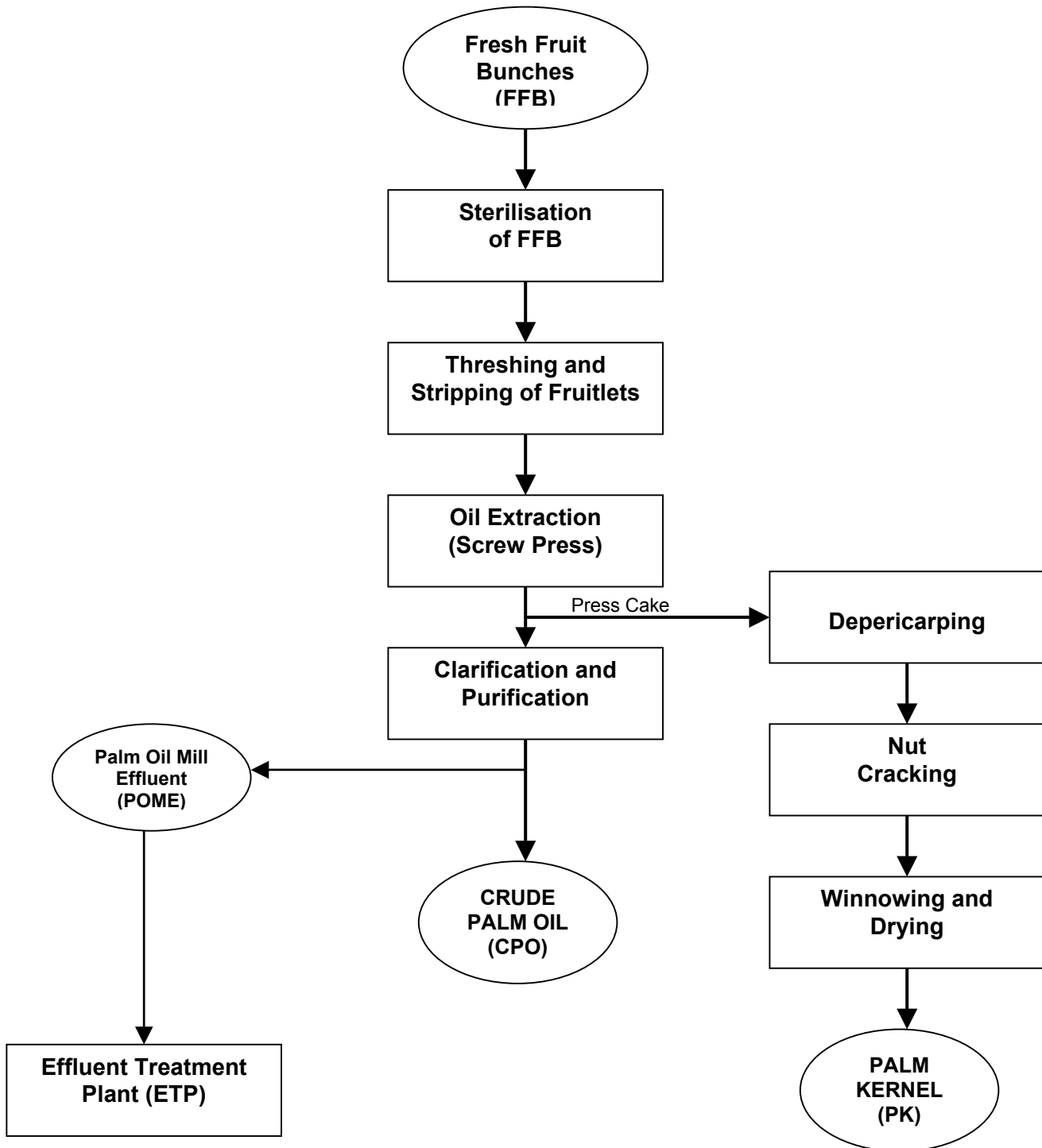
In the digesters, the fruits are heated using live steam and continuously stirred to loosen the oil-bearing mesocarp from the nuts as well as to break open the oil cells present in the mesocarp. The digested mash is then pressed, extracting the oil by means of screw presses. The press cake is then conveyed to the kernel plant where the kernels are recovered.

The oil from the press is diluted and pumped to vertical clarifier tanks. The clarified oil is then fed to purifiers to remove dirt and moisture before being dried further in the vacuum drier. The clean and dry oil is ready for storage and dispatch.

The sludge from the clarifier sediment is fed into bowl centrifuges for further oil recovery. The recovered oil is recycled to the clarifiers while the water/sludge mixture which is referred to as Palm Oil Mill Effluent (POME) is treated in the effluent treatment plant.(ETP).

The press cake is conveyed to the depericarper where the fibre and nuts are separated. Fibre is burned as fuel in the boiler to generate steam. The nuts are cracked and the shell and kernel are separated by means of a winnower and hydro-cyclone. The clean kernels are dried prior to storage.

Figure 5: Palm Oil Milling Process



3.3 Production of Refined Edible Palm Oil

About 80% of the national production of crude palm oil is used for food purposes, mainly as cooking oils. The CPO produced by the mills have to be refined to meet the industry's and international standards (FAO's Codex Alimentarius) for edible oils. The production of refined oil is undertaken in 57 refineries in Malaysia (Table 10) with a total refining capacity of 15.5 million tonnes CPO per year.

The refining process removes free fatty acids, phosphatides, odouriferous matter, water as well as impurities such as dirt and traces of metals from the CPO; the objective being to produce an edible oil of consistent quality that meets industry's standards and satisfies customer requirements particularly in respect of FFA, moisture and impurities, Iodine Value, Peroxide Value, melting point, colour and flavour. The refined oil must tasteless and have a bland flavour.

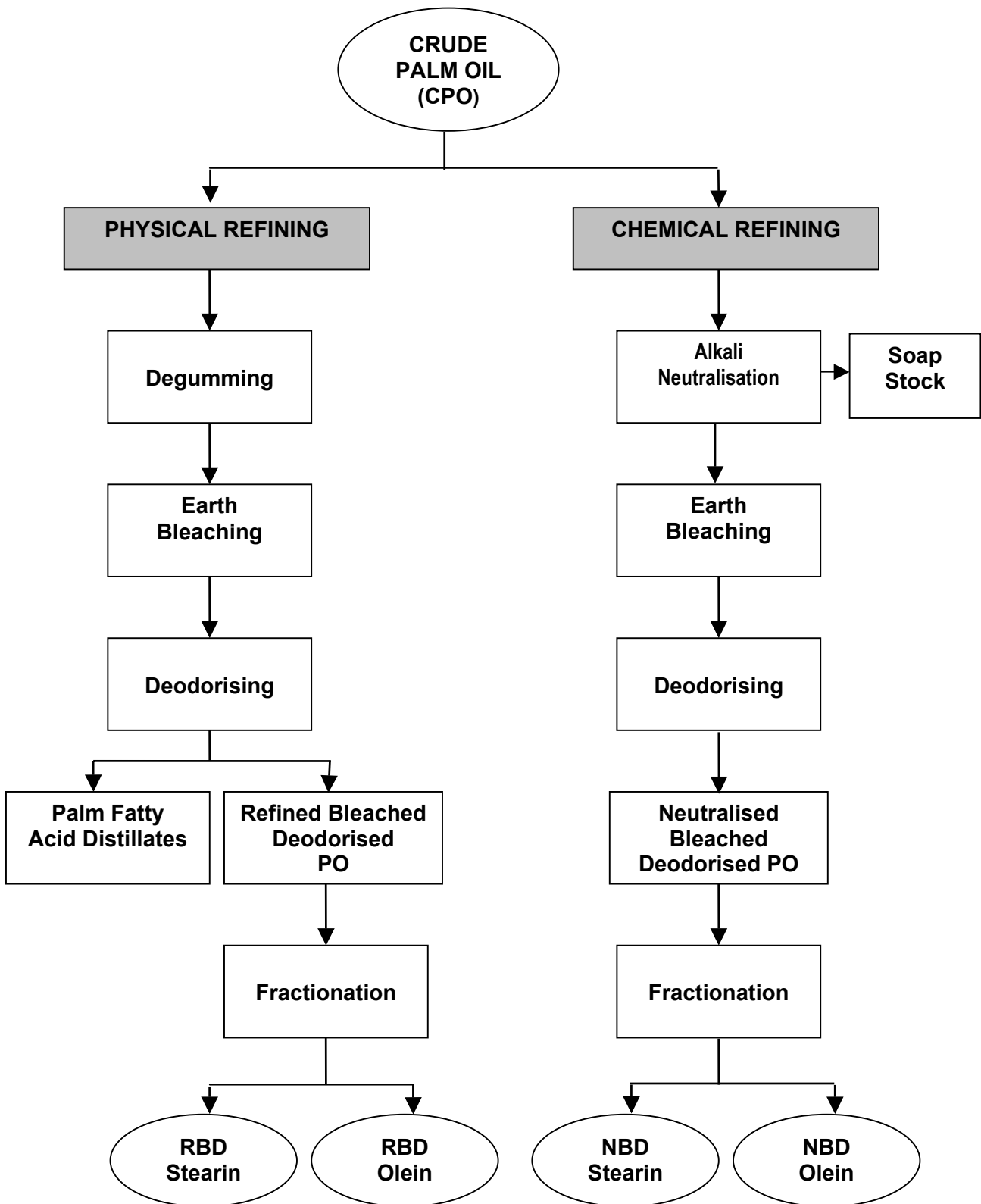
CPO is processed by either physical or chemical refining to produce either refined, bleached and deodourised palm oil (RBDPO) or neutralised, bleached and deodourised palm oil (NBDPO). These are subjected to fractionation to obtain the respective liquid olein fraction and the solid stearin fraction. (Figure 6). Of the two processes, physical refining is the predominant approach adopted by the refineries as it is simpler, less capital intensive, more efficient and produces a lower effluent load.

Physical or steam refining begins with degumming when the CPO is treated with food grade phosphoric acid or citric acid to remove natural gums in the form of phosphatides, followed by bleaching with activated earth (Fuller's Earth) under vacuum to remove colouring matters as well as to adsorb any metal ions. The treated oil is then heated to 240 C - 260 C under 2-6 mm Hg (MEOMA, 2002) for simultaneous deacidification and deodorisation. The FFA is stripped off by live steam and is recovered together with the entrained oil as palm fatty acid distillate. The steam distillation process also removes odours and off-flavors from the CPO ('Deodorisation'). The oil is then cooled to 55°C before polishing.

In the chemical refining process, the FFA present in CPO is removed by neutralisation with caustic soda (sodium hydroxide), the concentration of the latter being dependent on the quality of the CPO feedstock. This chemical reaction produces neutralised CPO and a soap stock; the latter is separated from the oil by a high-speed separator. The neutralised oil is subjected to earth bleaching to remove colour pigments and metal ions followed by deodorisation - steam distillation under vacuum to remove odouriferous matters such as aldehydes and ketones.

The refined oil contains triglycerides of various compositions and melting points, the main fractions being palm olein and palm stearin. These fractions can be separated by dry fractionation, detergent fractionation and solvent fractionation. Dry fractionation is commonly used whereby the refined oil is allowed to crystallise under controlled temperature and the resultant slurry is pumped through a membrane filter press to obtain the liquid olein fraction and the solid stearin portion. The olein could also be fractionated for a second time ('double fractionation') to produce a 'super olein' and a solid palm mid-fraction (PMF) which is the feedstock for production of specialty fats and other products.

Figure 6: Palm Oil Refining Process



PO = Palm oil
 R = Refined
 B = Bleached
 D = Deodourised
 N = Nentralised

4. The Supply Chain of the Palm Oil Industry in Malaysia

4.1 Introduction

The major players in the palm oil industry in Malaysia are shown in [Figure 7](#); the players are grouped under the following clusters:

- Upstream producers – essentially involved in the cultivation of oil palm, production of fresh fruit bunches (FFB) and processing them into crude palm oil and palm kernel.
- Downstream producers – palm oil refiners, palm kernel crushers, manufacture of palm-based edible products and specialty oils and fats,
- Exporters and Importers of palm oil
- Customers - institutional buyers and retail customers and investors
- Industry organisations representing the interests of the upstream and downstream producers
- Government agencies associated with the oil palm industry, particularly in respect of research and development and regulatory functions.
- Other players who have an interest and/or stake in the oil palm industry (NGOs, unions etc)

Profiles of the major players is given in Part B of the report; the write-up of industry organisations and Government agencies is covered on the following headings:

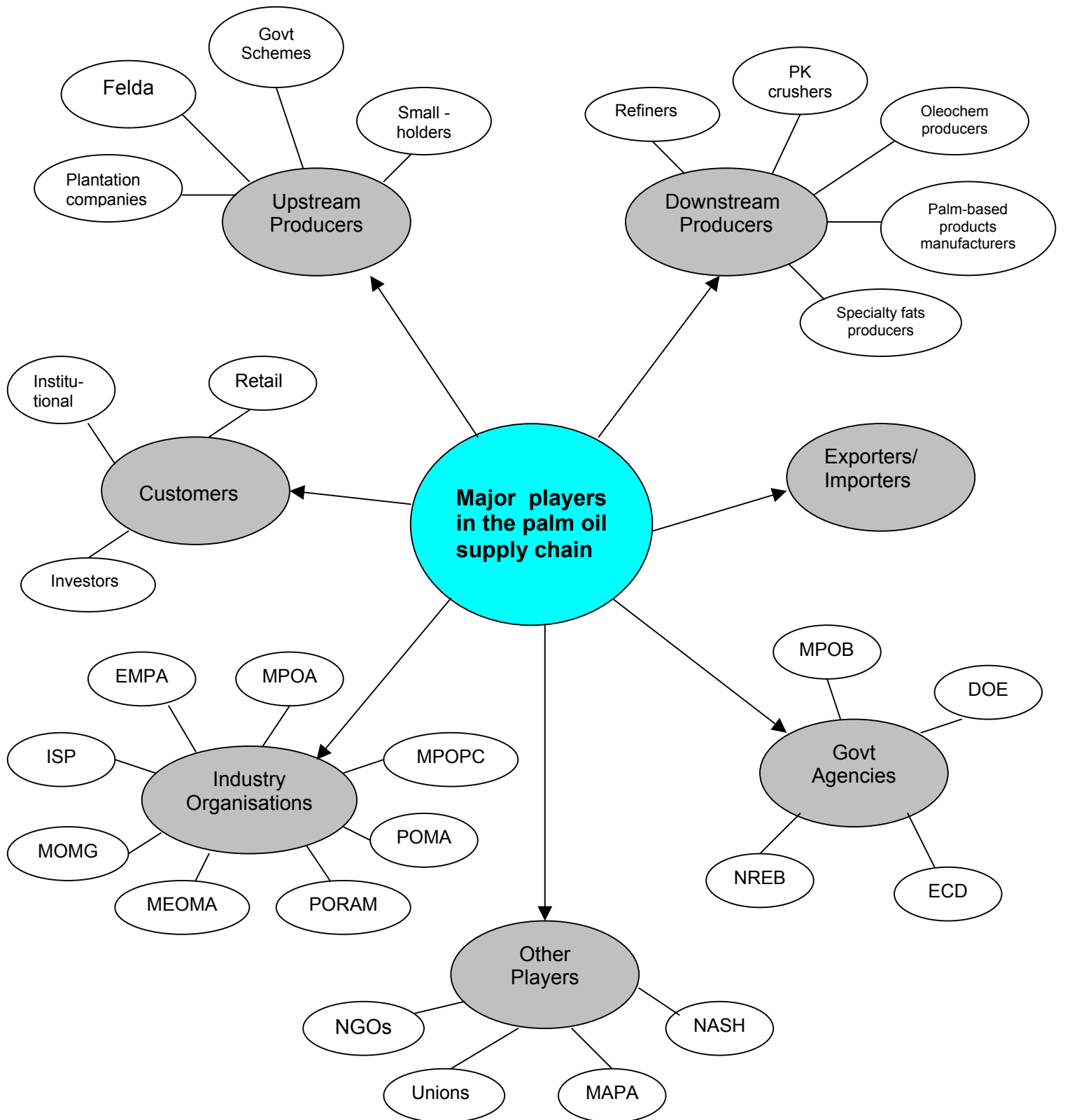
- Introduction
- Vision / Mission
- Role and Function
- Organisation
- Funding
- Activities
- Contact Information

The profile of the major plantation companies is presented as a 2-page fact sheet, covering the following aspects:

- Background of the company
- Corporate information
- Triple bottom line dimensions
 - Economic aspects
 - Environmental aspects
 - Social aspects
 - Stakeholder engagement
- Crop area statement
- Oil palm crop productivity and production (5-year record)
- Financial performance (5-year record)

The profiles of organisations and companies are based on published or public domain information, the major reference source of being recent company annual reports, corporate web sites and press reports.

Figure 7 Major players in the palm oil supply chain in Malaysia



The characteristics and roles of the players within each cluster are discussed in the following sections.

4.2 Upstream Producers

4.2.1 Plantation Companies/Private Estates

Of the 3.38 million hectares of oil palm planted in Malaysia in 2000 ([Table 11](#)), 60% were under private ownership, most of which are by plantation companies. The private sector has been the main driver for growth in the development and production of palm oil in the last two decades. From 1980 to 2000, the planted area under plantation had increased by more than 3.6 times, from 557,659 hectares to 2,024,286 hectares, most of the new developments being in the states of Sabah and Sarawak.

Table 11: Distribution of Oil Palm Planted Area (Hectares)

	1980		1990		2000	
	Hectares	%	Hectares	%	Hectares	%
Private Estates	557,659	52.1	912,131	44.9	2,024,286	60.0
Govt. Schemes:						
FELDA	316,550	29.6	608,100	30.0	598,190	17.7
FELCRA	18,851	1.8	118,512	5.8	154,357	4.6
RISDA	20,472	1.9	32,582	1.6	37,011	1.1
State Schemes	67,281	8.0	174,456	8.6	242,002	7.1
Smallholders	70,446	6.6	183,683	9.1	320,818	9.5
TOTAL	1,051,259	100.0	2,029,464	100.0	3,376,664	100.0

Source: MPOB

The sizes of plantation companies vary considerably from a few hundred hectares to more than 100,000 hectares; the largest plantation companies are given in [Table 12](#). Most of these companies are listed on the Main Board of the Kuala Lumpur Stock Exchange; Kuala Lumpur Kepong Berhad and Highlands & Lowlands Berhad are also listed on the London Stock Exchange while United Plantations is listed on the Copenhagen Stock Exchange. Based on planted areas, the largest plantation companies are Kumpulan Guthrie Berhad, Golden Hope Plantations Berhad, Kuala Lumpur Kepong Berhad, and IOI Corporation Berhad. The profiles of selected public listed companies are presented in Part B.

Besides size, plantation companies can be stratified according to their historical background, ownership and type of core business.

Historical perspective: The late 19th century and early 20th century saw the beginnings of many present day plantation companies in Malaysia. The pioneer planters were essentially Europeans and Chinese, the latter being credited for commercial planting of rubber through the establishment of a 17 ha estate near Batu Lintang in Melaka in 1896 by Tan Chay Yan (Tate, 1996). Companies that could trace their roots to the colonial era include Sime Darby Berhad which was founded by William Middleton Sime and Henry Darby in 1910. Kumpulan Guthrie Berhad's history goes back to 1821 when Alexander Guthrie set up Guthrie & Co as a trading company and as agents for 12 British companies with plantations in the then Malaya. Golden Hope Plantations Berhad had its beginnings in Harrisons & Crosfield Plc which started as a tea and coffee trading company in 1844 and as managing agents for UK-domiciled plantation companies from the early 1900s until their transfer of ownership to the present company in 1982. Kuala Lumpur Kepong Berhad also started as a UK domiciled company in 1906. Other European pioneers of Malaysian plantation companies include a

Dane, Aage Westenholz, who in 1906 established Jendarata Rubber Estate in Lower Perak which formed the foundation for present day United Plantations Berhad. A comprehensive account of the history of the plantation industry and its players for over a century is given in "The RGA history of the plantation industry in the Malay Peninsula" (Tate, 1966).

From the 1970s, several 'home grown' plantation companies entered the industry, some examples being Asiatic Development Berhad, Austral Enterprises Berhad, Hap Seng Consolidated Berhad, IOI Corporation Berhad, PPB Oil Palms Berhad, Tradewinds (M) Berhad and IJM Plantations Sdn Berhad.

Among the more recent players, IOI Corporation Berhad has demonstrated the most impressive growth, starting with zero base, with an initial acquisition of a 1,214 hectare estate in 1983. Through a series of acquisitions of established plantation companies over a 20-period, IOI became a major plantation-based corporation with a total planted area of 100,954 hectares, of which 98% have been planted under oil palms (as at 30th June, 2002). The acquisition of 27,880 ha from Dunlop Estates with 13 estates, 2 mills, 2 factories and a research station in 1990 was probably IOI's most strategic thrust into plantations

Austral Enterprises Berhad's (Austral) emergence as a major player was through the diversification strategy of its parent company, I & P Berhad, whose earlier core business was in property development. Austral spearheaded the commercial development in Sarawak and today has 14 estates covering a planted area of 31,588 hectares in the state, or 57% of the company's total planted area of 55,267 hectares.

Asiatic Development Berhad (Asiatic) is another company that started from zero base, commencing business in April, 1980 with the acquisition of the Rubber Trust Group of 3 Hong Kong domiciled rubber companies with a total area of about 13,700 hectares of developed plantation land in Peninsular Malaysia. Through a series of acquisitions of plantation companies, had accumulated a sizeable land bank within a 20-year period, most of which is located in Sabah. Asiatic has a significant area under oil palm in the Kinabatangan District.

Hap Seng Consolidated Berhad (Hap Seng) and IJM Plantations Sdn Bhd are relatively new players with plantations located entirely in Sabah. Hap Seng's plantations are mainly in the Kinabatangan District. IJM Plantations which was incorporated in 1985 is the Plantations Division of diversified group, IJM Corporation Berhad (IJM). It has a total area of 19,914 hectares planted with oil palms in 14 estates near Sandakan, Sabah.

Table 12: Oil Palm Areas of Major Plantation Companies in Malaysia

Company	Oil Palm Planted Area (Hectares)			Total	% of Total Planted Crop Area	Land Bank in Indonesia (Hectares)
	Malaysia	Indonesia	Papua NG			
Kumpulan Guthrie Berhad (2) *	91,863	161,596		253,459	99.3%	60,000
Golden Hope Plantations Bhd. (1)	111,111	8,014		119,125	90.1%	122,000
Kuala Lumpur Kepong Berhad (2)	82,278	30,487		112,765	83.0%	56,000
IOI Corporation Berhad (1)	98,864			98,864	97.9%	
Sime Darby Berhad(2)	73,218	8,322		81,540	97.0%	22,000
Kuala Sidim Berhad (2)	62,450	10,875		72,390	98.7%	29,800
Kulim (Malaysia) Bhd) (2)	29,647	10,400	25,305	65,352	99.4%	113,100
PPB Oil Palms Berhad (2)	57,288	8,641		65,929	100.0%	10,000
Tradewinds (M) Berhad (2)**				49,763	100.0%	50,000
Highlands & Lowlands Berhad (2) #	47,513			47,513	99.9%	
Austral Enterprises Bhd (1)	47,165	8,102		55,267	100.0%	26,250
Asiatic Development Berhad (2)	35,956			35,956	100.0%	
TDM Plantation Sdn. Bhd (3)	35,602			35,602	100.0%	
Hap Seng Consolidated Berhad (1)	34,965			34,965	100.0%	
United Plantations Berhad (2)	23,346			23,346	88.8%	
Pamol Plantations Sdn. Bhd. (3) @	20,253			20,253	100.0%	
Guthrie Ropel Berhad (2) #	21,967			21,967	97.6%	
IJM Plantations Sdn. Bhd (2)	19,914			19,914	100.0%	

Source:

1. = 2002 Annual Report
2. = 2001 Annual Report
3. = 2001 MPOA Annual Report

Notes:

- * Includes oil palm areas of listed subsidiary companies, Guthrie Ropel and Highlands & Lowlands
- # Listed subsidiary of Kumpulan Guthrie Berhad
- @ Unlisted subsidiary of Unilever plc
- ** Excludes land being prepared for planting

■ = Casson,A (1999), cited by Wakker,E (2000)

Prior to the entry of PPB Oil Palms Berhad into the plantations industry in the mid-1980s, its parent company, PPB Group had been involved in the trading and refining of palm oil with raw materials sourced from various plantation companies. The development of oil palm plantations in Sabah and Sarawak was taken as a logical step to synergise the Group's refining and trading activities.

Tradewinds (M) Berhad is the plantations arm of hotels and property owner and operator, Pemas International Holdings Berhad. Incorporated in 1974, Tradewinds became a public company in 1987 and was listed on the KLSE in March 1998. The company has a planted area of about 50,000 hectares of oil palm; however, with the recent acquisitions of more than 64,000 hectares of forest land in Sarawak and Indonesia, Tradewinds has set its sights to be a major upstream player in the region in the near future.

Ownership

Ownership of plantation companies in Malaysia can be broadly grouped as follows:

- Companies with substantial or controlling interests by Permodalan Nasional Berhad (PNB) or the National Equity Corporation and its unit trust funds
- Non-PNB controlled companies, owned by Malaysian companies or individuals
- Companies with substantial or controlling interests by foreign shareholders

PNB was established in March, 1978 as a wholly-owned subsidiary of Yayasan Pelaburan Bumiputra (Bumiputra Investment Foundation) as the Government's investment vehicle for implementing the New Economic Policy (NEP) that was formulated in 1970. (See 4.8, page 44) As part of the process of Malaysianisation of the country's assets, PNB negotiated with foreign-domiciled plantation companies for a transfer of ownership to Malaysians in the late 1970s. Transition of ownership was generally smooth and amicable, at mutually agreed equity prices, except in the case of Kumpulan Guthrie Berhad which came under Malaysian ownership through a 'dawn raid' at the London Stock Exchange in 1981. In the case of Sime Darby Berhad, the transfer of controlling interests was done through Perbadanan Nasional Berhad (PERNAS). In 1979. Plantation companies that are currently under the control of PNB and its unit trust funds include:

Company	No of shares	% of total
Sime Darby Berhad	1,011,577,232	43.49
Golden Hope Plantations Berhad	548,235,998	53.01
Kumpulan Guthrie Berhad	732,376,000	73.2
Austral Enterprises Berhad*	60,065,555	41.3

* Through PNB's 71.51% in Austral's parent company

Large non-PNB plantation companies under Malaysian ownership include Kuala Lumpur Kepong Berhad, IOI Corporation Berhad, Hap Seng Consolidated Berhad and Asiatic Development Berhad and PPB Oil Palms Berhad. These companies are effectively controlled by holding companies which have their roots in family-owned companies.

A few companies have substantial or controlling foreign shareholding, notable examples being United Plantations Berhad with about 43% of its equity held by Danish shareholders and Pamol Plantations Sdn Bhd, which is Unilever's plantation interest in Malaysia. Unilever NV recently announced its intention to dispose all its plantations in Malaysia as part of its strategy to divest from non-core business. It has placed all its plantations in Peninsular Malaysia and Sabah covering a titled area of more than 21,700 hectares for bidding; the estimated worth being between RM 500 to RM 800 million. (News Straits Times, 18.09.02)

Core Business

Many plantation companies are considered 'pure' plantation companies. Although several of them have diversified into resource-based manufacturing and property development, converting their plantations near urban areas into real estates, their revenues and profits are generated mainly from plantation operations, especially from oil palm. However, some companies have gone down further the diversification path and have moved away from their plantation roots to become conglomerates with a variety of resource and non-resource based core businesses. The most notable example is Sime Darby Berhad which stated as an early pioneer in plantations in 1910; it is Malaysia's own multinational conglomerate with core businesses in tyre manufacturing, motor vehicle assembly and distribution, property development in the energy sector, besides maintaining its presence in the plantations industry. However, the contribution from the plantations to the group's earnings is not significant. The contribution from the Plantations Division for FY 2001 and 2000 were 6.6% and 13.8% respectively but this is not a true indication of the segment's share as the Plantations Division itself has diverse business operations in commodity trading, refining, property development and medical services.

IJM Corporation Berhad is another diversified group with core businesses in plantations, construction (civil engineering) infrastructure (highways, airports, bridges etc), property development, manufacturing and quarrying and international ventures in construction and infrastructure development. The contribution of the Plantations Division to the Group's operating revenue and profit before tax were 6.1% and 3.2% respectively.

Among the newer players, IOI Corporation Berhad has diverse operations in plantation, property development and investment, industrial gases, oleochemicals and leisure. For FY 2001 and 2002, non-plantations business contribute to 77% and 63% respectively to the Group's profit before tax. With the recent acquisition of Loders Croklaan BV from Unilever, IOI has become a global producer and supplier for specialty oils and fats, with market access to Europe, North America and Latin America.

Plantation companies can be further differentiated by the location of their upstream activities as shown in [Table 12](#). Owing to the availability of land and supply of workers, both at lower costs than in Malaysia, many companies have ventured into the development of oil palm plantations in Indonesia. However, except for Kumpulan Guthrie Berhad, actual areas developed by these companies are considerably lower than those cited by Wakker (2000); a good case in point is Golden Hope Plantations Berhad which has todate developed only 8,014 hectares of oil palm plantation in Kalimantan against the proposed area of 122,000 hectares. The political turmoil and economic uncertainty that followed after the Asian financial crisis in 1997 could have deterred the Malaysian companies from proceeding with their proposed developments in Indonesia. For example, Kuala Sidim Berhad, stated in its 1999 Annual Report that "future development will be confined to 1,000 hectares per year until the political and economic situation becomes more apparent." but, as the situation remained uncertain, the Group announced in its 2000 and 2001 Annual Reports that further developments in Indonesia will be postponed until socio-political stability returns. The exception is Kumpulan Guthrie which expanded its planted area in Indonesia by about 14 times with the acquisition of Holdiko Plantations (now renamed as Minamas Plantations) in 2001.

Based on reported trends in land acquisition and planned development, some companies can be expected to remain essentially upstream players, particularly Kumpulan Guthrie Berhad and Tradewinds(M) Berhad. With the acquisition of Minamas Plantations Kumpulan Guthrie has become the largest plantation company with a total land bank of more than 322,000 hectares. However, it should be appreciated that it is not entirely practical to classify

plantation companies as either upstream or downstream players as many of them are both upstream and downstream operations. (See [Table 13, page 35](#))

4.2.2 Government Schemes

Federal Land Development Authority (Felda)

Among the public sector agencies, Felda (*Profile GOV.1, page 110*) has played the most significant role in the development of oil palm in Malaysia. In fact, it is the largest player in the industry in Malaysia, accounting for 17.7%² of the total planted area ([Table 11](#)) and about 20.6% of the palm oil produced in Malaysia in 2001. Felda was the main land development agency that was established in 1956 with the socio-economic mandate of developing forest land for the resettlement. From its formation until the mid-eighties, Felda's primary activity was the development of agriculture-based settlements, planted with plantation crops, initially with rubber and subsequently with other crops, particularly oil palm from primary forests and logged over forest land. The first planting of oil palm was on 8,100 hectares in the Taib Andak Complex in Pahang, Peninsular Malaysia in 1961. It spread its activities to Sabah in the early 1980s and had developed complexes at Umas and Kalabakan near Tawau and the Sahabat complex in the Dent Peninsular, east of Lahad Datu (Tunku Shamsul & Lee, 1980).

Following a change in the organisation's strategy in the 1980s, Felda changed its focus to commercial development management of plantations on a commercial basis. The 1980s saw rapid expansion in the area developed of oil but there had been no significant new land developments by Felda in the last decade and the major activity has been replanting of the older schemes in Peninsular Malaysia. The total area replanted until 2000 was 117,676 hectares (Felda 2000 Annual Report).

Under the current organisational structure, the Felda Group consists of Felda which is responsible for the management of the schemes emplaced settlers and Felda Holdings Sdn Bhd which is the corporate arm for the group. As at 2000, Felda has emplaced 103,001 settlers in 275 schemes, of which 67% have been planted with oil palm. Felda is also responsible for settler activities, which include settler community development, new economic activities to enhance settler income and education.

Felda Holdings Sdn Bhd is the holding company for 36 wholly owned and associate companies which are divided into the Plantations Group, Palm Industries Group and Enterprises Group. In the Plantations Group, Through these companies, Felda is involved in most aspects of the supply chain of palm oil. It manages 258 plantations covering a total area of more than 354,000 hectares, the produce of which are process in 72 palm oil mills, 6 kernel crushing plants, 7 palm oil refineries to produce cooking oil and 2 margarine plants. It also has refinery operations in Egypt and China. Felda is involved the production of palm-based oleochemicals through a joint venture with Proctor & Gamble. Various subsidiary companies provide support service to the core businesses. The group produces its own planting materials, fertilisers and other agricultural inputs, it has its own research and agricultural, engineering and construction services, transportation and bulking installations. At the end of the chain, Felda has companies for trading and marketing of its products. With the vertical integration of its activities, Felda is essentially an upstream and downstream producer.

² Based on MPOB statistics; according to Felda 2000 Annual Report, the agency's total area planted with oil palms in 2000 was 655,184 hectares or 19.1% of the area for Malaysia.

Although Felda was established with loans and grants from the Federal Government and international agencies such as the World Bank, it has been self-financing for many years since managing its agricultural operations on a commercial basis. Profits generated from companies under Felda Holdings Sdn Bhd has been ploughed abck to the settlers and Felda through their investment in the Felda Investment Co-operative (KPF) which owns 51% Felda Holdings Sdn Bhd.

Other Government Schemes

The contribution to the production of palm oil by other government land schemes such as the FELCRA Berhad, the Rubber Smallholders' Development Authority (RISDA), Sabah Land Development Board (SLDB) and Sarawak Land Rehabilitation and Consolidation Authority (SALCRA) is less significant. Among these agencies, FELCRA accounted for 4.6% of the total planted oil palm area in Malaysia.

FELCRA was established under the National Land Rehabilitation and Consolidation Authority (Incorporation) Act 1966 to improve the productivity and livelihood of settlers not covered under Felda. In 1997 it was corporatised and changed its name to FELCRA Berhad to make it commercially oriented while maintaining its original mission for rural progress. It has adopted a business strategy of balancing and synergising social-economic and business activities through a two-prong approach – a Social Development Programme that focuses on managing existing and sourcing of new areas for agricultural development and the Business-Oriented Programmes on upstream and downstream activities such as processing of palm oil and agro-industries.

RISDA was established in January 1993 under the Rubber Industry Smallholder Development Authority Act, under which RISDA was required to:

- “Administer the Rubber Industry Replanting Fund which was established under Section 3 of the Rubber Industry (Replanting) Fund Ordinance 1952
- Manage and implement Schemes approved under the provisions of the Rubber Industry (Replanting) Fund Ordinance 1952
- Plan and implement all innovations for the smallholder sector”

Although RISDA's original mandate was for rubber replanting and development on behalf of smallholders, its activities had been extended to include oil palm cultivation; in 2000, the area of oil palm schemes developed and managed by RISDA was 37,011 hectares or 1.1% of the national planted area.

4.2.3 Smallholders

While Felda, RISDA and FELCRA manage schemes for what is known as 'organised smallholders', individual smallholders account for about 320,818 hectares of oil palm or 9.5% of the total planted area. Under the RISDA Act 1972, a smallholder is defined as the owner of legal occupier of any land that is 100 acres (40.5 ha) in area. A census of smallholders undertaken in 1992 gave the following profile:

	<u>Smallholders</u>
Total numbers:	420,193
Rubber smallholdings:	341,694
Oil palm smallholdings:	37,333
Other crops smallholdings:	41,166
	<u>Smallholdings</u>
Total area:	1.289 million ha
Rubber area:	1.044 million ha
Average size:	3.05 hectare

The interests of individual smallholders are represented by the National Association of Smallholders (NASH). (See *Profile OP.1*, page 127)

4.3 Downstream Producers

Section 2 of this report included an overview of the wide range of food and non-food products that are produced from the oil palm fruit. The fresh fruit bunches (FFB) from the plantations are to a large extent, processed by the company's own mills to produce crude palm oil (CPO) and palm kernel (PK). A number of companies have also integrated palm kernel crushing in the mill complex to produce crude palm kernel oil (CPKO). The CPO and CPKO are refined and fractionated to produce a variety of edible oils and fats and non-food applications. Refined palm olein is usually used for producing cooking oils while palm kernel olein is the main feedstock for the production of oleochemicals.

Downstream producers can broadly be grouped under plantation-based companies, Felda, independent manufacturing companies and subsidiaries or associates of multinational companies. Plantation companies are involved in the downstream processing activities as shown in [Table 13](#). Besides being the largest upstream producer, Felda is a major player in downstream processing, operating seven palm oil refineries, six kernel crushing plants and two margarine plants.

The Malaysia Palm Oil Directory 2002 (MPOPC, 2002) listed 44 companies involved in palm kernel crushing, majority of them are essentially SME scale operators who supply their CPKO to the refining companies or oleochemical producers. There are more than 55 palm oil refining companies in Malaysia (MPOPC, 2002), of which about 18 companies produce more than 75% of the total export of processed palm oil. The largest players are PGEO Edible Oils Sdn Bhd., Ngo Chew Hong Oils & Fats (M) Sdn Bhd, and Pan-Century Edible Oils Sdn Bhd. PGEO Edible Oils is an associate company of PPB Oil Palms Berhad while Ngo Chew Hong is an independent refiner which is also a major manufacturer of palm-based oils and fats. Pan-Century is the subsidiary company of the Birla Group of India.

Major producers of bulk and retail pack cooking oil and palm oil-based products such as shortening, *vanaspati* (vegetable ghee), margarine are plantation-based companies such as Felda Marketing Services Sdn Bhd, Golden Hope Plantations Berhad, PPB Oil Palms Berhad, Sime Darby Berhad and United Plantations Berhad and independent manufacturers such as Kuok Oils & Grains Pte Ltd and related company, Federal Flour Mills Berhad, Lam Soon (M) Berhad and related company Intercontinental Specialty Fats Berhad, Ngo Chew Hong Oils & Fats (M) Sdn Bhd and Yee Lee Oils Corporation. Among multinationals, Unilever and Cargill are involved in the edible oil products sector through Unilever (M) Holdings Sdn Bhd and Cargill Palm Products Sdn Bhd respectively.

Among producers of specialty fats, IOI Corporation Berhad is set to be the major player following its acquisition of Lodders Croklaan BV. Other producers include PPB Oil Palms Berhad, Sime Darby Berhad, United Plantations Berhad, Intercontinental Specialty Fats Berhad, Southern Edible Oil Industries (M) Sdn Bhd and Cargill Specialty Oil & Fats Sdn Bhd.

The largest and most integrated producer of oleochemicals in Malaysia is Palmco Holdings Berhad, a subsidiary of IOI Corporation Berhad. Multinationals have a presence in the oleochemical sector through associate or subsidiary companies such as Akzo & Nobel Oleochemical Sdn Bhd, Cognis Oleochemicals Sdn Bhd (joint venture company between Cognis Oleochemicals of Germany and Golden Hope Plantations Berhad), FPG

Oleochemicals Sdn Bhd (Proctor & Gamble's joint venture with Felda) and Uniqema (Malaysia) Sdn Bhd. Other local major producers are Palm-Oleo Sdn Berhad, a subsidiary of Kuala Lumpur Kepong Berhad and Southern Acids (M) Berhad.

4.4 Exporters/Importers

A list of major exporters and importers of Malaysian palm oil is given in the interactive CD ROM edition Malaysia Palm Oil Directory 2002 (MPOPC, 2002) while contact details and other information are available in the hard copy of Malaysia Palm Oil Directory 1999-2000. (MPOPC, 2000). The main importing countries of palm oil are India, Peoples' Republic of China, European Union, Pakistan, and Egypt. (Table 6, page 12). The major importing companies and organisations by countries are listed in Table 14. In the past, imports of palm oil into India and Pakistan was done mainly by state-owned trading corporations but currently, imports have been privatised to a large extent. In the EU, the Netherlands has the most number of companies importing Malaysian palm oil. Recently, two of its key importers, Unimills B.V. and Loders Croklaan B.V. came under Malaysian ownership by Golden Hope Plantations Berhad and IOI Corporation Berhad respectively.

In general, plantation companies involved in downstream production and manufacturing companies of palm-based products are also exporters of palm oil products. Until recently, exports were mainly in various forms of processed palm oil and there was relatively low volume of export of crude palm oil because of very high export duties. However, in an effort to reduce high stocks of CPO in the country in the past few years, the Malaysian Government has allowed selected companies to export certain quantities of CPO annually without any export duty. The approved volume of duty-free CPO export in 2001 was one million tonnes. Companies exporting CPO include Austral Enterprises Berhad, Golden Hope Plantations Berhad, Kuala Lumpur Kepong Berhad and IOI Corporation Berhad.

Table 13: Downstream Production Activities of Plantation Companies

Company	Kernel crushing	Palm oil refining	Cooking oils	Palm-based products 1	Specialty fats	Oleochemicals
Golden Hope Plantations Berhad		✓	✓	✓		✓ 2
IOI Corporation Berhad	✓	✓			✓3	✓4
Johore Tenggara Oil Palm Berhad			✓			
Keck Seng (Malaysia) Berhad	✓	✓			✓	
Kim Loong Resources Berhad	✓					
Kuala Lumpur Kepong Berhad	✓	✓	✓			✓
Kulim (Malaysia) Berhad						✓
Kwantas Corporation Berhad	✓					
PPB Oil Palms Berhad	✓	✓	✓5	✓5	✓5	
Sime Darby Berhad		✓	✓	✓	✓	
United Plantations Berhad		✓	✓	✓	✓	
Felda Holdings Sdn Bhd	✓	✓	✓	✓		✓6

- Notes:
1. Includes shortening, vanaspati, margarine, dough fat
 2. Through associate companies Cognis Oleochemicals (M) Sdn Bhd and Cognis Rika (M) Sdn Bhd
 3. Through newly acquired Lodders Crokiaan BV
 4. Through Palmco Holdings Berhad
 5. Through associate company PGEO Group Sdn Bhd
 6. Through FPG Oleochemicals Sdn Bhd, joint venture company with Proctor & Gamble Co, USA.

Table 14: Major Importers of Malaysian Palm Oil

Country	Company
Algeria	Enterprise Nationale des Crops Gras, Algiers
Australia	Peerless Holdings Pty Ltd, Melbourne
Brazil	Braswey S.A. Industriai E Comercio
Canada	Canbra Foods Ltd, Alberta
China PRC	China National Cereals Oils and Foodstuffs Import & Export Corporation, Shandong; Universal Seeds and Oil Products Company, Beijing
Ecuador	INASA-Industrial Aceitera, Guayaquil; Palmaoil S.A., Santo Domingo
Egypt	MISR Gulf Oil Processing, Cairo; Savola Egypt, Cairo
Germany	Henry Lamonte Gmbh, Bremen
Greece	Pavlos N Pettas SA, Patras Achaia
Guatemala	OLMECA SA, Fraijanes
Honduras	Fabrica de Manteca Y Jabon Alantida S.A., La Ceiba
India	Ahmed Oomerbhoy, Mumbai; Hindustan Lever Ltd., M/S Dipak Vegetable Oil Industries Ltd., Gujarat; Pudumjee Agro Industries Ltd, Mumbai.
Italy	Via Gardizza snc., Ravenna
Japan	Fuji Oil Co Ltd., Osaka; Riken Nosan Kako Co. Ltd., Fukuoka
Lebanon	M.O. Ghandour & Sons SAL, Beirut
Mexico	Cargill de Mexico, S.A.de C.V., Lamas; Ecologia Y Lubricantes S.A. de C.V., Mexico Nuevos
Netherlands	Algemene Oliehandel (AOH), Utrecht; Bergia-Frites B.V., Roermond; Cargill B.V. Hardingsdivisie, Roermond; Karishamns B.V., Koog Ann de Zaan; Loders Crokiaan, B.V., Wormerveer; Mead Johnson B.V., Nymegan; Noba Vetveredeling, B.V., Zwaneburg; Remia C.V., ZG den Dolder; romi-Smilfood B.V., Vzaardingen; Soctek Nederland B.V., Zaandam; Unichema Chemie B.V., Gouda; Unimills B.V., Zwyndrecht; Zaanlandse Oileraffinaderji B.V., Zaandam
Pakistan	M/S ACP Oil Mills (Pvt) Ltd., Islamabad; M/S Agro Processors & Atmospheric Gases (Pvt) Ltd., Karachi
Portugal	Africunha-Imp./Exp., LDA, Loures; Gexpo-Gestao de Exp., LDA, Estoril; Mercadafrica-Com. De Exe.E.Imp., LDA, Lisboa; Mundafrica-Com. Prod. Alimentares LDA, Lisboa.
Spain	Sociedad Iberica de Moituracion S.A., Madrid
Taiwan	Blessing Brother's Ind.Co.Ltd; Cheng-I Food Co. Ltd; Chia Hsin Flour Feed & Vegetable Oil Corp; Flavor Full Foods Inc; Hsei-Yi Co. Ltg; Makro Taiwan Ltd; Namchow Ind.Co.Ltd; President Hissin Corp; Sunjet Religious Developing Co; Taisun Ent.Co.Ltd; TTET Union Corp.
Turkey	Almedar Chemical Industry Inc,
United Arab Emirates	Emirates Refining Company, Sharjah
United Kingdom	Hampshire Commodities Ltd, Hampshire; Matthews Food plc, West Yorkshire; Unitrition International, N. Yorks.
USA	Corporacion Bonanza CA; ENIG Associates Inc; Impex Trading Corp; Liberty Enterprise Inc; Penta Manufacturing Company Inc; Seaboard Trading & Shipping; Sumitomo Corporation of America
Venezuela	Corporacion Bonanza C.A., Caracas

Source: MPOPC - Malaysia Palm Oil Directory, 1999-2000

4.5 Industry Organisations

The diverse interests of upstream and downstream producers of palm oil and palm-based products and their derivatives are formally represented by a number of industry organisations as shown in [Table 15](#). The profile of each organisation (except for POMA) is presented in Part B of this report; a brief description of their roles and functions is discussed in the following sections.

Table 15: Industry Organisations

Sector	Organisation
Plantations	Malaysian Palm Oil Association (MPOA)
	East Malaysia Planters Association (EMPA)
Planters	The Incorporated Society of Planters (ISP)
Independent palm oil millers	Palm Oil Millers Association (POMA)
Palm oil refiners	Palm Oil Refiners Association of Malaysia (PORAM)
Edible oil manufacturers	Malaysian Edible Oil Manufacturers' Assn (MEOMA)
Oleochemical manufacturers	Malaysian Oleochemical Manufacturers Group (MOMG)
Palm oil promotion	Malaysian Palm Oil Promotion Council (MPOPC)

4.5.1 Plantations

As the plantation industry developed, from the colonial era to present day, various organisations have been formed to represent the interests of relevant groups; the earliest industry organisations include the United Planting Association of Malaysia (UPAM), Rubber Growers' Association (RGA) and the Malaysian Estate Owners' Association (MEOA). With the rapid expansion of the oil palm industry from the 1960s, the Malaysian Oil Palm Growers' Council (MOPGC) was established to represent the plantation companies. With the passage of time and changes in the structure of the industry, there was much overlap in the roles and functions of the four organisations. A rationalisation exercise in 1999 saw the merger of the four major industry organisations into a single body, the **Malaysian Palm Oil Association (MPOA)**. (*Profile ORG.1, page 88*) The mandate of this integrated organisation is, to represent the industry as a single voice and meet the complex needs of the plantation industry more effectively.

Any individual or company which owns a minimum of 40 hectares of a plantation crop is eligible to be a member of MPOA. As on 1st June, 2002, MPOA has more than 100 members with a total area of more than 1.4 million hectares under oil palms. This represents more than 70% of the area under private sector ownership. The total members' planted oil palm area includes more than 354,000 hectares under Felda Plantations Sdn Bhd which is registered as a plantation company.

MPOA represents the industry in several government and statutory bodies and related industry organisations, key representations include membership on the Board of the Malaysian Palm Oil Board (MPOB) and Chairman of the Board of Trustees of the Malaysian Palm Oil Promotion Council (MPOPC). MPOA also has a voice in international organisations on oils and fats such as the National Institute of Oilseed Products (NIOP), International Association of Seed Crushers (IASC), FOSFA International Oils and Fats Committee and the ASEAN Vegetable Oils Club (AVOC).

MPOA activities are focused on a number of priority issues, one of which is environmental concerns and sustainable development; recently, it set up a Working Committee on Environment. MPOA has been in active dialogue with WWF Malaysia on issues pertaining to oil palm and the environment, with particular focus on the development of best management practices in respect of forest and wildlife conservation.

Prior to 1999, the interests of plantation companies in Sabah and Sarawak are mainly represented by the **East Malaysia Planters' Association (EMPA)** (*Profile ORG.2, page 92*). During the exercise on the rationalisation of industry organisations, EMPA resolved to remain as an independent body to serve the needs of East Malaysia - domiciled plantation companies. With the establishment of branch offices of MPOA in Sabah and Sarawak, several plantation companies have since become members of the new pan-Malaysian organisation. While EMPA would continue to serve the unique needs of plantations in East Malaysia, the existence of two industry organisations with broadly similar functions could present the attendant risk of duplication of efforts and representation, particularly on issues of national interest.

Among its activities, EMPA has worked in collaboration with the Ministry of Tourism and Environment Development, Sabah to raise the level of awareness on the environmental issues such as pollution of rivers associated with logging and plantation activities. EMPA was an active participant in WWF Malaysia Partners for Wetlands Forum in April, 2001 on making land use more sustainable in the Lower Kinabatangan Floodplains.

4.5.2 Planters

While MPOA and EMPA serve the interests of plantation companies, the **Incorporated Society of Planters (ISP)** (*Profile ORG.3, page 94*), was established in 1919 to represent the interests of the planters – the estate executives at the management level. From an inaugural membership of 200 planters, the ISP currently has more than 4350 members, 600 of whom are overseas members from 37 countries. With the foresight of its founding members, ISP has had from its inception placed priority on technical support for its members through education and publications. The Society conducts examinations and awards professional qualifications from diploma to post-graduate levels; the latter being the Masters of Science in Plantation Management that is jointly conducted with Universiti Putra Malaysia.

Over the years, ISP has organised workshops, seminars, training courses and conferences, at national and international levels on various aspects on research, cultivation and management of plantation crops. The ISP organises the International Planters Conference every three years, the next one being scheduled for 2003.

The Planter, which has been published monthly since 1920 is the main vehicle for disseminating information on the plantation industry to its members. Although the ISP does not have specific focus or activities on the environment, it has expressed its interests and concerns in numerous editorials in *The Planter*. The ISP was an active participant in WWF Malaysia Partners-for-Wetlands Forum on in April, 2001 in Sabah.

4.5.3 Processors and Downstream Producers

Other producers along the supply chain have their own organisations to represent their interests in various government and industry bodies and committees. The **Malaysian Palm Oil Millers Association (POMA)** was formed in 1985 to represent the interests of the operators of independent palm oil mills that do not own oil palm plantations. It also serves as a mediator to settle disputes among members or between members and suppliers of fresh fruit bunches.

The **Palm Oil Refiners Association of Malaysia (PORAM)** (*Profile ORG.4, page 97*) looks after the interests of the member companies involved in the palm oil refining and processing industry. PORAM membership which includes subsidiary companies of plantation companies, subsidiaries of multinational corporations like Cargill and the Birla Group of India and independent refinery companies account for more than 75% of the total export of processed palm oil from Malaysia.

The **Malayan Edible Oils Manufacturers' Association (MEOMA)** (*Profile ORG.5, page 100*) cover a wider range of industries, its members business activities range from palm oil milling, kernel crushing, palm oil refining, production and packaging of cooking oil for the retail consumer, and oleochemicals. Several members are involved in the production coconut oil and coconut oil cakes while others offer services such as broking and insurance. In view of the varied activities, many MEOMA members are also affiliated with other industry organisations such as POMA, PORAM, MOMG and MPOA. Members of MEOMA represent about 80% of the edible oil industry in Malaysia.

The **Malaysian Oleochemical Manufacturers Group (MOMG)** (*Profile ORG.6, page 103*) is a product group of the Chemical Industries Council of Malaysia (CICM). MOMG consists of 12 members who are involved in the production of basic oleochemicals namely fatty acids, methyl esters, glycerine and fatty alcohols in Peninsular Malaysia. MOMG membership consists of local oleochemical manufactures and several joint-venture companies with multinational corporations.

The above palm oil producers organisations are essentially trade associations to represent the interests of their respective members. All of them are represented on the Board of MPOB and the Board of Trustees of MPOPC (except MOMG). They are also members of MPOPC's Palm Oil Task Force on the Environment.

4.5.4 Palm Oil Promotion

The **Malaysian Palm Oil Promotion Council (MPOPC)** (*Profile ORG.7, page 106*) was formed in 1990 to replace the Palm Oil Promotion Fund that was set up to address the anti-tropical oil campaign in USA in the 1980s. The mandate of MPOPC is to spearhead the promotional and marketing activities of Malaysian palm oil. MPOPC is an industry-funded organisation and is currently headed by the Executive Chairman of Kuala Kepong Berhad.

MPOPC's activities are focused on marketing communications, technical marketing and market promotion in locally and in several key edible oil consuming countries. In view of the increasing concern and adverse publicity over oil palm and the environment, MPOPC set up a Palm Oil Task Force on the Environment (POFTE) in 2001 with membership drawn from all palm oil industry organisations as well as the Malaysian Palm Oil Board (MPOB) and Dept of Environment Malaysia (DOE).

4.6 Government Agencies

4.6.1 Malaysian Palm Oil Board (MPOB)

Prior to the year 2000, public sector research and development efforts³ on oil palm was spearheaded by the Palm Oil Research Institute of Malaysia (PORIM) that was established in 1979. The regulatory and licensing functions of the industry were the responsibility of the Palm Oil Registration and Licensing Authority (PORLA). By Act 582 of the Parliament of Malaysia, the **Malaysian Palm Oil Board (MPOB)** (*Profile GOV.2, page 114*) was established in May 2000 to take over the functions of the two preceding organisations. Through this rationalisation, MPOB will be able to optimise the experience and expertise of the two organisations and provide more effective service to the oil palm industry.

MPOB's research and development activities, both upstream and down stream, are directed by the following three-prong strategy:

- High income strategy – to raise oil palm productivity through the application of modern production technologies and good management practices.
- Zero waste strategy – to optimise the utilisation of oil biomass for as recycled inputs to the plantations or for production of commercial products as well as generation of energy.
- Value-addition strategy – down stream R & D to increase the value chain of palm-based products for edible and non-edible uses.

MPOB operations are supported the oil palm industry by way of a research cess of RM 11.00 for every tonne of palm oil or palm kernel produced. Development and special research projects are financed by the Government under the Intensification of Research in Priority Areas (IRPA) programme.

4.6.2 Regulatory Agencies on the Environment

The implementation of environmental legislation and regulations come under the purview of the **Department of Environment Malaysia (DOE)** (*Profile GOV.3, page 117*), the **Natural Resources and Environmental Board (NREB) of Sarawak** (*Profile GOV.4, page 120*) and the **Environment Conservation Department (ECD) of Sabah** (*Profile GOV.5, page 123*) as prescribed under the following Acts:

- DOE: Environment Quality Act 1974 (Amendments 1985 & 1996)
- ECD: Conservation of the Environment Enactment 1966, Sabah
- NREB: Natural Resources and Environment Ordinance 1993, Sarawak

These three organisations perform broadly similar functions, key activities include environmental assessment monitoring and review and enforcement of environmental regulations and orders as prescribed under their respective legislation. Orders for prescribed activities pertaining to development of oil palm plantations are quite

³ Private sector research in oil palm and other plantation crops is undertaken by research stations belonging to the major plantation companies. They were responsible for laying the foundation for breeding and agronomic research and process research in Malaysia prior to the establishment of PORIM.

uniform for Peninsular Malaysia, Sabah and Sarawak. In general, development of agricultural plantations of an area exceeding 500 hectares from secondary or primary forests or from modification of present land use requires project proponents to submit an Environment Impact Assessment and obtain approval from DOE, ECD or NREB, depending on the location of the project.

Regulations that are directly applicable to the oil palm industry include the following under the Environmental Quality Act 1974:

- Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations, 1997 (Amendment) which stipulate detailed conditions with the licence to use or operate a premise for palm oil processing. These include compliance to stringent standards for discharge of treated effluents to water courses or for land application.
- Environmental Quality (Clean Air) Regulations 1978 which stipulate the conditions pertaining to open burning and emission standards for smoke and particulate emissions into the atmosphere.

4.7 Other Players

Environmental NGOs (ENGOS) and organisations associated with the social bottom line could have a role, albeit indirect, in the supply chain. Although ENGOS such as the **Malaysian Nature Society (MNS)** have a strong interest and role in the conservation of natural resources – forests and biodiversity, apparently only **WWF Malaysia** is actively working on the linkage between forest conservation and the development of oil palm plantations. It is part of the WWF global Forest Conversion Initiative that has been taken to promote sustainable oil palm and soybean production globally. Recently, WWF Malaysia has been working with the plantation industry on the development of Best Management Practices in respect of forest conservation and restoration, especially in areas where there is conflict between conservation and development such as the flood prone areas of the Lower Kinabatangan in Sabah.

Among the social organisations, the **National Union of Plantation Workers (NUPW)**, the **All Malayan Estates Staff Union (AMESU)**, the **Malaysian Agricultural Producers' Association (MAPA)** and the **National Association of Smallholders (NASH)** (*Profile OP.1, page 127*) are of particular relevance to the plantation industry. NUPW is the largest worker union in the country while AMESU represents the interests of clerical, medical and technical staff and non-clerical staff employed on plantations. MAPA is the largest employers' trade union with 181 member companies managing 470 estates with a total plantation crop area of 730,620 hectares (Malaysia Agricultural Directory & Index 1999/2000). MAPA negotiates collective wage agreements with the NUPW and AMESU, the former covers 10 collective agreements involving 150,000 workers. MAPA assists its members in labour and industrial relations and represents them in labour disputes and industrial court cases.

NASH was established in 1975 with the mission "to promote the socio-economic well-being of smallholders by fostering inter-agency and inter-organisational goodwill so as to mobilise effectively all available resources with the ultimate aim of enhancing overall productivity, income and quality of life". Major functions of NASH include research and development projects in collaboration with Ministries and research agencies, advocacy programme for smallholders, networking of smallholder chapters in every state and sub-chapters in 150 regions, capacity building, developing

strategic alliances with Government and private sector organisations, cooperative development and income generating activities.

4.8 Customers

Customers of Malaysian palm oil and finished palm-based products are important players at the end of the supply chain. Traditionally, customers are seen as the end users of palm oil, be they institutional buyers or retail purchases. At present, purchasing policies and decisions are based largely on price, quality and delivery with minimal considerations given to environmental aspects. However, with growing awareness on the need for sourcing raw materials and products that have been produced in a sustainable manner, it is envisaged that institutional buyer may incorporate environmental conditions into their purchasing policies. A case in point is Migros, the largest supermarket chain in Switzerland which announced in January, 2002, its commitment 'to source all its palm oil from plantations that have not been established at the expense of tropical forests' (www.panda.org/).

Although not involved in the physical product, investors and fund managers can exert significant influence on the supply chain through their shareholding in plantation companies. Institutional investors are usually the substantial shareholders in listed plantation companies, the most significant being *Permodalan Nasional Berhad* (PNB) or National Equity Corporation and the Employees Provident Fund (EPF) Board. Both organisations have been established with social bottom line responsibilities.

PNB was established as a wholly owned subsidiary of *Yayasan Pelaburan Bumiputra* (Bumiputra Investment Foundation) in 1978 as the main vehicle to implement the Government's New Economic Policy (NEP) introduced in 1970 to restructure the Malaysian society. One of the key thrusts of the NEP is to increase the share of the Bumiputra (indigenous) community in the Malaysian companies. The savings of individual Bumiputras are mobilised through investment in a number of unit trust funds launched by PNB, the first being the *Amanah Saham Nasional Scheme* in April, 1981. These trust funds have investments in a wide range of companies listed on the KLSE and have substantial holdings in many plantation companies which are held a nominee company, Amanah Raya Nominees (Tempatan) Sdn Bhd.

EPF was established in October 1951 as a social security organisation to provide retirement benefits for its members through management of a provident fund. Contribution to the fund is mandatory for all employers and employees at the current rate of 23% of the employees' salary, with the employer contributing 12% and the employee at 11% of the monthly salary. Members are entitled to withdraw one-third of the total contributions plus accumulated dividends upon reaching the age of 50 years and the balance at age 55. As in December 2001, EPF has 10.18 million members, of whom 5.04 are active contributing members. The EPF Board invests members' funds in Malaysian Government Securities and a number of approved financial instruments, including equities. As on 31st December 2001, 21.72 % of the total investment allocation of RM 184.57 billion was invested in the equity market. (EPF Annual Report 2001)

The ownership of shares by PNB and its unit trust funds and by the EPF Board in plantation companies listed on the KLSE are given in Table 16.

Table 16: Shares held by PNB and its unit trusts funds and EPF Board in plantation companies

Company	PNB + PNB Unit Trust Funds		EPF Board	
	No. shares	% of total	No. shares	% of total
Asiatic Development Berhad (4/2002)			11,877,000	1.60
Austral Enterprises Berhad (4/2002)	60,065,555	41.33	12,464,000	8.58
Golden Hope Plantations Bhd.(8/2002)	548,235,998	53.01	75,929,667	7.34
Hap Seng Consolidated Berhad (5/2002)	76,555,492	12.96		
IJM Corporation Berhad (3/2002)	26,542,294	7.32	8,422,000	2.32
IOI Corporation Berhad (9/2002)			27,253,000	3.06
Johore Tenggara Oil Palm Bhd (4/2000)			1,457,000	0.91
Kuala Lumpur Kepong Berhad (12/2001)	141,210,150	19.82	57,103,500	8.04
Kuala Sidim Berhad(4/2001)			546,000	0.44
Kulim (Malaysia) Berhad ((4/2002)			12,727,000	6.73
Kumpulan Guthrie Berhad (3/2002)	732,376,000	73.22	71,690,000	7.17
PPB Oil Palms Berhad (3/2002)			27,403,000	6.45
Sime Darby Berhad (9/2001)	1,011,577,232	43.49	253,555,505	10.90
Tradewinds (M) Berhad (4/2002)			2,225,750	0.75
United Plantations Berhad (8/2002)			19,531,998	12.89

Other unit trust companies in Malaysia and managers of foreign portfolio funds also have an interest in stocks of plantation companies but the level of their investments is unlikely to match those of PNB or EFF Board. Investments in the equity market in Malaysia are based mainly economic and financial considerations. Investments by PNB include social conditions to ensure that the investments are consonant with Islamic principles. However in general, environmental aspects are usually not given due recognition in investment decisions. But the situation may change with growing awareness on the need for socially responsible and sustainable investment, particularly among foreign fund managers.

4.9 Linkages among Major Players in the Palm Oil Supply Chain

The relationships among the main players in the oil palm industry can be seen from two perspectives – their formal representation at the Board level, particularly in respect of MPOB and MPOPC and their collective effort on the environment. MPOB Board members consist of representatives from the following organisations:

- Ministry of Primary Industries (MPI)
- Ministry of Finance (MOF)
- Ministry of International Trade and Industry (MITI)
- Federal Land Development Authority (Felda)
- National Association of Smallholders (NASH)
- Malaysian Palm Oil Association(MPOA)
- Malaysian Edible Oil Manufacturers' Association (MEOMA)
- Palm Oil Millers Association (POMA)
- Palm Oil Refiners Association of Malaysia (PORAM)
- Malaysian Oleochemical Manufacturers Group (MOMG)
- Sarawak State Government
- Sabah State Government

Members of the Board of Trustees of MPOPC include representatives of:

- Ministry of Primary Industries (MPI)
- Malaysian Palm Oil Board (MPOB)
- Malaysian Palm Oil Association (MPOA)
- Federal Land Development Authority (Felda)
- National Association of Smallholders (NASH)
- Malaysian Edible Oil Manufacturers' Association (MEOMA)
- Palm Oil Millers Association (POMA)
- Palm Oil Refiners Association of Malaysia (PORAM)

MPOB is represented on the Board of Felda through the representation by its Director-General. Felda sits in the Council of MPOA and in various working committees through the membership of Felda Plantations Sdn Bhd. The organisational linkages among the major players are shown in [Figure 8](#)

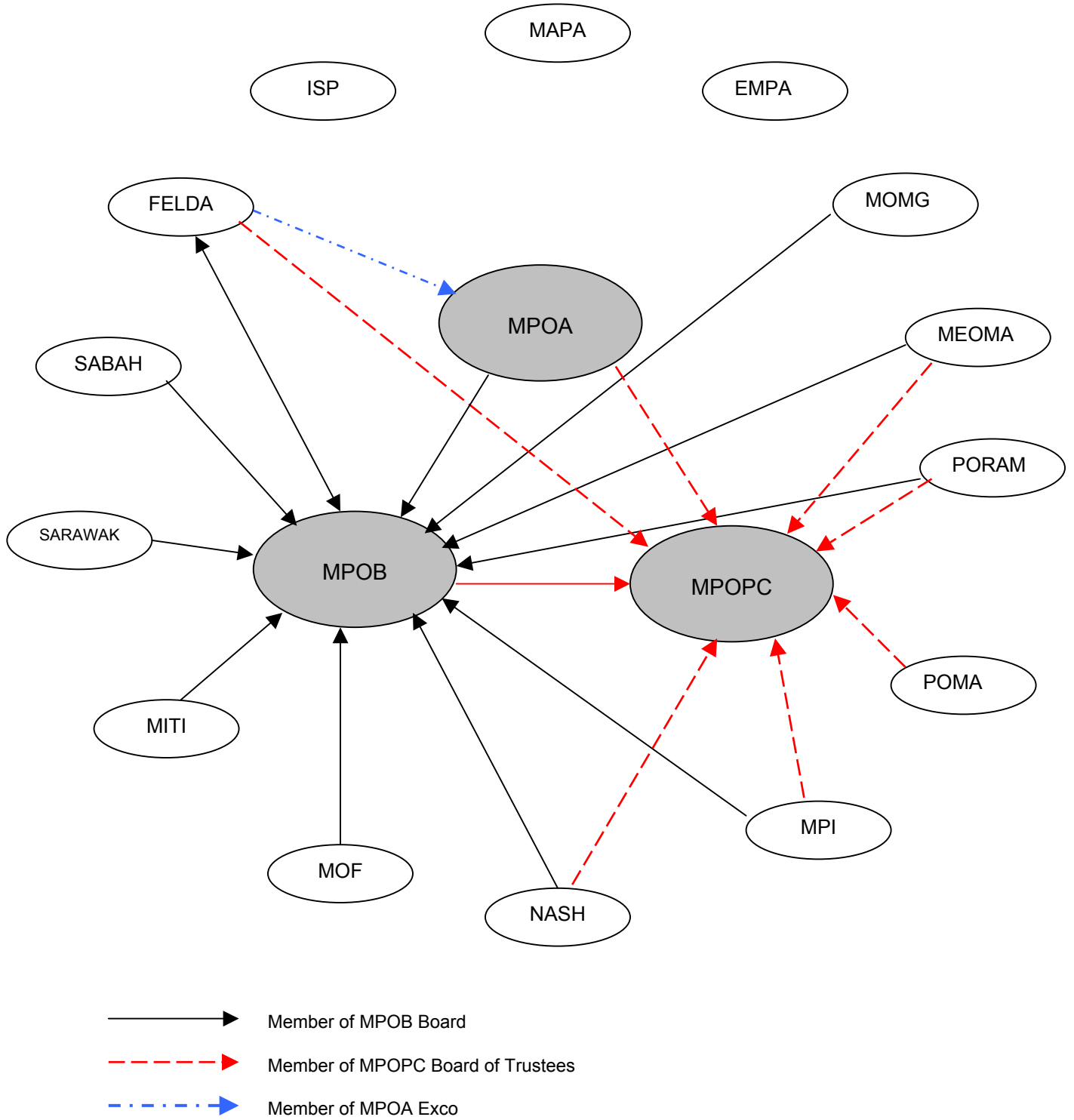
[Figure 9](#) shows how the players are linked to various committees and initiatives on the environment. In response to growing concerns over the environment, MPOPC established the Palm Oil Task Force on the Environment (POTFE) in 2001 with representation from MPOA, MPOB, MPI, POMA, PORAM, MEOMA, MOMG, NASH as well as the Department of Environment Malaysia. The main objective of POTFE is to address emerging issues concerning oil palm and the environment and to produce appropriate materials in various media to communicate the industry's response on these issues to its stakeholders.

In April 2002, MPOA set up the Environment Working Committee (EWC) comprising individuals from MPOA-member companies as well as representation from MPOB and MPOPC. Among the terms of reference for the MPOA EWC, the following would be of interest to WWF Malaysia and the WWF Network on Edible Oils:

- "To establish, maintain and strengthen communications and linkages with related organisations, both public and private, including both Government bodies and NGOs concerned with environmental issues." and
- "To review, improve and document recommended standards of environmental practices and conduct for the Industry (to be known as 'best practices') in consultation with industry members and appropriate external bodies and to promote the adoption of these standards by the industry" (M.R. Chandran, *pers. com*).

At the national level, MPOA represents the industry in the Environmental Quality Council (EQC) under the Ministry of Science, Technology and the Environment (MOSTE). The EQC advises the Minister, MOSTE on matters pertaining to the Environment Quality Act 1974. (WWF Malaysia is also represented on the EQC, through its Executive Director, as an Alternate Member)

Figure 8 Linkages among major players in the palm oil supply chain in Malaysia – Organisational relationships



MPOA, MPOB and MPOPC are active participants in the National Committee ISCZ on Environment Management Standards with the responsibility of contributing towards the development of the ISO 14000 series of environment management standards in Malaysia as well as at the level of the ISO/TC207 Committee on Environmental Management Standards. The industry members have made significant contributions to the annual plenary meetings of ISO/TC 207 since 1997 and currently, MPOB's representative is heading the ISO/TC207 Working Group (WG 5) on Climate Change. WG5's task is to draw up guidelines for the measuring, reporting and verifying the level greenhouse gas emissions in an effort to prepare appropriate standards by 2005

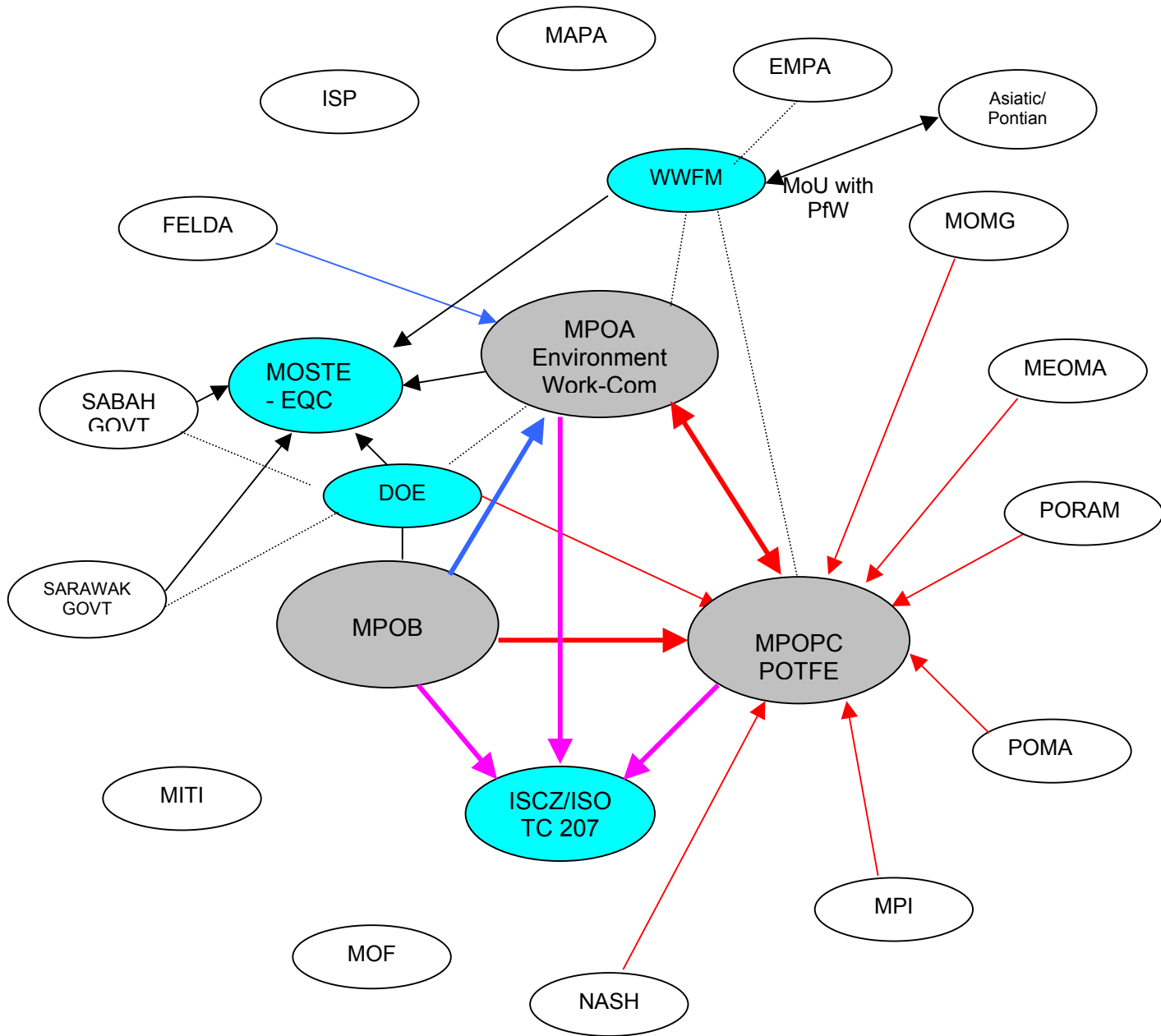
WWF Malaysia has established informal relationships with the industry, particularly with MPOA and MPOPC, through dialogues and seminars. MPOA, ISP and EMPA were active participants in the WWF Malaysia Partners-for-Wetlands Forum on 'Making Land Use Sustainable In the Lower Kinabatangan Floodplain' in April, 2001. The output of the multi-stakeholder meeting laid the foundation for enhancing collaboration with the industry towards realisation of the Partners-for Wetlands vision for the Kinabatangan Floodplains. WWF Malaysia has already established formal partnerships with two plantation companies (Asiatic Development Berhad and Pontian United Plantations Sdn Bhd) on pilot projects to re-establish riparian reserves in the flood prone areas of the Lower Kinabatangan. (Teoh, 2000).

MPOA and WWF Malaysia were co-authors of the following papers:

- *Balancing the Need for Sustainable Oil Palm Development and Conservation: The Lower Kinabatangan Floodplains Experience* – Presented at the ISP National Seminar, June, 2001
- *Trade-Related Environmental Challenges for the Palm Oil Industry* - Presented at MPOB's PIPOC 2001 Congress, August, 2001

In March, 2002, MPOA invited WWF Malaysia and WWF Switzerland to present their position on *Global Environmental Concerns from Consumers and Environmental Groups* at MPOA Seminar 2002 . After the Seminar, MPOA and MPOPC hosted a one-day dialogue session between the industry and WWF Malaysia and WWF Switzerland. Industry participation included MPOA, MPOB and MPOPC as well as members of the MPOPC POTFE. The dialogue provided the opportunity for a better understanding between WWF and the oil palm industry on sustainable development issues in relation to oil palm. Following the deliberations, WWF Malaysia is currently working on possible collaboration with MPOA on the development of Best Management Practices (BMPs) on areas pertaining to conservation and restoration and human-wildlife conflict in plantations.

Figure 9 Linkages among major players in the palm oil supply chain in Malaysia – Environmental Aspects



Note: Full line denotes formal representation or relationship
 Broken line denotes informal relationship

4.10 Profiles and Performances of Major Plantation Companies

4.10.1 Profiles of Plantation Companies

The profiles of the following plantation companies are presented in Part B of this report:

- Asiatic Development Berhad
- Austral Enterprise Sdn. Bhd.
- Golden Hope Plantations Berhad
- Hap Seng Consolidated Berhad
- IOI Corporation Berhad
- Kuala Lumpur Kepong Berhad
- Kuala Sidim Berhad
- Kulim Malaysia Berhad
- Kumpulan Guthrie Berhad
- PPB Oil Palms Berhad
- Tradewinds (M) Berhad
- United Plantations Berhad

The company profiles include corporate information, 5-year records on crop production and performance and financial performance as the company's activities in respect of the triple bottom line dimensions. Information is obtained mainly from the respective company's corporate annual reports. These reports are published within six months from the close of a company's financial year in compliance with the KLSE mandatory requirements on corporate disclosure. The company's financial performance is examined and verified by external auditors. There is no independent third party verification of non-financial aspects but the Malaysian Code on Corporate Governance that was introduced in March, 2000 would expect companies to ensure the accuracy of information and assertions published in the reports. It is beyond the scope of this study to verify the information pertaining to the triple bottom line aspects and information used for the company's profile have been taken in good faith.

Although Sime Darby Berhad, has a substantial investment in oil palm plantations, detailed information on its plantation operations are not readily available since the voluntary delisting of its plantations subsidiary, Consolidated Plantations Berhad in 1994. Financial performance and crop production are summarised in the Group's Annual Report but the published information is insufficient for completion of the two-page template for company profiles. Consequently, a profile on Sime Darby has not been included in Part B; however, an overview on this conglomerate and its involvement in the oil palm supply chain is presented below:

Sime Darby Berhad

Sime Darby (www.simenet.com) is Malaysia's multi-national conglomerate with more than 280 companies employing about 26,000 people in 20 countries. Its core business areas include plantations, manufacturing, heavy equipment and motor vehicle distribution, property development, insurance services, engineering, oil and gas and trading interests in several countries. Sime Darby's gross revenue and profit before tax for financial year ending 30th June 2001 were RM 11,959.9million and 1,130.5 million respectively. The contribution from the Plantations Division to the Group's pre-tax profit was 6.6% but this is not a realistic indication of the contribution from plantation operations because the Division's diverse business activities. Besides plantations, the Division is involved in commodity trading, aeroponics, edible oil refining, property development, medical services and hotel ownership.

Sime Darby's interest in plantations dates back to 1910 when its founders, William Sime and Henry Darby established a 17 ha rubber estate in Melaka. As of June 2001, the Group has 81,540 hectares planted with oil palm, including 8,322 hectares in Kalimantan, Indonesia. It also has 2,531 hectares are under rubber. Total FFB production from its own plantations was 1,477,202 tonnes in FY 2001. Sime Darby is involved in many aspects of the palm oil supply chain including production of planting materials, plantation and oil mills operations, refining of palm oil and production and distribution of edible oils and fats. Its oil refining operations and production of edible oils are done by subsidiary companies, Kempas Edible Oil Sdn Bhd in Malaysia, Sime Darby Edible Products Ltd. in Singapore and Morakot Industries Public Company Ltd. in Thailand. Through a joint venture company, the Group has palm oil refinery operations in Egypt.

Sime Darby is one the three Malaysian companies that have been included in the Dow Jones Sustainability Index. A recent assessment by Dow Jones Sustainability Asset Management (Sime Darby Group News Vol1/2002) gave a good overall rating of Sime Darby's sustainability performance. The Group had a higher rating than the average performance for the industrial services sector on a global basis in all triple bottom line indicators assessed. Performance scores exceeding 50% were recorded for corporate governance, compliance systems and intellectual capital management under the economic bottom line, industry specific criteria for environmental performance and social policies and employee relations under the social bottom line. Lowest performance scores were recorded for eco-efficiency and stakeholder engagement.

4.10.2 Triple Bottom Line Performance of Plantation Companies

A preliminary study on the triple bottom line performance of plantation companies was presented in the paper, '*The business case for sustainable development in the oil palm industry*' (Teoh, 2002) at MPOA Seminar 2002. An overview of the findings and additional information obtained from the present study is given in the following pages.

Economic Bottom Line

In general, plantation-based companies have maintained positive financial performance and cash reserves over the years. At the national level, the industry contributes significantly to the export earnings of the country, considering that about 90% of the palm oil produced is exported. The export value of palm oil and palm-based products in the last four years are as follows:

Year	Export value
1998	RM 22.7 billion
1999	RM 19.5 billion
2000	RM 14.5 billion
2001	RM 14.1 billion

However, their economic success of the industry is influenced by vagaries in local and global weather conditions (*El Nino* and *La Nina* cycles), natural biological cycles of the oil palm, demand and supply of other competing edible oils and fluctuations in prices. For instance, the price of crude palm oil fell from a peak of RM 2,360 per tonne in 1998 to a low of RM 700 per tonne in 2001. Companies which have oil palm

as their core business are obviously more sensitive to price fluctuations, reaping record profits during peak price periods such as 1998 but have to contend with depressed profit margins or even operating losses during lean years. A case in point was Kumpulan Guthrie Berhad which reported a loss of RM 70.3 million for FY2001 from plantations operations compared with a profit of RM 21.7 million in 2000 and RM 201.3 million in 1999.

At present there is a gap in potential and productivity, in terms of fresh fruit bunch (FFB) per hectare and oil extraction rate (OER). In spite of the progress made in breeding and selection of superior planting materials, there had been no significant improvement in the national oil and FFB yield per hectare since the 1980s. The national average FFB yield and oil produced per hectare recorded in the last two years were considerably lower than yields obtainable from well managed plantations. The average oil yields were only 40% of the genetic potential (Table 17). The inherent oil content of current planting materials, in terms of oil-to-bunch (O/B) is 26.0% (Jalani, 1998), but the national oil extraction rate (OER) has remained well below 20% in the last two decades.

Table 17: Oil palm yields and yield potential

	FFB yield (t/ha/yr)	Oil yield (t/ha/yr)
Average national yield *-2000	18.33	3.46
- 2001	19.14	3.66
Good commercial yields #	30	5.0 - 6.0
Experimental yields # (Current planting materials)	39	8.6

Source: * MPOB Statistics # Henson, 1990

The economic bottom line of the industry could be improved significantly the productivity and efficiency gaps are addressed effectively. The oil palm industry is well aware of the urgent need to increase productivity. The Hon Minister of Primary Industries has urged the industry to have 'Vision 25:35', i.e. an OER of 25% and FFB yield of 35 tonnes per ha (New Straits Times , 26.06.00). Some companies have made public commitments to increase their productivity. In its 2001 Annual Report, Kumpulan Guthrie Berhad announced its 'Vision 25: 25; (25 tonnes FFB per ha and 25% OER). IOI Corporation Berhad had stated its intention to increase palm oil yields by about 50% from about four tonnes CPO per ha to seven tonnes (New Straits Times, 31.01.02). An improvement in the national productivity could also enhance the industry's environmental bottom line through reducing the pressure for opening new land for plantations. Assuming that the current national yield could be raised by 20%, the anticipated increase in production would be equivalent to the output from more than 500,000 hectares of land.

Environmental Bottom Line

An indication of the environmental bottom line performance of plantation-based companies was obtained by assessing their corporate annual reports for either year 2000 or 2001 against the National Annual Corporate Reports Award criteria set for the Environmental Reporting Award (Appendix I). Among the 23 companies surveyed four companies (Golden Hope Plantations Berhad and Kumpulan Guthrie

Berhad and subsidiaries, Guthrie Ropel Berhad, Highlands & Lowlands Berhad) have demonstrated a strong commitment towards the environment. These companies have provided dedicated reports on the environment in their annual reports. The Kumpulan Guthrie Berhad 2001 Annual Report serves as a Malaysian benchmark as it won the 2001 NACRA Environmental Reporting Award. Five companies provided brief accounts on various aspects of environment management while the remaining 14 companies did not provide any information in respect of the environment in their annual reports. However, it is encouraging to note that some reports published since the survey contained more disclosure on environmental aspects. For instance, Kuala Lumpur Kepong Berhad and United Plantations Berhad have published their corporate environmental policies while PPB Oil Palms Berhad had a section on the environment in the Chairman's Statement in its 2001 Annual Report. IJM Corporation Berhad published a separate "Statement on Environment" in its 2001 Annual Report, covering the Group's environmental policy, environmental management, environmental monitoring and compliance report and protection of the environment in the plantations. (Note: Tradewinds (M) Berhad which was not included in the survey has also demonstrated a strong commitment to the environment, as reflected in its environmental policy and practices. The Group's Annual Report for the past 3 years had included reports in respect of the environmental management in Tradewinds.)

On environmental performance, in general, companies provided narrative accounts of the adoption of environment friendly management practices such as zero burning, planting of legume covers, biological control of rodents and other pests, effective waste management and utilisation of the oil palm biomass and implementation of the ISO 14001 environment management systems in some of the oil mills. To-date, only 9 palm oil mills have received certification to the ISO 14001 standards. (There are currently 352 mills in the country). Based on the NACRA criteria, companies are expected to provide details on their environmental performance against targets. Reasons for non-achievement of targets and remedial action taken are also required.

In general, better-managed plantations have put in place many environmentally sound practices in the field and the oil mills. However, based on monitoring by the Department of Environment (DOE) Malaysia, there is considerable scope for improving environmental performance in the industry. In year 2000, DOE reported that the overall compliance status of the Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations was 38%. Action was taken on 213 palm oil mills for various offences on air and water pollution. On the enforcement of the Environmental Quality (Delegation of Powers) (Investigation of Opening Order) 2000, DOE detected and investigated 1801 cases of opening in year 2000 in Malaysia and the most number of cases were detected in plantations (582 cases). (DOE 2000 Annual Report)

Social Bottom Line

In general, plantation companies have a favourable social bottom line. Companies traditionally provide housing, social and educational amenities and places of worship for the staff and workers. United Plantations Berhad could possibly be a benchmark for provision of quality housing for workers. In its 1999 Annual Report, the company stated that the population centre at its Ladang Ulu Basir earned the Company, 'the Government's award for providing the best workers' quarters in the country'.

Wages and terms of employment are based on collective agreements negotiated between the employers' union, the Malaysian Agricultural Producers' Association (MAPA) and the National Union of Plantation Workers (NUPW) on behalf of the workers and the All Malayan Estate Staff Union (AMESU) for technical and non-technical staff.

Many plantation companies have established employees share option schemes to enable employees to have a stake in the equity of their own companies. Several companies have also set up foundations and funds to facilitate the fulfillment of their social responsibilities, notable examples include Hap Seng Consolidated Berhad, IOI Corporation Berhad, Kumpulan Guthrie Berhad, Sime Darby Berhad and United Plantations Berhad. The Gek Poh Foundation under Hap Seng Consolidated Berhad built a RM 6 million foundation building to provide various facilities for the less fortunate in Sabah.

Felda, the largest player in the supply chain, was established with a clear social bottom line responsibility of development plantations for the settlement of the rural poor and landless. Since its inception in 1956, Felda has developed more than 810,000 hectares under oil palm (80%) and other crops and have emplaced 103,001 settlers in 275 schemes. Since the mid-eighties, Felda has developed and managed plantations on a commercial basis; profits have benefited the settlers and staff through their investments in Felda Investment Co-operative (KPF) which a 51% stake in Felda's corporate arm, Felda Holdings Sdn Bhd.

4.10.3 Corporate Governance

The Malaysian Code of Corporate Governance (the Code) was introduced in March 2000 and it was incorporated into the revised listing requirements of the KLSE in June, 2001. In Part E of the Listing Requirements relating to corporate governance disclosure, paragraph 15.26 requires a listed company to make a statement on its compliance of Part 1 (Principles) and Part 2 (Best Practices) of the Code in its annual report. Pursuant to this requirement, all listed companies have included a Statement on Corporate Governance in their annual reports covering the following aspects:

- Board of Directors – Board composition and responsibilities, Board balance, appointments, re-elections and training of Directors.
- Directors' remuneration
- Shareholder/Investor relations – Annual General Meeting , communications etc
- Accountability and Audit – Financial reporting, internal control, monitoring process, risk management, relationship with auditors

The level of disclosure varies with companies, from basic compliance of the Code to comprehensive information on policies and mechanisms to internalise the principles and practices of the Code; an example of the latter is Golden Hope Plantations Berhad.

5. Conclusion

Results of this study show that the palm oil industry in Malaysia is complex and well organised. Various organisations are in place to look after the interests of major players in the supply chain, from production of fresh fruit bunches, milling, refining of crude palm oil, production of edible oil products and manufacture of basic oleochemicals such as fatty acids and fatty alcohols.. Among the industry organisations, the Malaysian Palm Oil Association (MPOA), the Malaysian Palm Oil Board (MPOB) and the Malaysian Palm Oil Promotion Council (MPOPC) are considered the cornerstones of the industry. Plantation companies and the other industry organisations are associated with these three organisations either by way of direct membership or through representation in the governing Boards of MPOB and MPOPC as well as membership in various working or technical committees of these organisations. In view of the close linkages among the major players, engagement of the industry on issues pertaining to the environment, including the threat of further conversion of High Conservation Value Forests (HCVFs) should involve these key industry organisations, particularly MPOA as its members are the drivers for further development of the palm oil sector, in Malaysia and abroad.

6. Acknowledgements

The writer would like to thank WWF Switzerland for the opportunity to undertake this study. The cooperation extended by various plantation companies and industry organisations is gratefully acknowledged. Special appreciation is due to Mr M.R. Chandran, Chief Executive of MPOA and his executives for their support and for the use of the MPOA library. He would also like to thank Mr Andrew Ng of WWF Malaysia for his support and critique of this report and to Ms How Seok Sean and Ms Teoh Su Chin for assistance in preparation of the report. The writer also records his appreciation to MPOB for reproduction of the JPEG images used in Plates 1,3,4,5,6 and 7; these were obtained from “ MPOB’s CD ROM, “Clip Images of Oil Palm and Palm Oil”, 2001.

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8. Appendix

Appendix I: NACRA CRITERIA – ENVIRONMENTAL REPORTING AWARD⁴

The criteria for environmental reporting are designed to identify and recognise issues of reporting with the objective of raising awareness on the apparent benefits that are to be derived from corporate considerations of environmental issues and its protection.

The information coverage in their annual report should contain:

Environmental Management

- A statement of the organisation's environmental policy
- A statement of the significant environmental impacts of the organisation's activities, products and services
- A statement on how management has determined which of its activities, products and services present significant environmental impacts
- A statement of management's objectives in relation to environmental performance\A statement of progress towards achievement of those objectives, and important events (positive and negative) in that progress
- A statement on how environmental management is incorporated into the organisation's general decision making process across its activities, products and services.

Environmental Performance

The annual report should also contain information concerning the organisation's

- Consumption of non-renewable and renewable resources
- Levels of polluting discharges to land, air and water, and
- Impacts on flora and fauna

Details of the organisation's

- Environmental performance targets
- Performance against them
- Reasons for non-achievement of those targets and
- Associated remedial or preventive actions

Details of:

- Environmental incidents that resulted in any significant environmental impact by the organisation
- Compliance or non-compliance with environmental legislation by the organisation
- The use of independent environmental advice (including details of environmental audits performed and their results)

Research and Development Initiatives

The annual report should contain statement of:

- Research and development initiatives, and
- Environmental objectives for planned improvements

⁴ Extracted from NACRA 2002 National Annual Corporate Reports Awareness brochure published by the NACRA 2002 Organising Committee

The financial report should contain details of:

- Actual and foreshadowed environmental-related capital expenditures.
- Actual and foreshadowed environmental-related liabilities, and
- Assumptions made in calculating environment-related expenditures and liabilities

Appendix II: PUBLISHED ENVIRONMENTAL POLICIES OF PLANTATION COMPANIES

Golden Hope Plantations Berhad

“We at Golden Hope recognise our responsibility to safeguard the environment in the course of conducting our business operations. Environment will be our primary consideration in all aspects and at all stages of our business.

To protect the environment, we shall:

- Prevent or minimise any potential adverse environmental impacts arising from our operations, products and services
- Review and improve continuously our protocols, operations, products and services to enhance our environmental performance
- Encourage our employees to conduct their occupational and personal activities in an environmentally-responsible manner
- Promote high environmental performance standards amongst our stakeholders and the industry at large”. (2002 Annual Report)

IJM Corporation Berhad

IJM Corporation Berhad published a “Statement on Environment” under the following headings:

- Policy
- Environmental Management
- Environmental Monitoring and Compliance Report
- Protection of the Environment in Plantations

Under ‘Policy’, IJM stated that “the Group has a social responsibility towards greater environmental well-being and would combine business objectives with long-term sustainable development”. (Annual Report 2001)

Kuala Lumpur Kepong Berhad

“We are committed to keep our environment clean, safe and healthy. We will continue to promote greater environmental awareness in our daily activities. Preservation of the environment is the responsibility of everybody in the Company”. (Annual Report 2001)

Kumpulan Guthrie Berhad

Health, Safety & Environment Policy

“Kumpulan Guthrie Berhad and all its employees firmly believe that the health and safety of one and all as well as the quality of the environment are fundamental to our business and our sustainable growth.

We are, therefore, committed to implement fully this policy which will contribute positively to our personal growth, welfare and productivity; the interest of the community; the care and enhancement of the environment; our business success; the nation's socioeconomic development, and to global peace and prosperity.

In conducting our business in a highly moral and ethical manner, we shall undertake the following measures:

Health and Safety Provisions

- Ensure a health and safe workplace and clean working environment;
- Prevent any likely accidents and occupational illnesses; and
- Conduct annual review and audit of our operations.

Protection and Enhancement of the Environment

- Introduce new processes that are cleaner and more cost effective;
- Improve existing activities for total compliance of all relevant laws, regulations and standards; and
- Conduct regular monitoring and audit of all possible sources of pollution.

Care for All

- For one another, the community, the country and the planet Earth." (Annual Report 2001).

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Note: The same policy was also published in the Annual Reports of KLSE-listed subsidiary companies, Highlands & Lowlands Berhad and Guthrie Ropel Berhad.

Tradewinds (M) Berhad

"We are committed to making a concerted effort to ensure that our Group's activities are in harmony with our environment and with the community we serve in.

We are committed to the following:

1. We shall establish and maintain an Environmental Management System (EMS) for the Group.
2. We shall comply with the relevant MS ISO 14001 Standards or the Environmental Impact Assessment report.
3. We shall comply with the relevant Environmental Legislation and Regulations, and other requirements to which the Group subscribes.
4. We shall identify environmental aspects and impacts associated with the Group's activities, products or services in order to provide a framework for setting of objectives and targets for environmental management programmes. The objectives and targets shall be reviewed periodically as a means for continuous improvement.
5. We shall implement pollution-control and pollution-prevention measures to preserve the environment through the control of effluent discharges, air emission, scheduled waste disposal and noise exposure.
6. We shall educate and communicate to our employees and our contractors on environmental requirements.
7. We shall continue to improve on resource maximisation and conservation." (2001 Annual Report)

United Plantations Berhad

Environment Policy

“To conduct our agricultural business in the best principles of agriculture and in total harmony with the natural environment.

Objectives

- To produce quality palm oil, palm kernels, coconuts and their derived products to the total satisfaction of our worldwide valued customers.
- To produce elite oil palm, coconut and banana planting materials with proven yield potential.
- To value our human resources and to continuously strive to provide a conducive and safe environment at the work place.
- To adopt proven and sustainable agricultural practices that are environmentally compatible.
- To promote the conservation and development of biodiversity within our group of plantations.
- To continuously work towards a dynamic and innovative waste management and utilisation system aimed towards achieving zero waste.” (Annual Report 2001)

PART B

Profiles of Major Players in the Supply Chain of the Palm Oil Industry in Malaysia

Profiles of Major Players in the Supply Chain of the Palm Oil Industry in Malaysia

Plantation Companies

- Asiatic Development Berhad
- Austral Enterprise Sdn. Bhd.
- Golden Hope Plantations Berhad
- Hap Seng Consolidated Berhad
- IOI Corporation Berhad
- Kuala Lumpur Kepong Berhad
- Kuala Sidim Berhad
- Kulim Malaysia Berhad
- Kumpulan Guthrie Berhad
- PPB Oil Palms Berhad
- Tradewinds (M) Berhad
- United Plantations Berhad

Profile of Listed Plantation Companies: Asiatic Development Berhad

Background

Asiatic Development Berhad's entry into the plantation industry began with the acquisition of the Rubber Trust Group of 3 Hong Kong-domiciled companies which owned 13,700 ha of plantations in Peninsular Malaysia. It became a wholly owned subsidiary of Genting Berhad to serve as the vehicle for the hotel and casino operator's diversification into plantations. Asiatic was listed on the KLSE in August, 1982.

Through successive acquisitions of plantation companies in Sabah from 1985, Asiatic soon became a major player in the industry. Currently, it has a land bank of more than 50,000 ha, of which 35,956 ha have been planted with oil palm (as at 31.12.2001). The Group owns 21 plantations of which 13 are located in Peninsular Malaysia and 8 in Sabah. It has 4 palm oil mills with a total capacity of 185 tonnes of FFB per hour.

Realising the real estate potential of plantations around strategic urban locations, Asiatic diversified into property development in October, 1993 with the first development in Melaka. The flagship development is Indahpura in Kulai, in southern Johor.

Asiatic also ventured into manufacturing with the commissioning of an automated structural brick plant with a production capacity of 40 million bricks per year in October, 1997. Plans to set up an oil refinery project in China did not take off on account of unfavourable market conditions.

Economic Aspects

- With the replanting of the last 508 ha of rubber in 2001, Asiatic is today a 100% oil palm company. It is an upstream player in the palm oil supply chain, being mainly involved in the production of crude palm oil.
- Asiatic's revenue is mainly generated by plantations operations and property development, the contribution from the former varied from 51.3% (1999) to 78.1 % (2001) in the last 5 years.
- The PBT for plantation operations is largely influenced by palm oil price, a record PBT of RM 142.41 million was achieved in 1998 when the average selling price of palm oil was RM 2,321 per tonne while the lowest PBT was seen in 2001 at RM 31.68 million at an average price of RM 883 per tonne. The total PBT for the Group had included non-segment items such as proceeds from sale of short term investments and profits from disposal of land assets which had made significant contributions in the last 3 years. Excluding the non-segment items, the relative contribution of plantations to Asiatic's PBT from core business operations varied from 45.4% in 1999 to 91.2% in 1998.
- The total FFB production had increased substantially in the last 4 years, mainly on account of better productivity as more areas enter their prime phase. This is reflected in the steady increase in FFB yield per ha, from 16.8 tonnes/ha in 1998 to 21.4 tonnes/ha in 2001. The increasing yield pattern in the Tenegang group of estates in the Lower Kinabatangan had made significant impact on Asiatic's FFB production in 2000 and 2001.

Environmental Aspects

- In the Review of Operations in the 1999 Annual Report, Asiatic stated that "the Group always strive for sustainable development and environmental conservation in all aspects of its operations. As in past years, it continued to apply environmental friendly replanting techniques such as 'underplanting' and 'zero burning' in lieu of 'clear, fell and burn' method."
- In the 1997 Annual Report, Asiatic reported that 1208 ha lowlying area of the 17,863 ha Tenegang development in the Kinabatangan in Sabah was affected by prolonged floods in 1996. Following an in-depth study of the affected area, Asiatic began rehabilitation work in August, 1998. In the 2000 Annual Report, the Group stated that 1670 ha of 1770 ha affected by floods were planted with oil palm on raised platforms. "The remaining area is being preserved as a wildlife sanctuary, a programme the Group undertakes jointly with WWF Malaysia".
- Asiatic signed a MOU with WWF Malaysia Partners for Wetlands on 20th December, 1999 to establish a pilot tree planting project to re-establish damaged riparian reserves in the Tenegang area.
- Asiatic planted teak and other tree species along boundary fringes and steep areas deemed unsuitable for oil palm. The 1998 Annual Report recorded that an equivalent of 93 ha of teak had been planted in Sabah and Peninsular Malaysia.

Social Aspects and Stakeholder Engagement

- A commitment to the well being of its employees is embodied in Asiatic's corporate vision – "As people are the key to achieving the company's vision, we are committed to develop our employees and create a highly motivating and rewarding environment for them".
- In September 2000, Asiatic implemented an Executive Share Option Scheme (ESOS).

Profile of KLSE Listed Plantation Companies
Asiatic Development Berhad

Corporate Information		Crop Production and Productivity - Oil Palm							
Chairman : Tan Sri Mohd. Amin bin Osman		Year ending 31 st December							
Registered office : 24 th Floor, Wisma Genting, Jalan Sultan Ismail, 50250 Kuala Lumpur, Malaysia.		2001	2000	1999	1998	1997			
Website : www.asiatic.com.my		32,683	32,605	31,625	29,095	26,166			
Principal Bankers : -		6,076	4,765	4,331	6,581	9,483			
Auditors : PricewaterhouseCoopers		38,759	37,370	35,956	35,676	35,649			
Major Shareholders :		700,275	655,366	574,359	472,962	481,696			
		21.4	20.2	18.5	16.8	18.8			
		FFB yield per mature ha (tonnes)							
		Mill Productivity							
		Palm oil (tonnes)							
		Palm kernel (tonnes)							
		Mill Extraction Rates							
		Palm oil (%)							
		Palm kernel (%)							
		Average selling price							
		Palm oil (RM per tonne)							
		Palm kernel (RM per tonne)							
		Profit per mature ha (RM)							
		883							
		438							
		1,445							
		1,071							
		1,000							
		703							
		2,321							
		1,103							
		1,370							
		770							
Crop Area Statement as of 31 st December 1999 (1)		Year ending 31 st December							
Crop	Age (years)	Area in Hectares					Total Planted Area %	Total	1997
		P.M.'sia	Sabah	Sarawak	Indo-nesia				
Oil Palm	4-5	3,585	4,325			7,910	21.0		
	6-10	1,488	11,325			12,813	34.0		
	11-15	3,361	709			4,070	11.0		
	16-20	3,024	320			3,344	9.0		
	>20	2,319	1,169			3,488	9.0		
Total Mature		13,777	17,848			31,625	88.0		
Total Immature		2,091	2,240			4,331	12.0		
Total OP area						35,956	100.0		
Rubber									
Total Mature						1,582	4.0		
Total Immature						0	0.0		
Total rubber area						1,582	4.0		
Other crops						10	0.0		
Total Planted Area						37,548	100.0		
Group Financial Performance		Year ending 31 st December							
		2001	2000	1999	1998	1997			
	Revenue (RM million)	199.86	230.78	446.81	351.30	313.32			
	Profit before tax (RM million)	87.15	69.89	272.84	165.00	102.38			
	Profit after tax (RM million)	72.69	54.51	272.92	124.05	76.19			
	Earning per share (sen)	9.7	7.2	35.9	16.9	10.3			
	Net Dividend per share - (sen)	2.5	2.2	3.6	3.2	2.8			
	Dividend cover (times)	3.8	3.3	10.0	5.2	3.6			
	Share capital (RM million)	370.67	370.67	370.67	370.67	370.67			
	Shareholders' Equity (RM million)	1,139.51	1,086.44	1,048.76	809.15	716.49			
	Return on Shareholder Funds (%)	6.5	5.0	28.7	16.4	11.2			
Contribution from Plantations to Total Revenue and PBT									
	Revenue from plantations (% total)	78.1	70.8	51.3	75.1	60.0			
	PBT from plantations (% total)(2)	36.3	55.8	35.4	86.3	69.5			
Notes:									
1 - Detailed crop area statement not given in subsequent Annual Reports.									
2 - Total PBT includes Non-Segment Items such as income from short term investments, proceeds from disposal of land etc									

Profile of Listed Plantation Companies: Austral Enterprises Berhad

Background

The early development of present day Austral Enterprises Berhad (Austral) was linked to the corporate expansion of its parent company, Island & Peninsular Berhad (I&P) which started as a property development company in the mid-sixties. I&P's entry into the plantation industry was in 1972 when it acquired the then Austral Enterprises Berhad which owned oil palm plantations in the states of Pahang and Kedah.

I&P's entry into plantations in Sarawak came in 1981 with the acquisition of 70% equity of BHB Sdn Bhd which owned 4,607 hectares of agricultural land in the state.

Following the rationalisation of the group's activities, I&P became an investment holding company in 1984, Austral Enterprises Berhad became the public listed plantations vehicle for the group.

In 1995, Austral ventured into the development of oil plantations in Indonesia, following the signing of a JV agreement with PT Pontimakmur Sejatera to develop 30,000 hectares of land in Sanggau in Kalimantan.

Currently, Austral has planted area of 55,267 hectares of oil palm, of which 28% is located in 7 estates in Peninsular Malaysia, 57% in Sarawak (14 estates in 2 complexes near Bintulu) and 15% in Indonesia (2 estates –PT MAS1 & PT MAS2). Of the 8,102 hectares planted in Indonesia, 49% have reached maturity.

In October, 2002, Austral announced its proposed merger with I&P which will result in the eventual delisting of Austral in KLSE.

Economic Aspects

- Austral is essentially an oil palm company, involved the production and processing of crude palm oil. All its revenue is derived from the plantation. However, the company has announced plans to go downstream with the establishment of a palm oil refinery in Bintulu with an initial capacity of 300,000 tonnes per year. The company is also planning to widen its earnings base by investing in a RM 23.4 million fertiliser plant in Bintulu.
- New plantings in Sarawak and aggressive replanting of the older estates in Peninsular Malaysia have resulted in increasing total FFB production by Austral. Production in FY 2002 was 28% higher than in 1998; 60% of total production being from estates in Sarawak.
- As 99% of Austral's mature oil palm area is below 15 years of age, there is very good potential of increase in productivity per ha and total crop. Operations in Sarawak are expected to remain the main contributor to production and estates in Indonesia are also making increasing significant contribution. The company has forecast a total FFB production of one million tonnes by 2005. The company has also set a target yield of 25 tonnes FFB per ha by that year.
- A good OER performance has been maintained over the past 5 years, the highest level being recorded in 2002. Austral has set the target of achieving 22% OER by 2005.
- Being a 100% oil palm company, Austral's financial performance is highly dependent on the commodity's prices, highest profit per ha being seen during record price levels in 1999 while performance during 2001 and 2002 was poor.

Environmental Aspects

- Austral ratified three separate corporate policies on environment and occupational safety and health and quality in July, 2000. (See [Appendix II](#))
- In April, 2002, a Quality Division was established to coordinate the company's efforts on Total Quality & Environment Management (TQEM), Health & Safety and Quality. A TQEM Council has also been set up to steer the implementation of these initiatives.
- Among BMPs in the field, Austral pioneered the work on biological control of rats using barn owls in the 1970s. Commercial application of this approach was first evaluated in its Kok Foh Estate.
- Austral developed and applied the sub-soil fertiliser application technique during the last 8 years. It reported that this approach reduced fertiliser wastage through run-off by about 30%.
- The Derawan Estate palm oil mill that was commissioned in 2001 had incorporated the advanced effluent treatment system (the SES Effluent Treatment System) at the cost of RM 1 million to reduce the BOD of treated effluent to 20 mg/l.
- Austral reported the practice of printing internal memos and reports on used paper. It has also engaged the services of a recycling company to recycle waste paper, metal and glass from its head office.

Social Aspects and Stakeholder Engagement

- Austral has 6,808 employees, 82% of whom are employed and accommodated in the plantations.
- The company has embarked on an intensive training programme to upgrade the capabilities and capacities of its employees; a budget of RM 272,000 has been allocated for this purpose in the current year.
- Austral has taken the initiative to improve IT awareness among its staff and the public, through donations of computers to schools and free IT familiarisation programmes in the Bintulu district of Sarawak.
- The company established an Employees Share Option Scheme for eligible employees in April, 1996.
- In collaboration with the Forestry Dept, Austral has allocated a 15 hectares site in its Jentayu Estate in Kedah adjacent to the Sungkop Forest Reserve for conservation. Another 35 hectares in Kerdu/Jentar estate in Pahang has been retained as bird sanctuary and forest reserve.
- In 1999, Austral participated in the Terry Fox Run in aid of cancer research.
- Through its parent company, an annual 3-day social and educational trip to selected destinations is organised for about 35 orphans, selected by way of a competition among various orphanages.

Profile of KLSE Listed Plantation Companies
Austral Enterprises Berhad

Corporate Information		Crop Production and Productivity - Oil Palm						
		Year ending 31 st January						
		2002	2001	2000	1999	1998		
Chairman	: Dato Haji Mohd. Zuki bin Haji Kamaluddin	36,312	34,731	30,382	28,136	27,204		
Registered office	: 24-31, Jalan Setiawangsa 8, Taman Setiawangsa 54200 Kuala Lumpur, Malaysia.	16,955	20,398	24,825	24,303	29,652		
Website	: -	55,267	55,129	55,207	52,439	56,856		
Principal Bankers	: Malayan Banking Berhad / Oversea-Chinese Banking Corp. Ltd / Aseanbankers Malaysia Berhad	637,040	580,469	606,492	417,920	499,227		
Auditors	: KPMG Peat Marwick	16.27	16.63	19.88	14.85	19.21		
Major Shareholders	:	Mill Productivity						
Shareholder		Palm oil (tonnes) (2)						
1. Island & Peninsular Berhad	No. of Shares	116,736	102,984	104,460	71,899	78,042		
2. Employees Provident Fund Board	% of total	25,764	23,952	25,316	17,383	20,297		
3. Malaysia National Insurance Berhad		20.97	19.95	19.90	19.98	19.56		
4. Overseas Assurance Corporation (Malaysia) Berhad		4.76	4.72	4.89	4.91	5.13		
	Total :	912	961	1,300	2,133	1,372		
Location of shareholders	No. of shareholders	428	628	1,058	1,123	773		
	% of share held	781	832	2,732	3,983	2,749		
		Group Financial Performance						
		Year ending 31 st January						
Crop	Age (years)	2002	2001	2000	1999	1998		
		Area in Hectares						
		P. M'sia	Sarawak	Sabah	Indo-nesia	Total	Total Planted Area %	
Oil Palm	4-6	2,304	10,888	13,347	3,983	17,175	31.1	
	7-15	7,508	13,347			20,855	37.7	
	16-20	282				282	0.5	
	>20							
Total Mature		10,094	24,235		3,983	38,312	69.3	
Total Immature*		5,483	7,353		4,119	16,955	30.7	
Total OP area		15,577	31,588		8,102	55,267	100.0	
Rubber	>20							
	16-20							
	11-15							
	<10							
Total Mature								
Total Immature								
Total rubber area								
Other crops								
Total Planted Area		15,577	31,588	8,102	55,267	100.0		
		Contribution from Palm Oil Products to Total Revenue and PBT						
		Revenue from palm oil products (% total)						
		PBT from palm oil products (% total)						
		100%	100%	100%	100%	100%	92%	92%
		Notes: .						
		(1) Includes areas in the course of new planting/replanting						
		(2) - Own crop						
		+						

Profile of Listed Plantation Companies: Golden Hope Plantations Berhad

Background

The history of GHPB is closely associated with that of Harrisons & Crosfield PLC (H&C) which was founded as a trading company in coffee and tea in 1844. H&C became the managing agents for The Petaling Rubber Estates Ltd., Golden Hope Plantations Ltd. and The London Asiatic Rubber and Produce Company Ltd when they started plantation operations in Malaya (now Peninsular Malaysia) in 1903, 1905 and 1907 respectively. In 1997, these three companies merged to form Harrisons Malaysian Estates Plc (HME). In 1982, the entire share capital was acquired by Harrisons Malaysian Plantations Berhad (HMPB), with Permodalan Nasional Berhad (PNB) holding 50% of the equity in HMPB while H&C held 30%. In 1990, H&C sold its 30% stake in HMPB and the company changed its name to Golden Hope Plantations Berhad

Today, GHPB is a Malaysian conglomerate with core business areas in agribusiness, property development, resource-based manufacturing and international operations. Among these, agribusiness particularly operations in oil palm plantations is the major contributor to the Group's revenue and profit.. The Group's business activities in oil palm are vertically integrated, from the production of planting materials to cultivation of the crop, processing of crude palm oil and refined palm oil in Malaysia. GHPB has operations in Bangladesh, Peoples' Republic of China, The Netherlands and Vietnam for the processing and refining of palm and other edible oils. It has a subsidiary company in Germany for marketing of its produce, principally palm oil and wood-based products

Economic Aspects

- GHPB is involved in all aspects of the supply chain of palm oil, from production of the crude palm oil to refining and distribution of edible oils in Malaysia and other countries.
- Acquisition of Unimills B.V. in the Netherlands from Unilever Plc in January, 2002 has given GHPB a bigger share of the edible oils market in Europe. Unimills is reputed to be the second largest processor of edible oils and fats in Europe.
- GHPB has diversified into many downstream businesses for more than 10 years, but plantations operations, particularly oil palm, have remained the major contributor to the Group's revenue and profitability. In the past 5 years , palm oil products accounted for more than 30% of the Group's annual revenue and they had contributed from 42% (2002) to 72.1% (1999) of GHPB's profit before tax.
- The Group's profitability is influenced to a large extent by palm oil commodity prices; highest earnings were recorded in FY1999 when global palm oil prices reached peak levels while disappointing profit before tax was seen in FY2001 during the price trough. However, PBT almost doubled in the following year , largely attributable to a recovery in palm oil prices
- Comprehensive coverage on corporate governance policies and mechanisms in 2001 and 2002 Annual Reports

Environmental Aspects

- Signatory to the ICC Business Charter for Sustainable Development
- Corporate environmental policy published in Annual Reports and website (See [Appendix II](#))
- Has a Group department responsible for environment, health and safety and quality
- Quality and Environment Council and four Quality and Environment Divisional Councils are responsible for issues on quality, environment and health and safety at the corporate and divisional levels respectively
- Developed the Total Quality Environment Management System (TQEMS) to implement the Group's policies on quality, environment and occupational safety and health.
- First company to receive the ISO 14001 EMS certification in the plantation industry in Malaysia in 1997. To-date 4 of the Group's 15 palm oil mills have been certified.
- Received FSC certification for rubberwood production in 11 rubber plantations and the Chain-of-Custody certification for production of rubberwood products in 2 factories in 2002.
- Received UNEP's Global 500 Award for environmental achievement for zero burning on World Environment Day in 1992. More than 30,000 hectares in the Group replanted with this technique since 1989.
- Sponsored and co-organized the Global 500 Forum International Conference, *Towards Corporate Environmental Excellence – Challenges and Opportunities in Asia Pacific*, in Kuala Lumpur in October, 1995

Social Aspects and Stakeholder Engagement

- GHPB has 19,850 employees (as at 30.06.02), 85% of whom are involved in the agribusiness operations.
- Established an Employees Share Option Scheme.
- Annual Group scholarship scheme to support education of staff and general public; value for 2002 was RM 563,724
- Group policy on Occupational Safety and Health published and a corporate OSH Master Plan has been put in place to comply with OSH Act of 1994
- Annual environment awareness camp for employees and their families since 1998.
- The Group has introduced the Golden Hope Outdoor Challenge program towards improving leadership qualities and teamwork among employees.
- A Skilled Development Program is in place to provide specialized training for employees in factories and mills
- Organized Annual Student Environment Awareness Camps for secondary schools with the Department of Environment and Ministry of Education since 1996.
- Published best practice advisory booklets on zero burning and integrated pest management in 1997 for distribution to the plantation industry and other stakeholders
- Hosted the MS ISO14001 Seminar for Selangor Oil Palm and Rubber Mills by the DOE in February, 2001
- Organised a field visit to Carey Island to share experiences on the zero burning technique with delegates of the World Conference on Land and Forest Fire Hazards in June, 2002

Profile of KLSE Listed Plantation Companies
Golden Hope Plantations Berhad

Corporate Information				Crop Production and Productivity - Oil Palm						
				Year ending June	2002	2001	2000	1999	1998	
Chairman	: Tan Sri Dato' Seri (Dr) Ahmad Sarji bin Abdul Hamid			Mature area (ha)	91,162	88,467	85,620	76,212	72,825	
Registered office	: 13 th Floor, Menara PNB, 201-A, Jalan Tun Razak Kuala Lumpur			Immature area (ha)	27,963	29,371	30,260	32,417	27,038	
Website	: www.goldenhope.com			Total oil palm area (ha)	119,125	116,838	115,880	108,629	99,863	
Principal Bankers	: Bumputera Commerce Bank Berhad : Malayan Banking Berhad			Total FFB production (tonnes) (1)	1,907,259	1,942,769	1,743,334	1,599,192	1,484,717	
Auditors	: Ernst & Young, Kuala Lumpur			FFB yield per mature ha (tonnes)	20.33	22.38	21.35	21.15	20.66	
Major Shareholders				Mill Productivity						
Shareholder		No. of Shares	% of total	Palm oil (tonnes)	350,577	362,294	344,572	314,556	302,217	
1. Amanah Raya Nominees (Tempatan) Sdn Bhd - Skim Amanah Shaham Bumiputra		453,431,214	43.85	Palm kernel (tonnes)	89,351	98,134	96,017	87,864	86,069	
2. Bank Negara Malaysia		170,000,000	16.44	Mill Extraction Rates						
3. Employees Provident Fund Board		75,929,667	7.34	Palm oil (%)	20.5	19.5	19.7	19.5	19.6	
4. Permodalan Nasional Berhad (PNB)		70,004,784	6.77	Palm kernel (%)	5.3	5.4	5.5	5.5	5.7	
		Total:	74.40	Average selling price						
Location of shareholders		No. of shareholders	% of share held	Palm oil (RM per tonne ex-mill)	1,061	896	1,274	2,088	1,590	
Malaysia		12,296	94.20	Palm kernel (RM per tonne ex-mill)	539	472	992	1,129	858	
Singapore		374	0.40	Profit per mature ha (RM)	1,156	437	2,162	5,686	3,635	
United Kingdom		202	0.26	Group Financial Performance						
Others		3,227	5.41	Year ending June						
				2002						
				2001						
				2000						
				1999						
				1998						
Crop	Age (years)	Area in Hectares		Revenue (RM mill)	1,955.64	1,317.42	1,718.92	1,946.77	1,552.81	
		P.M.'sia	Sarawak	Profit before tax (RM m)	155.49	78.25	401.26	600.88	540.98	
		Indo-nesia	Total	Profit after tax (RM m)	106.76	57.17	330.01	596.63	453.75	
Oil Palm	>20	11,846	17,598	Earning per share (sen)	11.3	5.7	32.3	58.9	44.5	
	16-20	12,449	15,465	Dividend per share Gross (sen)	12.0	10.0	20.0	21.0	20.0	
	11-15	10,744	13,840	Dividend - Net cover (times)	1.2	0.7	2.0	3.9	3.1	
	<10	18,405	44,259	Share capital (RM m)	1,033.24	1,020.67	1,010.23	1,004.32	1,004.20	
Total Mature		53,444	91,162	Shareholder Funds (RM m)	3,913.41	3,833.69	3,786.28	3,608.40	3,169.56	
Total Immature		15,704	27,963	Return on Shareholder Funds (%)	3.0	1.5	8.6	16.4	14.1	
Total OP area		69,148	119,125	Contribution from Palm Oil Products to Total Revenue and PBT						
Rubber	>20	2,739	2,739	Revenue from palm oil products (% total)	31.8	31.4	33.3	42.1	42.7	
	16-20	1,000	1,000	PBT from palm oil products (% total)	42.3	49.4	46.1	72.1	48.9	
	11-15	3,836	3,836	Notes: 1. Own production						
	<10	822	822							
Total Mature		8,397	8,397							
Total Immature		4,227	4,227							
Total rubber area		12,624	12,624							
Other crops		2,006	2,111							
Total Planted Area		82,061	132,143							

Profile of Listed Plantation Companies: Hap Seng Consolidated Berhad

Background

The core business of Hap Seng Consolidated Berhad (Hap Seng), formerly known as The East Asiatic Company (Malaysia) Berhad is plantation ownership and operations and related processing activities. The Group has a total planted oil palm area of about 35,000 ha, all of which are located in Sabah; the main plantation areas are held under The River Estates Sdn Bhd (8 estates covering 20,958 ha) and 66% owned Jeroco Plantations Sdn Bhd (6 estates with 14,162 ha). Hap Seng has 4 palm oil mills in Sabah with a total throughput of 175 tonnes /hour.

Through its associate companies, Hap Seng is also involved in trading and manufacture of food products. It has a 19% equity interest in Lam Soon (Thailand) which is the country's leading producer and distributor of cooking oil and specialty fats and a 12% stake in Lam Soon (Hong Kong) Ltd., a subsidiary of one of Hong Kong's largest manufacturer and distributor of edible oils and flour and home care products.

In February, 2001, Hap Seng acquired a 25.13% interest in KLSE-listed PAOS Holdings Bhd which manufactures soap chips, finished soaps and palm-oil related edible products.

The Group is also involved in the dealership of Mercedes Benz logging and general purpose vehicles through wholly owned subsidiary, Si Khiong Industries Sdn Bhd. Its 100% owned Sasco Sdn Bhd is the major supplier of fertilisers and agrochemicals in East Malaysia.

Economic Aspects

- In Malaysia, Hap Seng is basically an upstream player in the palm oil supply chain. However, through its associate companies, it has been involved in various downstream activities such as palm oil refining, manufacture and distribution of edible oils in Thailand and Hong Kong. Kernel crushing is also undertaken in Thailand.
- The Group has recorded a rising trend in total FFB production in the past 5 years which is largely associated with an increasing crop productivity per ha.
- The contributions of the plantation operations to Group turnover and profit are not given as the Annual Report did not provide detailed segment analysis.
- The 3-fold increase in revenue recorded in FY2002 is mainly due to the incorporation of the full results of newly subsidiaries, Si Khiong Industries Sdn Bhd and Sasco Sdn Bhd.

Environmental Aspects

Social Aspects and Stakeholder Engagement

- Hap Seng is a founding member of the Gek Poh Foundation that was established with the following objectives:
 - "To provide free and subsidised education to the less privileged.
 - To support well documented, new entrepreneurial ideas and initiatives, which may be needing further research and development funding.
 - To support and undertake research work into the most suitable management approaches in a multi-racial society.
 - To support and provide cultural input into the society at a high moral level."
- The Gek Poh Foundation building was built in 1999 at the cost of RM 6 million to provide facilities for the less fortunate in Sabah.
- From January, 1999, the Gek Poh Foundation became the principal sponsor for Humana Child Aid Society Sabah, a charitable organisation that sets up schools in remote areas of Sabah where children do not have access to formal education.
- Hap Seng implemented an Employee Share Option Scheme for eligible employees in September, 1997.

Profile of KLSE Listed Plantation Companies
Hap Seng Consolidated Berhad

Corporate Information				Crop Production and Productivity - Oil Palm							
				Year ending 31st January							
				2002	2001	2000	1999	1998			
Chairman	: Datuk Henry Chin Poy-Wu			Mature area (ha)	27,562	26,972	27,158	23,329	20,844		
Registered office	: Hap Seng Consolidated Berhad (Incorporated in Malaysia) No. 1A, Jalan 205, 46050 Petaling Jaya, Selangor D.E., Malaysia.			Immature area (ha)	7,403	7,073	6,687	7,857	8,443		
Website	: www.hapseng.com.my			Total oil palm area (ha)	34,965	34,045	33,845	31,186	29,287		
Principal Bankers	: -			Total FFB production area (tonnes)	636,036	582,943	508,095	378,727	358,158		
Auditors	: Ernst & Young			FFB average yield per mature ha (tonnes)	23.24	21.77	18.84	16.37	17.34		
Major Shareholders	:			Palm oil (tonnes)	133,506	121,109	104,775	98,768	93,898		
Shareholder	No. of Shares	% of total		Palm kernel (tonnes)	29,700	26,413	23,276	22,949	21,593		
1. Malaysian Mosatics Berhad	312,016,000	52.80		<u>Mill Extraction Rates</u>							
2. Permodalan Nasional Berhad (PNB)	76,555,492	12.96		Palm oil (%)	21.41	20.96	20.31	20.23	20.06		
3. UOBM Nominees (Asing) Sdn Bhd	27,000,000	4.57		Palm kernel (%)	4.76	4.57	4.51	4.70	4.61		
4. Mayban Nominees (Asing) Sdn Bhd	25,000,000	4.23		<u>Average selling price</u>							
	Total:	440,571,492	74.56	Palm oil (RM per tonne)	900	1,311	1,666	1,898	1,347		
Location of shareholders	No. of shareholders	% of share held		Palm kernel (RM per tonne)	407	571	1,055	1,071	761		
				Profit per mature ha (RM)							
				Financial Performance							
				Year ending 31st January							
				2002	2001	2000	1999	1998			
Crop Area Statement as of 31st January 2002	Area in Hectares (t)			Revenue (RM million)	174.84	381.40	221.50	248.89	174.65		
Crop	Age (years)	P.M.'s/ia	Indo-nesia	Profit after tax, minority interests & extraordinary items (RM million)	151.82	346.47	131.14	139.34	114.68		
Oil Palm	>20	194	2,103	Net Earning per share (sen)	118.59	57.1	101.57	113.23	80.95		
	16-20	7,415	7,415	Gross Dividend per share (sen)	20.0	13.5	16.5	18.2	13.0		
	11-15	2,263	2,263	Dividend - Net cover (times)	10.5	13.5	11.0	5.0	10.0		
	<10	2	22,988	Paid-up capital (RM million)	622.66	622.66	622.66	622.66	311.33		
Total Mature		196	27,366	Shareholders' Funds (RM million)	1,337.32	1,304.37	995.52	964.53	879.72		
Total Immature		7,403	7,403	Return on Shareholders' Funds (%)	8.9	26.6	10.2	11.7	9.2		
Total OP area		196	34,769	Contribution from Palm Oil Products to Total Revenue and PBT							
Rubber	>20			Revenue from palm oil products (% total)							
	16-20			PBT from palm oil products (% total)							
	11-15			Notes:							
	<10										
Total Mature											
Total Immature											
Total rubber area			86								
Other crops											
Total Planted Area		196	34,855								
			86								
			35,051								
			100.0								

Profile of Listed Plantation Companies:

IOI Corporation Berhad (IOI)

Background

Originally established as a manufacturer of industrial gas in 1969, IOI Corp ventured into the plantation business from zero base through a series of acquisitions of established plantation companies over the past 20 years. The initial entry was the acquisition of Bukit Dinding Estate, Pahang with 1,214 ha. By year 1990, the Group's total plantation hectareage had expanded to more than 45,000 ha, the significant acquisitions being 10,900 ha in the Kinabatangan district from a cocoa company in 1985 and 27,880 ha from Dunlop Estates (13 estates, 2 mills, 2 factories and a research station) in 1990. The 1990s saw further expansion of IOI plantation area, At present, IOI's total planted area is 100,954 ha in 53 estates, of which 98% are under oil palm cultivation. More than 60% of the Group's oil palm area is in Sabah.

Following a strategy of positioning itself in various segments along the palm oil value chain, IOI ventured into the oleochemical business with the acquisition of a 32.96% stake in Palmco Holdings Berhad in March, 1997. In the same year, IOI also commissioned its own palm oil refinery in Sandakan, Sabah. Palmco, which is the country's largest and integrated oleochemical complex became a subsidiary of the Group in October, 2001 when IOI raised its stake to 60.5%.

IOI moved further down the supply chain with the acquisition of Unilever's Oils and Fats Division, Loders Croklaan BV for 217 million euros in August, 2002. Loders Croklaan has factories in the Netherlands, USA, Canada and Egypt.

While plantations is considered the Group's 'anchor business', IOI is also a major player in property development and manufacturing (refined palm oil, oleochemicals)

Economic Aspects

- IOI is involved in most upstream and downstream activities in the palm oil supply chain, from production of crude palm oil, refined oil to production of oleochemicals. The recent acquisition of Unilever's Loders Croklaan BV has given IOI market access to Europe, North America and Latin America. It has become a global supplier of specialty fats for the food industry with a customer base that includes Nestle, Cadbury and Kraft (NST 31.08.02)
- Funds required for the acquisition of Loders Croklaan was arranged by ABN Amro Holding BV.
- Over a period of 20 years, IOI has emerged to be a major player in the plantation industry and has chartered impressive growth in plantation area, revenue and improvements in productivity. The Group achieved its highest profit before tax of RM 571 million during FY2002.
- Plantations operation, principally palm oil has been the major contributor to IOI's revenue and profit. Plantations accounted for 75% of IOI's PBT during FY1999 when palm oil price reached its highest. During the price slump in FY2001, plantations share of the profits dropped to 23% but it recovered to 37% in 2002 following a recovery in palm oil prices.
- IOI has maintained good crop productivity and OER; the highest yield per ha was in FY2001 at 24.2 tonnes per ha which is about 20% than the industry average. The highest OER was 21.28% recorded in FY2002. The Group has set the target of increasing its palm oil yield by 50% (NST 31.01.02)

Environmental Aspects

- IOI's position on the environment was given in the Chairman's Statement in the 1999 Annual Report – "The Group subscribes to an environment protection policy and strives to ensure that our Group operations and development are conducted without any detrimental effect to the environment."
- In the 2001 Annual Report, environment was mentioned under Best Estate Practices – "Environment friendly practices such as the no-burn technique, soil and moisture conservation, recycling of by-products to the fields from the mills and biological control of rats continue to be implemented".
- The Group invested more than RM 1 million during the past 5 years on a pilot study to find better uses for oil palm waste, such as conversion of biomass into fibres for the furniture and pulp industries.
- In its review of plantations operations in the 2002 Annual Report, IOI stated that "we adopt plantation and agronomic practices that strive to ensure that yields are enhanced, resource inputs are optimised and wherever possible, be of renewable resources and that any adverse effects on soil fertility, water and air quality and other and other environmental effects are minimised".

Social Aspects and Stakeholder Engagement

- The Group's foundation, *Yayasan Tan Sri Dato' Lee Shin Cheng* provides scholarships and other educational assistance to needy students, total for 2000 and 2001 being RM 1,400,000 and RM 700,000 respectively.
- IOI supports the Chair for plantation management studies at Universiti Putra Malaysia. (UPM). In recognition for his contribution to plantation agriculture, IOI's Chairman received the Hon. PhD in Agriculture from UPM in 2002.
- On training of its employees, IOI has placed emphasis on IT and technical skills training.
- IOI introduced an Executive Share Option Scheme (ESOS) in April, 1995.

Profile of KLSE Listed Plantation Companies
IGI Corporation Berhad

Corporate Information		Crop Production and Productivity - Oil Palm						
		Year ending 30 th June						
		2002	2001	2000	1999	1998		
Chairman	: Tan Sri Dato' Lee Shin Cheng							
Registered office	: 7-10 Jalan Kenari 5, Bandar Puchong Jaya, Off Jalan Puchong 47100 Puchong, Selangor D. Ehsan, Malaysia.							
Website	: www.igigroup.com							
Principal Bankers	: Malayan Banking Berhad, Citibank Berhad, Standard Chartered Bank Malaysia Berhad, RHB Bank Berhad							
Auditors	: BDO Binder							
Major Shareholders	:							
Shareholder		No. of Shares	% of total					
1. Progressive Holdings Sdn Bhd (1)		107,176,139	12.03					
2. RHB Merchant Nominees (Tempatan) Sdn Bhd (2)		53,000,000	5.95					
3. RHB Capital Nominees (Tempatan) Sdn Bhd (2)		40,000,000	4.49					
4. Employees Provident Fund Board		40,000,000	4.75					
		227,429,139	25.53					
Location of shareholders		No. of shareholders	% of share held					
Malaysia		487,286,807	54.7					
Other countries		403,548,306	45.3					
Crop Area Statement as of 30th June 2002		Year ending 30th June						
Crop	Age (years)	Area in Hectares					1999	1998
		P.M.'sia	Sabah	Sarawak	Indo-nesia	Total		
Oil Palm	>20							
	16-20							
	11-15							
	<10							
Total Mature		25,066	59,969			85,035	84.2	
Total Immature		9,900	3,929			13,829	13.7	
Total OP area		34,966	63,898			98,864	97.9	
Rubber	>20							
	16-20							
	11-15							
	<10							
Total Mature		1,776				1,776	1.8	
Total Immature								
Total rubber area		1,776				314	0.3	
Other crops								
Total Planted Area		37,056	63,898			100,954	100.0	
Group Financial Performance		Year ending 30th June						
Crop		Year ending 30th June					1999	1998
		2002	2001	2000	1999	1998		
Oil Palm	Revenue (RM million) net	2,410.50	1,291.58	1,306.69	1,411.92	935.13		
	Profit before tax (RM million)	570.50	458.46	501.65	462.19	316.82		
	Profit after tax (RM million)	458.23	362.20	379.99	462.41	243.83		
	Earning per share (sen)	41.2	34.6	36.0	45.0	23.6		
	Dividend per share - Gross (sen)	15.0	12.5	10.0	6.0	3.0		
	Dividend - Net cover (times)	3.7	3.9	5.0	10.4	10.9		
	Share capital (RM million)	447.99	425.03	423.94	422.47	422.07		
	Shareholder Equity (RM million)	2,938.28	2,492.80	2,223.81	1,987.25	1,644.39		
	Return on Shareholder s' Equity (%)	12.8	12.2	14.2	20.6	12.7		
Contribution from Plantations to Total Revenue and PBT								
	Gross revenue from plantations (% total)	23.3	26.0	30.7	34.0	37.1		
	PBT from plantations (% total) (3)	36.9	23.2	41.0	74.8	63.7		
Notes:								
(1) Substantial shareholders include the Executive Chairman, his wife and son by virtue of their interests in Progressive Holdings Sdn Bhd.								
(2) Pledged Securities Account for Progressive Holdings Sdn Bhd								
(3) PBT = Profit before interest and tax								

Profile of Listed Plantation Companies: Kuala Sidim Berhad

Background

Kuala Sidim was originally known as the Kuala Sidim Rubber Company Ltd until December 1994 when it assumed its present name. The company is a subsidiary of Boustead Holdings Berhad which manages more than 100,000 ha of plantation land. Kuala Sidim is primarily a plantation-based company with a total land bank of 73,325 ha, of which 75% had been planted. The company owns and operates 38 estates; 14 are located in Peninsular Malaysia, 21 in Sabah/Sarawak and 2 in Sumatra, Indonesia. It operates 7 palm oil mills with a total capacity of 240 tonnes FFB /hour.

Kuala Sidim's entry into Sarawak was in September, 1994 through a 60:40 Joint Venture with the Land Custody and Development Authority (LCDA) of Sarawak to develop a 10,000 ha plantation under Logan Bunut Plantations Sdn Bhd

The Group expanded its operations to Indonesia with a 65% equity interest in P.T. Dendymarker Indahlestari in June, 1995 and subsequently, a 52% stake in P.T. Anam Koto. As at 31.12.01, the book value of investments in Indonesia was RM 193 million. . In 2001, 1065 ha of land in P.T. Anam Koto was affected by fire while the plantation in P.T. Dendymarker Indahlestari experienced operational difficulties because of socio-economic and political problems. The Group has since put on hold further developments in Indonesia.

Kuala Sidim is involved in agricultural research and advisory services through a 25% equity interest in Applied Agricultural Research Sdn Bhd (AAR).

Economic Aspects

- Kuala Sidim is an upstream player in the supply chain, being involved primarily in the cultivation and production of crude palm oil.
- With 99% of its planted area under oil palm, Kuala Sidim's financial performance would be influenced to a major extent by fluctuations in palm oil prices; good revenue and profit before tax were recorded during high price periods in FY1998 and FY1999 while PBT was slashed by about 70% when prices slumped in FY2000 and FY2001. In fact, PBT for 2001 would have declined by 82% compared with 1999, if the extraordinary gain of RM 14.6 million from sale of land had not been included.
- A segment analysis by geographical areas given in the 2000 Annual Report showed that operations in Peninsular Malaysia and Sabah accounted for 97.5% and 96.1% of the Group's revenue for FY2000 and FY2001 respectively and they were also the main contributors to total PBT. Sarawak operations incurred losses in both years while Indonesia's contribution was insignificant.
- Crop productivity in terms of FFB yield /ha and mill extraction rates were satisfactory in the last 5 years. In the effort to raise productivity and efficiency, the Group implemented the *Site Yield Potential Model* developed in collaboration with AAR in 2000. The model allows the setting of site-specific yield potentials and ways towards achieving these potential production.

Environmental Aspects

Social Aspects and Stakeholder Engagement

- An Employees Share Option Scheme was implemented in May, 1996 to enable eligible employees to have an equity interest in Kuala Sidim's parent company, Boustead Holdings berhad.

Profile of KLSE Listed Plantation Companies:
Kuala Sidim Berhad

Corporate Information		Crop Production and Productivity - Oil Palm						
		Year ending * December # June	* 2001	* 2000	* 1999	# 1998	# 1997	
Chairman	Y. Bhg. Gen (Rtd) Tan Sri Dato' Mohd Ghazali Hj. Che Mat	Mature area (ha)	44,940	39,969	36,672	34,285	30,763	
Registered office	Tingkat 28, Menara Boustead, 69, Jalan Raja Chulan, 50200 Kuala Lumpur, Malaysia	Immature area (ha)	27,450					
Website		Total oil palm area (ha)	72,390					
Principal Bankers	HSBC Bank Malaysia Berhad, Malayan Banking Berhad, Aflin Bank Berhad, The Bank of Nova Scotia Berhad	Total FFB production area (tonnes) (1)	830,121	770,198	783,296	641,130	634,703	
Auditors	PricewaterhouseCoopers	FFB yield per mature ha (tonnes)	19	19	22	19	21	
Major Shareholders	:As at 10 th April, 2002	Milil Productivity						
Shareholder		Palm oil (tonnes)	160,234	135,262	138,522	126,724	128,822	
Boustead Holdings Berhad	No. of Shares	Palm kernel (tonnes)	41,370	35,419	34,671	32,562	33,595	
Lembaga Tabung Angkatan Tentera	% of total	Milil Extraction Rates						
Yeoh Kean Hua	70,315,632	Palm oil (%)	19.8	19.4	19.5	20.3	20.1	
	26,712,031	Palm kernel (%)	5.1	5.1	4.8	5.2	5.2	
	3,400,000	Average selling price						
Location of shareholders	No. of shareholders	Palm oil (RM per tonne)	852	985	1,430	1,673	1,203	
	% of share held	Palm kernel (RM per tonne)	418	670	1,058	855	748	
		Profit per mature ha (RM) (2)	605	998	3,615	4,346	2,823	
Crop Area Statement as at 31 st December, 2001		Year ending * December # June						
Crop	Age (years)	Area in Hectares					# 1998	# 1997
		P.M'nsia	Sabah	Sarawak	Indo-nesia	Total		
Oil Palm	>20							
	16-20							
	11-15							
	<10							
Total Mature						44,940	61.3	219
Total Immature						27,450	37.4	86
Total OP area		19,644	22,538	19,333	10,875	72,390	98.7	71
Rubber	>20							51.5
	16-20							20.0
	11-15							3.7
	<10							125
Total Mature								746
Total Immature								11.4
Total rubber area		399				399	0.6	
Other crops		399				399	0.6	
Total Planted Area		85	194	257		536	0.7	
		20,128	22,732	19,590	10,875	73,325	100.0	
Contribution from Palm Oil Products to Total Revenue and PBT		Year ending * December # June						
Revenue from palm oil products (% total)								
PBT from palm oil products (% total)								
Notes: 1. Own FFB crop								
2. Profit per ha before replanting								

Profile of Listed Plantation Companies: Kulim (Malaysia) Berhad

Background

Kulim (Malaysia) Berhad came under the control of Johor Corporation through the acquisition of Tereh Estate with 5,803 hectares of oil palm in December, 1976. Further acquisitions of plantations and controlling interests in plantation companies, in Malaysia and overseas since then have made Kulim a major upstream player in the industry, with a total planted area of about 60,000 ha of oil palm. In 1966, Kulim acquired a 80% interest in New Britain Palm Oil Ltd in Papua New Guinea (NBPOL) with 25,000 ha of oil palm in 13 estates. In 1996-98, the Group expanded its plantation operations to Indonesia with 60% interests in 3 companies in Sumatra (P.T. Trimitra Panquest Plantation, P.T. Multrada Multi Maju, P.T. Padang Bolak Jaya).

In an effort to maximise land use and profitability, Kulim embarked on intercropping of oil palm with Cavendish bananas in one estate in Johor.

Kulim moved downstream with the acquisition of Natural Oleochemicals Sdn Bhd (Natoleo), a manufacturer of oleochemicals, in July 1994. Natoleo has an annual production capacity of 150,000 tonnes to produce various grades of fatty acids and glycerine. The Group is also involved in the manufacture of latex-dipped products and it supplies more than 60% of the world market for latex swimming caps.

With some of its plantations located in prime areas around Johor Bahru, Kulim went into property development in 1984 through public-listed subsidiary, Johor Land Berhad.

Economic Aspects

- Plantations operations is Kulim's main core business, accounting for 55% to 70% the Group's revenue for the last 5 years, of which, the main contribution came from operations in Papua New Guinea as shown below:

Country	% of Revenue from Plantation Operations			
	2001	2000	1999	1998
Malaysia	38.3	37.3	47.9	43.7
PNG	60.4	62.0	51.7	56.0
Indonesia	1.3	0.7	0.4	0.3

- Contribution of plantations to Group's PBT had varied to a large extent with palm oil price; a loss of RM 0.78 million was recorded in 2000. Comparing country contributions, PNG operations had consistently given the highest PBT while plantations in Indonesia have yet to make a positive contribution. Malaysian plantations was responsible for 47% of the total PBT in 1999 but incurred substantial losses in the subsequent 2 years.
- On productivity, the FFB yield per ha of the Malaysian estates significantly higher than the national average in the last 5 years, highest average yield being obtained in 1999 at 25.65 tonnes/ha. Kulim has also reported marked improvement in worker productivity through mechanisation of field operations (10.5 ha per worker).
- The oleochemicals unit is the second core business, with contributions to revenue rising from 23.3% in 1998 to 38.1% in 2001 and PBT increasing from RM 16.1 million to RM 53.5 million during the same period.

Environmental Aspects

- In its 1999 Annual Report, Kulim provided a brief account of environmental management in the Group's plantations which included the statement that "we maintain a strictly enforced zero-burning policy both in Malaysia and abroad while all our palm oil mill effluent is used back in the fields as fertiliser".
- Kulim entered into an agreement with Asia Green Environment Sdn Bhd in 2000 to produce compost from empty fruit bunches. Commercial production is expected to commence this year.

Social Aspects and Stakeholder Engagement

- The Statement to Shareholders in the 1999 Annual Report included a mention of Kulim's corporate responsibility towards employee welfare. Free home ownership has been given to employees who have served the Group for more than 10 years.
- For needy school children in the Group's estates. Kulim has made contributions of computers, school uniforms and books/stationery.

Profile of KLSE Listed Plantation Companies
Kulim (Malaysia) Berhad

Corporate Information		Crop Production and Productivity - Oil Palm in Malaysia (2)							
		Year end 31 st December	2001	2000	1999	1998	1997		
Chairman	:Tan Sri Dato' Muhammad Ali Hashim	Mature area (ha)	23,300	23,058	24,556	24,599	24,939		
Registered office	:Ulu Tiram Estate, K.B. 705, 80990 Johor Bahru, Johor, Malaysia	Immature area (ha)	6,347	5,150	3,675	3,345	3,024		
Website	:	Total oil palm area (ha)	29,647	28,208	28,231	27,944	27,963		
Principal Bankers	:5 Malaysian banks as listed in Note 1.	Total FFB production area (tonne)	528,159	542,097	629,727	545,004	563,334		
Auditors	:PricewaterhouseCoopers	FFB yield per mature ha (tonne)	22.67	23.51	25.65	21.07	21.50		
Major Shareholders	:	Mill Productivity							
Shareholder		Palm oil – own crops (tonnes)	84,634	89,824	100,913	88,198	89,323		
Johor Corporation (Direct & Indirect)		Palm kernel – own crops (tonnes)	26,678	28,556	32,166	28,531	28,438		
Employees Provident Fund Board		Mill Extraction Rates							
Lembaga Tabung Haji		Palm oil (%)	18.78	18.51	18.62	18.83	18.84		
PUB Capital Sdn Bhd		Palm kernel (%)	5.69	5.66	5.69	5.17	5.71		
		Average selling price							
Analysis of shareholders		Palm oil (RM per tonne locally delivered)	889	1,122	1,692	1,779	1,280		
Malaysian		Palm kernel (RM per tonne ex-mill)	448	745	1,028	960	709		
Foreigners		Profit per mature ha (RM)							
Crop Area Statement as of 31 st December, 2001 (Excluding Indonesia)		Group Financial Performance							
Crop	Age (years)	Area in Hectares			Year end 31 st December			1997	
		Malaysia	Indonesia	Papua New Guinea	2001	2000	1999		1998
Oil Palm	>20				702.57	868.19	995.29	1,127.64	843.55
	16-20				12.70	(0.78)	215.84	215.46	197.39
	11-15				(15.11)	(59.15)	197.75	43.43	(68.40)
	<10				(8.0)	(31.3)	104.6	23.0	(36.2)
Total Mature		23,300	8,892	21,947	5.0	5.0	10.0	10.0	7.5
Total Immature		6,347	1,533	3,358	3.3	3.3	3.6	4.5	2.7
Total OP area		29,647	10,425	25,305	94.53	94.53	94.53	94.53	94.53
Rubber	>20				2,214.59	2,281.86	2,355.31	2,230.94	2,226.64
	16-20				Negative	Negative	9.2	5.3	4.7
	11-15								
	<10								
Total Mature		401			55.8	55.7	61.7	69.9	64.9
Total Immature					Negative	Negative	84.2	78.9	
Total area		401							
Other crops		548							
Total Planted Area		30,596	10,425	25,305					
		Contribution from Plantation Operations to Total Revenue and PBT							
		Revenue from plantations (% total)			55.8	55.7	61.7	69.9	64.9
		PBT from plantations (% total)			Negative	Negative	84.2	78.9	
		Notes: 1. Bankers: Bumiputra Commerce Bank Berhad, Malayan Banking Berhad, OCBC Bank (M) Berhad, RHB Bank Berhad, Standard Chartered Bank Malaysia Berhad							
		2. In 2001, 498,529 tonnes of FFB were produced in PNG, average FFB/ha being 22.72 tonnes. Totals palm oil production from own crop was 108,558 tonnes.							

Profile of Listed Plantation Companies:

Kuala Lumpur Kepong Berhad (KLK)

Background

KLK's history dates back to 1906 when The Kuala Lumpur Rubber Company Limited (KLR) set up a head office in London to oversee 600 hectares of rubber and some coffee planted in Malaya. KLR changed its name to Kuala Lumpur-Kepong Amalgamated (KLKA) in 1960. Following a restructuring scheme initiated by KLK's Founder Chairman, the late Tan Sri Dato' Lee Loy Seng to transfer the domicile of the company back to Malaysia in 1973, KLKA went into liquidation and KLK took over the assets and liabilities of KLKA.

Today, KLK is one of the major plantation companies in Malaysia with a planted area of 135,391 hectares, of which 83% is planted with oil palm and 16% is under rubber. Geographically, 45% of the planted area is located in Peninsular Malaysia, 29% in Sabah and 26% in Indonesia (in Riau Province, Sumatra and in the Island of Belitung)

While plantations have been the core business of the Group since its foundation, KLK has integrated its business operations vertically in the 1990s to minimise the impact of fluctuations in commodity prices and to add value to resource-based products. Downstream activities include the manufacture of cocoa products, rubber and wood-based products and the manufacture of oleochemicals. KLK is also involved in non-resource-based manufacturing - the production of specialty chemicals and pharmaceutical intermediates through its London Stock Exchange listed associate company, Yule Catto & Co Plc

In 1996, KLK went into retailing through the acquisition of the Crabtree & Evelyn Group which has more than 300 specialty stores in more than 27 countries.

KLK has also ventured into property development.

Economic Aspects

- With the vertical integration of its business activities, KLK is involved in many aspects of the supply chain of palm oil, from the production of crude palm oil, refined palm and oleochemicals. The Group is also involved in joint-venture edible oil operations in Pakistan and the Peoples' Republic of China.
- Oil palm is the main contributor to the Group's revenue and profit. However, returns had declined significantly during the past two years because of poor commodity prices. The profit per mature had dropped from RM 5,154 per tonne in FY1999 to RM 2,483 in 2000, a decline of 52% and by another 60% to RM 1,001 per tonne in FY2001.
- As the result of an aggressive replanting policy in Malaysia and new planting in its Indonesian operations, about 30% of the planted area is immature while 40% of the palms are below 10 years of age. However, this augurs well for future production growth. For FY 2001, Sabah became the highest contributor to the Group's crop while production from the Indonesia estates had doubled.
- The increased proportion of crop from newly matured areas had reduced the Group's productivity from 21.28 tonnes FFB per ha in 2000 to 20.95 tonnes in 2001.
- KLK oil mills have maintained an OER performance of above 19% in the last 5 years, the highest level being recorded in 2001. One mill, Tanjong Malim Oil Mill received the *Anugerah Industri Sawit Malaysia* award in 1999 and 2000 for excellence in OER performance.

Environmental Aspects

- In its published Corporate Philosophy, KLK "believe that our products should consistently of the highest quality, manufactured in accordance with Good Manufacturing Practices (GMP) and under environmentally friendly conditions".
- The Group's environmental policy was published in the 2001 Annual Report as :
"We are committed to keep our environment clean, safe and healthy.
We will continue to promote greater environmental awareness in our daily activities
Preservation of the environment is the responsibility of everybody in the Company"
- Tanjong Malim Oil Mill was certified to the ISO 14001 Environmental Management System standard in July, 2001. (KLK has a total of 13 mills in Malaysia)

Social Aspects and Stakeholder Engagement

- KLK's corporate mission has two dimensions, one of which is "to be a good and responsible corporate citizen".
- The Group has operated the KLK Training Centre for the past 20 years to conduct refresher training courses for existing employees and orientation programmes for new employees.

Profile of KLSE Listed Plantation Companies

Kuala Lumpur Kepong Berhad (1)

Corporate Information		Crop Production and Productivity - Oil Palm in Malaysia						
Chairman		Year ending 30th September						
Registered office		2001	2000	1999	1998	1997		
: Dato' Lee Oi Hian		76,589	65,452	59,943	55,669	54,311		
: Kuala Lumpur Kepong Berhad, Wisma Talko, 1 Jalan S.P. Seenvissagam, 30000 Ipoh, Perak D. Ridzuan.		35,505	41,302	41,524	41,135	30,844		
: -		112,104	106,754	101,467	96,804	85,155		
: Malayan Banking Berhad / HSBC Bank Malaysia Berhad / Public Bank Berhad / RHB Bank Berhad		1,604,385	1,392,674	1,271,165	1,128,694	1,228,407		
: KPMG		20,95	21,28	21,21	20,28	22,62		
Major Shareholders		Year ending 30th September						
Shareholder		Year ending 30th September						
		2001	2000	1999	1998	1997		
1. Batu Kawan Berhad		424,313	358,039	340,232	308,335	320,771		
2. Permodalan Nasional Berhad		114,874	104,364	98,071	94,311	95,420		
3. Employees Provident Fund Board (KWSP)								
4. Amanah Raya Nominees (Tempatan) Sdn Bhd		19.9	19.3	19.1	19.1	19.0		
Total:		5.4	5.6	5.5	5.9	5.7		
Location of shareholders		Year ending 30th September						
		2001	2000	1999	1998	1997		
Local		824	1,131	1,711	1,847	1,216		
Foreign (Singapore and UK)		938	1,953	2,490	2,064	1,627		
		440	927	1,086	1,013	748		
		1,001	2,483	5,154	5,753	3,190		
Crop Area Statement as of 30 th September, 2001		Year ending 30th September						
		2001	2000	1999	1998	1997		
Crop		Area in Hectares						
		P. M'sia	Sabah	Sarawak	Indo-nesia	Total	Total Planted Area %	
Oil Palm		>20	10,363	6,590	-	16,953		1,690.90
		16-20	3,722	3,560	-	7,282		293.42
		11-15	5,460	4,154	-	9,614		221.70
		<10	8,472	21,419	14,739	44,630		31.1
Total Mature			28,017	35,723	14,739	78,479	58.0	15.0
Total Immature			15,082	3,456	15,748	34,286	25.0	2.9
Total OP area			43,099	39,179	30,487	112,765	83.0	712.80
Rubber		>20	2,413	-	-	2,413		2,650.69
		16-20	2,206	-	-	2,206		8.4
		11-15	6,023	-	-	11,051		
		<10	1,157	-	-	1,157		
Total Mature			11,799	-	5,028	16,827	12.0	39.9
Total Immature			5,329	-	-	5,329	4.0	58.5
Total rubber area			17,128	-	5,028	22,156	16.0	
Cocoa			359	111	-	470	1.0	
Total Planted Area			60,586	39,290	35,515	135,391	100.0	
Financial Performance		Year ending 30th September						
		2001	2000	1999	1998	1997		
Revenue (RM million)		2,041.61	2,224.10	2,404.26	2,334.73	1,690.90		
Profit before tax (RM million)		106.56	290.08	399.33	367.94	293.42		
Profit after tax (RM million) (5)		61.20	201.88	370.41	273.96	221.70		
Earning per share (sen)		8.6	28.4	52.1	38.4	31.1		
Dividend per share - Gross (sen)		15.0	20.0	20.0	25.0	15.0		
Dividend - Net cover (times)		0.8	2.0	3.6	2.1	2.9		
Share capital (RM million)		712.52	712.52	712.52	712.80	712.80		
Shareholders' Funds (RM million)		3,242.39	3,263.32	3,230.76	2,955.89	2,650.69		
Return on Shareholders' Funds (%)		1.9	6.2	11.5	9.3	8.4		
Contribution from Palm Products to Total Revenue and PBT		Year ending 30th September						
		2001	2000	1999	1998	1997		
Revenue from palm products (% total)		29.4	33.8	39.5	41.4	39.9		
PBT from palm oil products (% total)		41.6	44.1	74.5	74.1	58.5		
Notes:								
1 - Kuala Lumpur Kepong Berhad is also listed in the London Stock Exchange.								
2 - Weighted average hectares.								
3 - Own estates production.								
4 - Profit per mature hectare - before replanting expenditure								
5 - Profit after taxation and minority interests								
6 - Production from total FFB processed inclusive of outside FFB purchases.								

Profile of Listed Plantation Companies: Kumpulan Guthrie Berhad (KGB)

Background

Kumpulan Guthrie has a history exceeding 180 years, commencing in 1821 with the establishment of Guthrie & Co as a trading company in Singapore. The company acted as agents for 12 UK companies with plantations in then Malaya. These companies merged in 1965 as Guthrie Plc and listed on the London Stock Exchange (LSE). Ownership of the company was transferred to Malaysian interests through a 'dawn raid' on the LSE in 1981. The new company turned public and was renamed Kumpulan Guthrie Berhad in December, 1987

At present, KGB is among the biggest plantation companies in Malaysia, with a titled area of 107,475 hectares and planted area of 92,471 hectares, of which more than 99% is under oil palm. Other core businesses of the Group are property development (including construction of the Guthrie Corridor Expressway), manufacturing (wood-based and latex-based) and Trading.

KGB also owns 57.9% and 54.5% of listed plantation companies Guthrie Ropel Berhad and Highlands & Lowlands Berhad.

The Group has operations in UK, USA, Liberia Mauritius, Thailand and Indonesia. A joint venture company, P.T. Guthrie Pecconina Indonesia (with 70% KGB interest) was formed in 1995 to develop oil palm plantations in Palembang, South Sumatra. At the end of 2001, 15,517 hectares of forest land of the 60,000 ha concession have been acquired and 12,729 have been planted with oil palm. In March, 2001, KGB acquired interests in 25 companies in Holdiko Palm Plantations which has since been renamed as Minamas Plantation. The acquisition which covered area of about 200,000 hectares of oil palm raised the titled area in Indonesia to 215,047 hectares and the Group total land area to 322,522 hectares..

Economic Aspects

- In the oil palm supply chain, KGB is essentially an upstream player, being one of the largest producer of crude palm oil. This position has been enhanced significantly by the recent acquisition of Minamas Plantations in Indonesia, which tripled the Group's land bank. Expansion into Indonesia is built on the rationale that the plantations there are capable for achieving higher yield per hectare, higher OER % and a lower cost of production than those in Malaysia. However, the current production at 13 tonnes FFB/ha is considered low as majority of the plantings are young. With the move into Indonesia, KGB has become one of the largest producers of crude palm oil in the world.
- The plantations core business, particularly palm products is traditionally the major contributor to the Group's revenue and profit. However, actual contributions vary with commodity prices. Whereas record palm oil prices realised in 1998 resulted in plantations contributing 86% of the Group's PBT, a RM 70.3% loss was recorded when the palm oil price slumped in year 2001.
- The FFB yield per ha remained rather static over the past 5 years but there was marked improvement in the OER performance in 2001, reflecting improved mill efficiency. The Group has set itself the *Vision 25:25* which aims to increase the Group's yield per hectare and OER to 25 tonnes and 25% respectively by 2007.
- KGB has a good corporate track record; it was the recipient of KLCE's Corporate Sector Award (Plantations) in 2000 and 2001 maintaining excellent standards in corporate governance, accountability, business ethics etc.

Environmental Aspects

- Published Group 'Health Safety and Environment Policy' in Annual Reports (See [Appendix II](#))
- An independent corporate division (*Plantation Advisory & Quality Assurance Dept*) monitors implementation and compliance of Group's environmental practices in estates, mills and factories.
- Group's environmental activities are reported in a separate section in Annual Reports.
- Received the 2001 NACRA Environmental Reporting Award for the best environmental reporting among KLSE listed companies.
- Among BMPs, KGB pioneered the furrow irrigation method of field application of treated effluents as an alternative source of nutrients in 1975.
- KGB reported that 90% of the biomass of oil palm has been utilised, mainly in the form of mulch and source of nutrients in the plantation.
- Received ISO 14001 EMS certification for the palm oil mill in Tanah Merah, Negri Sembilan in 1998. (KGB has 12 palm oil mills in Malaysia).
- The 2001 Annual Report stated that KGB's focus on sustainable development is on "regular monitoring and audit for all possible sources of pollution", improving existing practices to ensure total compliance of relevant laws, regulations and standards and introducing new processes that are eco-efficient".

Social Aspects and Stakeholder Engagement

- The acquisition of Minamas Plantations had increased the number of workers employed from 14,437 to 49,008.
- KGB has an Employees Share Option Scheme for eligible non-executive and executive staff.
- Performance of employees is aligned to their individual Key Results Areas (KRAs),
- The Group's foundation, *Yayasan Guthrie*, supports a number of community and educational projects, a notable one being the *Rakan Jayadiri* or 'Partners in Self-Reliance' programme which was initiated in 1995 to give poor and underprivileged rural youth a head start in life. Candidates undergo a six-month intensive training in various subjects, including language proficiency, computer literacy and motivational courses. Since its inception, more than 250 youth have successfully undergone the programme.
- On education, *Yayasan Guthrie* made a RM 1 million contribution towards the educational foundation, *Yayasan Tun Ismail Ali* in 2001.

Profile of KLSE Listed Plantation Companies
Kumpulan Guthrie Berhad

Corporate Information			Crop Production and Productivity - Oil Palm In Malaysia (1)						
Year ending 31 st December			2001	2000	1999	1998	1997		
Chairman	: Tan Sri Dato' Musa Hitam								
Registered office	: Wisma Guthrie, 21 Jalan Gelanggang, Damansara Heights, 50490 Kuala Lumpur, Malaysia								
Website	: www.kumpulanguthrie.com								
Principal Bankers	: Malayan Banking Berhad / RHB Bank Berhad / Citibank Berhad Bumiputra-Commerce Bank Berhad / HSBC Bank Malaysia Berhad								
Auditors	: Ernst & Young								
Major Shareholders									
Shareholder		No. of Shares	% of total						
1. Permodalan Nasional Berhad (PNB)		460,287,000	46.01						300,010
2. Skim Amanah Saham Bumiputra (SASB)		272,089,000	27.20						98,660
3. Employees Provident Fund Board		71,690,000	7.17						19.0
4. Bimsec Nominees (Asing) Sdn Bhd		48,778,224	4.88						6.3
	Total:	1,449,276,000	85.26						
Classification of shareholders		No. of shareholders	% of share held						
1. Malaysians		7,750	96.68						1,296
2. Foreigners		266	3.32						744
									2,817
Crop Area Statement as of 31st December, 2001			Year ending 31 st December						
Crop	Age (years)	Area in Hectares			2001	2000	1999	1998	1997
		M'sia	Indo-nesia	Total	Total Planted Area %				
Oil Palm	>20								
	16-20								
	11-15								
	<10								
Total Mature		65,294	139,782	205,076	80.3				
Total Immature		26,569	21,814	48,383	19.0				
Total OP area		91,863	161,596	253,459	99.3				
Rubber	>20								
	16-20								
	11-15								
	<10								
Total Mature		608	1,236	1,844	0.7				
Total Immature		-							
Total rubber area									
Other crops									
Total Planted Area		92,471	162,832	255,303	100.0				
Contribution from Plantations to Total Revenue and PBT			Year ending 31 st December						
Revenue from plantations (% total)			29.0	29.4	36.1	43.1			
PBT from plantations (% total)			Negative	8.9	52.8	85.7			
Notes:									
1 - In 2001, plantations in Indonesia produced 918,525 tonnes FFB and 208,572 tonnes palm oil. Average yield/ha = 6.5 tonnes and OER = 22.4%.									
2 - Own crop									

Profile of Listed Plantation Companies: PPB Oil Palms Berhad (PPBOP)

Background

PPB Oil Palm Berhad entry into the plantation industry was through Perlis Plantations Berhad (PPB) which started its oil palm operations in Sabah and Sarawak in the mid-1980s. PPBOP was incorporated in January 1996 following the merger of PPB and its joint venture plantation companies in East Malaysia. The Group had chosen to invest in Sabah and Sarawak in response to the State Governments encouragement and incentives for development of plantations as a strategy to broaden their economic base. Furthermore, the location of plantations in East Malaysia would provide a competitive advantage in shipment of edible oils to the large emerging market in China.

In 2000, PPBOP expanded its operations to Indonesia through subsidiary companies PT Tidar Sungkai Sawit and PT Mustika Sempuluh in West Sumatra and Central Kailmantan respectively with a total land bank of 25,272 hectares. The planted area to date is 8,641 hectares.

In East Malaysia, PPBOP owns and operates 10 plantations and 6 oil mills, total planted is 57,288 hectares. The Group is also involved in refining of crude palm oil, kernel crushing, and production and packing of cooking oil. It has its own bulking installation .

Economic Aspects

- PPBOP is a 100% oil palm company which is involved in many aspects of the supply chain of palm oil, from production of clonal oil palm planting materials to palm refining and production of consumer pack cooking oil
- Revenue and profits would be influenced to a large extent by fluctuation in palm oil prices. In 2001, the sharp decline in revenue was mainly due to the restructuring and merger of the Group's refining business units with that of FFM Berhad to form an associate company of PPBOP. Consequently, reported revenue was largely attributed to the plantation operations..
- A rising trend in total FFB production is seen over the past 4 years, 2001 production in East Malaysia was 957,288 tonnes which was 70% higher than in 1998. A marked improvement in FFB yield/ha was seen in 2001 as more areas of palms come into the prime production phase. It was reported that the mature areas in Sabah achieved an average FFB yield of 23.2 tonnes /ha and an oil yield of 5.0 tonnes CPO/ha.
- PPBOP is among the few companies in Malaysia that have ventured into commercial planting of clonal oil palms. Results from 7 years' production in the earliest clonal planting showed a 31% increase in FFB/ha and 54% in terms of oil yield over those obtained from conventional DxP planting materials. To date, PPBOP has planted 1,657 ha of clonal oil palms. (Siburat *et al*, 2002).

Environmental Aspects

- In PPBOP's 2001 Annual Report, the Executive Chairman declared that "PPBOP is a responsible corporate citizen with a long term commitment to the preservation of the environment within its sphere of operations".
- For new plantation projects, PPBOP's policy is to develop only deforested or logged over land while steep land is left as conservation areas. About 10% of the Group's titled land area in Sabah and Sarawak has been left undisturbed for this purpose, including a 600 hectare forest ridge adjacent to the Tabin Wildlife Reserve in Sabah (Teoh, 2000).
- In existing plantations, PPBOP's 2001 Annual Report stated that "our estates are applying best conservation practices, such as soil conservation and water management, the recycling of empty fruit bunches back to the field as mulch, and the adoption of integrated pest management (IPM) methods for pest control. Our mills are designed to ensure that all effluent is treated to meet the Department of Environment's (DOE) standards for discharge"

Social Aspects and Stakeholder Engagement

- As at 31st December, 2001, PPBOP had 11,308 employees, 6592 being located in Sabah, 3027 in Sarawak and 1658 in Indonesia.
- PPBOP established an Employees Share Option Scheme (ESOS) for eligible management and non-management employees in May, 1998.
- The Group runs the IPAS Training School in Sapi Estate to improve the skills and competencies of staff and executives. The training facilities are also made available to personnel from the Government and statutory bodies in East Malaysia.
- PPBOP was an active participant in WWF Malaysia's Partners-for Wetlands Forum in Sabah in April, 2001 and the WWF Malaysia/WWF Switzerland dialogue with the oil palm industry on 21st March, 2002.
- PPBOP hosted the visit by members of the WWF Network on Edible Oils to its Sapi Estate, near Sandakan in November, 2001.

Profile of KLSE Listed Plantation Companies
PPB Oil Palms Berhad

Corporate Information		Crop Production and Productivity - Oil Palm In Malaysia (1)						
		Year ending 31 st December	2001	2000	1999	1998	1997	
Chairman	: Mr. Tan Yew Jin	Mature area (ha)	45,899	45,240	42,609	37,463	31,551	
Registered office	: 17 th Floor, Wisma Jerneh, 38 Jalan Sultan Ismail, 50250 Kuala Lumpur, Malaysia.	Immature area (ha)	11,389	12,725	14,053	15,663	11,508	
Website	: -	Total oil palm area planted (ha)	57,288	57,965	56,662	53,126	43,059	
Principal Bankers	: Bumiputra-Commerce Sdn Bhd/ Citibank Berhad/ HSBC Bank Malaysia Berhad/ Malayan Banking Berhad/ RHB Bank Berhad/ Southern Bank Berhad/ BNP Paribas/ ING Bank NV	Total FFB production (tonnes)	957,288	803,926	777,698	559,807	591,556	
Auditors	: Ernst & Young	FFB yield per mature ha (tonnes)	20.86	17.77	18.25	14.94	18.75	
Major Shareholders		Mill Productivity						
		Palm oil (tonnes)	250,073	171,380	168,833	156,428	155,799	
Shareholder		Palm kernel (tonnes)	54,210	38,213	34,476	33,527	35,900	
1. PPB Group Berhad	No. of Shares	Mill Extraction Rates						
2. Employees Provident Fund Board	242,648,089	Palm oil (%)	21.5	21.0	20.5	21.4	21.1	
3. Lembaga Kemajuan Tanah Negeri Sabah	27,403,000	Palm kernel (%)	4.7	4.7	4.2	4.6	4.9	
4. HSBC Nominees (Asing) Sdn Bhd	20,000,000	Average selling price						
	17,777,438	Palm oil (RM per tonne)	835	918	1,363	2,300	1,291	
	307,828,537	Palm kernel (RM per tonne)	383	607	1,000	1,052	710	
Location of shareholders	No. of shareholders	Profit per mature ha (RM)	712	586	2,535	5,360	3,245	
		% of share held						
Crop Area Statement as of 31 st December, 2001		Group Financial Performance						
Crop	Age (years)	Area in Hectares			Year ending 31 st December			1997
		East Malaysia	Indonesia	Total	2001	2000	1999	
Oil Palm	>3-5	9,298	3,091	12,389	239.41	1,249.35	1,814.94	1,418.24
	5-10	23,197	1,429	24,626	47.15	77.67	134.36	200.84
	10-15	9,340		9,340	33.97	60.38	130.47	143.89
	>15	4,064		4,064	7.2	13.7	28.8	32.1
	Total	45,899	4,520	50,419	7.0	7.0	10.0	15.0
Total Mature	11,389	4,121	15,510	3.3	2.8	3.3	3.0	
Total Immature	57,288	8,641	65,929	421.86	421.10	419.93	418.75	
Total OP area				1,079.20	1,058.34	1,028.84	942.87	
Rubber	>20				2.8	5.5	11.7	14.2
	16-20							
	11-15							
	<10							
Total Mature					100.0	100.0	100.0	100.0
Total Immature					100.0	100.0	100.0	100.0
Total rubber area								
Other crops								
Total Planted Area				65,929				
		Contribution from Palm Oil Products to Total Revenue and PBT						
		Revenue from palm oil products (% total)		100.0	100.0	100.0	100.0	100.0
		PBT from palm oil products (% total)		100.0	100.0	100.0	100.0	100.0
		Notes:						
		1 - In 2001, plantations in Indonesia produced 48,402 tonnes FFB and 3,445 tonnes crude palm oil. Average yield/ha = 10.71 tonnes; OER = 21.9%.						
		2 - In 2001, Revenue was solely from plantations operations (following restructuring of Group refining operations).						

Profile of Listed Plantation Companies: Tradewinds (M) Berhad

Background

Tradewinds started as a private limited company in 1974 and was converted to a public company under the present name, Tradewinds (M) Berhad in September, 1987. It was listed on the KLSE in the following year. The core businesses of Tradewinds are plantations, manufacturing and trading, essentially in sugar refining and property.

Tradewinds is a relatively recent player in the plantations industry, its initial entry being the acquisition of Ladang Permai Sdn Bhd with 2,800 ha in Lahad Datu, Sabah. Its expansion in the industry was through further acquisitions of plantation companies, especially in East Malaysia. With the increasing plantation area, the Group established its own plantation management company, Tradewinds Plantations Services Sdn Bhd in 1995.

In 1995, Tradewinds expanded its plantations operations into Indonesia with the acquisition of 56% equity interests in P.T. Saidin Tradewinds and P.T. Bumipermai Suryalestari. In November, 2002, it acquired a 56% stake in P.T. Bumibangka Lestari

Currently, Tradewinds has a total land bank of 106,311 ha, of which 49,765 ha are cultivated with oil palm while another 9,900 ha are in the process of planting.

Economic Aspects

- Tradewinds is essentially an upstream producer in Malaysia and Indonesia in the palm oil supply chain and it is likely to remain in future so the Group has indicated its intention to develop its large land bank, particularly in Sarawak and Indonesia.
- The contribution of plantations operations to the Group's ranged from 14% to 25% in the past 4 years; the manufacturing has consistently been the highest contributor to revenue.
- Plantations' contribution to Group's PBT had been variable in the last 4 years; losses were incurred in 2000 and 2001 on account of depressed palm oil prices as well as changes in the accounting policy on amortisation of plantation development expenditure. The later resulted in the reduction of the Group's PBT by RM 12.2 million and RM 5.8 million in 2001 and 2000 respectively. Very high relative contribution of plantations to total PBT (94.5%) in 1998 was due to substantial losses incurred by the manufacturing core business in that year.

Environmental Aspects

- Tradewinds has demonstrated a strong commitment to the environment, as reflected in its environmental policy and practices. The Group's Annual Report for the past 3 years had included reports in respect of the environmental management in Tradewinds.
- The corporate Environmental Policy was published in the Annual Report for 1999 and 2001. The policy contains 7 areas where Tradewinds has given its commitment to ensure that "our Group's activities are in harmony with our environment and with the community we serve in". (See [Appendix II](#))
- Its manufacturing subsidiary, Central Sugars Refinery Sdn Bhd and Serasa Palm Oil Mill in Kelantan received certification to the ISO 14001 Environment Management System standard in 2000 and 2001 respectively.
- With regard to good environmental practices, Tradewinds had reported the application of the zero burning technique, wherever possible, application of controlled release fertilisers to reduce nutrient runoff and the installation of a tertiary effluent treatment system that is aimed at zero discharge. The final treated effluent water is recycled to the mill for process use.

Social Aspects and Stakeholder Engagement

- In 1999, the Group set up the Tradewinds Plantation Academy in Sarawak to improve the knowledge and skills of its workforce.

Profile of Listed Plantation Companies: United Plantations Berhad (UPB)

Background

In 1906, Aage Westenholz established Jendarata Rubber Estate in Lower Perak which became the nucleus of present day United Plantations Berhad. In subsequent years, Westenholz acquired more properties in Lower Perak which were amalgamated in 1917 as United Plantations Ltd. In 1982, Kumpulan Fima Berhad acquired controlling interests of UPB; however, the company sold its stake to Aarhus (Malaysia) Sdn Bhd, a wholly-owned subsidiary of Aarhus Oliefabrik A/S, Denmark.

From an initial planting of 8 ha of oil palm in Sungai Bernam Estate in 1918 (Tate, 1996), UPB at present has 23,346 ha of oil palms in 9 estates, all of which are located in Lower Perak. UPB also has more than 3,000 ha of hybrid coconuts, the largest monoculture coconut area in the country.

While the principal business activity of UPB is cultivation of oil palm and other plantation crops and processing of their products, its subsidiary companies are engaged in several downstream activities such as processing of palm oil, manufacturing edible oils, fats, soap products, cocoa butter substitutes and trading in crude palm oil. Its palm oil refinery under Unitata Berhad was the first of its kind to be established in Malaysia in 1974.

Economic Aspects

- UPB is essentially an oil palm company involved in upstream and downstream production, including specialty fats (cocoa butter substitutes) and a niche market oil with naturally enriched carotenoids, tocopherol and tocotrienols. Palm oil operations have accounted for more than 95% of the company's revenue and profit before tax for the past 5 years. However, annual revenue and profits have fluctuated with palm oil prices, with record earnings in the high price periods in 1998 and 1999 while substantially lower results were seen in 2000 and 2001 when prices slumped.
- UPB has a good reputation for product quality, crop productivity and cost efficiency. Its FFB yields are among the highest in the country, the highest yield of 28 tonnes FFB/ha recorded in 1997. The company's policy of maintaining a balanced age profile of the palms with regular replacement of older palms with new high yielding materials is reported to be a major factor in sustaining high crop productivity.
- The location of its estates and favourable flat terrain also contribute to UPB's performance. All estates are located within 50 km of the Company's head office which is sited on Jendarata Estate.
- OER rates exceeding 20% have been attained in the last 5 years compared with the national average of 18.5% to 19.0%.

Environmental Aspects

- UP environmental policy, as published in the 2001 Annual Report is "to conduct our agricultural business in the best principles of agriculture and in total harmony with the natural environment". (See [Appendix I](#))
- UP's focus on environmental management is mainly of the optimal utilisation of palm biomass in the field.
- In 1979, UP designed a palm oil mill waste treated process whereby sludge is removed by a decanter and thus reduces the BOD load in the effluent treatment plant and an estimated 75% reduction in methane production. The sludge cake is dried in a rotary dryer to produce organic fertilisers. Since 1987, UP has produced 12,785 tonnes of three formulations of organic fertilisers with a market value of RM 5.5 million. The Company also reported that its organic fertiliser plant produces about 1500 tonnes of various formulations of fertiliser per year.
- Digested palm oil mill effluent from the biodegradation ponds has been used in furrow irrigation of palms, resulting in yield increases of up to 25%. About 140 ha of oil palm land is currently under furrow irrigation.

Social Aspects and Stakeholder Engagement

- The UP Workers Benevolent Retirement Scheme and UP Education and Welfare Fund were established more than 20 years ago to motivate the Company's worker to remain with the company. Payments made by the two funds, in the form of retirement benefits, scholarships for workers children and transport subsidies etc during the past three years (1999-2001) amounted to RM 1,633,176.
- UP also operates the Jendarata Bernam Provident Fund for its executives and staff. The Fund is the third largest shareholder of UP, with interests in 4,707,821 shares, equivalent to 3.11% of the issued capital.
- UP has a reputation for providing good quality housing and social amenities for its workers. Ladang Ulu Basir won the first prize in 1993 in the national landscape competition held by the Ministry of Agriculture and also declared winner in 2000 by MPOB for the best oil palm estate in the private sector.
- As an effort to improve workers' welfare, UP founded Bernam Bakery Sdn Bhd as a joint venture project between members of the workforce and the company on the basis of 70% equity by the workers and 30% by the company.
- On stakeholder engagement, UP was an active participant in the WWF Malaysia and WWF Switzerland dialogue with the oil palm industry on 21st March, 2002.

Profile of KLSE Listed Plantation Companies
United Plantations Berhad (1)

Corporate Information				Crop Production and Productivity - Oil Palm							
				Year ending 31 st December							
				2001	2000	1999	1998	1997			
Chairman	: Yg. Bhg. Tan Sri Datuk Dr. Johari bin Mat			19,642	19,490	20,012	19,513	18,542			
Registered office	: Jendrata Estate, 36009 Teluk Intan, Perak D. Ridzuan, Malaysia.			3,704	3,780	3,200	3,786	4,746			
Website	: -			23,346	23,270	23,212	23,299	23,288			
Principal Bankers	: HSBC Bank Berhad / Maybank Berhad / Standard Chartered Bank Malaysia Berhad / HSBC Bank Public Limited Company / Danske Bank A/S 1871			474,159	537,823	534,521	487,709	521,085			
Auditors	: Ernst & Young			23.92	27.59	26.70	25.00	28.08			
Major Shareholders	: As at 31 st August, 2002										
Shareholder		No. of Shares	% of total								
1. Aarhus (Malaysia) Sdn Bhd (Z)		47,588,067	31.41								
2. Employees Provident Fund Board		19,531,998	12.89								
3. KAF Nominees (Tempatan) Sdn Bhd		4,045,821	2.67								
4. La Roche & Co. Bankers		3,000,000	1.98								
		74,165,886	48.95								
Location of shareholders		No. of shareholders	% of share held								
Malaysia		7,971	48.06								
Denmark		880	42.73								
Switzerland		3	2.06								
Others		337	7.15								
Crop Area Statement as of 31st December 2001				Year ending in 31st December							
Crop	Age (years)	Area in Hectares				2001	2000	1999	1998	1997	
		P.M.'sia	Sabah	Sarawak	Indo-nesia						Total Planted Area %
Oil Palm	>20	227				222.54	279.71	436.68	446.26	316.67	
	16-20	2,164				32.04	49.39	117.14	132.44	87.14	
	11-15	9,403				23.66	40.09	115.10	92.02	63.47	
	<10	7,848				15.61	26.46	75.97	60.73	41.89	
Total Mature		19,642				20.0	20.0	25.0	35.0	30.0	
Total Immature		3,704				0.8	1.3	3.0	2.4	1.9	
Total OP area		23,346				151.51	151.51	151.51	151.51	151.51	
Coconut	>20	773				4.5	7.4	21.7	20.3	15.9	
	16-20	779									
	11-15	160									
	<10	700									
Total Mature		2,412									
Total Immature		717									
Total coconut area		3,129									
Other crops		57									
Total Planted Area		26,532									
				Contribution from Palm Oil Products to Total Revenue and PBT							
				Revenue from palm oil products (% total)			95	96	97	98	97
				PBT from palm oil products (% total)			95	97	97	98	99
Notes:											
1. United Plantations Berhad is also listed on the Copenhagen Stock Exchange											
2. Wholly-owned subsidiary of Aarhus Oliefabrik A/S Denmark											
3. Cost of production excludes depreciation											

Profiles of Major Players in the Supply Chain of the Palm Oil Industry in Malaysia

Industry Organisations

- Malaysian Palm Oil Association (MPOA)
- The East Malaysia Planters' Association (EMPA)
- The Incorporated Society of Planters (ISP)
- Palm Oil Refiners Association of Malaysia (PORAM)
- The Malayan Oil Manufacturers Association (MEOMA)
- Malaysian Oleochemicals Manufacturers Group (MOMG)
- Malaysian Palm Oil Promotion Council (MPOPC)

Malaysian Palm Oil Association (MPOA)

Introduction

As the plantation crop industry evolved, so had the industry organisations that were established to represent various interest groups. The major organisations included the Rubber Growers' Association (RGA), the United Planters Association of Malaysia (UPAM), the Malaysian Estate Owners Association (MEOA) and the Malaysian Oil Palm Growers' Council (MPOGC) which were established in 1907, 1934, 1931 and 1968 respectively. RGA was formed to represent owners of rubber plantations, predominantly British companies in then Malaya; following Malaysianisation of the industry, the association became RGA (Malaysia) Berhad in 1968. MEOA was established to look after the independent plantation owners, predominantly Chinese, who not members of either RGA or UPAM.

With the passage of time and changes in the structure of the industry, there was much overlap in the roles and functions of the four organisations. Many plantation companies have membership in these organisations and had to pay their membership fees to support the running of the respective organisations. A rationalisation exercise in 1999 saw the merger of the four major industry organisations into a single body, the Malaysian Palm Oil Association (MPOA). The mandate of this integrated organisation is , to represent the industry as a single voice and meet the complex needs of the plantation industry more effectively

Vision / Mission Statements

MPOA's mission is to “ensure the long term profitability and growth of the Malaysian palm oil industry and other plantation crops including oil palm, rubber, coconut, sugar cane, cocoa, tea, banana, and pineapple”. However, the new organization is likely to focus its attention and effort on oil palm as it is the most important plantation crop, in terms planted area, production and revenue generated.

Role and Function

MPOA is expected to:

- “Provide representation for the industry at both the domestic and international levels.
- Lobby the special interests and needs of the industry.
- Provide long term strategic thinking and direction.
- Shape R&D policies and priorities.
- Support national marketing and promotion efforts.
- Disseminate industry-relevant information to members”.

Organisation

The Council, consisting of a Chairman, Vice-Chairman, Secretary, Treasurer and 13 members, is the main policy and decision making body in MPOA. The Council is supported by an Executive Committee (Exco) with three Standing Committees (Government Affairs, Marketing & Promotion and Research & Development) and a Secretariat which is headed by the Chief Executive. The organizational structure of MPOA is shown in [Figure ORG 1.1](#).

Under the Standing Committee for Research & Development are working committees for Agriculture Research and Technical Research which in turn are supported by a number of sub-committees on relevant priority areas. Recently, an Environment Working Committee was formed by the Technical Research Working Committee to address issues and concern pertaining to oil palm and the environment.

Membership

Membership in MPOA is open to individuals or companies which own a minimum of 40 hectares of a plantation crop. Members are grouped under two categories; Category I for private plantation owners who are sub-divided into four classes according to planted area and Category II for the Government owned enterprises, FelDa Plantations Sdn Bhd. Collectively, MPOA members own and operate more than 1.4 million hectares of oil palm which is more than 40% of the total planted area in Malaysia. The membership status of MPOA as on 1st June, 2002 is shown in [Table ORG 1.1](#).

Table ORG 1.1: Summary of MPOA membership (1st June, 2002)

Category	CATEGORY I				CATEGORY II FELDA PLANTATIONS
	Class I >40,000 ha	Class II >5,000 - =< 40,000 ha	Class III >500 - =< 5,000 ha	Class IV >40 - =< 500 ha	
No. of members	9	22	52	17	1
Area (hectares)	724,632	324,357	91,943	4,576	354,291

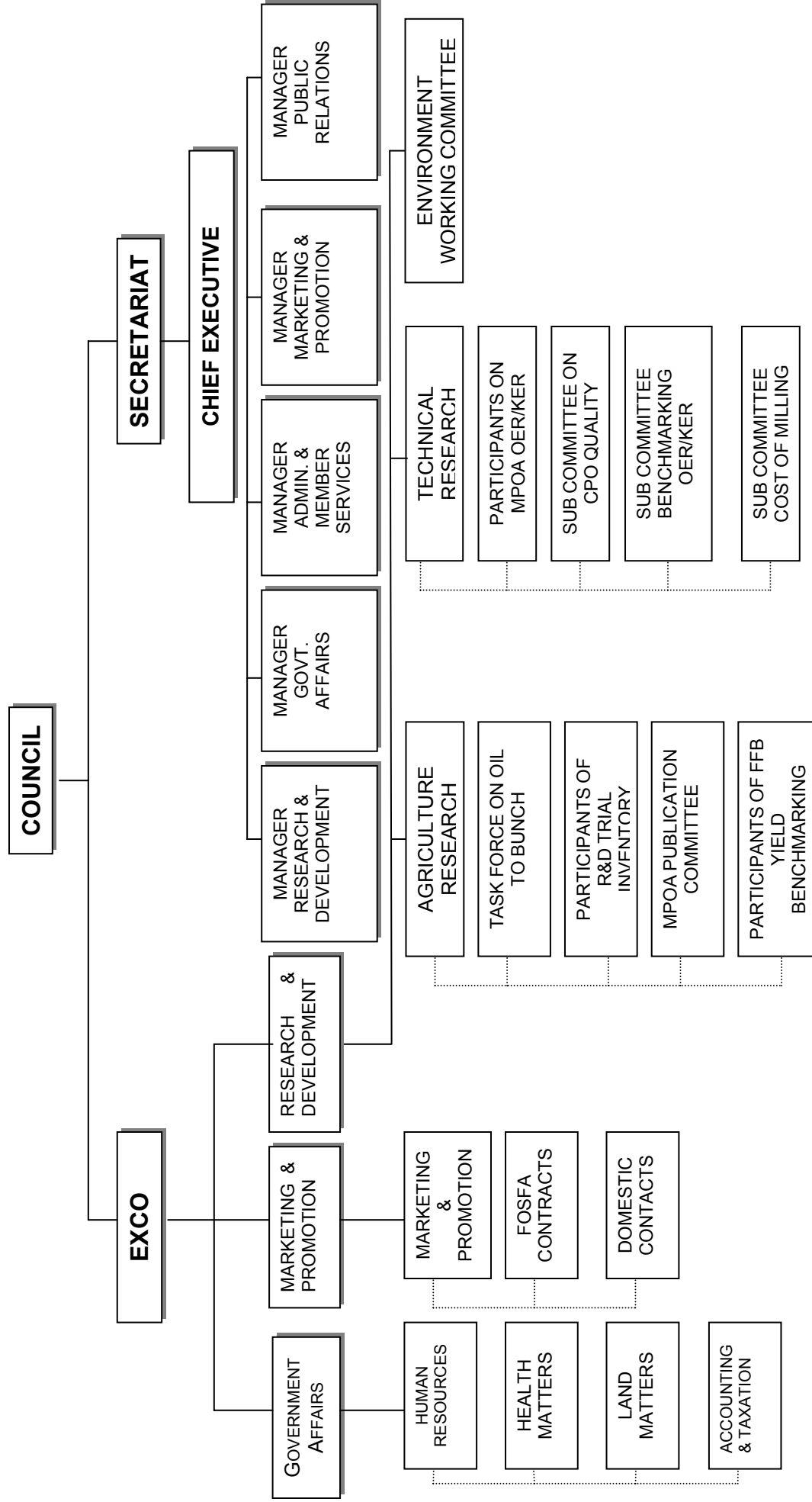
Funding

Administration and management of MPOA are supported entirely by membership fees which are based on the planted hectare of the member company; the unit rates for Category I are shown in [Table ORG 1.2](#). The fee for FelDa Plantations Sdn Bhd in Category II is based on 50% of the Category I rate.

Table ORG 1.2: MPOA membership fees for private plantation companies (Category I)

Class	Fee per hectare
1 (>40,000 ha)	RM 1.00 to RM 1.45
2. (5,000 to 40,000 ha)	RM 1.50 to RM 1.55
3. (500 to 5,000 ha)	RM 1.30 to RM1.45
4. (<500 ha)	RM 0.78 (Min RM 350/yr)

Figure .ORG 1.1: MPOA Organisational Structure



Activities

MPOA activities are focused on a number of priority areas which are directed at enhancing the competitive position of the industry globally through cost reduction and research and development. Among specific areas of activity, MPOA has a strong focus on environment and sustainable development. Recently, MPOA formed a Working-Committee on Environment to address issues pertaining to the environment and sustainable development and the oil palm industry. At the national level, MPOA is a member of the Environment Quality Council (EQC) which is appointed by the Minister of Science, Technology and Environment under Section 4 (1) of the Environment Quality Act, 1974 of Malaysia.

MPOA has been responsive to WWF Malaysia and WWF Switzerland's initiatives on making the production of palm oil more sustainable. Activities that MPOA have been engaged with WWF include:

- Participation in WWF Malaysia Partners-for-Wetlands forum on "Making Land Use the Lower Kinabatangan Floodplains" in April, 2001
- Co-author with WWF Malaysia on the following papers:
 - "Balancing the need for sustainable oil palm development and conservation – The Lower Kinabatangan Floodplains experience" presented at the National Planters' Seminar in June, 2001
 - "Trade related environmental challenges for the palm oil industry" presented at MOB's 2001 PIPOC Palm Oil Congress, August, 2001.
- Co-organized the Dialogue between the Oil Palm Industry and WWF Malaysia / WWF Switzerland on 21st March, 2002.
- Currently discussing with WWF Malaysia on potential collaboration on development and promotion of Best Management Practices for oil palm.

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The East Malaysia Planters' Association (EMPA)

Introduction

The East Malaysia Planters' Association (EMPA), started as the North Borneo Planters' Association in 1889; it changed its name to Sabah Planters' Association in 1973 and acquired its present name in 1973. Until recently, EMPA was the only industry organisation representing the interests of plantation companies in the states of Sabah and Sarawak.

Vision / Mission Statements

Nil

Role and Function

"The objectives of the Association are to represent, protect and advance the interests of the plantation industry in East Malaysia (Sabah and Sarawak).

To this end, the Association:

- Is fully recognised by the States and Federal Governments as the representative for plantation interests in East Malaysia.
- Works closely with the plantation industry to effectively address and resolve federal issues.
- Undertakes research and development projects deemed necessary as a means to finding ways for improving operating and cost efficiencies in plantations.
- Helps propagate public understanding, support and recognition for the social and economic contributions which the plantation industry makes to East Malaysia".

Organisation

Administration of the association is under the responsibility of an elected Management Committee, headed by a Chairman who is assisted by a Deputy Chairman and four committees known as the Oil Millers' Sub-Group, Agro Forestry Sub-Group, Human Resources Sub-Group and the General Agricultural Crops' Sub-Group.

Membership

Membership of EMPA is open to all owners, lessees and sub-lessees of plantation land of more than 20 hectares.

Funding

The administration and management of EMPA is supported by membership subscription fees.

Activities

EMPA's activities are focused to a large extent on addressing issues and problems faced by its members, particularly in respect of employment of foreign workers, CPO sales tax imposed by the State Government, industrial zoning for palm oil mills and security in plantations. With regard to the environment, EMPA has collaborated with the Ministry of Tourism Development, Science, Technology and the Environment on raising the awareness of its members on environmental issues air and water pollution by the industry. EMPA has also held dialogue sessions with the Department of Environment on open burning.

EMPA was an active participant in WWF Malaysia's Partners-for-Wetlands Forum on 'Making Land Use Sustainable in the Lower Kinabatangan Floodplains' in April, 2001.

Contact Information

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The Incorporated Society of Planters (ISP)

Introduction

The initiative of a small group of planters led to the establishment of the Incorporated Society of Planters (ISP) in 1919 to represent the interests of estate executives at the management level. From an inaugural membership of 200 planters, the ISP currently has more than 4,350 members, 600 of whom are overseas members from 37 countries.

Vision / Mission

ISP exists for the development and advancement of the professional interests of its members who directly or indirectly involved in the plantation. From the onset, ISP had placed priority on technical support for its members through education and publications. In 1919, the Technical Education Scheme (TES) was set up to “improve the technical knowledge of members by holding examinations and granting diplomas”. This primary mission has been upheld throughout the history of the society.

Role and Function

The primary functions of ISP are:

- The award of professional qualifications
- Conduct professional development programmes
- Publications
- Maintenance of a library
- Maintenance of a register of members and processing of applications for membership

Organisation

The ISP is managed by a Board of Directors comprising a Chairman, Vice-Chairman, Chief Executive and Board members representing the branches and committees of the Society. Board members are elected at the Society’s General Meetings for a tenure of two years. The Board is supported by the following committees:

- Executive Committee
- Technical Education Scheme Committee
- Planter Editorial Committee
- Finance Committee
- Library Committee

Day-to-day operations are managed by the Chief Executive and the Secretariat. The management of the business aspects of publications and training course are managed by a wholly-owned subsidiary company, ISP Management Sdn Bhd.

Membership

There two classes of membership; Category A are Ordinary Members who are employed as Managers, Assistant Managers or similar capacities while Category B membership covers professionals such as engineers, scientists and Estate Medical Officers.

Funding

ISP is primarily supported by membership subscriptions, which are RM 120. per year for both categories. The Society also generates income from the organisation of conference and other professional activities.

Apart from the Chief Executive and the Secretariat, Board and committee members are non- salaried and serve the Society on a voluntary basis..

Activities

Since its inception, ISP core activities have been on education and professional training and publications. Through the Technical Education Scheme, ISP conducts examinations and awards professional qualifications, namely:

- A professional Diploma of licentiate of the Incorporated Society of Planters (LISP)
- A certificate in oil palm or rubber processing of the Incorporated Society of Planters
- An Advanced professional Diploma of Associate of the Incorporated Society of Planters (AISP)
- A postgraduate Diploma of Fellow of the Incorporated Society of Planters (FISP)

The ISP and the Universiti Putra Malaysia (UPM) offer the ISP-UPM course in Master of Science in Plantation Management at the University.

The ISP publishes a monthly magazine, *The Planter* which contains papers on management and technical and other aspects of the plantation industry. Since the first issue of the first that appeared in August, 1920, *The Planter* has been published in 78 volumes with 915 issues (as at June, 2002).

The Society organised the Annual Planting Conference from 1924 to 1941. Since then , it has organised numerous conferences , seminars and workshops at the regional, national and international levels on various aspects of the plantation industry. The ISP has held the International Planters Conference every three years since 1994.

While there is no specific focus or activities on the environment, the ISP has expressed its interests and concerns in numerous editorials in *The Planter*, the most recent being in the June, 2002 issue (*Vol. 78 No.915*). Various aspects of environmental management and sustainable development have been included in the seminar and conference programmes.

The ISP was an active participant in WWFM Partners-for-Wetlands forum on “Making Land Use the Lower Kinabatangan Floodplains” in April, 2001

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Palm Oil Refiners Association of Malaysia (PORAM)

Introduction

The Palm Oil Refiners Association of Malaysia (PORAM) is a trade association that was formed in 1975 to represent the interest of member companies involved in the palm oil refining industry.

Vision / Mission Statements

Nil

Role and Function

The main objectives of PORAM are:

- “To provide an organisation for palm oil refiners to collectively support and enhance the status and interest of the palm oil refining industry.
- To promote the processing, refining and fractionation of palm oil and the manufacture of all products and by-products therefrom.
- To project an international image of sophistication and reliability.
- To establish an identity with the public at large as an organisation with an important role to play in Malaysia's economic development and as an organisation responsibly acting in the interest of the community.
- To be both responsive to the Malaysian Government's overall socio-economic policies and responsible in this role”.

Organisation

The Management Board, comprising a Chairman, Vice-Chairman, Treasurer and five Board members, is responsible for the running of PORAM. The Management Board members lead the following key committees of the association:

- Commercial & Contracts Committee
- Technical Committee
- Training and Education Committee
- Price Settlement Committee
- Associate Members Committee

There are also 4 regional committees that have been formed to serve members in the North, South, Central and East Coast regions.

Day-to-day operations of the association are the responsibility of the Secretariat, headed by the Executive Secretary.

Membership

There are three categories of members, namely:-

- Full members which are companies involved in the business of processing, refining and fractionation of palm oil. Currently, PORAM has 18 full members who account for more than 75% of the total exports of processed palm oil from Malaysia. The membership in this consists of plantation companies such as Golden Hope Plantations Berhad, IOI Corporation Berhad, Sime Darby Berhad, Kuala Lumpur Kepong Berhad, independent palm oil refining companies as well as subsidiaries of multinational companies like Cargill.
- Associate members are those who are involved in the oils and fats trade but not directly connected with the business of processing, refining and fractionation of palm oil.
- Supplementary members are subsidiary, associate companies or affiliates of full members of PORAM

Funding

PORAM is a non-profit organisation that is supported financially mainly by membership fees.

Activities

PORAM provides various forms of assistance to its members, including dissemination of market information, establishing business contacts, promotion of palm oil exports, guidance on problems arising from government regulations and procedures, arbitration and resolution of common problems, publications and organising seminars, workshops and training courses.

PORAM works closely with industry organisations such as the Malaysian Palm Oil Association (MPOA), Malayan Edible Oil Manufacturers' Association (MEOMA), the Malaysian Oleochemical Manufacturers Group (MOMG) and The Palm Oil Millers' Association (POMA). PORAM is affiliated to the National Institute of Oilseed Products (NIOP) and the Federation of Oils, Seeds and Fats Associations Ltd (FOSFA International). PORAM is also a founder member of the ASEAN Vegetable Oils Club (AVOC) and is currently serving AVOC as its Secretariat.

There is no specific focus on environmental issues; however, PORAM is a member of the recently established MPOPC Task Force on Environment.

Contact Information

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PROFILE ORG.5

The Malaysian Edible Oil Manufacturers' Association (MEOMA)

Introduction

The Malaysian Edible Oil Manufacturers' Association (MEOMA) was established in 1961 with eight core members and has grown to 81 members at present, representing 80% of the edible oils manufacturing industry in Malaysia.

Vision / Mission Statements

Nil

Role and Function

The key role of MEOMA is representation and promotion of the industry.

The objectives of MEOMA, as given in MEOMA's Handbook 2002-2003 are as follows:

- "To provide an organisation for the benefit and welfare of all edible oil millers in Malaysia and to promote and protect their mutual interests.
- To provide the means for mutual co-operation and the promotion of goodwill amongst members in connection with the industry as a whole.
- To enable members through the Association to speak with one voice and act with one purpose on all matters concerning the industry.
- To oppose vigorously any unfair legislation or unreasonable restriction that may adversely affect the industry as a whole.
- To work constantly for the maintenance of fair prices in edible oil and its by-products, and to abstain from unfair and unreasonable competition amongst members.
- To maintain good relations with other similar bodies and organisations and to co-operate with them for the mutual benefit of members.
- To represent members views at meetings of official and unofficial committees, councilor conferences as may be necessary and expedient.
- To do such other lawful things as are incidental or conducive to the attainment of the above objects or any of them."

Organisation

MEOMA is administered by a General Working Committee headed by a President. Members of this committee provide the leadership for the following sub-committees:

- Palm Kernel & Products Sub-Committee
- Copra & Products Sub-Committee
- Cooking Oil, Edible Fats & Margarine Sub-Committee
- Technical Sub-Committee
- Price Settlement Committee

Membership

MEOMA has two classes of membership, Ordinary Members and Associate Members. The association has a diverse membership profile, in terms of size and nature of business. Members vary from small private companies to companies listed on the Main Board of the KLSE and subsidiary companies of multinational companies such as Akzo Nobel, Cargill, Cognis Oleochemicals and Unilever. MEOMA member companies that are listed on the KLSE, either as the holding company or subsidiary companies include the following:

MEOMA Member	KLSE-listed Holding Company
Golden Jomalina Food Industries Sdn Bhd	Golden Hope Plantations Berhad
IOI Edible Oils Sdn Bhd	IOI Corporation Berhad
Johore Tenggara Oil Palm Bhd	Johore Tenggara Oil Palm Bhd
Keck Seng (M) Berhad	Keck Seng (M) Berhad
Kempas Edible Oil Sdn Bhd	Sime Darby Berhad
Kwantas Oil Sdn Bhd	Kwantas Corporation Berhad
Palmco Oil Mill Sdn Bhd	IOI Corporation Berhad
Southern Edible Oil Industries (M) Sdn Bhd	Southern Group Berhad
Unitata Berhad	United Plantations Berhad
Yee Lee Edible Oils Sdn Bhd	Yee Lee Berhad

Felda is also a member of MEOMA through its subsidiaries, FPG Oleochemicals Sdn Bhd and Felda Kernel Products Sdn Bhd.

Business activities of MEOMA members range from palm oil milling, kernel crushing, palm oil refining, production and packaging of cooking oil for the retail consumer, and oleochemicals. Several members are involved in the production coconut oil and coconut oil cakes while others offer services such as broking and insurance. In view of the varied activities, many MEOMA members are also affiliated with other industry organisations such as POMA, PORAM, MOMG and MPOA.

Funding

MEOMA is supported financially by membership fees.

Activities

The scope of MEOMA activities is reflected in the names of the sub-committees listed above. A major part of MEOMA's work is formal representation of its members in various government and industry organisations, including:

- Malaysian Palm Oil Board
- Malaysian Palm Oil Promotion Council Board of Trustees
- MPOPC Task Force on the Environment
- Malaysian Derivatives Exchange Berhad (Palm Oil Committee)

- MITI's Task Force Committee for Palm Oil Industry
- SIRIM Technical Committee on Oils and Fats
- SIRIM Technical Committee on Packaging

MEOMA is also affiliated with the following international organisations on oils and fats:

- The Grain & Feed Trade Association (GAFTA), UK
- The National Institute of Oilseed Products (NIOP), USA
- FOSFA International, UK
- ASEAN Vegetable Oil Club (AVOC), Malaysia

Contact Information

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Malaysian Oleochemical Manufacturers Group (MOMG)¹

Introduction

The oleochemical industry in Malaysia started in the early 1980's. As the industry attracted more producers, the Malaysian Oleochemical Manufacturers Group (MOMG) was formed in January 1984 as a product group of the Chemical Industries Council of Malaysia (CICM). MOMG consists of 12 members who are involved in the production of basic oleochemicals namely fatty acids, methyl esters, glycerine and fatty alcohols in Peninsular Malaysia.

The industry comprises manufacturers made up of both local and several joint-venture companies with multinationals. The total investment of the oleochemical industry is more than RM1.5 billion.

The industry had undergone rapid development over the past decade, and today the Malaysian oleochemical industry is one of the largest producers in the world's oleochemicals market, accounting for 20% of the global capacity.

The oleochemical industry in Malaysia is nearly totally dependent on indigenous raw materials, i.e. palm oil / palm kernel oil and other palm products as the major feedstocks for processing into the various basic oleochemical products.

Vision/Mission Statements:

Nil

Role and Function:

The objectives of MOMG are:

- To promote and foster the interests of the Malaysian oleochemical Industry.
- To liaise and co-operate with the Government of Malaysia on matters relating to oleo chemicals, the development of the industry and the export of oleochemicals.
- To represent the Malaysian oleochemical industry wherever appropriate in accordance with item 1.
- To co-operate and pursue dialogue with any other Society or Association having objectives altogether or in part similar to the MOMG and to procure from and to communicate to any such information as may be likely to forward the objectives of the oleochemical industry of Malaysia.
- To collect, obtain publish and disseminate information relating to the industry and trade and all matters connected therewith as may be of service to the members.

¹ MOMG profile was provided by the MOMG Secretariat

Organisation

Currently, MOMG is led by its Chairman, Mr Alan Brunskill of FPG Oleochemicals Sdn Bhd and Deputy Chairman, Mr Raymond Yap of Cognis Oleochemicals (M) Sdn Bhd. MOMG has two committees, namely the MOMG Executive Committee and the MOMG Technical Committee. The MOMG Technical Committee is chaired by Mr Wong Fok Gee of Southern Acids (M) Bhd and its Deputy Chairman is Mr A D Ingrole of Pan-Century Oleochemicals Sdn Bhd.

Membership

MOMG is a subgroup / product group of CICM. Members of MOMG are companies engaged in manufacturing of primary oleochemicals in Malaysia and comprise of 12 members who are also members of the ASEAN Oleochemical Manufacturers Group (AOMG). The list of MOMG members is as follows:

1. Acidchem International Sdn Bhd
2. Akzo Nobel Oleochemicals Sdn Bhd
3. Cognis Oleochemicals (M) Sdn Bhd
4. Fatty Chemical (M) Sdn Bhd
5. FPG Oleochemicals Sdn Bhd
6. Iffco (M) Sdn Bhd
7. Natural Oleochemicals Sdn Bhd
8. Palm-Oleo Sdn Bhd
9. Pan-Century Edible Oils Sdn Bhd
10. Pan-Century Oleochemicals Sdn Bhd
11. Southern Acids (M) Bhd
12. Uniqema (M) Sdn Bhd

Funding

MOMG activities and Secretariat are supported by contributions from member companies.

Activities

MOMG participates in various dialogues and task force, namely:

- Annual MITI Industry Dialogue
- Budget Dialogue
- Initiate dialogue with DOE to discuss environmental / regulatory issues faced by members
- Member of MIDA's Industry Task Force on Palm Oil-Based (Food) and Oil Palm-Based (Non-Food) Products
- Member of the MPOPC's Palm Oil Task Force on Environment
- Vice Chairman is MOMG's representative to MPOB Board.
- Annually, the MOMG Technical Committee will organise a MOMG Technical Workshop for its members

Contact Information

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Malaysian Palm Oil Promotion Council (MPOPC)

Introduction

In response to a campaign against tropical oils in the USA in the 1980s, the Malaysian oil palm industry established a fund and the Palm Oil Promotion Fund (POPF) Committee in 1988 to respond to the negative claims by the organizers of the campaign. The success of the work of the POPF Committee laid the foundation for the establishment of the Malaysian Palm Oil Promotion Council (MPOPC) on 25th January, 1990. MPOPC's mandate is to spearhead the promotional and marketing activities of Malaysian palm oil.

MPOPC undertakes its marketing and promotional activities through its representative offices in Vienna, Austria; Dhaka, Bangladesh; Sao Paulo, Brazil; Beijing, People's Republic of China; Cairo, Egypt; New Delhi, India; Lahore, Pakistan; Durban, South Africa and Chicago, USA.

Vision / Mission Statements

To support the country's vision to make Malaysian palm oil the world's leading vegetable oil, MPOPC's mission is "to undertake necessary promotional activities to remove obstacles and create opportunities to enhance the marketability and image of Malaysian palm oil in the world."

Role and Function

The objectives of MPOPC are:

- "To promote the positive image of Malaysian palm oil in order to maximise returns to the Malaysian palm oil industry.
- To package and disseminate plausible technical information to influence the market.
- To generate comprehensive market information.
- To collate, analyse and disseminate market information to the local industry.
- To make MPOPC a recognised centre for information on palm oil.
- To facilitate new business and off-shore joint ventures in palm oil.
- To build up an effective resource capacity for MPOPC to deliver".

Organisation

A Board of Trustees provides the policy directions of MPOPC. The Board consists of representatives of the Ministry of Primary Industries (MPOB), Federal Land Development Authority (FELDA), Malaysian Palm Oil Association (MPOA), Malaysian Edible Oils Manufacturers' Association (MEOMA), National Association of Smallholders (NASH), Palm Oil Millers' Association (POMA) and the Palm Oil Refiners Association of Malaysia (PORAM). The current Chairman of the Board of Trustees is from MPOA and he is also the Executive Chairman of Kuala Lumpur Kepong Berhad.

The management of MPOPC is the responsibility of the Chief Executive Officer who is assisted by the Director of Market Promotions and Heads of Technical Marketing, Marketing Communications, Marketing and Administration and Finance.

Funding

MPOPC's operations and activities are supported entirely from funds by the oil palm industry. Members contribute RM 2.00 for every tonne of CPO or PKO produced to the Palm Oil Promotion Fund. The estimated POPF for 2002 is RM 23 million and the amount is expected to increase to RM 26 million next year (The Star 22.11.02).

Activities

MPOPC's activities are focused on:

- Marketing communications – to position Malaysian palm oil “as the natural and excellent choice” through various communication media such as publications and promotional materials and participation in trade and consumer fairs and exhibitions, locally and abroad.
- Technical marketing – gathering and updating technical and scientific information on all aspects of palm oil; developing linkages with relevant local and international scientific and obtaining third party endorsements on the nutritional merits of Malaysian palm oil.
- Market promotion – to provide a positive image of Malaysian palm oil through seminars, workshops etc as well as to gather market information and monitor new market and business opportunities.

In recent years, MPOPC has taken cognisance of growing global environmental concerns and particular, criticisms of the oil palm with respect to deforestation, forest fire and environmental and social issues. In 2001, MPOPC formed a Task Force to respond to these criticisms. Members of the Task Force include representatives of MPOA, MPOB, PORAM, MOMG, NASH, POMA and MEOMA, as well as the Department of Environment, Malaysia..

MPOPC has also been active in the development of ISO 14000 environmental management standards through its participation of the ISCZ National Committee on Environmental Standards and as a member of the Malaysian delegation to ISO/TC 207 plenary meetings sine 1998. The Council had also co-organised national seminars with MPOB to raise the level of awareness on ISO 14000 standards in the oil palm industry.

MPOPC co-organised and hosted the Dialogue between the Oil Palm Industry and WWF Malaysia / WWF Switzerland on 21st March, 2002

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Profiles of Major Players in the Supply Chain of the Palm Oil Industry in Malaysia

Government Agencies

- Federal Land Development Authority (Felda)
- Malaysian Palm Oil Board (MPOB)
- Department of Environment (DOE) Malaysia
- Natural Resources Environment Board (NREB)
- Environment Conservation Department (ECD)

Federal Land Development Authority (Felda)

Introduction

The Federal Land Development Agency (Felda) was established in July, 1956 under Land Development Ordinance (1956) under the Ministry of Land and Co-operative Development. It is the largest producer of palm oil in Malaysia, accounting for 18.7% of the planted area and 20.6% of the total crude palm oil production in year 2001 in Malaysia.

Vision / Mission

Felda has the social-economic mandate of developing forest land for the resettlement the rural and landless poor.

Role and Function

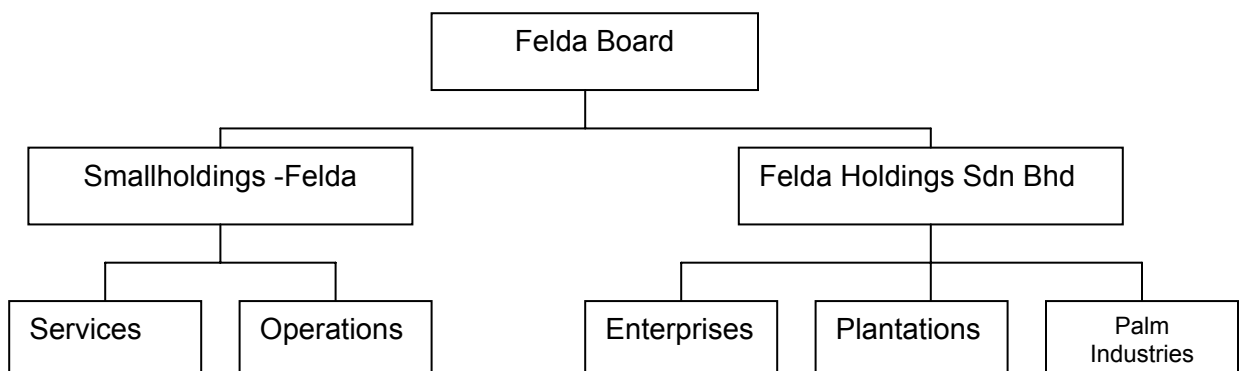
Felda's original function was to channel financial assistance to State governments for land development programmes but this was changed in 1961 when it was given the responsibility for new land development and settlements for the whole country. Since the mid-eighties, Felda has focused on development of plantations on a commercial basis.

The objectives of Felda, as given in the 2000 Annual Report are:

- “To successfully manage established and developed agriculture areas through effective field management practices to increase settlers’ incomes by maximising yields and minimising production costs.
- To contribute towards improving the settlers’ well-being by ensuring that they achieve a higher standard of living in a well organised and conducive manner.
- To establish a dedicated and efficient management team capable of implementing all the activities as planned.”

Organisation

Felda is administered by the Board which is responsible to the Minister of Land and Co-operative Development. Among the Board members is the Director-General of the Malaysian Palm Oil Board. The overall organisational structure of Felda is as follows:



Felda consists of the Smallholder Division, which is referred to as Felda and the corporate arm, under Felda Holdings Sdn Bhd which has a paid up capital of RM 200 million, 51% of which is held by Felda Investment Co-operative (KPF) and 49% by Felda. KPF is an investment fund belonging to settlers and staff of Felda.

Felda is responsible for the management of the settlers' agricultural schemes from land clearing to replanting after the full crop cycle. These operations are conducted through 10 regional offices.

Felda Holdings Sdn Bhd is the holding company for 36 wholly owned and associate companies which are divided into the Plantations Group, Palm Industries Group and Enterprises Group. In the Plantations Group, Felda Plantations Sdn Bhd. Manages 258 plantations covering a total area of more than 354,000 hectares while Felda Agricultural Services Sdn Bhd is involved in agricultural research and production of planting materials and provision of agronomic services and agricultural supplies.

Funding

The development budget is provided by the Federal Government; in 2000, this amounted to RM 1.26 million. The total amount spent on land development and settlements until 2000 was RM 8.998 billion, 89% of which was provided by the Government while the balance was from agencies such as the World Bank (6.0%) and from replanting grants. Of the total amount withdrawn, 54.7% was from loans while the balance was in the form of grants.

Felda operations are supported by revenue generated the subsidiary companies under Felda Holding Sdn Bhd; the turnover and profit before tax achieved in 1999 and 2000 are presented below:

Turnover and Profits of Companies of Felda Holdings Sdn Bhd

Group	Turnover (RM'000)		Profit Before Tax (RM'000)	
	2000	1999	2000	1999
Palm Industries Group	5,843,842	6,684,062	504,084	476,062
Enterprises Group	1,852,414	1,872,606	104,109	104,031
Plantations Group	202,392	204,536	33,958	58,036
Total	7,898,648	8,761,204	642,151	638,129

Source: Felda Annual Report 2000

Activities

Land development

The total land area developed for various crops by Felda at the end of 2000 was 811,140 hectares, of which 80.8% was planted with oil palm and 18.4% with rubber. Of the total planted area, 55.1% or 447,223 hectares have been emplaced with settlers in 275 schemes while 354,547 hectares without settlers are managed as commercial plantations by Felda Plantations Sdn Bhd.

Settler emplacement

Emplacement of settlers has been one of the primary functions of Felde. Each settler is allocated an agricultural area of four hectares and a house lot of 0.10 hectare. The first batch of settlers was emplaced in Felde Bilut Valley in Pahang in 1958. In 2000, a total of 103,001 settlers have been emplaced in 275 schemes, of which 67% have been planted with oil palms.

Felde spends about RM 50,000 to emplace a settler and his family in the scheme; this includes the cost of infrastructure, agricultural development and the cost of land allocated. Each settler has to repay 58% of the total costs over a period of 15 years after the agricultural area has commenced production. At the end of 2000, 67.2% of the settlers (65,296) have repaid their dues and have been given the title for the ownership of the land by the respective state governments where the scheme is located.

Felde in the palm oil supply chain

Through companies under Felde Holdings Sdn Bhd, Felde is involved in most aspect of the palm oil supply chain, from the production of planting materials to trading of its edible oil products and oleochemicals. Felde Plantations Sdn Bhd develops and manages plantations on a commercial basis, the total number of estates and crop areas are presented below:

Estates managed by Felde Plantations Sdn Bhd

Region	No. of Estates	Planted Area by Crops (Hectares)				Total Area
		Oil Palm	Rubber	Sugar Cane	Others	
Pen. Malaysia	142	216,097	16,463	4,663	27	237,250
Sabah	58	109,412			205	109,617
Sarawak	5	8,192				7,680
Total	205	333,189	16,463	4,663	232	354,547

Source: Felde 2000 Annual Report

Total FFB production from Felde estates during 2000 was 5,549,849 tonnes, the average yield per mature ha being 18.18 tonnes.

The number of plants and refineries and their capacities to process and produce Felde's palm-based products, as at December, 2001 are as follows:

	<u>No.</u>	<u>Capacity per annum(tonnes)</u>
Palm oil mills	72	16,693,300
Palm oil refineries	7	2,520,000
Palm kernel crushing plants	6	800,400
Margarine plants	2	120,000

The downstream operations are focused on palm oil refining and fractionation to produce a wide range of refined, bleached and deodorised palm oil, palm olein and palm stearin, margarine, ghee, shortening and dough fats. A joint venture with Proctor & Gamble, FPG Oleochemicals Sdn Bhd produces methyl esters, fatty alcohol and glycerine. Felde also

has joint venture operations in Egypt and the Peoples' Republic of China to produce and market various types of edible oils.

Subsidiary companies under the Palm Industries Group provide a wide range of supporting services. Felda has its own marketing services, transport system for its products, bulking installations in five ports and shipping agents.

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Malaysian Palm Oil Board (MPOB)

Introduction

Prior to the year 2000, public sector research and development efforts on oil palm was spearheaded by the Palm Oil Research Institute of Malaysia (PORIM) that was established in 1979 while the regulatory and licensing functions of the industry were the responsibility of the Palm Oil Registration and Licensing Authority (PORLA). By Act 582 of the Parliament of Malaysia, the Malaysian Palm Oil Board (MPOB) was established in May, 2000 to take over the functions of the two preceding organisations. Through this rationalization, MPOB will be able to optimize the experience and expertise of the two organisations and provide more effective service to the oil palm industry.

The head office and the main crop production research facilities are located in Bangi, Selangor while work on oleochemicals is done at the Advanced Oleochemical Technology Centre in Bandar Baru Bangi, Selangor. The Licensing and Enforcement Division and the Economics and Industry Division are housed in MPOB branch office in Kelana Jaya, Selangor. MPOB is supported by a network of regional and state offices and research stations/units throughout the country. To meet the needs of consumers, MPOB has Customer Technical Advisory Services offices in Hertford, U.K.; Washington DC; Karachi, Pakistan; Hong Kong; Giza, Egypt and Teheran, Iran.

Vision / Mission Statements

MPOB's vision is "to become the premier Nobel Laureate-producing research and development institution, providing leadership and impetus for the development of a highly diversified, value-added, globally competitive and sustainable oil palm industry".

To support this vision, MPOB will "enhance the well-being of the Malaysian oil palm industry through research, development and excellent services" through the following corporate goals:

- "To expand and improve the current uses of oil palm products;
- To find new uses;
- To improve production efficiency and quality of products;
- To optimize land utilization in oil palm areas;
- To promote the use, consumption and marketability of oil palm and biomass products"

Role and Function

The main roles and functions of MPOB include:

- "Implement policies and development programmes to ensure the viability of the oil palm industry of Malaysia;
- Conduct and promote research and development activities relating to the palm oil and oil palm industry;

- Regulate, register, co-ordinate and promote all activities relating to the oil palm industry;
- Develop, promote and commercialise research findings as well as provide technical, advisory and consultancy services to the oil palm industry;
- Develop and maintain markets for oil palm products as well as promote efficient marketing;
- Liaise and co-ordinate with other bodies within or outside Malaysia to further enhance the oil palm industry;
- Plan and implement training programmes and human resource development in line with the needs of the oil palm industry;
- Be the resource and information center of the oil palm industry including the publication and dissemination of information on oil palm as well as other oils and fats”.

Organisation

Policy directions and supervision of MPOB is the responsibility of the Governing Board comprising a Chairman, the Director-General of MPOB and representatives from the government, namely the Ministry of Primary Industries, Ministry of International Trade and Industry, Sabah State Government, Sarawak State Government and the Federal Land Development Authority. The industry is represented by the Malaysian Palm Oil Association (MPOA), Malaysian Oil Manufacturers’ Association (MEOMA), Palm Oil Millers’ Association (POMA), Palm Oil Refiners Association of Malaysia (PORAM) and the Malaysian Oleochemical Manufacturers Group (MOMG). The National Association of Smallholders (NASH) represents the interests of the small growers.

MPOB is supported by the Programme Advisory Committee (PAC) comprising eminent scientists and experts from Malaysia and abroad who review MPOB’s research programmes and proposals and provide recommendations on future research directions to the Board.

Administration and operational management of MPOB rests with the Director-General of MPOB who is assisted by two Deputy-Director General and seven divisional directors responsible for Biology Research, Engineering and Processing Research, Product Development Research and Advisory Services, Economics and Industry Development, Licensing and Enforcement, Information Technology and Corporate Services, and Finance and Management.

Funding

MPOB ‘s operations are financed by:

- A cess of RM 11.00 for every tonne of palm oil or palm kernel produced.
- Budget allocation from the government for development and approved research projects under the Intensification of Research in Priority Areas (IRPA) programme

Activities

MPOB's research and development activities, both upstream and downstream, are directed by the following three-prong strategy:

- High income strategy – to raise oil palm productivity through the application of modern production technologies and good management practices
- Zero waste strategy – to optimize the utilization of oil biomass for as recycled inputs to the plantations or for production of commercial products as well as generation of energy
- Value-addition strategy – downstream R & D to increase the value chain of palm-based products for edible and non-edible uses.

Activities pertaining to the environment are mainly undertaken by the Engineering and Processing Division where effort is directed at improving the eco-efficiency of oil mills and the treatment and utilization of effluents. The Biology Research Division is also involved in promoting sustainable management of oil palm through the development of better management practices such as integrated pest management and recycling of biomass in the field.

MPOB has been active in the development of the ISO 14000 environmental management standards, as a member of the ISCZ National Committee on Environmental Standards and as a member of the Malaysian delegation to the plenary meetings of the ISO/TC 207 on ISO 14000 Environmental Management Standards for the past six years. MPOB is currently providing the leadership for the ISO/TC207 WG 5 on Climate Change. The Board has also organized a number of workshops and national seminars to raise the awareness on the application of ISO 14000 standards.

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Department of Environment, Malaysia (DOE)

Introduction

In September, 1975, the Division of Environment was established in the Ministry of Local Government. In March, 1976 it was renamed the Department of Environment Malaysia and placed under the Ministry of Science, Technology and Environment.

Vision / Mission Statements

Vision: “That the uniqueness, diversity and quality of the environment are conserved towards maintaining health, prosperity, security and well-being for the present and the future”

Mission: “To promote, ensure and sustain sound environmental management in the process of nation building”.

Role and Function

The DOE is the agency under the Ministry of Science, Technology and the Environment that is responsible for implementation of the Environment Quality Act 1974 (Amendments 1985 and 1996). In fulfilling this role, the DOE has adopted the following strategies:

- “Sustainable development through conservation of resources
- Integration of environmental factors in development planning
- Pollution control and prevention
- Promotion of environmental education and awareness
- Inter-agency and Federal-State cooperation
- Public participation
- Bilateral, regional and international cooperation”

Organisation

The DOE is headed by the Director-General who is supported by a Deputy Director-General and five Directors responsible for Control (enforcement and monitoring), Development Planning, Assessment, Information and Administration. Every state in Malaysia has a State Director for environment who reports directly to the Director-General of DOE.

Section 4(1) of the Environmental Quality Act, 1974 provides for the establishment of the Environmental Quality Council (EQC) to advise the Minister for Science, Technology and the Environment on matters pertaining to the implementation of the Act. The Council also provides strategic and policy directions to the DOE. Membership of the EQC that was launched in April, 1977 consists of representatives from relevant federal ministries and the state ministries responsible for environment in Sabah and Sarawak and selected industries and non-governmental organisations. The oil palm industry was represented

by the Malaysian Oil Palm Growers' Council and currently, by the Malaysian Palm Oil Association (MPOA) after its formation in 1999.

Funding

Administration and activities of DOE are supported by funds from the federal government; the budget allocation for 2000 was RM 81.95 million, of which 61.6% was provided for operational expenditure. (DOE 2000 Annual Report)

Activities

Major activities of the DOE are:

- Pollution abatement – control of agro-based prescribed premises, scheduled waste management, air and water quality, airborne surveillance to monitor the occurrence of excessive smoke emissions, open burning, forest fires ; control of emissions from mobile sources etc
- Environmental assessment – EIA guidelines, processing of EIA reports and EIA monitoring etc
- Environmental programme development – review and formulation of environmental regulations, environmental research and development, information technology etc
- Environmental education and information – Malaysia Environment Week, publications (eg Environment Quality Report), awareness programmes etc
- International environmental cooperation – covering bilateral cooperation and assistance and regional and international environmental affairs. The DOE is the national focal point for UNEP, UNEP/INFOTERRA, UNEP/IRPTC and the Montreal Protocol.

DOE activities in relation to the oil palm industry are mainly associated with the following regulations of the Environment Quality Act, 1974:

- Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations, 1997 (Amendment) which stipulate detailed conditions with the licence to use or operate a premise for palm oil processing. These include compliance to stringent standards for discharge of treated effluents to water courses or for land application. (See Appendix xx)
- Environmental Quality (Clean Air) Regulations 1978 which stipulate the conditions pertaining to open burning and emission standards for smoke and particulate emissions into the atmosphere.
- Environmental Quality (Prescribed Activities)(Environmental Impact Assessment) Order 1987 which requires project proponents to conduct an assessment and submit an EIA report to the Director-General before undertaking any of the 19

prescribed activities. The sub-activities that are relevant to the development of oil palm plantations are:

- a) Land development schemes covering an area of 500 hectares or more to bring forest land into agricultural production.
- b) Agricultural programmes necessitating the resettlement of 100 families or more.
- c) Development of agricultural estates covering an area of 500 hectares or more involving changes in types of agricultural use.
- d) Conversion of hill forest land to other land use covering an area of 50 hectares or more.
- e) Conversion of mangrove swamps for industrial, housing or agricultural use covering an area of 50 hectares or more.

In enforcing the regulations on prescribed agro-based premises, the DOE makes frequent visits to rubber factories and palm oils. During year 2000, enforcement officers visited 627 palm oil mills and took action against 213 mills for various air and water pollution offences, of which 20 were court cases. The highest number of contraventions were recorded in the states of Sabah (83 mills), Johor (68 mills) and Pahang (66 mills). Overall compliance of the regulations was 38% (DOE Annual Report 2000)

Following the widespread occurrence of haze in the country and within the region in 1997, DOE has monitored and investigated the occurrence of open burning, including 'hot spots' detected through satellite images. During 2000, 1,801 cases of open burning were detected and investigated, of which 582 cases were found to be activities that were exempted under the Environmental Quality (Prescribed Activities) (Open Burning) Order that permitted burning under specific conditions. Among various sectors investigated, plantations had the highest incidence of open burning (582 incidences).

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Natural Resources and Environment Board (NREB) Sarawak

Introduction

The Natural Resources and Environment Board (NREB) Sarawak (*Lembaga Sumber Asli dan Persekitaran Sarawak*) was established on 1st February 1994 in accordance to the state legislation cited as section 3(1) of the Natural Resources and Environment Ordinance (*Cap. 84 - Laws of Sarawak*). It is the State Government agency responsible for environmental planning and management with respect to the utilisation of natural resources in the State of Sarawak, Malaysia.

Vision/Mission Statements

NREB's vision is "Towards integrated environmental quality management leading to sustainable development in Sarawak". In support of this vision, NREB's mission is to "protect and manage the State's environmental quality and natural resources" within the overall context of sustainable development.

Role and Function

The principal functions and statutory powers of NREB are as follows:

- 1) "To formulate or develop policies and guidelines to ensure that the exploitation, conservation and management of natural resources in the State will not cause any adverse impact on the environment.
- 2) To determine the mode and manner whereby natural resources can be exploited or used without damaging, polluting or causing adverse impact on the environment.
- 3) To direct any person or body involved in or undertaking the development, exploitation, utilisation or management of natural resources, on the steps or measures to be undertaken by them to maintain environmental quality control.
- 4) To control, stop or prohibit the destruction of vegetation for the prevention of erosion, damage or injury to the natural resources, rivers and landscapes or the protection of the inland waters of the State.
- 5) To make orders for the protection and enhancement of the environment.
- 6) To provide information and education to the public regarding the protection and enhancement of the environment.
- 7) To take or undertake such measures or steps as may be necessary to safeguard the quality of the environment".

Organisation

NREB consists of the Policy-Making Body and the Executive Body. The former has 12 members representing relevant Ministries and Government Departments and its is headed by the Minister of Environment and Public Health as the Chairman. The Executive Body, headed by the Deputy Chairman, is responsible for the management of NREB. Operational running of the Board is by the Controller of Environmental Quality with the support of six section heads covering:

- Monitoring and auditing
- Environmental impact assessment
- Enforcement
- Administration and Finance
- Publicity
- Planning and Development

The Enforcement Section is supported by regional offices in Kuching (Southern Region), Sibiu (Central), Miri (North) and a sub-regional office in Bintulu to ensure enforcement of environmental laws and regulations.

Funding

NREB operations and activities are funded by the Government of Sarawak.

Activities

The main activities of NREB are:

- Environmental impact assessment (EIA)
- Monitoring and enforcement
- Livestock pollution control
- Open burning control
- Municipal solid waste management
- Water pollution control
- Remote environmental monitoring
- Urban environment and public health enhancement
- Public education and environmental awareness
- Environmental planning and development

Among the core activities, environment impact assessment would have significant impact on ensuring sustainable development and cultivation of oil palm. Under Section 11A (1) of the Natural Resources and Environment Ordinance, environmental impact assessments must be under taken for 'prescribed activities' as a prerequisite for development. Development of oil palm plantations are covered under the prescribed activity for Agricultural Development which stipulates that:

- (i) Development of agricultural estates or plantations of an area exceeding 500 hectares
 - (a) from land under secondary or primary forests, or

- (b) which would involve the resettlement of more than 100 families; or
 - (c) which would involve modification in the use of the land.
- (ii) Conversion of mangrove swamps into agricultural estate having area exceeding 50 hectares.”

Under the Natural Resources and Environment (Prescribed Activities) Order that was enacted in 1994, no development can proceed unless an EIA has been conducted and the report has been approved by the NREB. Project proponents are required to put in place mitigation measures to ensure minimal impact on the environment. After approval has been given for development to proceed, the NREB would monitor the performance of the project proponent, especially in respect of implementation of the required mitigation measures. Since its inception in 1994, the NREB has approved 169 EIA reports for the development of oil palm plantations. (Wong, J.J; *pers com*)

Following the serious occurrence of haze in Sarawak and other parts of South East Asia in 1997, the Natural Resources and Environment Ordinance was amended to provide for effective control of open burning. NREB also set up its Centre for Remote Environmental Monitoring (CREM) to predict the occurrence of haze by remote sensing to detect 'hot spots' of forest fires in the region and by monitoring the ambient air pollutant index (API) in various locations in the State.

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Environment Conservation Department, Sabah (ECD)

Introduction

The Environmental Conservation Department (ECD) of Sabah (*Jabatan Konservasi Alam Sekitar*) was established on 1st August 1998 to administer and enforce the Conservation of Environment Enactment that was passed in 1966. The ECD replaced the Environment Division that was formed under the Ministry of Manpower and Environmental Development in 1975.

Vision / Mission Statements

The vision of ECD is “to transform the Environmental Conservation Department into a centre of excellence in environmental management” and its mission is “to maintain a sound state of the environment for good quality living.”

Role and Function

The primary role of ECD is the administration and enforcement of Conservation of Environment Enactment, 1966.

The main objectives of ECD are:

- “To integrate environmental factors into the planning of development activities and utilisation of natural resources
- To regulate development activities and the utilisation of natural resources that cause or have the potential to cause environmental degradation
- To protect sensitive areas for the conservation of biodiversity and the maintenance of environmental stability, and
- To enhance knowledge and awareness among the general public on the importance of environmental protection and conservation”.

Organisation

The ECD is responsible to the Minister of Tourism Development, Environment, Science and Technology Environment Conservation Council that is chaired by the Chief Minister of Sabah and the Director of ECD serves as the Secretary of the Council. Members of the Council include the Secretary – General of the Ministry of Science, Technology and the Environment Malaysia and the Permanent Secretary of the Ministry of Tourism, Environment, Science and Technology, Permanent Secretary of Agriculture, Development and Food Industries; Permanent Secretary of Local Government and Housing and the Secretary of Natural Resources .

Management of ECD is the responsibility of the Director who is supported by the following divisions:

Planning Division – involved in formulation of environmental regulations and guidelines, R & D projects, management information systems and education and awareness.

Evaluation Division – administration of the EIA process and monitoring of compliance of agreed environmental conditions.

Enforcement Division – enforcement and monitoring, investigation of environmental complaints and environmental offences and issuance of summons and fines.

Management Services Division – General administration and management of ECD

Funding

ECD operations and activities are supported by an annual budget from the Government of Sabah.

Activities

Activities of ECD are directed at improving environmental management in Sabah, focal activities being environmental planning, environmental assessment, environmental monitoring and assessment, environmental awareness and education and environmental systems.

ECD is responsible for the implementation of the Conservation of Environment (Prescribed Activities) Order, 1999 which stipulates the need for the conduct of an environmental assessment (EIA) for prescribed activities before development is allowed to proceed. The requirements for development of agricultural and forestry projects are quoted below from the First Schedule:

“Agricultural development:

- (i) development of agricultural estates or plantation covering an area of 500 hectares or more-
 - (a) from land under secondary or primary forests;
 - (b) which would involve the resettlement of 100 families or more; or
 - (c) which would involve modification in the use of the land;
- (ii) conversion of mangrove swamps and other wetland areas into agricultural estates having an area of 50 hectares or more; or
- (iii) development of agricultural are adjacent to any conservation are, park or sanctuary declared under any written law”.

“Forestry:

- (i) extraction or felling of timber covering an area of 500 hectare or more;
- (ii) extraction or felling of any timber within or adjacent to any water catchment are whether it has or has not been declared under any written law; or
- (iii) development of forest plantation having an area of 500 hectares or more”.

ECD provides an on-line access to various stages of the EIA process for special public interest EIAs such as the proposed Sino-Malaysia joint venture to develop forest

plantations in the Kalabakan and Gunung Rara forest reserves. It has also developed specific EIA guidelines for four prescribed activities, including the “EIA Guideline for Oil Palm Plantation Development” which provides an overview of the most important aspects, potential impacts and mitigation measures that must be taken into consideration at various stages of oil palm plantation development.

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Profiles of Major Players in the Supply Chain of the Palm Oil Industry in Malaysia

Other Players

- The National Association of Smallholders (NASH)

The National Association of Smallholders (NASH)²

Introduction

“NASH or the National Association Of Smallholders Malaysia, is a non-profit organisation created for the purpose of safe-guarding the welfare and rights of approximately 1 million smallholders cultivating various crops in Malaysia.

In solving problems that arise from time to time, NASH adopts a philosophy of constructive engagement initiating and facilitating effective communication linkages between the smallholders, the Government other non-profit organisations and the private sector.

Brief History

Prior to independence, small parcels of traditional land were allocated to rural families. When the country achieved its independence in 1957, the Government alienated more land to farmers to help them improve their socio-economic well-being.

As early as 1952, smallholders were recognised as a force to be reckoned with. This is even more so now because, of the total area of almost 5 million hectares under agriculture, over 3 million hectares are currently under smallholdings.

In the early years, dispersed independent smallholders in several states decided to form smallholders associations. There were several state-based associations. These splinter organisations later formed loose coalitions under the banner of a National Council Of Smallholders Associations.

In 1975, the Government initiated a move to integrate the various smallholders associations giving birth to the National Association of Smallholders or NASH.

Duality of the Malaysian Agricultural Scenario

The Malaysian agricultural scenario is dominated by two distinct sections, namely, the Estates sector and the Smallholders sector. The term “estates” refers to land under singular or co-ownership aggregate areas of which is in excess of 40.5 hectares. Any lands under singular or co-ownership, the aggregate area of which is less 40.5 hectares are deemed to be “smallholding”.

Representation

Since its inception in 1975, NASH continue to be the premier organisation recognised by the Government as the official voice of all smallholders, regardless of whether they are cultivators of rubber, oil palm, cocoa, coconut, padi, pepper, vegetables, fruits or others.

² The profile on NASH was prepared by the NASH Secretariat for this study and it is reproduced in full in this report.

Smallholders are accepted as life members of NASH for a token of RM12.00 or approximately US3.00. To date, NASH has a cumulative membership of no less than 60,000 members.

Apart from individual membership, NASH also accepts group or corporate membership especially from cooperatives. Currently, at least 17 cooperatives have joined NASH as associate members. These cooperatives are proxies for about 40,000 members.

Thus, in total, NASH directly represents over 100,000 members while being the official mouthpiece for over 1 million smallholders.

Smallholders Profile

In total, it is estimated that there altogether over 1 million smallholders households with a total aggregate family membership of over 5 million persons. This is equivalent to approximately 25 percent of the total population of the country.

The average age of the operating smallholders is in excess of 60 years old. Approximately 40 percent of the household members are between 15 to 40 years old and they have generally migrated to the city centres, holding better jobs by virtue of their better education.

Those remaining in the rural area are those below 15 or over 40 thereby bringing about problems with respect to labour availability.

The average lands owned by the smallholders is 2.5 hectares.

Land Under Various Crops In 1998 (Hectares)

Crop	S'holders	Estates	Total
Oil Palm	1,326,745	1,751,371	3,078,116
Rubber	1,372,700	183,000	1,555,700
Padi			660,000*
Coconut			200,000*
Cocoa	86,842	46,847	133,689
Tobacco			14,200*
Pepper			11,073*
Coffee			8,274*
Pineapple	2,580	5,000	7,580*
Tea			2,300

**Mainly under Smallholdings.*

Vision

A progressive, innovative, proactive, self-reliant smallholders community the obtains its rightful share of national wealth. Enjoying social justice while retaining its legitimate place in the Malaysian society with pride and dignity.

Mission

To promote the socio-economic well-being of smallholders by fostering inter-agency and inter-organisational goodwill so as to mobilise effectively all available resources with the ultimate aim of enhancing overall productivity, income and quality of life.

Organisational Structure

- President
- Deputy President
- 3 Vice President
- 11 State Representatives
- 6 Bureau Chiefs
- Secretary General
- Treasurer

Major Functions

Research And Development

NASH initiates research and development projects in collaboration with Ministries, Research Agencies and institutions of higher learning with special emphasis on transfer of agricultural technology, productivity and income enhancement and the improvement of the quality of life.

Advocacy

NASH actively implements an advocacy programme whereby problems identified within the smallholders sector arising from weakness in implementation of policies are quickly brought to the attention of relevant agencies, ministries or the Cabinet together with proposals for remedial action.

In this manner, NASH plays its legitimate role as a partner in development, complementing and supplementing governmental effort to develop the rural sector.

Networking

In order to widen its coverage, NASH has created chapters in every state covering sub chapters in over 150 regions. Each region is being coordinated by its respective state unit, which in turn subscribes to the National Headquarters.

Apart from independent chapters, NASH also accepts rural agricultural cooperatives as direct corporate members. Using its network, NASH has within its registers a membership of over 100,000.

NASH also plays a catalytic role with respect to rural development by ensuring a two communication channel between the government and the smallholders through its network of appointed information officers within the organisation.

Capacity Building

A common problem that characterises rural development is the lack of leadership capacity. NASH maintains contact and engages in continuous dialogue with the various chapters providing suggestions and advise on various topics including organisational development, leadership and management.

In recent times, NASH has strengthened its organisation by co-opting the services of senior ex-civil service professionals as volunteers in NASH. It has also introduced information technology into its management programme. NASH now also has its own premises which is located in the building owned by the Smallholders Plantation Cooperative.

Strategic Alliances

In order to ensure effective utilisation of available resources, NASH develops strategic alliances with various Government Ministries, Government Agencies, Institutions of Higher Learning, the private sector and other non-profit organisations.

NASH is currently exploring avenues for the expansion its sphere of contact to international organisations so that it can learn and benefit from the experiences of other countries.

Cooperative Development

NASH has also initiated the development of the Smallholders Plantation Cooperative. This cooperative owns 2,500 hectares of oil palm plantation generating dividends for its 8,806 members. In aggregate, these members hold shares totaling RM1.3 million.

Income Generation

In order to support the implementation of its programmes, NASH relies on internal sources of financing. Apart from the meagre income from membership fees, ex-gratia contributions from the Smallholders Plantation Cooperative, NASH has incorporated a few companies providing services related to plantation development, supply of seedlings and fertilizer and other input and marketing of oil palm.

The Future

The acid test for NASH is its capacity to create a rural agricultural community that is truly self-reliant and independent. In the past, the philosophy of development was to advocate “giving a man a fish”, if you will, which allows him to survive for a day. Now, however, in view of the advent of information technology, globalisation and liberalisation, this is no longer valid.

NASH now believes in “teaching the smallholders to fish”, so to speak, allowing him to survive for this lifetime. This of course is a monumental task considering the fact that NASH is extremely short of resources. NASH however is undaunted. It believes that advocation and education is the answer.

Happily though, in spite of all its short comings and constraints, NASH appears to be making headway. More and more smallholders are now opting to become members of NASH.

NASH now has also earned credibility as the point of reference for all matters regarding smallholders. It is often consulted by the Ministries and Government Agencies and private sector alike.

God willing, given emerging trends, the creation of a dynamic, progressive, self-reliant rural community leading and managing all aspects of development, production and marketing that was once no more than an idealistic dream may yet manifest itself as reality”.

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