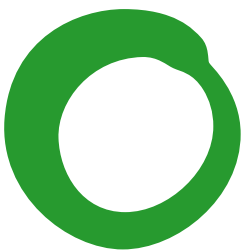




**Greasy Palms:
European buyers of
Indonesian palm oil**



**Friends of
the Earth**

Greasy Palms: European buyers of Indonesian palm oil

March 2004

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About this report

The international trade in palm oil is a key driver of rainforest destruction and human rights abuses on a massive scale.

This report is one of two research projects undertaken for Friends of the Earth in 2003 into the impacts of the palm oil industry in South East Asia, its links to the European market and the involvement of European companies in the palm oil trade. Chapters 1 – 3 of this report (examining the growth of the European market for oil palm and the Indonesian export market) are printed here. Chapters 4 – 6 (focusing on the palm oil market in UK, the Netherlands and Sweden) are available on request from Friends of the Earth.

Research methodology into the impacts of palm oil included monitoring reports compiled by the Indonesian non-governmental organisation (NGO) SawitWatch and interviews with community members and local activists. The SawitWatch data had been gathered over a period of five years, based on field investigations, meetings with local community members, media reports and regular monitoring. The analysis of the European market focused particularly on the companies trading in palm oil in the UK, the Netherlands and Sweden as well as giving a general overview of the trade in oil palm and the growth of the European market.

This research is available in two reports:

- Greasy palms: the social and ecological impacts of large-scale oil palm plantation development in South East Asia (*original research: Eric Wakker, AIDEnvironment*)
- Greasy palms: European buyers of Indonesian palm oil (*original research: Jan Willem van Gelder, Profundo*)

A summary of the two research reports, *Greasy Palms – palm oil, the environment and big business* (Friends of the Earth, 2004) is also available.

These reports can be obtained from Friends of the Earth, 26 – 28 Underwood Street, London N1 7JQ

Tel: 020 7490 1555 or downloaded at

www.foe.co.uk/resource/reports/greasy_palms_buyers.pdf [chapters 4 - 6 available on request]

www.foe.co.uk/resource/reports/greasy_palms_impacts.pdf

www.foe.co.uk/resource/reports/palm_oil_summary.pdf

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Chapter 1 The global oil palm sector

1.1 History of the cultivation of oil palms

The oil palm (*Elaeis guineensis*) originates from the coastal regions of West Africa, where it was mainly grown along rivers. Palm oil is presumed to have formed part of the diet in large parts of Africa well before our written history began. Evidence of palm oil has been found at archaeological digs in Egypt, dating from 3,000 BC, which seems to indicate that it was already traded on the African continent at that time.

The Portuguese discovered the crop during their expeditions to West Africa in the 15th century, and palm oil later became a basic part of the food on board of slave ships. Small-scale growers in Central and West Africa began to export their products to Liverpool and Marseilles in the late 18th century. The industrial revolution created a much larger demand for palm oil, which was used at the time to make candles and as a lubricant for machines.

A big boost to the trade was given by the anti-slavery legislation in the first part of the 19th century. The transportation of slaves from West Africa to North & South America and the Caribbean had been a lucrative trade for British shipping, and they needed an alternative. The trade in palm oil increased by leaps and bounds. Barrels were put together in Africa, taken to the villages, filled with oil and paddled in canoes to the port. Towards the end of the 19th century the first plantations were established by the colonial powers in Africa (United Kingdom, Belgium) to increase output.¹

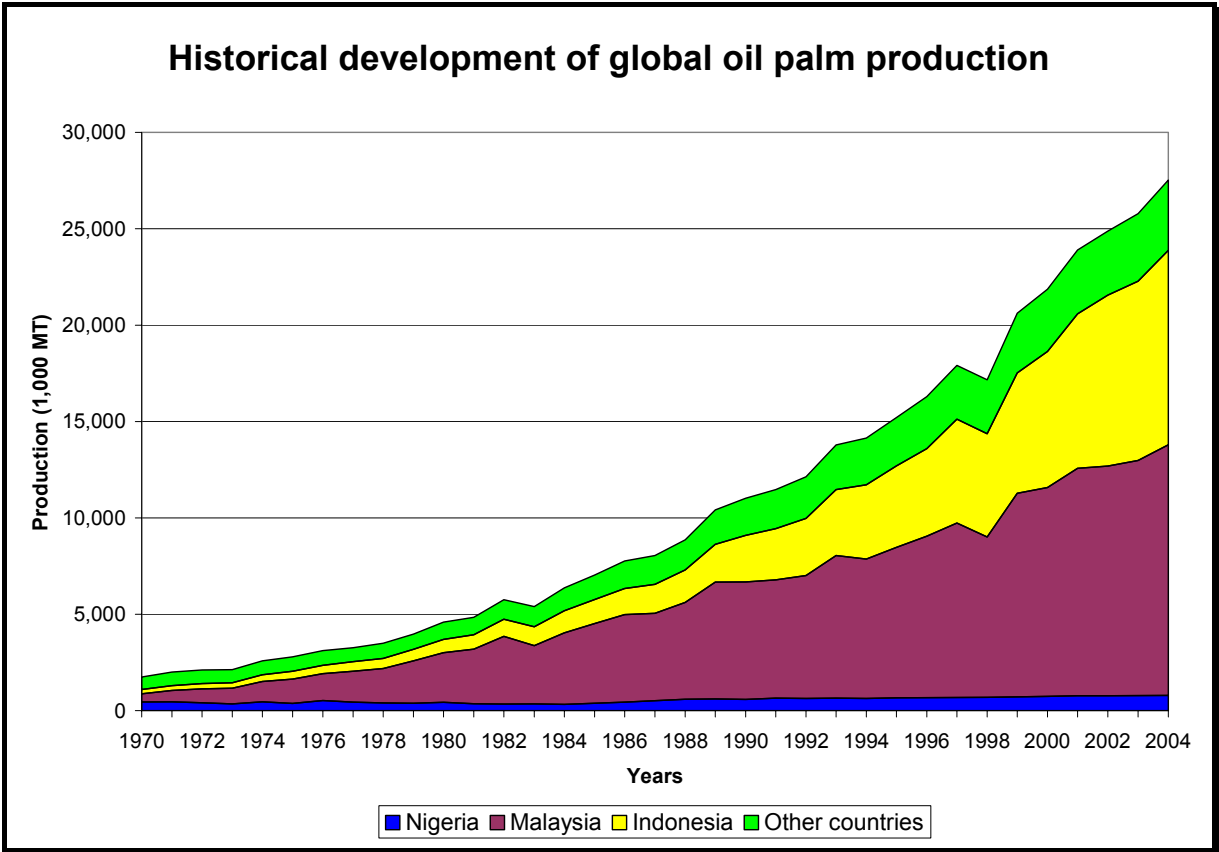


Figure 1. Historical development of the global palm oil production 1970-2004

At the beginning of the 20th century the first oil palm plantations were established in Asia. The Dutch colonial rulers started commercial exploitation in Sumatra after 1910 and British

traders established plantations in Malaysia in the 1920s. Right from the beginning it was used as an export crop in these countries, so that quality control and bulk handling systems were initiated.

Growth was slow, however, until the late 1950s, when Malaysia decided to diversify significantly away from rubber, the principal export crop. Declining world rubber prices contributed to this decision, but also the need to settle landless people and the ambition to open up forest areas to fight communist movements. A principal agent of this development was the government Federal Land Development Agency (FELDA) which undertook forest clearance and the settling of smallholders.²

As shown in Figure 1, Malaysia surpassed Nigeria as the most important palm oil producing country in the world in the early-1970s. At present Malaysia accounts for half of global palm oil production. At the end of the 1960s Indonesia started to follow the Malaysian example, but only since the mid-1980s has the sector really expanded. At the moment Indonesian oil palm production is approaching that of Malaysia. As oil palm production in Africa is largely stagnating and the oil palm sector in Latin America is still underdeveloped, the two Asian countries dominate world production at present (see Table 3).³

The continuing expansion of the Indonesian oil palm sector will be described in more detail in Chapter 2.

1.2 The global oil palm production chain

At present the production and usage of palm oil is no longer confined to a specific geographic region or a limited number of end-products. Large quantities of palm oil are consumed all over the world, as ingredients of numerous products manufactured by a large number of industries.

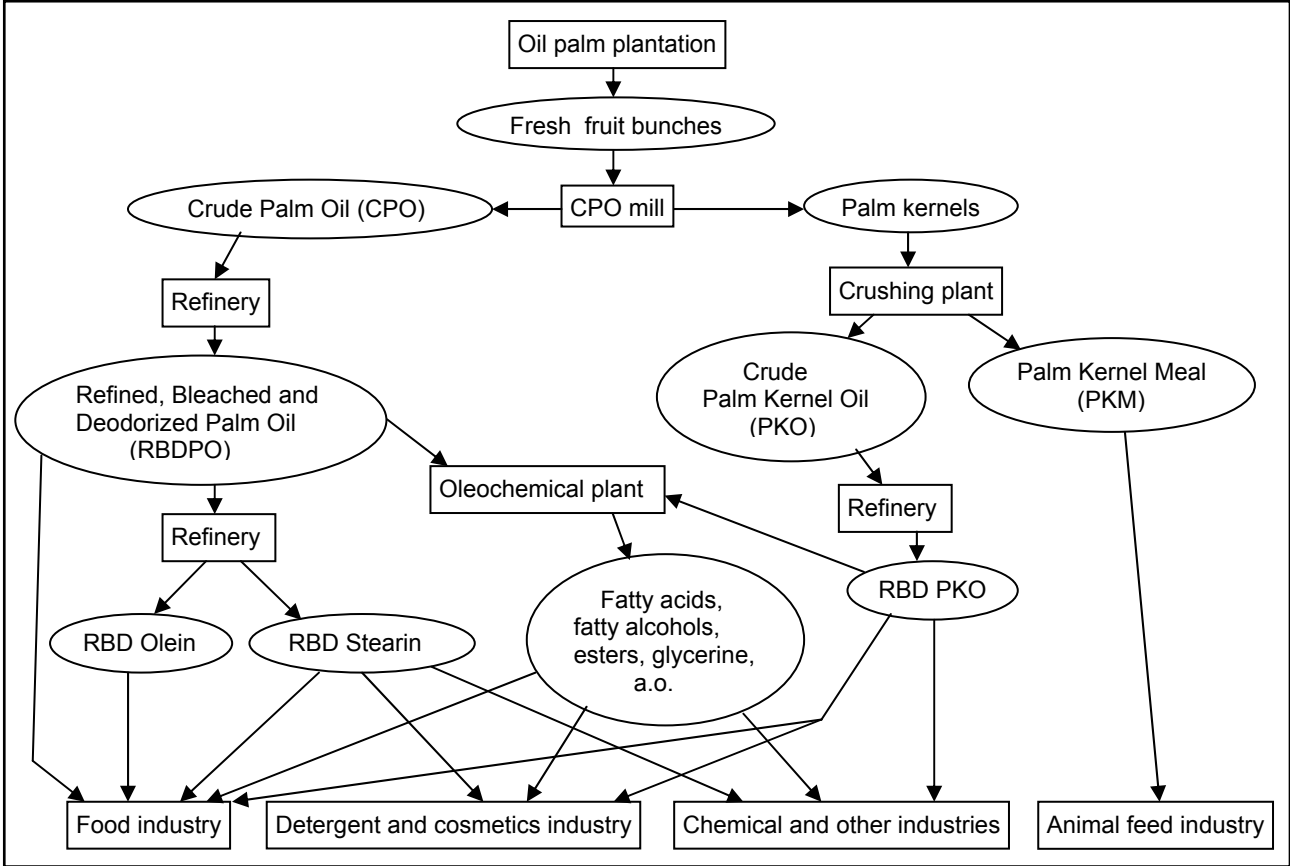


Figure 2. Overview of the oil palm production chain

To supply oil palm and its derived ingredients to these industries and their customers, an integrated, global oil palm production chain has developed over the years. Figure 2 gives a schematic overview of this global oil palm production chain, from the plantation to the end-consumer. The principal stages in the global oil palm production chain, as shown in Figure 2, will be described in the following paragraphs.

1.2.1 Oil palm plantations

The oil palm requires a wet tropical climate with temperatures between 24 and 32 °C throughout the year. This means its growth is generally limited to latitudes of approximately ten degrees north and south of the equator, at altitudes below 700 meters.⁴

The oil palm tree reaches maturity in three to four years, when it is about 2 meters high. Thereafter it continues to grow by another 70 centimetres per year and can reach a height of more than 10 meters. Its economic life continues until it reaches the age of 20 to 25 years, with peak production between the sixth and tenth year.⁵

When the palm tree is mature, each year large bunches of palm fruits (the size of small plums) grow in the armpits of the palm leaves. A so-called *Fresh Fruit Bunch* (FFB) can contain from 1,000 to 3,000 individual fruits, together weighing 10 to 20 kilograms. Every oil palm tree produces several bunches per year. The fruit yield per hectare therefore is enormous: 10 to 35 tonnes per hectare.⁶

1.2.2 Crude palm oil mills

After harvesting, the Fresh Fruit Bunches (FFB) have to be processed within 24 hours, to avoid the rapid build-up of free fatty acids in the harvested fruit. This means that the processing mills have to be located close to the production sites, with every cluster of oil palm plantations needing its own crude palm oil (CPO) mill.

The oil palm fruit looks like a plum. The outer fleshy mesocarp gives the palm oil, while the kernel (which is inside a hard shell) gives palm kernel oil and palm kernel meal. In the CPO mill, the flesh of the palm fruit is sterilised and mechanically separated from the kernel. The kernel is shipped to a crushing plant, and the fruit is mechanically pressed to extract the Crude Palm Oil (CPO), a yellow-red liquid. The CPO then is clarified and purified.⁷

The average recoverable palm oil content from fresh fruit bunches is about 20 percent, so the CPO yield per hectare is about 2 to 7 tonnes. In Indonesia the average CPO yield in recent years has been 3.2 tonnes per hectare. This is much higher than any other oil crop in the world, the average oil yield for soybeans is only 0.5 tonnes per hectare.⁸ The residues of the FFB (70% of the gross yield) are used as fuel and for mulching.⁹

1.2.3 Palm kernel crushing plants

The palm kernels are crushed in crushing plants, which can be located in either in producer or consumer countries. These are either dedicated palm kernel crushing plants or general oilseed crushing plants which also process soybeans and other oilseeds.¹⁰

The crushing process yields two products: 45% palm kernel oil (PKO) and 55% palm kernel meal (PKM). One hectare of oil palms therefore yields three different basic products: CPO (3.2 tonnes per hectare), PKO (0.34 tonnes per hectare), and PKM (0.42 tonnes per hectare). These figures are recent yield-figures for the Indonesian palm oil sector.¹¹

The chemical composition of palm kernel oil is very different from the composition of palm oil. Palm oil contains mainly palmitic and oleic acids and is about 50% saturated, while palm kernel oil contains mainly lauric and myristic acids and is around 82% saturated (see Table 1).

The high content of lauric acid gives palm kernel oil its sharp melting properties, meaning hardness at room temperature combined with a low melting point (just above room temperature). This makes palm kernel oil very well suited as shortening in pastry and to replace cacao butter. Palm kernel oil does not become rancid quickly and can be stored at room temperature, ensuring that pastry and confectionery have a longer shelf life. But once consumed, it melts in your mouth directly.

Only palm kernel oil and coconut oil have such a high content of lauric acid - other edible oils usually have less than 1%. For this reason palm kernel oil and coconut oil, the *lauric oils*, are generally more expensive than other edible oils.¹²

Fatty acid	C-atoms	Saturation	Palm oil	Palm kernel oil
Caprylic acid	8	Saturated	0%	1%
Capric acid	10	Saturated	0%	3%
Lauric acid	12	Saturated	0%	51%
Myristic acid	14	Saturated	1%	18%
Palmitic acid	16	Saturated	43%	9%
Stearic acid	18	Saturated	5%	2%
Oleic acid	18	Mono-unsaturated	39%	15%
Linoleic acid	18	Poly-unsaturated	11%	0%
Linolenic acid	18	Poly-unsaturated	0%	1%
Total			100%	100%

1.2.4 Palm oil and palm kernel oil refineries

Most of the crude palm oil as well as most of the crude palm kernel oil is processed further in refineries, which can be located either in producer or consumer countries. The primary processes undertaken in a refinery are:¹⁴

- **Neutralisation** (also called degumming): Crude oil must be neutralised to remove any 'free' fatty acids (those which may have broken away from the triglyceride molecule) which, with time, would otherwise react with oxygen and cause the oil to develop a rancid taste. The neutralised oil is washed and dried thoroughly as a high moisture content would also cause deterioration of the oil;
- **Bleaching**: Colour and impurities are removed by bleaching the oil with a special absorbent earth. The earth is carefully filtered out to leave the oil clear;
- **Deodorizing**: Deodorisation removes any smell and taste in the oil. This is achieved by blowing steam through the heated oil and a vacuum draws off the steam along with the smell and taste.

Through these processes, CPO is processed into refined, bleached and deodorized palm oil (RBDPO). RBDPO is a light yellow liquid or semi-solid at room temperature, melting to a clear yellow liquid on slightly heating. RBDPO is used as an industrial frying oil to produce chips, crisps, instant noodles, and other snack foods. It is also used to produce margarines, shortenings, ice cream, condensed milk, vanaspati, soap and other products.

A secondary process undertaken in most palm oil refineries is the *fractionating* of refined palm oil. This means that the palm oil is cooled under controlled conditions, separating the

high melting point triglycerides in the oil from the low melting point triglycerides. This yields two separate products.¹⁵

- RBD palm olein: a clear yellow liquid at room temperature;
- RBD palm stearin: a white solid at room temperature, melting to a clear yellow liquid on heating.

The chemical composition of both products is comparable to that of palm oil (see Table 1), but olein contains more oleic acid and less palmitic acid, while stearin contains more palmitic acid and less oleic and linoleic acid.¹⁶

Both fractions are used for different end-products:¹⁷

- In its pure form, RBD palm olein is sold as cooking oil. RBD palm olein is also used in the manufacture of margarine and shortenings and in industrial frying of processed foods like potato chips, chips, instant noodles and other snack foods.
- RBD palm stearin is used in for margarine and shortenings and as a source for producing specialty fats for coating in confectionery. It's also used in the soap and oleochemical industries.

The refining of crude palm kernel oil follows the same pattern. First crude palm kernel oil is processed into refined, bleached and deodorized palm kernel oil (RBDPKO), which is used mainly in soap, detergents and cosmetics as well as in margarine and shortenings. Part of the RBD palm kernel oil is fractionated into a solid and a liquid component. RBD palm kernel olein is a light coloured oil. It can be used as cooking oil or as a base oil for the manufacturing of margarine. RBD palm kernel olein has excellent keeping qualities and is therefore often used in the commercial frying of nuts, roasting of popcorns, candy making and cracker spraying. The hydrogenated product is also used to replace milk fat in ice cream making. Its industrial application includes the production of soaps, shampoo, detergents, cosmetics and lubricants.¹⁸

1.2.5 Manufacturers of margarine, shortenings and fats

Manufacturers of margarine and speciality fats further process refined palm oil and refined palm kernel oil, to produce margarine, frying fats and spreads for the consumer market and industrial margarines, frying fats, shortenings, cocoa butter substitutes, and other food ingredients for the bakery, chocolate, confectionery, ice-cream, snacks and biscuits industries. Often these type of companies are integrated with edible oil refineries, which makes it difficult to make clear distinctions.

Manufacturers of margarine and speciality fats modify and combine various kinds of refined edible oils, to achieve an oil- or fat-mixture with the desired texture, consistency and other physical and chemical properties. These modifications are done using various techniques:¹⁹

- **Fractionation:** see paragraph 1.2.4;
- **Hydrogenation:** Adding hydrogen to unsaturated fatty acids to create saturated fats with a higher melting point. This process is often called *hardening*.
- **Rearrangement:** Combining two different oils to produce a fat with different melting characteristics.

With these techniques specific oil- or fat-blends can be created, which eventually can be mixed with oil-soluble ingredients such as vitamins, colours, flavour and emulsifiers. Some of these oil- or fat-blends are used as ingredients in all kinds of food industries.

Other oil- or fat-blends are mixed with water (in which whey, brine, milk proteins and starches are dissolved) at temperatures of 50°C - 60°C. After pasteurisation, the blend is carefully chilled under constant agitation to form a water-in-oil emulsion. This process generates various types of margarines and spreads, sold both to consumers and to other food industries.

1.2.6 Oleochemical industries

The oleochemical industry uses edible oils to produce *oleochemicals*, such as fatty acids, fatty alcohols, glycerine and methylesters. Oleochemicals are used in the manufacture of such products as foods and specialty fats, soaps and detergents, cosmetics and personal care products, lubricants and greases, drying oil, surface coatings and polymers, and biofuels (see Table 2).²⁰

Similar chemicals may be synthesized from crude oil, but then they are classified as petrochemicals. The advantages of using oleochemicals over using comparable petrochemicals are:

- oleochemicals are derived from renewable resources;
- oleochemicals are more readily biodegradable;
- the production of petrochemicals uses more energy and causes greater emission of pollutants.

Table 2 Applications of oleochemicals ²¹	
Industry/Product	Uses
Leather	Softening, dressing, polishing and treating agents
Metal Work & Foundry	Cutting oils, coolants, buffing and polishing compounds
Mining	Surface-active agents for froth floatation of ore and oil-well drilling
Rubber	Vulcanising agents, softeners and mould-release agents
Electronics	Insulation and special-purpose plastic components
Lubricants and Hydraulic Fluids	General and specialty industrial lubricants and biodegradable base oils, hydraulic fluids
Paints and Coatings	Alkyd and other resins, drying oils, varnishes and other protective coatings
Printing and Paper Recycling	Printing inks, paper coatings, photographic printing, de-inking surfactants
Plastics	Stabilizers, plasticizers, mould-release agents, lubricants, anti-static agents, antifogging aids, polymerisation emulsifiers
Biofuels	Methyl esters and alcohols
Waxes	Ingredients in waxes and polishes
Soaps & Detergents	Industrial and domestic products, specialty surfactants
Health & Personal Care	Culture media, tableting aids, soaps, shampoos, creams, lotions
Food	Emulsifiers, confectionery and specialty fats for bread, cakes, pastries, margarine, ice-cream and other food products
Animal Feeds	Nutritional supplements

Until 1985 the oleochemical industry was mainly located in Northern America, Japan and Europe and the main edible oils used were coconut oil (for C12 and C14 fatty acids) and tallow (for C16 and C18 fatty acids). Since then, palm kernel oil (for C12 and C14 fatty acids) and palm oil (for C16 and C18 fatty acids) have become the main feedstocks for the global oleochemical industry. This is caused by the limited growth in global tallow and coconut oil production, lower costs of oil palm products and the convenience in using two products from the same supplier.

At the same time the strongest growth in basic oleochemical production capacity took place in Malaysia and - to a lesser extent - Indonesia and other ASEAN-countries. In 2000 the global production volume of basic oleochemicals amounted to 6.3 million tons of which 2.3 million tons (36%) were produced in the ASEAN-countries.²²

It is generally estimated that 14% of global edible oil production is processed by the oleochemical industry.²³ For palm oil and especially palm kernel oil this percentage might be much higher.

Unlike refineries, oleochemical plants break down palm oil and palm kernel oil into their chemical components. All edible oils and fats are composed of molecules called *triacylglycerols* or *triglycerides*. These molecules consist of a glycerol molecule to which are attached three fatty acids, usually of different types. The primary process in the oleochemical industry therefore is to break up the triacylglycerols in separate fatty acids as well as glycerine (see Figure 3).²⁴

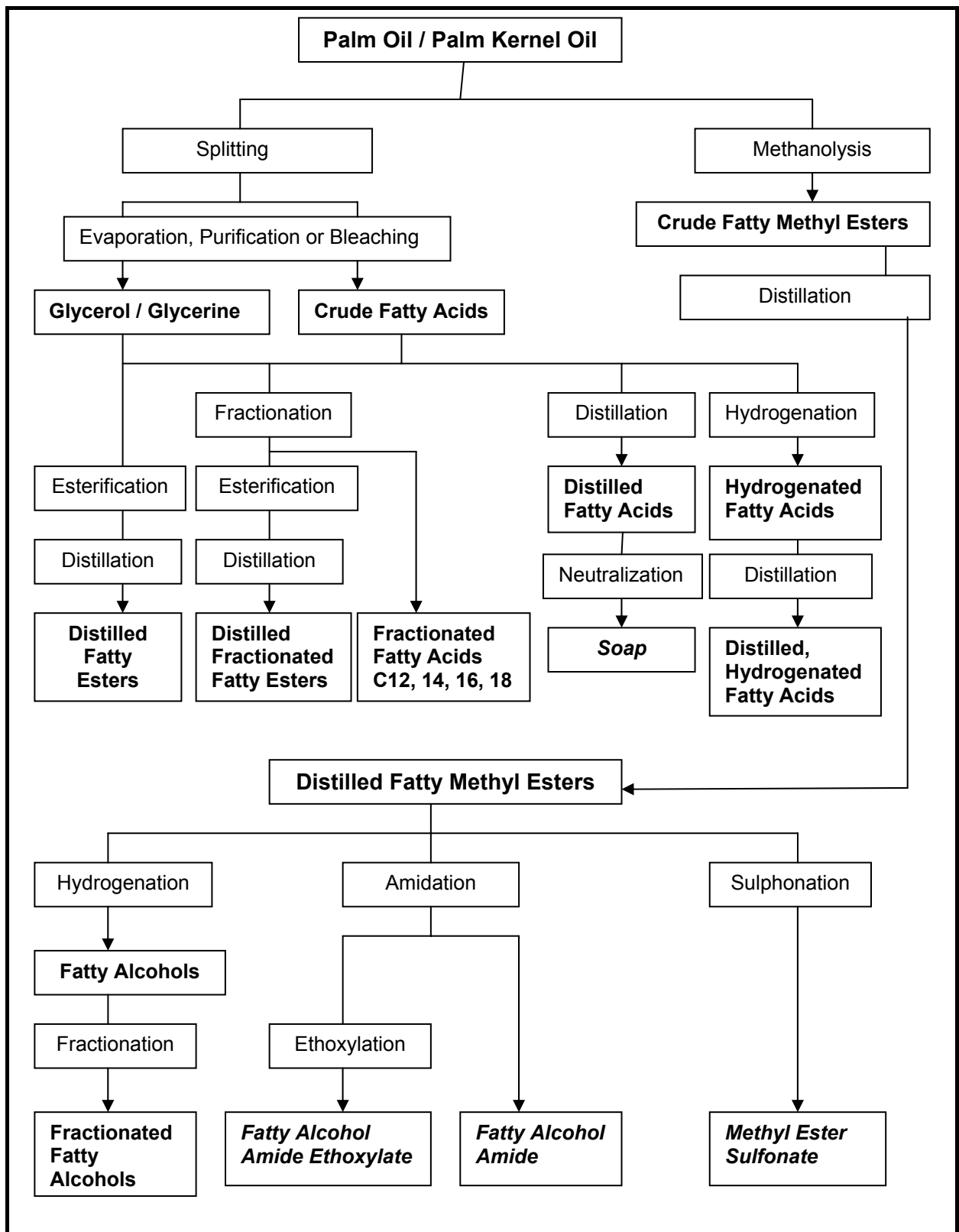


Figure 3. Basic oleochemicals (bold) and downstream oleochemicals and derivatives (italics)

Some additional information regarding the uses of these different types of oleochemicals:

- **Glycerine:** Glycerine is used in pharmaceuticals, perfumery, food emulsifiers, cigarettes, alkyd resins, cellophane, dynamite, ester gums, toothpaste, polyurethane and polyols.

- **Fatty acids:** Fatty acids are used in the cosmetics industry on a large scale. Fatty acids derived from palm kernel oil are often used in hair cosmetics, while fatty acids derived from palm oil are often used in skin cosmetics (see Table 1).²⁵
- **Fatty alcohols:** Fatty alcohols are used on a large scale to produce *surfactants*. A surfactant is a material that can greatly reduce the surface tension of water when used in very low concentrations. Because of this property surfactants are used as detergents in laundry and household cleaning products, as foaming agents in the production of plastics or as emulsifier in the production of cosmetics, margarine and other food products. The best-known surfactant is ordinary soap, which is always made from vegetable oils. Palm kernel oil is most commonly used and to a lesser extent coconut oil. (To produce normal soap, these oils do not have to be processed in an oleochemical way).²⁶ But besides soap there are several other types of surfactants. The intermediate products used in the production of 80% of all surfactants (except for soap) are *fatty alcohols*, which can be produced from lauric oils (palm kernel oil or coconut oil) or from mineral oil. Total global surfactant capacity using oleochemical feedstocks is about 1.01 million metric tons, almost equal to the 1.10 million metric tons capacity using petrochemical feedstocks.²⁷

1.2.7 Final processing industries

Oil palm products are being used to process a broad range of final products in a number of industrial sectors.²⁸

- **Food industry**

Palm oil is valued by the food industry for its competitive price compared to other oils and fats, its nutritional advantages over other fats and the fact that it contains hardly any cholesterol. Ingredients derived from palm oil are used in margarine, frying fat, shortenings, mayonnaise, sauces, salad oil, potato chips, crisps, instant noodles, snacks, biscuits, bread, cakes, pastry, chocolate, confectionaries, ice cream, coffee whitener and many other food products.

Palm kernel oil and its hydrogenated and fractionated products are widely used either alone or in blends with other oils for biscuit doughs and filling creams, cake icings, ice-cream, imitation whipping cream, coffee whiteners, substitute chocolate and other coatings, sharp-melting margarines, et cetera.²⁹

Oleochemical ingredients derived from palm oil and palm kernel oil are used on as emulsifiers for the production of margarine and other food products.

- **Soap and detergents industry**

Lauric oils (palm kernel oil and coconut oil) are indispensable in soap making. Good soap must contain at least 15% lauric oils for quick lathering, while soap made for use in sea water is based on virtually 100% lauric oils. Lauric oils also confer hardness, solubility and a feel of quality to soap. Coconut oil has been the traditional fat for this application but is increasingly substituted by palm kernel oil.³⁰

Palm oil is still used to make soap as well, but on a declining scale.

Oleochemical ingredients derived from palm oil and palm kernel oil are used on a large scale for the production of detergents, personal care products and household care products.

- **Cosmetics industry**

Palm oil has the advantage of being more easily absorbed by the skin than other oils, so it is found in beauty creams, lotions, shampoo, lipsticks, et cetera.

Oleochemical ingredients derived from palm oil and palm kernel oil are used on a large scale for the production of cosmetics.

- **Leather and textile industry**

Palm oil is used for greasing and softening leather. In the textile industry it is used as a lubricant, since it has the advantage of being easier to remove than mineral oil.

Oleochemical ingredients are also used in various applications.

- **Metal industry**

Palm oil is used on a large scale for cold rolling of thin metal sheet, and sharpening and polishing special steels.

- **Chemical industry**

Oleochemical ingredients derived from palm oil and palm kernel oil are used for the production of plasticizers and as additives to plastics, rubber and textiles. They are also used in the production of paint and surface coatings.

- **Compound feed industry**

All palm kernel meal is processed and blended into compound feed for the livestock industry. Its high carotene content also makes palm oil an inexpensive source of vitamins in animal feed.

- **Other industries**

Palm oil is also used as a substrate for cultivating yeast, as a lubricant additive, as a component in ski wax and printing ink, to make candles, et cetera.

Palm kernel oil is an ingredient for insecticides and fungicides, hydraulic brake fluids, and substances used in the electronics industry.

1.3 Global palm oil production

Commercial cultivation of oil palms is only possible in low-land areas near the equator, i.e. in Northern Latin America, Central Africa and South Asia. Among these regions, the position of South East Asia has been very dominant for the past decades. Malaysia and Indonesia together account for a staggering 84% of global output and Thailand and Papua New Guinea add another 3%. Countries in Africa (Nigeria, Ivory Coast) and Latin America (Colombia, Ecuador) play a far more modest role as shown in Table 3.

Country	1995	1998	1999	2000	2001	2002	Growth	Share
Malaysia	7,811	8,315	10,553	10,840	11,804	11,908	52%	48%
Indonesia	4,220	5,361	6,250	7,050	8,030	9,020	114%	36%
Nigeria	660	690	720	740	770	775	17%	3%
Thailand	354	475	560	525	620	590	67%	2%
Colombia	388	424	501	524	548	528	36%	2%
Papua New Guinea	223	210	264	336	329	318	43%	1%
Ivory Coast	285	269	264	278	220	240	-16%	1%
Ecuador	180	199	263	222	201	217	21%	1%
Others	1,089	1,211	1,250	1,359	1,399	1,437	32%	6%
World total	15,210	17,154	20,625	21,874	23,921	25,033	65%	100%

Global palm oil production has increased by as much as 65% since 1995. But Indonesian palm oil output is growing even stronger (114%) and its global market share has increased from 28% to 36% in the past seven years. Malaysia, on the other hand, has seen its market share gradually decrease in the past seven years from 51% to 48%.

1.4 Global usage of oil palm products

1.4.1 Global palm oil usage

Global palm oil usage has increased by 70% since 1995. Figures on the main palm oil consuming countries and regions are listed in Table 4. It is important to note that the usage figures in this table refer to the countries and regions in which the palm oil processing industries are located. The products of these processing industries (margarine, confectionery, soap, cosmetics, etcetera) can of course be exported to end-users in other countries and regions. The actual geographical spread of the end-usage of palm oil therefore will differ somewhat from these figures.

As shown in Table 4, most of the major oil palm growing countries (Indonesia, Malaysia, Nigeria, Thailand, Colombia) are important palm oil users as well. But their market share is declining as their growth in usage is slower than the global average. Despite a usage growth of 36% in the past seven years, Indonesia has lost its position as the largest oil palm market in the world and has fallen back to third place behind India and the European Union.

With a growth in usage of 369% over the past seven years, India has overtaken Indonesia as the largest oil palm market in the world and now accounts for 14% of global usage. On its own, India accounts for 27% of global usage growth over the past seven years. However, this growth was mostly achieved in the late-1990s; since 2000 the growth of the Indian market has stagnated.

Country/region	1995	1998	1999	2000	2001	2002	Growth	Share
India	757	1,817	2,997	3,623	3,620	3,552	369%	14%
EU	1,689	2,051	2,168	2,368	2,855	3,211	90%	13%
Indonesia	2,160	2,810	2,960	2,977	2,857	2,933	36%	12%
China	1,294	1,549	1,407	1,618	2,145	2,500	93%	10%
Pakistan	1,157	1,129	1,062	1,117	1,240	1,337	16%	5%
Malaysia	1,098	985	1,231	1,386	1,474	1,186	8%	5%
Nigeria	725	776	776	845	891	972	34%	4%
Thailand	414	443	445	484	499	483	17%	2%
Egypt	400	409	409	438	473	467	17%	2%
Former Soviet Union	61	121	129	205	373	459	652%	2%
Colombia	378	367	408	429	448	456	21%	2%
Bangladesh	91	114	89	194	376	430	372%	2%
Japan	350	359	364	371	392	415	19%	2%
Turkey	190	186	159	209	261	278	46%	1%
Other countries	3,946	4,547	4,889	5,325	5,838	6,273	59%	25%
Total	14,710	17,663	19,493	21,589	23,742	24,952	70%	100%

The opposite is the case for China and also for the countries in the Former Soviet Union and Bangladesh: a spectacular growth has occurred especially since 2000. China now accounts for 10% of global palm oil usage and is the fourth largest market in the world.

A much more gradual growth was apparent in the second largest palm oil market in the world, the European Union. Growth in usage in the EU was nevertheless higher than the global average, resulting in an increase in global market share from 11% to 13% in the past seven years.

1.4.2 Global palm kernel oil usage

Global palm kernel oil (PKO) usage has increased by 59% since 1995, which is a lower growth rate than that of global palm oil usage (70%). In volume terms, global PKO usage decreased from 13% of global palm oil usage to 12%, because the extraction rate of palm oil per FFB is increasing while the PKO extraction rate is more constant. The relative value of global PKO usage compared with global CPO usage is generally somewhat higher, as PKO prices are usually above CPO prices.

Figures on the main PKO consuming countries and regions are listed in Table 5. Again, it is important to note that the usage figures in this table refer to the countries and regions in which the oil palm processing industries are located. End-usage could be located elsewhere as the products of these processing industries can be exported to end-users in other countries and regions.

Country/region	1995	1998	1999	2000	2001	2002	Growth	Share
Malaysia	600	661	792	815	875	944	57%	31%
EU	317	385	501	465	430	545	72%	18%
Indonesia	110	108	76	158	199	222	102%	7%
Nigeria	176	178	187	189	201	201	14%	7%
United States	125	149	202	145	135	197	58%	6%
China	10	12	20	21	117	95	850%	3%
India	1	7	26	50	61	69	6800%	2%
Brazil	47	44	29	57	48	51	9%	2%
Mexico	15	16	45	43	44	51	240%	2%
Japan	53	52	53	51	50	50	-6%	2%
Turkey	44	38	45	51	50	50	14%	2%
Others	434	522	513	503	565	592	36%	19%
Total	1,932	2,172	2,489	2,548	2,775	3,067	59%	100%

As shown in Table 5, the major oil palm growing countries (Malaysia, Indonesia, Nigeria) play a much more important role as palm kernel oil consumers than they do as palm oil consumers (see Table 4). Malaysia alone accounts for almost one-third of global palm kernel oil usage. This dominance is mainly explained by the well-developed Malaysian oleochemical industry, which processes PKO into soap, detergents and several intermediate products that are largely exported to other countries. A similar kind of industry is developing (mainly with Malaysian capital and technology) in Indonesia as well, which explains its strong growth figures and its current position as third largest PKO market in the world.³⁴

The second largest PKO market is still the European Union, which shows a gradual growth level just above the global average. The global market share of the EU on the PKO market (18%) is also significantly higher than its share of the global palm oil market (13%, see Table 4).

Although it has fallen back to fifth place in recent years the United States is still a significant PKO market, although the country hardly consumes any palm oil. This is explained by the strong soybean sector in the United States: the physical and chemical properties of soy oil are very similar to those of palm oil, while PKO has different characteristics and is used in different products.

As with the global oil palm market, China and India are important upcoming PKO markets, as is Mexico.

1.4.3 Global usage of edible oils

Palm oil and PKO are competing on a global scale with a number of other edible oils (vegetable and animal) in most markets. Each edible oil has different physical and chemical properties, making it more suitable for specific products or applications. However, for many products, one edible oil ingredient can easily be substituted for another, when availability and price makes this attractive. For price and marketing reasons end-consumers can also switch to comparable products (such as cooking oil), which are based upon another edible oil. For these reasons it is relevant to compare global oil palm usage with the global usage of other edible oils.

Oil type	1995	1998	1999	2000	2001	2002	Growth	Share
Soybean oil	19,436	23,601	24,489	25,139	27,350	29,912	54%	25%
Palm oil	14,710	17,663	19,493	21,589	23,742	24,952	70%	21%
Rapeseed oil	10,650	12,286	13,159	14,448	13,981	13,463	26%	11%
Sunflower oil	8,462	8,565	9,157	9,310	8,688	7,729	-9%	6%
Palm kernel oil	1,932	2,172	2,489	2,548	2,775	3,067	59%	3%
Other edible oils	37,248	38,805	39,570	40,142	41,449	42,121	13%	35%
Total	92,438	103,092	108,357	113,176	117,985	121,244	31%	100%

As Table 6 shows, palm oil has recently enforced its position as the second most important edible oil when ranked by global usage. Since 1995 palm oil usage shows the strongest growth of all edible oils and palm oil now holds a 21% share of the global edible oil market. When the market share of palm kernel oil (3%) is added to that of palm oil, both oil palm derived oils near the market share of market leader soybean oil (25%). Together palm oil and palm kernel oil accounted for almost 40% of the global growth in the usage of edible oils since 1995.

1.4.4 Global palm kernel meal usage

Global palm kernel meal (PKM) usage has increased by 56% since 1995. Palm kernel meal is mostly used by the feedstock industry and therefore its geographical usage pattern differs distinctively from those of palm oil and PKO (Table 4 and Table 5). Table 7 lists the main consuming countries and regions for PKM.

Country/region	1995	1998	1999	2000	2001	2002	Growth	Share
EU	1,936	1,988	2,226	2,263	2,192	2,359	22%	64%
South Korea	17	264	205	210	266	308	1711%	8%
Nigeria	44	34	44	61	120	151	243%	4%
Indonesia	11	39	13	56	95	141	1182%	4%
Australia	15	15	17	19	20	92	513%	2%
Malaysia	9	23	54	63	57	90	900%	2%
Thailand	41	57	66	63	75	71	73%	2%
Colombia	36	43	50	54	59	58	61%	2%
Ecuador	22	27	35	30	27	31	41%	1%
Cameroon	23	26	28	29	29	30	30%	1%
Others	221	274	293	317	504	366	66%	10%
Total	2,375	2,790	3,031	3,165	3,444	3,697	56%	100%

Table 7 shows that the European Union is by far the largest PKM consuming region in the world. But despite a growth in usage of 22% over the past seven years, its global market share has decreased from 82% to 64%. A number of important oil palm growing countries (Nigeria, Indonesia, Malaysia, Thailand, Colombia, Ecuador and Cameroon) are increasingly consuming their own PKM production domestically. Some industrialized Australasian countries, notably South Korea and Australia, are following the European example and are importing PKM for their livestock industries.

1.4.5 Global usage of oil meals

Just as palm oil and PKO, PKM is also competing on the global market with other oil meals. Global usage of oil meals increased by 28% since 1995, as is shown in Table 8.

Oil type	1995	1998	1999	2000	2001	2002	Growth	Share
Soybean meal	88,022	102,070	107,106	110,140	120,298	128,847	46%	61%
Rapeseed meal	17,017	19,028	20,275	22,121	20,870	20,234	19%	10%
Cotton meal	15,037	15,320	15,029	14,592	15,281	15,852	5%	7%
Palm kernel meal	2,375	2,790	3,031	3,165	3,444	3,697	56%	2%
Other oil meals	43,601	44,586	45,127	46,746	44,711	43,791	0%	21%
Total	166,052	183,794	190,568	196,764	204,604	212,421	28%	100%

The global oil meals market is clearly dominated by soybean meal, which increased its market share to 46%. The usage of palm kernel meal is growing faster than that of other oil meals, but still only has a 2% market share on the global oil meals market. Global compound feed production amounts to around 800 million tonnes annually, including 161 million tonnes of oil meals (20%).³⁸

1.5 World market prices for oil palm products

Since the beginning of 2000 the CPO and PKO prices on the world market were very low. This price trend was partly caused by the rapid expansion of CPO and PKO export from the main producing countries, especially Malaysia and Indonesia.

Year	CPO	PKO
October 1992 - September 1993	387	439
October 1993 - September 1994	450	566
October 1994 - September 1995	647	680
October 1995 - September 1996	545	729
October 1996 - September 1997	544	680
October 1997 - September 1998	640	653
October 1998 - September 1999	514	708
October 1999 - September 2000	338	533
October 2000 - September 2001	272	313
October 2001 - September 2002	359	379
October 2002 - April 2003	438	455

Because global demand is still increasing, CPO and PKO prices started to recover again in 2002 and this year they are rising further.

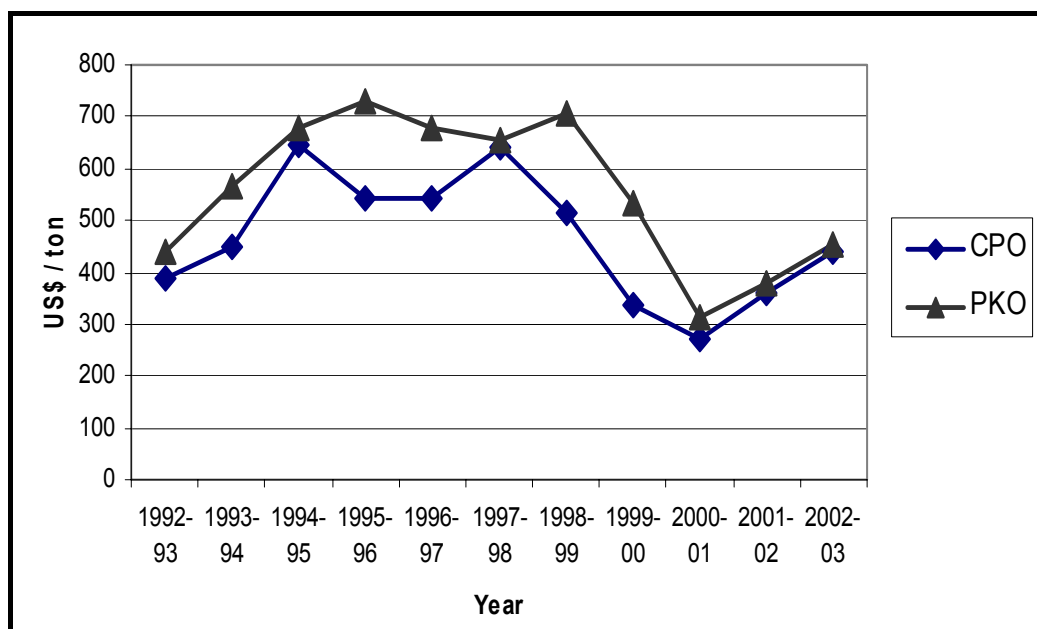


Figure 4. Development of the CPO and PKO prices in the past ten years

Chapter 2 The Indonesian oil palm sector

2.1 Historical development of the Indonesian oil palm sector

2.1.1 1848-1945: Colonial development

The development of the oil palm sector in South East Asia started in 1848, when four seedlings were transported from Africa to the botanical garden in Buitenzorg (the present-day Bogor) in Java, which was then under Dutch colonial control. The descendents of these four palms were transferred to Deli in Sumatra, where they were first used for ornamental purposes only. The first large-scale Indonesian oil palm plantation was set up by Dutch traders in 1911, using the seed of these Deli-palms. Soon afterwards, British traders set up oil palm plantations in Malaysia as well.⁴⁰

Setting up state-owned oil palm plantations in Indonesia was made possible by the Agrarian Law adopted by the colonial government in 1870, which declared all land not under permanent cultivation to be 'waste land'. Dutch developers were then offered as much land as they needed on 75-year renewable leases at nominal rent.⁴¹

Until the 1940s palm oil production developed at a moderate pace in both Malaysia and Indonesia, as it was restricted mainly to use as a lubricant. A more rapid phase of expansion began in Malaysia in the 1950s and 1960s, which turned Malaysia into the dominant oil palm producer in the world. Final processing industries in the industrialized world discovered that oil palm could be a cheap alternative to crude oil (for instance in detergents), to butter (margarine), and to other edible oils. World demand for palm oil therefore increased substantially. At the same time, global demand for rubber decreased, making it attractive to turn rubber plantations into oil palm plantations.⁴²

2.1.2 1945-1968: Post-colonial decline

After Indonesia had gained independence in 1945 the plantation system partly collapsed as Dutch plantation owners no longer had the backing of the colonial government and labour migration was no longer undertaken with government assistance. Furthermore, president Sukarno promoted an isolationist policy during the period (known as *Guided Democracy*), antagonistic towards the entry of foreign capital or foreign loans. In 1957 the Dutch colonial plantations were nationalized and placed under the control of the New State Plantation Company (*Perusahaan Perkebunan Negara Baru*). Since then they suffered a period of declining production. In 1967 the oil palm plantation sector covered no more than 106,000 hectares, including 65,573 hectares of state-owned plantations.⁴³

2.1.3 1968-1985: First expansion phase

From 1968, president Suharto started to invest again in the Indonesian oil palm sector by making direct investment via state run companies called *Perseroan Terbatas Perkebunan (PTPs)*. During this period, the area planted with oil palm on government estates grew from 65,573 hectares in 1967 to 176,408 hectares in 1979. Most of these plantations were found in Sumatra, primarily North Sumatra. However, the government began to expand state-owned plantations into Kalimantan and Irian Jaya in the late 1980s.⁴⁴

Since 1979 the development of private plantations and smallholder estates was stimulated by the government as well, with some World Bank aid. Under the so-called PIR/NES schemes (*Perkebunan Inti Rakyat* or *Nucleus Estate and Smallholder Scheme*) private developers (known as *Inti* or *Nucleus*) planted plots of land with oil palms on behalf of smallholders located nearby. Most of these smallholders were migrants from other areas. As the oil palms matured, usually after three to four years, the plots were transferred to the smallholders (known as *Plasma*), who developed the plantations under the supervision of the *Inti* developers. *Inti* developers were then required to purchase the oil palm fresh fruit bunches (FFB) from the smallholders, process them into CPO and sell this CPO on the market.

Since the PIR/NES scheme was initiated, smallholder plantations have further expanded under the *PIR-Transmigration* scheme (1986-1994) and the *KKPA* scheme (1995-1998), which both stimulated smallholder developments in transmigration areas. Non-existent in 1978, planted areas held by smallholders grew to a total of 1.1 million hectares in 1999. Most smallholder estates are found in Riau, South Sumatra, North Sumatra, Jambi and West Kalimantan.⁴⁵

During this first expansion phase, total acreage of the Indonesian oil palm plantation sector increased fivefold from 120,000 hectares in 1968 to 600,000 hectares in 1985.⁴⁶

2.1.4 1985-1998: Second expansion phase

As the world demand for oil palm continued to grow at a rapid pace, the Suharto regime recognized the possibilities of further developing the oil palm sector during the 1980s. Labour costs are much lower in Indonesia than in Malaysia and land is more abundantly available. The average cost of producing one ton of crude palm oil was calculated in 1998 at US\$ 225.5 for Malaysia, US\$ 296.1 for Colombia, US\$ 298.4 for Ivory Coast and only US\$ 206.8 for Indonesia.⁴⁷

In the mid-1980s the Indonesian government formulated a policy goal to overthrow Malaysia as the world's largest palm oil producer. To achieve this aim, large forest areas were handed out to the large Indonesian business groups and to foreign investors. Officially, the government reserved 5.5 million hectares, mainly covered with forests, to be converted into oil palm plantations.

But the Indonesian consultancy Data Consult in 1996 calculated from records of the Investment Coordinating Board (BKPM) that the government had actually allocated 9.13 million hectares of land for oil palm plantations in the eastern part of the country alone, including 5.56 million hectares in Irian Jaya, 1.70 million hectares in East Kalimantan and 1.80 million hectares in Maluku.⁴⁸

Even this area looked insufficient to satisfy the appetite of the oil palm plantation sector. According to some sources, private plantation companies around 1995 had applied for the conversion of an additional 20 million hectares of forestland into oil palm plantations. Part of this tremendous demand was motivated by the search for cheap timber supplies, rather than serious investment plans.⁴⁹

Greater private sector involvement in the oil palm sector was also encouraged between 1986 and 1996 by granting access to credit at concessionary rates for estate development, new crop planting and crushing facilities. Newly established companies could then draw on a loan from an *executing bank* at a rate of 11 percent during land preparation and establishment of the trees and 14 percent after the trees had begun to yield. In turn, the *executing bank* was eligible to borrow from the Bank of Indonesia at a concessionary rate of 4 percent. The interest subsidies were intended to help investors overcome risks and uncertainties associated with establishing estates involving smallholders.⁵⁰

As a result of this expansion drive, the area planted with oil palm in Indonesia increased considerably from the mid-1980s. Starting from about 600,000 hectares in 1985, the total area reached approximately 2.8 million hectares in 1998 and 4.1 million hectares in 2003. Private plantations, which covered just 145,000 hectares in 1986, experienced the strongest growth during the 1990s and now cover 2.0 million hectares.⁵¹

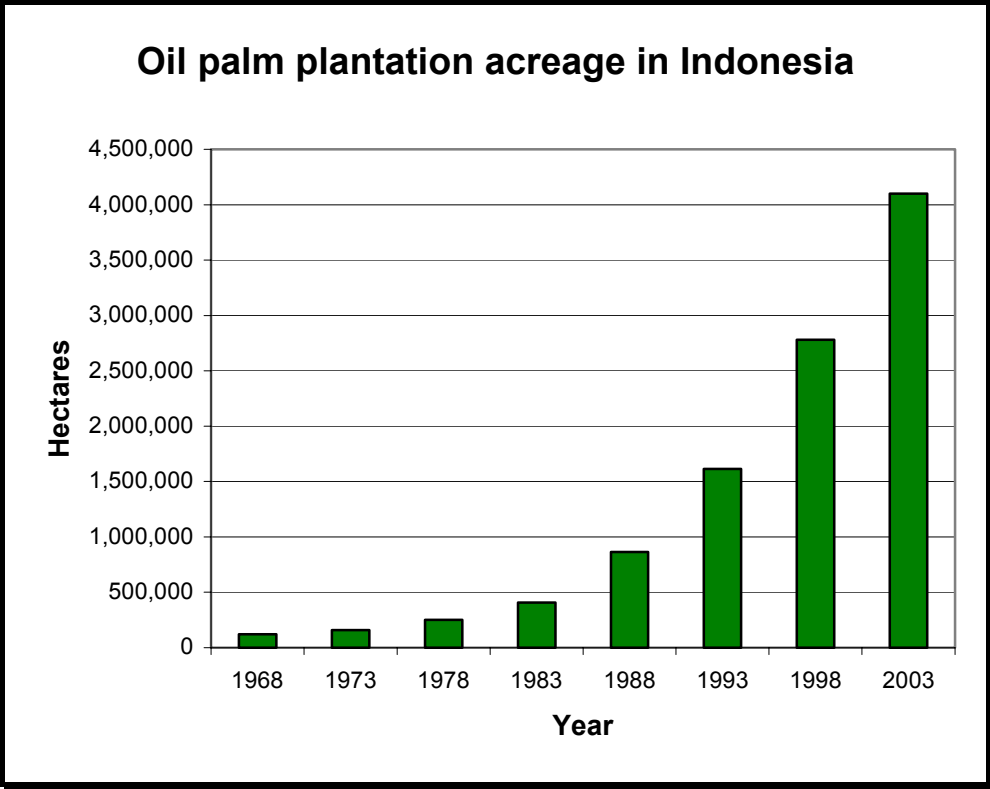


Figure 5. Development of oil palm plantation acreage in Indonesia

Figures on the development of the mature oil palm acreage in Indonesia are provided in Table 10. As planting has slowed down during the past few years, the mature acreage is close to the total planted acreage at present. The mature acreage increased by 118% over the past eight years.

Year	1995	1998	1999	2000	2001	2002	2003	Growth
Oil palm acreage	1,350	1,828	2,022	2,208	2,465	2,734	2,937	118%

As a consequence of the tremendous increase in oil palm acreage, the production and export of Indonesian oil palm products has also grown rapidly. Production growth in Indonesia (114% over the past seven years) was stronger than in any other producing country. In the late 1980s and early 1990s this production growth was mirrored by a strong rise in domestic usage, from 0.7 million tonnes in 1986 to 2.8 million tonnes in 1997.

Year	1995	1996	1997	1998	1999	2000	2001	2002	Growth
CPO production	4,220	4,540	5,380	5,361	6,250	7,050	8,030	9,020	114%
Palm oil export	1,855	1,851	2,982	2,260	3,319	4,140	4,940	6,380	244%
Export %	44%	41%	55%	42%	53%	59%	62%	71%	

This sharp increase was caused by several factors, mainly increasing population and income per capita.

Since 1997, domestic use has been growing only modestly to 2.9 million tonnes in 2002, leaving a surplus production to be exported. Over the past seven years, export growth was much stronger (244%) than production growth and now 71% of total production is exported. The development of the Indonesian oil palm sector, in other words, is increasingly export-driven.

For the year 2003, the Indonesian Palm Oil Producers Association (Gapki) expected CPO output to increase to 9.6 million tons.⁵⁴ The authoritative Oil World magazine is somewhat more cautious expecting an output of 9.3 million tons for 2003 and an export of 6.27 million tonnes.⁵⁵

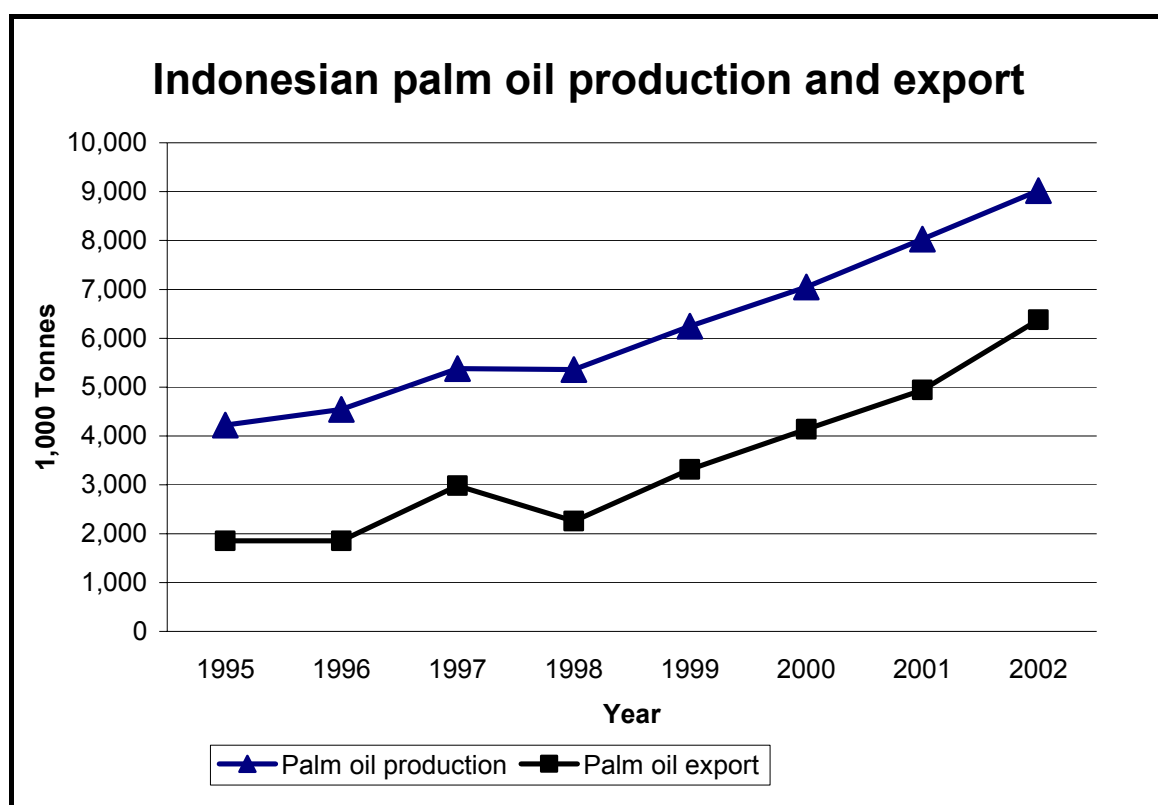


Figure 6. Indonesian palm oil production and export 1995-2002

Figures for palm kernel oil production and export (Table 12) show a comparable pattern, although the export percentage is higher there are also greater fluctuations. Domestic usage of palm kernel oil in the expanding oleochemical industry plays a significant role here (see paragraph 2.3.5).

Year	1995	1996	1997	1998	1999	2000	2001	2002	Growth
PKO production				552	658	735	808	937	
PKO export	311			413	598	579	582	738	137%
Export %				75%	91%	79%	72%	79%	

Obviously, the strong growth of the oil palm plantation sector has brought economic benefits to Indonesia. In 1997, when CPO and PKO prices were at their peak, the export earnings of the oil palm sector were valued at US\$ 1.7 billion. In 1998 they tumbled to US\$ 940 million, but in 2002 they had recovered to US\$ 2.1 billion. Indonesia's oil palm industry is also an important employer, with over 800,000 people employed directly and another 2 million people employed indirectly.⁵⁷

To realise these benefits, significant investments were needed. Developing a new plantation often involves building a CPO mill as well, and it takes a number of years before the plantation starts producing. On average, developing a new plantation costs between US\$ 2,500 and 3,500 per hectare. A CPO mill with a processing capacity of 30 tons of FFB per hour is estimated to cost US\$ 5 million.⁵⁸

Based upon our analysis of the financing structures of 27 prominent Indonesian oil palm plantation groups, we estimate the total investment figure for the Indonesian oil palm sector as a whole at US\$ 10.0 billion over the past ten years.⁵⁹

These investments were only partly provided by the Indonesian state and wealthy Indonesian businessmen. Direct investments by Malaysian plantation companies in Indonesian joint-ventures were encouraged, some other foreign companies have also set up or acquired Indonesian oil palm plantation subsidiaries and foreign individuals and financial institutions have invested in shares of Indonesian oil palm plantation companies listed on the stock exchange. Furthermore, especially during the mid-1990s, domestic and foreign banks have financed a large part of the expansion process by issuing loans and other forms of credit.⁶⁰

2.1.5 1998-2002: Investment pause

Between 1998 and 2002, the expansion of the Indonesian oil palm sector was much slower than during the preceding decade. During this period, many oil palm groups ran into financial trouble and lacked sufficient funds to invest in existing plantations or open new ones. The slackening off of oil palm expansion is not yet visible in the CPO production figures, as it takes three years after planting before an oil palm starts producing and another five years before it reaches its full production capacity. Because of the large number of oil palms planted before 1998, output has continued to grow during the past few years. New plantings have clearly slowed down considerably, which in turn will reduce output growth in the coming years.⁶¹

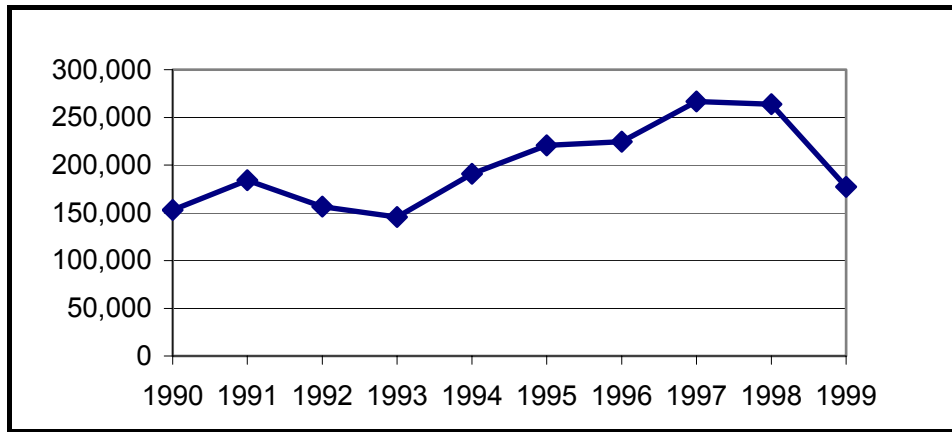


Figure 7. Annual area planted with oil palms in Indonesia (hectares)

The main reasons why many oil palm plantation companies ran into financial problems in the period 1998-2002, are discussed briefly below:

- **The Rupiah exchange rate**

The so-called *Asia Financial Crisis* of 1997/1998, resulted in a strong devaluation of the Rupiah since the end of 1997. In June 1997, one US dollar equalled 2,432 Rupiah, but in June 1998 the exchange rate had slipped to 14,925 per dollar. Table 13 and the accompanying figure below show how the dollar/rupiah exchange rate has deteriorated in the past three years.

Year	Average	At 31 December
1996	2,328.5	2,363.1
1997	2,903.5	5,535.0
1998	10,285.4	8,005.0
1999	7,876.9	7,150.0
2000	8,415.8	9,725.0
2001	10,293.8	10,505.0
2002	9,350.1	8,962.2
2003	8,592.8	8,464.7

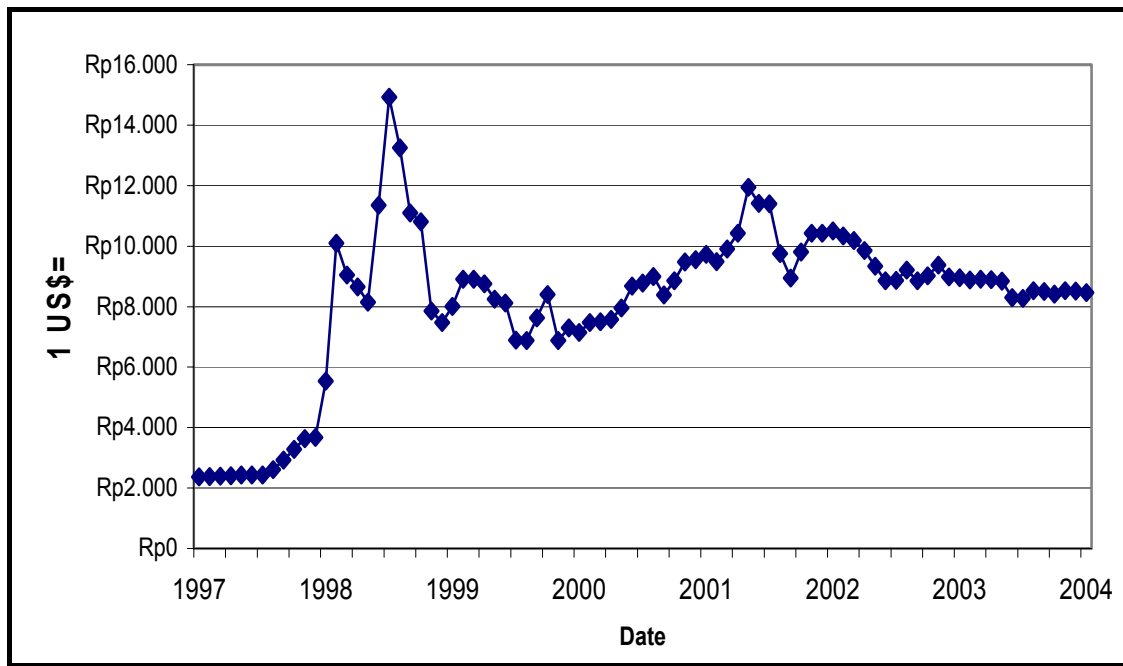


Figure 8. Exchange rate of the rupiah vs. the dollar 1997-2004

This development had mixed consequences for the Indonesian oil palm companies. Companies exporting a large part of their production saw their Rupiah-income rise substantially while for instance labour costs did not rise significantly. But companies that had borrowed large sums from foreign banks needed much more Rupiahs to pay interest and principal on their debts. For companies exporting a large part of their production, this was less of a burden. However, companies producing mainly for the domestic market that had borrowed large sums from foreign banks ran into financial trouble.

- **Prices on the world market**

Since the beginning of 2000 the CPO and PKO prices on the world market have been very low (see Table 9). This price trend was partly caused by the rapid expansion of CPO and PKO export from Indonesia. But for the individual Indonesian producer it meant that export earnings were much lower than expected in 2000 and 2001.

However, in 2002 CPO and PKO prices started to recover and during 2003 they have risen further. Export earnings and profits for the Indonesian oil palm companies are rising accordingly.

- **The CPO export ban and export tax**

In the beginning of 1998, the Indonesian government banned the export of CPO for four months. Since 1997, most Indonesian oil palm companies had tried to export as much of their production as possible, as the devaluation of the rupiah and the high CPO prices on the world market offered very high returns. This resulted in shortages and accompanying price rises on the domestic market for cooking oil, which is seen as a vital commodity by most Indonesians. To diminish social unrest, the Suharto regime decided to temporarily ban CPO export.⁶³

Oil palm plantation companies that had borrowed large sums from foreign banks were thereby deprived of the possibility of earning foreign currency to pay interest and principal on their debts.

In April 1998, the CPO export ban was replaced by a CPO export tax of 40 percent, in an attempt to normalise the CPO prices on the domestic and export markets. The export tax was levied on the difference between a government-determined target price and the actual export price. Since April 1998, this export tax has been raised and then gradually reduced, as shown in Table 14.

From	To	CPO export tax / ban
	December 1997	5%
December 1997	January 1998	30%
January 1998	April 1998	Export ban
April 1998	July 1998	40%
July 1998	February 1999	60%
February 1999	June 1999	40%
June 1999	July 1999	30%
July 1999	September 2000	10%
September 2000	February 2001	5%
February 2001		3%

Especially the export ban, but also the high export taxes at the end of the 1990s have contributed to the financial troubles faced by many Indonesian oil palm companies since 1998.

- **Policy changes in Indonesia**

After President Suharto stood down in May 1998, the new Habibie government came under a great deal of pressure to reform the forest sector and rid Indonesia of corruption, collusion and nepotism (KKN). Some of these changes have deterred investment in the oil palm sector:

- In early June 1998, the Ministry of Forestry and Estate Crops instructed all provincial forestry and plantation offices to revoke the forest use and conversion permits of estate crop companies that were only interested in cutting timber from their concessions and had failed to develop their estates. This instruction was strengthened when, in October 1998, the Ministry of Forestry and Plantation Estate Crops issued a statement saying that they had stopped issuing new licences to open up conversion forest land for plantation estates because many investors had neglected their projects. According to the government, only 1.4 million hectares (16.5 percent) had been realised from the nine million hectares of forests licensed for plantation estates since early 1990. Investors were then warned that the government would revoke their licences if they did not start their projects within the next year. The instruction to revoke the plantation licences of companies that had failed to develop their estates has been implemented at least partially at the provincial level and has greatly concerned the industry. ⁶⁵
- In March 1999, the Ministry of Forestry and Estate Crops released a regulation that limited plantation concession sizes. This regulation set the tree crop plantation development area at 20,000 hectares in any one province, and up to a maximum of 100,000 hectares in the whole country for a given company. This regulation has created much unrest, but seems ineffective. It is not preventing separate companies owned by the same owner (business group) exceeding the maxima jointly. Plantations are also required to have their own CPO-mill. ⁶⁶

- During 1998 and 1999 frequent changes were made to the domestic CPO distribution system as well as to the CPO export system. CPO distribution used to be dominated by Bulog, the National Logistics Agency, but the government has now retreated from this sector. The current government policy is not to intervene in CPO price-setting as long as there is adequate oil supply.⁶⁷

- **Social unrest**

The relative political liberalisation which has taken place in Indonesia since the end of 1998, has provided room for local communities to step up protests against further oil palm expansion by damaging estate offices, large machinery, processing plants and plantations. Local communities have reclaimed land taken from them during the Suharto-era, when oil palm plantation companies were given concessions to vast areas of land which the local people considered theirs. Often it was taken by force, and frequently the local communities received no compensation. Prior to Suharto's fall in 1998, any attempt to invade land was suppressed by the army. But in the age of *reformasi*, the authorities became reluctant to side with the big companies.⁶⁸

Looting also increased on estates because estate workers and local communities began to experience increased living costs after the rupiah depreciated against the dollar. Some resorted to looting in order to supplement their incomes.⁶⁹

- **Foreign reluctance to invest in Indonesia**

Since 1998, foreign companies and banks have shown great reluctance to invest in Indonesia, and especially in the oil palm sector. The general reluctance is caused by the economic and political instability facing the country since the financial crisis of 1997/1998. Many Indonesian companies suffered financial collapse during that period, exposing the large loans extended to them by local banks (which often belonged to the same business groups). Many Indonesian banks ran into financial difficulties, forcing the Indonesian Bank Restructuring Agency (IBRA) to take over these banks and guarantee their loans. As collateral, IBRA seized shareholdings in other companies from the owners of these banks. By selling these assets, IBRA tried to restructure the Indonesian banking sector, but this restructuring is still not finished.

The efforts of IBRA were also hampered by the strong political and social unrest which accompanied the end of the Suharto regime in May 1998 and the subsequent hesitant transition towards democracy. A new, stable political order has yet to emerge, which makes foreign investors wary.

In particular, the oil palm sector was unpopular with foreign banks between 1998 and 2002, as the loans extended in the mid-1990s had not generated the expected returns. Because of the reasons outlined above, many Indonesian oil palm companies were unable to pay scheduled interest and principal on their debts. Many oil palm companies entered into a difficult debt restructuring process, which often forced foreign banks to accept write offs on their outstanding loans.

At the same time, foreign banks were faced with NGO-criticism of their role in converting the Indonesian forests into oil palm plantations.⁷⁰

All these factors greatly reduced the appetite of foreign banks to lend to Indonesian oil palm companies. The successful IPO of Golden Agri-Resources in July 1999 on the Singapore stock exchange was a remarkable exception, resulting from generally positive perceptions of the Sinar Mas Group that still existed abroad.

Indonesian banks and the Indonesian capital market offered some relief during this period. For those Indonesian oil palm companies that were not in big financial trouble, but were nonetheless excluded from international financing because of the reluctance to invest in the sector described above, the domestic capital market provided an alternative. A number of companies attracted local bank loans, companies such as Astra Agro Lestari and Indofood were able to issue bonds on the local market and Tunas Baru Lampung even succeeded in making a successful IPO in February 2000.

- **Financial problems of sister and mother companies**

Sometimes exacerbating the financial problems of some oil palm plantation companies in the period 1998-2002, were the financial problems of their respective sister and mother companies. Golden Agri-Resources of the Sinar Mas Group for instance is still not able to use the cash deposits it had deposited at a bank in the Cook Islands (which itself is part of the Sinar Mas Group) as this bank had run into serious trouble itself. And PP London Sumatra Indonesia was unable to retrieve the considerable loans it had extended to its mother company Pan London Sumatra Plantation.

Also, a number of Indonesian oil palm plantation companies have been put up for sale, as their mother companies try to raise cash to pay their own debts. This was the case with Golden Agri-Resources of the Sinar Mas Group and Astra Agro Lestari of the Astra Agro Group, and probably also with PP London Sumatra Indonesia. A large part of the oil palm plantations of the Salim Group have already been handed over to IBRA, and were subsequently sold to Kumpulan Guthrie Berhad. And Bakrie Sumatera Plantations became effectively owned by a large group of Indonesian and foreign banks as a consequence of the debt restructuring of its parent company Bakrie & Brothers.

2.1.6 Since 2002: Renewed expansion

During 2002 and certainly during the first half of 2003, the tide seems to have turned for the Indonesian oil palm sector. CPO and PKO prices on the world market have recovered (see figure 2.2) and the rupiah has appreciated somewhat relative to the dollar. Almost all oil palm groups are making profits again and most have finally succeeded in restructuring their debts: some debts have been written off and others rescheduled.

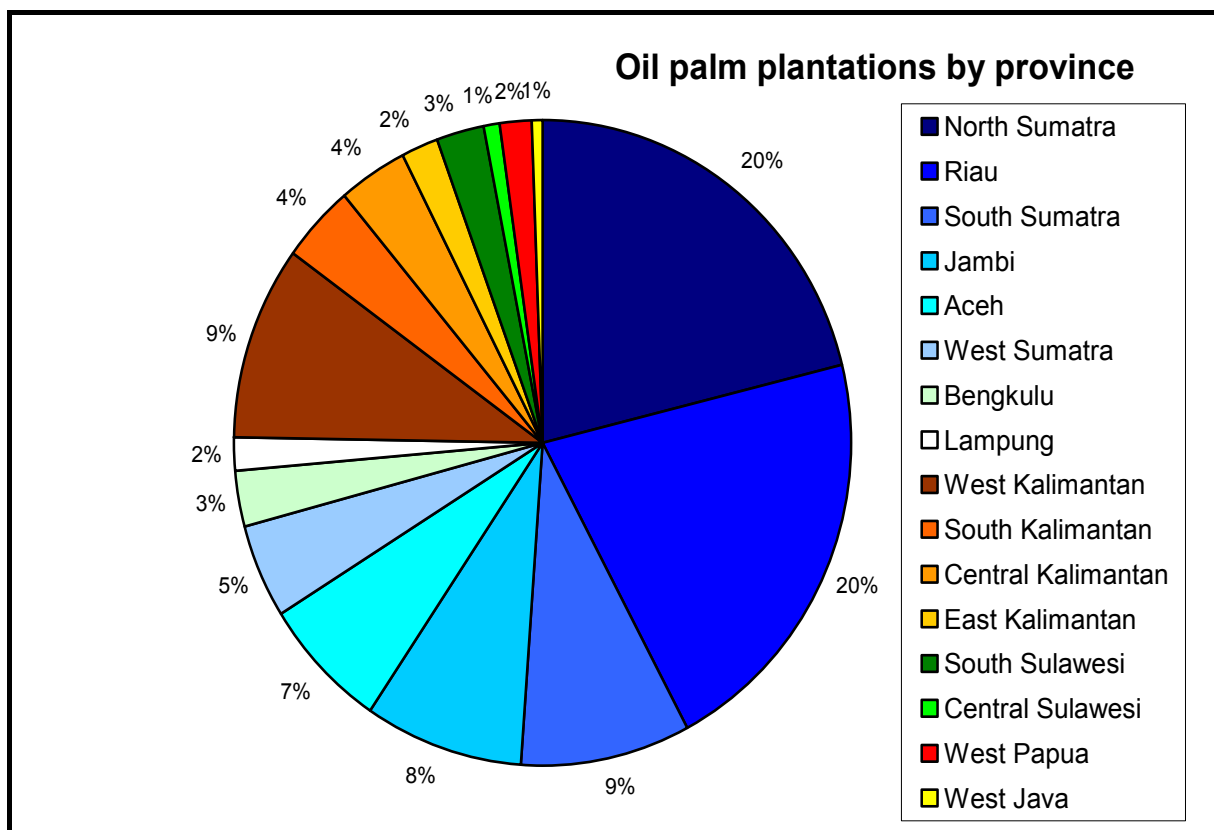


Figure 9. Indonesian oil palm plantations by province

Figure 9 provides details of the geographical distribution of the Indonesian oil palm plantations in 2001, as provided by the Ministry of Agriculture. More than 75% of all oil palm plantations are located in Sumatra and another 19% in Kalimantan. Oil palm plantation development in Sulawesi and West Papua has only just started.⁷¹

Now they have the required financial resources, many oil palm companies are resuming their expansion plans. Early in 2003 the Indonesian Agriculture Ministry announced it had licensed 74 companies to open new oil palm plantations covering an additional 672,977 hectares. These companies promised to make a total investment of Rp 17,300 billion (US\$ 2.1 billion). With the addition of these new oil palm plantations Indonesia's CPO production is expected to outstrip Malaysia's in two to three years' time, according to the Ministry.⁷² But this will only be achieved when more CPO milling capacity has been established in the main plantation regions. After harvesting, the oil palm fruit has to be processed within 24 hours to avoid the rapid build-up of free fatty acids. Between 1998 and 2002, many plantation companies were forced to postpone the building of CPO mills due to a lack of funds. Meanwhile, areas planted with oil palms before 1998 have become mature. As a consequence, at least one million tons of fresh fruit bunches (FFB) were wasted last year due to a lack of milling capacity. This amounts to 0.2 million tonnes of CPO that was lost. Indonesia has nearly 300 mills spread over some 16 provinces. About 240 of these are located in the northern parts of Sumatra and nearly 40 in Kalimantan. South Sumatra and Kalimantan in particular still face a capacity shortage, especially in the peak production months. South Sumatra province alone needs at least 22 new CPO-mills, according to its governor in January 2003.⁷³

Further expansion of the Indonesian oil palm sector requires substantial additional investments, for which the support of financial institutions is needed. New bank lending by domestic and foreign banks is increasing once again and some companies even have issued bonds into the international capital markets. Landmarks were the loans arranged by ING Bank (The Netherlands) for Indofood in April 2002 and by Rabobank (The Netherlands) for Kumpulan Guthrie's Indonesian operations in March 2003, as well as Indofood's international bond issuance in July 2002 which was managed by Cr dit Suisse (Switzerland). With the economic prospects for the sector improving and with some of the major foreign banks apparently overcoming their reluctance to invest in the Indonesian oil palm sector, a new expansion phase is clearly gaining momentum.

2.2 Export markets for the Indonesian oil palm sector

2.2.1 Introduction

The oil palm yields three basic products: crude palm oil, crude palm kernel oil and crude palm kernel meal. In the following paragraphs data are provided on the Indonesian exports of these basic products, in combination with some derived products:

- Crude palm oil is refined into RBD palm oil, and then fractionated into RBD olein and RBD stearin. In trade statistics these four products (CPO, RBDPO, RBD olein and RBD stearin) are generally taken together under the heading *palm oil*. In paragraph 2.2.2 provides data on the Indonesian palm oil exports, comprising the combined exports of these four products.
- Similarly, in paragraph 2.2.3 data are presented for the combined exports of crude palm kernel oil and RBD palm kernel oil from Indonesia.
- Paragraph 2.2.4 provides data on the Indonesian export of palm kernel meal.

Indonesian export figures for oleochemical products and speciality fats are not available.

2.2.2 Palm oil export markets

The development of the Indonesian oil palm sector is increasingly export-driven, as palm oil exports increased by 244% in the past seven year. Table 15 provides an overview of the main export markets for Indonesian palm oil (crude and refined).

Despite a volume growth of 60% since 1995, the European Union lost its position as the most important export market for Indonesian palm oil to India. The share of the EU declined from 50% to 23%, while India now accounts for 28% of Indonesian palm oil exports. Some other Asian markets, especially China, Malaysia, Pakistan, Bangladesh and Hong Kong are quickly expanding their palm oil imports from Indonesia. On a lower level, the same applies to some African countries (Egypt, Tanzania, Nigeria and South Africa) as well as to Jordan and Russia. In the past seven years Indonesia has further diversified its export markets, a development that looks likely to continue.

Indonesian palm oil exports to Malaysia - still the largest palm oil exporter in the world - are worth remarking on. It is probable that this palm oil is re-exported from Malaysia, but classified as Malaysian palm oil.

Table 15 Export markets for Indonesian palm oil (in 1,000 MT) ⁷⁴								
Year	1995	1998	1999	2000	2001	2002	Growth	Share
India	113	309	1,029	1,639	1,520	1,767	1,464%	28%
European Union	935	993	1,002	908	1,185	1,496	60%	23%
China	181	325	354	693	681	789	336%	12%
Malaysia	27	264	273	76	78	405	1,400%	6%
Pakistan	41	16	10	15	97	269	556%	4%
Bangladesh	3	12	41	96	179	221	7,267%	3%
Turkey	31	10	45	68	154	152	390%	2%
Nigeria	0	0	21	51	53	141	> 100%	2%
Tanzania	5	3	36	87	110	114	2,180%	2%
Hong Kong	19	8	12	34	31	101	432%	2%
Jordan	39	6	4	14	25	96	146%	2%
South Africa	4	7	47	61	136	93	2,225%	1%
Russia	0	0	3	10	88	91	> 100%	1%
Egypt	56	22	70	35	96	89	59%	1%
Other countries	401	285	372	353	507	556	39%	9%
Total export	1,855	2,260	3,319	4,140	4,940	6,380	244%	100%

2.2.3 Palm kernel oil export markets

Indonesian palm kernel oil (PKO) exports increased by 137% over the past seven years. Table 16 provides an overview of the main export markets for Indonesian PKO.

Table 16 Export markets for Indonesian PKO (in 1,000 MT) ⁷⁵								
Year	1995	1998	1999	2000	2001	2002	Growth	Share
European Union	222	303	362	330	304	449	102%	61%
Malaysia	7	31	33	41	26	63	800%	9%
India	1	2	24	57	49	49	4,800%	7%
China	0	0	4	3	60	36	> 100%	5%
Turkey	12	11	29	35	37	31	158%	4%
Mexico	0	2	28	15	27	23	> 100%	3%
Singapore	0	3	4	3	6	12	> 100%	2%
United States	19	38	73	50	20	11	-42%	1%
Brazil	26	11	16	23	22	7	-73%	1%
Canada	19	6	4	2	0	0	-100%	0%
Other countries	5	6	21	22	31	57	1,040%	8%
Total export	311	413	598	579	582	738	137%	100%

Unlike the palm oil market (Table 15), the European Union is still the most important export destination by far for Indonesian palm kernel oil. Exports to the EU doubled in the past seven years and its share in total Indonesian PKO exports slipped only slightly from 71% to 61%. As is the case with Indonesian palm oil, Malaysia, India, China and Turkey are also strongly expanding their PKO imports from Indonesia. The same applies to Mexico, but the United States, Canada and Brazil seem to be decreasing their PKO imports from Indonesia. As Malaysia is also an important exporter of PKO, Indonesian PKO exports to Malaysia could be re-exported.

2.2.4 Palm kernel meal export markets

Indonesian palm kernel meal (PKM) exports increased by 109% over the past seven years. Table 17 provides an overview of the main export markets for Indonesian PKM.

Year	1995	1998	1999	2000	2001	2002	Growth	Share
European Union	455	572	716	670	632	876	93%	87%
South Korea	6	83	78	66	59	67	1,117%	7%
Singapore	0	23	26	70	15	25	>100%	2%
China	0	0	0	4	123	13	>100%	1%
South Africa	0	0	0	0	2	11	>100%	1%
United States	8	0	6	0	15	5	-37%	0%
Malaysia	0	0	0	2	14	0	0%	0%
Other countries	15	5	0	10	20	13	-13%	1%
Total export	483	683	825	822	880	1,010	109%	100%

Even more than is the case for Indonesian PKO, the European Union is the dominant export market for Indonesian PKM. Indonesian PKM exports to the EU increased by 93% over the past seven years, and its share of Indonesia's PKM exports only slipped slightly from 94% to 87%.

Apart from the EU, only South Korea and Singapore seem to be stable (although much smaller) export markets for Indonesian PKM. Other countries, such as China, South Africa, the United States and Malaysia, seem to import Indonesian PKM on a more sporadic basis.

2.3 Business groups in the Indonesian oil palm sector

2.3.1 Oil palm plantations and CPO mills

There are hundreds of oil palm plantation companies active in Indonesia. The larger plantation companies usually operate their own CPO mill, while the smaller plantation companies sell their Fresh Fruit Bunches to CPO mills of neighbouring plantations. While the total number of oil palm plantation companies is very large, a limited number of Indonesian and foreign business groups controls most of them. Table 18 provides an overview of the largest business groups operating in the oil palm plantation sector (including the state-owned Perkebunan Nusantara Group).

Group	Country of ultimate ownership	Land bank (ha)	Planted area (ha)	CPO production (tons)	Case study
Anglo-Eastern	Malaysia	33,692	18,389	63,240	
Astra Agro	Singapore	290,621	189,970	543,635	12
Bakrie	Indonesia	80,000	34,681	55,401	
Benua Indah	Indonesia	180,000	?	?	
Bolloré	France	37,467	37,467	182,628	
Bumi Flora & Parasawita	Indonesia	11,982	?	?	
Cargill	United States	27,000	27,000	100,000	
Carson Cumberbatch	Sri Lanka	15,934	12,557	26,570	
CDC	United Kingdom	30,625	22,731	100,000	2
Cisadane	Indonesia	20,652	?	?	
Dutapalma	Indonesia	60,000	42,000	?	
Golden Hope	Malaysia	72,000	8,014	?	
Hasil Karsa	Indonesia	14,000	?	?	
Hasko	Indonesia	8,000	?	?	
Incasi Raya & Metro	Indonesia	200,000	?	?	
Johor	Malaysia	140,000	19,622	?	
Kuala Lumpur Kepong	Malaysia	52,000	31,808	?	
Kumpulan Guthrie	Malaysia	215,973	162,213	329,524	9-11
Kuok	Malaysia	57,927	9,708	16,100	3
Lyman	Indonesia	160,000	?	?	
Musim Mas	Indonesia	60,000	?	?	
Napan & Risjadson	Indonesia	340,000	40,534	259,492	5
Oriental	Malaysia	43,900	?	?	
Perkebunan Nusantara	Indonesia	770,000	561,126	2,094,364	14
Raja Garuda Mas	Indonesia	543,000	317,850	600,000	6,7
REA	United Kingdom	125,000	13,209	28,557	
Rowe Evans	United Kingdom	35,304	25,136	?	
Salim	Indonesia	230,000	161,973	775,651	7
Sinar Mas	Indonesia	591,000	282,000	1,105,000	8
Sipef	Belgium	65,000	29,364	127,003	
Sungai Budi	Indonesia	62,015	12,000	?	
Surya Dumai	Indonesia	154,133	23,975	?	
Tirtamas and Maharani	Indonesia	270,000	105,282	?	
Wilmar	United States / China	?	?	?	

Total for Indonesia		?	4,100,000	9,020,000	
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Some of these plantation groups own edible oil refineries as well (see paragraph 2.3.3). It can be assumed that a large part or all of their CPO production is sent to these refineries. But many of the plantation groups listed in Table 18 also export their CPO directly. The following information related to the export of oil palm products is found for these oil palm plantation groups:

- **Astra Agro Group:** Foreign customers buying crude oil palm products from the Astra Agro Group include:⁷⁸

- | | |
|--------------------|---------------|
| • Cargill | United States |
| • Gardner Smith | Australia |
| • Kumpulan Guthrie | Malaysia |
| • Kuok | Singapore |
| • Wilmar | Singapore |

- **Cargill Group:** Cargill owns one plantation in South Sumatra, PT Hindoli, producing 100,000 tonnes of CPO annually. Cargill Indonesia also operates as buyer and exporter of palm oil and palm kernel oil from other plantations, crushing plants and refineries. Operating a storage tank program in Belawan and Dumai, the company collects palm oil direct from both large and small plantations. The annual CPO volume exported by Cargill is around 700,000 tonnes, 11% of total Indonesian CPO export (see Table 15).⁷⁹ Indonesian oil palm plantation and refinery companies (outside the Cargill Group) from which Cargill is buying crude or refined oil palm products include:⁸⁰

- | | |
|----------------------------------|--|
| • Golden Agri-Resources Ltd. | Sinar Mas Group ⁸¹ |
| • PT Astra Agro Lestari | Astra Agro Group ⁸² |
| • PT Bukit Kapur Reksa | Wilmar Group |
| • PT Cirenti Subur | Dutapalma Group |
| • PT Darmex Oil & Fats | Dutapalma Group |
| • PT Dutapalma Nusantara | Dutapalma Group |
| • PT Eka Dura Indonesia | Astra Agro Group |
| • PT Eluan Mahkota | Dutapalma Group |
| • PT Intibenua Perkasatama | |
| • PT Ivo Mas Tunggal | Sinar Mas Group |
| • PT Johan Sentosa | Dutapalma Group |
| • PT Jumbo Glory | |
| • PT Kantor Pemasaran Bersama | Perkebunan Nusantara Group |
| • PT Karya Amal Tani | |
| • PT Kencana Amal Tani | Dutapalma Group |
| • PT Musim Mas | Musim Mas Group |
| • PT Permata Hijau Sawit | |
| • PT PP London Sumatra Indonesia | Napan & Risjadson Groups ⁸³ |
| • PT Sari Lembah Subur | Astra Agro Group |
| • PT Sawitra Oil Grains | Salim Group |
| • PT Siringo-Ringo | Musim Mas Group |
| • PT Smart | Sinar Mas Group |
| • PT Swasti Siddhi | |
| • PT Taluk Kuantan Perkasa | Dutapalma Group |
| • PT Tunggal Perkasa | Astra Agro Group |
| • Sipef Group ⁸⁴ | |

PNG oil palm plantation companies from which Cargill is buying crude oil palm products include:

- New Britain Palm Oil Johor Group⁸⁵
- **CDC Group:** The foreign marketing office of the CDC Group is Pacific Rim Palm Oil Ltd. in Singapore.⁸⁶
- **Dutapalma Group:** Foreign customers buying crude or refined oil palm products from the Dutapalma Group include:⁸⁷
 - Cargill United States
 - Gardner Smith Australia
 - Kumpulan Guthrie Malaysia
 - Kuok Singapore
 - Wilmar Singapore
- **Golden Hope Group:** The Golden Hope group has a subsidiary in Germany, Paul Tieffenbacher GmbH., which acts as its European marketing office.⁸⁸ Golden Hope also owns the edible oils refinery Unimills B.V. in the Netherlands, which it probably also supplies with palm oil from Malaysia and Indonesia.⁸⁹ An important foreign customer buying refined oil palm products from the Golden Hope Group is:⁹⁰
 - Britannia Food Ingredients United Kingdom
- **Johor Group:** The Johor Group has a subsidiary in the Netherlands, Matthes & Porton B.V., which probably acts as its European marketing office.⁹¹
- **Kumpulan Guthrie Group:** The Kumpulan Guthrie Group has a subsidiary in the United Kingdom, Guthrie Symington Ltd., which acts as its European marketing office. A wide range of rubber & latex grades, rubber related industrial products and edible oils are also sourced from outside the Kumpulan Guthrie Group via an extensive network of producer contacts. Outside the UK, Guthrie Symington also has offices in Milan (Italy), Paris (France) and Durban (South Africa).⁹² Indonesian oil palm plantation and refinery companies (outside the Kumpulan Guthrie Group) from which Guthrie Symington is buying crude or refined oil palm products include:⁹³
 - PT Dutapalma Nusantara Dutapalma Group
 - PT Eluan Mahkota Dutapalma Group
 - PT Inti Buana Perkasatama
 - PT Ivo Mas Tunggal Sinar Mas Group
 - PT Jumbo Glory
 - PT Karya Amal Tani
 - PT Karya Sawit Lestari
 - PT Permata Hijau Sawit
 - PT PP London Sumatra Indonesia Napan & Risjadson Groups⁹⁴
 - PT Siringo-Ringo Musim Mas Group
 - PT Tunggal Perkasa Astra Agro Group

- **Kuok Group:** Kuok Oils & Grains Pte. Ltd. in Singapore is the edible oils marketing company of the Malaysian Kuok Group. This company buys oil palm products produced by its own Indonesian oil palm plantations and outside oil palm plantation companies. Crude palm oil, crude palm kernel oil and palm kernels can be transported to the refineries and palm kernel crushing plants of PGEO Group Sdn. Bhd. in Malaysia for further processing. But they can also be shipped to external customers directly, just as the refined oils produced by the Malaysian operations of the Kuok Group. Transport is carried out by Malaysian Bulk Carriers Sdn. Bhd., a company partly owned by the Kuok Group.⁹⁵ The Kuok Group is closely related to the Wilmar Group. Other Indonesian oil palm plantation and refinery companies from which Kuok is buying crude or refined oil palm products include:⁹⁶

- | | |
|----------------------------|----------------------|
| • PT Bukit Kapur Reksa | Wilmar Group |
| • PT Cirenti Subur | Dutapalma Group |
| • PT Dutapalma Nusantara | Dutapalma Group |
| • PT Eka Dura Indonesia | Astra Agro Group |
| • PT Gandaerah Hendana | Barito Pacific Group |
| • PT Intibenua Perkasatama | |
| • PT Ivo Mas Tunggal | Sinar Mas Group |
| • PT Johan Sentosa | Dutapalma Group |
| • PT Musim Mas | Musim Mas Group |
| • PT Permata Hijau Sawit | |
| • PT Taluk Kuantan Perkasa | Dutapalma Group |
| • PT Tunggal Perkasa | Astra Agro Group |

Possibly Kuok Oils & Grains Pte. Ltd. is (or will become) involved as well in the export sales of the Napan & Risjadson Groups and the Tirtamas and Maharani Groups.

- **Musim Mas Group:** See paragraph 2.3.3.
- **Napan & Risjadson Groups:** PT PP London Sumatra Indonesia Tbk. (LonSum) exports much of its CPO production via the Belawan port in North Sumatra. Its CPO was stored by tank storage company PT Deli Tama Indonesia. LonSum was among the Deli Tama clients whose CPO-exports were contaminated with diesel in the fall of 1999. In December 1999 LonSum switched to two other storage companies, PT Prima Palm Indah and PT Belawan Tanki Indonesia (see 2.3.6), to store its CPO in Belawan.⁹⁷ Foreign customers buying crude oil palm products from the Napan & Risjadson Groups include (the referenced year is the last year in which it is certain that the company was a customer):⁹⁸

- | | | |
|-----------------------------------|----------------|------|
| • Anglia Oils (now Aarhus United) | United Kingdom | 1997 |
| • Gardner Smith | Australia | 1995 |
| • Wilmar | Singapore | 2002 |

Foreign customers possibly buying crude oil palm products from the Napan & Risjadson Groups include (the referenced year is the last year in which it is certain that the company was a customer):⁹⁹

- | | | |
|---------------------|----------------|------|
| • Cadbury Schweppes | United Kingdom | 2002 |
| • Cargill | United States | 2001 |
| • Genvora | Singapore | 1996 |
| • Kumpulan Guthrie | Malaysia | 2002 |
| • Ito Shoji Co. | Japan | 1998 |

- MacRobertson Foods Singapore 1999
- State Company Food Stuff China 1998

Recently, the Kuok Group acquired a large shareholding in the LonSum Group.¹⁰⁰ Possibly Kuok Oils & Grains Pte. Ltd. will become involved in the export sales of the LonSum Group.

- **Perkebunan Nusantara Group:** The marketing of CPO produced by the oil palm plantations of the Perkebunan Nusantara Group is handled by the Group's joint marketing office *Kantor Pemasaran Bersama (KPB)*.

CPO produced by Perkebunan Nusantara plantation companies in North Sumatra, West Sumatra, Lampung and in part of Java is stock-piled and distributed by PT Deli Tama Indonesia in the Belawan port (see paragraph 2.3.6).¹⁰¹

The German company IndoHam MbH. (a joint-venture between the Perkebunan Nusantara Group and three German companies) is the marketing office of the Perkebunan Nusantara Group in Europe.¹⁰²

Foreign customers buying crude or refined oil palm products from the Perkebunan Nusantara Group include:¹⁰³

- Cargill United States
- Wilmar Singapore

- **Sipef Group:** The Sipef Group sells oil palm products to Unilever and Cargill.¹⁰⁴

- **Salim Group:** PT Sawitra Oil Grains is the edible oil trading subsidiary of food company PT Indofood Sukses Makmur. Sawitra trades in crude and refined palm oil, palm kernel oil and coconut oil, produced by oil palm plantations belonging to the Salim Group as well as by other companies. Around 25% of its sales are to export markets.¹⁰⁵

Foreign customers of PT Sawitra Oil Grains include (the referenced year is the last year in which it is certain that the company was a customer):¹⁰⁶

- Archer Daniels Midland United States 1999
- Cargill United States 2002
- Gardner Smith Australia 1999
- Lotte Trading South Korea 1997
- Nabisco United States 1997
- Procter & Gamble United States 2001
- Safic Alcan France 1999
- Unilever Netherlands / United Kingdom 1997

- **Sungai Budi Group:** Oil palm products are marketed abroad by Inter-United Enterprises Pte. Ltd. in Singapore, probably a subsidiary of the Sungai Budi Group.¹⁰⁷

- **Sinar Mas Group:** Oil palm products are marketed abroad by Golden Agri International Ltd. in Singapore, a subsidiary of Golden Agri-Resources Ltd.¹⁰⁸

Foreign customers buying crude or refined oil palm products from the Sinar Mas Group include:¹⁰⁹

- Cargill United States
- Gardner Smith Australia
- Kumpulan Guthrie Malaysia
- Kuok Singapore
- Marubeni Corporation Japan

- Mitsubishi Corporation Japan
- Unilever The Netherlands / United Kingdom
- Wilmar Singapore

- **Tirtamas and Maharani Groups:** In setting up their oil palm plantations, the Tirtamas and Maharani Groups have collaborated with the Kuok Group.¹¹⁰ Possibly Kuok Oils & Grains Pte. Ltd. is involved in export sales of these groups.

- **Wilmar Group:** Wilmar Holdings in Singapore is owned by Archer Daniels Midland (United States), Cofco (China), Martua Sitorus (Indonesia) and Kuok Khoon Hong (Malaysia, member of the Kuok family which controls the Kuok group).¹¹¹ Wilmar Holdings owns a number of oil palm plantations and several palm oil mills in Indonesia. Wilmar claims to be the largest exporter of palm oil, palm kernel, palm kernel expeller and related products in Indonesia. The company buys crude palm oil from its own plantations and from a number of other plantations in Indonesia.¹¹² Indonesian oil palm plantation companies selling palm oil to the Wilmar Group are:¹¹³

- PT Astra Agro Lestari Astra Agro Group¹¹⁴
- PT Cirenti Subur Dutapalma Group
- PT Dutapalma Nusantara Dutapalma Group
- PT Intibenua Perkasa
- PT Ivo Mas Tunggal Sinar Mas Group
- PT Johan Sentosa Dutapalma Group
- PT Kencana Amal Tani Dutapalma Group
- PT Kantor Pemasaran Bersama Perkebunan Nusantara Group
- PT Musim Mas Musim Mas Group
- PT Permata Hijau Sawit
- PT PP London Sumatra Indonesia Napan & Risjadson Groups¹¹⁵
- PT Sari Lembah Subur Astra Agro Group
- PT Sawitra Oil Grains Salim Group¹¹⁶
- PT Tunggal Perkasa Astra Agro Group

PNG oil palm plantation companies from which Wilmar is buying crude oil palm products include:

- New Britain Palm Oil Johor Group¹¹⁷

The CPO sold by these companies to the Wilmar Group could be exported as such to overseas markets by Wilmar, or could be refined in Wilmar's refineries in Indonesia and Malaysia (see paragraph 2.3.3) and then exported.

Wilmar Holdings has a subsidiary in the Netherlands, Wilmar Europe B.V., which probably acts as its sales agent in Europe.¹¹⁸ Probably Wilmar Holdings supplies ADM trading companies and refineries in the Netherlands, Germany and the United Kingdom.

2.3.2 Palm kernel crushing plants

Almost all Indonesian palm kernels are processed in palm kernel crushing plants in Indonesia, as is shown in Table 19. Less than 1% is exported, mostly to Malaysia.

Year	1995	1996	1997	1998	1999	2000	2001	2002	Growth
Crushings				1,240	1,478	1,651	1,815	2,105	
Exports				3	8	8	2	6	

The following information is available on the companies owning palm kernel crushing plants in Indonesia:

- **Bolloré Group:** PT Socfindo operates a palm kernel crushing plant with a capacity of 4.4 tons per hour (30,000 tons per year).¹²⁰
- **Cahaya Kalbar Group:** PT Cahaya Kalbar operates a palm kernel crushing plant in West Kalimantan. Cahaya Kalbar does not own plantations and buys all palm kernels from outside plantation groups.¹²¹
- **Dutapalma Group:** PT Taluk Kuantan Perkasa operates a palm kernel crushing plant in Dumai, Riau, with a capacity of 600 tonnes palm kernels per day (210,000 tons per year).¹²²
- **Salim Group:** PT Bitung Menado Oil operates a palm kernel crushing plant with an annual capacity of 45,000 tons in Sulawesi.¹²³
- **Sinar Mas Group:** Golden Agri-Resources Ltd. operates four palm kernel crushing mills with an annual capacity of 356,400 tonnes. One of these crushing mills is on the Bangka Islands.¹²⁴
- **Wilmar Group:** Wilmar Holdings Ltd. operates four palm kernel crushing facilities in Indonesia and Malaysia with total palm kernel crushing capacity of 800,000 tons per annum. Wilmar claims to be the largest palm kernel crusher in Indonesia, as well as the largest exporter of palm kernel oil and palm kernel expeller and related products in Indonesia. The company buys palm kernels from its own plantations in Indonesia and from a number of other plantations in Indonesia (see paragraph 2.3.1).¹²⁵

2.3.3 Palm oil and palm kernel oil refineries

As shown in Table 20 the majority of the Indonesian CPO production is refined domestically, either for domestic usage or for export as refined palm oil. The refined volume increased by 95% since 1995, almost equalling total production growth. At present 69% of total Indonesian palm oil production is refined, down from 86% in 1999.

Fluctuations in the refining percentages are probably caused by:

- Changes in Indonesian export taxes (see Table 14);
- Changes in import taxes in important export markets, especially when the import of refined palm oil products is levied higher than the import of crude palm oil (which is the case in the European Union - see Table 25);
- Investments needed to bring new refining capacity on stream.

The existing import levies of the European Union, which try to encourage refining within the EU, clearly influence Indonesian palm oil export patterns. Of total Indonesian palm oil exports in 2002, 44% consisted of crude palm oil and 56% of refined palm oil. But of Indonesian palm oil exports to the European Union 65% consisted of crude palm oil and only 35% of refined palm oil.¹²⁶

Year	1995	1996	1997	1998	1999	2000	2001	2002	Growth
CPO production	4,220	4,540	5,380	5,361	6,250	7,050	8,030	9,020	114%
Palm oil refining	3,180	3,530	3,932	4,466	5,385	5,232	6,181	6,215	95%
Refining %	75%	78%	73%	83%	86%	74%	77%	69%	

In February 1999, Indonesia housed 57 palm oil refining companies, with a combined annual capacity of 7.9 million tonnes.¹²⁸ These refineries belonged to a limited number of business groups, as indicated in Table 21.

Group	Country of ultimate ownership	Plantation ownership	Annual capacity (MT)	Share
Musim Mas	Indonesia	Yes	1,600,000	20.4%
Wilmar	United States / China	Yes	1,562,250	19.9%
Hasil Karsa	Indonesia	Yes	991,675	12.6%
Sinar Mas	Indonesia	Yes	911,200	11.6%
Salim	Indonesia	Yes	570,000	7.3%
Berlian Eka Sakti Tangguh	Indonesia	No	430,500	5.5%
Sungai Budi	Indonesia	Yes	420,000	5.3%
Perkebunan Nusantara	Indonesia	Yes	385,355	4.9%
Raja Garuda Mas	Indonesia	Yes	337,280	4.3%
Others			647,112	8.2%
Total			7,855,372	100%

As is shown in Table 21, nine business groups accounted for more than 90% of the Indonesian palm oil refining capacity. Most of these groups are Indonesian-owned, only one (Wilmar) is a joint-venture by the big American commodity trader ADM and the Chinese company Cofco. Seven refinery groups own oil palm plantations themselves (see Table 18), but they generally also buy CPO from other oil palm plantations. The other two refinery groups rely fully on CPO bought externally.

The following information is available regarding the production and export of refined palm oil and palm kernel oil by these refinery groups. (Refining capacities provided here are in some cases much higher than in Table 21, but it is unclear if this is caused by take-overs or expansions).

- **Bakrie Group:** PT Kilang Vecolina operates a palm oil refinery in West Java with a capacity of 200 tonnes CPO per day (70,000 tonnes per year).¹³⁰
- **Bolloré Group:** PT Socfindo operates a palm oil refinery with a capacity of 320 tonnes CPO per day (112,000 tonnes per year).¹³¹
- **Cahaya Kalbar Group:** The Cahaya Kalbar Group operates two edible oil refineries in West Java and one in West Kalimantan.¹³²

- **Cisadane Raya Group:** PT Cisadane Raya Chemicals operates a palm oil refinery with an annual capacity of 180,000 tonnes in Jakarta. The production is sold domestically.¹³³
- **Dutapalma Group:** PT Darmex Oil & Fats operates a palm oil refinery in Bekasi, West Java, with a capacity of 1,300 tonnes CPO per day (460,000 tonnes per year).¹³⁴ For details on foreign customers of the Dutapalma Group see paragraph 2.3.1.
- **Musim Mas Group:** The Musim Mas Group operates five palm oil refineries with a combined capacity of 8,000 tonnes CPO per day (2.8 million tonnes per year). These refineries are:¹³⁵

• PT Musim Mas	Belawan	North Sumatra
• ?	Tanjung Mulia	North Sumatra
• ?	Dumai	Sumatra
• PT Bina Karya Prima	Jakarta	Java
• ?	Surabaya	Java

The Musim Mas Group owns its own oil palm plantations, but also buys CPO from other companies. Oil palm plantation companies supplying CPO to Musim Mas are:

- PT Astra Agro Lestari Astra Agro Group¹³⁶
- PT PP London Sumatra Indonesia Napan & Risjadson Groups¹³⁷

The Musim Mas refinery is located near the Belawan port in North Sumatra and has its own bulk tank terminal and ships to export products in liquid bulk.¹³⁸

The Musim Mas Group claims to have exported 1.5 million tonnes of crude and refined palm oil and palm kernel oil in 2002, which amounts to more than 20% of Indonesia's total exports (see Table 15 and Table 16). Export marketing is the responsibility of its Malaysian subsidiary Musim Mastika (Malaysia) Bhd.¹³⁹

Foreign customers buying crude or refined oil palm products from the Musim Mas Group include:¹⁴⁰

• Cargill	United States
• Kumpulan Guthrie	Malaysia
• Kuok	Singapore
• Wilmar	Singapore

- **Raja Garuda Mas Group:** PT Asian Agri operates three palm oil refineries in Indonesia, located in North Sumatra, Riau and Jakarta. These refineries have a combined capacity of over 780,000 tonnes of CPO per annum.¹⁴¹
- **Salim Group:** PT Intiboga Sejahtera operates two palm oil refineries in Jakarta and Surabaya with a refining capacity of 2,100 tons CPO (735,000 tons per year).¹⁴² For details on foreign customers of the Salim Group see paragraph 2.3.1.
- **Sinar Mas Group:** Golden Agri-Resources Ltd. operates two palm oil refineries with an annual refining capacity of 840,000 tons.¹⁴³ For details on foreign customers of the Sinar Mas Group see paragraph 2.3.1.
- **Sungai Budi Group:** PT Tunas Baru Lampung operates three palm oil and coconut oil refineries in Lampung, South Sumatera and West Java.¹⁴⁴ For details on foreign customers of the Sungai Budi Group see paragraph 2.3.1.

- **Wilmar Group:** Wilmar Holdings Ltd. operates four palm oil refineries in Indonesia and one in Malaysia with total palm oil refining capacity of 3.3 million tons per annum. The Indonesian refineries are:
 - PT Bukit Kapur Reksa
 - PT Karya Prajona Nelayan
 - PT Multimas Nabati Asahan
 - PT Sinar Alam Permai

Wilmar claims to be the largest palm oil refiner as well as the largest exporter of palm oil, palm kernel oil and related products in Indonesia. The company buys crude palm oil from its own plantations and from a number of other plantations in Indonesia.¹⁴⁵ For details see paragraph 2.3.1.

Apart from refined palm oil and refined palm kernel oil, many of the refinery groups mentioned in Table 21 also produce and export further processed products, such as margarine, shortenings and soap. As these exports are mainly destined for the Asian market, we will not elaborate on them here.

2.3.4 Manufacturers of margarine, shortenings and fats

Indonesia houses a limited number of manufacturers of margarine, shortenings and fats. The following information is available on these companies and their exporting activities:

- **Cahaya Kalbar Group:** PT Cahaya Kalbar Tbk. is producing a wide range of speciality fats such as cocoa butter and cocoa powder, cocoa butter replacer fats, confectionery fats, coating fats and filling fats. Its products are used in chocolate and cocoa confectioneries, bakeries, ice cream products, and general food related products. These products are mainly made from cocoa, palm oil, palm kernel oil, coconut oil, shea oil, tengkawang fat and ilipe fat. Cahaya Kalbar does not own oil palm plantations itself, but the company owns a palm kernel crushing plant and three edible oil refineries.¹⁴⁶ Cahaya Kalbar exports its products worldwide, including to the Netherlands, Sweden and England. Foreign customers buying speciality fats from the Cahaya Kalbar Group include:¹⁴⁷

- | | |
|------------------------------|-----------------|
| • Britannia Food Ingredients | United Kingdom |
| • Juremont | Australia |
| • Theobroma | The Netherlands |
| • Walter Rau | Germany |

- **Salim Group:** PT Intiboga Sejahtera, a subsidiary of the large food company PT Indofood Sukses Makmur, has an annual margarine production capacity of 226,200 tons in Jakarta. Consumer margarine is sold under the brand names Simas, Palmia and Amanda. Industrial margarines and shortenings are sold under the brand names Palmia, Royal Palmia, Queen's, Simas, Vitamas, Amanda, Malinda and Delima.¹⁴⁸ PT Indofood Sukses Makmur controls 66 percent of the Indonesian margarine and fats market. Around 12 percent of Indofood's total sales are exported, to a total of 36 countries. PT Indofood Sukses Makmur is without doubt the largest Indonesian consumer of CPO. But only 45 percent of its CPO need is sourced from its own oil palm plantations.¹⁴⁹
- **Sinar Mas Group:** The oil palm plantation company PT SMART also produces margarine speciality fats as cacao butter substitutes, toffee fat, coating fat and butter substitute. The output is probably largely sold on the domestic market.¹⁵⁰

- **Wilmar Group:** PT Karya Putrakreasi Nusantara produces speciality fats.¹⁵¹

2.3.5 Oleochemical companies

Oleochemical production in Indonesia amounted to 712,012 tons in 2001. Fatty acid production accounted for 67% of the total production. Fatty alcohol came second, followed by stearic acid and glycerol (see paragraph 1.2.6). The usage of palm oil and palm kernel oil by the oleochemical industry can be estimated at 783,000 tons, which equals 10% of the Indonesian palm oil and palm kernel oil production in 2001 (see Table 11 and Table 12).¹⁵² Indonesian oleochemical exports amounted to 541,972 tons in 2001, or 76% of production output. Among the most important export destinations were Spain (83,012 tons), the Netherlands (40,709 tons) and Germany (9,680 tons).¹⁵³

Indonesia houses a number of oleochemical companies as indicated in Table 22. These companies mainly belong to business groups owning oil palm plantations (see Table 18) and/or palm oil refineries (see Table 21).

Table 22 Oleochemical companies in Indonesia			
Group	Country of ultimate ownership	Plantation ownership	Production capacity (tons/yr)
Aribhawana Utama	Indonesia	No	35,000
Bumi Flora & Parasawita	Indonesia	No	54,000
Cisadane Raya	Indonesia	Yes	120,000
Ecogreen	Indonesia	No	102,500
Imora	Indonesia	No	157,000
Musim Mas	Indonesia	Yes	180,000
Sinar Mas	Indonesia / Japan	Yes	88,000
Total			736,500

The following information is available on the exporting activities of these oleochemical companies:

- **Bumi Flora & Parasawita Groups:** PT Flora Sawita Chemindo owns an oleochemical production facility in Medan, North Sumatra, producing palm oil fatty acids and glycerine, as well as coconut and other vegetable derived acids. Annual production capacity amounts to 54,000 tonnes. Palm oil is supplied by its own plantations (see Table 18).¹⁵⁴
- **Cisadane Raya Group:** PT Cisadane Raya Chemicals operates an oleochemical plant with an annual capacity of 120,000 tonnes in Jakarta, including 70,000 tons of fatty acid, 15,000 tons of glycerine, 10,000 tons of distilled fatty acid and 25,000 tons of bar soap. As inputs palm oil, palm kernel oil and coconut oil are used. The production is sold domestically and abroad. Palm oil is supplied by its own plantations and by plantations of the Bakrie Group (see Table 18).¹⁵⁵

- **Ecogreen Group:** Ecogreen Oleochemicals is one of the worlds largest producers of naturally fatty alcohols. The company owns plants in Batam (PT Batamas Megah) and Medan (PT Prima Inti Perkasa), as well as in Germany. The two Indonesian plants of Ecogreen have a combined annual capacity to produce 90,000 tons of fatty alcohols and 12,500 tons of glycerine. The main feedstock is palm kernel oil, sometimes supplemented with coconut oil. This is supplied by plantations belonging to the Salim Group (see Table 18). Ecogreen Oleochemicals exports 95% of its products worldwide, 20% of which goes to Europe. The company has a marketing office in Germany and long term lease storage facilities in Rotterdam.¹⁵⁶

Ecogreen Oleochemicals was formerly known as Salim Oleochemicals and was part of the Salim Group. As part of the Salim Group's debt restructuring, the company was transferred to the Indonesian Bank Restructuring Agency in 1999. In November 2000, IBRA sold the company to an international investment consortium comprising Bhakti Investama (Indonesia) and Asia Debt Managers (Hong Kong) for a sum of US\$ 131 million.¹⁵⁷

At present Ecogreen is planning to expand fatty alcohol production by 20,000 tons per year and to build a fatty acid plant in Medan with an annual capacity of 60,000 tons. The International Finance Corporation is currently considering a US\$ 30 million loan to finance this expansion project.¹⁵⁸

- **Imora Group:** PT Sumi Asih is one of the world's largest manufacturers of natural fatty acids and their derivatives from palm oil, palm kernel oil and coconut oil. Products include fractionated fatty acids, stearic acids, hydrogenated coconut fatty acids and glycerine. The plant in Jakarta has an annual production capacity of 90,000 tonnes fatty acids, 15,000 tons of glycerin and 32,000 tons of stearic acid (stabilizer) and metallic soap.¹⁵⁹

Sumi Asih also has a joint-venture with the German company Goldschmidt (a subsidiary of Degussa) producing betain, a shampoo additive, with an annual capacity of 20,000 tons.¹⁶⁰

The export sales agent of Sumi Asih is Derifats Chemicals Sdn. Bhd. in Malaysia.¹⁶¹ In Europe Sumi Asih sells its products via the German trader Corichem AG.¹⁶²

- **Musim Mas Group:** The Musim Mas Group owns an oleochemical plant in Medan, North Sumatra with an annual capacity of 60,000 tonnes of soap noodles and 120,000 tonnes of fatty acids and glycerine (to be expanded to 240,000 tonnes in 2004). Export marketing is the responsibility of its Malaysian subsidiary Musim Mastika (Malaysia).¹⁶³ Musim Mas sells soap noodles in Europe via the German trader Corichem AG.¹⁶⁴

- **Sinar Mas Group:** PT Sinar Oleochemical International (SOI) is a joint-venture between the Indonesian oil palm plantation company PT SMART (40%, see paragraph 2.3.1) and four Japanese companies: NOF, Shiseido, Marubeni and Hitachi Zosen. SOI produces glycerine and fatty acids from palm oil and palm kernel oil, supplied by plantations of the Sinar Mas Group (see Table 18). The plant, located in Medan, has an annual capacity of 88,000 tonnes. The marketing office for export sales is Marubeni Chemical Asia Pacific Pte. Ltd. in Singapore.¹⁶⁵

2.3.6 Ports, storage and transport companies

Indonesian oil palm products are exported through a number of ports throughout Indonesia, as indicated in Table 23.

Table 23 Indonesian export ports for oil palm products	
Port	Province
Belawan	North Sumatra
Cirebon	West Java
Dumai	Riau
Pulau Laut	South-east Kalimantan

The following information is available on palm oil transport and storage companies operating in/from these ports:

- **Port of Cirebon:** The port of Cirebon houses seven vegetable oil tanks with a total storage capacity of 10,300 tons. It is likely that these tanks are mainly used for transporting CPO to refineries in Java, as well as for the export of refined oil palm products. The tanks are operated in cooperation with the port authority and:

- PT Marga Tulus ?
- PT Inti Boga Sejahtera Salim Group
- PT SMART Sinar Mas Group
- PT Bukit Kapur Reksa Wilmar Group

New storage facilities are being built by PT Sawit Tunggal Artha Raya and PT Cahaya Ratu Berlian.¹⁶⁶

- **Perkebunan Nusantara Group:** The main CPO storage company in the Belawan port is PT Deli Tama Indonesia, which owns 68 reservoir tanks for CPO and derivative products. The company, which is part of the state-owned Perkebunan Nusantara Group, has a storage capacity of 115,000 tons. PT Deli Tama Indonesia collects and distributes CPO produced by Perkebunan Nusantara plantation companies in North Sumatra, West Sumatra, Lampung and in part of Java.¹⁶⁷ In the fall of 1999 some Indonesian CPO-shipments in the port of Rotterdam (The Netherlands) were found to be contaminated with diesel. This CPO came from the storage tanks of PT Deli Tama Indonesia, which blamed its clients. Among these were:¹⁶⁸

- PT Bert ?
- PT PP London Sumatra Indonesia Napan & Risjadson Groups
- PT Musim Mas Musim Mas Group
- PT Prima Paku Indah ?
- PT Salim Oil Salim Group
- PT SMART Sinar Mas Group

- **Belawan Tanki Indonesia:** An important palm oil tank storage company in the Belawan port is PT Belawan Tanki Indonesia. Capacity is unknown. The company has the following clients:¹⁶⁹

- PT Asianagro Agungjaya Raja Garuda Mas Group
- PT Astra Agro Lestari Astra Agro Group
- PT Berlian Eka Sakti Tangguh Berlian Eka Group
- PT Bukit Kapur Reksa Wilmar Group
- PT Bunge Agribusiness Indonesia Bunge Group
- PT Cakra Sapta Pratama
- PT Cargill Indonesia Cargill Group

- PT Ecogreen Oleochemicals Ecogreen Group
 - PT Gunung Melayu Raja Garuda Mas & Salim Groups
 - PT Hari Sawit Jaya Raja Garuda Mas Group
 - PT Indah Pontjan
 - PT Indo Sepadan Jaya
 - PT Inti Indosawit Subur Raja Garuda Mas & Salim Groups
 - PT Marintan Jaya
 - PT Pacific Indomas
 - PT Palm Trimitra Indotama
 - PT Pati Sari
 - PT Perkasa Jaya
 - PT Permata Hijau Sawit
 - PT PP London Sumatera Indonesia Napan & Risjadson Groups
 - PT Sinar Fadillah Jaya
 - PT Singamas Jaya Perdana
 - PT Supra Matra Abadi Raja Garuda Mas Group
 - PT Usaha Inti Padang
 - Ud Bintang Terang
 - Ud Kresindo
 - Ud Saudara Jaya
 - Ud Serba Guna
- **Prima Palm Indah:** Another palm oil tank storage company in the Belawan port is PT Prima Palm Indah. One of its customers is PT PP London Sumatera Indonesia (Napan & Risjadson Groups).¹⁷⁰
 - **Salim Group:** PT Sawitra Oil Grains owns edible oil storage tanks with a total capacity of 100,000 tons in Jakarta, Belawan and Cirebon.¹⁷¹

Chapter 3 The European Union market for oil palm products

3.1 Usage of oil palm products in the European Union

3.1.1 EU palm oil imports

Table 24 gives an overview of the countries of origin of the palm oil imports into the European Union. Palm oil imports into the EU increased by 92% since 1995 to 3.34 million tonnes in 2002, equivalent to 13% of global palm oil usage.

Country	1995	1998	1999	2000	2001	2002	Growth	Share
Malaysia	479	947	1,059	1,015	1,440	1,482	209%	44%
Indonesia	878	801	755	905	1,095	1,430	63%	43%
Papua New Guinea	239	195	279	330	352	341	43%	10%
Other countries	142	199	194	169	132	87	-39%	3%
Total	1,738	2,142	2,287	2,419	3,019	3,340	92%	100%

Indonesian palm oil imports into the European Union showed a growth of 63% since 1995, but nevertheless its market share declined from 50% to 43%.¹⁷³ The main reason for this was the discovery in the fall of 1999 of some Indonesian diesel-contaminated CPO-shipments in the port of Rotterdam (The Netherlands). This affair seriously hampered imports at the end of 1999 and the beginning of 2000. Some buyers switched to other suppliers, from which they continued buying after attention to the affair faded.¹⁷⁴

Malaysia clearly profited, trebling its palm oil exports to the EU over the past seven years. The Malaysian market share is now 44%, slightly larger than the Indonesian market share (43%).

Imports from Papua New Guinea are only growing slowly and now have a market share of 10%. Other producing countries do not play a significant role on the EU market. This is despite the fact that most other palm oil producing countries have preferential access to the EU-market, compared with Indonesia and Malaysia. EU import tariffs applicable to some of the main palm oil producing countries are shown in Table 25.

Product / Country	Indonesia Malaysia	Papua New Guinea, Ivory Coast Nigeria, Ecuador, Colombia	Thailand Brazil
Crude palm oil	3.8%	0%	0%
Refined palm oil (olein)	9.0%	0%	3.1%
Stearin	10.9%	0%	3.8%

Among the main palm oil producing countries (see Table 3), the normal EU import tariffs only seem to apply to Indonesia and Malaysia. Based upon the *Cotonou Treaty* (formerly *Lomé Treaty*) tropical oil exports from the *ACP-countries* (including Papua New Guinea, Ivory Coast, Cameroon, Nigeria and the Solomon Islands) to the EU are exempt from import tariffs.

Within the *Generalised System of Preferences* the EU also imposes reduced import tariffs for a large number of other oil palm producing countries. Palm oil exports to the EU from most countries in Latin America (Bolivia, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Peru and Venezuela.) are exempt from import tariffs to reward them for their fight against drugs. Palm oil exports from a large number of other countries, including Thailand and Brazil, are levied with a reduced tariff.¹⁷⁶

Country	1995	1998	1999	2000	2001	2002	Growth	Share
Netherlands	258.3	282.4	284.2	391.6	387.5	556.5	115%	39%
Germany	188.6	183.1	145.3	236.3	267.7	347.0	84%	24%
United Kingdom	150.2	125.6	134.7	120.7	118.0	181.4	21%	13%
Spain	60.0	71.1	80.3	95.6	144.4	158.6	164%	11%
France	3.2	5.7	13.0	10.6	58.5	82.5	2,578%	6%
Belgium/Luxemburg	77.3	50.0	39.3	19.1	45.1	40.4	-48%	3%
Italy	107.5	44.7	46.0	23.3	46.9	31.3	-71%	2%
Greece	4.3	11.0	5.9	5.5	12.5	12.5	213%	1%
Denmark	16.1	16.3	0.0	0.2	5.7	11.3	-31%	1%
Portugal	8.8	9.6	5.1	1.8	8.8	8.1	-10%	1%
Ireland	1.6	0.0	0.0	0.0	0.0	0.0	-100%	0%
Sweden	1.5	1.1	0.6	0.2	0.0	0.0	-100%	0%
Austria	0.3	0.0	0.0	0.0	0.0	0.0	-100%	0%
Total	878	801	755	905	1,095	1,430	63%	100%

As is shown in Table 26, the Netherlands is the most important market in the European Union for Indonesian palm oil. Dutch oil palm imports increased by 115% since 1995 and its market share has now reached 39%. However, a large part of these Dutch oil palm imports are re-exported, mostly to other EU-countries. Actual Indonesian palm oil imports of some other EU-countries are therefore higher than shown in Table 26.

Other major EU-markets for Indonesian palm oil are Germany (24% of total EU-imports) and the United Kingdom. Others showing strong growth figures are Spain (11%) and France (6%). Other EU-markets are not important or stopped all (direct) palm oil imports from Indonesia.

Of total Indonesian palm oil exports to the European Union 65% consisted of crude palm oil and 35% of refined palm oil.¹⁷⁸

3.1.2 EU palm kernel oil imports

Table 27 gives an overview of the countries of origin of the palm kernel oil (PKO) imports into the European Union. PKO imports into the EU increased by 81% since 1995 to 568,000 tonnes in 2002, equivalent to 19% of global PKO usage (see table 1.3).

Country	1995	1998	1999	2000	2001	2002	Growth	Share
Malaysia	75	105	129	84	83	102	36%	18%
Indonesia	208	254	320	340	327	436	110%	77%
Papua New Guinea	13	19	25	25	23	24	85%	4%
Other countries	18	28	42	35	9	6	-67%	1%
Total	314	406	516	484	442	568	81%	100%

With a market share of 77%, Indonesia is much more dominant in the European PKO market than it is in the European palm oil market (43%, see Table 24). This is mainly caused by the fact that Malaysia (18% market share) is processing most of its palm kernel oil production domestically in its oleochemical industry.

Country	1995	1998	1999	2000	2001	2002	Growth	Share
Germany	85.5	93.1	148.4	151.9	164.2	247.5	189%	57%
Netherlands	40.2	80.8	99.2	78.5	48.4	49.4	23%	11%
Belgium/Luxemburg	13.4	13.3	7.5	34.5	28.1	36.5	172%	8%
United Kingdom	15.0	19.2	17.1	16.5	34.9	36.2	141%	8%
Spain	23.8	21.5	19.2	30.8	29.6	32.7	37%	7%
Italy	15.6	9.0	12.8	13.6	13.3	17.5	12%	4%
France	7.0	7.3	9.5	7.8	4.3	14.0	100%	3%
Portugal	0.0	1.0	0.6	0.1	1.6	1.7	>100%	0%
Greece	0.2	1.6	1.2	2.2	2.2	0.9	350%	0%
Denmark	5.7	6.7	4.5	4.5	0.0	0.0	-100%	0%
Sweden	1.5	0.0	0.0	0.0	0.0	0.0	-100%	0%
Total	208	254	320	340	327	436	110%	100%

As shown in Table 28, Germany is the most important EU market for Indonesian palm kern oil by far, with a share of 57% of total EU imports. The Netherlands (11%), Belgium (8%) the United Kingdom (8%) and Spain (7%) follow behind.

3.1.3 Edible oils usage in the European Union

Total edible oil usage in the European Union increased by 20% since 1995, as is shown in Table 29. Palm oil usage showed a growth of 90%, which is more than that of any other edible oil. Palm oil now has a 17% market share and is the second most consumed edible oil in the EU.

Palm kernel oil usage in the EU increased by 72% since 1995, giving PKO a 3% share of the EU edible oils market.

Oil type	1995	1998	1999	2000	2001	2002	Growth	Share
Rapeseed oil	2,160	2,619	2,988	3,291	3,373	3,356	55%	18%
Palm oil	1,689	2,051	2,168	2,368	2,855	3,211	90%	17%
Soybean oil	2,029	1,876	1,798	1,717	1,979	2,094	3%	11%
Olive oil	1,484	1,732	1,810	1,893	1,948	1,950	31%	10%
Sunflower oil	1,957	2,092	2,132	2,101	2,032	1,922	-2%	10%
Butter (as fat)	1,425	1,505	1,543	1,542	1,535	1,510	6%	8%
Lard	1,295	1,395	1,449	1,402	1,370	1,400	8%	7%
Palm kernel oil	317	385	501	465	430	545	72%	3%
Other edible oils	3,293	3,189	2,852	2,991	2,953	2,805	-15%	15%
Total	15,650	16,844	17,241	17,770	18,475	18,793	20%	100%

3.1.4 EU palm kernel meal imports

Table 30 gives an overview of the countries of origin of the palm kernel meal (PKM) imports into the European Union. Since 1995 PKM imports into the EU have increased by 22% to 2.4 million tonnes, equalling 64% of global PKM usage (see Table 7).

Country	1995	1998	1999	2000	2001	2002	Growth	Share
Malaysia	1,387	1,294	1,288	1,330	1,314	1,360	-2%	58%
Indonesia	351	504	719	756	725	887	152%	38%
Nigeria	162	168	182	132	101	67	-59%	3%
Other countries	35	22	37	45	53	46	31%	2%
Total	1,935	1,988	2,226	2,263	2,193	2,360	22%	100%

With a market share of 58%, Malaysia is the most important supplier on the European PKM market, but the growth in volume of Malaysian PKM supplies to the EU is stagnant. As PKM imports from Nigeria are declining and other supply countries only play a minimal role, the growth in EU PKM imports over the past seven years is accounted for solely by the growth in Indonesian exports. Indonesia has increased its share of the EU PKM market from 18% to 38%.

Country	1995	1998	1999	2000	2001	2002	Growth	Share
Netherlands	159.1	245.0	317.2	370.0	282.5	411.8	159%	46%
Germany	100.4	125.0	236.7	199.0	222.7	196.5	96%	22%
United Kingdom	33.8	77.8	78.1	74.7	66.5	85.8	154%	10%
Portugal	0.0	0.0	0.0	7.5	31.0	40.2	>100%	5%
Ireland	33.5	29.8	44.8	57.9	12.1	34.2	2%	4%
France	0.3	6.2	5.0	12.6	27.9	31.1	>1000%	4%
Sweden	2.2	3.5	7.3	15.8	13.1	24.7	>1000%	3%
Spain	11.1	3.7	23.4	5.0	35.2	24.2	118%	3%
Italy	6.2	2.9	0.0	10.3	8.9	21.1	240%	2%
Belgium/Luxemburg	4.3	10.3	6.0	2.8	25.1	17.4	305%	2%
Total	351	504	719	756	725	887	152%	100%

As shown in Table 31, The Netherlands are the most important EU market for Indonesian palm kernel oil by far, with a share of 46% of total EU imports. However, a large part of these Dutch PKM imports are exported again, mostly to other EU-countries. Actual Indonesian PKM imports of some other EU-countries are therefore higher than shown in Table 31. Other important PKM markets in the EU are Germany (22%) and the United Kingdom (10%). Portugal, France and Sweden are also significant.

3.2 Sectors in the EU oil palm production chain

3.2.1 International edible oil trading sector

Obviously, the international traders in (bulk) edible oil products play a principal role in bringing oil palm products from Indonesia to Europe. Different from other stages in the supply chain, there are very many companies involved in this stage and presenting a full overview is difficult. Generally, four types of traders are involved:

- European trading subsidiaries of Indonesian and Malaysian oil palm plantation companies or refineries. Some of the Indonesian producers and refineries have set up European trading subsidiaries, which can buy oil palm products from their sister companies as well as from other producers. Examples are Kumpulan Guthrie in the UK, Perkebunan Nusantara and Golden Hope in Germany and Johor in the Netherlands.
- The trading arms of the major European edible oil refining companies. To supply their European refineries and crushing plants, these companies set up trading companies buying palm oil, palm kernel oil and palm kernels in Indonesia. The two most important examples are the American giants Cargill and ADM, which source oil palm products from their own plantations and refineries in Indonesia but also from other producers. Smaller examples are the refineries of Soctek (Netherlands), Golden Hope (Netherlands), Karlshamns (Sweden) and Aarhus (UK).
- Procurement divisions of major European food, detergent and chemical companies. These companies often procure oil palm products directly from producers in Indonesia, either in refined form (which can be used directly) or in crude form (which probably is refined on a contract basis). Major examples are Unilever, Henkel, Migros.

- Independent edible oil traders and brokers. Apart from the three types of integrated traders, a large number of independent edible oil traders are active in the sector. They sell to European refining and processing industries which either lack a procurement division or have a temporary demand exceeding their regular supply. Most of these independent traders and brokers are fairly small, with the exception of Safic-Alcan (France).

3.2.2 Edible oil transport and storage sector

Oil palm products are transported from Indonesia to Europe by edible oil bulk carriers, chartered by the traders mentioned in paragraph 3.2.1. The carriers are discharged (and sometimes temporarily stored) in various European ports, among which Rotterdam is the most important. From these ports the oil palm products are transported by ship and truck to refineries and processing industries. Important transport and storage companies involved in these activities are C.Koole (Netherlands), Vopak (Netherlands) and ITC Holland (Netherlands).

3.2.3 Oilseed crushing and refining industry

In the European oil palm product chain the European oilseed crushing industry is not of high importance, as non-crushed palm kernels are hardly imported in the European Union. But edible oil refineries play a very important role, as almost all European imports of palm oil and palm kernel oil are processed by European edible oil refineries. Of total Indonesian palm oil exports to the European Union 65% consisted of crude palm oil and 35% of refined palm oil.¹⁸⁴

Apart from refining all imports of crude palm oil and palm kernel oil, imports of refined palm oil and palm kernel oil are often refined again by European edible oil refineries to remove remaining or new impurities. Oil palm products are often shipped to Europe using tankers and shore facilities which do not meet the standards of a European food manufacturer.¹⁸⁵

The most important edible oil refining companies in Europe, ranked by market share in 1998, were.¹⁸⁶

- | | |
|--------------------------------------|------------------------------|
| • Cargill | United States |
| • ADM | United States |
| • Cereol, which is now part of Bunge | United States |
| • Unilever | United Kingdom / Netherlands |

But since then Unilever has sold its edible oil refineries in the Netherlands (to Golden Hope), United Kingdom (to ADM) and Germany. The dominance of the three American refineries therefore has increased since 1998.

The European organisations for the oilseed crushing and refining industries are organized in *FEDIOL (EC Oilseed Crushers' and Oil Processors' Federation)*.

3.2.4 Oil packing sector

A small part of the European palm oil imports is packed in bottles or small containers directly after the refining stage. These are sold to consumers and the foodservice markets both inside and outside Europe for cooking and frying. The most important oil packing companies in Europe, ranked by market share in 1998, were.¹⁸⁷

- | | |
|--|------------------------------|
| • Lesieur, which is now part of Bunge | United States |
| • AOP, which is now part of Cargill | United States |
| • Unilever | United Kingdom / Netherlands |
| • Pura Foods, which is now part of ADM | United States |
| • Brökelmann & Co. | Germany |

These large oil packers - which do not all sell palm oil - generally own edible oil refineries as well. But on a national level a lot of smaller companies without refining capacity are active on the oil packing market as well. They buy palm oil in bulk from traders or refineries, pack it and sell it.

3.2.5 Margarine and spreads industry

Probably the most important palm oil consuming sector in the European Union is the margarine and spreads industry. According to the *International Margarine Association of the Countries of Europe (IMACE)*, which regroups 21 national margarine associations, the total production of margarine and fat spreads in the EU amounted to 2,191,301 tonnes in 2001. The four biggest producing countries are Germany (573,973 tonnes), United Kingdom (409,200 tonnes), Belgium (278,789 tonnes) and the Netherlands (262,006 tonnes).¹⁸⁸

3.2.6 Biscuit, chocolate and confectionery industry

The European biscuit, chocolate and confectionery industry is an important consumer of palm oil and palm kernel oil. Palm oil is especially used on a large scale in biscuits, cakes and (fresh) pastry.¹⁸⁹

Palm oil can also be used in chocolate and related products. After 27 years of negotiations, the European Union adopted a new *Chocolate Directive* in May 2000, which sets out rules for the ingredients and labelling of chocolate products. Chocolate with up to 5% of substitutes for cocoa butter can now officially be called *chocolate* all over the European Union. Apart from palm oil, illipe, sal, shea, kokum gurgi and mango kernel oils are permitted by the *Chocolate Directive* as substitutes for cocoa butter, as long as their usage is indicated properly on the label of the product.¹⁹⁰

Chocolate producers had been lobbying for this for years. It was often assumed they were mainly interested in the cost reduction resulting from a substitution of expensive cacao butter by cheaper tropical oils. But in fact the price of *Cocoa Butter Equivalent (CBEs)* is only slightly lower, or sometimes even higher, than that of cacao butter. Most commonly, CBEs are the result of a specific blending of three tropical fats: shea nut butter, palm oil and illipe nut butter. Although the crude oils are cheaper than cocoa they all have to undergo significant processing and blending and this brings the prices of the blended CBEs closer to those of cocoa butter.¹⁹¹

The main reason for the industry to lobby for allowing CBEs, was that the shelf life of chocolate bars would be increased. It prevents the formation of fat bloom, a white discoloration generated by heat. Fat bloom, common in summer and in warmer climates or resulting from temperature changes, is a major source of consumer complaints. Also, CBEs may improve fat stability, texture and gloss, as well as hardness and snap, especially in chocolate products with a high-milk content.¹⁹²

However, over the years, technical improvements in the chocolate production process reduced the importance of these technical arguments. When the *Chocolate Directive* finally came into force in August 2003, most producers of chocolate bars said that there would be no change to their current recipes. Cocoa constitutes only 10% to 15% of the total production costs and the price advantage would therefore not outweigh the disadvantage of losing the label *pure chocolate*. Also, the *Chocolate Directive* is expected to bring down the price of cacao butter.¹⁹³

Sources within the industry therefore expect that the *Chocolate Directive* will most affect the makers of biscuits and chocolate-covered products since the incorporation of vegetable oils makes chocolate more pliable and sticky - key properties for such manufacturers.¹⁹⁴

3.2.7 Snacks, chips and crisps industry

Large scale industrial frying in Europe and Asia is probably the largest application of palm oil.¹⁹⁵

3.2.8 Soap, detergents and cosmetics industries

Annually 2.2 million tons of surfactants are used in the European Union, mainly by the soap, detergents and cosmetics industries. Most of these surfactants are based upon fatty alcohols derived from lauric oils (palm kernel oil or coconut oil). Figure 10 shows how the usage of fatty alcohols in the EU is distributed by fields of application (I+I = industrial and institutional cleaning).¹⁹⁶

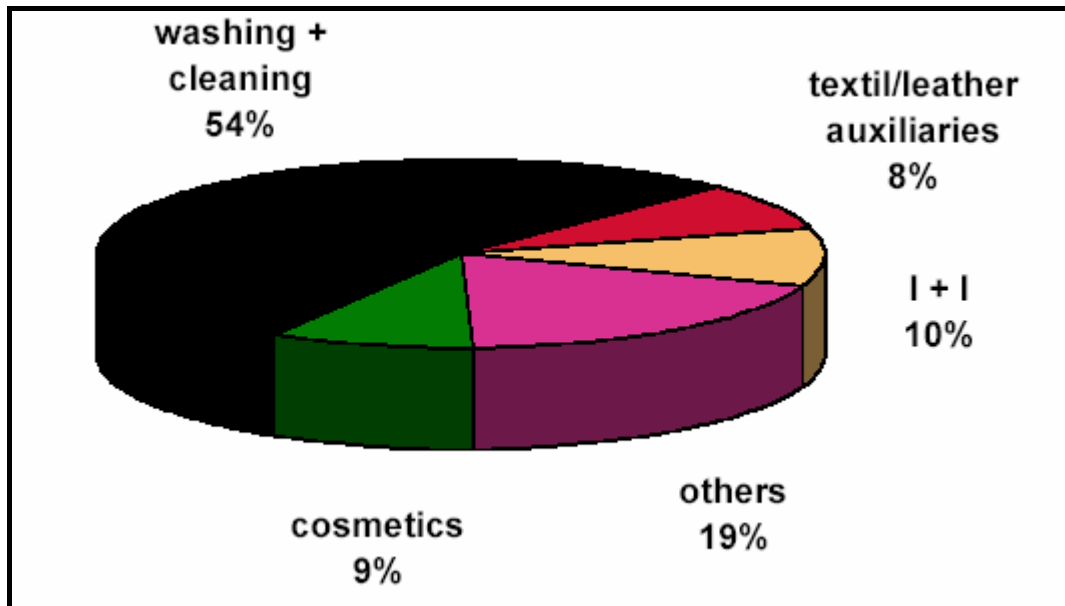


Figure 10. Surfactant usage in Europe

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