

Preface

The International Institute for Environment and Development (IIED), ProForest and Rabobank International were commissioned by the International Finance Corporation (IFC)'s Corporate Citizenship Facility and WWF-US to research the environmental and social issues associated with the production of a wide range of agribusiness commodities. The project aimed to understand how useful the development and application of 'Better Management Practices' (BMPs) would be for these commodities. Specifically, the project has sought to provide guidance on:

- the commodities future initiatives should focus on;
- the potential partners for these initiatives; and
- the key opportunities and constraints associated with each commodity.

The first phase consisted of a scoping review, which involved the collection of basic data and industry intelligence on each of ten commodities (cocoa, coffee, cotton, oil palm, salmon, shrimp, soy, sugar, tea and timber pulp). At the end of the first phase, IFC and WWF-US selected four commodities (cotton, palm oil, soy and sugar) for further investigation, on account of the perceived magnitude of sustainability impacts, financial sector traction, and the potential added value of an IFC/WWF initiative for each commodity.

This report is the product of the second phase of the project and is intended as a basis for discussion regarding future work on BMPs and agribusiness commodities. For each of the four selected commodities, it sets out background information on the sector; key environmental and social impacts; prospects for tackling these impacts through the adoption of BMPs; and preconditions, risks and strategic choices in relation to developing a BMP approach. The four commodity-specific chapters are preceded by a summary of common themes and potential approaches that emerge.

The research focused particularly on production issues (rather than processing, trading or retail). Processing issues were addressed where they are integrated with primary production (e.g. carried out at the same location as production). However, where non-production issues have significant implications in terms of the potential for BMPs, the research also highlights these.

This report was written by IIED and ProForest in co-operation with Rabobank. Readers should note that the report is intended as a rapid, 'first-pass' assessment of these commodities, and, given the evolving nature of commodity production and trade, elements of the report may be inaccurate or out of date. Furthermore, it should be emphasized that Rabobank provided input for this publication and was not involved in the final editing or writing of the report. As such the report does not necessarily represent the views of Rabobank in all areas.

3 Palm Oil

3.1 The palm oil sector

3.1.1 Production volumes and regions

Palm oil is produced from the oil palm, primarily *Elaeis guineensis*, which originated in West Africa, but has adapted extremely well to other tropical lowland regions. The largest producer of palm oil is Malaysia, accounting for approximately 49% of global production. Indonesia ranks second, accounting for another 36%. Nigeria follows a distant third, with 2.9%. Oil palm plantations exist on a much smaller scale in several other African countries and in Central and South America (e.g., Colombia, Ecuador and Costa Rica). SE Asia is thus by far the main palm oil producing region accounting for in excess of 85% of world production (figure 3.1). This is produced from over of 6 million hectares of plantation (figure 3.2), which represents nearly 80% of the world total oil palm plantation area. Between 1999/00 and 2002/03 Malaysian production of palm oil grew at 8.5% per year, whilst Indonesian production growth outstripped the world average, growing at 14.7% per year

Global consumption of major oils and fats has been increasing over the last few years, driven by growing consumer demand, particularly in the developing world, and increased usage of vegetable edible oils which are replacing animal fats in foods, feeds and other non food applications. Palm oil is the fastest growing segment of the world edible oil production base, growing from less than 6 million MT in 1983/1984 to more than 27 million MT in 2002/2003. In the five-year period 1999/2000 to 2002/2003, palm oil production increased at an average of 9.5% per year. In comparison, the total supply of oils and fats only grew at an average annual growth rate of about 4% in the same period, to a total of 122 million MT. Authoritative projections suggest that world consumption will exceed 40 million tonnes by 2020. This represents an approximate doubling of production. Past trends suggest that per hectare yield growth will be slow, so the great majority of this increased production seems likely to stem from increased area of plantation. About half the expansion is expected to be in Indonesia (which is expected to overtake Malaysia as the world's largest producer by 2007) and much of the rest in Sabah and Sarawak.

Figure 3.1 World production of palm oil by country in 2002-2003²⁵

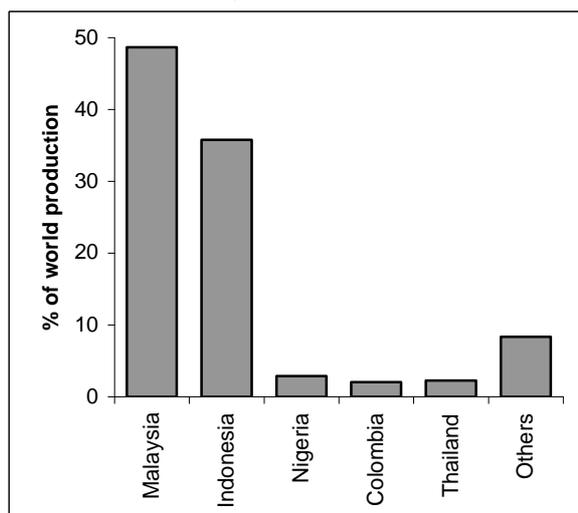
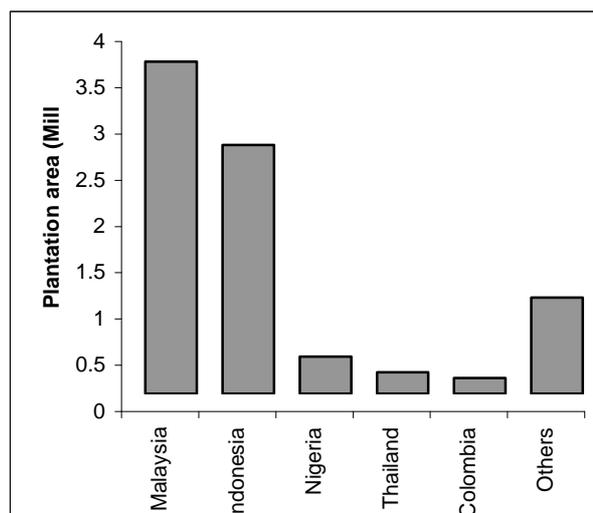


Figure 3.2 Estimated total plantation area²⁶



²⁵ Source: Oil World 2003 Oil World Annual. Mielke, Hamburg.
 Better Management Practices Project for IFC and WWF-US: Phase 2 Commodity Guides
 IIED, ProForest, Rabobank 29th March 2004

Chapter 3: Palm Oil

Oil World forecasts an increase in the mature oil palm planted area of 4.2% p.a. between 2002 and 2005. This is slower than the 6.5% p.a. growth achieved in the previous five years. Indonesia is likely to lead that growth with an increase of 6.5% p.a. whereas Malaysia is expected to increase by 4.7% p.a. In total, Indonesia is forecast to have 2.76 million ha of mature oil palm plantations by 2005 while Malaysia is expected to have 3.68 million ha in that year.

Although a number of countries including India, Brazil, Nigeria, Uganda, the Philippines and Suriname have announced their intention to introduce new or expand existing palm oil plantations through various schemes (public and private), we do not anticipate that the importance of Indonesia and Malaysia as major producing countries of palm oil will change to any significant extent. The major current and future environmental and social impacts of oil palm production are therefore concentrated in SE Asia, and although similar impacts have been reported from other producer countries, the following analysis will therefore focus on the two major producing countries.

3.1.2 The value chain

Crude Palm Oil (CPO) accounts for 21% of the global oils and fats supply, and 26% of the global vegetable oil supply.²⁷ Figure 3.3 presents the typical value chain. Palm oil is the highest yielding oil crop per hectare. One hectare of oil palm yields 15–30 tonnes of fresh fruit, giving 2 to 7 tonnes of CPO, as well as PKO (Palm Kernel Oil) that is extracted from the kernels.²⁸ Average production per tree is about 10 to 12 fruit bunches per year, each weighing between 20 and 30 kg. The harvested FFB are transported by truck from the plantation to the mill. Smallholders usually do not have milling facilities and sell their FFB to plantations that do have mills.

At the mill the FFB is processed to CPO. Processing must take place within 24 hours of harvesting to prevent deterioration of the quality of the fruit. Upon arrival at the mill, the FFBs are sterilised under pressure and at high temperatures in wagons. This process also softens the fruit bunches, which facilitates the stripping of the fruits from the bunches. The fruits are then mechanically pressed to extract the oil from the fleshy mesocarp and further clarified and purified to remove moisture, dust, dirt and other impurities. Crude palm oil must then be refined prior to its use as food. Refining removes free fatty acids, colour and odour from the CPO. The result is Refined Bleached Deodorised (RBD) palm oil. RBD is fractionated to produce liquid palm olein and palm stearin fractions. Refinery and fractionation of palm oil into products such as cooking oil, stearin, and shortenings can take place in either the country of origin or the destination country.

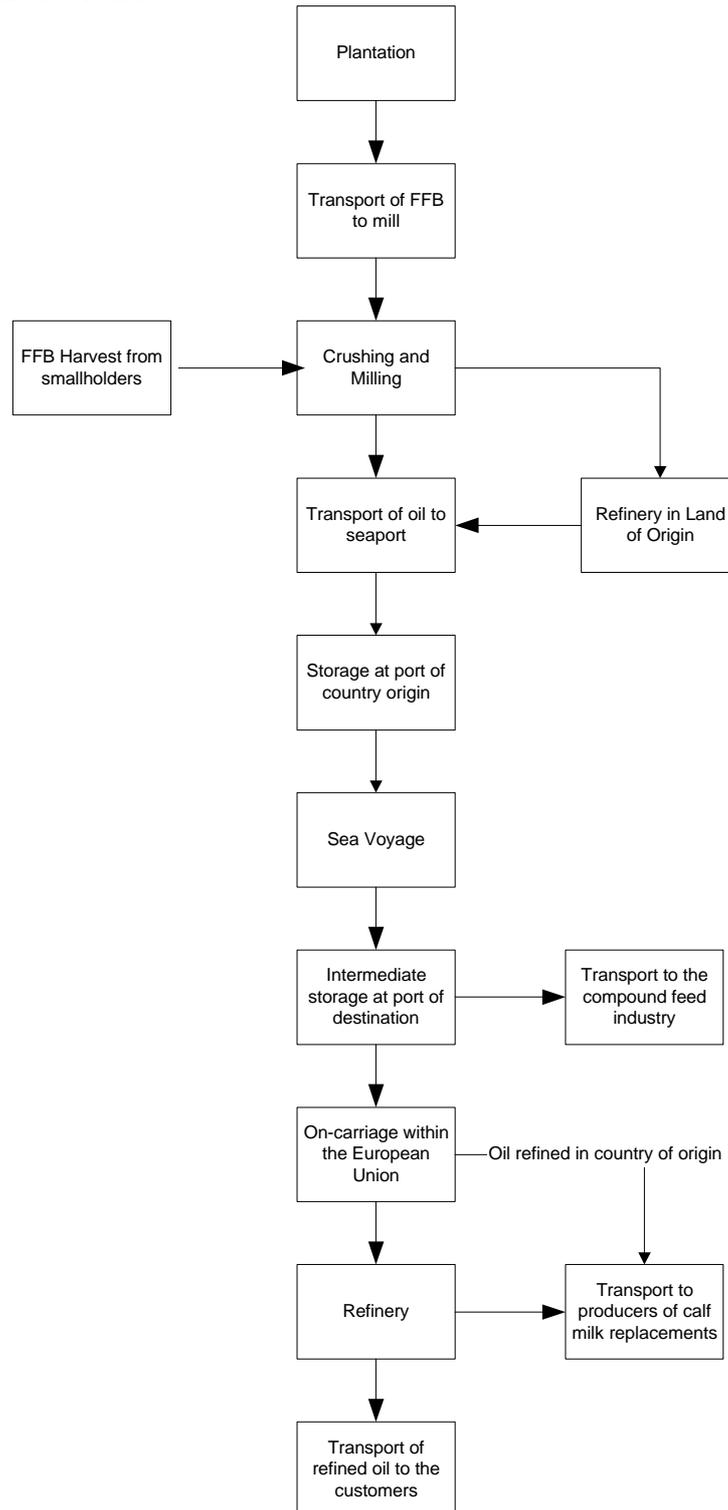
The crude oil is usually transported by tanker truck to the seaport. Refined products can be transported in bulk or otherwise (if already packed). Oil is usually stored in bulk storage tanks at the seaport before being transported in tanker vessels to the port of destination. Here it is stored, usually in large tanks, before being transported once again to refineries for further processing, mostly for food purposes, but also to producers of calf milk replacements and the cosmetics, detergents and chemical industries. A small part of the crude oil is transported to the animal feed industry. Further processing of the oil takes place at the refinery. Refined products are transported to customers (wholesalers, retail chains, food processors). Bulk shipping requirements for palm oil may make product segregation and chain of custody very difficult to maintain.

²⁶ Oil World 2003 *op cit* gives data on mature plantation area - the mature area accounts for around 80-90% of the total area planted, since there are also newly planted and replanted stands. Figure 3.2 uses a conservative figure of 90% for the estimates.

²⁷ In comparison, soybeans yield 0.4 to 0.5 tonnes per hectare, and account for 25% of global oils and fats supply and 31% of global vegetable oil supply.

²⁸ In this analysis 'palm oil' refers to CPO.

Figure 3.3 Palm Oil Value Chain



3.1.3 The different types of producers

There are three broad modes of production: small semi-natural groves, smallholders (with areas of 2-40 ha) and medium to large industrial plantations, ranging in size up to 10,000 ha or more. Smallholdings and industrial plantations (either private or state-owned) supply most global production and almost all export demands. Groves predominate in Africa, but as they supply negligible palm oil to world trade, these will not be considered further. In South America, there is a mix of smallholders and medium to large plantations. In Asia, large plantations are the dominant model, but smallholders still represent a significant proportion of production.

Chapter 3: Palm Oil

The oil palm is unusual for a tropical crop in that a large and expensive mill is needed to deal with the fruit bunches within a few hours of harvesting. Mills are usually an integrated part of large plantations and these process fruit both from the core plantation and outlying smallholders. Oil extraction rates are high and quality is usually controlled to produce high-grade oil suitable for further refinement.

Large plantations involve mass, even-aged, regularly spaced plantings of relatively uniform stock, typically produced by a specialist nursery. Agronomic inputs vary, with the most intensive usually on large plantations. Productivity of plantations is high (typically 15 t/ha of fresh fruit bunches in Ivory Coast, 20-30 t/ha in Malaysia and Indonesia), with somewhat lower average production on smallholdings. The most responsible plantations give consideration to environmental and social aspects of their activities, in addition to production.

Smallholders account for 30-40% of the total area of planted oil palm in Malaysia and Indonesia, but only 20-30% of the output. The necessity of processing harvested fruit bunches rapidly means that independent smallholders can only grow oil palms if there is a processing mill nearby. Smallholders are therefore usually dependent on the processing capacity of the larger plantation companies. Larger plantations often offer assistance to smallholders (e.g., planting material, credit guarantees) and recover the costs during the first few years of production. In addition, smallholder associations exist in many producer countries and in some cases smallholders schemes are organised through government development agencies (for example, FELDA in Malaysia is responsible for approximately 18% of all plantations).

The structure of the palm oil sector differs considerably in Malaysia and Indonesia. While more than one third of Indonesia's palm oil area is managed by smallholders, this only accounts for 11% of the area in Malaysia. In Malaysia, the government owns a substantial part of the plantation area (31%), compared with 16% in Indonesia.

3.1.4 Financing requirements within the sector

As the palm oil industry is a major source of foreign currency due to the high level of trade in the sector, the palm oil industry is viewed as a very important and strategic industry in the main producing countries. As a result, the larger palm oil companies and value chain players have significant economic and political influence, and rarely have difficulty accessing credit facilities or financial services with financial institutions. The financing of Indonesian and Malaysian Palm Oil Sectors is relatively straightforward, and sophisticated financial structures are not yet used widely by the industry.

Production: Financing requirements of palm oil plantations depends on factors such as the size of the plantation (particularly smallholder vs. large plantation), whether it is an existing plantation or a new project, whether there are government funds involved (e.g. the smallholders scheme in Indonesia), and existing banking relationships. Also, the political climate in the country is of importance, in particular in Indonesia. But in broad terms, financial requirements may be divided into two overall categories: short term financing (i.e. working capital) and long term agricultural investment financing (e.g. for setting up the plantation, infrastructure projects etc.).

Financing a new oil palm plantation is a long-term investment, as palm is a perennial crop. Normally the palm trees will start yielding three years after planting, with a peak yield at about eight years of age. Production may continue until the palm tree is 20-30 years old. Consequently, there will be no cash flow in the years of establishment and maturing of the oil palms. Furthermore, setting up a commercial plantation generally requires investments in land (possible clearing), setting up a nursery, germination and care of seedlings, planting of young trees, and often a construction of an oil mill. Close proximity to an oil mill is a prerequisite due to the fact that FFBs must be processed within 24 hours. Training of personnel and massive infrastructure projects including arranging for roads and transport and the development of an area for housing, schools and medical care must often be deployed. The level of investments naturally depends on the size and type of a plantation, as a number of these requirements will not be applicable to smallholders. It should be noted that in several producer countries, at least part

Chapter 3: Palm Oil

of the cost of establishing plantations is raised through selling timber from the forest which the plantations replace.

Processing: The primary processors of palm oil are the millers that extract the CPO from the FFB. Mostly this group of processors are the property of the large-scale commercial plantations – they would not be stand-alone companies. Yet, only plantations with sufficient production of FFB will have a mill, which and most smallholders deliver to a larger plantation's mill within 24 hours' transport from their plantations. The refiners of CPO, on the other hand, may be the property of the plantation or could be independent. Not all plantations have a refinery, e.g. due to the required scale of CPO supply, and not all CPO is refined in the country of origin. In Indonesia, the majority of exports are CPO (unrefined palm oil), while Malaysia has a large developed refining sector; consequently the majority of Malaysia's exports is RBD (Refined Bleached Deodorised) palm oil.

Refiners and further processors of palm oil are also installed in the end user markets, primarily China, India and the EU. These will refine and process CPO, but due to the fact that RBD imports may have a certain quality loss due to transport and storage, large volumes of RBD are also refined in the country of destination.

As 77% of the global palm oil supply is exported (2002/2003), and palm oil is a commodity traded on the world market, the majority of this sector is highly exposed to world market prices. Also, due to the high degree of substitutability between edible oils, palm oil prices are also interrelated with prices of the other three major oils; soybean, rapeseed and sunflower. Consequently, revenues are very volatile – the price of CPO was \$240 in January 2001 while it is \$553 at the end of February 2004. In December 1994, it was at its peak of \$719.

Term loans are a common form of financing the industry for the purposes of project financing for establishing greenfield plantations, capital expenditure finance for building or upgrading crushing and refining plants, or trade commodity finance to facilitate the trade in palm oil worldwide. All major global banks participate in financing the palm oil industry in Indonesia and Malaysia, including large domestic mainstream and smaller specialist Government agricultural banks. The following points highlight some of the practical issues influencing the operation of foreign banks in the Malaysian and Indonesian Palm Oil Industry.

Local Knowledge and Presence: Financial institutions with strong linkages to the grass roots of plantation companies and which have specialist knowledge of the industry are ideally positioned to finance the Palm Oil production sector. International banks often do not have sufficient local presence or knowledge to be sufficiently aware of management practices, or to influence the customers to manage environmental and good agricultural practice issues appropriately. To ensure that all issues relating to development, operation and ongoing management, some banks are utilising the services of specialist industry consultants to provide expert industry opinions on the quality of various palm oil plantation companies, before applications for financing are approved. In Malaysia, the existence of such specialist consultants is quite common, but in Indonesia, access to similarly qualified consultants is more difficult. Programs to facilitate the training of such locally based consultants would be extremely beneficial to the industry, and would greatly assist the banking sector in the assessment of the operational management practices of individual credit applicants in the Palm Oil Sector.

Customer Selection: For financial institutions operating in an environment such as Indonesia, decisions to finance Palm Oil companies rely heavily on the relationships fostered with senior executives and the management capability, and track record of the senior management team. Trust is a very important element of the relationship and in many respects can dictate the final decision to finance. All financial institutions seek to pursue the best players as they represent lower credit risks. However, from an industry perspective, restricting finance to only a relatively small number of players with acceptable levels of industry practices, would in all likelihood would limit the ongoing growth of an industry which is a key plank in the Government's economic growth strategy. This provides a potentially powerful point of leverage with governments.

Chapter 3: Palm Oil

Significance of smallholders: A considerable share of the plantation area of both Malaysia and Indonesia is operated by smallholders. Smallholders do not represent a target sector for international banks, or domestic banks for reasons of lack of creditworthiness and limited deal sizes and the risk premiums applied to lending products are too high for a smallholder to accommodate. Many large plantation companies provide (or provide access to) loans that cover oil palm planting and the early years before production commences, but the terms of such finance is varied and are reportedly not always equitable. An effective approach may thus be to encourage the banking sector to add support to other initiatives that target the smallholder level.

Government Schemes for smallholders: Oil palm production does not receive significant, direct subsidies in the main producer countries. However, considerable government assistance has been given to smallholders as part of the drive for rural development. In Malaysia, Government Schemes have been instrumental in assisting the development of smallholder oil palm producers: FELDA; The Federal Land Development Authority was established in 1956 for the purposes of developing land to facilitate the improved economic situation of the rural poor in Malaysia. FELDA is one of the largest players in the production of Palm oil in Malaysia and representing more than 1.1 million hectares of palm plantations. FELDA is also responsible for arranging finance of various types on behalf of its members. FELDA has grown into a well-organized force in the Malaysian Palm Oil Industry, and in conjunction with other supporting bodies is well positioned to influence the plantation sector to improve the best practice adoption. The Indonesian government has also given considerable support to smallholder schemes, including low cost financing. In addition, government regulations include a guaranteed minimum benchmark price for FFB to be paid by private or state owned mills to smallholders. The sustainability of this program was placed under considerable pressure after the Asian economic crisis and since this time the benefits of this have been weakened considerably.

3.1.5 Key players and financiers by country

As noted above, the structure of the Indonesian and Malaysian sectors differ somewhat at the production level (figure 3.4). With respect to processing, the Malaysian government has pushed for investments in downstream processing like refining, fractionation and oleochemicals, while Indonesia has not focused on this. This is also reflected in different export profiles; the majority of Malaysian exports are processed palm oil products while Indonesia primarily exports CPO, as well as having a large internal demand for cooking oil derived from palm oil. As a result, the Indonesian government has attempted to ensure a stable domestic supply of cooking oil. In December 1997, the Indonesian government introduced a ban on palm oil exports in order to stabilise the price of local cooking oil. The export ban was subsequently lifted in April 1998 and replaced with an export tax on palm oil products. The initially imposed level of 60% was gradually reduced to 10% by July 1999 under an agreement between the Indonesian Ministry of Finance and the International Monetary Fund as part of the restructuring package for Indonesia. Self-sufficiency is no longer a concern and as such export taxes on palm oil have been reduced further to the current 3% level.

Figure 3.4 Plantation ownership, production and milling capacity in Indonesia and Malaysia in 2002²⁹

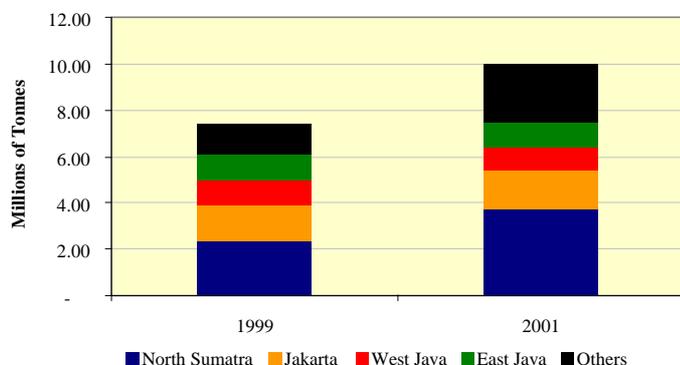
Plantations	Indonesia		Malaysia	
Government	0.5 mln. Ha.	16%	1.1 mln. Ha.	31%
Private	1.6 mln. Ha.	50%	2.1 mln. Ha.	58%
Smallholder	1.1 mln. Ha.	34%	0.4 mln. Ha.	11%
Total	3.2 mln. Ha.	100%	3.6 mln. Ha.	100%
FFB Production	~50 mln. MT	n.a.	67.7 mln MT	n.a.
Crushing Mills	289 Mills	n.a.	362 Mills	n.a.
Milling Capacity	46.5 mln MT FFB	n.a.	71.2 mln MT FFB	n.a.

²⁹ Sources: MPOB, MDEX, Malaysian Agricultural Index, 2001/02
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Chapter 3: Palm Oil

As a result of Government incentives, Indonesia's edible oil refining sector expanded by 35% between 1999 and 2001 to 70 mills with an installed capacity of approximately 10 mln. MT of CPO. The most significant capacity growth was observed in North Sumatra (figure 3.5).

Figure 3.5: Indonesian Domestic Edible Oil Refining Capacity 1999 and 2001³⁰



As noted above, Malaysia's government has been instrumental in fostering the development of the palm oil sector by encouraging local players to take advantage of value adding opportunities. Consequently, Malaysia has a well-established palm oil processing sector. At the end of 2002 there were 46 refineries with an installed capacity of 16 million. MT of CPO a year. Due to the low level of palm oil consumption relative to production in Malaysia, it is likely that refining capacity will reach an overcapacity situation. Besides incentives, the Malaysian government imposes an incremental export tariff starting at 10 % on crude palm (with a duty-free quota), while RBD exports have 0% duty. Consequently Malaysian exports are focused on processed palm oil products rather than CPO.

Examples of major players are:

Malaysia: MPOA, Golden Hope, Kumpulan Guthrie, Sime Darby, Felda, and United Plantations.

Indonesia: Astra Agro Lestari, London Sumatra, Minimas Plantations (Guthrie), Bakrie Sumatera, Apkasindo (Producer group), Socfindo, Sarana Agro Nusantar, Arlinto Perkasa Buana, Selektani, Orang Tua, PTPN (Government owned plantation companies).

Financing of production and trade activities is provided by a large number of parties, ranging from local and international banks to the World Bank and its associated groups. Government funding is additionally very important on the production side. In particular the Malaysian government is very active in export financing as a mean to promote Malaysian palm oil. Recent examples of this are loans to Egypt and Russia in return for buying Malaysian palm oil. Both Malaysia and Indonesia are also engaged in reciprocal deals with e.g. China, in which China receives palm oil and in return supplies locomotives to Malaysia or Chinese rock phosphate to Indonesia. Domestic financial support is for instance given through smallholder schemes, granting cheap loans to farmers.

Examples of institutions engaged in financing recent projects in the sector (2003 and 2004) are provided in figure 3.6. As the palm oil industry is continuously expanding outside Asia – especially the Malaysian – an ever-increasing number of local and international banks will become engaged to some extent. Examples of new markets where Malaysian companies invest in production are DR of Congo, Venezuela and Suriname. Examples of countries where they expand into processing are particularly the EU, India and China through acquisitions, JVs and new plants.

³⁰ Source: Malaysian Derivatives Exchange, 2002.

Chapter 3: Palm Oil

Figure 3.6: Institutions financing palm oil production: recent loan facilities³¹

Country	Institution	Company/Project	Project Value
	Development Institutions		
Uganda	JV partners / IFAD (World Bank Group) / Ugandan Government	JV ADM, Wilmar, Josovina (Asia) and BIDCO (Kenya)/Palm plantation development programme Bugala Island with >2,000 farmers	\$155million: IFAD \$19.9 million, the government \$12.3 million, and the JV \$120 million.
Indonesia	The International Finance Corporation (World Bank Group)	Verdaine Investment Ltd/To acquire, rehabilitate, and further develop Indonesian palm oil plantations	\$14 million
Indonesia	The International Finance Corporation (World Bank Group)	Indonesia/Subsidiary of Verdaine (P.T. Sahabat Mewah Dan Makmur)/Rehabilitation of plantation	\$12 million
	Local Commercial Banks		
Malaysia/ Russia	Negara Bank	Vneshtorgbank/to finance Malaysian palm oil purchase	\$50 million
Malaysia	Bank Industri & Teknologi Malaysia Bhd.	Palm Energy Sdn. Bhd (part of Kwantas)/construct a biomass-based power plant in Sabah	MYR20 million (\$1=MYR3.80)
Malaysia	Aseambankers Bhd (plus possible others)	Golden Hope Plantations Bhd. and Island & Peninsular Bhd. (P.IPS) will restructure their property and plantation businesses	n.a.
Malaysia	Various	IJM Plantations Bhd/expand the size of its oil palm plantations and boost milling capability	60 to 80 million MYR (\$1=MYR3.80)
Malaysia	Export-Import Bank of Malaysia Bhd	Kulim re-lends to its subsidiary PT Multrada Multi Maju/ part-finance the development & construction cost of the first phase of a 40-tonne-per-hour palm oil mill	US\$5.5 million (US\$1 = RM3.80)
	International Banks/Institutes		
Malaysia/ NL	Citigroup plus syndicate	IOI Corp. /finance acquisition of refiner in the EU (Loders)	EUR230 million
Indonesia	Rabobank plus syndicate:	Kumpulan Guthrie Bhd/refinance existing borrowings and for operational financing	\$40 million
	Government Funds		
Malaysia	Malaysian Government	Smallholders' Oil Palm Replantation Easy Loan Scheme - to be paid back in 10 years	RM350 million

Traders and end users

While the production of palm oil is highly concentrated in Indonesia and Malaysia, trade of palm oil is a worldwide business. However, the majority of trade is within Asia, and in particular India (18% of world trade), China (12%) and Pakistan (17%), and also to the EU (17%). The amount of palm oil being traded with individual countries in the Americas and Africa is negligible. New markets for palm oil such as Russia, Egypt and the US are emerging, though still at relatively small volumes.

In contrast with soybean processing, which is dominated world-wide by the multinationals ADM, Cargill, and Bunge, processing of palm oil (outside Indonesia and Malaysia) is in the hands of many different players, including multinationals such as Cargill and ADM, and local companies in the various import regions. In the palm oil sector the multinationals do not have a dominant position. JVs are quite common, in particular in Asia, where for instance ADM, Wilmar, and COFCO are engaged in numerous

³¹ Source: Articles on Factiva and internet.

Chapter 3: Palm Oil

different plants in different company combinations. In particular Malaysian palm oil groups are not limited to JVs but are also acquiring processors abroad, e.g. in the EU (the Netherlands), and by this means are setting up integrated supply chains from plantation to end user level. Examples of larger palm oil refiners besides the groups already mentioned are Anglia Oils (part of Aarhus Olie), Liberty Oil Mill, Adani Wilmar (JV Adani and Wilmar), Unimills (part of Golden Hope), Loders Croklaan (part of IOI), Fuji Oil, and Karlshmans.

End users of palm oil are firstly producers of margarines, shortenings, cooking oils etc., such as Unilever and Vandemoortele, and secondly the users of such products. These are primarily found in the bakery business, confectionery, ice cream, snacks, the noodle industry and sectors using frying products. Examples of these are Cadbury Schweppes, Kellogs, Danone, Kraft, Unilever, Uni-President, and McCain. Consumers also use palm oil products directly as cooking oil or fat, often in blends. In addition to food uses, palm oil is also found in non-food products, in particular in oleochemicals, cosmetics, detergents, but also increasingly in biodiesel. ICI with the subsidiary Unichema, KAO, Cognis, Croda International, and P&G USA are examples of such companies in export markets.

Given the range of companies involved in the trade and end-use, the number of banks engaged is considerable. Providing a short list of banks financing (parts of) this sector is therefore not feasible. To illustrate this, a couple of examples of financiers of recent syndicated loans to a few of the end users (source: Bloomberg) are listed below:

Uni-President: Bank of Taiwan, BNP Paribas Group, Chang Hwa Holdings, Chinatrust Commercial Bank, E Sun Commercial Bank, Hua Nan Commercial Bank, Land Bank of Taiwan, Standard Charter, Shanghai Commercial Bank, Ta Chong Bank.

Kellogs: ABN AMRO, AIB Debt Management Ltd, Bank of America, Bank One NA, Barclays, Citigroup, Bank of Tokyo Mitsubishi Ltd, BBVA Securities, Fifth Third Bank, Unicredito Italiano, Rabo Securities, Scotia Capital, HSBC Bank, WestLB, Wells Fargo Bank.

Kraft: ABN AMRO, BNP Paribas, Dresdner Bank, Credit Suisse, Deutsche Bank, Citibank, JP Morgan, Banco Espirito Santo, Lehman Brothers, ING, HSBC, NAB Capital Markets, BBVA Securities, Den Norske Bank, Société Générale.

Other stakeholders

- The Round Table on Sustainable Oil Palm may emerge as a key global body facilitating new sustainability initiatives.
- NGOs including WWF; AIDEnvironment, Greenpeace, Friends of the Earth, Sawit Watch (Indonesia); World Rainforest Movement Plantations Campaign; Global Response 'Stop Financing Destruction in Indonesia' (targets American audiences, urging them to lobby Citigroup about their role in supporting the Indonesian oil palm company Lon Sum); Environmental Investigation Agency (campaign to save Orang Utans and Indonesian forests); Rainforest Action Network 'Stop Citigroup' Campaign (now succeeded, less active in oil palm at present); Birdlife International (campaign on Sumatra's Rainforests plus major initiative about to start, which focuses on the policies of international donors and investors who support the oil palm sector).

3.1.6 Macro issues facing and affecting production

Substitutability: The world has a high demand for edible oils that must be met from some source. A key aspect of the edible oils market is that more than one oil is often suitable for a given end-use. For many of the bulk end-uses it is both technically feasible and affordable to switch to an alternative if the preferred oil becomes too expensive. This makes the market acutely competitive. The total global production of the eleven main edible oils is about 95 million tonnes per year. Recently soy has supplied the largest share (32%) with palm oil a close second (26%), although palm oil is likely to surpass soy in the near future. Adding rapeseed and sunflower oil encompasses more than 80% of the total. Global consumption has shown high and sustained growth, which is predicted to continue as a consequence of both population growth and increasing per capita consumption of edible oil.

Chapter 3: Palm Oil

The price of soy oil tends to set the price standard for its competitors, including palm oil. This is partly because soy has had the largest share of the market. It is also because soy meal for animal feed forms over 80% by weight and over 60% by value of the soy crop, so soy oil is in some ways a by-product. World soy production is concentrated in the USA, Brazil and Argentina.

Subsidies: Palm oil production does not usually receive significant direct subsidies in most palm oil producer countries, which therefore perceive subsidies for other oils (especially soy, rape and sunflower in the US and EU) as a severe example of unfair competition.

Food Safety: Global consumer markets worldwide are becoming more and more aware of where food is produced, the way it is produced and what processes and practices have been adopted to deliver food to a market ready state, and as a result society is demanding higher levels of food safety performance from food value chains. Acknowledging the rising importance of food safety issues in the industry, and that food safety will be a precondition for market access in the future, the Netherlands Ministry of Agriculture, Nature and Food Quality has undertaken an initiative to assist the Malaysian and Indonesian Palm Oil Industry to improve food safety performance and to better understand the underlying factors affecting food safety risk. Food safety issues in palm oil relate largely to the danger of contamination during storage and transport (for example, diesel contamination of palm oil occurred in Indonesia in 1999, referenced in paper presented by Unilever 2001).

Consumer issues: Alternative opinions over the healthiness of palm oil versus competitors (e.g. soy, rapeseed) affect markets. EU retailers and some food processors avoid GMOs, giving some advantage to palm oil over oils such as soy in this market.

3.2 Key sustainability impacts

3.2.1 Environmental impacts

The key negative environmental impacts associated with palm oil production are described below. For each, an indication is given as to whether they occur as a result of establishing new plantations (E), of managing existing ones (M), or both (E/M). The order of this list is not intended to reflect an assessment of priority, for two reasons: Firstly, although there are numerous case studies and other sources identifying impacts, there are currently no assessments of how common (or severe) each of the impacts is over a wide geographical range. Secondly, it is likely that the severity of each impact will differ between production locations. Nevertheless, all have been reported as significant in one or more instances.

- **Forest conversion** (E) – establishment of oil palm plantations is significant factor in lowland tropical deforestation in some countries/provinces although note complex interaction with logging, other land uses and national policies³². No clear consensus in industry/NGOs about what forest (if any) is suitable for conversion - but potential to develop one. Even if the predicted doubling of demand for palm oil over the next 20 yrs turns out to be an over-estimate, further considerable expansion in area will still occur and therefore forest conversion will remain a major issue.
- **Clearance techniques** (E/M) – use of fire causes serious smoke haze, CO₂ emissions and damage to neighbouring forests/farms. Commonplace until recently, but zero-burning techniques are now well developed and have been widely adopted in Malaysia and by the more reputable companies elsewhere. Note recent ASEAN treaties on the issue³³, because of the trans-boundary effects of haze.
- **Choice of site & soil type** (E) – prime sites now rare and planting on marginal and fragile soils is increasing. These include: deep peats (vulnerable to drying, oxidation, subsidence, CO₂ emissions, fire and alterations to local hydrology), riparian areas (flooding and erosion), and steep slopes (erosion). National regulations in most producer countries exclude planting on certain soil types/slopes, but these may not always be sufficient and are not always implemented.
- **Soil loss** (E/M) – current best practices can control erosion adequately but are not always applied - erosion worst in establishment phase whilst canopy open, unless cover crops are established rapidly.
- **Soil fertility** (M) – heavy harvest off-take needs to be replaced by recycling of organic material and other milling waste products and use of chemical fertilisers. Technology well understood and adopted by progressive companies – the challenge is wider adoption.
- **Use of pesticides and herbicides** (M) – Integrated Pest Management (IPM) the ideal approach³⁴ but overuse of pesticides widely reported. Similarly, herbicide use can be minimised through cultural techniques. Complexity of IPM may limit uptake, particularly with smallholders.
- **Biodiversity on plantations** (E/M) – little effort is taken to plan plantations to maximise biodiversity or manage sites to increase on-site diversity but many measures could be tested or applied. Best practice yet to be defined.
- **Water management** (M) – concerns over drainage (particularly of deep peat soils) and unsustainable irrigation.
- **Emissions and pollution** (M) – significant innovations have been made in reducing CO₂ emissions and effluent emissions, or are available from other sectors. Techniques for management of toxic waste available.

³² Casson, A. (2000) The hesitant boom: Indonesia's oil palm sub-sector in an era of economic crisis and political change. Occasional Paper No. 29, CIFOR, Bogor, Indonesia.

³³ The ASEAN Secretariat will shortly release its 'Guidelines for the implementation of zero burning'.

³⁴ Corley, R. H. V. and Tinker, P. B. (2003) *The Oil Palm*. Fourth edition. Blackwell Publishing, Oxford, UK.

3.2.2 Social impacts

The oil palm sector plays a major role in the economics of both Malaysia and Indonesia, as well as a few of the smaller producers. This expansion is seen by many as an enormously positive development, since it brings great economic wealth, employment and rural development to the producer countries whilst supplying cheap foodstuffs and other products to the global marketplace. Whilst acknowledging these undoubted benefits, there are also some negative social impacts that have been associated with oil palm:

- **Competing land claims** (E)³⁵ – as with other large-estate plantation crops, disputes arise with previous land users/owners who are often disadvantaged groups with high dependency on natural resources. Issues include loss of farmland and loss of access to forest resources for use and sale. Particularly severe problems in Indonesia where national and local tenure systems conflict.
- **Large-scale social transformation** (E) – the establishment of one or more large plantations or smallholder schemes in a disadvantaged rural area can have dramatic social implications. Some of these impacts are positive: companies point to greatly improved infrastructure, employment and social services. Critics point to the negative impacts, including loss of previous livelihoods; increased dependence on a single source of income; suddenly altered relationships between different groups in the society; increased levels of debt; and influxes of migrant workers.
- **Terms of trade for smallholders** (M) – smallholders have weak bargaining power and usually depend on a single buyer (logistics and debt ties). There are widespread reports of low prices or refusal to buy at all at times of low demand.
- **Social justice/grievance procedures** (E/M) – dispute resolution essential but sometimes poorly done - reports of violence, false imprisonment, inappropriate use of police/military etc. Protestors also break law, escalation can occur.
- **Workers rights and conditions** (M) – case studies exist showing lack of regard for national and international laws - migrant workers and women are especially vulnerable - lack of collective bargaining, health and safety lapses etc.
- **Welfare provisions for workers** (M) – employees and out-growers depend on nucleus estates for many services - sometimes exemplary, but in other cases lacking.

³⁵ One regional study reported that all 81 oil palm plantations in South Sumatra had experienced land dispute problems with local communities. This accounted for 11% of the total area of the plantations (Kartodihardjo, H. and Supriono, A. (2000). The impact of sectoral development on natural forest conversion and degradation: the case of timber and tree crop plantations in Indonesia. Occasional Paper No. 26, CIFOR, Bogor, Indonesia). Case studies of land disputes from several countries are given in the World Rainforest Movement's "Bitter Fruit of Oil Palm" (<http://www.wrm.org.uy>).

3.3 Prospects for taking a BMP approach

3.3.1 Which of the key impacts a BMP approach could seek to address

A BMP approach could potentially improve all of the key negative environmental and social issues associated with palm oil production. However, resolution of several of the issues goes above and beyond the scope of BMPs. These include some of the major issues caused by development of new plantations, such as forest conversion, competing land claims and large-scale social transformation, all of which are also dependent on reform of land-use planning processes and other governmental instruments.

Environmental impacts:

- **Forest conversion (E):** BMPs could partially address this issue (e.g., through more rigorous EIAs), but wide uptake of (or incentives for) BMPs would be necessary to prevent less scrupulous oil palm companies converting forest that a company following BMPs had forgone. However, even development and widespread application of BMPs within the oil palm sector would potentially result in transferring the problem to other sectors (e.g., other agricultural sectors, plantation forestry) without similar requirements. Ultimately, development and/or implementation of improved land use planning/zonation by governments would be required to secure critical forest areas. It should be noted that there is a great deal of land in both Malaysia and Indonesia that is already severely degraded³⁶, much of which would be suitable for oil palm cultivation. Land allocation policies and tax incentives could potentially focus plantation development towards these areas and reduce the pressure on forest lands.
- **Clearance techniques (E/M):** Could (and is) being addressed by BMPs – the techniques are well known and could easily be applied by large plantations. Note the development of ‘Guidelines for the implementation of the ASEAN policy on zero burning.’ Smallholders (particularly in Africa) might be reluctant to change their traditional practise of burning.
- **Choice of site & soil type (E):** BMPs could address this - planting on appropriate soils and topography is a basic aspect of plantation establishment, and adoption is to the advantage of all plantations with any medium or long-term pretence to produce palm oil sustainably, because marginal lands have higher production costs and lower yield. Note that there are some issues that need to be resolved regarding the suitability and sustainability of certain soil types (e.g. deep peat).
- **Soil loss (E/M):** Could be addressed by BMPs – it is a basic aspect of plantation management, techniques are well understood, and adoption is to the advantage of all plantations with any medium or long-term pretence to produce sustainable palm oil.
- **Soil fertility (M):** Could be addressed by BMPs – it is a basic aspect of plantation management, techniques are well understood, and is necessary to sustained yield. Smallholders face the problem that harvested material is exported to the processing mills and the ‘waste’ (e.g., empty fruit bunches) would need to be returned to maintain soil organic matter content.
- **Use of herbicides and pesticides (M):** Could be addressed by BMPs – though the complexity of IPM may limit uptake, particularly with smallholders.
- **Biodiversity on plantations (E/M):** Could be addressed by BMPs - although best practice has not yet been established, retention of natural vegetation in uneconomic areas (e.g. steep slopes) or in compliance with legal requirements (e.g. riparian protection zones) provides a starting point for conservation planning in plantations. Biodiversity conservation is likely to only be practical for large plantations as smallholders will have little option or capacity to plan or manage for increased biodiversity.

³⁶ Estimates suggest that there may be 11 million hectares of long-degraded *Imperata* grassland in Indonesia and 1 million in peninsular Malaysia: Hardter, R., Woo, Y. C. and Ooi, S. H. (1997) Intensive plantation cropping, a source of sustainable food and energy production in the tropical rain forest areas in southeast Asia. *Forest Ecology and Management* 93: 93-102; Casson, A. (2000). *The hesitant boom: Indonesia's oil palm sub-sector in an era of economic crisis and political change*. Occasional Paper No. 29, CIFOR, Bogor, Indonesia. Furthermore, much expansion in the past ten years in both Peninsular Malaysia and Sabah has been on areas already cleared for cocoa and rubber plantations, and similar sites are still available in some regions.

Chapter 3: Palm Oil

- **Water management (M):** Could be addressed by BMPs – drainage and irrigation techniques are well developed.
- **Emissions and pollution (M):** Could be addressed by BMPs – techniques available, mostly affects plantations rather than smallholders (except chemical disposal).

Social Impacts:

- **Competing land claims (E):** Could be partially addressed (mitigated) by BMPs – good practise already implemented by the most responsible oil palm companies as well as companies from other agricultural/industrial sectors, but there is variations in the scope and methodologies used. However, reforms to regulations or planning processes (or their implementation) by other agencies (e.g., governments) would be required to avoid such problems in the first place.
- **Large-scale social transformation (E):** Could be partially addressed by BMPs – managing the consequences of social transformation is attempted by responsible companies. However, reforms to regulations or planning processes (or their implementation) by other agencies (e.g., governments) would also be required to mitigate such problems.
- **Terms of trade for smallholders (M):** Could be addressed by BMPs – some companies have equitable and transparent mechanisms.
- **Social justice/grievance procedures (E/M):** Could be addressed by BMPs – dispute resolution procedures are well developed for several natural resource sectors. Does not apply to smallholders.
- **Workers rights and conditions (M):** Could be addressed by BMPs – well established in national laws, international guidelines etc. May be more difficult to apply with smallholders and contract workers.
- **Welfare provisions for workers (M):** Could be addressed by BMPs – well established in national laws, international guidelines etc.

3.3.2 To what extent there is agreement on BMPs

All of the key environmental and social impacts are listed because of reports of at least occasional severe problems with these areas. This in itself implies that there is no consensus, because some or many players in the industry are failing to implement management practises that would avoid or mitigate these impacts. However, for many of these impacts there is at least some consistency amongst BMPs suggested and implemented by the more reputable companies, associations and in the literature. We can therefore regard these BMPs as being agreed by responsible players, rather than there being a 'consensus' amongst stakeholders.

Environmental impacts:

- **Forest conversion (E):** No clear agreement within the industry or from environmental NGOs about which forests it is acceptable to convert.
- **Clearance techniques (E/M)³⁷:** BMPs widely agreed, implementation inconsistent. Use of fire is illegal in both Indonesia and Malaysia (although there are reports that fire is still often used to clear forest in Indonesia) and there is general agreement that it should not be used (except in exceptional circumstances, e.g., where there is high risk of outbreaks of *Oryctes* beetle). In Africa, it is traditional for smallholders to clear using fire, but as they contribute little to world trade, and are usually required to have controlled burning licences, this is perhaps less of an issue.
- **Choice of site & soil type (E):** BMPs partially agreed. Even within the industry, there is doubt as to the long-term sustainability of planting on deep peat soils³⁸, due to subsidence, oxidation, micronutrient, etc. Laws in Indonesia do not permit planting on peat greater than 3 m deep, but it is still done (note also potential contradictions with provincial laws allowing conversion of these sites).

³⁷ This and other of the main agreed management techniques can be seen in publications such as: Corley, R. H. V. and Tinker, P. B. (2003) *The Oil Palm*. Fourth edition. Blackwell Publishing, Oxford, UK; and Turner & Gillbanks, 2003, *Oil palm cultivation and management*. 2nd Edn. ISP, Kuala Lumpur.

³⁸ For example, Sargeant, H. J. (2001) *Oil Palm Agriculture in the Wetlands of Sumatra: Destruction or Development?* Forest Fire Prevention and Control Project Dinas Kehutanan Propinsi Sumatera Selatan. European Union and Indonesian Government Ministry of Forestry.

Chapter 3: Palm Oil

NGOs also point out the wider impact of planting on deep peat – as this requires drainage, it increases fire risk and can disrupt the hydrology of areas outside the plantation. There are different opinions as to the degree of slope on which oil palm should be planted.

- **Soil loss (E/M):** BMPs widely agreed. Techniques for minimising soil loss are well understood. This involves establishing cover as rapidly as possible in planted areas, sound road construction, etc. Such techniques are implemented by responsible companies.
- **Soil fertility (M):** BMPs widely agreed. Techniques for maintaining soil fertility are well understood. This involves returning organic harvesting 'waste' to the plantations, use of N-fixing leguminous ground cover, fertilization, etc. Such techniques are implemented by responsible companies.
- **Use of herbicides and pesticides (M):** BMPs partially agreed. Pesticide and herbicide use is minimised through Integrated Pest Management systems (IPM). Many of the techniques are understood, but are complex and require considerable situation-specific adaptation, which means that smallholders may have difficulty in implementing them. IPM is used by most responsible industrial plantation companies.
- **Biodiversity on plantations (E/M):** No agreed BMPs. Very little consideration is given to maximising biodiversity on plantations (e.g., maintaining samples of native ecosystems and the habitats of rare species). There is little clear and definitive guidance on this from academics and NGOs.
- **Water management (M):** BMPs widely agreed. Techniques for maintaining the quantity and quality of water are well understood (and often subject to legal requirements). This involves careful planning of drainage and irrigation, maintenance of riparian buffer zones, treatment of mill effluent, etc. Such techniques are implemented by responsible companies.
- **Emissions and pollution (M):** BMPs widely agreed. Techniques for minimising emission and pollution understood (and often subject to legal requirements). This involves treatment of mill effluent, efficient burning of fuel in mills, responsible disposal of pesticide containers etc. Such techniques are implemented by responsible companies.

Social impacts:

- **Competing land claims (E):** BMPs partially agreed. Legally required procedures vary greatly but it is implicit in the granting of tenure that the state is not aware of any valid competing claims for the land. Reputable companies recognise that it is often not sufficient to rely on the state's procedures and try to ensure that their land rights have been granted in as fair a way as possible, taking account of competing claims to parts of the estate. Formal procedures for identifying competing land claims and for addressing compensation are reflected in many of the codes of practice but the scope and methodologies of these vary.
- **Large-scale social transformation (E):** BMPs partially agreed. Best practice in this area is not always clearly articulated; nevertheless several of the existing codes of practice do consider these issues, through, for example, containing provisions for minimising the impacts on vulnerable groups, spreading the benefits to local communities etc.
- **Terms of trade for smallholders (M):** BMPs widely agreed. Many companies provide (or provide access to) loans that cover oil palm planting and the early years before production commences, as well as technical assistance to smallholders. Best practice also involves providing the smallholders with a fair, transparently set market price for their produce and some guarantee that at least part of their crop will be bought from them irrespective in fluctuations in demand. There are reports of some companies exploiting their bargaining power to offer very low prices to smallholders especially where there are not strong collective bodies defending their interests.
- **Social justice/grievance procedures (E/M):** BMPs widely agreed. Reputable companies aim to resolve all protests through peaceful means in full accordance with national laws and relevant international treaties, using standard grievance procedures. These should include an explicit policy that they do not condone or encourage human rights abuses either by their own staff or by the local police and military.
- **Workers rights and conditions (M):** BMPs widely agreed. Best practices on worker's rights and working conditions are set out in various international conventions (specifically, one or more of the ILO conventions), as well as in national laws. These different sources vary widely in their scope and

Chapter 3: Palm Oil

level of requirements. Responsible companies take these issues very seriously and report that they are proud of their performance. Several of the codes of practice (Section 3.4) make some provision for workers' rights.

- **Welfare provisions for workers (M):** BMPs widely agreed. Services that are considered essential by a company aiming for best practice include schools, health centres/clinics, places of worship and purpose-built housing with appropriate electricity and sanitation.

3.3.3 To what extent different BMPs would be required for different types of producers and different regions

The basic technical aspects of oil palm production are similar throughout the tropics. It is therefore possible to develop generic BMPs across regions (see the following section), although there has to be room for adapting these to take into account differences in the legal requirements, social and environmental circumstances between countries.

There may, however, need to be variations in BMPs according to production systems. Large plantations have the capacity to make considerable investments in infrastructure, technical and management expertise, planning and operations. This means that, given a commitment to change, they are likely to be able to adopt a wide range of BMPs covering complex social and environmental issues. The needs and possibilities for smallholders are different. This is because:

- Some of the key environmental and social impacts do not apply to smallholders. These include many of the social issues (e.g., workers rights, large-scale social transformation, immigration) and also some environmental ones (e.g., emissions from processing mills).
- Smallholders are not in a position to exert an influence on other key impacts. These include several environmental impacts such as forest conversion, biodiversity in plantations, choice of site. These impacts could potentially be addressed by core plantations, smallholder associations, development agencies, etc.
- Compared with industrial plantations, smallholders are less likely to be able to access technical knowledge, finance and other capacity for investing in BMPs. This means that any BMPs would have to be expressed in terms appropriate to smallholders, be part of a package of training and extension and require less exacting, simplified performance. Again, the role of core plantations, smallholder associations and development agencies would be critical.

3.3.4 Examples: Where BMPs have already been identified and/or implemented

Migros Criteria for Oil Palm Plantations: MIGROS is the largest supermarket chain in Switzerland and has a strong commitment to high standards of environmental and social audit management. MIGROS developed its Criteria for Oil Palm Plantations in co-operation with WWF Switzerland, which were published in February 2002. The MIGROS criteria set out a generic baseline defining the standards MIGROS wishes suppliers to meet. The criteria are generic, but also provide guidance for interpretation at a national level. This is done prior to an audit by an expert team with inputs invited from interested parties including environmental and social NGOs, local and national government and industry representatives. The team usually comprises the team leader, technical, environmental and social specialists. Local interpretations usually refer to local best management practice guidelines where available. 2nd party verification.

Unilever Sustainable Palm Oil Good Agricultural Practice Guidelines: Unilever developed its four principles of sustainable agriculture and 10 sustainable agriculture indicators following a workshop in 1998. The Sustainable Oil Palm Good Agricultural Practice (GAP) Guidelines were developed on the basis of these principles and indicators and published in September 2002. The guidelines were developed using research and cultivation experience in Malaysia, Indonesia and West Africa. They were produced in consultation with scientists and specialists, including members of the Unilever Sustainable Agriculture Advisory Board, which comprises individuals, specialists in agricultural practices and representatives of NGOs. Unilever has implemented its GAP guidelines through pilot projects in its oil palm plantations in Malaysia (now sold) and Ghana, though the development and incorporation of local indicators into plantation management practices. The impacts of the

Chapter 3: Palm Oil

implementation in the plantation are monitored internally. There is some question as to how this programme can be implemented through independent producers/suppliers.

Round Table on Sustainable Palm Oil: This is a collaborative effort by leading players in the industry, together with WWF. The aim is to establish broad consensus on the main social and environmental issues associated with oil palm and then to design and implement a programme of action. A central principle is the belief that, given sufficient commitment to improving and adopting best practice within the industry, oil palm cultivation can continue to develop whilst at the same time preventing or minimising most of the serious negative impacts reported in the past. The Round Table had its first meeting in Kuala Lumpur in August 2003 and is beginning work on elaborating criteria for sustainable oil palm production.

Pacific Rim Palm Oil Environmental and Social Handbook: Pacific Rim Palm Oil (PRPOL) is an independent organisation with backing of the CDC (formerly Commonwealth Development Corporation) which owns three plantations in Papua New Guinea and two in Indonesia. PRPOL's Environmental and Social handbook, published in September 2002 provides a summary of PRPOL's approach to environmental and social commitments and activities.

Rabobank criteria for financing oil palm plantations: In order to prevent the bank being associated with poor management of oil palm plantations in Indonesia, Rabobank developed a set of criteria to determine the conditions under which it would finance palm oil plantations. Rabobank asks customers to provide periodic environmental and social impact reports. Where doubts exist about compliance, the bank can commission independent experts to assess compliance. Prior to approving a request for financing a Rabobank employee assesses environmental impacts of the proposed project. Agencies such as CIRAD (Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement) are also used for monitoring. If clients do not meet the criteria, Rabobank can potentially terminate its financing of a project.

Financial services to oil palm plantation companies; proposed screening of potential clients by financial institutions: Many financial service institutions use policies and guidelines to inform their investment decisions. However, in 2001 four major Dutch commercial banks – ABN AMRO, Rabobank, ING Bank and Fortis Bank – introduced specific principles in relation to the financing of oil palm plantation development in Indonesia. The four basic principles to which the client must adhere are (1) not to be involved in burning forestland; (2) not to clear tropical rainforest; (3) to respect the rights and wishes of local communities; (4) to respect Indonesia's law and relevant international conventions. The documentation suggests that compliance with the criteria should be evaluated by an external, independent auditor and that a system to ensure continued compliance with the criteria is developed. However, it is acknowledged that the various financial institutions will require different approaches. It is not clear to what extent the proposed screening criteria and monitoring requirements have been agreed or implemented by the banks.

Environmental Guide for the Oil Palm Agro-industry Subsector (Fedepalma/Ministry of Environment, Colombia): The Environmental Guide was produced by the Colombian National Federation of Oil Palm Growers (Fedepalma) with support from the Colombian government in May 2002. It provides a background to the relevant national legislation, a description of the main activities involved in oil palm cultivation (including land preparation, nursery practice, plantation management, replanting and management of natural areas) and guidelines for identifying and dealing with environmental impacts of plantations and mills. The objectives of the guide are to help oil palm producers in Colombia improve their environmental management and implement clean technologies in their plantations. (Environmental guides are also being produced for other agro-industrial sectors in Colombia).

Malaysian Palm Oil Association: The proposed sustainable environmental charter is aimed at a different level from the other initiatives described. The charter aims to set out the responsibilities for safeguarding the environment, which members of the MPOA would sign up to. The requirements of the Better Management Practices Project for IFC and WWF-US: Phase 2 Commodity Guides

Chapter 3: Palm Oil

charter need more detailed development by individual companies before being implemented in practice. The MPOA has proposed to carry out a survey of best management practices in the industry and to compile and document them for use by industry. The proposed charter would also commit members to adoption of best management practices established in the industry. The MPOA suggested at the Seminar that member organisations may in future be encouraged to go for a voluntary certification scheme on a phased BMP approach.

Sustainable Agriculture Network (SAN): Standards for oil palm are under consideration.

ISO 14001: Increasingly being applied in the sector, especially to mills. All PNG plantations are now ISO 14001 compliant.

Equator Principles: This is an industry approach to assist financing institution in determining, assessing and managing environmental and social risk in project financing. The Principles³⁹ have been adopted by twenty banks, some of which finance oil palm development; they apply only to projects with a total capital cost of US\$50 million or more. The Principles commit signatory banks to reviewing customers' requests for project financing against a selection of WBG safeguard policies and environmental guidelines and to only providing direct loans where compliance with these can be assured over the course of a loan and an appropriate Environmental Assessment has been carried out. Oil palm plantations and mill development might require the completion of a detailed Environmental Assessment.

3.4 Obstacles to the adoption of BMPs

There are currently at least eight NGOs working with or campaigning against oil palm producers or investors in plantations. This provides a strong pressure for environmentally and socially responsible oil palm production. At the same time, many companies and producer associations are actively developing and/or implementing BMPs (see the previous section). However, several obstacles exist to the wider development and implementation of BMPs, as follows.

3.4.1 Producer level

Lack of financial incentives to implement BMPs: The edible oils market is highly competitive. In particular, oil produced from soy can be used for many of the same end-uses as palm oil. This means that price concerns dominate the palm oil sector and social and environmental concerns are seen by many as secondary. Consequently, those BMPs that confer an economic advantage by lowering production costs or increasing production per unit area of land are more the ones that are already best known and implemented. Conversely, there will need to be direct financial incentives to encourage the adoption of BMPs that may cause a short-term increase in costs or decrease in production. These are assessed below:

- **Forest conversion (E):** Disincentive for BMPs – forgoing clearance of some types of forest land would potentially cost plantation companies access to timber felled and sold during clearance, access to suitable sites, etc.
- **Clearance techniques (E/M):** Incentive for BMPs – clearance techniques that avoid fire have been found to be perfectly commercially viable.
- **Choice of site & soil type (E):** Incentive for BMPs – selection of soils and topography suitable for oil palm is essential to reducing management costs and ensuring economically viable yield of palm oil. However, this may also cause a short-term loss, particularly in view of the complex relation between the timber industry and clearance for oil palm.
- **Soil loss (E/M):** Incentive for BMPs – minimising soil loss essential to ensuring a high yield in the long-term.
- **Soil fertility (M):** Incentive for BMPs – maintaining soil fertility is essential to long-term yield.
- **Use of herbicides and pesticides (M):** Incentive for BMPs – Integrated Pest Management has been shown to be effective in the long-term. However, it is a complex approach, that requires

³⁹ Details can be found at www.equator-principles.com

Chapter 3: Palm Oil

knowledge of the pest's life cycle, a monitoring system, establishment of economic thresholds for action and selective control measures. This means that smallholders find adoption difficult and even large plantations may need several years before they accomplish a satisfactory working system.

- **Biodiversity on plantations (E/M):** Disincentive for BMPs - maintaining samples of natural vegetation, restoration of degraded habitats etc, is likely to be seen as costly, particularly if it means that potentially productive parts of plantation land can not be planted with oil palm. Also note the interaction between the timber trade and oil palm production in some producer countries.
- **Water management (M):** Partial incentive for BMPs – long-term advantage to sustainable water management, but initial costs may be incurred (e.g., retaining riparian protection zones). Note also that aspects of water management are covered by legal requirements in many countries, and that responsible companies accept the necessity for such measures.
- **Emissions and pollution (M):** Partial incentive for BMPs – one aspect of reducing emissions is increasing the efficiency of fuel use, which should be advantageous. Other aspects may cause initial costs (e.g., improving effluent treatment facilities, developing SOPs for toxic chemical management). Note also that these are covered by legal requirements in many countries, and that responsible companies accept the necessity for such measures.
- **Competing land claims (E):** Long-term incentive for BMPs - companies can become mired in prolonged and acrimonious disputes with local communities, even if they believed that they had acquired the land legally.
- **Large-scale social transformation (E):** Partial incentive for BMPs – several of the existing codes of practice do consider these issues, through, for example, containing provisions for minimising the impacts on vulnerable groups, spreading the benefits to local communities etc. Such measures recognise the long-term benefits of operating plantations within a stable social setting.
- **Terms of trade for smallholders (M):** Long-term incentive for BMPs – although it is recognised by responsible players in any industry that terms of trade with smallholders are an important aspect of sustainability, there will be a short-term cost for producers that are not currently complying with best practice.
- **Social justice/grievance procedures (E/M):** Incentive for BMPs – avoiding serious breakdowns in social justice reduces reputation risks and sometimes damage to plantations caused by protestors.
- **Workers rights and conditions (M):** Incentive for BMPs – it is recognised by responsible players in any industry that workers rights and conditions are basic to long-term economic stability and profitability, as well as being governed by national laws and international agreements.
- **Welfare provisions for workers (M):** Incentive for BMPs – it is recognised by responsible players in any industry that workers rights and conditions are basic to long-term economic stability and profitability, as well as being governed by national laws and international agreements.

Competition with other oils: A key aspect of the edible oils market is that more than one oil is often suitable for a given end-use. For many of the bulk end-uses it is both technically feasible and affordable to switch to an alternative if the preferred oil becomes too expensive. The price of soy oil tends to set the price standard for its competitors, including palm oil. Maintaining low production costs is therefore key to the continued profitability of palm oil producers. This is exacerbated by subsidies: palm oil production does not usually receive significant direct subsidies in most palm oil producer countries, which therefore see subsidies for other oils (especially soy, rape and sunflower in the US and EU) as a severe example of unfair competition.

Smallholders: Approximately one-third of the palm oil entering the world market comes from smallholders. As outlined in previous sections, the needs and possibilities for smallholders are different to those of large plantations, as some key environmental and social impacts do not apply to smallholders and they may have limited influence over, or capacity and technical knowledge to implement, others. Overcoming these differences is likely to involve collaboration with organisations that can assist smallholders (including smallholder scheme organisers, associations, development agencies and core plantations) as well as careful consideration of what is reasonable to expect of smallholders and how that should be structured and communicated.

3.4.2 Throughout the value chain

Limited proportion of direct supplier-buyer relationships: Palm oil is typically transported, mixed, bulked, traded, refined and processed several times before it is used to make a final product. This means that there are difficulties in tracing palm produced from a particular plantation. As a consequence, it is difficult to reward individual plantations that follow good environmental and social practise, and, conversely, to exclude or otherwise penalise those whose performance falls below those requirements. These problems are not insurmountable, but are likely to result in increased costs. For example, Migros (see section 3.3.4) currently pays a premium for palm oil from plantations that are assessed and compliant with their requirements, as well as additional costs to cover the increased logistics necessary to maintain a separate supply chain.

A related issue is that sustainable palm oil production is the common interest of a wide range of players, essentially producers, processors, traders, retailers and financial institutions that invest in oil palm. However, many of the BMP initiatives so far developed deal just with production, without considering financial incentives to improve sustainability (although note, for example, the Rabobank criteria and screening guidelines produced by four Dutch banks). Experience from other natural resource sectors has shown that uptake of complex BMPs concerning social and environmental practise is slow without clear market signals. In the absence of mechanisms that provide direct financial incentive, adoption of BMPs is likely to be confined largely to those companies who are already leading the field.

Lack of visibility at consumption level: Palm oil is used in the manufacture of many products, including margarine, cooking oil, snacks, cakes, cosmetics, detergents, soap, paint, chemicals and animal feed. Outside Africa, it is rarely retailed as a product in its own right. As one constituent amongst many in such end-products, it is concealed, and therefore public awareness and ability to discern between products using palm oil produced in different ways is likely to be limited. This may in turn limit the ability of civil society to lever greater adoption of BMPs. Nevertheless, with increasing pressure from NGOs (see Section 3.1.5) and with financial service institutions beginning to question manufacturers and retailers of palm oil containing products⁴⁰, there may be greater leverage in the future.

3.5 Preconditions for the successful adoption of BMPs

For palm oil, a number of the initiatives identified earlier have already started the process of agreeing BMPs, identifying key players and points of leverage. What remains is further work on creating incentives for the adoption of BMPs once they have been agreed, and engaging non-sector players in relation to some of the impacts that cannot be addressed by BMPs alone.

- **Developing BMPs:** Although many plantation companies and other major players already have a clear idea of what constitutes BMPs, there is by no means universal agreement on these. In addition, for several key environmental and social impacts, no agreement as to what constitutes best practice exists. BMPs will therefore have to be developed, with wide ranging input from different stakeholders to ensure widespread buy-in. These should include producers (both large plantations and smallholders); supply chain interests (including traders, processors, manufacturers, retailers and investors); environmental interests (e.g. ENGOs) and social interests (including plantation workers and their representatives and local communities impacted by plantations or NGOs representing them). The Roundtable on Sustainable Palm Oil is currently starting to consider such a process for developing criteria for sustainable oil palm management.
- **Incentives for uptake:** Uptake of BMPs is unlikely to be widespread in the absence of clear market signals to producers. Engaging other parts of the supply chain (including traders, manufacturers, retailers and investors) is therefore a pre-condition to widespread adoption of BMPs. Some mechanisms that are directed at players other than primary producers already exist (e.g., Rabobank criteria, Dutch banks screening principles) and others may begin to do so (e.g., the Roundtable on Sustainable Palm Oil). Increased and sustained demand-side pull for BMPs could

⁴⁰ For example, ISIS Asset Management & ProForest (2003). *New risks in old supply chains: Where does your palm oil come from?*

Chapter 3: Palm Oil

be stimulated through development of responsible procurement policies and fulfillment of CSR commitments. Providing consistent financial incentives to BMP adoption remains a priority.

- **Engagement of non-sector players:** Oil palm plantation companies work within frameworks provided by laws, regulations and government processes and resolution of several of the key environmental (e.g., forest clearance) and social impacts (e.g., conflicting land claims) cannot be achieved by oil palm BMPs alone. In most countries, the clearance of forest for oil palm takes place in the context of enormous and complex changes in land-use. There is much confusion in the debate over the extent to which oil palm is the 'cause' of forest conversion. Forest clearance commonly happens in cases where no subsequent land-use is planned (oil palm or otherwise), because the income from timber and pulpwood is sufficient attraction on its own. It can be argued that some or all areas cleared for oil palm might eventually have been deforested anyway for some other reason. The fact that many lie in areas designated by the government for conversion supports this argument. It is also supported by the observation that many companies have requested oil palm concessions but after the logging phase have shown no interest in establishing plantations⁴¹. The picture is further complicated by the fact that oil palm plantation companies are often part of larger business groups, sometimes including timber companies. This emphasises the point that BMPs that are aimed at reducing forest clearance by the palm oil sector may in practise have little effect if wider issues are not also addressed. Solution to these problems will also require reform of land-use planning procedures or implementation of existing ones.
- **Smallholders:** Engagement of smallholder scheme managers associations, development authorities, core plantation managers and NGOs will be necessary to implement BMPs dealing with some of the over-arching environmental and social issues as well as providing the training, education and extension necessary to enable smallholders to implement others.

3.6 Risks of adopting a BMP approach

The risks of adopting a BMP approach for palm oil include the following:

Making palm oil uncompetitive: Despite subsidies, production costs for substitute oils remain higher than for palm oil, especially because they have relatively low production per hectare. However, competing edible oils have some advantages that are rapidly eroding this difference. One is that production is highly mechanised, so labour inputs are low and prices are less vulnerable to increasing wage levels. A second is that productivity per hectare has shown sustained rapid increases over the past twenty years, especially for soy, due in part to the adoption of genetic modification (GM) technology and in part to huge research efforts in the developed world.

Given this background, the oil palm sector sees both its current market share and future growth as being highly vulnerable to changes in prices, especially in Malaysia where production costs are somewhat higher than in some other palm oil exporting countries. This sharpens the concerns of both the industry and the governments of producer countries over the potential costs of changing their environmental and social practices.

As discussed in preceding sections, many negative impacts have been attributed to the oil palm sector. Significant impacts are also reported for other edible oils, especially soy (see chapter 4). Crops in the temperate zone (rapeseed, sunflowers, some soy) are less connected with ongoing loss of forest and other natural habitats (since deforestation happened long ago in most of these areas). For the same reason, loss of land by local communities is also less of a current concern. Nonetheless, these and other forms of temperate agriculture are implicated in severe and continuing biodiversity losses due to intensification and heavy use of pesticides and fertilisers.

⁴¹ See: Potter, L. and Lee, J. (1998) Tree planting in Indonesia: trends, impacts and directions. Occasional Paper no. 18, CIFOR, Bogor, Indonesia; FWI/GFW (2002) The state of the forest: Indonesia. Forest Watch Indonesia, Bogor, Indonesia and Global Forest Watch, Washington DC. Interestingly the same fact has been used by some conservationists to support the argument that oil palm is driving deforestation. This is true from one point of view – money invested in one of these bogus oil palm projects may end up being used for cut-and-run logging – but it does not support the argument that buying palm oil products funds deforestation.

Chapter 3: Palm Oil

At least some of the BMPs necessary to address key environmental and social issues associated with palm oil production are likely to result in increased production costs, at least in the short-term (see Section 3.4.1). If oil palm is treated in isolation, there is therefore the risk either that there will be little uptake of BMPs or that it will shift the competitive advantage to other edible oils and hence simply transfer these problems to those other crops and countries.

Exclusion from markets: Decreased competitiveness of oil palm would also have wider implications. All the major oils contribute to the economies of the producer countries roughly in proportion to the total value of production (excluding subsidies). Some satisfy significant domestic markets that would otherwise be fed by more expensive imports; others contribute to export incomes. The levels of employment, particularly rural employment, are often significant; in this regard oil palm stands out because it is currently less mechanised and so more labour intensive. For example, oil palm plantations employ about 1 person per 10 hectares. This means that a 30,000 ha plantation will directly employ 3,000 people, with many times that number supported directly or indirectly by the plantation. By comparison, soy cultivation employs approximately 1 person to 160-200 ha, and so a similar-sized area of soy would directly employ 150-190 people⁴².

Smallholders: As discussed above, unless BMPs appropriate to smallholders are developed and appropriate institutions engaged to implement them and/or provide extension work, many smallholders are likely to find difficulty in implementing BMPs. This presents a risk that smallholder production would begin to be excluded from export markets. In many areas, smallholders close to plantations prefer to plant oil palm for several reasons: it can provide a long-term income, the intensity of labour inputs is flexible and not too great, and the crop is both productive and relatively disease resistant. In spite of the various reports that the terms of trade for smallholders are sometimes less than ideal (see previous sections), there is great demand amongst smallholders to be included within such schemes in many regions. Exclusion of smallholders from the market would therefore potentially undermine the preferred livelihoods of millions of rural people in tropical countries.

Allocation of costs: Given few, if any, financial incentives for the adoption of BMPs, there is a risk that the burden of any associated costs will fall disproportionately on producers, with little if any compensatory financial return.

Continuing lack of incentives: There is a risk that producers continue to have any incentive to change practices given the macroeconomic situation. Any investment in promoting BMPs is likely to be wasted without creating sufficient incentives for adoption.

Not tackling the worst producers: As with any voluntary mechanism, there is a danger that a BMP approach simply recognises existing good practice of responsible growers rather than tackling the worst practices of irresponsible growers.

3.7 Strategic Choices

A number of strategic choices need to be made by any initiative seeking to reduce the negative environmental and social impacts associated with palm oil production through a BMP-based approach.

#1 Whether to focus on the development of BMPs?

There are a number of independent BMPs or similar for oil palm (see Section 3.3.4). These have been produced for specific situations and none has wide buy-in. The Round Table on Sustainable Palm Oil⁴³ is currently developing proposed criteria for sustainable oil palm. It is intended that the final criteria will be developed through a multi-stakeholder participatory process. At the current time, this represents the

⁴² E.g., Fearnside, P. M. (2001) Soybean cultivation as a threat to the environment in Brazil. *Environmental Conservation* 28: 23-38; and Corley, R. H. V. and Tinker, P. B. (2003) *The Oil Palm*. Fourth edition. Blackwell Publishing, Oxford, UK.

⁴³ See: <http://www.sustainable-palmoil.org>

Chapter 3: Palm Oil

best opportunity for developing BMPs that have a broad support base, from different sectors of the supply chain as well as from civil society. Engaging and collaborating with such initiatives would have reputational, managerial and institutional implications, and care would need to be taken to ensure that the goals of an existing initiative are complementary. But failing to engage with these initiatives runs the greater risk of diluting energy and commitment among industry stakeholders, and of failing to develop an authoritative set of BMPs and agenda for implementation.

#2 Whether to explicitly address smallholder issues through BMPs?

It is not clear how suitable a formal BMP approach is for smallholders. The technical and financial capacity of many smallholders is comparatively limited and so there is a real risk that they might be excluded from markets if complex BMPs are demanded from them. One approach would be to develop specific BMPs for smallholders. Alternative (or supporting) activities include developing and implementing training programmes on basic environmental and social and production issues, working with associations, development agencies, smallholder scheme managers and core plantations to address some of the wider environmental and social impacts. As most smallholders are dependent upon the processing capacities present in large plantations, there exists considerable potential for making the financing arrangements of large plantations conditional upon extension, financing, training, fair pricing and increased technical capacity of the smallholders that supply their mills.

#3 Whether to support development of purchasing guidelines?

Experience from other natural resource sectors suggests that, without financial incentives, it is unlikely that the uptake of BMPs will extend much beyond those companies who are already committed to economic, social and environmental excellence. The Round Table on Sustainable Palm Oil may decide to include criteria for palm oil purchasers (e.g., by demanding a year-on-year increase in the proportion of palm oil coming from plantations that fulfil the requirements of the criteria they are developing, or who have a time-bound commitment to do so). If this is the case, then this could be further stimulated through encouraging purchasers of palm oil to join the Round Table. If the Round Table chooses not to include such guidelines, serious consideration will need to be given to seeking to drive uptake of BMPs through the demand side. Options include leveraging purchasing commitments from key players (perhaps in fulfilment of existing CSR commitments) and supporting demand-side initiatives.⁴⁴

#4 Whether to roll out investment criteria?

Investment opportunities represent an important financial stimulus to changing production practises. The proposed screening for financial services produced by four major Dutch banks has not to date been fully implemented, is limited to Indonesia and entails only four of the key environmental and social issues. Encouraging adoption and implementation of these amongst other financial service institutions, or linking them to BMPs or criteria for oil palm management would potentially provide a powerful stimulus to adoption of BMPs. As noted earlier, an important enabling condition for wider adoption of responsible investment criteria (particularly in Indonesia) includes increasing the in-country capacity for independent assessment of palm oil companies.

#5 How traceable should 'sustainable' palm oil be?

How does the market reward producers who apply BMPs? A future BMP initiative should consider the pros and cons of working with existing markets rather than investing in alternative supply chain structures or ensuring full chain of custody traceability. Several options exist, ranging from:

- **certification and segregation** of sustainably-produced palm oil. This provides the best guarantee that any oil really does come from a plantation implementing BMPs, but runs the risks of losing the benefits associated with commodity markets and incurring the costs of establishing and monitoring a dedicated chain of custody within traditional complex supply chains;

⁴⁴ For example, the UK Government's Department for Environment, Food and Rural Affairs is considering demand-led initiatives to encourage sustainability in commodities, see DEFRA 'From Principles to Action: Applying the Product Sustainability Toolbox.' Advisory Committee on Consumer Products and the Environment, Third Report. February 2004.

Chapter 3: Palm Oil

- an **area-wide approach**, where production areas are targeted for BMP adoption and so the entire production of the area can be mixed and bulked. This allows most of the benefits associated with the commodity markets to be maintained, but without rigorous control, runs the risk of unsustainably produced palm oil entering into the 'sustainable' oil;
- a **'pool'** system, where a buyer pays the premium to the sustainable producer, but without taking physical delivery of oil from that producer. Instead, the producer's oil would be bulked with others in the normal way, and the buyer would buy from the 'pool' as usual (a mechanism analogous to that used in buying 'green' electricity in the UK). This has not yet been implemented for any commodity and may provide insufficient stimulus for widespread BMP adoption.

#6 Whether to aim for a system that is visible to consumers or only to processors?

As noted above, palm oil's lack of visibility at consumption level means that a consumer-facing initiative would be a significant challenge. If a BMP initiative did aim for a certified, traceable approach, experience from other sectors suggests that it may make more sense for labels to be targeted at buyers and processors rather than consumers.

#7 Whether to provide equivalent support to soy BMPs?

Any action regarding BMPs for oil palm may influence the competitiveness of palm oil against soy. Several important environmental and social impacts have been reported for soy and so targeting one of these crops rather than the other could potentially transfer problems to another crop and other countries rather than resolve them. In addition, the palm oil sector is already sensitised by the perceived advantage given to soy through subsidies and would be less likely to engage with initiatives if equivalent processes were not being undertaken for soy. This is recognised by WWF, who are campaigning on edible oils (not just palm oil) and who are involved in Roundtables for both palm oil and soy.

#8 Whether and how to engage governments?

Some of the most serious environmental impacts of oil palm involve issues wider than can be addressed by individual plantation companies, or by the sector as a whole. These include forest conversion, competing land claims and large-scale social transformation. Solutions to these problems include BMPs, but also require input from, for example land-use planning procedures, legal requirements and the implementation of these. Similarly, provision of tax incentives could provide a powerful stimulus for establishing plantations on land that has long been degraded, and for maintaining conservation set-asides and riparian protection zones within plantations. The possibilities for enabling governments in producer countries to reform their procedures and regulations and the way that these are implemented will need to be explored. Analogous processes are being undertaken by the proposed by the EU's Forest Law Enforcement, Governance and Trade Action Plan (FLEGT) to tackle the problem of illegal logging, which includes governance reform, institutional strengthening and negotiations.