

OIL PALM SMALLHOLDERS CHALLENGES TOWARDS THE CHANGES IN GLOBAL MARKET

Sakti Hutabarat

Staf Pengajar Jurusan Agribisnis, Fakultas Pertanian Universitas Riau

ABSTRACT

The expansion of oil palm plantations has been blamed to be the causes of deforestation, biodiversity loss, increased greenhouse gas emission, and land conflicts in Indonesia. The introduction of certification on palm oil products is an effort to meet global demand of edible oils in the way that promote production sustainably and equitably. The goal is to rise oil palm production while reducing negative externalities. Oil palm production can be improved either by intensification and replanting on the current plantations or expansion on degraded land. Smallholder is the most vulnerable actor to be included in the certification scheme because of their weaknesses on accessing to technical assistance, inputs, finance, markets and infrastructure. This article is aimed to analyse barriers faced by oil palm smallholders to improve smallholder yields and to meet the requirements of certification. This study is based on literature reviews, stakeholder interviews and field visit in Riau Province.

Keywords: *Small holders, oil palm, agronomic, institutional, certification*

INTRODUCTION

The global demand of crude palm oil (CPO) increases significantly in the last decade. There are several reasons of this phenomenon. Firstly, palm oil is an important and principal ingredient in various products (foods and non-foods) (Teoh, 2012; World Growth, 2011). Secondly, oil palm is the most productive crops producing edible oils in terms of tonnes per hectares (Teoh, 2012; World Growth, 2011). Thirdly, the cost of production of oil palm is the lowest amongst oil plant producers (Carter, Finley, Fry, Jackson, & Willis, 2007; Corley, 2006). High demand for CPO incite demand and price of fresh fruit bunches (FFB) (Dinas perkebunan Provinsi Riau, 2013). Better prospect of oil palm plantation eventually encourage people to grow oil palm either by land expansion (Badan Pusat Statistik, 2010; Fairhurst & McLaughlin, 2009; USDA, 2009) including converse their land from other crops to oil palm or intensification and replanting (Fairhurst & McLaughlin, 2009; Koh & Wilcove, 2007). In Indonesia, little effort has been focused on intensification. The reason is that the costs of land expansion is considerable less compared to intensification or replanting. This becomes a dilemma for Indonesia. As illustrated in Figure 1, on one side, oil palm improves the welfare of local people and the economy of Indonesia through increased employment, farmers' income, taxes, value-added and foreign exchange (Purba, 2003; Teoh, 2012; World Growth, 2011). On the other side, it creates negative social and environment such as deforestation, biodiversity loss, increased greenhouse gas emission, pollution, and land right conflicts (Danielsen et al., 2008; Fairhurst & McLaughlin, 2009; Koh & Wilcove, 2008; McCarthy & Zen, 2010). There three alternative strategies to increase oil palm production i.e.,

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intensification on current plantation including replanting and land expansion on degraded land. Expansion on peat land and forest land are not recommended as it creates negative impacts to environment. Likewise, land conversion from food crops to oil palm may have effects on food security. These issues become crucial in the global value chain, particularly in relation with product certification.

The introduction of product certification in line with sustainable production is an effort to meet growing awareness of global consumers on environmental and social impacts caused by oil palm production and processing. The RSPO palm oil certification was established by international private companies and NGOs. The objectives is to promote the production and use of sustainable palm oil for people, planet and prosperity (RSPO, 2007). Indonesian government was also establish its own certification, Indonesian Sustainable Palm Oil (ISPO), through Permentan No. 19 Tahun 2011 tentang ISPO. ISPO is an agribusiness sistem for sustainable oil palm production that economically, socially and environmentally feasible.

The change in the global market particularly product certification has significant impacts on actors in the palm oil value chain including adjustment costs, transcation costs, auditing and monitoring costs, and administration costs. Smallholders is the most vulnerable actor in the supply chain because of its scale economies, agronomic constrains, and institutional barriers. This article is aimed to review oil palm development, particularly related to smallholders. First this article describes demand for palm oil and the consumer awareness. Secondly, it discuss about the expansion versus intensification in the palm oil supply side. Thirdly, it describes determination of FFB prices. Fourthly, it presents the changes in global market and certification. Fifth, it describes agronomics and institutional barriers face by smallholders to obtain potential yields. Finally, the study suggests recommendation in how smallholders improve yield and business performances to face the changes in global market. Information needed in this study are collected from literature reviews, stakeholder interviews, and visiting oil palm plantation.

Palm Oil Supply, Demand and Prices

Demand for palm oil

Demand for edible oil has increased significantly with population growth, per capita consumption, and the trend to replace animal fats in the human diet (Teoh, 2012). The most important edible oil in the global market are palm oil, soybean oil, rapeseed oil and sunflower oil. Palm oil has appropriate characteristics that preferred by global oils and fats industry than other vegetable oil. Palm oil is the principle ingredient in various food products (cooking oils, margarine, chocolates, ice cream) and non-food products (detergents, soaps, cosmetics, and biofuels). More than 50% of products in supermarkets contain palm oil products (Teoh, 2012).

European Union (EU) was the most important importer of palm oil until year 2004. Then, China becomes the largest importer between 2004 and 2006. Since 2006, India replaced China as the highest palm oil importer in the world. The changes in the global markets have changed the country of destination of palm oil, from EU to China and India. Campaigns by international NGOs and consumers' awareness on environmental and social impacts have triggered the

establishment of RSPO certification. Although, demand for CPO in EU countries still increases however its rate is below China and India.

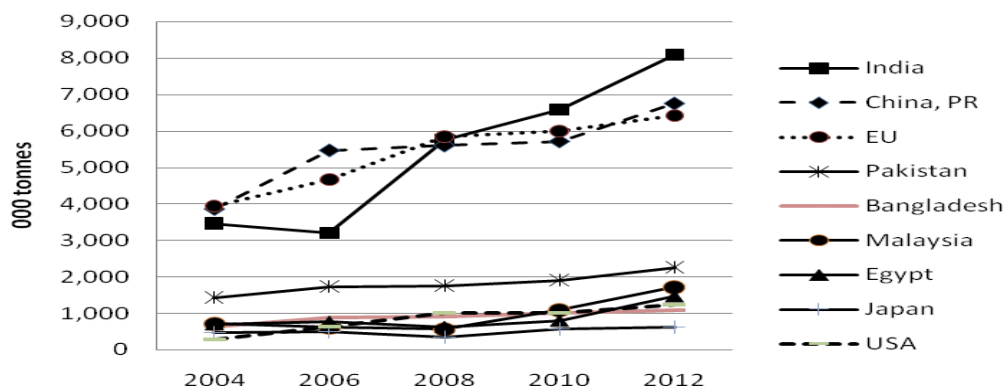


Figure 1. World demand for palm oil (millions of tonnes CPO-PKO) *Source: Oil World Annual (Various years)*

Palm oil production

Rapid demand for edible oil has provoked vegetable oil production. Soybean was in the top position of vegetable oil in the market before year 2000s. However, after almost three decades in the second position of the world demand of edible oil, palm oil become the most important vegetable oil since mid 2000s (Oil World, 2012; Teoh, 2012). In the last three decades, the total world production of vegetable oil has increased significantly from 40 million tonnes in 1980 to 133 million tonnes in 2009 (Teoh, 2012). Palm oil is the most productive oil plant (t/ha) and the cost of production is the lowest compared to other vegetable oil, therefore its production growth rapidly. In the mid 2000s, palm oil production is the highest in the world followed by soybean oil, rapeseed oil and sunflower oil.

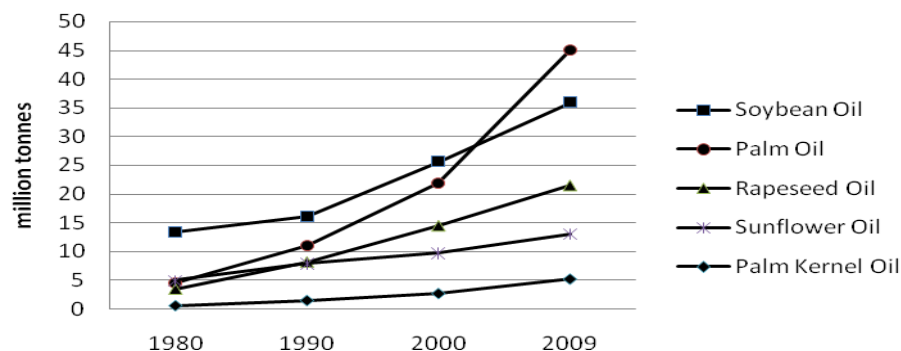


Figure 2. World production of vegetable oils (millions of tonnes) *Source: Oil World (Various years) Cited by Teoh (2012)*

Indonesia and Malaysia are the largest palm oil producers which account for 90.4% of total world production. As illustrated in Figure 3, Malaysia was the world largest palm oil producers until year 2004. Then, Indonesia take this position with 26.5 million tonnes of palm oil production in year 2012. This amount account for more than half world production (Oil World, 2012).

In Indonesia, palm oil has been cultivated commercially since 1911. The first commercial plantation was established in Pulau Raja (North Sumatera) and Sungai Liput (Aceh). Then, the first palm oil mill was established at Tanah Itam Ulu (North Sumatera) (Buana, Kurniawan, & Siahaan, 2004). Until 1960s there was no significant progress in palm oil sector. In 1978 the Government of Indonesia established Nucleus Estate Smallholder (NES) or Perkebunan Inti Rakyat (PIR) programme. NES/PIR programme was supported by The World Bank and International Finance Cooperation (Teoh, 2012). In this period, there are three main operators in palm oil value chain i.e., state plantations, private plantations, and smallholders. In 1995, the NES was replaced by Koperasi Kredit Primer Anggota (KKPA) which supported by domestic financial institutions. Many palm oil plantations and mills were established and oil palm production started to increase significantly from 294,560 hectares and 721,172 tonnes CPO in 1980 to 8,110,447 hectares and 21,958,120 tonnes CPO in 2010 (Badan Pusat Statistik, 2010). Land expansion increased significantly and dominated by private estate followed by smallholders (Figure 4).

At the beginning, most of palm oil plantations were located in Sumatera. Then expansion was carried out in Kalimantan and Papua. The largest oil palm area is in Riau Province (25%) followed by the Province of North Sumatera (20%), South Sumatera (12%), Jambi (10%) and Central Kalimantan (10%). In 2010, private companies operate more than half of the total area of Indonesian oil palm plantation. Smallholders, both scheme and independent, also play significant role in oil palm development which account for 37.9 percent of the total oil palm area in Indonesia. Riau province is the largest smallholders which account for 36% of the total smallholder area in Indonesia (Badan Pusat Statistik, 2012).

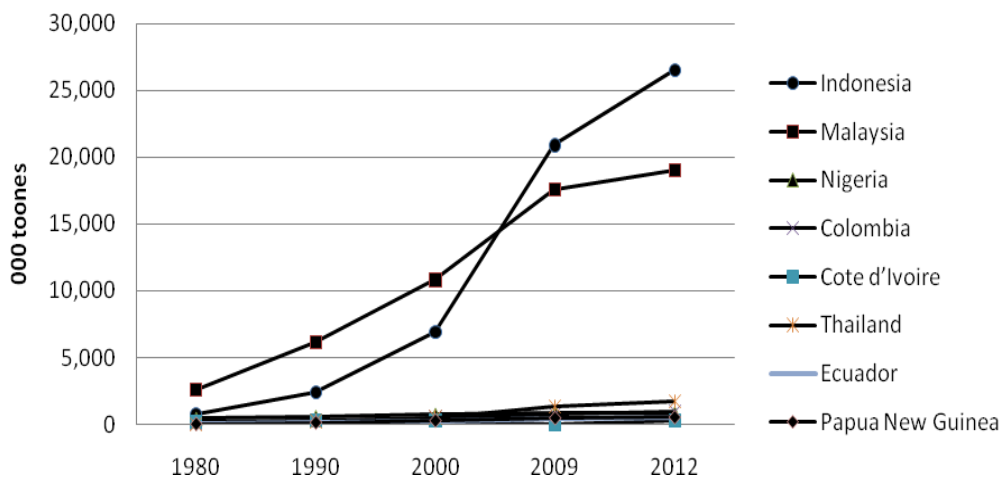


Figure 3. World production of palm oil (millions of tonnes) *Source: Oil World (Various years), Index Mundi (year 2012)*

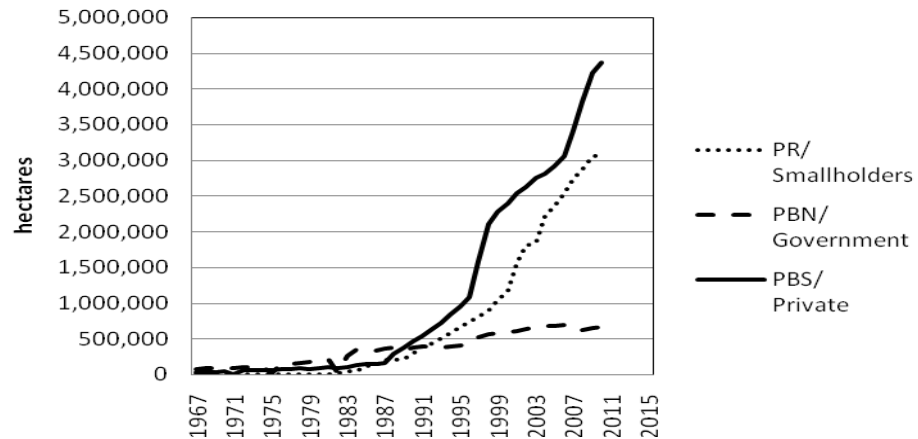


Figure 4. Oil palm area 1967-2010 (hectares) *Source: Department of Agriculture, Indonesia 2012*

Determination of FFB prices

Theoretically, price of a commodity is determined by supply and demand in a market. In Indonesia, the FFB prices are set by a price team at provincial level based on government regulation, Permentan No. 395/Kpts/OT.140/11/2005. The team consists of representatives of provincial and regencial governments, companies, smallholders and other related institutions. The objective is to guarantee FFB prices of oil palm growers at mill gate and to prevent unfair competitiveness among millers.

The FFB prices are set up based on following formula:

$$\text{FFB price at mill} = K (\text{Hms} \times \text{Rms} + \text{His} \times \text{Ris})$$

Where:

P FFB = is the price of FFB received by oil palm growers at mill gate, (Rp/Kg)

K = is an index of proportion of the price received by oil palm growers, (in percentage)

Hms = is a weighting average of exported CPO prices (FOB) and domestic prices in each companies in the previous period, (in Rp/Kg)

Rms = is CPO rendements or oil extraction ratio (OER), (in percentage)

His = is a weighting average of exported CPO prices (FOB) and domestic prices in each companies in the previous period, (in Rp/Kg)

Ris = is PKO rendements or kernel extraction ratio (KER), (in percentage)

The determination of FFB prices seems to be subjective and unfair. In practice, K index is determined by CPO prices, costs of processing, marketing costs and depreciation. The costs dependent on the efficiency of mills, geographical location, and quality of CPO/PKO. The weighting average of CPO and PKO prices are fixed based on realization of the companies in the previous period. It depends on CPO prices in international markets. In reality, the OER and KER are mostly fixed lower than the ratio for good plant material. Hutapea (2013) argued that the OER and KER for good plant material are about 23.2 – 26.8 percent and 4.2 -5.9 percent, respectively. However OER and KER fixed lower by the team (15.62-21.87 percent and 3.70-5.10 percent, respectively).

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Another issue is that FFB prices are fixed based on the age of palm trees. Teoretically, OER and KER depend on the quality of fruit bunch and mill performance. Fruit quality is determined by plant material, fruit ripeness, and fruit set while factors that influence mill performance including losses in empty bunch, fruit in empty bunch, unstripped bunch, cyclone fibber, nut, solid decanter and raw effluent. In reality, millers always buy FFB based on the weight of FFB without considering the age of plants.

In a monopsoni market, smallholders are price takers. Even though they grow good plant material and good quality of fruit, their OER and KER are always fixed at lower ratios. In many mills, the FFB from companies has a priority with the highest prices, then the fruits from companies scheme smallholder plantation. Independent smallholders have less access to the mills and mostly take the lowest prices. In facts, price regulation do not protect oil palm growers. Price mechanism does not work well in oil palm value chain.

Changes in Global Market and Certification Scheme

Market liberalisation and consumer awareness of quality of people and planet are the main issues in global market. The challenge to oil palm producers including access to the global market, risk of price variation, product certification, management practices, access to resources, access to finance and co-ordination mechanisms.

Product certification is one of the important issues in the global market changes. Stake holders and activities in the value chain have to comply with the standards set by certification. This implies that production should be increased sustainably without or less negative social and environmental impacts. In general, stakeholders have to meet a list of requirements including traceability sistem, recources management, specific infrastructure, regulation compliance.

In Indonesia, palm oil development should prevent land expansion to avoid deforestation, loss of biodiversity, greehouse gas emissions and land rights conflicts. Intensification is a promising strategy that can be applied to improve yield since oil palm plantations yields are mostly lower than its potential yield and smallholders' yields are lower than those of large-scale plantations (Molenaar et al., 2010). How to improve oil palm yields sustainably is the challenge that smallholders face to reduce the gap in productivity and to meet the requirements of certification.

Theoretically, smallholder productivity correlate with the use of inputs and agricultural practices. Molenaar et al. (2010) shows that the most importat agronomic variables in determining smallholders' yield performance are land selection, quality of planting material, fertilizer inputs, harvest and transport, and replanting. However, agronomic constraints might not be solved without appropriate institutional arrangements.

Scale economies of smallholders might be another important factor to improve their business performance. There are two types of smallholders: scheme and independent smallholders. Scheme smallholders (PIR or KKPA) have the same land size (2 hectares) and most of them are members of cooperatives (group farmers) while independent smallholders differ in land size, agricultural practices, land titles and work individually. Most of smallholders' size are relatively small to cover transaction costs (organization, monitoring, and administration).

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Therefore, their business performance could be improved by working together in a group of farmers to increase their scale economies.

Institutional environment (formal and informal) may play a significant role to achieve better business performance in a value chain. Theoretically, institutional environment indicates the environment (rules of the game) in which institutional arrangements function while institutional arrangements is co-ordination mechanisms to organize activities and transactions, the way the game is played (Slangen, Loucks, & Slangen, 2008). Institutions facilitate activities and transactions between the stakeholders as a whole and individual actors in the sector (Groenewegen, Spithoven, & van den Berg, 2010). Transaction costs are the costs of coordination including contact, contract and control (Slangen et al., 2008). As the scale economies of smallholders are relatively limited, this increases the costs of transactions including finding partners and production information, making negotiation, and monitoring agreements.

There are a number of actors involved in the palm oil supply chain, such as agricultural inputs distributors, producers (companies and smallholders), agricultural extension services or technical assistant, middlemen, cooperatives, millers and manufacturers, that produce palm oil and its derivative products and sell it to consumers. There are transactions of products and agricultural inputs between actors in the value chain. To equate supply and demand for these products there exist various co-ordination mechanisms (e.g. market, organizations and contracts).

In a market the supply and demand of products and inputs meet and determine its prices. The determination of prices depends on the structure of the market, i.e., perfect competitive market, monopoly or monopsony, and oligopoly or oligopsony. Coordination mechanism depends on transaction costs, information and uncertainty, asymmetric information, time inconsistency, transaction specific investments, bounded rationality and transaction frequency. The choice of coordination is determined by maximum profit for individual actors or total profit of the chain (Slangen et al., 2008).

An institutional pattern comprises a set of incentives and disincentives that how individuals and groups act (Adam, 1993). Incentives and disincentives provide means on controlling actors to conduct according to the rule of the games. Therefore, facilitating incentives to the stakeholders in palm oil value chain is crucial to drive actors' behavior.

CONCLUSION

The creation of certification is an instrument to promote sustainable palm oil production through the supply chain and the collaboration of the stakeholders. The capability to meet the certification scheme differs amongst actors in the palm oil sector. Millers and large-scale enterprises are considered to have competency to meet the certification requirements. However, this scheme puts the smallholders on a disadvantage situation given their scale economies, agronomic constraints and institutional barriers. The creation of incentives could be an important issue to promote stakeholders in the oil palm value chain. There are some government roles in supporting smallholders in the global market changes. Firstly, government should ensure policies that encourage market co-ordination to work with smallholders. Secondly, government should improve infrastructure and services.

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for oil palm smallholders to access technical assistance, inputs, finance, markets and land titles. Thirdly, government should promote beneficial commitment and effective partnership between stakeholders in the oil palm value chain.

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