Jurnal Sylva Lestari **ISSN 2339-0913**
Vol. 1 No. 1. September 2013 (93—100)

DYNAMIC OF PLANTATION OF OIL PALM SMALLHOLDINGS IN RIAU PROVINCE SUMATRA INDONESIA

Duryat[1)], Sylvain Raflegau[2)], and Marck-Phillip Cannon[2)]
[1)]Jurusan Kehutanan Fakultas Pertanian Universitas Lampung
[2)]Agricultural Research for Development (CIRAD), Avenue Agropolis 34398
Montpellier Cedex 5, France

ABSTRAK

Perkebunan sawit rakyat mencapai porsi 44% dari total luas perkebunan sawit di Indonesia dan mereka diketahui memiliki produktivitas yang jauh lebih kecil dibandingkan perkebunan sawit besar. Oleh karena itu ada peluang yang sangat besar dalam upaya meningkatkan produksi sawit nasional dengan metode penanaman yang berkelanjutan. Metode diagnosis pertanian digunakan untuk mengetahui keberagaman perkebunan petani kecil di Propvinsi Riau Sumatra Indonesia. Kajian ini telah berhasil mengkarakteristikan dinamika perkebunan sawit rakyat dan kejadian-kejadian yang melatarbelakangi perkembangan perkebunan sawit rakyat tersebut. Dari delapan bentuk perkebunan sawit rakyat yang ada di Indonesia hanya ada tiga bentuk perkebunan yang memiliki produktivitas yang lebih rendah dibanding perkebunan sawit besar. Berdasarkan hasil penelitian ini perlu dilakukan kajian lebih lanjut dengan penerapan diagnosis pertanian yang didasarkan pada kondisi hara tanaman menggunakan data analisa daun dan analisa tanah.

Kata kunci : dinamika penanaman, kelapa sawit, perkebunan rakyat, Sumatera.

ABSTRACT

Smallholder's plantations represent 44% of oil palm in Indonesia, and they were known to have agronomic performance much lower than Estate ones. So there is large room for increasing the yield with sustainable cropping system. To better understand the heterogeneity of smallholder's plantations, an agricultural diagnosis has been implemented in a specific place, Riau Province of Sumatra. This study led to well characterize the dynamics of plantation in the region and the diversity of rationalities. Among eight existing types of smallholding plots, there were only three types with yield hardly lower than those of the estate plantations. This reinforced the interest to implement diagnosis through the nutritional status of palms using data from foliar diagnosis and soil analysis.

Key words : dynamic of plantation, palm oil, smallholders, Sumatra

INTRODUCTION

To ensure sustainable development of oil palm plantations, the simultaneous consideration of agronomic, socio-economic and environmental is inevitable. For communities in the tropical belt, palm oil has been a blessing. Oil palm could become the motor of development of rural areas, create jobs, while reducing poverty (World Growth, 2010). Trends of increased demand and world prices of vegetable oil has increased the enthusiasm of palm cultivation, both by the agro-industry, as well as smallholdings. However, societal concerns for the preservation of forests in the tropics make it more and more uncertain any extension of planting surfaces. The ecological intensification in agriculture is recognized today as the new paradigm that should allow to meet these needs

while taking into account the environmental impacts: The objective is actually to increase the yields of palms already planted with sustainable cropping systems on the societal, economic and environmental.

However, it is often the Smallholder's plantations that have the lowest agronomic performance on average but also more heterogeneous. It is therefore important to explain the yield spreads in smallholder's plantations to rethink technical advice for smallholder so that their current plantations and future display no factor limiting the yields.

The potential increase in production by increasing yields in smallholder's plantations is particularly important in Indonesia where surfaces in production represent 45% of the world palm plantations. The history of development of smallholder's plantations also results in highly contrasted setting conditions.

Total area planted to oil palm in Indonesia (immature and mature) in 2010/11 is about 7.65 million hectares, with total production of 23.0 million tons (USDA FAS, 2010). The bright prospect of oil palm commodity which is marked by the increasing of price in the last few years prompted the government to boost the expansion of oil palm plantation area (Sawit watch, 2010).

Increased land area of plantations in Indonesia is the result of government's efforts to make oil palm as a commodity to create jobs and improve the welfare of the community.. The number of workers absorbed in upstream sector reached 1.95 million people in plantations, while 1.7 million farmers in people's plantations. The workers absorbed in palm oil mills reaches 70,000 people. Total labour force is absorbed in oil palm plantations to palm oil mills to reach 3.72 million people. Middle and downstream industries provide employment for 31,664 peoples that from upstream to downstream palm oil industry could provide employment for 3.75 million people. If a worker has a family consisting of his wife and two children, then the totals of people who depend on Indonesian palm oil industry as much as 15 million people (IPOAT-IPOB, 2010). Oil palm is also increasing farmers livelihoods, Feintrenie et All., (2010) reported that in Jambi Province, Sumatra Indonesia, the monthly net income for scheme smallholding between 8 and 25 years after planting, free from any debt and with average price of FFB (1500 Rp/kg, or 111 €/t), is about 220 €/ha/month.

In the context of increasing demand for palm oil and related environmental and social concerns about oil palm expansion, there is a demand for knowledge on how to increase the smallholdings palm oil yield per hectare in a sustainable way, without additional land use. The main question of the research is how the agriculture dynamics has occurred (related to global, national, and regional issues) so that creates the types of agriculture that is exist today?

The aim of the study is to figure out the dynamic of smallholders oil palm plantation in Riau Provice, Sumatera, Indonesia.

MATERIAL AND METHOD

This study has been conducted in the research centre of Sinarmas Group, Smart Research Institute (Smartri) Main Station Libo, with plantation area of Sinarmas in Siak and Kampar District, Riau province, Sumatra, Indonesia. In this region Sinarmas group has built a palm oil plantation smallholdings scheme since 1992 through the PIR-Trans program, followed by PIR program in 1994-1995, and KKPA program in 1996. In addition, since the beginning of the opening of plantations in 1985, independent smallholdings began to develop in the area around the estate plantation. Presently, there are smallholdings in the region in commercial relation with Sinarmas, the independent smallholdings, for the delivery of bunches to the mill. Sinarmas also manages or advices the smallholdings who benefit from a development scheme. As in the same ecological, social and geographical environments we

can find PIR and KKPA scheme plantations and also independent smallholding plantations. Therefore this region was selected as the location to implement this study.

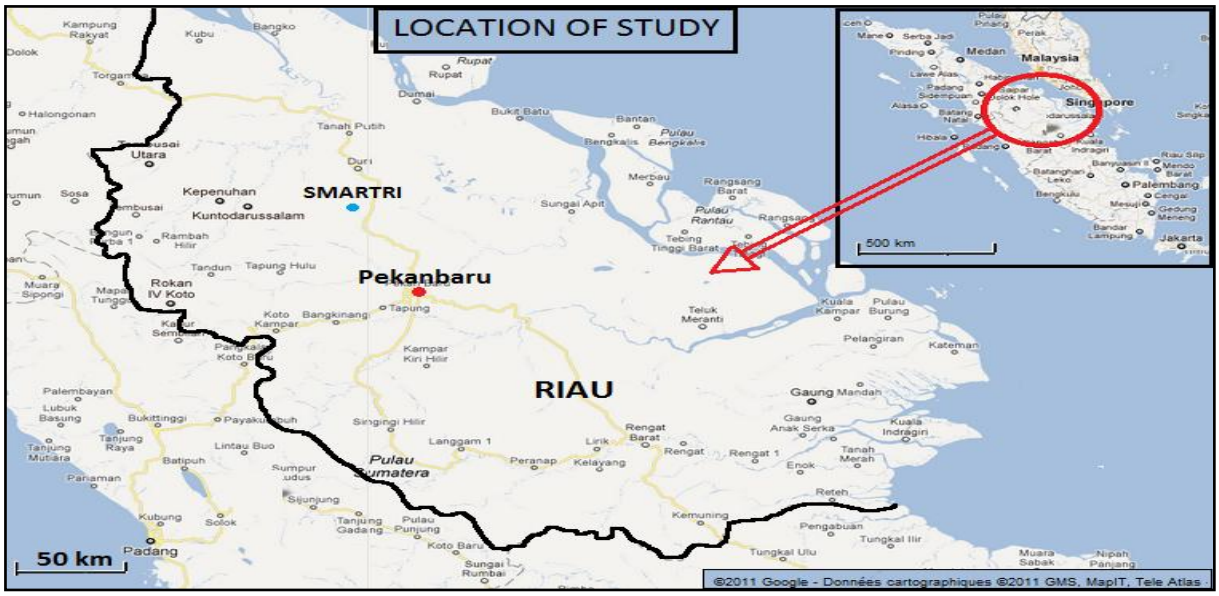

Fig. 1 Location of Study.

Agrarian diagnosis approach has been used to make a typology of farms and another typology of smallholding plots that exist in the region. Agrarian diagnosis method by Sacklokham and Baudran (2005) was used in this study to understand comprehensively the agricultural conditions that exist in the region in order to understand how the development of palm oil plantations occurred and the factors that played a role in the dynamics of plantation. In explaining this way the actual agrarian situation, a typology of oil palm farms and a plot typology were built. These typologies divided farms and plots into groups that are significant for the regional oil palm development, which also have specific characteristics. In each farm, an oil palm plot is defined as a field where palms were planted in the same year with the same planting material.

Biophysical environmental analysis was done by studying location maps, soil maps, contour maps, and climatic maps within and surrounding Sinarmas plantation. Then field crosschecking was performed to determine differences in farming practices carried out under the different biophysical environmental conditions. The data collected at this stage included:

- Soil type;
- Climatic data (position coordinates, the average temperature, average rainfall, the number of wet and dry month per year);
- Topographic data (slope, altitude);
- Source of water (irrigation, ponds, rivers, water reservoirs);
- Land accessibility.

Biophysical and environmental analysis aimed to find out the relationship between biophysical and environmental conditions with the agricultural exploitation and techniques applied by the farmers.

Historical analysis from the beginning of Sinarmas plantation in 1985 up to now was organised through interviews with key persons who know the history and dynamics of oil palm development in Riau Province. This interview was conducted with:

- The native people who had settled in this region before the opening of Sinarmas plantations;

- Pioneer workers who came in to carry out plantation;
- Contract workers which were brought in from Java and Lombok during the early plantation development;
- Participants of general transmigration and PIR-Trans program;
- Leaders and staff of Sinarmas who are aware about government policies related to the development of plantations and its reality on the field;
- Cooperative leaders and staff who know the history of development scheme for smallholding plantations.

Crosschecking data were obtained from literature study and comparison of data collected during interviews, about the factors that influence estate and smallholding plantations development, such as: government policies, fluctuations in oil prices and world market conditions, origin of farmers, when and why they move to this region, their opportunities to get land, credit for plantation, selected planting material, fertilizer, technical help, commercial relations with agro-industries.

RESULT AND DISCUSSION

Government policy for agricultural development. Development of oil palm plantations in Riau Province, has began in early 1980s, triggered by government policy in a low-interest credit scrolling for industrial plantation named *Kredit Perkebunan Besar Swasta Nasional* II (Credits for Big Private National Plantation Company II) which was a relief from world bank. At that time, in the region there were many ex-timber extraction land that were dormant, so that local governments adopted policies for the development of oil palm plantations giving land concessions to industrial companies.

Since 1984 Sinarmas have taken advantage of the opportunity to establish plantations with a nucleus estate of industrial plantations and plasma of smallholding plantations implanted by the company, up to a total area of 46,882 ha. In order to fulfill manpower, contract workers were imported from North Sumatra, and Java. In general Workers from North Sumatra, already have knowledge about the cultivation of oil palm. They mostly worked in oil palm agro-industries, or even already have oil palm smallholding plantations before. Therefore a year after arrival, they began to buy the land from indigenous people in order to grow independent smallholding plantations. The land they bought was ruled by customary rights of indigenous people (*Suku Sakai*).

Workers from North Sumatra started to plant independent plantations using unselected planting material, i.e. open pollinated seedlings uprooted in selected plantations. In the same time, workers from Java didn't know enough about oil palm, thinking that the cultivation and processing of palm require too much high technology for smallholdings' farmers. Big wave of arrival from North Sumatra occurred in 1990. They generally carry capital and buy land from indigenous, while the other ones came as plantation workers. The rapid development of independent smallholdings has increased the demand for selected planting material. However, access to selected planting material was very difficult for many independent smallholdings who finally planted open pollinated progenies because:

- Low availability of selected seeds;
- Agro-industries were priority customers for seed producers;
- The way to buy selected seed is not obvious for a smallholding.

In District Kampar, About 40km from the first site of Sinarmas plantations, the government has conducted a general transmigration program, helping people to settle producing food crops for self consumption and sales, during period 1982-1986. People from populated areas in Java have been brought in. However, the transmigration program in the region did not succeed because of:

- Soil fertility is low compared with Java fertile soil;
- There were a lot of pest such as elephant, pig, and rat.
- The low motivation from the transmigrants which joined the program just to obtain the land and subsistence help during first two years, and after they sold the land and returned to their hometown to rejoin other transmigration program.

Some migrants sold their land to migrants who opted to stay, or to comers who are generally come from North Sumatra one year after the arrival of transmigrants. At that time, transmigrants and comers were able to survive by working as laborers on logging companies, or agro industry which had begun to develop since 1984.

In 1988, the government has charged the national private plantation company (PBSN) to involve the communities in oil palm plantations ownership. For the development of new plantations, agro-industries are required to allocate 80% of their concession for smallholding plantations. According to the policy, Sinarmas started 1992 to create smallholding plantations through PIR-Trans program, on forest previous. Transmigrants from Java were brought in 1994. Furthermore, Sinarmas had started 1994 a partnership with the communities to implant smallholding plantations on the ex-land of general transmigration program (food crops based), trough the PIR program. The community is very excited about this partnership because about 50% of the recipients were comers from Sumatra who already know the economical potential of oil palm and also had work experience in oil palm plantations. On these land, previous culture were either forest or food crop because on arrival, each transmigrant received 1ha of agricultural land for growing food crops, and 0.75 ha of reserve land still forested.

After 1995, a new government policy, called "cooperative scheme", stopped the bank to attribute the planting credits directly to each individual farmer, planting credit was therefore given to farmer cooperatives through agro industry in order to guaranty the implantation of smallholding plantations. So from 1996, Sinarmas built cooperative scheme plantations in collaboration with the communities in the land of the ex general transmigration program. Therefore, previous were either forest or food crops in cooperative scheme plantations implanted by the local agro industrial company, Sinarmas.

Table 1. Dynamic of oil palm plantation in Riau Province.

No	Period	Year	Influence factors	Impact/Change
1.	Early development of oil palm	Early 1980	- Credits for Big Private National Plantation Company II - Policy of Riau provincial government to utilize idle land ex timber extraction	Development of oil Palm estate plantations in Riau Province
2.	Development of Independent Smallholding Plantation	1985 – now	- Development of estate plantation attract arrival of workers and immigrants who have knowledge background about oil palm cultivation - Availability of land sold by indigenous	Development of Independent smallholding oil palm plantation
3.	Development of plantation NES scheme	1988 – 1995	- The Policy of Government commissioned the private company to develop oil palm smallholdings	Development of PIR-Trans in forest area and PIR Plantation in area of ex public transmigration
4.	Development of plantation Cooperative scheme	1996 – Now	- Government policy regarding the credit scheme of planting for development of smallholding plantation	Development of smallholding plantation in the form cooperative scheme (KKPA)

To create an oil palm plantation requires basic needs: land, capital, and knowledge about oil palm cultivation techniques. Knowing the history of smallholding plantation development in Riau, a farm typology was built on two criteria:

1. Status of farmers at arrival, which is linked to land access conditions and to the region of origin, a region with or without oil palm plantation.
2. Capital available and economical activities in farm.

Status of arrival is important, because it relates to their knowledge about oil palm. Land buyers and Worker generally know the prospect and cultivation techniques of oil palm, because they come from Sumatra, where the oil palm had been developed. Indigenous and migrants generally do not have knowledge at all about oil palm, because it isn't cultivated in Java, while indigenous previously they are shifting cultivators. Capital available and economic activities in farm are important because they draw the investment capacity of farmers, their ability to buy land, and purchase of production factors.

Status of arrival. Based on the arrival status, smallholding farmers in this region can be classified into 4 groups, which are indigenous, transmigrants, land buyers, and workers. Indigenous is Sakai Tribe (*Suku Sakai*) who has been living in the area for generations. When the Sinarmas plantation was created, they were still practicing traditional life, such as shifting cultivation, fishing, looking for rattan, tapping latex of jelutung (*Dyera costulata*, syn), and hunting. Transmigrants came from Java following the government's program, both the general transmigration (before 1988) and PIR-Trans program (after 1988). Land buyers are comers who arrived last in the region, after the establishment of plantations and after the transmigrantion programs. Workers are those who came to work both in the agro industry (industrial plantations, palm oil mills, and research units), timber extraction and mining companies, and those who work as agricultural laborers in smallholding plantations.

Based on capital available and on economical activities in farms, there are three categories, ie. 1) Doing business or bring big capital, 2) bring small capital, and 3) no other economic activity. "Doing business or come up with a big capital", is they who came up with enough capital to buy more than one plot of scheme smallholding, and those who did business (trade, grow vegetables or fruits that are fast making money, raising livestock, land clearing services with chain saw, business transportation or garage), that allowed them get a enough money to buy some scheme smallholding plots. "Small capital" are farmers who arrived with the capital that allow them to buy just one plot of smallholding scheme plantation. "No business" are the farmers who have no other economic activity than oil palm farmer.

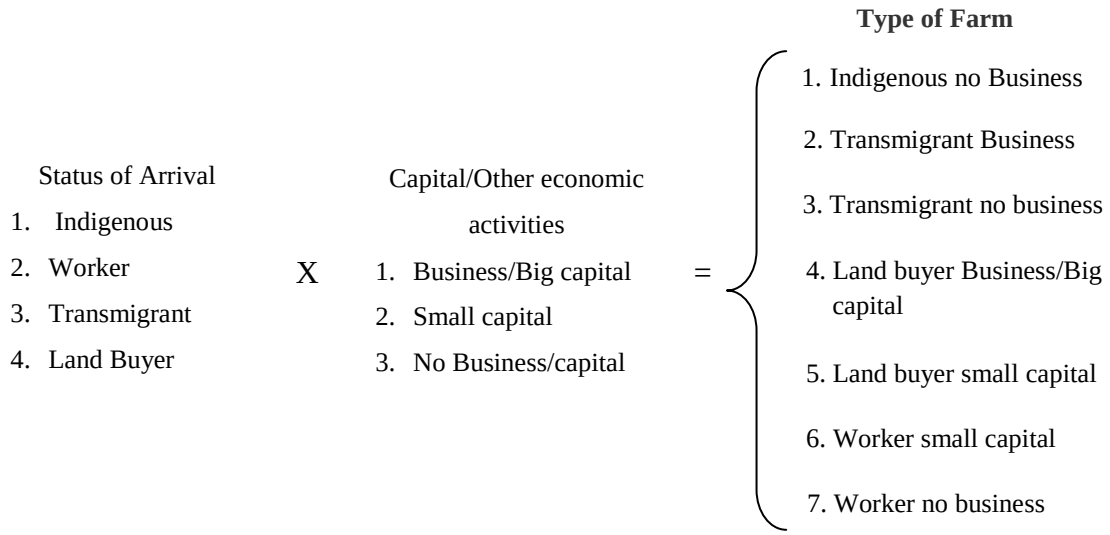

Fig. 2 Based on the 2 criteria of typology, status of arrival and capital, farm in the region can be classified into 7 types.

Crossing our two typologies, we draw out the dynamics of plantation in Riau. In the relationship analysis between farm type and owned plots, simplification was made joining the

previous forest and food crops in the same supra type, because previous culture had no effect on prices and public preferences for buying plantations.

At the beginning, smallholdings land in the region is only owned by transmigrant and indigenous. The return of transmigrant to their hometown give an opportunity for land buyers and workers (in agro industry, timber extraction, or Mining company), and other migrants who have business to buy full and semi managed plots. Selling of customary land by indigenous also give opportunities for land buyers and workers to build an independent plot. However, full and semi-managed plots are preferred because it could potentially provide greater benefits.

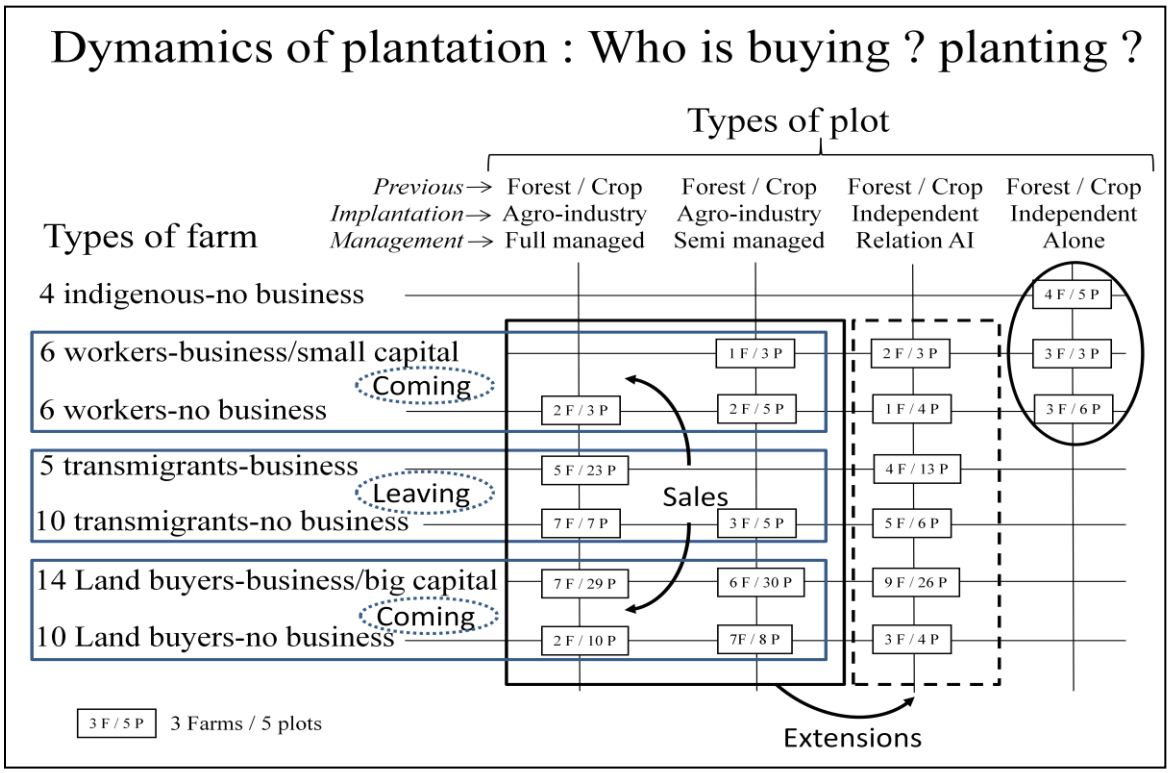

Fig. 2 The dynamic of Oil Palm Plantation in Riau Province

After the planting credit paid off, the price of full and semi managed plot becomes very high, and could only be achieved by land buyers who have big capital or doing business and transmigrants who doing business. Because the expensive of full and semi-managed price, they who already have a full and semi-managed plot extending their plantation by developing an independent plot. The knowledge during manage full or semi managed was applied in independent plot they created. Therefore the plot they built is independent plot related with agro industry.

Workers who come at the period after the planting credit paid off, are no longer able to buy full and semi managed plot. They have palm plantations by establishing an independent plot. Not all workers who come in this period have a relationship with the agro industry. They who work on agro industrial plantations have got the technical knowledge of oil palm cultivation, therefore the plot that they built is independent plot related with agro industry. They who work on palm oil processing mill, timber extraction and mining company, or as agricultural laborers on full and semi managed plots did not receive any knowledge about the technical cultivation of oil palm from agro industry. The same thing occurred on indigenous. They do not have any relationship and never received the knowledge about the cultivation of oil palm from agro industry. Therefore the plots they developed ere Independent alone plots.

CONCLUSION

Dynamics of smallholding plantations in Riau Province proved to be complex and moving in the historical time. It started with the development of agro industrial plantations, followed in 1985 by the planting of independent smallholding plot by agro industrial workers, around the estate plantation. Then government organized and encouraged such settlements with the transmigration programs. During the last decade many ownership transfers occurred from the beneficiaries of the program (transmigrants) to land buyers and workers who came from Sumatra. It results of this a range of eight types of smallholder's plot from the "full managed" by agro-industry to the "Independent alone" without technical advice.

REFERENCE

Feintrenie, L., Chong, W. K., Levang, P. 2010. *Why do farmers prefer oil palm? Lessons learnt from Bungo district, Indonesia.* World Agroforestry. Bogor.

Indonesia Palm Oil Advocacy Team - Indonesian Palm Oil Board (IPOAT-IPOB). 2010. *Fact of Indonesian oil palm*. Indonesia Palm Oil Board Press. Jakarta.

Sawit Watch, Serikat Petani Kelapa Sawit, and Pusat Studi Ekonomi Kerakyatan UGM. 2010. *Independent smallholdings in the Indonesian oil palm industry. Sawit Watch*. Bogor.

United States Department of Agriculture Foreign Agriculture Service. 2010. Indonesia*: rising global demand fuel palm oil expansion*. Commodity Intelligence Report Retired from http://www.pecad. fas. usda.gov/highlights/2010/10/Indonesia/.

World Growth Oil Palm Development Campaign. 2011. *Pentingnya kelapa sawit bagi perekonomian Indonesia. Rapport World Growth 2011*. Retrieved from: http://www. worldgrowth.org/assets/files/WG_Indonesian_Palm_Oil_Benefits_Bahasa_Report2_ pdf.