

OIL PALM BUSINESS MODELS

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I Introduction

Oil palm plantations have expanded a lot during the last three decades in Southeast Asia, and especially in Indonesia, in answer to the growing international demand for vegetable oil (see 2012 consumption per country, figure 1). Since 2008, Indonesia has been the first world producer of palm oil, ahead of Malaysia. In 2012, the country produced more than 31 Mt of Crude Palm Oil (CPO). Oil palm expansion was much less intensive in Africa. African countries are far behind in term of production (see figure 2), with Nigeria (more the 930 000 t in 2012), Ghana (about 240 000 t) and Cameroon (about 210 000 t) as the main African producing countries (Index Mundi 2013).

Expansions in Indonesia have become more complicated since 2010 and the commitment of the State in a moratorium on deforestation, signed with Norway, and the commitment of oil palm biggest companies in the Roundtable on Sustainable Palm Oil (RSPO) which includes a prohibition to plant on forested areas. Investors are now looking at other suitable areas to develop oil palm plantations. These areas rest in the Amazonian basin and in the Central African region.

Oil palm plantations are very diverse, ranging from smallholder plots of less than 1 ha targeting family or village consumption of artisanal palm oil in Cameroon, to very large industrial plantations of more than 50 000 ha hold by multinationals in Indonesia targeting urban consumers of the producing country and exportation. Various arrangements are signed between industries, governments, and local populations. These arrangements defined the relationships between the actors of the producing sector, and the conditions of benefit sharing among these actors. The livelihoods impacts on local peoples raise concerns among outsiders, who point at the risks of unfairness, manipulation and abuses of the population; examples abound in the oil palm sector in Indonesia, and in rubber development in Southeast China and Laos. Another major concern is the direct consequence of rapid conversion of large areas into plantations, which can have a direct impact on local people's access to land, and can induce the displacement of food crop production, and cause direct or indirect deforestation.

Oil palm business models are defined as the oil palm production system, including the producers, the milling units, the relations between industries and producers, and the intermediate actors if any. Based on literature review, field data collection from 2007 to 2010 in Indonesia and in 2012-2013 in Indonesia and Central African countries, the paper questions the impacts of oil palm business models on local livelihoods.

II Material and Method

The analysis draws on socio-economic surveys conducted in Indonesia from 2007 to 2010 (see Feintrenie 2010) and updated in 2013, and interviews of key stakeholders (ministries, oil palm industries' managers, villagers nearby industrial plantations, NGOs) conducted in 2012 - 2013 in Cameroon, Gabon and Republic of Congo, completed with scientific literature review and media reports review.

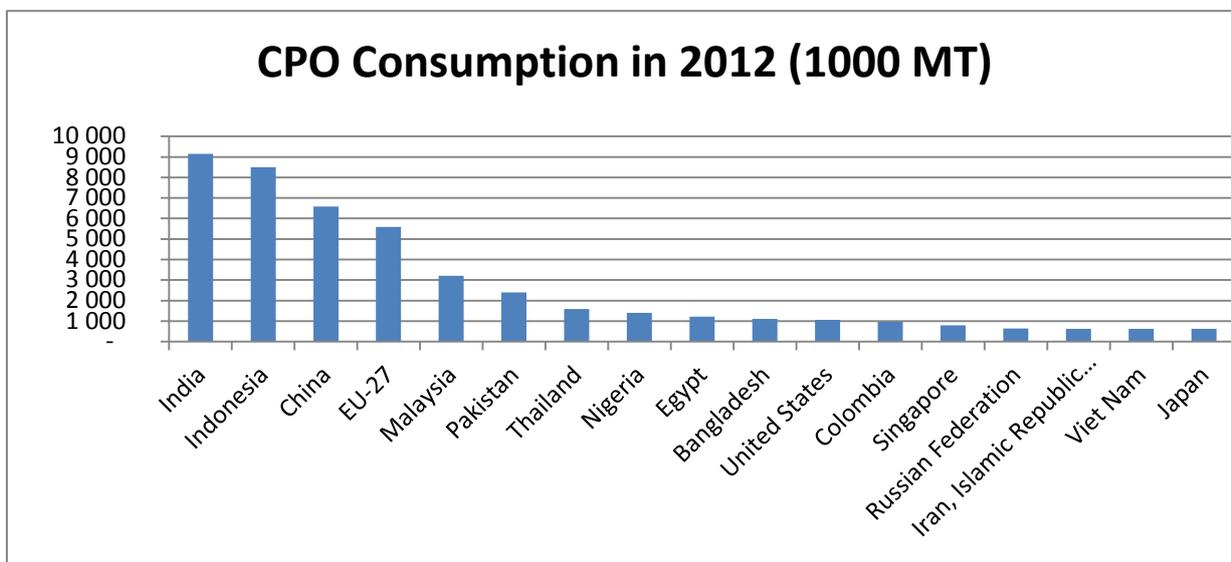


Figure 1: World consumption of Crude Palm Oil (CPO) in 2012, per country. Source: Index Mundi 2013.

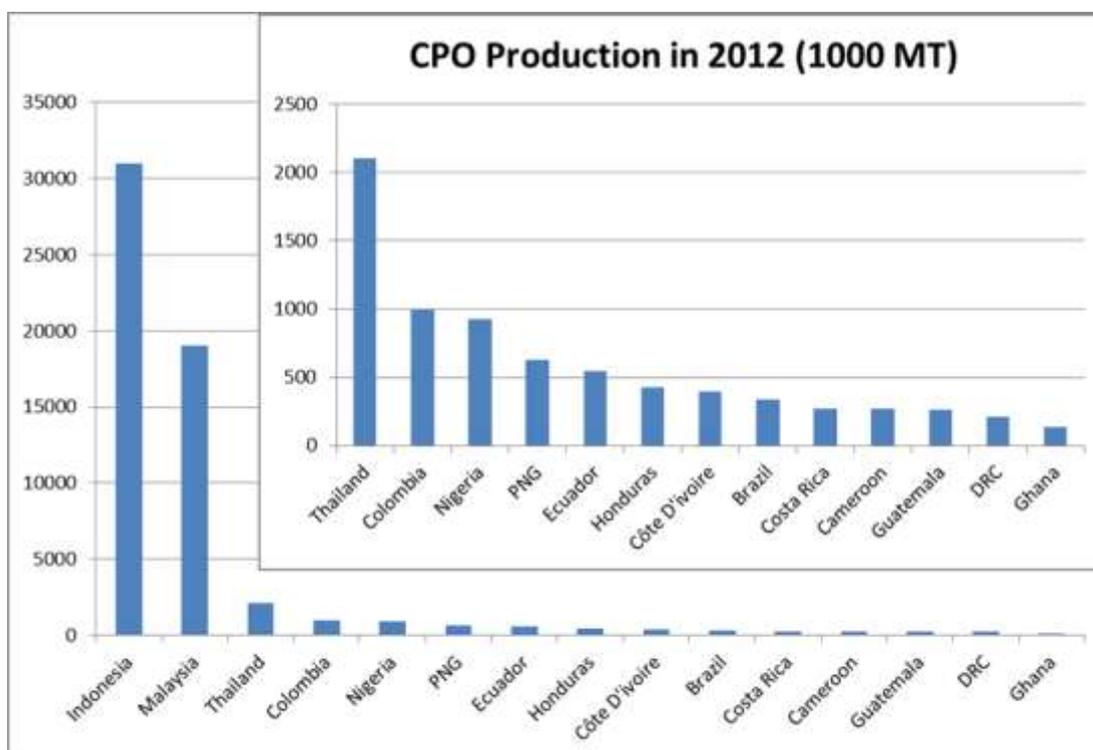


Figure 2: World production of Crude Palm Oil (CPO) in 2012, per country. Source: Index Mundi 2013.

III Results

1. Smallholders and artisanal milling in Central Africa

Three types of plantations are present in Central Africa: agro-industrial estates, contracted small and medium holders who supply industrial mills, and independent smallholders who might also produce artisanal red palm oil at home with artisanal mills. Smallholders with less than 5 ha of oil palm represent more than 75% of oil palm growers in Cameroon. Most of them don't have access to good quality seedlings, use little inputs, cultivate food crops between juvenile palms and face mortality due to rodent (Cheyins and Rafflegeau 2005). As a consequence, the return to land of smallholdings are quite low with about 318 €/ha/year in Cameroon for the production of FFB (Hayatou 2013).

In Cameroon, as in the entire Central African region, the traditional extraction by hand and foot of red palm oil with water is well spread and allows processing a small quantity of FFB. For processing at home a bigger quantity of FFB, equivalent to the production of 3 to 30 hectares of oil palm, smallholders use manual or motorized artisanal press (Hayatou 2013). A traditional way of extracting palm kernel oil at home by heat is also wide spread in West and Central Africa, palm kernel oil is used to produce artisanal soaps and for custom medicine.

The artisanal sector of transformation of FFB in various products is well developed. The artisanal extraction of red oil by the farmer with a small-scale mill allows him/her to get an added value of about 40 €/ha/year, with nearly no added production costs (Hayatou 2013). In these conditions, it is more profitable for a smallholder to process red oil and sell on the local market than to sell FFB to an industrial mill. The artisanal transformation of FFB to red oil is also an opportunity of livelihoods resources for widows and lonely women, who have poor access to land. It is worth mentioning that some women workers in oil palm farms (for transporting FFB), demand to be paid in loose fruits in order to get raw material to extract artisanal red oil. (Hayatou 2013)

Another African specificity of the oil palm production model is the production of palm wine and palm alcohol (distilled palm wine). Palm wine is produced after cutting down the palm trees, slashing off the palm leaves in order to collect twice a day the naturally fermented sap (Cheyins and Rafflegeau 2005). Cutting a thin slice of the apex twice a day allows the sap collection during about one month and is very profitable. The oil palm plantation can be used as a cash-reserve, cut for palm wine production when there is an important need for cash in the family, to cover medicinal costs, education or university costs, or ceremonies. The benefits of slashing down the palms can also be used to invest in replanting, and cover input costs. There is here an opportunity to improve smallholdings productivity by providing to smallholders a market on which to buy selected high quality seedlings and fertilizers (see Rafflegeau 2008 on good practices of production for smallholders).

The government attempted to develop the oil palm sector by promoting Nucleus Estates and Smallholders (NES) projects. The so called 'village plantations' are owned by smallholders under contract with an industrial mill. The contract states that the smallholders will sell all their production to the mill and receive a monthly payment for the FFB with deduction of the reimbursement of a credit to cover planting and production costs. The enterprise possesses and manages an industrial plantation and a mill. Workers on the estate and at the mill are usually migrants coming from other Cameroonian regions. The first projects of village plantations date from the 1970s, and were supported by the National Fund for Rural Development (FONADER). The public development company, Socapalm, was developed on this model, with the plantation of the estates started in 1969, and development of surrounded village plantations beginning in 1978 (Rafflegeau 2008). The proportions in surface between the Socapalm plantation and the village plantations are around 70% of estates and 30% of

contracted-smallholdings. The CDC and Pamol also benefited from the village plantations program (Nkongho et al. 2013).

The program didn't last long, the Fonader bankrupted in 1991 due to several problems: (i) unclear management of the credits, with complete lack of transparency, (ii) long-term reimbursements justified by very high rates of interest, (iii) in reaction, a lack of reimbursement of the credits by the smallholders, who preferred selling their fruits on the informal artisanal market to avoid paying back their credits (Nkongho et al. 2013), or to buy a small scale mill and produce red palm oil to sell on the local market, or to sell their FFB to another industrial mill (Cheyns and Rafflegeau 2005; Nkongho et al. 2013). The failure of the model in Cameroon probably lies on the weak dependency relations between contracted smallholders and the enterprise involved in the project. The presence of the artisanal palm oil sector and the domestic red oil consumption in Cameroon, open a window for contracted-farmers not to respect their contract, and process their FFB at home or to sell the fruits to artisanal mills.

2. Industry-smallholders partnerships in Indonesia

The main oil palm production system in Indonesia is also based on the NES scheme. In the late 1970s, 'Perkebunan Inti Rakyat', Indonesian translation of 'nucleus and community plantation' was introduced as part of the transmigration program (Levang, 1997), a public program which aimed at moving landless volunteer farmers from the over populated islands of Java, Madura and Bali to the less populated islands of Sumatra, Kalimantan and Sulawesi. In the 1980s, oil palm plantations began to expand in Sumatra island, as part of PIR or as industrial plantations with no agreement with smallholders called 'Perkebunan Besar Swasta' (PBS). At the end of the 1980s, 'Primary Cooperative Credit for Members' or 'Koperasi Kredit Primer untuk Anggota' (KKPA) were promoted by the government (McCarthy and Cramb 2009). KKPA could be associated with a transmigration project, with local population joining the KKPA cooperative and transmigrants benefiting from a PIR scheme.

PIR and KKPA, rely on a contract signed between a company, smallholders grouped in cooperatives (so-called plasma-cooperatives), and a bank, under the supervision of the government. Usually, the deal includes the handing over, from the village to the company, of some land against financial compensation. This land bought by the company participates to the nucleus of the plantation, in opposition to the plasma made up by all the smallholdings participating in the venture. Different conditions of contract exist in Indonesia, with various proportions of the land sold to the industry by smallholders above the land conserved as plasma plot, and involving either a financial credit or a share of the net product (table 1).

Type of contract =>	PBS	KKPA	KKPA	KKPA	KKPA
Land share (% sold to industry / % preserved in plasma)	100 / 0	80 / 20	70 / 30	50 / 50	0 / 100
Net product share (% taken by the industry / % of the plasma member)		0 / 100	0 / 100	60 / 40	0 / 100
Credit		yes	yes	no	yes

Table 1: Examples of the main conditions of contracts between plasma holders and industry

Local governments participate in the process through facilitation of discussions between the partners and land titling. If there is a credit, the bank keep individual land titles as collateral, and the company is responsible for collecting the repayments from the farmers. Charges are made for all services. Plasma holders are paid monthly after deduction of all installation and production costs. If the contract involved a credit, a percentage of the net product is kept to pay back the credit.

The degree of responsibility of the plasma holders and cooperatives in the management of the plantation depends on each specific case. In some cases, the industry manages all the technical operations on the plantation and the cooperative is only responsible to distribute their gains to the plasma holders. In other cases, the cooperative manages the plasma plots under the technical directions of the industry (calendar of activities, access to inputs). At least, plasma holders might manage their own plot themselves, benefiting from an easy access to inputs and technical advice through the cooperatives.

The benefits of such contracts for the plasma holders depend on the conditions of land sharing and of credits. Too often interest rates of the credits are very high (above 12%), with installation costs also high, especially in sloppy areas where terracing is needed before planting. In these conditions only a quick reimbursement allows to get out of debt, if the plasma holders wish to devote only a small part of the net product to the repayment of the debt, they might not been able to pay back the whole credit in the duration of the plantation (25 to 30 years).

Some independent smallholdings are developing around industrial and plasma plantations. These smallholders sell their production to middle-men, who sell it to the oil mill. Middle-men are important actors in this market: they collect FFB from many smallholders and then negotiate the price with the mills. They can even organize strikes or protests if they disagree with the enterprise's decisions (Feintrenie et al. 2010). Oil palm independent smallholdings are less productive than estate plantations and plasma plantations. Farmers do not have access to seedlings of productive varieties, they lack of knowledge in the best practices on fertilization or pest management. But they are learning, asking for advices to workers from the estates, employing them as daily workers or plantation managers. Oil palm plantations are profitable to independent smallholders, especially in comparison to other smallholder's plantations (Feintrenie et al. 2010). The return to land of an oil palm smallholding is quite comparable to a rubber or cocoa one, depending of the price of these commodities, but return to labor is generally higher on an oil palm plantation thanks to the poor labor needs.

3. Joint-ventures, and alliances

An alliance aims to organize smallholders in order to collect their FFB, to offer them credit, technical assistance and opportunities for inputs at coarse price and to become share holder of a mill according to their surface. Industries participating in this scheme can benefit from financial help from the government and secure their supply in FFB (FEDEPALMA 2010). Credit for smallholders is one of the similarities with the NES development model. Smallholders join the alliance with their own land, like in Cameroon or in Indonesia (Feintrenie and Rafflegeau 2012).

Thanks to a combined development of industrial oil mills and smallholdings under 'alliances', smallholdings represented 19% of the total planted area in 2012 and smallholders were about 5400 (Pacheco 2012). Alliances are based on a win-win partnership between smallholders and an oil mill.

IV Discussion

1. How smallholders-industry partnerships can work?

National procedures have been developed by governments to limit risks of land grabbing and negative impacts on the environment and the population impacted by large-scale land acquisitions. These usually involve Environmental and Social impact assessments (ESIA) conducted either by independent consultants or by public officers (or the two together), followed by operational plans of impact management, signature of Free Prior and Informed Consent (FPIC) with writing of the enterprise commitments in specification books signed by all the parties. These agreements and documents are part of the requirements of certification procedures, and have become national standards. Thanks to this, even not-certified industries have to respect some minimum requirements to ensure certain sustainability in the use of large-scale land acquisitions (Feintrenie 2013).

As an example, the Atama society, installed since 2012 in the North of Congo, is not certified, but the society respected the legal procedure and it took 2 years of assessments and discussions between the signature of the agreement protocol with the Ministry of Agriculture and the decree of authorization of occupation of a public land reserve for 25 years (renewable). During these two years, ESIA were conducted, FPIC were negotiated and signed (in November 2012, some villages were still negotiating with the enterprise and the preparation of the land for plantation around these villages was postponed until signature). The main difference between this plantation and a RSPO certified one thus lies in the impact on forest. Indeed, Olam in Gabon, RSPO member, refused land in High Conservation Value (HCV) forests, inundated forest or Ramsar sites, and Sime Darby, RSPO certified, cancelled its plans of oil palm plantation in Cameroon because only forested land were available for large-scale plantations. On the opposite, Atama is not a RSPO member, and thus accepted a concession in a forest area, part of the concession being a declassified forest (from the UFE Ngombe), and part being on inundated forest, and even argued to the government officers that savannahs were not suitable for oil palm plantations, without further enquiry in the actual production potential. Because Olam-Gabon followed the RSPO recommendation to define the area to be planted, including FPIC, HCV assessment, buffer zones around rivers and inundated areas, 70% of the land attributed by the State to the group was stepped aside and will not be planted. Part of it has been excluded from the Olam concessions (especially areas on Ramsar sites or where villages refused the project), and part will remain under the management of Olam but not be planted (HCV areas, buffer zones) (Feintrenie 2013).

2. Opportunities for oil palm development

Oil palm is the most extended commodity in which international holdings have been investing in Central Africa since 2000, with the largest concessions acquired totalizing more than 870 000 ha (Atama in Congo, Olam in Gabon, SG-SOC in Cameroon, TriNorth Capital in DRC) and the biggest plans of expansion totalizing more than 260 000 ha (FriEl Green and ENI-Congo are negotiating in Congo, GMG is negotiating in Cameroon and Gabon, Olam will expand in Gabon, Siva and SG-SOC are negotiating in Cameroon). This rapid expansion of oil palm plantations answers to the domestic demand (all the countries of the region are net importers of palm oil), the global demand for edible oil (human and animal), industrial use and biofuel. The region is also targeted as a suitable place for oil palm, which is natural to the region, with huge areas of non-cultivated, non-protected and low-population-density land. However, potential yields are lower than in Southeast Asia because of the rain regime (with a dry season) and lack of sunlight during the rainy season. But land is getting scarce in Southeast Asia, and industrial producers are looking for new regions to invest in. Africa is an

interesting market, and close by Europ, but Latin America might be more interesting in term of yield potential. Besides, certified companies will not develop plantations on forested lands, and might not be willing to invest in savannahs with higher uncertainty on the level of production. For this reason, and because of the difficulties encountered in its plantation in Liberia, Sime Darby has decided to cancel its plan of oil palm plantation in Cameroon (600 000 ha of oil palm plantations were at stake). Sime Darby is one of the funding members of RSPO, and much involved in the promotion of a sustainable palm oil production, thus it was considered impossible to them to develop a plantation on forested lands, and no large-scale (above 300 000 ha) non-forested land suitable for oil palm was available. Certification might thus slow down and limit the surfaces to be converted to oil palm plantations in the future in the region.

One common same risk remains everywhere: land grabbing by international companies or local elites. Land grabbing by local elites has been observed both in Cameroon and Indonesia, and reported in numerous countries. The arrival of an industrial plantation creates a land market where land never had a price but was more or less freely accessible to anyone willing to convert it to farming. Confronted to an opportunity of accessing quickly and easily to a lot of cash, numerous farmers decide to sell their land. Money is spent in more or less long-term investments: paying studies to the kids, buying a car or building a new house. But next generations are left with villages surrounded by foreigners' lands, and no more land to develop their own agricultural plots.

IV Conclusion

The development of large-scale industrial oil palm plantations might be of interest in countries of low population density with large areas of non-forested unoccupied lands. On the opposite, in countries with high density of family farming, oil palm smallholders should be favored, as well as artisanal mining of red palm oil. Nonetheless, new forms of partnerships between the industry and smallholders – such as alliances in Colombia - must be imagined to adapt to the African context. These partnerships must include technical support to the oil palm growers and access to facilitated access to high quality seedlings and inputs, against the sale of their bunches to the mill at a price similar or superior to the local market price. The joint-venture system of ownership of mills might be an opportunity to better secure the participation of smallholders into the partnership.

In general terms, sustainable oil palm development requires compliance to international standards of sustainable production such as RSPO certification; the 'free, prior and informed consent' of any community directly or indirectly involved in a development project or who use or benefit from the land or natural resources which will be affected by the project; and transparency on any negotiation of concession, and on management of planting credits. Land agreements have also to be respected on a long term basis in order to avoid conflict with landowners. A sustainable oil palm development also requires investment in increasing FFB productivity of smallholdings, as well as favoring private investments of agro-industries which can provide skills, productivity, and capacity of investment.

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