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Breaching the black box: The role of ramps in Thai sustainable palm oil certification

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Abstract: *Certification of sustainable palm oil as organised through the Round Table on Sustainable Palm Oil is based on a simplified understanding of the global palm oil value chain – according to which instructions about production practices can be directly translated from the palm oil mill to the primary producer. The reality of palm oil provision is much more complex than this as is shown in the case of Thailand. On the basis of qualitative field study in Southern Thailand this paper clarifies that intermediary stages, such as the collection of oil palm fruit bunches at the ramp, play a key role in the organisation of the chain. The fluidity and complexity of the palm oil flow at the local level complicates the promotion of sustainability through certification. Global and national stakeholders, such as processing and trading firms, non-governmental organisations and national governments, should therefore open this black box of local dynamics to more effectively contribute to sustainability in palm oil supply.*

Keywords: *palm oil, ramps, Round Table on Sustainable Palm Oil, sustainable value chains, Thailand*

Introduction

Palm oil production does not always take place in accordance with the environmental concerns expressed at the sites of consumption. Certification schemes such as the Round Table on Sustainable Palm Oil (RSPO) have been designed to deal with these concerns – enabling the provision of responsible and sustainable palm oil. The RSPO is a non-profit organisation created in 2004 to promote sustainable palm oil. It is composed by nearly 670 organisations representing different categories of stakeholders such as growers, processors, manufacturers, retailers, banks and investors, environmental non-governmental organisations (NGOs) and social/development NGOs (RSPO, 2013b). According to the RSPO, this governance structure ensures the ‘representation of all stakeholders throughout the entire supply chain’.¹ By directly involving key stakeholders, the RSPO aims at maximising credibility and compliance to sustainable production standards. The organisation aims to develop and implement standards for sustainable palm oil and promote the interests of people, planet and prosperity in the

production and use of palm oil. Today, RSPO certification is the most widespread international palm oil certification scheme. The scheme is based on eight general principles – each further defined into one or more criteria – which are translated locally by national interpretation working-groups.² In RSPO chains producers and mills are the main certified actors (RSPO, 2009, 2013a). However, intermediaries such as middlemen also link local producers with the global market – often without being certified. The ramps in Thailand are one example of such intermediaries. Ramps are collection points where fresh fruit bunches (FFBs) from different smallholder oil palm producers are collected, purchased and subsequently sold to the mills. Ramps not only collect FFBs but are also involved in supporting production and harvesting among smallholders. This paper argues that key intermediaries connecting local producers and global markets, (e.g. ramps in Thailand) such as middlemen, should not be ignored when designing global sustainable palm oil certification and analysing how demand are translated into local production practices of standards.

This study looks at global RSPO certification and its application and enforceability at lower levels of palm oil production in Thailand. The role of locally embedded actors is analysed to identify missing links in the process of translating globally agreed upon environmental standards into the local production context. Ultimately, we would like to answer two questions: first, whether the RSPO certification scheme is a useful tool for promoting palm oil sustainability in Thailand; and second, whether the RSPO has contributed to the vertical integration of the upstream palm oil chain in Thailand, by allowing for material as well as information flows downstream in the certified chain and thus linking consumers' demand with producer's supply.

The article is structured as follows. In the next section, we present the theoretical framework of global value chains (GVCs) that we apply in this study. The third section outlines the characteristics of the Thai palm oil sector and RSPO initiatives. The fourth section presents the materials and methods used in the research. The fifth and sixth sections present our empirical findings on the role of ramps in RSPO certified GVCs from Thailand, while conclusions are provided in the final section.

Conceptual framework

Value-chain studies (Gereffi, 1994, 1999) have their origins in the commodity chain analysis of Wallerstein (1974) and Hopkins and Wallerstein (1986) intending to study the steering role played by private companies in the global market. Gereffi (1994) introduced the distinction between producer-driven and buyer-driven GVCs. Producer-driven GVCs are characterised by industrial and capital-intensive manufacturing, where most of the value added is generated at the production level. Buyer-driven GVCs are typically associated with agrarian commodities (Gibbon *et al.*, 2008), where most of the value added is generated at the wholesale-to-retailer level. Buyer-driven chains usually see a shift of power from producers to trading/branding actors. The literature provides many examples of buyer-driven value chains where the production network is located in exporting countries, usually in the global South, driven by large

retailers and leading trading companies (Gereffi, 1994, 2014).

Power asymmetries have been understood as a crucial element in GVC governance, strongly associated with buyer–supplier interactions (Morrison *et al.*, 2008). Leading firms are identified as powerful GVC actors, seeking economies of scale to fight competitors in price and volume in a globalised risky market (Humphrey and Schmitz, 2002; Gibbon and Ponte, 2005). However, new forms of power are emerging in the context of the emerging network society (Castells, 1996). Networking power with a variable geometry and dematerialised geography is derived from organisations networking internationally. This form of power in global networks, such as GVCs, goes beyond the sovereignty of the nation-state while also going beyond a focus on economic actors alone. The actors' position in the network of production and supply and their level of decision-making on the specifics of the material (product and production) standards and the associated information flows, determines the relationships and hierarchies of power (Castells, 2009).

At the same time product diversification and branding increase the opportunities to capitalise on the fragmentation of the GVC. Value addition is shifting from upstream to downstream, hand in hand with a skewed yet growing mutual dependency: producers need the market opportunities offered by leading firms, but these require an assured supply of quality produce – typically leading to increased vertical integration (Gereffi *et al.*, 2005).

Increased vertical integration is associated with lower costs and improved efficiency, optimising both material and informational flows. Through private governance initiatives like the RSPO, buyers try to harness material and informational flows by investing in training, auditing and monitoring. These investments reduce the probability of moral hazard by suppliers through long-standing trust relations (Henson & Humphrey, 2010) but the costs involved make it also more expensive for a buyer to shift from one supplier to another. This analysis, however, largely ignores the increasing role of non-economic actors, such as NGOs and consumers, in steering the global chain, neither is much attention paid to how global dynamics are embedded in the specific

local context (Neilson and Pritchard, 2009). Market frameworks typically assume constant physical nodes of transaction without much interruption or divergence, while this characterisation may not be fully correct in the case of the palm oil GVC.

Network theories go beyond hierarchical dynamics to understand possible interruptions of linear relationships. In doing so, they introduce the concept of 'horizontal networks'. Horizontal relationships between a GVC and external, yet influential, actors may affect the transfer of matter and information from producers to consumers and vice versa (Gereffi *et al.*, 2005; Gibbon and Ponte, 2005; Coe *et al.*, 2008). Horizontal network actors may connect a particular value chain with parallel and interconnected markets. At the same time, these actors are in certain cases responsible for so called 'black boxes'.

Bush and Oosterveer (2007) define a black box in a GVC as the 'missing link' between producers and buyers, interrupting the linearity of chain relations. For instance, local traders may establish strong moral contracts within local communities spanning across the credit and the primary products markets. These 'middlemen' drive down the income of farmers and drive-up the costs for processing companies but remain an essential actor without whom the link between spatially diffused small-scale producers and distant concentrated large-scale processors would be mutilated. Although these middlemen, and horizontal network actors more in general, affect the ways in which value chains function (Goodman and Dupuis, 2002), they are often ignored when implementing value-chain standards. Transposing global standards into local contexts is not only the mere translation of requirements for compliance (Oosterveer and Sonnenfeld, 2013); it requires interventions targeting the specificities of the chain at different levels, including addressing the presence of black boxes at the local level (see Fig. 1).

If certification processes do not replace socially embedded horizontal relations and dynamics – or include them into the certified GVC – these horizontal networks can persist. Certified producers might therefore continue to interact with horizontal networks limiting their scope of action and hindering the expansion of certification (Ab Rahman *et al.*, 2009;

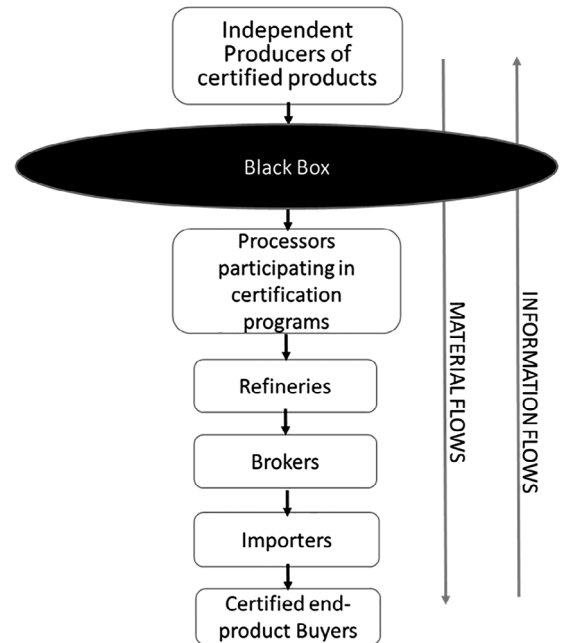


Figure 1. A certified palm oil value chain

Dallinger, 2011; Brandi *et al.*, 2015; Bray and Neilson, 2018). However, rather than simply rejecting locally embedded actors, certification programmes may also benefit from their potential role within the certified GVC – by converging formal (business) and informal (horizontal) flows of certification-relevant information (Bush and Oosterveer, 2007).

Standards like the RSPO intend to promote sustainability through vertical integration of material and informational flows. As we expect, the universal applicability of vertical integration in certified chains is a challenge, we intend to study whether the RSPO is a tool to promote sustainability in Thailand for smallholders. We do so by looking at (i) how the chain is organised and functioning, and (ii) at the dynamics in Thailand, where the relatively large number of smallholders forms a challenge for implementing RSPO-certification, but where also the first group of independent smallholders worldwide was RSPO certified.

Thai palm oil sector and RSPO

Palm oil, which represents 34% of the global production of vegetable oils, is cultivated on

less than 5% of the total area under oil crops (RSPO 2007). This is due to oil palm's high oil content and its relatively high yield in comparison with other oil crops (Mattsson *et al.*, 2000). Globally, around 3 million smallholder households take part in oil palm production (World Bank and IFC, 2011). Palm oil is an essential component of the diet in many countries, including some rapidly growing countries – particularly China, India and Brazil (Fitzherbert *et al.*, 2008) – and 75% of its production is traded internationally (World Bank and IFC, 2011). After Indonesia and Malaysia, Thailand is ranking third in production volume with 2.9% of global production (Colchester *et al.*, 2011).

While Indonesia and Malaysia are big exporters with solid markets, currently Thailand is mostly supplying the domestic market (Colchester *et al.*, 2011). In 2011, out of a total production of almost 2 million metric tons of crude palm oil (CPO), Thailand exported less than 0.4 million metric tons, while another 0.4 million metric tons was destined to biodiesel; the rest was used for domestic consumption (Office of Agricultural Economics (OAE), 2012; JIRCAS, 2014). The Ministry of Agriculture and Cooperatives has formulated a plan to increase the oil palm plantation area from about 650 000 ha in 2011 to 1.6 million ha, equivalent to 10 million rai by 2029 (Yangdee, 2007). Yet, the area under oil palm plantation may increase even further, given the rising trend in domestic palm oil consumption (Unjan *et al.*, 2013). Between 2008 and 2014 Thailand faced the highest growth rate of palm oil production worldwide (Indexmundi, 2014), while the oil palm area expanded rapidly (29% between 2000 and 2009, and another 18% between 2009 and 2011).

The reasons for this rise in production levels are partially historic, partially geographic. The palm oil industry only started developing in Thailand during the late 1960s, while Malaysia's palm oil sector dates back to 1917. Also, compared to Malaysia and Indonesia, Thailand is disadvantaged by lower rainfall and soil fertility, and by higher costs for improved planting material. The latter has led to the use of low-quality oil palm varieties planted on small-scale plantations, responsible for one third of Thai palm oil production today. As a consequence the Thai average palm oil yield is lower

than in Indonesia, while the production costs are higher, particularly in the north of the country (Yangdee, 2011). In fact, while the area with oil palm trees in northern and north-eastern provinces like Chonburi and Trad is expanding, these regions lack the necessary infrastructure, as processing plants which are located at a large distance.

At present 90% of Thai oil palm plantations are in the south, with the provinces of Krabi, Surat Thani and Chunphorn accounting for 72% of the planted area (Thailand's Office of Agricultural Economics (OAE), 2008 in Colchester *et al.*, 2011). Surat Thani province has been the highest contributor to the rapid growth of palm oil production in Thailand, with an increase of 14.6% in harvested area and 16% in productivity between 2009 and 2011. Thai FFB production grew with 2.6 million metric tonnes between 2009 and 2011 (+32%) of which 27.5% was due to Surat Thani alone. In 2011 Surat Thani produced 2.87 million metric tonnes FFB, closely followed by Krabi with a production of 2.86 million metric tons, both producing more than 26% of the total Thai FFB production (OAE, 2012).

Around 120 000 farmers are involved in Thai oil palm production, and smallholders³ cultivate over 76% of the total area. These smallholders cultivate on average around 4 ha, while large plantations have on average almost 800 ha (AOE, 2008 in Colchester *et al.*, 2011). Oil palms should be harvested approximately every 15 days (Hartley, 1967; GIZ, 2011), and as the majority of the farmers have no contract with a particular mill, they are free to sell to anyone who has an attractive offer. Ramps are important intermediaries in Thai palm oil supply chains as they are the collection points for FFBs produced from smallholders and often better within reach than mills. Ramps are collecting the harvest from on average between 25 and 150 clients (the vast majority of which are smallholders) and transport the FFBs on big trucks to the oil crushing mills. The number of clients depends on factors like the number of active years in the sector and the number of ramps and mills in the area. This allows ramp owners to bargain for a higher price with the mills than smallholders individually can, given the high volume delivered by the former. Additionally, as FFBs have to be processed within

24 hours after harvesting in order to maintain the quality of the CPO (Kardash and Tur'yan, 2005; Tagoe *et al.*, 2012), ramps can facilitate fast delivery.

According to the owner of the Southern Palm Oil (SPO) mill in Surat Thani: 'Only 20 years ago oil palm production was not famous in Thailand. I had to guarantee at the bank for individual farmers who wanted to undertake oil palm production at that time, which was not seen as a good and economically viable activity' (SPO, 24 July 2013). Nowadays Thailand is not only ranking third in palm oil production, but is also a pioneer in independent smallholders' RSPO certification. Worldwide, over 6 million metric tonnes palm oil was RSPO-certified in 2012, equalling 13% of the global palm oil production of 36 million metric tonnes (RSPO, 2012). In 2012, Thailand was the first country to have independent smallholders RSPO certified: 412 smallholders were certified, covering almost 3000 ha (RSPO, 2012).

The certification of Thai smallholders was initiated in 2010, when the German Federal Ministry of Environment, Nature Conservation and Nuclear Safety Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU) commissioned a project on sustainable palm oil production for bio-energy, under the International Climate Protection Initiative. The project was implemented by German Corporation for International Cooperation (GIZ) together with the Thai government OAE and other partner institutions. A 'Three I-steps' policy led the project: (i) Increase productivity through technical support and input cost reduction; (ii) increase FFB quality through premium price linked to the grading system and (iii) internalise sustainability through best management practices but also through long-term relationships between smallholders and the mills.⁴ Besides building capacity and increasing farmers' yield, the project aimed at getting the participants RSPO certified, and strengthening farmer-mill relations, to ensure that the outcomes would survive the termination of the project (Interview with GIZ, 2014).

Due to the limited demand for sustainable palm oil it is not possible to apply traceability of certified palm oil such as identity Preserved (IP) and Segregated (S) schemes, through which RSPO-certified palm oil remains separated from non-RSPO-certified palm oil throughout the

chain, both physically and administratively. In Thailand, mills opt for the Mass Balance (MB)⁵ and Book & Claim (B&C)⁶ schemes. Under the MB and B&C systems, RSPO-certified palm oil is only administratively monitored throughout the supply chain but not physically separated (RSPO, 2008a, 2008b). These schemes allow for mixing of RSPO- and non-RSPO-certified palm oil throughout the supply chain, and only guarantee that the total volume of certified palm oil is registered.

Ten mills were initially selected for the GIZ-RSPO project, based on criteria such as mill capacity, relation of the mill with smallholders, attitude of the mill managerial staff towards RSPO and export orientation. Mills had to provide farmers participating in the project with: (i) input support through a 20% discount on the costs of fertiliser and seedlings; (ii) premium price based on quality; (iii) technical support; and (iv) access to empty fruit bunches for free to use as organic fertiliser, based on the amount of FFBs sold to the mill (GIZ, 2014). After assessing the motivation of the mills to participate in the project, four mills and the Aoluek cooperative were selected. The four mills participating in the programme were: United Palm Oil (UPO) and Univanich in Krabi province, SPO in Surat Thani province and Suksomboon Palm Oil in Chomburi province (GIZ, 2011). In total, around 500 farmers were certified (GIZ, 2014).⁷

Materials and methods

Out of the four mills involved in the RSPO-GIZ project, we selected the three located in Surat Thani and Krabi – jointly responsible for over half of the total production of palm oil in Thailand – as case studies (see Fig. 2).

For each case we applied a multi-method approach to studying the palm oil supply chain from primary producers to mills. Triangulation was conducted through the application of different research methods to deepen our understanding of the findings and to contextualise and validate them. We used qualitative methods to understand the context, develop a questionnaire and identify the respondents. In 2012, we conducted interviews with UPO and Univanich in Krabi province and with SPO in Surat Thani province to understand the development of the

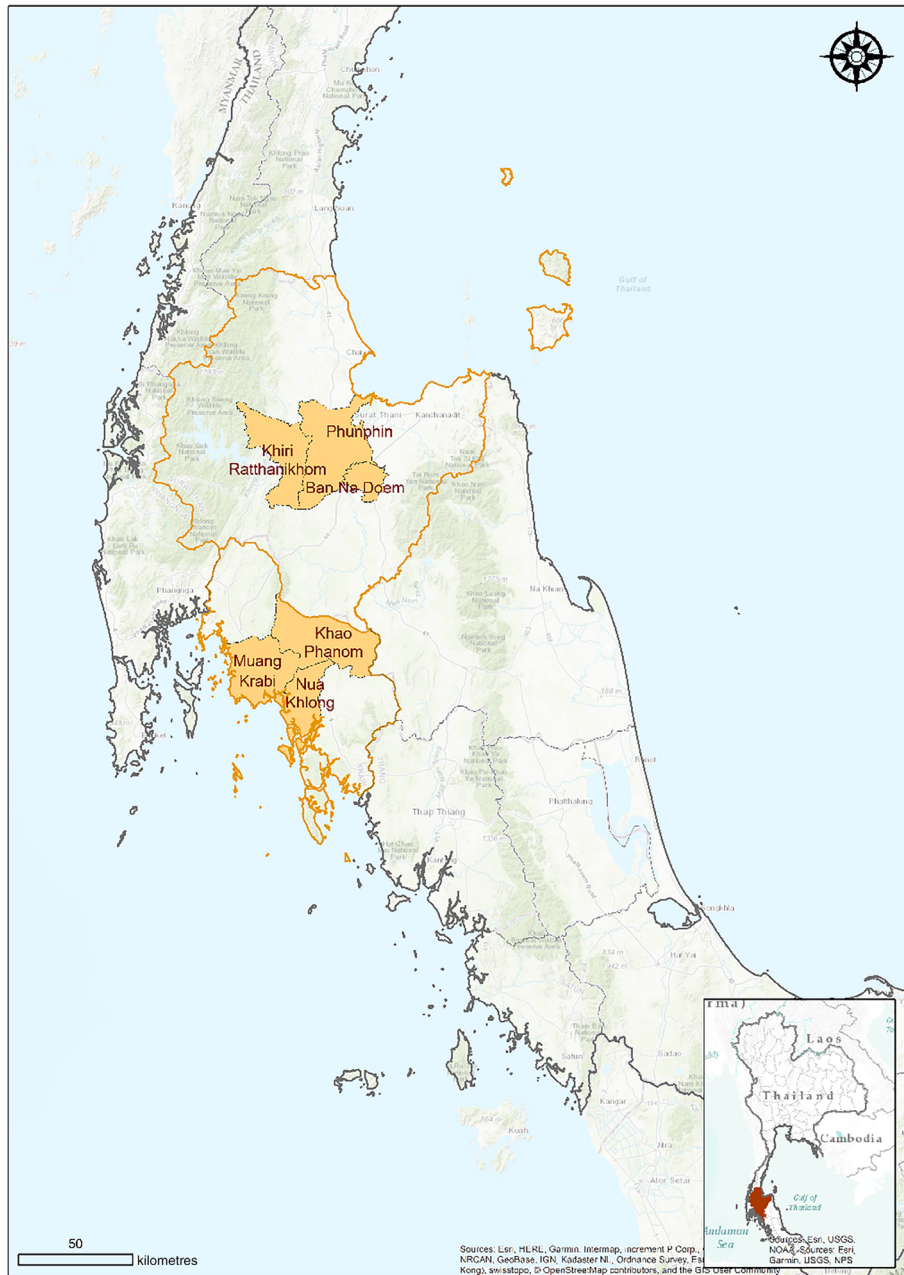


Figure 2. Map of study areas in Thailand [Colour figure can be viewed at wileyonlinelibrary.com]

project and to get the list of RSPO producers selling certified oil palm bunches to them. We also interviewed producers undergoing certification, one GAP-certified farmer and one government officer of the department of agriculture responsible for implementing GAP-certification in Surat Thani province. Next we collected survey data on palm oil primary producers registered by the SPO and UPO mills as RSPO-certified or in the

process of RSPO certification to quantify trends in sales. In 2014 and 2015 we conducted 17 semi-structured interviews with different stakeholders. We interviewed 10 ramp owners, management staff from all three mills and other key informants, namely two GIZ and one Songkla University representatives. We also conducted one household-based interview with a RSPO producer who had followed training

courses from Songkla University and was applying for RSPO certification. Participant observation complemented this study. Finally, we obtained information through grey literature (i.e. RSPO-GIZ project related reports and training material brochures). We selected the SPO mill and the UPO mill to analyse the changes after introducing RSPO-certification in a vertically integrated market, to analyse how independent economic agents react to the RSPO standard, and what this implies for their sale of FFBs. The Univanich mill was included through several interviews with informants but not in our survey. In total, 270 farmers were interviewed: 101 RSPO-certified farmers who were trained through the GIZ project and 18 farmers who joined the certification scheme later on were randomly selected from the mills lists; and 151 non-RSPO-certified farmers were randomly selected from neighbouring areas. Besides, 10 ramps in the same area were identified and the owners were interviewed. The owners of four of these ramps were also RSPO-certified oil palm producers.

Ramps as central node in Thai GVCs

Ramps are collection points where FFBs from different oil palm producers are purchased, collected and subsequently sold to mills. The name *ramp* comes from the way FFBs are weighed; producers bring FFBs with their vehicle,⁸ and go up a raised structure locally called a ramp. The latter is connected with a balance, which in most cases is linked to a computer inside an office, where a person records the weight of the vehicle transporting the FFBs. The vehicle then goes to another area, where the FFBs are offloaded, examined and selected according to quality features and other determinants (bunch size, ripeness of the fruit, level of moisture and length of the peduncle). FFBs that do not comply with the minimum standards required by mills are rejected and placed back on the vehicle.⁹ Once the FFBs have been selected, the vehicle goes back on top of the ramp to establish the difference in weight, so that the amount of money corresponding to the specific weight and product quality of the FFBs can be calculated.

Originally, ramps developed through the initiative of some wealthier oil palm producers. Mid-level producers did not have a big truck to transport all their FFBs in one trip to the mill, while smaller producers did not even have enough produce to make a trip to the mill worth the money. Some entrepreneurs saw a business opportunity and started offering transportation services after collecting FFBs from different producers at one locality. Over the years such collection points progressively spread in Surat Thani and Krabi, facilitated by the absence of strict legal requirements. Opening a ramp does not require an official licence, but only a registration by the tax office. Today ramps have diversified and provide also other services such as pruning, fertilising and harvesting.

Ramp staff is organised and trained by the ramp owners. Other than family members, depending on the size of the business, ramps use workers, in the study area mostly migrant workers from Myanmar. Workers get trained by ramp owners in FFB selection and, in case the ramp is providing other services, also in pruning, fertilising, weeding, planting and most frequently in harvesting. The wealthier the ramp, the larger the range of services offered to customers, as well as the number of employees involved in these activities. Every additional service a ramp gives to producers allows strengthening their relationship and securing the supply of FFBs. In the words of a ramp owner 'most of the people I provide planting services for, afterwards sell their FFBs to me' (Interview; ramp owner 8).

Through this mechanism, farmers do not only have easy access to a range of services linked to oil palm production, such as harvesting-teams, but they also do not need to pay for them prior to their FFBs sale. When the sale takes place the costs of services and inputs are deducted. The ramp represents an easy-to-reach and timesaving creditor, free of interest. Moreover, ramps may also offer monetary loans, and farmers may even ask occasionally for a guarantee from the ramp in front of a bank (Interview; ramp owner 1). Credit is given in small amounts, ranging between 1500 and 3000 baht (USD 50–100), and only applies to regular customers. Occasional customers are not considered eligible for credit, since they have a high chance of disappearing without paying their

debts. Some ramps that previously experienced such cases have become stricter on their credit clients' selection (Interview; ramp owners 5 and 6). Among regular customers, the ones requiring services, such as planting, fertilising, pruning and harvesting, are preferred most by ramps as credit clients, as their already embedded relation gets further strengthened (personal observation; interviews; GIZ, 2014). Compared to other creditors and to mills, ramps that offer harvesting services can more easily provide their customers with credit facilities, because they have a guaranteed collateral that prevents debtors from defaulting: the harvested FFBs (Interview; ramp owner 9). Through this credit policy, producers are tied not only to a buyer, but also to a creditor, a technical assistant and a service provider. Ramps combine different economic roles in one and this cannot be easily abandoned or disentangled. However, material and informational flows are disrupted by the absence of vertical integration in the chain, due to the relationship between producers and horizontal networks. As a consequence, the type of information producers receive is determined by the relationship with the ramp to which they sell directly or indirectly, through harvesting teams (see Fig. 3).

When a ramp is established village networks, usually composed and supported by family

relatives of the owner, facilitate the constitution of the first bulk of clients. These networks are responsible for creating embeddedness and also disruption when farmers move from one ramp to another: '20 per cent of my customers move from a ramp to another one when their relatives open a new ramp, and they tell me they want to support their relatives' ramp' (Interview; ramp owner 10). Second, recognition of a ramp by customers is related to long-standing village or business networks, or to local political positions of ramps owners (e.g. being the current or the former head of the village). Embeddedness becomes increasingly important when ramps spread in number and their competition intensifies. 'Being well-known helps in the business. I use the name of my husband for the ramp because everyone knows his name here and it's easier for the business' (Interview; ramp owner 3). Being part of the rubber network (rubber was the dominant tree crop in Southern Thailand until the oil palm spread) or having a fertiliser shop, are other examples of locally networked positions that increase a ramp owner's access to a wide and reliable clientele.

According to ramp owners a way of creating embeddedness is offering a large range of services linked to oil palm cultivation (Interview; ramp owners 7, 8 and 10) and making customers trust that the scale is well-calibrated

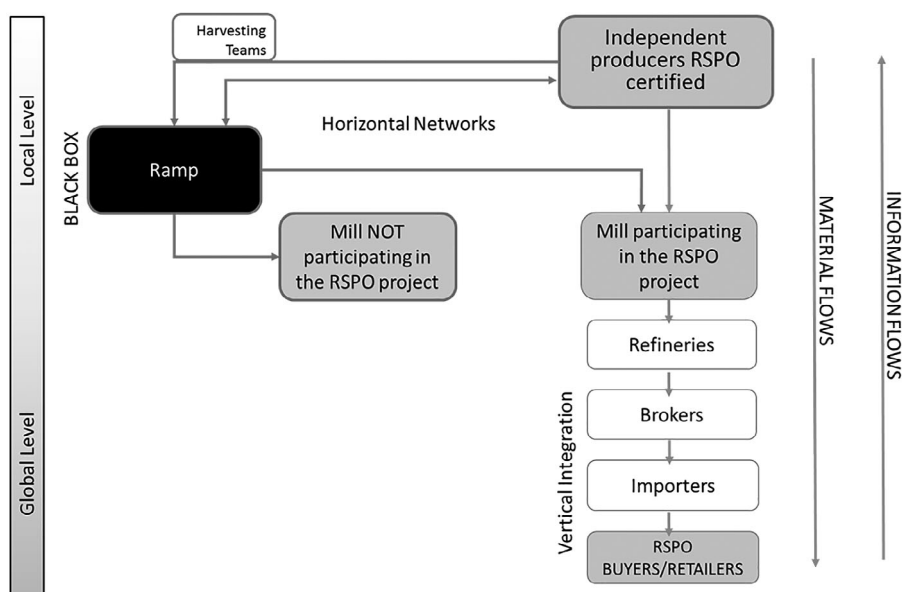


Figure 3. Horizontal networks in palm oil chains

Table 1. Overview ramps sample, as of March 2014

Ramp	Province	Services provided	Years in business	Regular/long-term customers	Total customers	RSPO customers
1	Surat Thani	Five harvesting teams; pruning, fertilising, credit	5–6	100 ^a	100	—
2	Krabi	NA ^b	0–1	10	20	—
3	Krabi	One harvesting team, pruning, fertilising	3 ^c	30	30	2–3
4	Surat Thani	One harvesting team, pruning, fertilising, transportation, credit	9 ^d	20–30	200–300	—
5	Krabi	Transportation, credit	1	20	50	—
6	Krabi	Transportation, credit	15	100	100	—
7	Krabi	Two harvesting teams, credit	15	10	100	6–7
8	Surat Thani	One harvesting team, planting/replanting, credit	10	90 ^e	90	11
9 ^f	Surat Thani	One harvesting team, pruning, fertilising, credit	20	50 ^g	70	14
10	Surat Thani	One harvesting, pruning, fertilising, credit, transport of seedlings from the mill for customers	10	48	60	—

RSPO, Round Table on Sustainable Palm Oil.

^aA total of 70–80% have been customers since the start-up.

^bDue to the early age, this ramp has not established a harvesting team yet, but is planning to do very soon.

^cPre-existing ramp for 3 years.

^dPre-existing ramp for 10 years.

^e78% receive harvesting service.

^fThe owner owns two ramps.

^g100% receive harvesting service.

(Interview; ramp owners 2 and 6), or even giving a New Year's present (Interview; ramp owner 1). Larger and longer established ramps tend to have comparatively higher numbers of regular customers. Ramps with the highest number of harvest workers are most likely able to cover a larger area and have a larger network of customers. For instance, for a ramp with five harvesting teams and in business for 5–6 years, 70–80% of the customers have remained since the start-up (see Table 1).

Tailor-made strategies from ramp staff may further affect producer-embeddedness. For instance, the owner of a ramp selling to Univanich, and in business for 15 years, explained how she is keeping track of customers' harvest schedules, calling them for harvesting arrangements every two weeks, in order to make sure her supply is secured.

Some producers do not trust the accuracy of the ramps in calculating the weight of their FFBs or in judging the FFBs quality and in determining the final price. However, the proximity and personal relationship with the owners of ramps make them easier to monitor, when compared

with the bigger scale and the more formal management style of the mill. 'I sometimes let farmers take the weight by themselves, in order to show them that I am not cheating. I treat them like family!' states a ramp owner in the business for 15 years (Interview; ramp owner 6). From their side, regular customers appreciate it when ramp owners trust them – for instance, when the time spent for bunch selection is shortened, because of past performance, or when they receive a price that is slightly higher than the one posted in front of the ramp. 'In this way, we may lose some cents, sometimes, but we make sure the supply is constant!' (Interview; ramp owner 4).

A black box in the Thai certified value chain

Black boxes alter the linearity of a value chain through interactions of chain actors with horizontal networks. In our case study we observed that the fragmented nature of the palm oil market in Southern Thailand represents an obstacle for mills to consolidate trusting relationships

with smallholders. Also, the high transaction costs involved make mills dependent on ramps – a major actor in the buying practices that mills apply when they try to meet the required supply from small-scale producers. Every village hosts at least one ramp. Frequent and constant flows of palm oil require their involvement because ramps assemble enough FFBs to fill a two-container truck and make the first selection of the produce.

Although all three mills in this study prefer to deal directly with individual farmers, they cannot deny the importance of ramps in supplying FFBs from small-scale producers. Even if these mills offer discounts for seedlings and fertilisers (following the GIZ criteria), or organise short training courses to farmers, there is neither obligation nor contract to force producers to sell their FFBs solely to them. The SPO mill, established in 1993, is an example of these erratic relationships. The company has 30 years of experience in CPO production, including 18 years with contract farming. The decision to quit contract farming and shift to ‘on-the-spot’ purchasing came after the factory’s realisation that farmers lack reliability and sell to the most generous buyer, regardless of contract (SPO, 24 July 2013). This follows also from overcapacity in milling. As one manager of Univanich states, this milling overcapacity: ... is good for the producers because they have more choice for selling, but it is not good for the milling business’. There is ‘The supply is almost the same but the number of mills increased, so more competition is taking place’. ‘Before, one mill would have 20 per cent quality FFBs but nowadays it only receives 14 per cent. If Univanich rejects the bunches, customers go to another mill. There is overcapacity in the region and the quality of the fruits went down’. (Interview; Univanich mill manager, 2014). In addition, as 50–60% of the harvesting teams belong to ramps, plantation owners using the services of ramps most likely sell their FFBs to these ramps (SPO, 19 March 2014).

Currently SPO has 20 regular and around 300 incidental suppliers (SPO, 19 March 2014). The mill is not able to collect enough produce every day and often machines run below capacity (sometimes at less than 50%). Buying FFBs from ramps promotes a constant flow of produce and a safer access to bulk quantities. This

dependency requires a lowering of quality standards for FFBs. The quality is, to the disappointment of the miller, pushed down to a level of 14% oil extraction rate of CPO in FFBs supplied, compared to the 17% Thai average extraction rate (Colchester *et al.*, 2011; Wangrakdiskul and Yodpijit, 2015). According to a (Purchaser from SPO, 2014) ...We do not have problems with individual farmers; if farmers have unripe FFBs we will make a selection and get rid of them. However we will give them higher price for bunches with higher percentage of CPO’. ‘Ramps instead keep FFBs for periods up to 3 days. And they mix low and high quality; they have many strategies to hide older bunches among the recently harvested, so that when they dump them at the mill, the older bunches would be underneath the fresher ones, which will be on top. We usually separate FFBs from farmers and those from the ramps. To the ramp we will give maximum 14–15% CPO content related price. If the ramps receive bad quality FFBs and they mix bad and good quality, it is a problem for us, because we cannot spend too much time checking the entire load of a two container truck’ (SPO, 2014). This mill gives an attractive price to ramps that supply good quality and quantity FFBs, in order to avoid them turning to more competitive mills. As such, the mill is able to meet the demand for supply and to reduce the losses from processing in under-capacity conditions. Farmers, on their side, criticise the double standards included in this policy, saying that producers receive low prices while ramps are given a higher price for a lower quality.

Mills prefer to deal with producers directly, in order to shorten the supply chain and to maintain high quality in their FFBs. In practice, however, mills have to adopt a proactive approach towards ramps to gather large amounts of produce. Consequently, SPO for instance has decided to involve ramps in RSPO certification. The mill is dealing with two ramp owners who are member of the RSPO farmers group in Surat Thani province, and one of them is even a group leader. As long as these ramps can provide the necessary records of RSPO volumes per farmer, SPO gives them a higher price for certified bunches, worth 0.20 baht/kg (0.007 USD/kg), which is paid at the end of the year (SPO, 2014). Unlike SPO, the two other mills,

UPO and Univanich, seem less engaged with RSPO-certified ramp owners in Krabi. Not only do they not pay the ramp a higher price for certified FFBs, but they have adopted a discouraging strategy to RSPO-certified producers who want to open a ramp. According to a RSPO-certified producer who opened a ramp, the mill feared she would mix RSPO and non-RSPO FFBs: ... The purchase staff told me: you have a ramp now, I cannot give you 10 cent RSPO premium anymore'. 'But is it my fault that I own a ramp now!' 'He should know my professionalism in this business and my product quality' (Interview; ramp owner 3). The mill in this case had decided to stop paying the premium price agreed as part of the GIZ project because, by becoming a ramp, this producer represented a risk of mixing different FFB quality levels. If ramps' FFBs are not integrated in the RSPO chain, the universal applicability of the RSPO standard is undermined. Like ramp owners, this owner decides where to sell on the basis of the trade-off between the prices that the mills offer and their distance from the ramp. It is indeed a common policy for ramps to have two mills as potential buyers (Interview; Univanich mill manager, 2014; Interview; ramp owner 1). The ramp owners call these mills every day to ask for their price and then decide, based on the amount of FFBs they have, whether it is worth to drive a longer distance for a better price. ... During peak season we do approximately 3 rounds per day, one truck full each. During low season only 1 round/day. Sometimes it is not full, but we have to send it anyway in 2 days otherwise we compromise the quality' (Interview; ramp owner 6). According to another respondent: 'Less than three metric tons per truck is not worth the transportation cost, so then we go to the closest mill' (Interview; ramp owner 2).

Refusing to recognise the produce from ramps as RSPO-certified means that all certified volumes are 'lost' in mainstream CPO. In other words, while producers have complied to RSPO requirements at the sites of production, their FFB enters the chain as non-certified FFB. This compromises the possibility for farmers to sell their certificate upstream the value chain. Mills are reluctant to accept ramps' FFBs as RSPO-certified because producers may have already sold their certificate, and thus their volume

records, for instance to Johnson & Johnson (J&J). J&J has been member of the RSPO since 2006 and is currently purchasing RSPO certificates to cover 100% of their palm oil usage with certified palm oil. However, J&J buys their certificate but not necessarily their certified volumes through a Book & Claim system. J&J can then buy any palm oil they prefer and claim it as RSPO-certified. This way J&J offers a financial reward for RSPO-certified growers who sell their certificate; but the farmers can sell their FFBs to any buyer they want and for a price solely based on quality (interview; GIZ, 2014; J&J, 2018). This implies that the mill itself does not benefit from the certified product, but does benefit from receiving better quality FFB. However, this better quality might be lost during the mixing of FFBs from different customers at the ramp. This creates a disincentive for mills to engage proactively with ramps in the RSPO value chain. In fact, UPO and Univanich obtain most of their RSPO volumes records from their own RSPO-certified plantations – in the case of UPO, over 93% of their total RSPO-certified FFB (GIZ, 2014; Univanich, 2014; UPO, 2014).

Interviewed ramp representatives responded that one mill can be perceived to be stricter or more flexible than another mill – with respect to quality and delivery time – depending on the relationship the ramp has with them.¹⁰ Social relationships and trust dynamics have an important role in the way business is conducted. 'I only send the FFBs to Univanich because it is not too strict and we can understand each other and negotiate' (Interview; ramp owner 5). While another ramp owner says: 'Univanich is stricter than Surat Thani mills, that's why they have better quality FFBs' (Interview; ramp owner 1). A long-standing relationship between the mill and the ramp creates special situations where, for instance, in case the ramp cannot bring all bunches in one day, they are allowed to sell the FFBs at the same price the next morning (Interview; ramp owner 6, personal observation).

As with the duration of the relationship, flexible behaviour depends also on the level of supply the ramp is providing to the mill, the number of competing mills and ramps in the area, and the season (peak/low season). During peak season farmers cannot wait in long queues because they need to continue working on their farms; therefore when mills see a surge in their

supply from the ramps they are obliged to relax their quality control policy, at least temporarily. For instance, during peak season UPO increases the proportion from ramps, from 7% to 30% of their total FFB supply (UPO, 2014). Although mills generally distrust ramps, they nevertheless depend on them. In the absence of their own collection points, ramps offer the mills the possibility to gather sufficient FFBs from the surrounding areas. On the one hand, this arrangement is very efficient, on the other it compromises the information and material flows necessary to sustain high quality palm oil production.

Ramps are major actors in the selling practices of farmers, since the latter mostly value the proximity of ramps and their speed in dealing with clients compared with the mills.¹¹ Given the perishable nature of FFB, it is fundamental for producers to dispose of the harvest timely and safely. Ramps are the nearest available outlet for their FFB while their buying price can easily be monitored by farmers – 43% of the interviewed farmers obtained up-to-date price information primarily from ramps. Linking the labour market with the palm oil market increases the power of ramps enormously, and 47% of interviewed farmers rated their negotiation power with ramps as ‘extremely weak’.

Also, 44% of the interviewed farmers consider ramps, and the harvest workers hired through ramps, as the most powerful actors within their network, compared with a mere 20% indicating mills.

The RSPO aims at creating more direct links between farmers and mills, through increased trust relationships resulting from training, organising farmers, capacity building and ultimately from higher yield and better quality of FFBs. While the strong dependency between farmers and ramps is weakened by RSPO, it is certainly not eradicated. Among the non-RSPO respondents 69% sells to middlemen/ramps, 18% is selling directly to harvesting teams, and only 11% to mills. When looking at the RSPO-respondents we observe that RSPO certification indeed increases the by-passing of ramps, with 44% of the respondents selling directly to mills. Yet, the majority of FFBs are still filtered through ramps, either directly (27%), or indirectly (26%) through harvesting teams that typically work for the ramps (see Fig. 4). RSPO-respondents expressed their concern about the transport costs when selling to mills: ‘Sometimes the cost of transport to the mill that buys RSPO is not worth the little price difference we lose when selling to a close-by ramp’ (RSPO farmer, 20 September 2013).

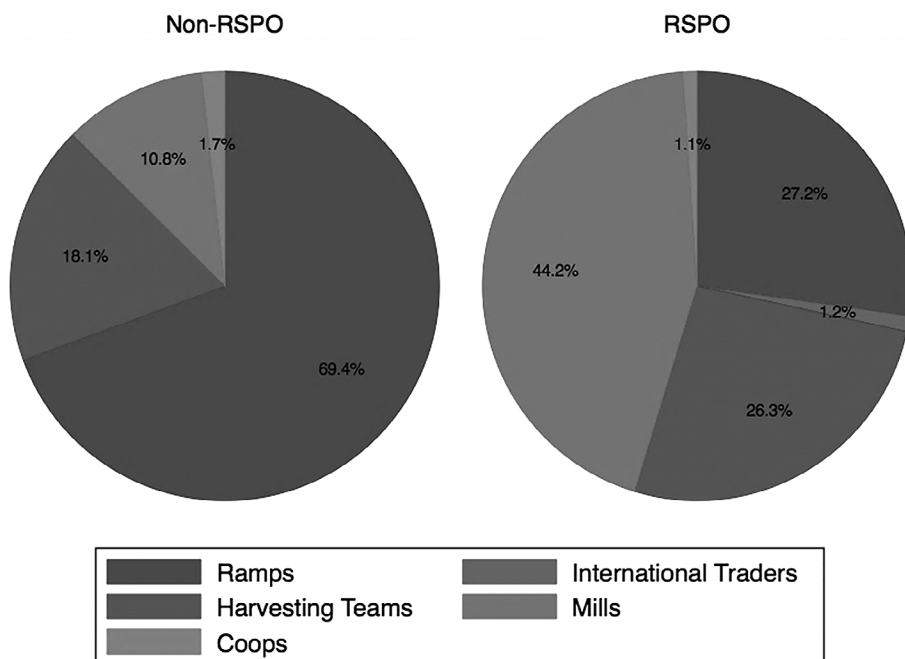


Figure 4. Proportions of fresh fruit bunch (FFB) sales to different categories of buyers in Southern Thailand

Table 2. Descriptive statistics and differences between RSPO and non-RSPO producers

Variables	Non-RSPO (N = 151)	RSPO (N = 119)	Difference
Age	51.95	53.27	1.33
Male	0.629	0.765	0.136*
Buddhist religion	1.000	1.000	0.000
Years of education	1.75	2.18	0.43**
Household size	4.225	4.412	0.187
Mobile phone	0.960	0.958	-0.002
Radio	0.603	0.697	0.094
TV	1.000	0.916	-0.084
Refrigerator	0.993	0.992	-0.002
Car	0.874	0.933	0.059
Motorcycle	0.715	0.756	0.041
Bicycle	0.815	0.882	0.067
Other income	5220	9929	4709*
Phone credit	427	7489	322*

RSPO, Round Table on Sustainable Palm Oil.

*Group means (*t*-test): 95%.**Group means (*t*-test): 99%.

The higher proportion of respondents selling to mills among the RSPO respondents cannot be explained by key socio-economic characteristics, such as average age, household composition, religion (which is in both cases Buddhism) and ownership of assets such as

mobile phone, fridge, radio, bicycle, motorcycle and auto (see Table 2). Significant differences can be found, however in level of education, expenditure in phone credit, land holding and higher average salary from other sources of income, where the RSPO group has higher scores (see Table 2). It seems that RSPO producers are richer on average, have better means to reach the mills and negotiate with them directly a higher price for their FFBs, bypassing middlemen.

The average selling price for FFBs sold by non-RSPO respondents is 3.99 Baht/kg (0.132 USD/kg) while RSPO receive an extra 0.25 Baht/kg (0.08 USD/kg, (see Table 3). Yet, these average selling prices cover a very large variation, indicating that the market remains significantly fragmented. Perhaps more importantly, RSPO farmers typically produce higher quality palm oil and are more aware of its current price and of the grading of their last sale. However, the RSPO-certified farmers' supplying practices are limiting the potential benefits this certification could offer. Our data reveal that not all RSPO-certified farmers who are selling directly to mills are selling their FFBs to SPO and UPO (RSPO-certified mills). Many are selling to the mill nearby, which, if not part of the RSPO project, will not produce and sell CPO under RSPO certification. This is inefficient for both sides of the value chain and interrupts vertical integration of RSPO chains.

Unlike the mills, ramps do not have a detailed grading system; they usually pay a standard price based mostly on the weight of the FFBs and the mills' buying price. The only quality assessment applied (be it seldom) by ramps is judging the ripeness of the fruits. This absence of an elaborate assessment procedure hinders further quality improvement: 'Sometimes it can happen that I harvest FFBs that are not mature enough and there are 2 scenarios: 1 – The mill will give me a lower price; 2 – The mill will reject the immature bunches. However I can still sell the same FFBs to the ramp and the ramp will water them and sell to the mill' (RSPO farmer, 17 March 2014). Also, RSPO respondents complain about malpractices at the ramps: they see the quality of their FFBs being damaged by the rent-seeking behaviour of ramp operators, who may add water, sand or soil to increase the weight. Ramps may also detach the

Table 3. Prices, knowledge, and quality

Variables	Non-RSPO	RSPO	Difference
Price at last sale (baht/kg, [USD/kg])	3.994 [0.133]	4.239 [0.141]	0.245**
Good quality or higher	0.300	0.558	0.258*
Know current price	0.074	0.168	0.094*
Know quality of last sale ^a	0.364	0.594	0.230**

RSPO, Round Table on Sustainable Palm Oil.

*Group means (*t*-test): 95%.**Group means (*t*-test): 99%.

^aRespondents were asked whether they knew the grade of quality of their fresh fruit bunch (FFB) at the last sale. The buyer should pay the FFBs per kilogram according to a grading system. Grading is always applied although the methodology for assessing it is often conducted, as locally defined, 'by eye'.

fruits from FFBs, as loose fruits seen as having a higher oil content and are unconsciously valued higher by the mills (SPO, 20 September 2013; participant observation; Forest People Programme, 2011).

RSPO certification opens the door for export, but it will take some time before certified volumes will be available on the market. The demand for RSPO-certified CPO comes primarily from Europe, while the domestic market in Thailand, as well as main importing markets such as India and China, are still oriented towards not-certified palm oil. The management staff of the three mills participating in the RSPO project mentioned that, at the moment, mills do not have any incentive to separate certified from not-certified supply and that they will continue applying MB or B&C arrangements. Separation between certified and non-certified palm oil would imply increasing costs for transport, administration and processing, considering that the machinery should be different for both categories. This would therefore have to correspond with increasing profits coming from higher demand or a higher price for certified palm oil. In general, this would imply a change in the entire palm oil GVC: refineries, brokers and retailers would have to make many efforts to align the standards.

Europe represents a relatively unattractive market when compared with China and India, all mill managers claim. The markets in China and India are less distant and therefore cheaper outlets. However, both countries do not reflect a particular interest for certified palm oil yet. 'India offers a better price for mainstream palm oil while the cost for shipping the oil is lower' (SPO, 24 July 2013). For this reason, mills are mostly interested in the higher quality offered by RSPO farmers that use good harvest and post-harvest practices, not in the certification per se. Yet, currently half of the higher-quality FFB produced by RSPO-certified farmers does not find its way to the mill without being downgraded and mixed with lower-quality produce at the ramp, and because it does not reach RSPO mills it does not supply the initial goal of RSPO vertical integration. Ramps thus remain a key player within the mainstream and RSPO GVCs, but they are also responsible for a loss in quality, lack of quality incentives and reduced vertical integration.

Discussion and conclusions

We observed how the lack of established market relationships in the palm oil value chain gives bargaining power to ramps and generates a 'missing link' between the actors in the RSPO GVC. Mills participating in RSPO can adopt different strategies depending on their daily CPO processing capacity, the availability of FFBs in terms of suppliers and seasonal changes in production. To a certain extent, these mills need to keep good relationships with the closest and most strategic ramps, because they are more important than the producers themselves. Including strategic ramps as main physical nodes in their supply network (Castells, 1996, 1997, 2004) becomes crucial for the survival of the mill, provided that through one ramp mills can reach many producers. As a consequence, the price they pay to strategic ramps is, in some cases, higher than the one offered to producers that bring their FFBs directly to the mill. Although Castells's theory has not been used as the main theoretical framework for this study, we may nevertheless use Castells's terminology to mark the central position of ramps in the production network of palm oil. Ramps might be seen as a form of networking power; they connect producers with mills and thereby control the network of smallholders as part of the palm oil value chain (Castells, 1997, 1998, 2008). However, the nature of their power is not limited to their controlling position within the network, rather it is important to observe how their position influences the material standards and the information flows, with their related socioeconomic consequences.

Ramps can be seen as rent seekers that limit the income of farmers, drive up the costs for mills and drive down the price producers receive. Mistrust appears to be a common denominator with respect to ramps. Mills and producers do not trust the way ramps handle FFB supply, and ramps claim not to trust producers. On the other hand, ramps fulfil a key role because they collect a quantity of FFBs that mills would not be able to access nor to handle alone, considering the time needed to check individual producers and the limited willingness of the latter to wait in long queues at the mills. Ramps are also socially embedded actors that facilitate market access and material flows:

farmers find buyers and service providers nearby, while mills find easily manageable sellers. Around half of the RSPO respondents in our study are therefore still selling to ramps either directly or indirectly (through harvesting teams).

Also in the RSPO GVC, long-standing relationships between different actors are exceptional, while the material and informational flows that should go along with them are lacking as well. Although four RSPO certified farmers are also owners of a ramp, two of them state that their relation with the mill has not improved since they became RSPO certified, but even worsened because the mill's trust in their product has diminished. The result is that these ramps would rather sell FFBs to the best offer instead of selling to mills participating in the RSPO project, which implies a loss of RSPO products for these mills (material flows) and reduced information exchange among actors in a certified chain (information flows). This may compromise the development of an integrated RSPO-certified chain from upstream to downstream.

Information flows, such as records of certified production, link producers and end-users worldwide, whereas this is not necessarily so for the material flows. Diverse horizontal networks interact with the local material flow of RSPO FFBs and within them ramps are black boxes that compromise coordination in the RSPO value chain. The RSPO can either engage with ramps or try to side-line them from RSPO certified production. If ramps are not engaged, the black box is maintained. If they do engage, ramps represent a peculiar node of translation in the chain for both formal (business) and informal (horizontal network) flows of information (Bush and Oosterveer, 2007), necessary to enhance the expected outcome of RSPO certification.

Knorringer *et al.*, (2011) reach the conclusion that for RSPO to allow up-scaling of sustainability programmes, better inclusion and inclusiveness of smallholders as stakeholders are necessary. A more equal stakeholders' representation at the Round Table is a must to achieve legitimacy of the standard (Schouten and Glasbergen, 2011). Legitimacy and enforceability mean, however, inclusion in the traceability system which requires investments in a whole

new chain-wide organisation of records and administration, trainings for ramps and perhaps incentives. With this study we go one step forward in this debate by analysing where a voluntary standard like the RSPO standard is located within the GVC (Bush *et al.*, 2015). We identified the ramp as a key node in the Thai palm oil chain – pre-existing the establishment of RSPO (ramps date to the 1960s) – through which inclusion of smallholders in certification can be triggered. Further research could investigate the potential of mills to increase the information flows of RSPO FFBs coming from ramps by adopting a stricter supply chain governance on product requirements, and whether this could lead to a re-organisation of the chain and shift of power, using GVC studies or political economy of production. Scholars could also include the national level in future studies to determine whether the Thai Government should include horizontal networks in the National Interpretation Working Groups and the Task Force for the interpretation of RSPO Principles and Criteria for smallholders, and, if so, how this could be achieved. Finally, at the global level, understanding and addressing the role of black boxes in GVCs and certification programmes is necessary, to further inform the debate on the integration of marginal and remote producers in global certified value chains.

Notes

- 1 The seat of the association is in Zurich, Switzerland, the Secretariat is based in Kuala Lumpur with a RSPO Liaison office in Jakarta (<http://www.rspo.org/about>).
- 2 The national interpretation working group is composed of self-selected representatives from the aforementioned categories, plus 'relevant government representatives' and technical experts.
- 3 'Smallholders are farmers who grow oil palm, alongside with subsistence crops, where the family provides the majority of labour and the farm provides the principal source of income, and the planted oil palm area is less than 50 ha' (<https://rspo.org/smallholders/rspo-smallholders-definition>).
- 4 RSPO does not have a criteria on premium (Source: <https://www.rspo.org/key-documents/certification/rspo-principles-and-criteria>); however, by implementing Best Management Practices as required by RSPO certification programme, the FFB are expected to have higher quality (Source: [https://www.standardsimpacts.org/sites/default/files/Costs-and-benefits-of-RSPO-certification-for-independent-smallholders-FINAL\(2\).pdf](https://www.standardsimpacts.org/sites/default/files/Costs-and-benefits-of-RSPO-certification-for-independent-smallholders-FINAL(2).pdf), pages 16–

- 17), which was reflected in a premium price agreement between producers and mills in this project.
- 5 'The mass balance model is constructed in such a way that volumes of RSPO certified product shipped, will never exceed volumes received by the end user' (Source: [http://www.rspo.org/file/fact_sheet_-_mass_balance_240908\[1\].pdf](http://www.rspo.org/file/fact_sheet_-_mass_balance_240908[1].pdf)).
- 6 The B&C system assigns credits equivalent to the volumes of Crude Palm Oil produced by the mills participating in the RSPO project which are sold to a manufacturer, independently from what is actually supplied. (Source: [http://www.rspo.org/file/fact_sheet_-_mass_balance_240908\[1\].pdf](http://www.rspo.org/file/fact_sheet_-_mass_balance_240908[1].pdf)).
- 7 The national interpretation for Thai smallholders is developed by the Thai National Interpretation Working group, composed of stakeholders and NGOs, and approved by the RSPO in order to help the transition (RSPO, 2012).
- 8 Ranging from a simple motorbike with a large basket on the side or the back, to pick-up trucks (Source: personal observation).
- 9 This quality check is mostly conducted only for occasional customers, rather than with the regular ones (Source: interviews March 2014).
- 10 If ramps wait more than 24 hours before bringing the FFBs to the mill, the free fatty acid (FFA) level of crude palm oil is increased (Kardash and Tur'yan, 2005). The FFA level increases with the time elapsing between the harvest and the first processing step, which may result in deterioration of CPO containing FFA above the acceptable limit of 5%; this problem cannot be fixed through further refinement (Tagoe *et al.*, 2012). Ramps reply that producers harvest in the morning and bring their FFBs in the afternoon, making it sometimes impossible to transfer them to the mill on the same day (Interview; ramp owner 3).
- 11 Both producers and ramps consider mills as extremely time consuming, because suppliers have to wait in a queue for a long time, especially during peak season, before being served. Participating in the RSPO certification programme allowed producers to use a so-called fast access method when showing their RSPO card. Nevertheless, respondents from ramps that are also RSPO-certified claim that this is not always the case.

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