



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



International Food and Agribusiness Management Review
Volume 18 Issue 3, 2015

Sustainability Certification and Palm Oil Smallholders' Livelihood: A Comparison between Scheme Smallholders and Independent Smallholders in Indonesia

Nia Kurniawati Hidayat[Ⓐ], Pieter Glasbergen[Ⓑ], and Astrid Offermans[Ⓒ]

[Ⓐ] *PhD Researcher, Maastricht University; International Centre for Integrated Assessment and Sustainable Development (ICIS)- Kapoenstraat 2 P.O. Box 616 6200 MD Maastricht, The Netherlands*

and

Lecturer, Bogor Agricultural University; Faculty of Economics and Management, Department of Resource and Environmental Economics- Kampus IPB Dramaga 16880 Bogor, Indonesia

[Ⓑ] *Professor, Ⓒ Post-Doctoral Researcher, Maastricht University; International Centre for Integrated Assessment and Sustainable Development (ICIS)- Kapoenstraat 2 P.O. Box 616 6200 MD Maastricht, The Netherlands*

Abstract

Most sustainability certifications in Indonesia are developed by Northern-based businesses and NGOs to regulate the production of agricultural commodities in the South. However, research still shows a lot of uncertainty about what sustainability certifications imply for the livelihood of smallholder farmers. Given these uncertainties, this paper explores the potential of certifications to improve the livelihood of smallholder farmers. To achieve this objective we developed an amended livelihood framework applied to an exploratory study of Indonesian smallholders who participate in the Roundtable of Sustainable Palm Oil (RSPO). Although access to markets and vulnerability are not improved through certification, indirect effects through organizational changes increase productivity. If certification schemes are weakly institutionalized, farmers will easily shift to a more profitable way of production. Further analysis is needed to discover the balance between the ethical aspects of certification while improving economic profitability for participating smallholders.

Keywords: sustainability certification, sustainable livelihood, smallholders, RSPO, Indonesia

[Ⓐ]Corresponding author: Tel: +31633652310

Email: N. K. Hidayat: nia.hidayat@maastrichtuniversity.nl; nia@ipb.ac.id

P. Glasbergen: pieter.glasbergen@maastrichtuniversity.nl

A. Offermans: a.offerfans@maastrichtuniversity.nl

Introduction

Since the mid-1990s, voluntary sustainability standards and certifications have been introduced as a new governance model in global agrifood chains. Most of them aim to regulate the negative environmental and social effects of food production in Southern, often developing countries. However, their impacts on the livelihood of smallholder farmers at the production level are still widely debated (Auld 2010, Blackman and Rivera 2010, Bitzer 2012, Glasbergen 2013, Méndez et al. 2010).

Most studies analyze the impact on a combination of social, economic, and environmental indicators related to production processes of agricultural commodities. These findings are contradictory and fluctuate among attributing positive economic effects (Becchetti and Costantino 2008, Brandi et al. 2013, Bacon 2005, Beuchelt and Zeller 2011), social effects (Elder, Zerriffi, and Le Billon 2012, Giovannucci et al. 2008), environmental effects (Melo and Wolf 2007, Blackman and Naranjo 2012), towards insignificant effects (Ruben and Fort 2012, Valkila 2009, Bacon et al. 2008), mixed results (Pirrotte, Pleyers, and Poncelet 2006), and even negative consequences of certification (Beall 2012).

We assume that these contradictions may be due to the different indicators that are used to measure impact, the different research methods, and, as we see as most important, the lack of a more generally accepted underlying theoretical consideration for the choice of variables. Based on this assumption, this paper aims to further explore the potential of certifications to improve the livelihood of smallholder farmers, asking the questions:

- 1) How can we conceptually understand the relationship between certification and the livelihood of smallholders?
- 2) What does an application of this conceptual understanding teach us about the factors playing a role in improving farmer's livelihood through certification and what challenges can be identified?

We are particularly interested in smallholder farmers' perspectives - what participation in the certification implies to them, what they value, what they regard as long-term positive and negative effects. To that end we developed an amended livelihood framework which comprehensively defines economic, social and environmental variables that may influence the relationship between certification and smallholder's livelihoods.

This analytical model is applied in an exploratory study of Indonesian smallholders who participated in the Round Table on Sustainable Palm Oil (RSPO). The RSPO, formally established in 2004, is a Northern-based international multi-stakeholder initiative in sustainable palm oil cultivation with members and participants from different backgrounds and with different interests, including palm oil processors and traders, consumer goods manufacturers, retailers, banks/investors, representatives of oil palm producers, and social and environmental NGOs. The RSPO is generally regarded as a promising certification scheme; it has a considerable impact on production processes and a market share of certified palm oil of about 15% (Schouten and Glasbergen 2012, Schouten, Leroy, and Glasbergen 2012).

Indonesia was chosen as our study field because this country is the largest producer and exporter of palm oil world-wide (WWF 2013). However, inclusion of smallholders in palm oil certification has proven to be difficult (Opijnen, Brinkmann, and Meekers 2013), despite efforts made by the RSPO to accommodate smallholders in the RSPO system. The General Assembly established a Smallholder Task Force (STF) in 2005, focusing on the relevance and applicability of the RSPO principles and criteria for smallholders. In 2012, the RSPO's Smallholders' Fund Initiative (SFI) was launched to support the smallholders' certification process and to increase smallholders' awareness on the advantages of certification (Pesqueira and Glasbergen 2013).

Smallholders are an important but economically vulnerable production group in palm oil. Their vulnerability is partly due to the characteristics of the commodity: Fresh Fruit Bunch (FFB) or palm oil fruit should be milled within 24 hours after harvest to maintain its quality. As palm oil smallholders often do not have the means to sell and transport their FFB quickly, the quality of their FFB is easily reduced (Colchester and Jiwan 2006, Hanu and Sadjli 2013). Other factors contributing to smallholders' economic vulnerability are uncertainty about market access, price fluctuations in the market, lack of knowledge about maintaining palm oil plantations which reduces their productivity, and their dependency on agents to sell their outputs to mills (Papenfus 2000, Marti 2008).

In the coming years, the claim for a more sustainable production, including that of smallholders, will become even more important. Smallholder oil palm plantations in Indonesia increased from 3,125 ha in 1979 to 3,387,257 ha in 2010 and cover 40% of the total area of oil palm plantations. These areas are predicted to increase continually and reach 4,166,778 ha by the end of 2014 (Directorate General of Estate 2011). Moreover, the Indonesian government is in the process of developing its own sustainability standards and certification scheme called Indonesian Sustainable Palm Oil (ISPO), which will be mandatory, and aims to include the smallholder farmers (Hospes 2014).

Presently, only 3.8% (of 4,415,800 hectares) of the smallholders' oil palm plantations have been certified (estimated value¹). We expect the experiences from the first certified smallholders (either positive or negative), on which this study focuses, may have an influence on the willingness (the target group) of uncertified farmers to participate in a certification scheme.

This article is structured as follows. In the first section we develop the analytical framework that conceptualizes the relationship between certification and livelihood outcomes. Thereafter we introduce the research field and our research methods. Our research findings are presented in the next five sections. The last section reveals the pattern of relationships that has become visible and reflects on our research findings.

¹The percentage of certified plantation is calculated by comparing total certified (independent and scheme) smallholders' land area with total area of smallholders' oil palm plantation in Indonesia. Certified Independent smallholders in Indonesia: 1,199 ha; certified scheme smallholders in Indonesia: 165,181 ha (Primary data).

Conceptual Model

Following van Rijn, Burger, and den Belder (2012), who connected the livelihood concept to impact research, we take the livelihood concept as a starting point to analyze the relationships between certification and smallholders' living conditions. We consider the livelihood concept a powerful notion to select and arrange variables and to create order in the conceptual complexity underlying the relation between certification and impact.

The livelihood concept is rooted in development thinking that traditionally focused on production, employment and income to describe poverty levels. This approach was considered too narrow and could not explain the complexity of interacting aspects that influence the situation of the rural poor. The livelihood notion therefore introduced a more comprehensive approach to poverty alleviation (Chambers and Conway 1992, Scoones 1998, Carney 1998, DfID 1999, Ellis 2000) that goes beyond analyzing the economic realities and opportunities of the poor.

Based on the definition of the Department for International Development (DfID), the concept of livelihood comprises the capabilities, assets and activities required for sustaining or improving a means of living (DfID 1999). At the core of the livelihood concept lie the assets (resources) that can be utilized to undertake production, engage in markets, and improve ways of living (Scoones 1998, Utting 2009). Assets are conceptualized as different forms of capital: human, social, financial, natural, and physical capital (Scoones 1998, DfID 1999). Human capital refers to skills, knowledge, and health needed to enable people to pursue different livelihood strategies and achieve their livelihood goals (DfID 1999). According to Scoones (1998), social capital refers to empowerment—the opportunity to form networks, membership of groups, and relationships. Financial capital comprises all stocks and flows in income, credit, and savings (Scoones 1998, DfID 1999). Natural capital encompasses natural resources including biodiversity, land, and forests. Issues of transport, shelter, water, energy, and communication belong to the category of physical capital (DfID 1999, Scoones 1998, Utting 2009).

These forms of capital provide smallholders the capacity to act and sustain or improve their livelihood. However, all these forms of capital are assumed to be influenced by (a) external factors, referred to as the vulnerability context, which encompasses critical economic trends, shocks and seasonality; (b) transforming structures and processes, such as policies and legislation; and (c) strategies of rural entities, which refers to activities and choices that smallholders make with the intention to improve their livelihood. A livelihood is considered sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base (Scoones 1998, Carney et al. 1999). In the sustainable livelihood approach this is indicated with the variable of outcomes, which results from livelihood strategies, and covers the conservation and enhancement of social, environmental and economic aspects.

Although it provides an underpinned interpretation of the potential relationships between certification and impact on living conditions, the sustainable livelihood concept has also been criticized. First, the concept is said to give scant attention to commercial factors such as profitability (Utting 2009) and lacks understanding of economic and market issues (Carney

2003). Second, it does not capture cultural issues, and lacks attention to power relationships, politics (Adato and Meinzen-Dick 2002, Carney 2003, De Haan 2012), and the role of history and historical experiences (Adato and Meinzen-Dick 2002, Carney 2003). In addition, people’s priorities and preferences are commonly missing from the framework while they are believed to play a fundamental role in determining livelihood strategies (Ashley and Hussein 2000). Another criticism relates to the inadequate representation of the relation between access to assets and a proper use of assets. Bebbington (1999) emphasized that social capital (indirectly) affects livelihoods because it provides access to resources. However, access to assets is a necessary but not sufficient condition to guarantee sustainable livelihoods, if the productive capacities of farmers are not linked to access to markets (Bitzer, Glasbergen, & Arts 2013).

Taking these criticisms into account, we developed an amended livelihood framework (see Figure 1) that connects certification to livelihood outcomes and addresses the criticisms by including additional variables. In this framework certification intervention is the independent variable and the livelihood outcome is the dependent variable. The framework consists of the following components: (1) the certification intervention; (2) livelihood components which consist of assets, livelihood strategies (activities), and livelihood outcomes; (3) smallholders’ priorities and preferences; and (4) external factors.

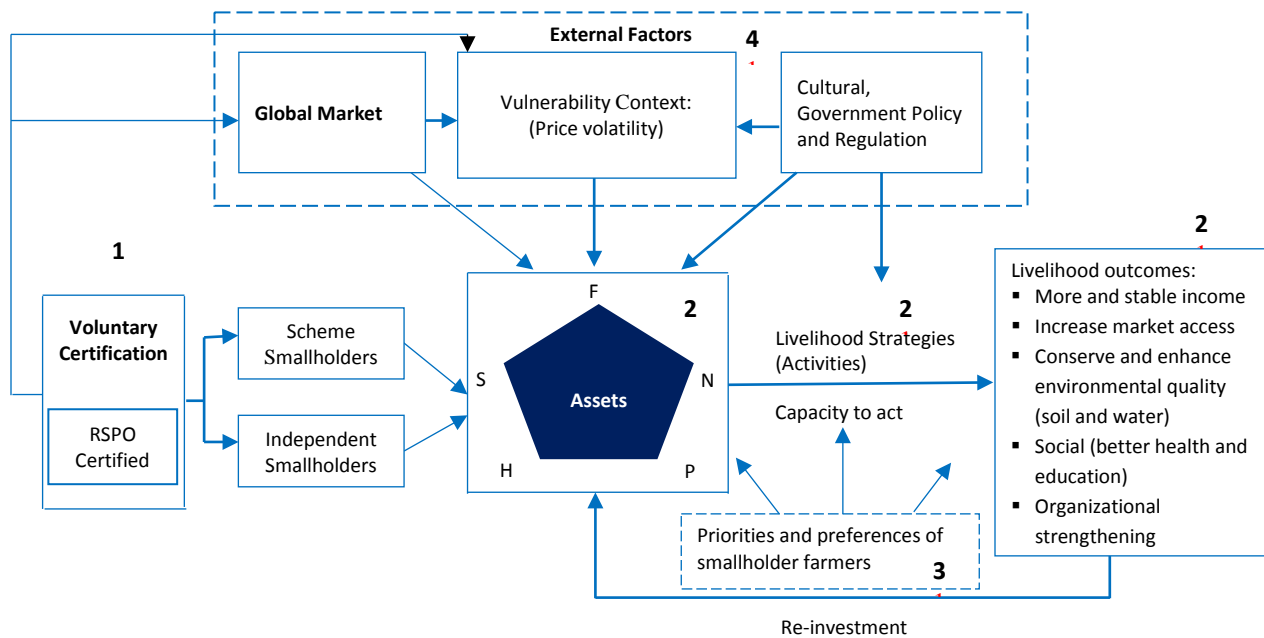


Figure 1. Conceptual framework amended from DFID (1999)

Based on this conceptual model (Figure 1) we hypothesize that sustainability certification can potentially support smallholders to improve their livelihood. This hypothesis has been further explicated in four assumptions.

- First, and most general, we assume that certification affects assets, which will then be used to perform activities that are expected to create better livelihood outcomes. We operationalized outcomes as increased and stable income, increased market access,

conserved and enhanced environmental quality, better health and education, and organizational strengthening.

- Second, we assume that certification may improve livelihoods in three ways: (1) through directly changing the assets of smallholders, such as skills and management practices; (2) through increasing smallholders' access to the global market; 3) through reducing the economic vulnerability of smallholders, understood as the extent to which smallholders are influenced by uncontrolled or limitedly controlled factors such as price volatility.
- Third, we assume that the preferences of smallholders play a role in the intervention process, as they influence choices to decide on what assets to invest, what activities to pursue, and what outcomes to be achieved.
- Fourth, we assume that changes in livelihood should also be understood in the context of external socio-economic factors. Besides the context of the global market and external vulnerabilities, these are the cultural contexts (beliefs, history and traditions), politics, and other regulations.

Research Field and Methods

We took the conceptual model of Figure 1 as starting point and comparatively analyzed the role of certification in sustaining and enhancing the livelihoods of two groups of smallholders: scheme smallholders and independent smallholders.

Respondents in the certified scheme smallholders group live in the province of South Sumatera, which is the third most important province in Indonesia in terms of smallholder land-area and an important site of scheme smallholder production of palm oil. Scheme smallholders are structurally bound by a contract or credit agreement to a particular mill or estate. Scheme smallholders are often not free to choose what crop they develop, are supervised in their planting and crop management techniques, and are often organized, supervised or directly managed by the managers of the mill, estate or scheme to which they are structurally linked (RSPO 2009). Scheme smallholders in our research represent the PT Hindoli/ Cargill Group, which was the first RSPO certified scheme-smallholder group in the world.

The scheme smallholders group consists of 8,797 members and covers 17,594 ha oil palm plantations. The smallholders scheme in PT Hindoli, explains Ross (2010), originated from a government transmigration project (PIR-Trans scheme, which was established in the early 1980s for growing soybeans. However, the soybean project failed and in 1991 PT Hindoli received government approval for the development of oil palm plantations including a plasma (smallholders) plantation establishment. The project was financed by PIR-Trans scheme and KKPA (*Koperasi Kredit Primer Anggota* or Cooperative Credit Scheme). PT Hindoli established a Farmers Development Department and hired Farmer Development Assistants located in the village to train the smallholders. PT Hindoli was taken-over by Cargill in 1995. The smallholder oil palm plantations were planted in the early 1990s and the palms are now mature and in the first cycle.

The respondents from the independent smallholders group are from the province of Riau, which has the highest share of smallholder land-area and smallholder production of palm oil in Indonesia. Independent smallholders are characterized by freedom to choose how to use their lands, what crops to plant and how to manage them. They are self-organized, self-managed, self-financed, and not contractually bound to any particular mill or association (RSPO 2010). We studied the *Asosiasi Swadaya Amanah* group. This is the second largest independent smallholder group in the world and the first RSPO certified in Indonesia (Savi 2013).

There are 349 independent smallholders in *Asosiasi Swadaya Amanah* who have individual agreements with the association to comply with the RSPO certification requirement. *Asosiasi Swadaya Amanah* comprises 10 sub-groups of farmers and covers 763 ha of land. All the palms are in the first planting cycle and matured. Gustomo (2013) explains that the land of *Asosiasi Swadaya Amanah* members was originally obtained via government lease and the land status is officially issued by The National Land Agency in the form of *Sertifikat Hak Milik* or Land Ownership Certificate. This certificate indicates that the land of the association is neither illegal nor under conservation areas. The independent smallholders in *Asosiasi Swadaya Amanah* sell FFB to a partnering mill, specifically Ukui Palm Oil Mill that belongs to PT Inti Indosawit Subur (IIS).

The data collection methods covered semi-structured in-depth interviews, informal discussions, participant observations and literature studies. The interviews consisted of questions regarding smallholders' motivation to join the RSPO, the institutional changes the membership induces, and perceived effects of certification on livelihood outcomes. Semi-structured interviews were held with 66 certified smallholders (34 scheme smallholders and 32 independent smallholders). Farmers were selected with the help of representatives of farmers group. To guarantee that the results would not be colored by the influence of (changes in) property rights and livelihood strategies imposed by actors outside the certification schemes, we only selected farmers who own and manage their land themselves. Farmers had to be literate and able to communicate in the Indonesian language (Bahasa).

During the time at the villages the first author participated in meetings and also had many informal discussions with farmers about the topic of the research, for example with those farmers that were hesitant to participate in the formal interviews. Additional Interviews were conducted with other stakeholders, such as companies, government actors, farmer organizations, an NGO and experts (see Table 1). These interviews were partly used to verify the results of the interviews with the smallholder farmers.

As the farmer groups are very homogeneous in aspects such as ethnic background, level of education, land area, and start of the plantations, this sample is regarded to represent a normal distribution of the population in the villages; results will not be influenced by significant differences in demographic background. A tabulated pivot table was used to capture whether respondents experienced any relationship between the components of Figure 1, and the type of relationship they experienced. This table was subsequently used as the main basis for deriving our results and conclusions.

Table 1. Interview Subjects by Affiliation.

No	Respondent	Number of Formal Interviews
Smallholder Groups		
1	Independent smallholders from <i>Asosiasi Swadaya Amanah</i> , Riau	32
2	Scheme smallholders from PT Hindoli, Cargill Group, South Sumatera	34
Key Informants		
1	Farmer organizations (cooperative, association)	5
2	Government (district, regional and national such as Directorate General of Estate)	6
3	NGO (WWF)	1
4	Expert (Green Palm Company, RSPO Secretariat and researcher)	3
5	Palm oil company (PT Hindoli)	3
Total		84

Motivations to Participate in the Certification Scheme

The two groups of smallholders in our study came to participate in the RSPO with a similar understanding of the potential of certification. For both groups, certification was something new; a program that came from abroad and that was introduced to them by an external actor. In fact, the smallholders were unaware of the philosophy behind sustainability certification and the concept of the RSPO. For them, certification was (and still is) a set of technicalities that need to be fulfilled to improve their production and get a better price for their FFB. One farmer said:

“RSPO is English, I am Indonesian and I did not go to school. I do not know what the RSPO is. But I do know and do apply the technical things. RSPO obliges farmers to have a land certificate; we are banned to do total spraying.... Obviously, I want to join the RSPO because the RSPO guarantees selling of the certified product ...” (Independent farmer).

Another farmer said:

“...I do not know what the RSPO stands for; after joining the RSPO our oil palm plantation became environmentally friendly because we reduced the use of chemicals For farmers the first and the most important thing is a higher price of the product” (Scheme farmer).

Their motivation to join the certification is related to this unawareness about what the RSPO stands for. Our data show that all smallholders mention financial considerations as their main motive for joining RSPO. Motives related to social and environmental improvements did not play a significant role in their decisions. The smallholders see certification as a marketing tool and not as a tool to create a more sustainable production. In our cases, participation in the RSPO certification scheme was even more attractive as the certification-related costs were covered by external actors; the nucleus company for scheme smallholders and an NGO for the independent smallholders. These motivations give a first indication on how farmers may value the effects of the RSPO on their livelihood, namely, in economic terms.

Organizational Consequences of Participation in the Certification

As smallholders cannot directly access certification individually (Bitzer, Glasbergen & Arts 2013, Brandi et al. 2013), and need support from external actors to comply with the standards (Lemeilleur 2013), participation has implications for the organizational structures within which they work. Regarding the RSPO, the organizational changes also result from the obligation that the smallholders should join a group certification and establish a group manager who is responsible for an internal control system (ICS) to monitor smallholders' performance (RSPO 2013b).

These organizational requirements have different consequences for the groups of smallholders. Scheme smallholders can only enter the market of certified palm oil when the nucleus they are connected to is certified. Their organizational embeddedness does not change that much. For scheme smallholders, certification is led by a group manager coming from the nucleus company. This nucleus company is responsible for the establishment of internal control mechanisms including the standard operational procedures (SOP) and a 'farmer development' team in order to conduct an internal audit. Figure 2 shows three important actors supporting scheme smallholders to become certified, namely a group manager, the Cooperative/Village Unit Cooperative/*Koperasi Unit Desa* (KUD), and farmer groups.

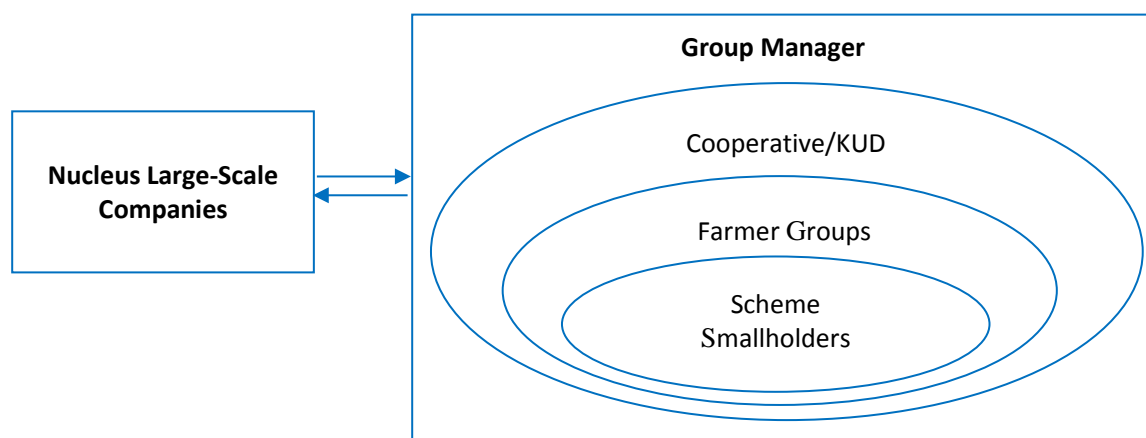


Figure 2. Key actors supporting scheme smallholders to participate in sustainability certification.

Although participation in the certification does not change the scheme smallholders' organizational embeddedness, the roles of the cooperative and farmer groups become more pivotal. After joining the certification, all plantation activities ranging from input supply and credit support to FFB selling, are centralized in a KUD. The KUD also provides a forum for sharing and communicating problems as well as the possible solutions related to palm oil plantation. The KUD, however, cannot manage all individual smallholders directly; farmer groups are important to link the KUD with individual scheme smallholders. The farmer groups are a forum for sharing knowledge and information on a smaller scale. They also supervise all oil palm plantation activities, including fertilizer application, harvesting, sorting, loading and transporting the FFB, and distributing income from FFB selling to farmer members. A post harvesting monitor needs to guarantee traceability of the RSPO FFB from certified smallholders to mills.

The independent smallholders entered the RSPO scheme after being made aware of the certified market by an NGO: WWF Indonesia. The NGO purposefully selected these independent smallholders because—as Java Trans migrants, they already had a long experience with farmer groups and a legal status of their land. The same ethnical background translates into comparable interests and easiness to communicate with each other. The smallholders were also selected because they are located near a conservation area. This is related to the objective of the NGO: conserving biodiversity through the certification of sustainable palm oil plantation management. Participation in the RSPO certification changes the independent smallholders’ organizational structure more fundamentally than for scheme smallholders. Joining certification implies that the smallholders need to select a group manager from the farmers; one who is experienced in managing cooperatives or farmer groups. They also have to organize themselves to establish a quality control mechanism. They need to construct an internal control system (ICS) team for the internal audit and arrange the standard operational procedures (SOP). In the audit process they have to convince the third party auditor about the reliability of the SOP and the capability of managers and the ICS team. Figure 3 illustrates actors that support independent smallholders to participate in the sustainable certification.

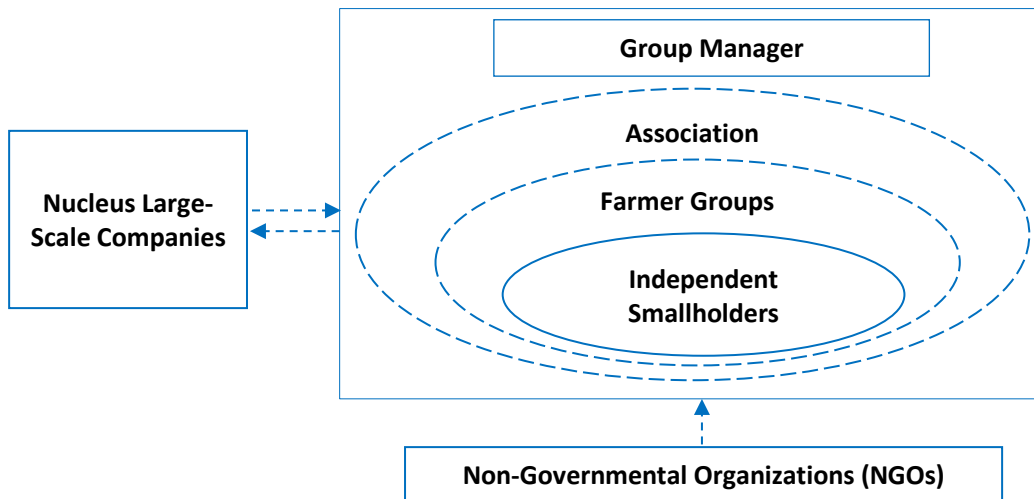


Figure 3. Key actors supporting independent smallholders to participate in sustainable certification

The independent smallholders’ cooperative or association has more responsibilities than the scheme smallholders’ cooperative. The association is not only responsible for the internal control mechanisms, which is also part of the nucleus company’s responsibility for scheme smallholders, but also for selling the FFB, buying production input, and providing credit. In the same way, independent smallholders’ farmer groups have more responsibilities than scheme smallholders’ farmer groups. The functions of the independent farmer group are not only limited to supervision and knowledge sharing, but also include activities such as coordinating plantation activities to gain benefits from economics of scale.

Embeddedness of the Smallholders in New Dependencies

In both cases, participation in the certification put the smallholders in a system of new dependency relationships which determined their action space. The smallholders are dependent on the other stakeholders to get the RSPO certification and to gain benefit from participation in the certification. In the scheme smallholder case, the dependency on the nucleus company is stronger than before participating in the certification due to the rules of the RSPO. These rules require that certified palm oil growers with a Nucleus Estate Smallholder (NES) scheme are obliged to certify their smallholders within three years after the certification of the nucleus. The nucleus company is directly involved in the certification process; it pays for the RSPO membership and the costs of audits and takes responsibility for capacity building of the connected smallholders (e.g. training and strengthening farmer organizations). The company is also contractually bound to buy certified FFB from scheme smallholders and responsible for the distribution of a premium for Crude Sustainable Palm Oil (CSPO) sales (if buyers can be found who are willing to pay a premium). The new dependency of the scheme smallholders on the company obviously relates to the fact that the company is the one who holds the RSPO certificate.

Different from scheme smallholders, independent smallholders hold their own sustainability certificate. However, although independent smallholders are characterized as independent and not bound by a contract to a nucleus, participation in the certification makes them reliant on external actors. This dependency is triggered by smallholders' demand for, but incapacity to gain, credit, risk management, information, technology, and market access. The independent smallholders in our research became particularly dependent on an NGO: WWF Indonesia. The independent smallholders entered the RSPO scheme after they were made aware of the certified market by the NGO. Furthermore, the NGO socialized the required standards, conducted training, and helped to prepare for the RSPO certification audit. In turn, WWF was funded by the philanthropic Carrefour Foundation, which is concerned about the negative impacts of uncontrolled production of palm oil, to organize trainings.

WWF also facilitated the smallholders to join a company to receive technological help and they have sold their RSPO certificate via the Green Palm trading system, which is the channel to the market of sustainable palm oil, and the way to get a premium fee. The certified independent smallholders can sell their products in two ways. The traditional way is selling the FFB (physical) to a nucleus company/mill. If the FFB has a higher quality than uncertified FFB, the smallholders can get a higher price. However, in this case smallholders are fully dependent on the company. The second way is new and opened by the RSPO certification scheme. RSPO certified palm oil producers can register a quantity of their output with the Green Palm program. It is only through this trading program that the smallholders can sell their certified products to buyers (e.g. consumer goods manufacturers). They are awarded one Green Palm certificate for each ton of palm oil which has been sustainably produced. They can then put those certificates up for sale on the Green Palm web based trading platform to get a premium fee (see also <http://greenpalm.org/>).

Benefits of Participation in the Certification

Although the dependency relations of scheme and independent smallholders change in a different way through certification, the influence on their assets is more or less the same. Direct effects are observable in the assets of social and human capital, as well as some provisions that are related to physical capital. These direct effects are closely related to the new organizational structure, which provides the farmers with the necessary training to become certified. Therefore, these direct effects have already been visible or materialized from the first year of certification and can be identified as short term benefits.

Farmers' organizations are trained by the certification facilitators (companies or NGOs) to better manage their business (including filing data), to better communicate with members, and to build business relationships with the company and input supplier. This contributes positively to farmer's social capital (e.g. increase opportunities for networks and relationships) and human capital (skills and knowledge). The majority of smallholders hold the view that the farmer organization's staff is better trained and their services improved. They also feel that they have more opportunities to participate in the organizations.

Social and human capital is further strengthened through training of farmers in Good Agricultural Practices (GAP), focusing on integrated pest management, limited use of pesticide and spraying, proper fertilizer application, and best harvesting techniques. Furthermore, human capital is improved via trainings on High Conservation Values (HCV) and trainings on the concept of protected animals and Environmental Impact Assessment. At this training, farmers receive ample information on the safe use of chemical pesticides and safe ways to deal with chemical waste. In addition, they are also introduced to healthy and safe working conditions, first aid, and ways to deal with fire (see Ekayani, Nurrochmat, and Darusman 2015), that, in turn, contribute to better health conditions. Next to that, smallholders get access to elements of physical capital such as safety tools (masks, boots, helmets, gloves and affronts), chemical storage systems, sanitary rooms, waste ponds, and owl nests.

Other assets (natural and financial) are not directly improved through participation in the certification scheme, but indirectly through the process of capacity building. Moreover, these improvements are seen as long term effects that are not visible yet. Although smallholders cannot specify the value, they believe that sustainability certification may preserve natural capital. Our interviews indicate that scheme and independent smallholders, after becoming a member in the RSPO, have undertaken several conservation activities which result in positive livelihood outcomes in the area of conserving and enhancing environmental quality, such as planting bamboo or trees to prevent erosion and floods. They also conserve soil and water quality, for example through arranging palm oil midribs in a 'U' shape to reduce erosion, maintain soil fertility, and keep the irrigation channels clear from any obstructions to prevent flooding. Due to better understanding of the harmfulness of pesticides and herbicides to health and biodiversity, the farmers apply a waste management system. They never wash chemical containers in the river, but collect used chemical containers and send them to the cooperative and company to be destroyed safely. Furthermore, farmers use natural predators for eradicating pest by building owl nests and plant *Turnera ulmifolia* and do not hunt protected animals - such as

cobra snakes, owls, and *Varanus salvator* (water monitor lizard)- to safeguard biodiversity. The following comment of an independent smallholder is an illustration:

“... Maybe the effects [of certification] on environmental quality cannot be seen yet, because we are recently certified. But at least to reduce land and water degradation we have already applied many activities. We do not apply fertilizer in the dry season and do not wash fertilizer containers in the river to protect animate creatures in the river. In essence, RSPO teaches us to protect our nature....” (Independent smallholder).

A scheme smallholder opinioned:

“... Effects on the environmental quality can be seen if we look at our plantation, which is greener now because we keep weed in our plantation to cover soil and reduce erosion due to surface runoff (rainfall), although it looks messy. Before joining RSPO, we believed that a good plantation is the one that is free from weed, so we applied total spraying with excessive herbicides” (Scheme smallholder).

Certification is also considered to potentially contribute to an increase of smallholders' financial capital and hence to contribute positively to the livelihood outcomes (more income). Within this context certification is particularly valued by the smallholders because participation increases the volume and quality of their production, which opens opportunities for a higher income. Furthermore, understanding of Good Agricultural Practices encourages them to apply the right fertilizers at the right time and with the right dosage, which also increases the productivity of the plantation. Next, increasing knowledge on harmful chemicals leads the smallholders to reduce pesticide and herbicide use which reduces the cost of spraying from approximately IDR 900,000 – 1000,000 /ha/year to IDR 400,000 /ha/year (interview with head of independent smallholder association). Also, compared to uncertified smallholders, most certified scheme and independent smallholders believe that they get a higher price for their FFB. This higher price does not so much result from the fact that the FFB is certified, but from the fact that the quality of certified FFB is generally higher than uncertified FFB. In addition, centralization of plantation activities (including fertilizer application, spraying and selling FFB) increases smallholders' economies of scale that allows to share costs of production, management and transport. Table 2 shows the perception of farmers concerning the effects of certification on price, production volume, costs and income. Based on Table 2, the majority of smallholders perceived participation in the RSPO to positively contribute to price, production of FFB, and income, while decreasing cost of production.

Table 2. Smallholders' Perception Regarding Certification Effect on Price, Production, Costs and Income.

	Price (%)	Production (%)	Costs (%)	Income (%)
Higher	86	80	11	74
The same	14	17	12	11
Lower	0	2	77	2
Do not know	0	2	0	14

Table 3 summarizes the analysis of our data related to the different types of capital and several dimensions. The first dimension (direct versus indirect) refers to the presence of intervening variables that specify how a given effect occurs between an independent variable and a dependent variable, such as capacity building. The second dimension (short term versus long term) refers to the expected time lag between participation in the certification and effects. The third dimension (visible versus expected) takes the actual presence of results into account.

Table 3. Benefits of Certification on Smallholders' Livelihoods.

Assets	1 st Dimension		2 nd Dimension		3 rd Dimension	
	Direct	Indirect	Short Term	Long Term	Visible (materialized)	Expected
Social Capital						
Strengthening organization	√		√		√	
Increasing smallholders' trust in organization		√		√		√
Increasing participation in organizations		√		√		√
Increasing connections and networking		√		√		√
Human Capital						
Increasing opportunity for training (improving knowledge and skill)	√		√		√	
Better health		√		√		√
Physical Capital						
Providing safety equipment and building chemical storage system, sanitary room, waste pond, owl nests and planting <i>Turnera</i>	√		√		√	
Natural Capital						
Conserving soil and water quality		√		√		√
Protecting biodiversity		√		√		√
Financial Capital						
Increasing income		√	√		√	
Increasing credit access		√		√		√
Premium fee		√	√		√	

Uncertainties of Participation in the Certification

Participation in the certification scheme does not only create benefits, but also new uncertainties that may hamper or counteract the earlier described positive effects of certification on livelihood outcomes. These uncertainties regard the premium fee, price volatility, market access and access to credit.

Premium Fee

Certified palm oil smallholders receive an annual premium fee which is different from premium prices for certified FFB at the farm gate². Smallholders consider the premium fee as a bonus from a company or the Green Palm certificate sales. The amount of premium fee gathered by smallholders depends on their production capacity and (for scheme smallholders) on the affiliated company. Therefore the policy and ability of the company to access international buyers who are willing to pay a premium fee plays an important role in the amount of premium fee. For independent smallholders, although they are facilitated by an NGO, their capability to negotiate with buyers of GreenPalm certificates determines the amount of premium fee they are able to receive.

The low uptake and slow growth of the Crude Sustainable Palm Oil (CSPO) uptake also influence the extent to which premium prices will be paid to the smallholders. In 2012, the actual volume of the CSPO produced was 6,724,236 tons, while the CSPO sales were 3,479,415 tons, which is only 51.7% of CSPO produced (RSPO 2013a). In 2013, the CSPO uptake did not significantly increase as the market absorbed only 52% of the global CSPO production in that year (WWF 2014). Furthermore, the global market share of CSPO is approximately 6% of the 58 million tons of global palm oil production (RSPO 2013a). WWF (2013) reported that in 2012 CSPO usage by the most important European markets equals 2,534,767 tons, which is approximately 43% of the 6,384,000 tons palm oil usage (Gerasimchuk and Koh 2013). These data show the lack of commitment of international buyers to support the sustainable certification and little possibilities to shift part of the certification costs to the buyer (World Growth 2013). It needs to be seen each year again if buyers are willing to pay a premium fee. This uncertainty becomes higher if more certified palm oil enters the market, while the demand for CSPO is not significantly changing.

The premium fee is managed by the cooperative (scheme smallholders) or association (independent smallholders) and is used to fund surveillance preparation such as training, safety tools, and ICS wages (for independent smallholders). It can also be used to fund social activities such as building a mosque. Premium fees are thus no direct source of income. The relationship between certification and livelihood outcomes in the financial domain should not be seen merely in terms of the availability of premium fees. Increased productivity and improved product quality more importantly contribute to the higher income of certified smallholders.

Price Volatility

Our interviews indicate that price volatility can be considered the most important factor to explain income insecurity. For example, smallholders experienced a sharp decrease of FFB price from IDR 2100/kg to IDR 760/kg (for scheme smallholders) or IDR 250/kg (for independent smallholders) at the end of 2007. This situation significantly decreased the smallholder's income. Smallholders try to cope with this permanent instability in different ways. The majority of the independent smallholders (56%) depends on a cooperative or association and uses the savings

²For Independent smallholders, the average premium price is approximately \$50/ton FFB, and the premium fee is around \$1.82/ton FFB. For scheme smallholders, the premium price is managed by the farmer organization, there is no premium fee, and scheme smallholders directly receive premium prices as additional income.

and loans from the cooperative to temporarily set-off a decrease in income. Around 16% of the smallholders employ non-agricultural activities and 13% has livestock as alternative source of income. The remaining 15% has even more than one income alternative. Different from the independent smallholders, the majority of scheme smallholders uses crop diversification as an income alternative (50%), although many of them still depend on the cooperative (26%) for a loan to fulfill their daily needs when their income decreases. Furthermore, approximately 9% of scheme-smallholders work in non-agricultural activities, 3% has livestock as alternative income, and 12% even has more than one income alternative.

Certification does not change the price volatility with which smallholders need to cope. Because of this, we can say that certification—although generally leading to higher income—does not result in more *stable* income. After becoming certified, smallholders stay (scheme) or become (independent) dependent on the company. Whether the company is willing to pay a higher price for certified palm oil depends on its policy, which may be different for each company. Although the FFB price is formally and by regulation, the same for scheme smallholders within a region and the incentive for certification is not regulated, it gives more freedom to companies to differ in their prices and limit surplus prices for certified palm oil. Scheme smallholders can, however, not go to another company (that may pay higher prices) because they are bounded to a company by contract. Independent smallholders have more leeway. They are free to decide to whom their FFB will be sold. Their choice is mainly determined by prices (which depends on the number of certified companies), and the distance to mills. However, the characteristic of FFB as a perishable commodity and the limited number of certified mills mostly constrain their choice. Also, independent smallholders tend to avoid risk and prefer to stay with one mill/company by arranging contracts and building commitment with the company. Maintaining commitment and social relations (social capital) are often as equally important for small holders as gaining higher prices.

Market Access

Smallholders do not have much insight into the market and global value chains. They consider the market as a place where they can sell their FFB directly, such as to middlemen (for independent smallholders), or to mill companies (for scheme smallholders). The smallholders perceive palm oil companies as the most important market for them as they pay higher prices than middlemen. Nevertheless, the number of certified mills is still limited; 107 mills (out of 324) are under 34 RSPO certified companies in Indonesia (RSPO 2014). In Pelalawan, Riau where independent smallholders reside, there are only three certified mills and in Musi Banyu Asin, South Sumatera there is only two. Certification limits smallholders' opportunities to access markets due to the limited availability of mills.

Scheme smallholders do not consider market access a benefit of certification. They have a market as the FFB of scheme smallholders must be bought by the corporation. In contrast to the scheme smallholders, independent smallholders perceive an improvement of their market access through increased opportunities for collaboration with companies. The FFB of certified independent smallholders is prioritized over uncertified FFB. Although in a peak season the certified smallholders are still able to easily sell their FFB. Therefore, independent certified smallholders do not need to spend extra transport costs and time to find alternative buyers.

Furthermore, they can avoid deterioration of FFB quality and depreciation costs due to the time lag between harvesting and milling.

Access to Credit

Regarding access to credit, our research shows different results for scheme and independent smallholders. Our interviews indicate that the majority of independent smallholders (66%) do not observe an improvement in access to credit after joining RSPO. However, most of the scheme smallholders (59%) do experience better access to credit. Independent smallholders believe that access to credit is not influenced by participation in the certification, but by membership of a farmer organization. More than half— 56% of the independent smallholders rely on farmer groups, cooperatives or associations for their credits compared to 26% of the scheme smallholders. In contrast to independent smallholders, scheme smallholders believe that access to credit is affected by participation in the certification scheme because it increases income and their ability to repay loans. Moreover, better record-keeping and management of cooperative and farmer groups indicate the improvement of organizations' transparency. As a consequence, banks or other financial institutions have more trust in them and are more willing to provide loans.

The Role of Governments

Our data shows that external factors, such as the difficult access to the global market and vulnerability in terms of price fluctuations, do not change significantly with certification. Findings also indicate that government programs that are intended to improve smallholders' livelihood (for example through increasing oil palm productivity by providing palm oil seeds and subsidized fertilizers) do not succeed in doing so. This can be explained by limited information and/or access of the smallholders to these programs and by the fact that some of these programs are not even known by the smallholders. Training arranged by the government is only available to farmers who have just established new plantations or those who request training, which hampers the continuous development of human capital. Furthermore, and in line with Gauthier (2000) our study indicates that in the view of smallholders, policies often do not reach the poorest farmers due to limited budget allocation and bureaucracy. Improvements in infrastructure for example, are limited to village roads (*jalan desa*), while agricultural roads (*jalan usahatani*) (that are crucial to transport FFB) have to be established by the smallholders themselves. The smallholders in our research view the role of the government as non-responsive and even an obstacle to participating in the certification scheme. Because of complicated checks and approvals, all smallholders face a lot of difficulties to receive the Cultivation Registration Certificate (which is one of the RSPO requirements) showing that they comply with the national and local regulations. The following comment by the association management illustrates this:

“Cultivation Registration Certificate (Surat Tanda Daftar Budidaya/ STD-B) is very important after the Land Ownership Certificate (Surat Hak Milik/ SHM). The process is difficult because we need verification from the District Plantation Office and it should be signed by Head of the District Government... There has not been any support yet from the government... I think they only see oil palms as a matter of business....”

Conclusions

To better understand the potential of sustainability certifications for improving the livelihood of Indonesian smallholder farmers we developed an amended sustainable livelihood framework as a conceptual model for our empirical study.

In accordance with the research of van Rijn, Burger, and den Belder (2012), who studied the impacts of coffee certification from a livelihood perspective, our research reveals that capacity building plays a vital role. Certification encourages the transformation of an unorganized, fragmented and uncontrolled production plantation into an organized one. First, certification requires organizational changes which are conditional in the certification process. Second, the changed organizational structure gives smallholders access to training, valuable relationships, and technology, which secures their ability to comply with the prerequisites, and improves production methods.

Organizational and technological changes induce a higher production quality that may benefit smallholders indirectly and financially. We found that certification, as a tool to create more sustainable agriculture, is not fully understood by the smallholders. Rather, certification is seen as an economic tool in the pursuit of a better livelihood. Smallholders participate because they have to (scheme smallholders), or because certification is introduced by trustful people who open opportunities for higher incomes (independent smallholders). Non-economic benefits from certification such as social and environmental improvements are less valued by the smallholders unless they lead to economic benefits.

Consistent with the findings of van Rijn, Burger, and den Belder (2012), our study reveals that participation in the certification process does not change farmers' dependency relations, nor their economic vulnerability and access to the market (scheme smallholders). Smallholders do not have much insight into the price setting of their products and they are still subject to unpredictable price fluctuations. There is also uncertainty about the uptake of certified palm oil in the market and premium prices. Furthermore, the governmental programs designed to improve smallholder livelihoods rarely reach them. Neither have the difficulties that result from smallholder alignments with certification programs become visible enough to influence the governmental programs designed to improve them.

Different from prior research which has focused on the impact of certifications on the environmental, social, and economical effects of sustainability certification (see Blackman and Rivera 2011, Alvarez and Hagen 2011), our research provides some first insights into the relationships between these impacts. These findings have led us to hypothesize that the ethical aspects of sustainability must be better aligned with the economic interests of the (Southern) farmers or the certifications will likely lead to weakly institutionalized practices.

The need to better accommodate the economic interests of farmers will probably increase as more smallholders are certified whereas the demand for certified palm oil is not growing. Currently the overproduction of certified palm oil lies around 50%; and many markets are not interested in buying certified palm oil if the price is higher than for conventional palm oil—a

similar trend is seen among other agricultural commodities certifications (KPMG Sustainability 2013).

This study examined two smallholder groups that are culturally homogeneously. Naturally, certification is more difficult if farmers do not share similar backgrounds as group belongingness and organizational identity are essential components to cohesiveness and willingness to work together in a group towards a shared goal. Cultural diversity and its impact on certification schemes is an underexplored topic in the current research. Such knowledge might further improve our understanding and potential for schemes to induce more sustainable livelihoods.

Also, the scope of this research did not examine the outcomes and relationships of uncertified smallholder groups, the difficulties in compelling them to participate in a certification scheme; and analyzing strategies to incorporate them while improving the livelihood effects of participation in sustainability certification.

Lastly, our research focuses on actors at the bottom of the value chain. However, these value chains are not power-neutral. As Bitzer and Glasbergen (2015) observed, with certification, smallholder farmers need to change production processes within their existing resources and power asymmetries. Their relative vulnerable position may influence the farmers' ability to cope with uncertainties inherent to participation in a certification scheme. Therefore, we suggest exploring the connection between the 'horizontal' livelihood framework and the logics of a 'vertically' organized agricultural value chain (see Vellema and van Wijk (2014)).

Acknowledgements

This research was conducted as part of the joint research project on Social and Economic Effects of Partnering for Sustainable Change in Agricultural Commodity Chains in Indonesia. The project involves a bilateral cooperation between Maastricht University and Lampung University, with the financial support from the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Directorate General of Higher Education (DIKTI) of the Ministry of Education and Culture of Republic Indonesia. The authors are very grateful to Ron Cörvers, Bustanul Arifin, Fadhil Hasan, and Hanung Ismono for their valuable comments and input to (earlier versions of) this paper.

References

- Adato, Michelle, and Ruth Meinzen-Dick. 2002. Assessing the impact of agricultural research on poverty using the sustainable livelihoods framework. International Food Policy Research Institute. FCND Discussion Paper 128. <http://ageconsearch.umn.edu/bitstream/16074/1/ep020089.pdf>.
- Alvarez, Gabriela, and Oliver Von Hagen. 2011. The Impacts of Private Standards on Producers in Developing Countries: Literature Review Series on the Impacts of Private Standards, Part II. Geneva: International Trade Centre (ITC). Doc. No. MAR-11-201.E. <http://www.intracen.org/>.

- Ashley, Caroline, and Karim Hussein. 2000. Developing methodologies for livelihood impact assessment: experience of the African Wildlife Foundation in East Africa. Overseas Development Institute: London. <http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/2750.pdf>.
- Auld, Graeme. 2010. Assessing certification as governance: effects and broader consequences for coffee. *The Journal of Environment & Development* 19 (2):215-241.
- Bacon, Christopher. 2005. Confronting the Coffee Crisis: Can Fair Trade, Organic, and Specialty Coffees Reduce Small-Scale Farmer Vulnerability in Northern Nicaragua? *World Development* 33 (3):497-511. doi: 10.1016/j.worlddev.2004.10.002.
- Bacon, Christopher M., V. Ernesto Méndez, María Eugenia Flores Gómez, Douglas Stuart, and Sandro Raúl Díaz Flores. 2008. Are Sustainable Coffee Certifications Enough to Secure Farmer Livelihoods? The Millenium Development Goals and Nicaragua's Fair Trade Cooperatives. *Globalizations* 5 (2):259-274. doi: 10.1080/14747730802057688.
- Beall, Elizabeth. 2012. Smallholders in Global Bioenergy Value Chains and Certification. *Environment and Natural Resources Management Working Paper 50*. <http://www.fao.org/docrep/015/i2597e/i2597e00.pdf>.
- Bebbington, Anthony. 1999. Capitals and capabilities: a framework for analyzing peasant viability, rural livelihoods and poverty. *World Development* 27 (12):2021-2044.
- Becchetti, Leonardo, and Marco Costantino. 2008. The effects of fair trade on affiliated producers: An impact analysis on Kenyan farmers. *World Development* 36 (5):823-842.
- Beuchelt, Tina D., and Manfred Zeller. 2011. Profits and poverty: Certification's troubled link for Nicaragua's organic and fairtrade coffee producers. *Ecological Economics* 70 (7):1316-1324. doi: 10.1016/j.ecolecon.2011.01.005.
- Bitzer, Verena. 2012. Partnering for change in chains: The capacity of partnerships to promote sustainable change in global agrifood chains. *International Food and Agribusiness Management Review* 15 (Special Issue B):13-37.
- Bitzer, Verena, and Pieter Glasbergen. 2015. Business–NGO partnerships in global value chains: part of the solution or part of the problem of sustainable change? *Current Opinion in Environmental Sustainability* 12:35-40. doi: 10.1016/j.cosust.2014.08.012.
- Bitzer, Verena, Pieter Glasbergen, and Bas Arts. 2013. Exploring the potential of intersectoral partnerships to improve the position of farmers in global agrifood chains: findings from the coffee sector in Peru. *Agriculture and Human Values* 30 (1):5-20. doi: DOI 10.1007/s10460-012-9372-z.
- Blackman, A., and J. Rivera. 2011. Producer-level benefits of sustainability certification. *Conserv Biol* 25 (6):1176-85. doi: 10.1111/j.1523-1739.2011.01774.x.

- Blackman, Allen, and Maria A. Naranjo. 2012. Does eco-certification have environmental benefits? Organic coffee in Costa Rica. *Ecological Economics* 83:58-66. doi: 10.1016/j.ecolecon.2012.08.001.
- Blackman, Allen, and Jorge Rivera. 2010. The evidence base for environmental and socioeconomic impacts of “sustainable” certification. *Resources for the Future: RF-DP-10-17*.
- Brandi, Clara, Tobias Cabani, Christoph Hosang, Sonja Schirmbeck, Lotte Westermann, and Hannah Wiese. 2013. Sustainability certification in the Indonesian palm oil sector, Benefits and challenges for smallholders. German Development Institute (DIE):Bonn <http://www.die-gdi.de/>
- Carney, Diana. 1998. Sustainable rural livelihoods: what contribution can we make? The Department for International Development's Natural Resources Advisers' Conference. London, England, July 1998.
- Carney, Diana. 2003. Sustainable livelihoods approaches: progress and possibilities for change. In, ed Omar Sattaur. London: Department for International Development London.
- Carney, Diana, Michael Drinkwater, Tamara Rusinow, Koos Neefjes, Samir Wanmali, and Naresh Singh. 1999. Livelihoods approaches compared. London: Department for International Development (DFID): London.
- Chambers, Robert, and Gordon Conway. 1992. Sustainable rural livelihoods: practical concepts for the 21st century. Institute of Development Studies (UK): Brighton. Discussion Paper 296. <http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/775/Dp296.pdf?sequence>.
- Colchester, Marcus, and Norman Jiwan. 2006. Ghost on Our Own Land Indonesian Oil Palm Smallholders and the Roundtable on Sustainable Palm Oil. Forest Peoples Programme: England <http://www.forestpeoples.org/sites/fpp/files/publication/2011/02/ghostsonourownlandtxt06eng.pdf>
- De Haan, Leo J. 2012. The livelihood approach: a critical exploration. *Erdkunde* 66 (4):345-357.
- Department for International Development (DfID). 1999. A livelihood comprises the capabilities, assets and activities required for a means of living. In *Sustainable livelihoods guidance sheets*. London: DFID Department for International Development. http://mhpss.net/?get=216/1382088062-DFID_Sustainable_livelihoods_guidance_sheet.pdf .
- Directorate General of Estate. 2011. *Tree crop estate statistics of Indonesia, 2010-2012 oil palm*. Jakarta: Directorate General of Estate.

- Ekayani, Meti, Dodik Ridho Nurrochmat, and Dudung Darusman. 2015. The role of scientists in forest fire media discourse and its potential influence for policy-agenda setting in Indonesia. *Forest Policy and Economics*. doi: 10.1016/j.forpol.2015.01.001.
- Elder, Sara D., Hisham Zerriffi, and Philippe Le Billon. 2012. Effects of Fair Trade Certification on Social Capital: The Case of Rwandan Coffee Producers. *World Development* 40 (11):2355-2367. doi: 10.1016/j.worlddev.2012.06.010.
- Ellis, Frank. 2000. *Rural Livelihoods and Diversity in Developing Countries*. Oxford: Oxford University Press.
- Gauthier, R. 2000. Agro-ecological strategies in North Lampung, Indonesia: social constraints to biological management in soil fertility. *Netherlands Journal of Agricultural Science* 48:91-104.
- Gerasimchuk, Ivetta, and Peng Yam Koh. 2013. *The EU Biofuel Policy and Palm Oil: Cutting subsidies or cutting rainforest?* Manitoba: The International Institute for Sustainable Development.
- Giovannucci, Daniele, Jason Potts, B Killian, C Wunderlich, G Soto, S Schuller, F Pinard, K Schroeder, and Isabelle Vagneron. 2008. "Seeking sustainability: COSA preliminary analysis of sustainability initiatives in the coffee sector." *Committee on Sustainability Assessment*.
- Glasbergen, Pieter. 2013. Legitimation of Certifying Partnerships in the Global Market Place. *Environmental Policy and Governance* 23 (6):354-367. doi: 10.1002/eet.1625.
- Gustomo, Aryo. 2013. RSPO public summary report of Independent smallholder initial certification assessment Assosiasi Swadaya Amanah Ukui-Pelalawan District, Riau Province, Indonesia. BSi Group.
- Hanu, Mansuetus Alsy, and Marlina Sadjli. 2013. *Market Transformation by Oil Palm Smallholders*. Oil Palm Smallholders Union: Bogor.
<http://www.files.com/set/52e9e35c5fa0c>.
- Hospes, Otto. 2014. Marking the success or end of global multi-stakeholder governance? The rise of national sustainability standards in Indonesia and Brazil for palm oil and soy. *Agriculture and Human Values* 31 (3):425-437. doi: 10.1007/s10460-014-9511-9.
- KPMG Sustainability. 2013. *Improving smallholder livelihoods: Effectiveness of certification in coffee, cocoa and cotton*. <http://www.sustaineo.org/>.
- Lemeilleur, Sylvaine. 2013. Smallholder Compliance with Private Standard Certification: The Case of GlobalGAP Adoption by Mango Producers in Peru. *International Food and Agribusiness Management Review* 16 (4):159-180.

- Marti, Serge. 2008. Losing ground: the human rights impacts of oil palm plantation expansion in Indonesia. Friend of Earth, LifeMosaic and SawitWatch. <http://www.foei.org/>.
- Melo, Cristian J., and Steven A. Wolf. 2007. Ecocertification of Ecuadorian Bananas: Prospects for Progressive North–South Linkages. *Studies in Comparative International Development* 42 (3-4):256-278. doi: 10.1007/s12116-007-9009-1.
- Méndez, V. Ernesto, Angel Mendoza, Christopher M. Bacon, Meryl Olson, Seth Petchers, Doribel Herrador, Cecilia Carranza, Laura Trujillo, Carlos Guadarrama-Zugasti, and Antonio Cordón. 2010. Effects of Fair Trade and organic certifications on small-scale coffee farmer households in Central America and Mexico. *Renewable Agriculture and Food Systems* 25 (3):236-251. doi: 10.1017/S1742170510000268.
- Opijnen, Marjon van, Arjen Brinkmann, and Petra Meekers. 2013. Lessons Learned on RSPO Smallholder Certification in Indonesia. CREM. <http://www.crem.nl/>.
- Papenfus, Michael M. 2000. Investing in Oil Palm an Analysis of Independent Smallholder Oil Palm Adoption in Sumatera, Indonesia. Southeast Asia Policy Research Working Paper, No. 15. <http://www.worldagroforestry.org/>.
- Pesqueira, Luli, and Pieter Glasbergen. 2013. Playing the politics of scale: Oxfam’s intervention in the Roundtable on Sustainable Palm Oil. *Geoforum* 45:296-304. doi: 10.1016/j.geoforum.2012.11.017.
- Pirotte, Gautier, Geoffrey Pleyers, and Marc Poncelet. 2006. Fair-trade coffee in Nicaragua and Tanzania: a comparison. *Development in practice* 16 (5):441-451.
- Ross, Charlie. 2010. Public Summary Report RSPO Certification Assessment PT Hindoli Scheme Smallholders South Sumatera Indonesia. BSi Group. <http://www.rspo.org/> .
- RSPO. 2009. Roundtable Sustainable Palm Oil (RSPO) Principles and Criteria for Sustainable Palm Oil Production Guidance on Scheme Smallholders. <http://www.rspo.org/>.
- RSPO. 2010. Roundtable Sustainable Palm Oil (RSPO) Principles and Criteria for Sustainable Palm Oil Production. Guidance on Independent Smallholders. <http://www.rspo.org/>.
- RSPO. 2013a. Key statistics for certification. [http://www.rspo.org/
http://issuu.com/rspo2013/docs/cspo_uptake__production_-_charts-feb_final_#](http://www.rspo.org/http://issuu.com/rspo2013/docs/cspo_uptake__production_-_charts-feb_final_#).
- RSPO. 2013b. RSPO Standard for Group Certification Final – approved July 2010 (Amendment April 2013). <http://www.rspo.org/>
- RSPO. 2014. Certified grower May 2014. edited by RSPO. <http://www.rspo.org/>

- Ruben, Ruerd, and Ricardo Fort. 2012. The Impact of Fair Trade Certification for Coffee Farmers in Peru. *World Development* 40 (3):570-582. doi: 10.1016/j.worlddev.2011.07.030.
- Savi, Stefano. 2013. World second group of independent smallholders to be RSPO certified [accessed 31-July 2015] <http://www.rspo.org/news-and-events/news/worlds-second-group-of-independent-smallholders-to-be-rspo-certified>.
- Schouten, Greetje, and Pieter Glasbergen. 2012. Private multi-stakeholder governance in the agricultural market place: An analysis of legitimization processes of the roundtables on sustainable palm oil and responsible soy. *International Food and Agribusiness Management Review* 15 (Special B):63-88.
- Schouten, Greetje, Pieter Leroy, and Pieter Glasbergen. 2012. On the deliberative capacity of private multi-stakeholder governance: the roundtables on responsible soy and sustainable palm oil. *Ecological Economics* 83:42-50.
- Scoones, Ian. 1998. Sustainable rural livelihoods: a framework for analysis. *IDS Working Paper* 72. Institute of Development Studies. <http://www.ids.ac.uk/>.
- Utting, Karla. 2009. Assessing the Impact of Fair Trade Coffee: Towards an Integrative Framework. *Journal of Business Ethics* 86 (S1):127-149. doi: 10.1007/s10551-008-9761-9.
- Valkila, J. 2009. Fair Trade organic coffee production in Nicaragua - Sustainable development or a poverty trap? *Ecological Economics* 68 (12):3018-3025. doi: DOI 10.1016/j.ecolecon.2009.07.002.
- van Rijn, Fédes, Kees Burger, and Eefje den Belder. 2012. Impact assessment in the Sustainable Livelihood Framework. *Development in Practice* 22 (7):1019-1035. doi: 10.1080/09614524.2012.696586.
- Vellema, Sietze, and Jeroen van Wijk. 2014. Partnerships intervening in global food chains: the emergence of co-creation in standard-setting and certification. *Journal of Cleaner Production*. doi: 10.1016/j.jclepro.2014.03.090.
- World Growth. 2013. Smallholders: Costs and Challenges of Small-Farmer Certification. Melbourne: World Growth. <http://worldgrowth.org/>.
- WWF. 2013. Palm Oil Buyers Scorecard Measuring the Progress of Palm Oil Buyers. http://wwf.panda.org/what_we_do/footprint/agriculture/palm_oil/solutions/responsible_purchasing/palm_oil_buyers_scorecard_2013/.
- WWF. 2014. UNSEEN, Palm Oil Consumption Digital Campaign. 15-January. http://www.wwf.or.id/berita_fakta/index.cfm?uNewsID=30862&uLangID=1.