

# Smallholders in Global Bioenergy Value Chains and Certification

Evidence from Three Case Studies



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Jatropha intercropped, Koulikoro, Mali (Helena Barton)  
Palm kernel sorting, Krabi, Thailand (Enno Mewes, GIZ)  
Sugarcane harvest, Piura, Peru (Jose Muro, SNV)  
MBSA fieldworkers and farmer, Koulikoro, Mali (Helena Barton)  
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# Smallholders in Global Bioenergy Value Chains and Certification

## Evidence from Three Case Studies

Edited by Elizabeth Beall



Bioenergy and Food Security Criteria  
and Indicators project  
Food and Agriculture Organization of the United Nations (FAO)



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ISBN 978-92-5-107149-6

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## FOREWORD

The global demand for modern bioenergy, and especially liquid biofuels, is rapidly growing, driven mainly by climate change mitigation policies and increasing oil prices. This creates both opportunities and risks for developing countries.

On one hand, modern bioenergy development can boost both agricultural and rural development by raising agricultural productivity, creating new employment and income-generating opportunities, and improving access to modern energy services in rural areas. On the other hand, if not properly managed, modern bioenergy development can trigger a number of negative environmental and socio-economic impacts, for instance, by putting pressure on key resources such as land and water.

The environmental and socio-economic sustainability of modern bioenergy has been highly debated over the past few years. One of the most controversial issues that has dominated this debate is the relationship between bioenergy and food security.

In order to shed light on this complex issue and help policy-makers understand and manage the risks and opportunities for food security associated with various bioenergy development pathways, the Bioenergy and Food Security (BEFS) project of the Food and Agriculture Organization of the UN (FAO) developed an Analytical Framework and a toolbox, which are being implemented in several countries.

Building on this work, FAO's Bioenergy and Food Security Criteria and Indicators (BEFSCI) project has developed a set of criteria, indicators, good practices and policy options on sustainable bioenergy development that foster rural development and food security. BEFSCI seeks to inform the development of national frameworks aimed at preventing the risk of negative impacts – and increasing the opportunities – of bioenergy development on food security, and help developing countries monitor and respond to the impacts of bioenergy development on food security.

A number of voluntary standards for the certification of biofuels and of specific biofuel feedstocks have been developed over the past few years in response to concerns about the environmental and socio-economic sustainability of biofuel supply chains and as a means for foreign producers to show compliance against the sustainability requirements of key importing markets. While one of the goals of voluntary standards is to enhance the sustainability of bioenergy production – including from a socio-economic perspective – they might also present a disincentive for incorporating smallholders in value chains, due to greater cost and complexity.

FAO's Bioenergy and Food Security Criteria and Indicators (BEFSCI) project has conducted three case studies to examine the opportunities and challenges for smallholders presented by: 1) bioenergy as a new type of value chain, and by 2) bioenergy certification schemes.

Understanding the specific challenges and opportunities for smallholder inclusion in bioenergy voluntary standards and certification is crucial in order to ensure that modern bioenergy development delivers on its rural development and poverty reduction potential.



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## ACKNOWLEDGEMENTS

This report was prepared under the overall supervision of Heiner Thofern, Senior Natural Resources Management Officer, with technical supervision from Andrea Rossi, Natural Resources Management Officer, of the Climate, Energy and Tenure Division (NRC). We would like to thank all of the private companies and farmers who shared their experiences with us, in addition to our partners in conducting the three case studies for this report – the Deutsche Gesellschaft für Internationale Zusammenarbeit (or the German Agency for International Development [GIZ]), the Netherlands Development Organisation (SNV), and the International Institute for Environment and Development (IIED) – without all of whom the case studies would not have been possible. We would also like to thank the many FAO colleagues who provided advice, insights, and comments throughout the development of this report, including Astrid Agostini, Paola Cadoni, Arianna Carita, Beau Damen, Carlos da Silva, Olivier Dubois, Erika Felix, Pascal Liu, Paul Mathieu, Pilar Santacoloma, and Andrew Shepherd. This report also benefited from research conducted by Francesca Farioli. Additionally, we would like to thank Ivan Grifi, Alessandro Flammini, and Stephanie Vertecchi for their assistance in the finalization of this document. The work was carried out in the context of the Bioenergy and Food Security Criteria and Indicators (BEFSCI) project (GCP/INT/081/GER) funded by the German Federal Ministry of Food, Agriculture and Consumer Protection (BMELV).

**Smallholders in Global Bioenergy Value Chains and Certification –  
Evidence from Three Case Studies**  
Edited by Elizabeth Beall

119 pages, 6 figures, and 9 tables

Environment and Natural Resources Working Paper No.50 – FAO, Rome, 2011

**Keywords:** Bioenergy, biofuels, smallholders, food security, sustainability, certification, voluntary standards, value chains, Thailand, Peru, Mali, International Sustainability and Carbon Certification, ISCC, Roundtable on Sustainable Biofuels, RSB, Roundtable on Sustainable Palm Oil, RSPO

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# EXECUTIVE SUMMARY

Over the last few years, there has been growing interest in bioenergy, due in part to its potential for rural development and climate change mitigation, and as an energy alternative given the high price of oil. At the same time, concerns regarding the potential negative impacts of bioenergy have also grown and have led to the development of a range of voluntary standards aimed at ensuring the sustainability of bioenergy production. While one of the goals of voluntary standards is to enhance the sustainability of bioenergy production – including from a socio-economic perspective – they might also present a disincentive for incorporating smallholders in value chains, due to greater cost and complexity. FAO's Bioenergy and Food Security Criteria and Indicators (BEFSCI) project conducted three case studies to examine the opportunities and challenges for smallholders presented by: 1) bioenergy as a new type of value chain, and by 2) bioenergy certification schemes.

## Case Studies: Contrasting three Countries, three Feedstocks, three Business Models, three Certification Schemes



### **Peru, with SNV<sup>i</sup>**

Feedstock: Sugarcane

Business Model: Outgrowers/Contract farming

Scheme: International Sustainability and Carbon Certification (ISCC)



### **Mali, with IIED and RSB<sup>ii</sup>**

Feedstock: Jatropha

Business Model: Joint venture and cooperative

Scheme: Roundtable on Sustainable Biofuels (RSB)



### **Thailand, with GIZ<sup>iii</sup>**

Feedstock: Oil Palm

Business Model: Partnership farming/Independent Smallholders

Scheme: Roundtable on Sustainable Palm Oil (RSPO)

i SNV, Netherlands Development Organisation, [www.snvworld.org](http://www.snvworld.org)

ii IIED, International Institute for Environment and Development, [www.iied.org](http://www.iied.org)

iii GIZ, Deutsche Gesellschaft für Internationale Zusammenarbeit, or the German Agency for International Development, [www.giz.de](http://www.giz.de)

## Key Findings from Case Studies

*Under current scheme structures, smallholders can still participate in global bioenergy value chains, even without becoming certified:* Each of the three schemes analysed (i.e. the International Sustainability and Carbon Certification [ISCC], the Roundtable on Sustainable Biofuels [RSB] and the Roundtable on Sustainable Palm Oil [RSPO]) allows for a mass balance chain of custody<sup>iv</sup>, which means that a percentage of the feedstock can come from uncertified sources or suppliers. In the Peru case, Caña Brava, which achieved certification of its own plantation and production, can still purchase feedstock from uncertified smallholders based on the mass balance chain of custody guidelines of ISCC.

*There is a lack of current incentives for the certification of smallholders:* This is tied in part to the mass balance chain of custody mechanism mentioned above, which allows companies that are interested in certification or certified to still include smallholders in their value chain (and smallholders themselves can conversely still sell to current off-takers). The lack of incentive is also related to the early stage of involvement of many smallholders in bioenergy supply chains, the uncertain price premium, and costs and process of certification presented in the three case studies explored in this paper. For example, in the Thai case, with the current low price premium for RSPO certified product and the strong negotiating position of smallholders with the mills, it has been challenging to convince smallholders of the added value of undergoing certification. In each of the three case studies, many of the benefits espoused by certification – access to markets, price premium, better farm management – are already being provided to smallholders in the absence of the actual certification.

*Farmer organization is a key determinant of the success of both engaging with buyer companies and in managing the certification process:* In all three case studies, there existed at least a minimum structure for group formation and management of farmers. The group structure is a key factor in the success of both participating in the value chain and for increasing the potential to become certified. The type of farmer organization varied based to some extent on the business model in each case. For example, in Mali the farmers are organized in part by participation in cooperatives, and in part by a donor supported foundation. In all three case studies, the quality of farmer organization depended largely on the communication and trust that was built as part of the process of organization.

## Recommendations at Various Levels of Governance

The objective of enhancing smallholder inclusion in both value chains and certification is to improve smallholder livelihoods. This report has sought to identify the relationship between smallholder participation in global value chains and certification and the potential impact on smallholder livelihoods. The recommendations included herein focus

- IV** A mass balance chain of custody is characterized by a tracking system where the amount of certified product sourced and sold by each supply chain actor is tracked, but the certified product does not have to remain separated from the uncertified product. This means that a company can have a certified part of its supply chain (from feedstock to distribution) and an uncertified part, as long as the levels are tracked at each stage of the supply chain.



on improving smallholder livelihoods through participation in global value chains and certification. The success of intervention will depend on the ability of actors to address these challenges jointly after having defined the role of each institution.

***Create incentives for smallholder inclusion at the policy and private standard levels:***

Governments could provide incentives to producers who incorporate smallholders into their value chain. Voluntary standards for certification continue to be targeted mainly towards large-scale plantation model producers and no standard currently includes specific criteria to require or reward the inclusion of smallholders. Adding mechanisms (different labelling or communication) that differentiate smallholder production could provide a means for achieving a higher premium in the market and encouraging companies to incorporate smallholders.

***Capacity building on certification should be incorporated into the existing efforts aimed at creating shared value:*** It is important both for the long-term sustainability of the business model and in pursuing certification that the reason for working together (company and smallholders) is a genuine economic interest (in addition to any other social or environmental goals). Careful consideration should be given to identifying not only the capacity-building needs of smallholders, but also to how both smallholders and the purchasing company will benefit through the relationship first, and then how certification benefits will be distributed. By focusing on the methods espoused in voluntary standards rather than on the certification process, companies and smallholders can improve yields and build trust while readying themselves for potentially greater incentives for pursuing the process of certification.

***Tailor smallholder inclusion measures to the specifics of both the country and crop:***

There is not a universal business model or smallholder certification mechanism (e.g. group certification, step-wise certification) to point to that provides greater benefit than others. The success of the business model and certification mechanism will depend on the specific policy, market conditions, and feedstock characteristics present in each specific case. As evidenced by the variety of results within the case studies, it is important to ensure that future interventions reflect these different characteristics and address the specific challenges they pose. For example, the interventions in Peru will be quite different to Thailand and Mali, given the difference in negotiating position of smallholders, current price premium for the various certified crops/fuel, and the regulatory environment, among other factors.

***Develop financial mechanisms to enhance smallholder inclusion:*** One recommendation for standards to foster inclusion of smallholders in certification, or at a minimum reduce the barriers, is to establish a fund to pay for smallholder certification, as is currently under development in the RSPO. Other entities, such as development banks or international donors, can also design technical assistance grants/programmes targeted towards smallholder inclusion and capacity building around certification. Additionally, financing institutions could create and expand specific financing facilities targeted towards smallholders.



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Biofuel development can have significant implications for all four dimensions of food security – availability, access, stability and utilization. For instance, it may result in increased competition for land and water resources, leading to higher and less stable food prices. At the same time, however, it may create new employment and income-generating opportunities, with potential benefits for rural development and food security. At both ends of this spectrum are smallholders. The FAO Bioenergy and Food Security Criteria and Indicators (BEFSCI) project has conducted the following study including three case studies covering three countries, three feedstocks, three business models, and three voluntary standards, with evidence gathered from the field, complimented by existing literature on voluntary standards and smallholder inclusion in global value chains.

A number of voluntary standards for the certification of biofuels, or of specific biofuel feedstocks, have been developed over the past few years, in response to concerns about the environmental and socio-economic sustainability of these products and as a means for foreign producers to show compliance against the sustainability requirements of key importing markets. While one of the goals of voluntary standards is to enhance the sustainability of bioenergy production, they might also present a disincentive for incorporating smallholders in value chains, due to greater cost and complexity. Understanding the specific challenges and opportunities for smallholder inclusion in bioenergy voluntary standards and certification will help to maximize the potential for smallholder participation in global bioenergy production and deliver on the socio-economic goals espoused in bioenergy sustainability initiatives.

The challenges and potential opportunities for smallholders in global value chains have been well-documented through the literature (Vermeulen and Cotula 2010; Poole 2010; DaSilva 2009; Shepherd 2007; Resnick 2004; Poulton *et al.* 1998). These studies have outlined recommendations, specifically inclusive business models, and assessed the various models' impact on smallholder livelihoods. Many studies have addressed how smallholders can benefit from *local* production and use (local value chains) of bioenergy (Bogdansky 2010; Practical Action Consulting 2009; Dubois 2008; UNDESA 2007; Vermeulen and Goad 2006), but there is less information about smallholder participation in *global* bioenergy value chains and the potential challenges and opportunities in participation. At the same time, there is a growing body of literature on the challenges and opportunities presented by voluntary standards and certification for smallholders (ITC 2011; LeCourtois *et al.* 2011; Graffham *et al.* 2007; Santacoloma 2007; Gonzalez and Nigh 2005; Liu 2004;





Bass *et al.* 2001). These studies have largely focused on health and safety standards for agriculture, with a growing amount of interest and focus on sustainability standards, including in bioenergy (UNEP 2011; WWF Germany 2010; Van Dam *et al.* 2010).

Each of these bodies of literature has highlighted in the conclusions the need to address value chain analysis and certification jointly, and to test the application of these concepts in the field. The FAO BEFSCI project therefore seeks to add value by presenting three field studies where the challenges and opportunities presented by bioenergy certification are discussed in three distinct value chains.

This study seeks to analyse the relationship between bioenergy certification and smallholder inclusion in global value chains by:

1. Conducting a literature review across the range of topics covered in this study including:
  - ◇ business models that foster smallholder inclusion in global value chains, and
  - ◇ lessons learned on smallholder inclusion in existing certification schemes;
2. Presentation of three case studies; and
3. Recommending ways to enhance smallholder inclusion at various levels of governance.

#### **FAO'S BIOENERGY AND FOOD SECURITY CRITERIA AND INDICATORS (BEFSCI) PROJECT**

Building on the Bioenergy and Food Security (BEFS) Analytical Framework, the BEFSCI project has developed a set of criteria, indicators, good practices and policy options on sustainable bioenergy production that foster rural development and food security, in order to:

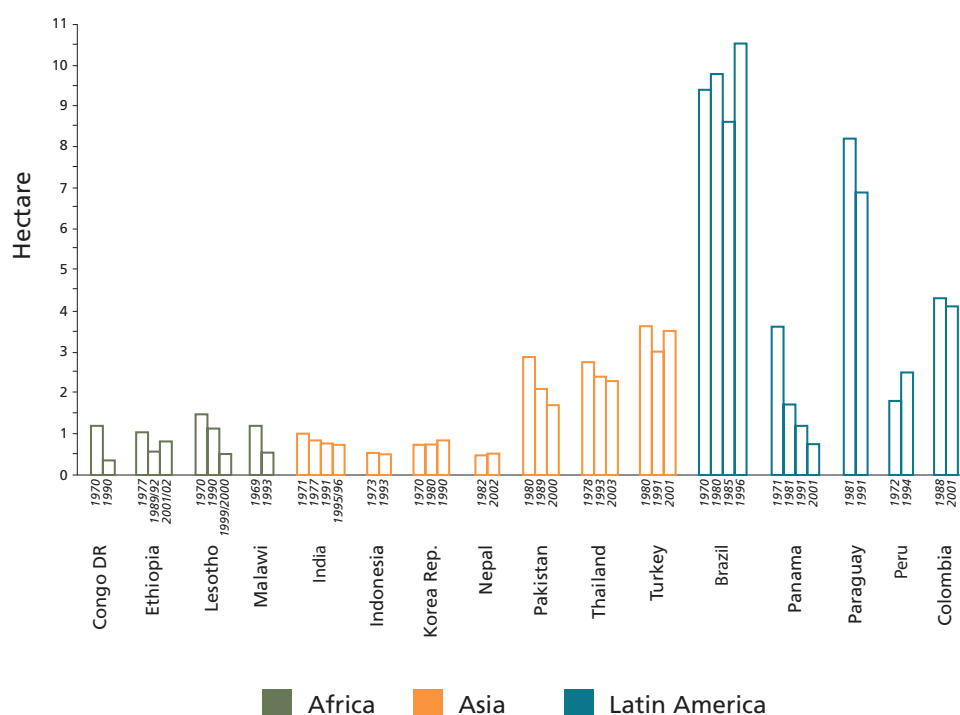
- inform the development of national frameworks aimed at preventing the risk of negative impacts, and increasing the opportunities, of bioenergy developments on food security, and
- help developing countries monitor and respond to the impacts of bioenergy developments on food security and its various dimensions and subdimensions.

SMALLHOLDERS IN GLOBAL  
VALUE CHAINS

Elizabeth Beall

As a starting point for this study, it is important to understand why the focus is on smallholders in *global* value chains. The definition or identification of smallholders varies widely but is generally agreed to refer to farmers with limited resource components, principally related to land area, in relation to other farmers/farms within the same sector (Dixon *et al.* 2004). Therefore, the determination of what constitutes a smallholder will depend on the local resource base and country context and the solutions to foster inclusion will need to be adjusted accordingly (Barrett 2007). As the **Figure** below illustrates, farm sizes vary widely by region, country and over time.

Figure 1

**Median farm sizes in the developing world**

Source: FAO data from agricultural census.

A value chain is defined as:

*“a system made up of two components: 1) a sequence of activities such as production, processing and transport, and 2) a network of functional relationships that work together to reach an objective. These components interact through dynamic linkages such as contractual arrangements and coordination, and determine opportunities for investment along the value chain” (Moir in Cromme et al. 2010).*

By analysing the links between producers, exporters, and global markets, an understanding of the specific challenges, opportunities, and mechanisms to enhance economic, social and environmental performance along the value chain can be achieved. Value chains can be assessed at various levels and/or boundaries by geography, product, and process. The issues and benefits vary greatly when assessing smallholder inclusion in global value chains, particularly in terms of market access and voluntary certification. This section will first introduce the issues and benefits of smallholder inclusion in global value chains, and then will discuss mechanisms to enhance inclusion.

## CHALLENGES OF SMALLHOLDER INCLUSION IN GLOBAL VALUE CHAINS

There are an estimated 500 million smallholder farms worldwide comprised of less than 2 hectares each. Small farms comprise 85 percent of the world’s farms and provide approximately 80 percent of food consumed in Asia and Africa (IFAD 2011). At the same time, 925 million people are undernourished, and food production needs to increase by 70 percent by 2050 to feed the projected population of 9 billion (FAO 2010). In order to meet these targets, agricultural production strategies need to include the “bottom of the pyramid”, such as smallholders (Diao and Hazell 2004; Resnick 2004; Magingxa and Kamara 2003). The largest obstacle smallholders face is lack of market access. Enhancing market access for smallholders would result in more opportunities for rural employment and income generation, and could lead to sustained agricultural growth, with positive effects on food security (Doward *et al.* 2003; Stiglitz 2002; Poulton *et al.* 1998).

In addition to market access, common challenges faced by smallholders in global value chains are:

- changing production methods – requiring higher up-front capital investments, such as mechanical harvesting for sugar cane;
- inadequate infrastructure (roads, electricity, markets, irrigation) and scattered location of farms, to facilitate stable and efficient delivery to markets;
- lack of access to adequate skills, inputs, equipment and services (e.g. credit);
- lack of formal organization or means to build scale;
- high susceptibility to changing weather patterns given that they often live on marginal lands and areas prone to flooding, drought, storms, or other natural disasters that will be exacerbated by climate change.

Of these additional challenges, farmer organization is often cited as the most significant barrier to smallholder ability to access markets. “Without a means to reduce transaction costs, ensure due diligence, and ensure that trading agreements are honoured, they

[buying companies] will see smallholder suppliers as a threat to their “value proposition” (Vorley *et al.* 2009 in da Silva *et al.* 2009). In the absence of existing farmer associations or organization, it can be extremely costly and time consuming for the company to organize smallholders on their own. Once formed, farmer organizations face their own internal challenges including divergent interests, asymmetric information exchange, and selection and approval of members (Maitre d’Hotel *et al.* 2011; Ton and Van-Der-Mheen-Sluijer 2009).

Associated with the lack of farmer organization is the challenge of lack of access to credit for smallholders. Smallholders often lack access to credit as they are too small independently to access financing. Therefore, in the absence of farmer organization, access to credit can be exacerbated. Lack of credit results in reliance on often outdated or ineffective farming inputs and/or an inability to make larger investments in irrigation or fertilizer to improve yields. (Miller and Jones 2010).

#### **CLIMATE CHANGE AND SMALLHOLDERS**

Climate change will present new and growing challenges for smallholders. The type of challenges presented by climate change, and smallholders’ ability to cope with the challenges, will depend on many factors including location, strength of rural institutions, the type of crop being farmed/introduced, extension services and training from a purchasing company or other stakeholders, and policies or support services. Smallholders often live and farm in some of the most at-risk landscapes, including flood zones, deserts, and hillsides (IFAD 2011a). However, smallholders may be able to adapt more quickly to the impacts of climate change given greater mobility and diversification of livelihoods. Therefore, climate change will present new capacity building challenges, but also new opportunities to engage with smallholders to adapt farming practices and land management techniques (Seeburg-Elervfeldt 2010; Glantz 2009, Morton 2007).

#### **POTENTIAL BENEFITS OF SMALLHOLDER INCLUSION IN GLOBAL VALUE CHAINS**

Worldwide, the livelihoods of two billion people depend on the production of the estimated 500 million small farms (IFAD 2011b). Therefore, smallholder inclusion in global value chains can have positive effects on the livelihoods and the food security of the broader community, depending on the type of business model, crop, and country context. Food security includes four dimensions: availability, access, utilization and stability. Incorporating smallholders in global agricultural (including bioenergy) value chains is often recommended as a way to increase the food security of smallholder farmers (and associated households) by specifically addressing the access dimension. The argument is that incorporating smallholders into global value chains can increase income and purchasing power, and thereby greater ability to meet dietary needs. Participating in global value chains can also increase technical capacity and farm management generally, thereby

providing a basis for increasing yields for own production, not just commercial sale, which can address the dimensions of stability and availability.

#### **FOOD SECURITY BENEFITS FROM SMALLHOLDER INCLUSION, BIOENERGY AND FOOD SECURITY (BEFS) TANZANIA**

One example of the positive impacts that bioenergy development can have on smallholders, has been presented through the analysis conducted by the Bioenergy and Food Security Project team. In Tanzania, the majority of farmers are smallholders with average land holdings of 1.6 hectares and most of the production is concentrated in staple food crops. Tanzania produces most of its own food, only importing approximately 5-10 percent of total requirements over the last decade. Cassava is the second most important food crop in Tanzania and is largely produced by smallholders with low yields. The results of the BEFS analysis showed that “pursuing a cassava-based biofuel industry, as opposed to a maize-based industry, could deliver considerable benefits to smallholder farmers in income generation and in ensuring food security through increasing yields from intensified cassava production” (BEFS Tanzania 2010). However, the analysis also illustrated the trade-offs and challenges of incorporating smallholders, in terms of profitability and reliability of supply. (BEFS Tanzania 2010)

*Benefits to companies including smallholders:* Incorporating small-scale producers into value chains can provide benefits to companies engaging with smallholders as well, including: increasing security of supply through greater diversity in supplier base; increased profitability as a result of lower supply cost (SNV-WBCSD, 2008), and building goodwill in the community and therefore strengthening the company’s license to operate in the medium and long term. These benefits of smallholder inclusion also reduce the overall investment risk, as no land, or at least less land, needs to be purchased or leased. However, many banks still see smallholder supply as an investment risk where feedstock supply is not integrated or guaranteed, especially in least developed countries where other risks are also high (Vermeulen and Cotula 2010; IFAD 2011b). Therefore, there is continued effort required to ensure that the potential benefits of smallholder inclusion are actually realized.

Incorporating smallholders can lead to access to new markets for companies. There is a growing trend among consumers for a desire to connect directly with farmers and a growth in demand for products with a “story”<sup>1</sup>. According to TransFair USA, consumer demand is growing, “It’s really driven by consumer demand. We’re seeing a rise in socially conscious consumers who want to see a change in ‘business as usual’ and are willing to pay for it” (Hoback 2010). These products can often demand higher value (price premium) in the marketplace and/or be sought by niche and specialty suppliers. As stated in DaSilva *et al.* 2009, “small-scale producers are themselves a new business opportunity”. However,

<sup>1</sup> Hot Trends in Food and Drinks Innovation, Business Insight, April 2011, [http://www.reportlinker.com/p0498500/Hot-Trends-in-Food-and-Drinks-Innovation.html?utm\\_source=prnewswire&utm\\_medium=pr&utm\\_campaign=Beverage](http://www.reportlinker.com/p0498500/Hot-Trends-in-Food-and-Drinks-Innovation.html?utm_source=prnewswire&utm_medium=pr&utm_campaign=Beverage)



the value generated by this new business opportunity, often stays primarily with the larger purchaser/retailer (Lundy *et al.* 2010). It is still unclear how these factors might translate to bioenergy markets, given that fuel presents different retailing, branding, and marketing costs and characteristics. For example, certified fuel may not elicit the same *willingness to pay*<sup>2</sup> a price premium, as niche food products by consumers<sup>3</sup>, so there may be a lower possibility of obtaining a price premium for bioenergy companies' incorporating smallholders. This will be explored further in the case studies.

While substantial attention has been given to the inclusion of smallholders in global value chains and the potential benefits therein, actual incorporation of smallholders in global value chains in the agriculture and forestry sectors is still relatively limited, although growing (Swinnen 2007). Therefore, greater attention is needed in understanding why smallholders continue to be marginalized, despite the significant attention and focus that they are given by research, policy, and donor institutions. At the same time, the actual *impacts* of inclusion of smallholders in global value chains on food security and local livelihoods still require further research (McMichael and Schneider 2011). Reviews of smallholder inclusion in value chains have illustrated that there are a number of important factors to consider that will impact the type of social outcomes and potential benefits. These include the type of crop, land tenure, smallholders' level of income diversification, and prior experiences with large-scale investors (German *et al.* 2011; Porter and Phillips-Howard 1997; Glover 1990; Lamb and Muller 1982). On the investor side, pricing and contract terms, pricing policies, and diversification of market outlets will also have an impact on the potential and level of social benefits to smallholders (German *et al.* 2011; Freeman *et al.* 2009; Glover 1990).

## MECHANISMS TO ENHANCE SMALLHOLDER INCLUSION

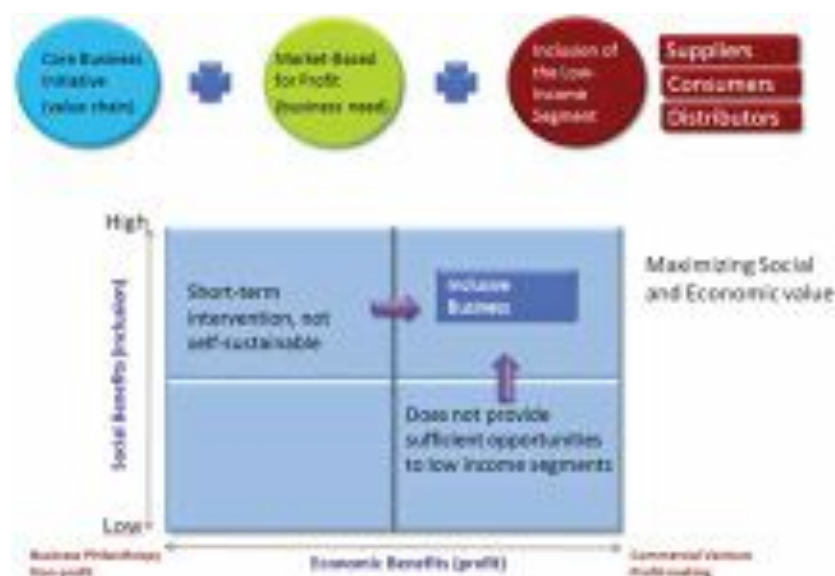
Given the range of potential benefits of incorporating smallholders into global value chains, and recognition of the challenges in doing so, it is important to investigate and contrast the variety of business models that could foster smallholder inclusion. A business model is the way through which a business creates and captures value within a network of producers, suppliers and consumers, or "what a company does and how it makes money from doing it" (Da Silva *et al.* 2009). Inclusive business models<sup>4</sup>, a concept developed by SNV in alliance with the World Business Council on Sustainable Development, are defined as the commercial arrangements which incorporate small-scale producers and operators into larger enterprises and where the interests of smallholders are recognized. In order for a business model to be truly inclusive, it should not just include a collaborative relationship,

- 2 *Willingness to pay* refers to the maximum amount a person would be willing to pay, sacrifice or exchange in order to receive a good or to avoid something undesired, such as greenhouse gas emissions.
- 3 Stated consumer willingness often does not translate into sustainable consumer behaviour because of a variety of factors – such as availability, affordability, convenience, product performance, conflicting priorities, skepticism and force of habit.
- 4 The term "inclusive business models" was developed by the WBCSD-SNV Alliance on Inclusive Business and provides a useful shorthand for the variety of models that share value with small scale producers and enterprises.

but also provide fair and equitable terms on which the relationship is based (SNV 2010). There are many possibilities for inclusive business models that enable smallholders to be active market participants while offering investors economically attractive opportunities, lower risks, and greater capacity for growth.

Figure 2.

#### Social and Economic Benefits of Inclusive Businesses



Source: SNV (2011)

There have been many studies conducted to date comparing and analysing types of inclusive business models (and combinations thereof) to provide recommendations for how to increase the adoption of inclusive business models and improve the results of their implementation, including a joint report by Vermeulen and Cotula 2010: *"Making the most of agricultural investment: A survey of business models that provide opportunities for smallholders"*. The key findings of this report include:

- No one business model is better than another, it depends on the specific terms of the arrangement.
- Inclusive business models are more relevant for labour intensive and higher value crops; but where economies of scale are significant, all inclusive business models may struggle to maintain competitiveness.
- Economic motivation for the adoption of an inclusive business model by companies is a key factor to lasting success.
- Negotiating power of smallholders in the contractual arrangement is the single most important element in determining both the success of the business model and the positive impacts for the community.
- Increasing smallholders' access to information will help to improve negotiating power.

As key next steps, the report calls for a greater understanding of “what works, and what doesn’t in specific contexts” and “international guidance on promoting models of agricultural investment that maximize opportunities for local smallholders”. The current study seeks to contribute to these two areas in the specific area of bioenergy, and to assess what additional challenges and opportunities are presented by certification.

## BUSINESS MODELS FOR COMPANIES TO FOSTER INCLUSION OF SMALLHOLDERS

There are a variety of business models which present different challenges and opportunities depending on the specific crop, country, company, and farmer context. The benefits and risks associated with each model are well-documented and discussed through a range of studies over the last 15 years (Cotula and Leonard 2010; Vermeulen and Cotula 2010; DaSilva *et al.* 2009; Shepherd 2007; Diao and Hazell 2004; Doward *et al.* 2003; Adiwinata *et al.* 2003; Poulton *et al.* 1998). This paper will not go into the detail of each model (or combinations thereof) but instead presents a summary chart of the challenges and risks of each model as context for the case studies presented in this research.

Table 1.

### Inclusive Business Models – Benefits and Challenges

<b>Contract farming</b>	Pre-agreed supply agreement between farmers and buyers	<b>Smallholder:</b> Increased access to inputs (seeds, fertilizer, services, credit) <b>Agribusiness:</b> Improved security of supply and lower land acquisition risk	<b>Smallholder:</b> Poor negotiating position, locked into unfair contract <b>Agribusiness:</b> Uncertainty re: quality of product, smallholders selling to others, higher transaction costs
<b>Management contracts</b>	Farmer or farm management company work agricultural land belonging to someone else	<b>Smallholder:</b> Higher returns, access to new economic opportunities <b>Agribusiness:</b> Simple to implement, maintain control of production quality, etc.	<b>Smallholder:</b> Can lock smallholders into long term leases at flat rates <b>Agribusiness:</b> Dependant on land tenure context
<b>Tenant farming/ sharecropping</b>	Version of management contract where individual farmers (smallholders) work the land of larger agribusinesses or other farmers	<b>Smallholder:</b> Redistribution of income-generating opportunities to landless <b>Agribusiness:</b> Maintain management of resources	<b>Smallholder:</b> Locked out of land ownership, weaker negotiation position <b>Agribusiness:</b> Difficult to ensure compliance with efficiency or sustainability
<b>Joint ventures</b>	Co-ownership of a business venture by two independent market actors, such as a farmers’ organization and agribusiness	<b>Smallholder:</b> Receipt of dividends, input into business decisions <b>Agribusiness:</b> Clear terms of engagement, legal framework	<b>Smallholder:</b> Dividends and equity percentage may be very low <b>Agribusiness:</b> Complex accounting and information sharing structures
<b>Cooperatives (Farmer owned venture)</b>	Formally incorporated business structures for farmers to pool their assets to enter into particular types of business	<b>Smallholder:</b> Pooling of resources provides efficiency gains and economies of scale, can work on legal terms with agribusiness <b>Agribusiness:</b> N/A	<b>Smallholder:</b> Higher risk associated with more complex legal and financial frameworks; higher capital costs <b>Agribusiness:</b> N/A

Source: Compiled from Vermeulen and Cotula 2010

All of the business models described are applicable to bioenergy value chains. As discussed above, the challenges and opportunities will vary depending on the specific attributes of the location, production methods, and other factors. Bioenergy could present increased opportunities given the greater scrutiny on this sector than on “traditional” agricultural production, and the desire for bioenergy production to contribute specifically to rural development and other environmental and social goals (Milder *et al.* 2008). However, bioenergy could also present additional challenges due to the complexity or “newness” of certain feedstocks and technologies. Added to these challenges and potential opportunities are the increasing prevalence of voluntary sustainability standards.

## VOLUNTARY STANDARDS FOR CERTIFICATION

Elizabeth Beall

## INTRODUCTION

Sustainability certification has flourished over the past decade, with over 100 different schemes covering various aspects of sustainable development now in existence (Genier *et al.* 2009). Certification is defined as:

*“a procedure through which a third party gives written assurance that a product, process or service complies with certain standards. Certification is a form of communication along the value chain. The certificate demonstrates to the buyer that the supplier complies with certain standards”.*<sup>5</sup>

Certification can apply to any type of standard – health, safety, quality, chemical, or sustainability. The type of criteria included in certification schemes varies widely and is dependent on the interests of the actors involved and the issues or concerns related to the type of product or process. In the bioenergy sector alone there are over 15 schemes, varying in public and private participation (FAO BEFSCI 2011).

FAO BEFSCI COMPILATION OF BIOENERGY SUSTAINABILITY INITIATIVES<sup>6</sup>

Numerous initiatives have been developed to address the environmental and socio-economic impacts associated with the production of biofuels or of specific biofuel feedstocks. These initiatives include regulatory frameworks, voluntary standards/certification schemes, and scorecards. Some of them cover the entire supply chain, while others deal only with parts of it. The BEFSCI project reviewed 23 of these initiatives. A portion of them are still under development or are being tested, while others are already in operation or implementation. A few of these initiatives were completed but never adopted. For each initiative, a description is provided, followed by a table listing all of the initiative's provisions to address a set of sustainability aspects/issues. In order to allow for comparisons among this diverse set of initiatives, a standardized format and set of sustainability aspects/issues are used.

<sup>5</sup> Adapted from Dankers *et al.* 2003

<sup>6</sup> FAO/Bioenergy and Food Security Criteria and Indicators Project, Bioenergy Compilation, <http://www.fao.org/bioenergy/foodsecurity/befsci/62379/en/>





While each certification scheme varies in its structure and issues that it addresses, most schemes address a few key areas, including:

- Environmental criteria
  - ◇ Biodiversity and ecosystem services
  - ◇ Land use changes
  - ◇ Productive capacity of the land
  - ◇ Crop management and agrochemical use
  - ◇ Water availability and quality
  - ◇ Air quality
  - ◇ Greenhouse gas emissions\*
  - ◇ Waste management
- Socio-economic criteria
  - ◇ Land tenure/access to land
  - ◇ Employment, wages, and labour conditions
  - ◇ Human health and safety
  - ◇ Energy security and access
  - ◇ Access to natural resources
  - ◇ Good management practices and continuous improvement
  - ◇ Food security\*
  - ◇ Gender\*

\* These criteria are not widely included to date, but represent growing areas of interest and increasing uptake by sustainability certification schemes.

## **VOLUNTARY STANDARDS AND VALUE CHANGE ANALYSIS**

Voluntary standards, including those specifically addressing “sustainability” concerns associated with agriculture, can provide benefits in terms of market access and price premium in some cases. However, literature on private standards also illustrates that the revenues are not equally distributed along the value chain and that the greatest gain is realized by the retailer and the lowest gain (if any in some cases) is realized by smallholders (Lundy *et al.* 2010). As stated in a recent ITC report (2011): “Value chain structures and governance play a significant role in how revenues are distributed”. For example, the type of business model and institutional environment will have a large influence on what the impact of certification is for smallholders.

Additionally, evidence suggests that adoption of voluntary standards accelerates vertical integration of supply chains, thereby decreasing the number of small producers and centralizing production with the most efficient larger producers (World Bank 2007). A study looking at the application of the Origene Senegal label on fruit and vegetables between 2000-2005 showed that “the number of small-scale producers with export contracts fell by 72 percent, and the three largest exporters increased their market share from less than half to 66 percent” (Genier *et al.* 2010). Standards and certification schemes are currently geared towards large-scale producers and plantation style agricultural

systems by both the type of criteria included and by the processes and management required to achieve certification (Byerlee and Deininger 2010; Kearn and McCormick 2008). In a study on Bolivian forestry, Nebel *et al.* (2005) found that it was primarily the larger companies who held the certification and thus the benefits; limiting the potential positive or transformational effect for smaller producers and the surrounding community. The results will vary considerably depending on the company, crop, and country. It is important to investigate this area further if development goals, such as poverty reduction and enhanced food security (through income generation), are thought to be furthered by voluntary standards addressing overall sustainability. As summarized in a recent report by the International Trade Center (2011) on the impact of standards in developing countries:

*“Private certification programmes, with the aim of increasing scale and efficiency, have sometimes been criticized for replicating existing ‘conventional’ commodity chains, arguing that with the exception of a social premium there can be no difference in the structure (actors, institutions, regulations and activities) of conventional trade and that of sustainability standards (Dolan 2010; Smith and Barrientos 2005), limiting the potential impact at the producer level.”*

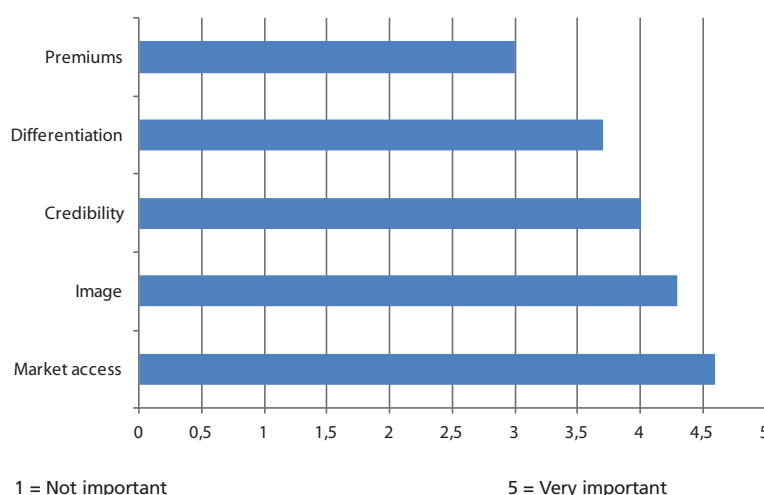
Therefore, it’s important to understand the impact for smallholders that are engaging in value chains pursuing certification. The three case studies presented herein seek to provide field level producer data to contribute to greater understanding of how social benefits can be maximised and negative impacts minimised.

## **DRIVERS OF CERTIFICATION**

Certification of a voluntary standard is one mechanism to differentiate products on the basis of specific quality attributes or criteria, such as the environmental and social criteria included in the previous section. As stated by Taylor 2005, “Certification and labelling initiatives worldwide have gained growing attention as promising market-based instruments which harness globalization’s own mechanisms to address the very social injustice and environmental degradation globalization can foster”. Certification systems in agriculture and forestry have primarily been developed to address social and environmental concerns that have not been possible through other governance mechanisms, such as regulation. The majority of certification systems were born out of a combination of NGO concern and pressure on industry, and a desire by industry to have a mechanism for reducing reputational risk. Certification in bioenergy and bioenergy feedstocks is increasingly driven by the binding sustainability requirements being implemented by key importing markets such as the European Union and the United States. Certification can serve as one mechanism to show compliance with these requirements.

Figure 3

**Examples of Drivers for Seeking Certification:  
Producers' motivation for supplying certified forest products.**



Source Raunetsalo *et al.* (2002)

The drivers for certification differ depending on the actor, but for smallholders the main drivers are access to markets and the possibility of achieving greater value in the marketplace (i.e. a price premium). “Market-based certification instruments presume that consumers are willing to reward producers’ superior practices with price premiums or improved market access”, (Bass *et al.* 2001) Although increased market access and price premiums are stated as the main drivers for seeking certification, it is rarely smallholder farmers who initiate the certification process as they do not usually have access to market or certification information, and are often wary of high costs. Therefore, smallholders are most often driven to participate in certification by larger purchasers or by donors or NGOs (LeCourtois *et al.* 2011). When driven by larger producers, it is often to meet export market requirements, for example, GLOBALGAP. When driven by donors or non-governmental organizations (NGOs), the certification is more often seen as a means for achieving environmental or social objectives, although smallholders may be convinced to participate for the same reasons listed above of a potential price premium and increased market access.

Depending on the specifics of the type of certification and the type of business model, if the larger company is driving the process, the larger company might be the one who actually owns the certification with the smallholders participating under contract farming conditions (LeCourtois *et al.* 2011). In this scenario, smallholders cannot use the certification for products sold to other buyers, thereby locking them into a relationship with the company if they wish to access certain markets. This could result in exacerbating an already imbalanced negotiating position for smallholders within the contract. This has important implications for bioenergy, since in most cases it will be larger processors driving the desire for certified feedstock.

## CERTIFICATION COSTS AND SMALLHOLDER CERTIFICATION MECHANISMS

While certification can help increase global market access, it can also present a significant additional barrier to smallholder inclusion in global value chains due to costs and complexity. Costs can be differentiated by compliance costs (i.e. to meet the required criteria), transaction costs (i.e. costs associated with the certification process), and opportunity costs associated with potential missed opportunities (Dankers 2003; Bass *et al.* 2001). Costs of compliance are associated with increases in time and labour associated with new production and training activities for producers. Transaction costs are related to the processes and institutions necessary for both achieving certification and managing the certification process. Opportunity costs are those arising from having to leave a percentage of land for conservation, and the opportunity cost of not being able to develop it for profit (Lee *et al.* 2011). In developing countries, in some cases donors or NGOs may cover at least part, if not all, of the costs listed above for smallholders; but there is a question of who or how the certification is maintained in the long-term once donor support runs out or projects are concluded. If certification does not deliver a price premium substantial enough to cover the additional costs, it will likely not be maintained. As stated by Lee *et al.* 2011: “Generous donor support might also cause some smallholders to underestimate the true costs of certification, resulting in disillusionment and even business failures when they fail to maintain their practices”.

Many studies have been conducted looking at smallholder inclusion in certification for agriculture and forestry (LeCourtois *et al.*, 2011; Lui, P. 2009; Graffham *et al.* 2007; Santacoloma, P. 2007; Gonzalez, 2005; Harris *et al.* 2001; Bass *et al.* 2001).<sup>7</sup> These studies have shown that many of the criteria included in sustainability certification schemes may have little relevance for smallholders or are infeasible/prohibitive to implement. Many voluntary standards have stated that greater attention needs to be devoted to addressing inclusion of smallholders. For instance, as International Federation of Organic Agriculture Movement (IFOAM) states: “Certification should be an enabling mechanism rather than a technical barrier to market access and trade” (IFOAM 2003). Similarly, the International Social and Environment Accreditation and Labelling (ISEAL) Alliance advises its members to “facilitate the access and relative influence of disadvantaged groups (article 7.4)”. However, few schemes actually have specific criteria requiring or rewarding the inclusion of smallholders, although the Forest Stewardship Council and the Roundtable on Sustainable Palm Oil, for instance, have developed alternative mechanisms including simplified versions of their standards and funding support (Genier *et al.* 2009). Other voluntary standards are creating smallholder taskforces and pilot projects to certify smallholder cooperatives (WWF 2010). Lessons identified are being incorporated into initiatives that target smallholder inclusion, such as the Soy Producer Support Initiative,

<sup>7</sup> In a recent literature review by the International Trade Center (2011) on private standards, over 90 percent of the studies reviewed focused on Fairtrade, Organic, or Forest Stewardship Council certification schemes.

Palm Oil Producer Support Initiative and Sugar Producer Support Initiative coordinated by Solidaridad (Solidaridad, 2011).

The mechanisms that have been developed to facilitate smallholder inclusion in certification include: 1) group certification; 2) stepwise certification; 3) funding for certification; 4) technical assistance and capacity building for smallholders, and 5) mass balance chain of custody. Each of these mechanisms varies in its application by standards, with some standards incorporating all four and some not including any. Existing mechanisms within certification schemes<sup>8</sup> are defined as follows:

- **Group certification** is defined as “certification of an organized group of producers with similar production systems, where certification applies to the group as a whole” (ISEAL 2008).
- **Stepwise certification** is defined as a “phased approach to certification” (FSC 2011). With stepwise certification, compliance can be achieved in phases, or on parts of the criteria of a standard. This allows smallholders with less capacity and resources to focus on specific areas one at a time, and gradually improve and implement management practices. WWF and ProForest have developed a “Modular Implementation and Verification toolkit”<sup>9</sup> to assist producers with meeting forestry certification in a phased manner (Durst *et al.* 2006).
- **Dedicated funds for smallholders:** Funding mechanisms vary, but can include a fund specifically set up by the voluntary standard to reduce up-front/initial costs for smallholders in setting up internal/group management and control systems. Another option is to include provisions in the standard for shared costs between the buyer company and smallholders. RSPO collects US\$1 for each buyer who registers on GreenPalm<sup>10</sup>, of which they then use for smallholder capacity building, although the modalities of the fund are not yet publicly available (RSPO 2011)
- **Technical assistance and capacity building:** UTZ Certified and the Sustainable Agriculture Network (SAN) have developed training modules to assist producers in attaining certification. The modules address yield improvements, market expertise, and capacity building around management practices and organization (van Dam *et al.* 2010). Technical assistance could also take the form of the establishment of regional certification bodies to reduce transaction costs. RSB recently conducted a regional training for auditors in Southeast Asia (September 2011). Availability of local auditors will help reduce auditing costs for smallholders and thus improve the potential income benefits.
- **No certification but participation through mass balance system:** Mass balance is one chain of custody option under many of the certification schemes and allows

<sup>8</sup> Other mechanisms for the inclusion of smallholders, which require the involvement of other stakeholders beside certification bodies, are discussed in the Conclusions and Recommendations.

<sup>9</sup> WWF Global Forest and Trade Network’s (GFTN), Modular Implementation and Verification Toolkit, [http://wwf.panda.org/what\\_we\\_do/how\\_we\\_work/conservation/forests/tools/miv\\_toolkit/](http://wwf.panda.org/what_we_do/how_we_work/conservation/forests/tools/miv_toolkit/)

<sup>10</sup> GreenPalm, <http://www.greenpalm.org/>

companies to keep track of the amount of product that is certified and that which is not, without having to physically separate the product. The schemes vary slightly in their requirements for the mass balance system, but they all provide for at least some percentage of product (feedstock, oil, fuel) to come from uncertified sources. Therefore, a mass balance chain of custody system would provide one way for smallholders to continue to participate in global bioenergy value chains without becoming certified until they are ready. However, in this scenario, smallholders would not receive the benefits of achieving the certification. The company can also be incentivized through a mass balance chain of custody to increase the amount of its supply that is certified (thereby providing incentives to support smallholder certification), so that it can make increasing claims (e.g. from 20 percent certified to 40 percent) and potentially gain access to higher price premiums.

#### **SMALLHOLDER MECHANISMS IN FAIRTRADE**

Fairtrade is unique in its design among voluntary standards, as its principal focus is on the inclusion of smallholders in global value chains, or a “shortening of traditional value chains (generating direct producer-buyer relationships); whereas most standards do not explicitly pursue a change in value chain structure” (ITC 2011). Fairtrade is also unique in other ways geared towards smallholders: 1) in that it requires the purchaser to pay the cost of certification, rather than the producer; 2) it sets a minimum price that producers must receive above the market price, and 3) producers are paid a “social premium” for investment in education and healthcare, farm improvements to increase yield and quality, or processing facilities to increase income.(FLO CERT 2011). However, FairTrade USA has recently decided to adapt their requirements to now include larger plantations and there are some concerns about how this will impact the already small market share for smallholders (Neuman 2011).

There is evidence that smallholder inclusion in voluntary standards can be maximized if combined with other programmes by the company and/or certification body to both support smallholders and incentivize them to be active participants in the process. For example, a recent study by Lecofruit, which buys certified beans and peas from 10 000 smallholders in Madagascar, found significant benefit to producers including increased income and productivity increases (Minten *et al.* 2009). This was as a result of combining the application of a voluntary standard with a deliberate support policy to smallholders including information services, loans of seeds and fertilizer that could be paid back in-kind, and long-term microcontracts (Genier *et al.* 2009). “The Lecofruit example shows that it is possible to implement a standard or code without excluding small-scale producers, but only as just one part of a wider, ongoing package of intensive support”(Genier *et al.* 2009). The study however, does not explore how the company funded this programme or was driven to invest in this process; which are important to understand and explore in attempting to replicate this type of programme.



## LESSONS FROM AGRICULTURE AND FORESTRY TO CONSIDER IN BIOENERGY VALUE CHAINS

Agriculture and forestry voluntary standards and certification systems have provided many valuable lessons and information on smallholder inclusion that will be assessed in each of the case studies to determine their validity and applicability for bioenergy value chains and certification. These lessons have been identified within the overall objective of improving smallholder livelihoods and enhancing food security.

### Enhance Socio-economic Topics Covered in Certification while Implementing Impact Monitoring Systems

Many studies have been conducted on the impact of certification on value chains (ITC 2011; WWF 2010; Neilson 2008; Durst *et al.* 2006). These studies have concluded that there is a lack of evidence-based, statistically significant data to draw analysis from as a result of most standards not developing sufficient monitoring and evaluation systems at the outset. Bioenergy voluntary standards will be able to incorporate this lesson learned from early standards like the Forest Stewardship Council (FSC) and the Marine Stewardship Council (MSC), resulting in greater availability of data and potential for analysis. There continues, however, to be an issue of attribution, especially with measuring social impacts, as it is nearly impossible to measure a direct link between the standard and the impact (WWF 2010). Socio-economic issues are arguably the most important in the developing world, and for smallholders themselves, and yet in a review of 67 sustainability initiatives, the majority of current schemes were not found to address food security or socio-economic impacts directly (van Dam *et al.* 2010).

### Challenges of Certification

The principal challenges in incorporating smallholders in global value chains seeking certification or applying voluntary standards are (ITC 2011; LeCourtois *et al.* 2011; van Dam *et al.* 2010):

- Smallholders are both employers and labourers, which makes social standards (designed primarily to apply to large multinationals or larger agribusiness companies) difficult to interpret and apply.
- Lack of farmer's organizational capacity to manage certification process and support market linkages.
- Number of producers and geographic distribution/dispersion which makes auditing difficult, if not impossible, unless there is a group management structure already in place (e.g. in a cooperative).
- Increasing integration of supply chains to manage and implement certification requirements resulting in either smallholder exclusion or loss of independence for smallholder farmers.
- Uncertain price premium, both in terms of longevity and in value.

It is expected that these challenges will be similar, and in some cases exacerbated, for smallholders engaged in bioenergy value chains. These issues will be explored further in the case studies.

## Target Large-scale Consumers

One of the key areas identified in the literature for enhancing smallholder inclusion in certification is linked to the drivers of certification. In studies on both FSC and food certification schemes (GLOBALGAP and Organic), the drivers of both the certification process and the demand for certified products are key determinants in the success of including smallholders (LeCourtois *et al.* 2011; Santacoloma 2007; Taylor 2005). For example, FSC certification has not been driven by consumer demand, but rather through large retailers seeking to reduce reputational risk: “We weren’t ever going to have customers demanding sustainable timber in our stores. But we knew that if our name, B&Q was associated with the destruction of tropical forests, or even temperate forests, our brand name would be damaged” (executive at B&Q UK retailer, in Taylor 2005). However, large-scale corporate buyers have historically tended to purchase from commercial/industrial forests, not from smallholders. The majority of FSC certified forests are in temperate or boreal regions of North America and Europe. Developing countries account for less than 13 percent of FSC certified forests, and tropical forests (the reason for forest certification development), account for only 4.7 percent (Durst *et al.* 2006). This presents interesting lessons for bioenergy, given that it is likely that demand will not come directly from consumers seeking certified bioenergy at the gas station, but rather from large-scale companies seeking to protect their brand or from key importing market regulation. It will be important, given demand driven by large multinationals, and the potential exclusion of smallholders as a result, to identify ways to incentivize large corporate buyers to incorporate smallholders in certified value chains.

## Combine Public and Private Initiatives to Deliver Greatest Benefit and Longest Sustainability

In a recent study on farmers’ access to markets for certified food products (LeCourtois *et al.* 2011), the issue of who leads the certification process was identified since it influences the ownership of the certification. This is also important because whoever takes the lead often determines the target market and the type of certification scheme. As farmers rarely initiate the process, they are highly susceptible to the goals determined by external actors – whether donor institutions, public sector, or private companies. The LeCourtois *et al.* study found that public sector lead certification leads to “long-term capacity building for farmers, encourages farmer empowerment, and is as inclusive as possible”. However, it was also found to have the lowest linkage with markets and retailers, and to lack long-term economic sustainability without subsidy. The private sector lead initiatives are found to have the opposite results, with lower capacity building, lower transparency, and greater dependency of the farmers on the company, but with higher price premiums and greater market access (LeCourtois *et al.* 2011).

In most cases, even when certification has been lead by a private company, there has been support from other sectors including donor agencies, NGOs, and the public sector in order to address lack of knowledge, capacity, and organization of smallholders (Romano

and Liversage 2010). There are many successful examples of smallholders achieving certification in cacao and coffee, especially where cooperatives have been formed. However, there is concern that certification is not self-sustaining, or that the price premium does not outweigh the costs of achieving certification, especially for smallholders. As stated by da Silva *et al.* 2009: “Until these donor-supported initiatives are scaled up and become self-supporting, the question of tokenism and long-term sustainability remains”. There is some indication that certification could become self-sustaining if combined with public sector policy/initiatives, and that this combination would also better address the sustainability concerns that certification schemes have been developed to address. Van Dam *et al.* 2010, recommend “Combining certification with positive incentives such as tax incentives, direct subsidies or public investments. Combining these with absolute prohibitions or requirements and strong international agreements will encourage desired sustainable practices” and maximize benefits to smallholders.

### **Separate Process of Certification from the Methods Espoused by Certification**

Over the last ten years, with the increase in interest in certification and the growing availability and types of certification, there is often the idea that certification is always a positive thing for smallholders. Studies assessing the impact of organic certification have identified that it is important to separate the process of certification (auditing, paperwork, etc.) from the methods espoused in certification (Dankers 2003). Adopting the methods, for instance, improved fertilizer management or required mechanical harvesting, may improve yields and provide environmental and social benefits, without smallholders needing to undertake the full process of certification. In order to understand whether pursuing certification will add value, an assessment of the market conditions, potential price premiums, and cost of certification should be undertaken (Harris *et al.* 2001). For example, studies have shown that GAP certification does not necessarily result in a price premium at the farm level, but meeting higher quality and safety standards may provide certain companies or countries with a “competitive edge” (Santalcoma and Casey 2011). In the absence of a price premium for certification, it may be difficult to encourage smallholders or the companies purchasing from smallholders to pursue the process of certification.

## EFFORTS TO ENHANCE SMALLHOLDER INCLUSION AT VARIOUS LEVELS OF GOVERNANCE

**Public sector** – Brazil launched a National Biodiesel Programme (PNPB) in December 2004, with the specific objective of promoting the inclusion of smallholders in bioenergy production. The programme included a blending mandate of 2 percent biodiesel with diesel beginning January 2008, and increasing to 5 percent by 2013 (Law 11, 097/05)<sup>11</sup>. The programme includes tax incentives to biodiesel producers (processors/blenders) who purchase at least a certain share of feedstock from smallholders. Producers who comply with these criteria can apply for a Social Fuel Certificate from the Agrarian Development Ministry<sup>12</sup>. The programme also requires that biodiesel producers provide technical assistance and a purchase guarantee to farmers.

Despite the Programme's intended objectives to foster inclusion of smallholder farmers, the majority of biodiesel production still comes from large-scale production of soy (78 percent) and animal fats (18 percent). "According to the national coordinator of the biodiesel programme of the Agrarian Development Ministry (MDA), around 37 000 families were working in the biodiesel value chain in 2008 and the incorporation of family farmers has ground to a halt, making it difficult to attain the initial goal of 200 000 families" (Wilkinson and Herrera 2010). The principle reason for lack of success in integrating farmers into the national biodiesel production is linked to price. Biofuel producers will purchase feedstock (castor, palm oil, sunflower) from small farmers in order to comply with the law, but then process that supply into oil; and continue to make biodiesel from large-scale production of soy and animal fats. Therefore, smallholders are in a delicate position, where the sale of their products to large-scale processors depends entirely on the continued existence of the current policy rather than on a functioning market. However, there are successful examples within the programme which provide valuable lessons for other public sector initiatives. For example, smallholders who began growing soy as a result of the Social Fuel Certification programme have benefited; with a specific case of ADM purchasing soy from approximately 500 small farmers in Mato Grosso do Sul (Wilkinson and Herrera 2010).

**International development institutions** – FAO's Farmer Field and Life Schools Programme<sup>13</sup>: FAO developed the Farmer Field Schools approach in 1989 to address agricultural production concerns and strengthen agribusiness linkages. Since 1990, several million farmers have graduated from FFS programmes established to build capacity to analyse production systems, identify areas for improvement, test potential solutions, and adopt better management practices throughout the world (Herbel et al. 2011). The FFS approach has been effective in helping farmers increase yields while

<sup>11</sup> As a result of pressure from the biodiesel industry, the percentage was raised to 3 percent in July 2009, and in January 2010 to 5 percent.

<sup>12</sup> Only firms with the Social Fuel Certificate could participate in selling biodiesel in Brazil, as a temporary measure for the start of the programme.

<sup>13</sup> For more information on Farmer Field Schools, see Gallagher (2003) or Braun *et al.* (2006).

reducing production costs, thus improving livelihoods (Davis et al. 2010). “The most significant change was seen in Kenya for crops (an 80 percent increase) and in the United Republic of Tanzania where agricultural incomes have risen by more than 100 percent” (Herbel et al. 2011). Another successful example in Kenya is the development of the Kenya Agricultural Commodity Exchange (KACE), which links producers to non-traditional market segments without increasing their transaction costs. In Colombia, the FFS worked with farmers to develop a label of origin to create greater market linkages (Herbel et al. 2011). FFS programmes in general have illustrated an effective way of organizing and empowering smallholders with common interests, and could serve as a way to provide extension services and capacity building on certification specifically.

**NGOs – Solidaridad** is an international network organization with nine Regional Expertise Centres (RECs) worldwide, and over 20 years of experience in creating fair and sustainable supply chains from producer to consumer. Solidaridad believes that fair and sustainable trade reduces poverty and helps to preserve people’s environment. Solidaridad’s Agri-Commodities programme focuses on improving working and living conditions of palm oil, sugar cane and soybean smallholders. Solidaridad aims to increase smallholder revenues from cash crops for food, feed, fibre and fuel markets while maintaining or improving household food security. The Palm Oil Producer Support Initiative (POPSI) is an initiative of Solidaridad and the Roundtable Sustainable Palm Oil (RSPO), and the Sugar Cane Producer Support Initiative (SUPSI) is designed to support Bonsucro members and help smallholders and plantations to achieve RSPO or Bonsucro certification. POPSI and SUPSI aim to ensure that smallholders can access and benefit from the growing market of sustainable certified palm oil and sugar cane, and to prevent the exclusion of smallholders from certified supply chains. (Solidaridad, 2011a).

# SMALLHOLDERS IN GLOBAL BIOENERGY VALUE CHAINS AND CERTIFICATION – EVIDENCE FROM THREE CASE STUDIES

## CASE STUDY METHODOLOGY

The issues presented in the literature review have been explored in three case studies. The case studies were selected based on the objective of contrasting three different bioenergy feedstocks, three different certification schemes, three different business models, in three different countries/regions. For each case study, FAO/BEFSCI partnered with international institutions with local counterparts to carry out country level analysis and conduct semi-structured field interviews with larger companies/processors and smallholder farmers. The interviews included questions on: 1) the perceived benefits of participation in the value chain and expected benefits of certification, and 2) the primary challenges experienced in participation with the value chain and perceived challenges in becoming certified. The case studies include analysis of the country context for agricultural and bioenergy investments; an analysis of the business model and positioning of smallholder farmers; a review of the certification scheme and specific mechanisms for smallholder farmers, and conclude with a discussion of the challenges and opportunities for smallholders in each case and recommendations to enhance inclusion, in each specific context.

## PARTNERS



**GIZ:** The Deutsche Gesellschaft für Internationale Zusammenarbeit (or the German Agency for International Development) was formed on 1 January 2011 and brings together the expertise of DED, GTZ, and Invent. GIZ is a German government-owned corporation which provides consultancy

services for both public and private sector clients. GIZ currently operates in over 130 African, Asian and Latin American countries and has offices in 88 countries, with an annual turnover of approximately 1.5 billion Euros. GIZ partners with state agencies, NGOs, universities and private enterprises in the countries it operates to advance sustainable development.

**IIED:** The International Institute for Environment and Development is an independent international research organization, launched in 1971, based in the United Kingdom, and operating in Africa, Asia, the Caribbean, Latin America, the Middle East and the Pacific. Together with an extensive network of partners, IIED





carries out research, capacity building and advocacy work, and provides advisory services to governments, businesses, and international development agencies. The four principal areas of IIED's work are climate change, human settlements, natural resources, and sustainable markets.



**RSB:** The Roundtable on Sustainable Biofuels is an international initiative coordinated by the Energy Center at EPFL in Lausanne that brings together farmers, companies, non-governmental organizations, experts, governments, and intergovernmental agencies concerned with ensuring the sustainability of biomass production and processing. The RSB has developed a third-party certification system for biofuels sustainability standards, encompassing environmental, social and economic principles and criteria through an open, transparent, and multistakeholder process.



**SNV:** The Netherlands Development Organisation is an international not-for-profit development organization, committed to eliminating poverty and inequality in emerging markets worldwide. With 40 years of on-the-ground experience and more than 500 professionals based in 36 countries in Africa, Asia, Latin America and the Balkans, SNV provides strategic advisory services to leading public and private sector clients. In Latin America, SNV focuses strongly on advancing Inclusive Business: entrepreneurial initiatives which aim to contribute to poverty alleviation by including low-income communities in the value chain of companies, generating value for both parties involved.

## THAILAND CASE STUDY

BY ENNO MEWES AND JONAS DALLINGER

With GIZ



**Bioenergy Feedstock** – Oil Palm

**Certification Scheme** – Roundtable on Sustainable Palm Oil

**Business Model/Smallholder role** – Partnership Farming, Independent Smallholders

**Case Study Sample:** Average age 50; 90 percent male; Average landholding 7 hectares; Average Household: Four people

### Main Findings:

- Smallholders are in a strong negotiating position due to the combination of the over capacity in processing and the land policies in place
- Smallholders are already receiving many of the “benefits” of certification without being certified

### Main Recommendations:

- Building on the GIZ model, identify mutually beneficial incentives to enhance smallholder inclusion
- Public and private sector will need to increase capacity building to ensure sustainability of GIZ programme.

## INTRODUCTION

The project on Sustainable Palm Oil Production for Bioenergy in Thailand was commissioned by the German Federal Ministry of Environment, Nature Conservation and Nuclear Safety (BMU) under the International Climate Initiative (ICI) and implemented by GIZ in cooperation with the Ministry of Agriculture and Cooperatives and the Office of Agricultural Economics (OAE) in Thailand<sup>14</sup>. The overall objective of the project is to make certified palm oil from Thai smallholders, in compliance with European sustainability standards, available on the market. The two main approaches for meeting this objective are: 1) working with the Thai palm oil sector stakeholders on the National Interpretation of the RSPO standard, as well as calculating GHG-emissions and monitoring impacts from palm oil production, and 2) providing capacity building and technical assistance to mills and smallholders to prepare them for certification. The project is working with private palm oil crushing mills to support smallholder groups in optimizing the entire value chain with regard to farm efficiency, product quality, and consequently to receive RSPO certification for smallholders while strengthening export competitiveness. By applying a *Partnership Farming* approach - an inclusive business model between palm oil crushing mills and smallholders - and engaging with government institutions, the project has established the necessary support structures to pursue certification.

<sup>14</sup> The budget of 3.43 Million Euro (4.87 Million USD) has been provided for a framework of three years from 1 January 2009 until the end of 2011, and has been extended until August 2012. 1 Euro equals US\$1.42 on 4 September 2011

## COUNTRY CONTEXT

Land is very expensive in Thailand. Prices<sup>15</sup> of land have doubled and tripled during the last decades (Preechajarn 2010). This has led to a decrease in investment in land, especially in the South. However, investments in agricultural products and processing within the last two years have been increasing. The table below highlights the Foreign Direct Investments (FDI) by sector in Thailand in the rubber, sweeteners and fat/oil sectors.

Table 2

### Foreign Investment in Agricultural Products Approved by BOI in 2010 (January-June) in Million USD

1.	Manufacture of natural rubber products	180.3
2.	Manufacture of sweeteners (except sugar)	44.2
3.	Manufacture of oil or fat from plants or animals	38.9
4.	Manufacture or preservation of food or food ingredient	38.5
5.	Manufacture of medical food	18.2

Source: BOI, 2010

The Government has implemented certain programmes and targets to expand plantations nationwide, especially for rubber and oil palm, which has led to an average annual expansion of 8.26 percent in the area cultivated with oil palm (OAE 2011b) and 5.74 percent of the area cultivated with rubber (OAE 2011a) within 2006 to 2010. The Government has also implemented various plans and policies to promote oil palm and the oil palm industry.<sup>16</sup> The Committee on Biofuel Development and Promotion (CBDP)<sup>17</sup> created a scheme to expand palm oil cultivation by 400 000 hectares from 2008 – 2012 (Preechajarn 2010). The Government has set a blending target of 5 percent (B5)<sup>18</sup> by 2011 (BOI 2010a; Damen 2010), which has created a 25 percent increase in demand, translating to 380 000 tons of additional oil palm (Kukeawkasem *et al.* 2011).<sup>19</sup>

<sup>15</sup> Within the last three years, prices of land have been increased by 26.97 percent in all 75 provinces. Especially the prices in the South have skyrocketed, namely 85.79 percent. In the North East prices have been increased by 22.97 percent, in the North by 15.43 percent, in Central Thailand by 11.71 percent and in Bangkok by 5.76 percent within the same timeframe (Thailand Treasury Department, 2010).

<sup>16</sup> Implemented policies and plans are the “Oil Palm and Palm Oil Industries Development Plan for 2008-2012”, “Biodiesel Production and Consumption Promotion Policy” and “Action Plan on Biodiesel Utilization Promotion and Development” (TEI 2009).

<sup>17</sup> A joint working group from the Ministry of Agriculture and Cooperatives and the Ministry of Energy (Preechajarn 2010).

<sup>18</sup> “Diesel B2 was enforced nationwide in February 2008, and B5 will follow suit in 2011 as palm oil cultivation expands to 2.5 million rais (400 000 hectares).” (BOI 2010a) As a reaction to a shortage of palm oil in early 2011, the Government adopted a flexible approach of biodiesel admixture quotas. To manage the supply of oil palm and ensure stable prices for oil palm farmers.

<sup>19</sup> Further on, the Government supports investments in this area through soft loans financed through a tax on fossil fuels and tax exemptions for investors.

The Board of Investment (BOI) supports six major sectors, one of which is bioenergy. In 2009, the BOI received 402 applications from investors planning alternative energy projects, which constitutes a significant increase from just 62 in 2008. Applications in 2009 represent 229.1 billion THB (US\$7.66 billion <sup>20</sup>), which is more than a tenfold increase. The 170 approved renewable energy projects from 2006 to 2008 had an investment value of 104 billion THB (US\$3.48 billion) (BOI 2010a).

In addition to the policy induced incentives, another main reason for increasing investments is the current high price of palm oil<sup>21</sup>, globally and locally. These combined factors have led to plantations, mills, and biodiesel producers all expanding capacity (Interview with Triyanond, S., Chairman of Biodiesel Association). However, the expansion has been done without any systematic management, which has resulted in an enormous overcapacity in processing. Despite overcapacity, even further processing projects are planned<sup>22</sup>. Investors, interested in land for expansion of oil palm to meet growing demand, are investigating the potential of degraded and unused land in non-traditional palm growing regions, especially in the East and some areas in the North East of Thailand, although most of the North East has been determined to be unsuitable for oil palm cultivation (Damen 2010).<sup>23</sup>

As of 2004, 63 percent of total land had been registered in Thailand and very few land disputes have emerged (Childress 2004). Table 3 gives an overview of the large variety of existing land titles in Thailand and their corresponding rights.

<sup>20</sup> 1 USD equals 29.9 THB, 4 September, 2011.

<sup>21</sup> While the FFB price in the year 2000 was 1.66 THB (US\$0.06 ) per kg, it was 4.22 THB (US\$0.14) per kg in 2010 already (Unpublished data, Department of Agricultural Economics, 2010). During the same period the CPO price increased from 12.94 THB (US\$0.43) to 26.17 THB (US\$0.87) (Unpublished data, Department of Internal Trade, 2010).

<sup>22</sup> As Mr Triyanond confirms, two further Biodiesel plants are in the planning stage. Also the Krabi Oil Palm Farmer Cooperative Federation (KOPFCF) is planning a second processing site (Interview with Chantip, W., Manager), also other mills are internally discussing to either increase capacity or construct new mills.

<sup>23</sup> Currently these expansions are taking place mainly in Chonburi and Trat. Luck Wajananawat, the president of the Bank for Agriculture and Agricultural Cooperatives (BAAC) reported to have more than 150 000 rai (24 000 hectares) of land that could be used for oil palm plantations. One investment example is a biodiesel project in Nakhon Nayok province that is being planned by the BAAC and Bangchak Petroleum Plc. 1 200 rai (192 hectares) are going to be leased to grow oil palm on degraded tangerine orchard land (Chantanusornsiri and Keeratipipatpong 2011).

Table 3

**Land Titles and User Rights in Thailand**

Land Title	Unrestricted Selling/buying	Land has to be put to use	Registered ownership	Ownership can be applied for	Can be inherited	Can be borrowed against	Can be mortgaged	Officially registered land markers	Can apply for whole ownership	Land-users can initiate ownership process
Wholly owned	x	x	x	x	x	x	x	x		
NoSo 3 ko	x	x	x	x	x			x	x	
NoSo 3		x	x	x						
SoPoKo		x	x		x			x		
NoSo 2		x	x		x			x	x	x
SoKo 1				x				x	x	x
NoSo 5		x	x	x	x			x		

Source: GTZ, 2008

From 1984 – 2002 Thailand participated in the *Land Titling Programme (LTP)*<sup>24</sup>, supported by the World Bank. As a result, Thailand has a very transparent and efficient land administration system compared to neighbouring countries (Childress 2004). From 1975–2003 the Government allocated 3.7 million hectares of public land to 1.5 million recipients (Giné 2004). Today, 76 percent of the land used for oil palm in Thailand is cultivated by smallholders with an average landholding of 7.2 hectares in the project pilot area (Thongrak *et al.* 2011; World Bank 2010).

### Smallholder Positioning

Since new land for private investment is scarce, the expansion of the area for oil palm cultivation is taking place primarily on smallholders' land with conversion from fruit trees, unused or unproductive paddy, rubber, sugar cane, and degraded land. Smallholders are planting high-value crops such as oil palm and rubber as a way to improve their

<sup>24</sup> This programme sought to resolve tenancy problems, landlessness, and tenure insecurity by imposing ceilings on private landholdings, allocating land, and enhancing the land administration system (Childress 2004; Dallinger 2011).

income and livelihoods. Due to the overcapacity of, and competition between, many mills, smallholder oil palm growers are in a good bargaining position. Additionally, the effective land administration system has resulted in a high number of family farms. Therefore smallholders are positioned to benefit from oil palm production if there are effective extension services available to improve farm management and thus increase yields and income, which will further enhance their position in the market.

More than 120 000 farmers in Thailand are currently cultivating oil palm of which 98 percent are smallholders (TEI 2009; Prakarn 2011), and smallholders produce more than an estimated 70 percent of the total production by volume. The majority of oil palm growers in Thailand operate completely independently and are not connected to mills by any kind of written contract or formal arrangement.<sup>25</sup> Smallholder schemes, for instance, the Nucleus Estate Scheme (NES) in Indonesia or Federal Land Development Authority (FELDA) in Malaysia, are not present. The only form of an intermediate scheme, (hybrid) between market and vertical integration (hierarchy), are farmer cooperatives which are not as common. Since the establishment of mills is very capital-intensive, only a few farmers have formed their own cooperative mill with support of the Government (Dallinger 2011; Thongrak *et al.* 2011).

At the same time, smallholders are dependent on the mills for processing of FFB which needs to occur within 48 hours after harvesting in order to maintain the food quality properties. Most mills do not own large plantations and are dependent on smallholders and ramps (middlemen, distribution sites) for FFB supply. This results in mills being forced to accept every quantity and quality from any party due to their current overcapacity (TEI 2009).<sup>26</sup> As most mills depend on smallholders, they cannot afford to grade and consequently reject or penalize the delivery of FFB that is not satisfactory. As a result, prices have historically not been differentiated by FFB quality (Dallinger 2011).<sup>27</sup> Although desirable and beneficial for the mills and potentially for the farmers, there are significant challenges to implement a grading system due to the fact that all mills would need to implement the same grading system or risk turning away smallholders with lower quality FFB, and thus lose supply to competitors<sup>28</sup> (May and Nielsen 2011). However, there are increasing efforts this year to implement a price premium for higher quality FFB as a result of a resolution passed by the National Oil Palm Board in early 2011. Only a few mills own plantations and do not rely heavily on smallholder production, which means that they are in a better bargaining position with smallholders to demand higher quality FFB and/or pay a lower price.<sup>29</sup>

Prior to the GIZ project, the average smallholder in the project area achieved an income

<sup>25</sup> The market relationship is based on daily spot prices and cash payment.

<sup>26</sup> This also increases smallholders and ramps bargaining power on price, resulting in some mills paying higher prices at times than even the market price.

<sup>27</sup> Some mills have started to give smallholders an incentive for delivering higher quality FFB by paying quality premiums. However, a proper grading system does not yet exist (Thongrak *et al.* 2011).

<sup>28</sup> If the mill would implement a grading system and refuse FFBs, smallholders in turn would deliver to another mill and would result in the mill procuring less FFB in total.

<sup>29</sup> Interviews with selected mills.



of 6 283 THB per rai per year (US\$1 313.12 per hectare per year). This can be calculated from an average yield of 2.9 tons FFB per rai per year (17.8 tons FFB per hectare<sup>30</sup> per year) an average FFB price of 3.7 THB (US\$0.12) and average production costs of 2 793 THB (US\$93.41) per ton, of which 51 percent are fertilizer costs (OAE 2010). Calculations have shown that a gain of around 15 billion THB (US\$0.50 billion) in annual income along the entire supply chain is feasible when achieving a yield increase of up to 3 tons per rai (18.75 tons per hectare) and an increase of 20 percent Oil Extraction Rate (OER) based on the 2009 baseline (Kukeawkasem 2011a). Therefore, there is an incentive for all actors along the value chain to invest in improving yield and quality of oil palm.

Usually ramps<sup>31</sup> operate as middlemen between farmers and mills. Ramps are not always held in high regard by mills due to the perception that they are “cheating” the mills by decreasing the quality of the FFB through poor management practices, such as detaching single fruits and spraying water, in order to increase the weight of the truckload. These practices worsen the quality of FFB and result in the mill preferring to procure directly from smallholders rather than from ramps (Dallinger 2011). There are more than 60 mills, with a combined annual capacity of 16.68 Million tonnes FFB (Apichart 2010), of which less than 40 percent is currently being met (Interview with Taechasriprasert, S., OAE and Triyanond, S., Chairman of Biodiesel Association).

Sourcing from smallholders causes higher transaction costs and involves a couple of other challenges for mills. As discussed earlier, the FFB quality delivered by smallholders is slightly better than the one delivered by ramps, but is still lower than plantation yields. Smallholders have low yields often due to poor plantation management practices, such as harvesting of unripe fruit due to lack of knowledge. From the point of view of smallholders, they are facing high fertilizer prices, fluctuation of FFB prices, lack of water in the dry season, low soil fertility, and a lack of extension services. Other than through the GIZ project, the mills typically do not provide any services to smallholders. Furthermore, the majority of farmers (70.8 percent) do not document their farm activities (Fairhurst 2009; Thongrak *et al.* 2011).<sup>32</sup>

## PROJECT/OPERATION OVERVIEW

### The Business Model – Partnership Farming

The concept of *GIZ Partnership Farming* is the establishment of a long-term interdependence and trusting business partnership between smallholders and processors where mutual interests, benefits, and information are shared, instead of products solely being purchased

<sup>30</sup> 1 hectare equals 6,25 rai.

<sup>31</sup> Ramps collect the FFBs produced by smallholders, sometimes organize harvesting teams to support smallholders and in most cases organize the delivery of FFB by bigger trucks to different palm oil mills. Thus, they reduce the costs of transportation and in return receive reasonable margins due to larger volumes and ability of negotiation with mills.

<sup>32</sup> It is too complex for them, they do not see the benefit, and have no time for keeping records. Smallholders receive information on oil palm management and marketing information either from governmental officials or from the Crude Palm Oil (CPO) mill’s extension officer.

on the spot market. On the one hand, *Partnership Farming* seeks to improve access to international and domestic high quality markets, to facilitate certification, and to make premium prices for smallholders accessible. On the other hand, the goal of the *Partnership Farming* concept is to enable farmers to become self-sufficient decision-makers and agripreneurs (agricultural entrepreneurs), which allows for a more flexible production system and highlights knowledge based agriculture. In order to achieve these goals, the approach combines smallholder production in the field with large scale processing by first forming farmer groups and supporting institutional development<sup>33</sup>; providing basic agricultural education in addition to commodity-specific training<sup>34</sup>; and including agricultural labourers, not just farmers, in training and education activities<sup>35</sup>.

The major difference and added value of the *Partnership Farming* approach in contrast to a usual contract farming arrangement is that the buyer is willing to contribute to a broader agricultural education for farmers by providing certain services, understanding that they will achieve greater long-term benefits as a result of these investments.

### Stakeholders<sup>36</sup>

*Office of Agricultural Economics (OAE) and GIZ:* On the national level, GIZ initiated and supports a variety of activities together with the OAE. Besides the Thai National Interpretation Working Group (TH-NIWG) for the RSPO for mills and plantations, the Thai Task Force on Smallholders (TTFS) has been established with the main objective to produce a version of Thai Guidance and Indicators, specifically for Independent Smallholders under Group Certification. The project is also involved in preparing a *Greenhouse Gas (GHG) Balance for Thai Palm Oil Production*. With regard to the challenge of reducing GHG emissions, the project initiated the establishment of a technical team and advisory board that developed and agreed on a GHG calculation methodology for the Thai palm oil sector as well as developed a baseline of the current emissions. GIZ and OAE have also developed guidance on *High Conservation Value (HCV) Guidance and Mapping* to increase smallholders' access to RSPO certification, by providing a practical and economically viable approach for simplified HCV assessments. Other activities include monitoring the impacts of palm oil production in Thailand and integrating sustainable palm oil production into Thai Policy (GIZ 2011; GIZ 2011a; GIZ

<sup>33</sup> This reduces transaction costs, increases bargaining power and assists in the transfer of technology.

<sup>34</sup> This ensures knowledge based agriculture to improve traditional behaviour by providing education on the basics of farming and management and business skills, instead of exclusively problem oriented training.

<sup>35</sup> Due to the livelihood situation of labourer families the potential for poverty alleviation is extremely high. By training labourers to become skilled actors in the production system, farmers and agribusiness will benefit by higher quality FFB and yields.

<sup>36</sup> The project works together with a variety of institutions, such as the Department of Agricultural Extension Department of Agriculture, Cooperative Promotion Department, Land Development Department, National Bureau of Agricultural Commodity and Food Standards (ACFS), Universities (Mahidol University and Prince of Songkla University) and various associations (e.g. Thailand Biodiesel Association, and the Thai Palm Oil and Oil Palm Association).

2011b; GTZ 2010a; GTZ 2009).

**Palm oil crushing mills:** GIZ selected four pilot palm oil crushing mills which have, based on the Partnership agreement between mills and smallholders, committed to sustainable production practices and to aim for certification of sustainable palm oil in the course of the GIZ project. They also gave recommendations of farmers and middlemen to participate in the project. The mills agreed on establishing measures towards improved Fresh Fruit Bunch (FFB) quality and that they would pay a price premium for high quality FFB to the farmers, even before certification could be achieved. As discussed in the *Partnership Farming* approach, the mills who agreed to participate in the project understood that they would benefit by investing in measures to improve quality of supply with smallholders. The measures include various support services for participating smallholders, such as fertilizer discount, free Empty Fruit Bunches (EFB), high quality fertilizer, express delivery channel of FFB, discounts for seedlings, credit schemes, and soil and leaf analysis services. Smallholders benefit from the services through improved yields, lower costs and finally higher incomes which present clear incentives and create motivation to improve practices.

**Smallholders:** Approximately 500 smallholders to date have been involved in the GIZ project at varying levels of participation and commitment. The smallholders have agreed to regular delivery to the participating project mills, implementing best practices in their farm management, record keeping, and adoption of socio-economic and environmental sustainability criteria of the Roundtable on Sustainable Palm Oil (RSPO). Additionally, smallholders have committed to establishing group structures in order to make the group certification possible, and have subsequently participated in meetings and capacity-building activities organized through the project.

## CERTIFICATION

The Roundtable on Sustainable Palm Oil (RSPO)<sup>37</sup>: The Roundtable on Sustainable Palm Oil is a multistakeholder organization initiated by the World Wide Fund for Nature (WWF) and private companies in 2002 to meet the rising concerns about negative environmental and social impacts from the rapid global expansion of oil palm plantations. The certification is not envisioned to just be a tool to access niche markets, but rather is foreseen to become the industry baseline standard.<sup>38</sup>

The core element of the RSPO Standard is its Principles and Criteria (RSPO 2007). The RSPO P&C have to be implemented by the RSPO members from the Grower Category and the implementation has to be certified by an independent, third-party certification body (CB). Palm oil producing countries have the possibility to develop National Interpretations of the RSPO P&C (NI) in a process clearly outlined by the RSPO. The development of NIs shall ensure that the RSPO P&C fit the national context in each country, and potentially reduce certification costs. Whereas the generic Principles and Criteria are maintained, NIs provide additional local context on specific indicators and

<sup>37</sup> <http://www.rspo.org>

<sup>38</sup> To date, 9 percent of global oil palm production is certified to the RSPO (RSPO 2011).

guidance to assist certification bodies in the audit process.<sup>39</sup>

**RSPO and smallholders:** If the RSPO succeeds in its goal to completely transform the global market for palm oil to be in accordance with its sustainability criteria, smallholders will sooner or later have to adapt their practices to these criteria or lose the market for their produce. In 2005, the RSPO established a Task Force on Smallholders (TFS) based on a General Assembly Resolution at the Third Roundtable Meeting of the RSPO (RT). The TFS was mandated to find solutions on how to best integrate smallholders in RSPO certification so they would not be marginalized from the market for sustainable palm oil (Colchester 2011). Smallholders have been defined by RSPO as:

*“Farmers growing oil palm, sometimes along with subsistence production of other crops, where the family provides the majority of labour and the farm provides the principal source of income and where the planted area of oil palm is usually below 50 hectares in size.” (RSPO 2007a)*

Realizing that there are a variety of different types of smallholders in oil palm production, the TFS distinguished between “scheme” and “independent” smallholders and developed the respective definitions.

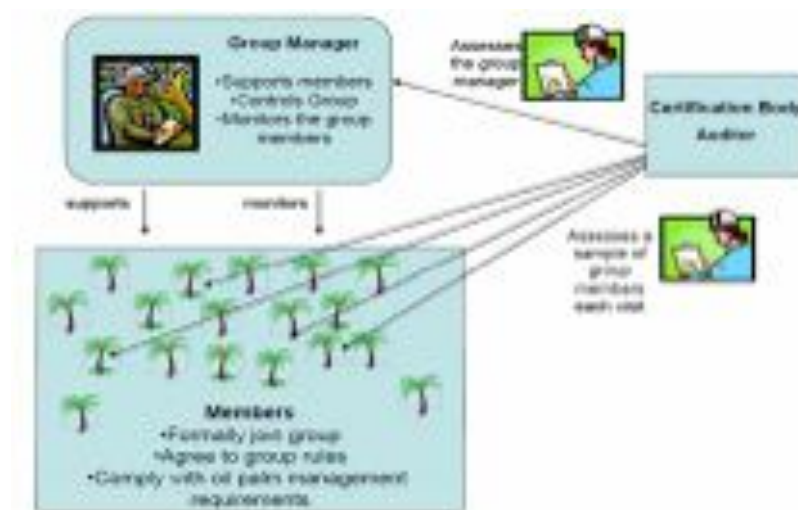
Scheme smallholders are bound to a particular mill by a contract or other means. It is the responsibility of the mill to ensure that the scheme smallholders, as an integral part of their supply base, comply with the RSPO requirements. Independent smallholders, on the other hand, are free to choose where they sell their fruit and are not strictly bound to any mill. As they do not fall under the category of associated smallholders they are not covered in the RSPO Certification System as of 2007.<sup>40</sup> The certification of independent smallholders becomes possible only by using group certification. To enable the certification of groups of independent smallholders, the RSPO in August 2010 adopted the RSPO Standard for Group Certification and the Guidance for Independent Smallholders under Group Certification.

The Standard for Group Certification has to be met by the smallholders in a group in addition to the actual certification standard for sustainable palm oil production. In Figure 1 its process, including responsibilities and relationships, has been presented in a simplified form.

**39** The framework for certification towards the RSPO is outlined in the RSPO Certification System Document (RSPO 2007). It covers the RSPO Certification Standard, Accreditation Requirements, Certification Process Requirements and details on the Funding of RSPO Certification. Additional information on formats and procedures can be found in the five Annexes of that document.

**40** It is not clearly documented what the term “associated smallholders” under 4.2.3 of the RSPO Certification System comprises. According to some statements of people closely working with RSPO, the term “associated smallholders” under 4.2.3 in the RSPO Certification System Document only refers to scheme smallholders and does not cover independent smallholders (according to Ng, C., TÜV Rheinland and Jiwan, N., Sawit Watch, email communication). In the RSPO P&C which have been published shortly after the RSPO Certification System document, it is distinguished between “smallholders in schemes” and “individual smallholders”. The categorization into scheme and independent smallholders came later.

Figure 4

**Structure of group certification**

Source: RSPO 2010

The certified product is the FFB of the group members and a single certificate is issued to the group and held by the group manager (RSPO 2010).<sup>41</sup> RSPO certification is valid for five years. Yearly surveillance audits have to be conducted to maintain certification.

Especially for individual smallholders<sup>42</sup>, the guidance addressing smallholders contains major simplification of the RSPO P&C as published in 2007 and some criteria are declared as not applicable<sup>43</sup> (RSPO 2007a). The guidance for each category of smallholders was later separated from the original RSPO P&C resulting in two new documents which contain further detail, published in 2009 and 2010.

In the following, only the Guidance for Independent Smallholders will be taken into account rather than the Guidance for Scheme Smallholders as this is more relevant for the Thai context and has been used as the basis to develop the Thai NI for Smallholders.<sup>44</sup>

The Thai National Interpretation (NI): The objective of the Thai National Interpretation Working Group (THNIWG)<sup>45</sup> is to establish an NI for Thailand, give guidance and provide a platform for exchange (RSPO 2009). Given the importance of smallholders in the Thai palm oil industry, it was agreed to establish a Thai Task Force on Smallholders

<sup>41</sup> Any legal entity can play the role of a GMU as long as it achieves an agreement with the group.

<sup>42</sup> At that stage, it has been distinguished between smallholders in schemes and individual smallholders, however no clear definition of this categories is given.

<sup>43</sup> Criteria 3.1, 4.5, 6.5, 7.1.

<sup>44</sup> Contractual or even stable relationships between oil palm farmers and oil palm crushing mills are not common practice in Thailand, which makes scheme certification unthinkable on a large scale.

<sup>45</sup> The THNIWG has been established following a first official public meeting from 16 to 18 September 2009. Participants from all interested stakeholder groups were invited to join and of the 271 participants of the first meeting, 41 signed up to join the THNIWG.

(TTFS). The main task of the TTFS is to produce a draft version of a Thai Guidance and Indicators for Independent Smallholders under Group Certification (Thai NISH)<sup>46</sup>. Both NIs are currently in the approval process of the RSPO and it is expected that both of them will be approved in 2011.

**Mechanisms and structures for certification:** Supported by GIZ, smallholders have established a group structure, which is necessary for certification to the RSPO as outlined above and described in detail in the RSPO Group Certification Standard. These groups consist of a group manager or chairman, who supports and monitors the group members and controls the group, group leaders for each subgroup and some group advisors, who are responsible for transferring knowledge in terms of specific aspects of the standard to the field and implementation. Establishing these structures is a lengthy process which currently requires strong support from the GIZ project. Members formally joined the group, agreed on group rules, signed an agreement towards sustainability and strive to comply with oil palm management requirements.<sup>47</sup> Farmers participate in meetings and capacity building events and have generally gained increased motivation and interest in processes of the project and in growing oil palm to a higher standard. In order to achieve certification, farmers have to keep records about every detail of their farm activities (field interviews, Kukeawkasem 2011).

## MAIN FINDINGS

### Costs and Challenges of Certification

#### Lack of Incentives

*The main challenge experienced throughout the project is to convince smallholders to aim for RSPO certification, when the direct benefits are not visible or apparent to them at this point.* A number of smallholders were convinced to join the project by the mill or community leaders. Almost every smallholder mentioned that they joined the project to gain knowledge in farm and fertilizer management, and soil and leaf analysis. Access to agricultural knowledge as an incentive to join the project was especially predominant around Suksomboon, one of the pilot mills located in Chonburi. This can be attributed to their lower level of knowledge and experience in growing oil palm since most farmers just recently converted their land. Another reason is that existing extension institutions in this region typically have less experience. Oil palm smallholders have the overall aim to improve the quality of FFB, increase yields, and reduce costs in order to achieve better

<sup>46</sup> The term Thai NI refers to the NI applicable for big estates. The Thai NISH defines smallholders as “oil palm growers who possess planting areas of oil palm of less than 50 hectares (312.5 rais) in total” (Thai NI for Smallholders. Final Draft). Growers with larger landholdings can join group certification if they do not possess an oil palm crushing mill because they do not have access to sustainable palm oil production through other certification mechanisms of the RSPO.

<sup>47</sup> The group committee has a regular monthly meeting, and meetings among all group members are supposed to take place every 2-3 months.



prices and ultimately a better livelihood.

Premium prices for RSPO certified products are often discussed. Current prices for RSPO certificates traded on the GreenPalm<sup>48</sup> internet platform are US\$1.33 per ton of Crude Palm Oil (CPO) and US\$2.90 per ton of Palm Kernel Oil (PKO). This transfers to a premium for certified FFB of 0.01 THB per kg<sup>49</sup> (US\$0.0003 per kg) which is a very small fraction of the usual FFB prices and certainly not enough to incentivize smallholders to seek RSPO certification<sup>50</sup>. As an alternative to improved prices, extension services could be another incentive if they were tied to certification. This could create economic benefits for smallholders resulting from improved productivity. However, extension services are currently not tied to certification, creating little incentive to internalize the extra costs of certification, if the benefits associated are already realized through extension services. Thus far, the benefits are not directly linked to RSPO certification and a carrot-and-stick approach was taken by GIZ and its partners to convince farmers to undertake the certification process. For example, in return for adhering and following the guidance on certification, the GIZ project offered trainings on farm management, in addition to the benefits already outlined that the mills are providing (fertilizer discount, fast track, etc.) directly to smallholders.

### High Costs

The current high costs of preparing for certification are another major obstacle for smallholders. Costs for audits vary between different Certification Bodies (CBs) and countries, but are generally considered high for individual smallholders. Currently there are 13 RSPO approved CBs for P&C certification and 7 RSPO approved CBs for supply chain certification available on the market<sup>51</sup>. RSPO requires comprehensive competencies of audit teams (RSPO 2007) which require CBs to invest in their own capacity building in many cases. Some capacity building for local CBs has been done within the project; however, Thai CBs with interest in RSPO fear that the new RSPO accreditation requirements will be very costly and entering the relatively small Thai market for RSPO certification might not be economically viable, creating a disincentive for becoming accredited<sup>52</sup>. Current practice in Thailand is that international CBs with a local presence have to bring in auditors from Malaysia, Indonesia, Australia or Europe who are then supported by national staff to overcome language and cultural barriers.

<sup>48</sup> <http://www.greenpalm.org/>

<sup>49</sup> 0.0079 THB (US\$0.0003) from CPO plus 0.0021 THB (US\$0.0001) from PKO; based on a conversion rate of 20 percent for CPO and 2.5 percent for PKO; exchange rate of 29.9 THB per US\$, 4 September 2011.

<sup>50</sup> Average FFB price in 2010 was 4.26 THB (US\$0.14) (OAE, 2011).

<sup>51</sup> <http://www.rspo.org/?q=page/491>.

<sup>52</sup> The RSPO accreditation system for CBs recently changed. Previously, CBs accredited to ISO Guide 65 or Guide 66 could apply at the RSPO for approval to doing RSPO audits. In the future independent accreditation by Accreditation Services International (ASI) will be required. Information on the accreditation cost is not accessible but for accreditation to the Forest Stewardship Council, ASI estimates cost of 35 000 Euro (US\$49 700 USD) excluding travel and accommodation (ASI 2010). Reoccurring cost are expected as well.

For a pre-assessment conducted by the project, assessing two farmer groups including a total of 409 smallholder farmers and an area of 1 790 hectares, the cost quoted by three different CBs ranged between 12 000 Euro (US\$17 040 USD) to 23 000 Euro (US\$32 660). The quoted price for the certification audit of the same two groups is estimated at 22 500 Euro (US\$31 950). The required annual surveillance audit was quoted at approximately 11 000 Euro (US\$15 620). This totals around 33 000 Euro (US\$46 860) for the first year of certification, split among 409 smallholders, resulting in an estimated cost of 81 Euro (USD115) per smallholder in the first year and 27 Euro (US\$38) in the following four years<sup>53</sup> just for the auditing process, not taking into account costs for changes in practice, time spent in preparing documentation, or other associated costs of compliance. Within the end of a five-year period a reassessment of compliance is needed, resulting in additional auditing costs.

### **Lack of Capacity**

Challenges in implementation of the RSPO certification requirements are extensive; however they vary greatly between individual farmers. The current knowledge of RSPO for farmers in the project differs depending on their participation in the various capacity-building activities of the project (Field Test 2011; Pre-audit 2010; Public Consultation 2010/11; Roadshow 2009) and their varying capabilities. Documentation, record keeping and establishing certain group procedures and mechanisms (e.g. Criteria 1.1, 1.2, 3.1, 8.1, Group Certification Standard) are considered difficult because this is completely new to most farmers. The sophisticated and demanding requirements of record keeping for group certification under RSPO are seen as a burden that has to be overcome only for the certification process itself and without any direct benefit to the farmer (Interview with Kukeawkasem, Y.). Besides cooperatives initiated and supported by the Government, few formal groups of smallholders with a joint management structure exist in Thailand. Farmers use informal networks and relationships to share knowledge and improve their farm management. Sporadically they seek and consider government advice through extension services. For most groups, however, there is no coordinating body available that would be in the position to manage the certification process. The farmers are completely free in their decisions regarding farm management and practices and marketing of their produce, and most have no desire to lose this independence. The RSPO guidance for independent smallholders shifts responsibility to the group manager, which requires adherence by the group to a uniform set of practices and criteria. At the moment, there is no marketing mechanism for certified FFB under RSPO.

### **Challenges with Specific Principles and Criteria**

*Principle 4: Use of appropriate best practices by growers and mills*, is considered easy to implement and perceived by farmers to be beneficial in their farm management. However,

<sup>53</sup> In total each year around 43 Euro (US\$61) per smallholder.

external support for capacity building is necessary<sup>54</sup> and the administrative, monitoring, and documentation requirements of the Principle require strong group management. Principle 4 clearly shows that farmers could strongly benefit from RSPO by receiving knowledge and trainings as well as the respective support and monitoring of implementation.

*Principle 5: Environmental responsibility and conservation of natural resources and biodiversity:* Farmers are not experienced with doing environmental impact assessments which are a requirement at the stage of replanting and when clearing natural vegetation. Such assessments involve substantial expert knowledge and the process requirements of RSPO are unclear. A more practical approach would be the promotion of good practices for activities with potential environmental impacts. This certainly applies to 5.2<sup>55</sup> and the necessary knowledge on High Conservation Values (HCV) in the plantation, as farmers and mill management do not have any experience with the HCV concept. Some stakeholders also expressed concerns regarding Criterion 5.5<sup>56</sup> as alternatives for using fire at replanting requires input of machinery or labour which increases costs for the farmers. Concerns exist that disease might spread in the plantation if the remains of dead palms are left in the field. There is a need for training and awareness-raising on good practices in replanting.

*Principle 6: Responsible consideration of employees and of individuals and communities affected by growers and mills* constitutes an administrative burden to prove compliance. For example, conducting a social impact assessment (6.1), procedures on communication and consultation (6.2) or the documented systems required in 6.3 and 6.4 can be seen as obstacles.

*Principle 7: Responsible development of new plantings* is challenging for smallholders in Thailand, again especially regarding the proof of compliance rather than the actual practice. One important factor will be the outcome of the intention of RSPO to develop simplified HCV assessments and Social and Environmental Impact Assessment (SEIA) for smallholders (Colchester 2011). If expert knowledge on HCV areas from accredited HCV assessors is required<sup>57</sup>, major costs for smallholders will arise to prove compliance. Expansion of oil palm in Thailand in most cases takes place on agricultural or degraded land (TEI 2009), and environmental protection and conservation in Thailand is considered strong<sup>58</sup>. There are some reports of encroachment into national parks or other protected areas, which is already against Thai law and being addressed by the Government of Thailand.<sup>59</sup> HCV assessments are better suited to assess areas not already protected or

<sup>54</sup> Farmers for instance do appreciate the access to soil and leaf analysis but they lack the knowledge on interpreting the results and deducing fertilizer recommendations.

<sup>55</sup> The status of rare, threatened or endangered species and high conservation value habitats, if any, that exist in the plantation or that could be affected by plantation or mill management, shall be identified and their conservation taken into account in management plans and operations.

<sup>56</sup> Use of fire for waste disposal and for preparing land for replanting is avoided except in specific situations, as identified in the ASEAN guidelines or other regional best practices.

<sup>57</sup> Outlined in the new planting procedures under the generic RSPO P&C (RSPO without year).

<sup>58</sup> [wcs.org/where-we-work/asia/thailand.aspx](http://wcs.org/where-we-work/asia/thailand.aspx)

<sup>59</sup> Currently the Thai Royal Forest Department plans to intensify investigations on encroachment into national parks (Wipatayotin 2011).

included in national parks or conservation areas.

Experience from the project shows that cases of non-compliance to Principle 7 are most likely to occur where oil palm is grown close to rivers or channels (maintenance of riparian buffer zones) or on steep terrain. Smallholders could lose a substantial part of their farm to be in compliance with RSPO. A rapid HCV assessment done in Northern Krabi suggests that due to the historic land development in the assessed area, HCV issues should be addressed by improving organizational management and farm management and promoting good agricultural practice; rather than by setting aside certain areas, as existing HCV areas are mostly well protected or in areas not suitable to be converted to plantations. The report also confirms that knowledge on environmental management is very limited among smallholders. Therefore it might be more appropriate to target training and increasing knowledge of environmental management rather than focus on HCV assessment as the measure (Proforest 2008) Criterion 7.3<sup>60</sup> is perceived as particularly burdensome to smallholders given that it requires gathering information on previous land use if the smallholder has obtained the land after 2005. Land conversion may have occurred when the RSPO requirements were unknown in Thailand and prior to the Government's land reallocation programme, thus these criteria would penalize new owners unfairly.

## Benefits

### Knowledge

Almost every interviewed farmer has stated a gain in knowledge within the process of certification. This seems to be one of the most visible effects of the project.<sup>61</sup> They have learned about efficient fertilizer management and nutrient deficiency and changed their decision-making from a traditional or intuitive approach to conscious entrepreneurial decisions. Farmers also stated that they are now more confident in their practices. Overall, the project increased their motivation and interest in being active farm managers.

### Relationship between Smallholders and Mill

A major benefit noticed by almost all project stakeholders is a considerable improvement in the relationship between mills and smallholders. Both sides have indicated a closer and more trusting relationship, where more information (for example, regarding palm oil market trends) is being shared and more interactions are taking place that lead to a better understanding of the constraints and position of both parties. This has created a situation where there is greater space for compromise and jointly working towards the goal of higher yields through better management practices.

<sup>60</sup> New plantings since November 2005, have not replaced primary forest or any area required to maintain or enhance one or more High Conservation Values.

<sup>61</sup> Smallholders mentioned gaining knowledge in farm management, fertilizer management, soil and leaf analysis, and based on that, improved their fertilizer application.

### On-farm Benefits

Besides yield increases as a result of improved farm management, some smallholders stated environmental benefits as a result of better management practices, such as enhanced soil texture, water savings, and prevention of open fires. One farmer has reported that other farmers around his place got the full ownership of land since the project has started.<sup>62</sup> Other farmers have stated that they appreciate the group structure, which provides a structure to share knowledge and experiences among members. As discussed earlier, record keeping is one of the challenges for smallholders, but a couple of farmers have stated the direct advantages of documentation, such as being able to compare yields and fertilizer application with other farmers, and having the link to research and analysis regarding the amount of fertilizer that needs to be applied.<sup>63</sup> Additional benefits are improved safety and health conditions at the workplace through the provision of a manual produced by the project. Complying with RSPO Principles and Criteria could also help to improve and facilitate greater communication between smallholders and other community members by facilitating the process of documenting and proving the land use rights of smallholders.

### Income Generation

A number of smallholders have indicated an increase in income already. This is attributed to a few factors including receiving a price premium based on good quality FFB, or higher yields of FFB based on the implementation of good agricultural practices (GAP). Several farmers also saved considerable amounts of fertilizer, reduced the application of herbicides, and could procure fertilizer at better prices, resulting in lower overall production costs. Overall, the improvement of agricultural and management practices as a result of seeking compliance with the RSPO standard, provided enhanced productivity and efficiency for smallholders. GAP and constant improvements are integral components of the RSPO Principles and Criteria.

### Costs vs. Benefits

The following table highlights the potential monetary effect of certification, comparing four different scenarios. The first scenario assumes a premium of 0.01 THB per kg FFB (US\$1.33 per ton of CPO and US\$2.90 per ton of PKO<sup>64</sup>)<sup>65</sup>. The second scenario considers a quality premium of 0.1 THB per kg FFB (US\$13.34 per ton CPO), the third a quality premium of 0.2 THB per kg FFB (US\$26.69 per ton CPO) and the fourth scenario includes income from yield increase and fertilizer costs savings. Finally, the table shows the potential income gain and possible cost coverage for smallholders.

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- <sup>62</sup> It is not proven, whether this is a benefit of the project, because smallholders need to arrange this with the Government. However, the project provides information on land rights, titles and responsibilities.
  - <sup>63</sup> All generated information is documented in the record book, transferred to the electronic project database and processed with the help of Oil Palm Management (OMP) programme. This is being used for farm management and monitoring activities.
  - <sup>64</sup> Considering an OER of 20 percent for CPO and 2.5 percent for PKO.
  - <sup>65</sup> The premium price on quality is 0.05 – 0.2 THB (US\$0.0017 – 0.0067) per Kg FFB depending on the pilot mill. The project is aiming for a premium of 0.5 THB (US\$0.017) per kg FFB considering an increase of estimated 0.2 THB (US\$0.0067) per kg FFB when the OER rises by 1 percent.

Table 4

**The Potential Effect of Certification on Smallholders' Costs and Returns in USD**

		SCENARIO 1	SCENARIO 2	SCENARIO 3	SCENARIO 4
Item	2009 baseline	0.01 THB premium / kg FFB (1.33 USD / ton CPO)	0.1 THB premium / kg FFB (13.34 USD / ton CPO)	0.2 THB* premium / kg FFB (26.69 USD / ton CPO)	0.2 THB premium / kg FFB (26.69 USD / ton CPO), 2.5 tons/ha/year yield increase** and 6 % fertilizer costs saving***
Fertilizer	453.62	453.62	453.62	453.62	426.40
Labour (excluding harvesting)	69.40	69.40	69.40	69.40	69.40
Pesticides	35.22	35.22	35.22	35.22	35.22
Harvesting	188.34	188.34	188.34	188.34	188.34
Transportation	112.02	112.02	112.02	112.02	112.02
Fuel	30.92	30.92	30.92	30.92	30.92
<b>Total variable cost (USD/ha/year)</b>	<b>889.51</b>	<b>889.51</b>	<b>889.51</b>	<b>889.51</b>	<b>862.29</b>
Yield (tons FFB/ha/year)	17.80	17.80	17.80	17.80	20.30
Average cost (USD/ton FFB)	49.97	49.97	49.97	49.97	42.46
Average price of FFB (USD/ton)	123.7	124.1	127.1	130.4	130.4
Gross return (USD/ha/year)	2202.91	2208.86	2262.44	2321.99	2648.08
Net return (USD/ha/year)	1313.40	1319.36	1372.93	1432.48	1785.79
Income gain (USD/ha/year)	-	5.96	59.53	119.08	472.39
<b>Income gain (USD/landholding/year)****</b>	<b>-</b>	<b>42.87</b>	<b>428.68</b>	<b>857.35</b>	<b>3401.10</b>
Audit costs*****	-	402.68	402.68	402.68	402.68
Yearly surveillance audit	-	198.46	198.46	198.46	198.46
Average yearly certification costs	-	279.00	279.00	279.00	279.00

Source: Own table, based on Thongrak et al. 2011

\* CPO and PKO certificates from smallholder groups are expected to achieve higher prices than those of big companies currently traded at GreenPalm.

\*\* Thomas Fairhurst has estimated that FFB yields could increase by 2.5 t per hectare by applying better farm management practices (Fairhurst, 2009).

\*\*\* 6 percent achieved through cost savings as a result of the leaf analysis and reduced amounts of fertilizer applications (GTZ, 2008). Additional 15 percent cost savings through procuring from partner mills are actually achieved (10 percent saving through fertilizer discounts and 5 percent through group sourcing) (Interview with the farm adviser from Univanich), but are not taken into account due to having no relation to certification.

\*\*\*\* Assuming the average landholding used for oil palm cultivation, 7.2 hectares or 45 rai.

\*\*\*\*\* Costs of certification have been outlined above (Group audit: approximately 11 250 Euro (US\$15 975); yearly surveillance audit per group: approximately 5 500 Euro (US\$7 810); this assumes that the audit costs of one group equal half the audit costs of the two groups in the pre-audit example; it is conceivable that the actual costs can be even higher) Based on these costs and an average group size of around forty farmers (Calculation based on Kukeawkasem 2011) within one pilot group, one smallholder needs to cover around 280 Euro (12 040 THB or US\$402.68) for the audit and 138 Euro (5 934 THB or US\$198.46) for the yearly surveillance audit. 1 Euro equals 43 THB, 1 September 2011.



The potential gain in net return would be maximum 101,693 THB (US\$3 401.10) per average oil palm farmer per year, considering a maximum of 0.2 THB per kg FFB as a price premium and adding the possible yield increase of 2.5 tons per hectare per year as a consequence of better farm management practices in line with RSPO, and incorporating 6 percent fertilizer cost savings.

This surplus value has to cover all costs of certification, which would be viable in Scenario 3 and only just in Scenario 2. The current RSPO premium in the market is far below covering any costs of certification. The estimated costs do not yet incorporate the costs of preparing smallholders for compliance with RSPO criteria, such as capacity development and costs of establishing the group structure. These costs are difficult to estimate at this point and it is not meaningful to consider the project costs for this purpose.<sup>66</sup> The calculation also excludes an RSPO member fee for smallholders that mills have to pay. Therefore, it is questionable whether the generated income would cover all associated costs of certification. Assuming that it would, farmers would still need to be convinced that their increase in income has a direct link to certification, whereas they could argue that there are other (cheaper) approaches for improving yields and subsequent income than certification.

## RECOMMENDATIONS TO ENHANCE INCLUSION OF SMALLHOLDERS

### Capacity building

Considering the requirements of the RSPO, it is clear that massive capacity-building efforts are necessary to enable the certification of smallholders. The field interviews have shown that it is important to provide smallholders with a sufficient scale and scope of trainings and follow-up activities in order to truly change practices and increase knowledge. Follow-up activities in the field conducted by group advisers, staff from the mill, and farm advisers are essential elements to finally transferring knowledge and implementation of requirements into practice.<sup>67</sup> It was agreed at the start of the project that private mills will take over this role after the OAE-GIZ project. However, the continuation of the RSPO certification for smallholders will depend on long-term costs and benefits incurred to private mills. The RSPO and its members are facing a major challenge in terms of capacity building in order to meet the ambition of certifying smallholders. Unless the necessary funding and mechanisms for capacity building are made operational soon, the RSPO risks excluding smallholders from the market for sustainable palm oil.

<sup>66</sup> The project funds have not only been used for capacity development and setting up the group structure, but also for implementing a completely new idea, new structures and a functioning standard. The business-model as well the training components had to be designed and implemented. If all this is ready to use and institutionalized, the costs will be very much reduced.

<sup>67</sup> Advisers need to visit farmers regularly and give recommendations on different aspects taught in the trainings.

## Incentives

Getting certified by the RSPO requires substantial resources, time, and a commitment to change various practices. To avoid RSPO certification becoming an unintended market barrier for smallholders and perceived as an imposed burden, clear incentives to participate in RSPO certification need to be created. Incentives could come from the private as well as the public sector. Possible government incentives are tax reductions, direct payments, social security or extension services linked to certification.

Possible incentives from the private sector are various and could include a premium price (at a level beyond just covering the cost of certification), price guarantees, community development programmes, extension services, or preferential business relationships. There are two ways of structuring a potential price incentive for smallholders who become certified. One would be selling FFBs to a mill that is certified and the mill paying a premium for certified smallholders FFB. The other would be smallholders directly selling certificates through the trading platform GreenPalm. Considering the current low price premium for certified palm oil, smallholders will require other incentives and institutional support to encourage certification. Currently, mechanisms to support smallholders are being discussed within the RSPO (Dallinger 2011).

Some of the commitments made by the mills in the project are also good examples for creating incentives for farmers to aim for certification. Fertilizer provision, express delivery channel, training support or free provision of EFB are not very costly and can create strong incentives. Many farmers have gained interest, knowledge and motivation while participating in the project as a result of these incentives. Another possibility of an incentive from the private sector is supporting smallholders by training their labourers or providing skilled labourers for harvesting. Training labourers could also include components of RSPO in order to meet the requirements. Many members have mentioned the general labour shortage, which resulted in not being able to harvest 100 percent of their actual production, so trained labourers could be a strong incentive. The mill assesses quality based on loose fruit, short stalk, and no contamination, therefore skilled labour is needed. By supporting farmers with highly skilled labour, the mill could achieve higher quality, ensure FFB delivery, and farmers would be willing to forgo any price premium if the mill sent labourers. Considering the mill accepts the idea of sending skilled labour for harvesting FFBs and smallholders in turn forgo any price premium, the net return mentioned in the 2009 baseline would increase from 6 283 to 8 795 THB per rai (US\$1 313.40 to 1 838.42 per hectare) per year. In order to implement this type of arrangement, smallholders trust GIZ and appreciate their work very much, but it will be necessary to also understand and trust the mill.

## Ensuring the certification process after the GIZ project

One of the main challenges in creating opportunities from RSPO, are the required high investments in group formation, capacity building and achieving and maintaining certification while at the same time maintaining the independence of smallholders. It is currently unclear who would be willing to undertake this responsibility following the end

of the GIZ project. The position of the mills in Thailand is mixed. Some consider providing capacity building and paying for smallholder audits by themselves, while some of the interviewed mills hold the view that the necessary support should come from the RSPO or partly from the Government through extension services or training on environmental and social best practices. The Government of Thailand is interested in giving support to improving the practice of smallholders and to increase efficiencies in the supply chain, rather than supporting the actual process of certification or even paying for smallholder audits. The RSPO has been discussing the establishment of an internal funding mechanism for the auditing costs of smallholders. However, implementation is lacking and it is not clear whether the fund would also cover the significant indirect costs and expenses necessary for group formation and for preparing smallholders for certification. Establishing strong self-sufficient groups could take five to ten years (Verburg 2009). The GIZ project shows clearly that farmers need strong, long-term support to prepare for certification.

Lessons learned from the project and business model have shown that a strong and reliable partner from industry is necessary and should take the leading role within the certification process after the GIZ project finishes. The willingness to invest in smallholders and the establishment of high levels of trust between smallholders and the mills are a precondition for continuing and maintaining the certification.<sup>68</sup> In the process of group certification, one possibility is that the mill takes the role of the group manager and provides structure as well as covers costs. Smallholder groups do not have direct access to the market for certified palm oil, which requires that the mill initiate the certification process. The mills' willingness to continue capacity building and invest in certification of smallholders is largely dependent on the pressure or incentives for them to become certified themselves. However, it is clear that mills would be willing to provide the incentives structured by the project (EFB, fertilizer discount, etc.) in return for higher quality FFB. In general, mills who are part of a larger company and already have experience with management certification in their operations are in a better position to manage the process of getting certified to RSPO than small or medium enterprises which need substantial support and often lack resources to invest in moving the process ahead. Larger companies are also more heavily influenced by multinational demands for certification or export markets requiring RSPO.

### Role of the Government

Even though the private sector is more suited to taking the leading role in the certification process, the Government could support the process by creating an enabling environment and providing incentives for seeking certification in order to improve competitiveness of the Thai palm oil sector with Indonesia and Malaysia. The Government could support smallholders in implementing GAP, including yield increases, efficiency, and quality improvements through extension services. The Department of Agriculture Extension

<sup>68</sup> In this regard, smallholders trust GIZ and appreciate its work very much, but it will be necessary to also understand and trust the mill.

could be expanded to give trainings specific to certification and thus absorb components of the capacity-building activities for smallholders. The Government could also take an active role within the certification process by providing a governmental officer as supporting body of certification, for instance as a group manager, who could give guidance and structure.

For a successful certification process, a sophisticated group structure with clear responsibilities plays a crucial role. Auditing costs per member of a group or per area can significantly be reduced by applying for certification as a large group because only a sample of all group members will have to be audited by a CB. To strengthen the group structure, the creation and maintenance of cooperatives can be useful. The Government could support this process through training on group management and formation.<sup>69</sup>

Smallholders and other stakeholders currently doubt the capacity and capability of the Government to take on this role, due to a perceived lack of capacity, perceived low efficiency and the potential for corruption or abuse of power. Additionally, since RSPO is a private standard, the Government in Thailand seems currently unwilling to actively support its implementation. For this reason, a price incentive for complying with RSPO provided by the Government or any coverage of the emerging costs of group certification is not likely at the time of writing.

## Standards adjustment

Many stakeholders involved with the RSPO in Thailand expressed the need for having local certification bodies (CBs) available. This would lead to reduced certification costs<sup>70</sup> and local CBs and auditors would be in a better position to ensure smooth communication and understand the specific context of smallholders in Thailand. Overall, the RSPO group certification standard is seen as too complex to be handled by smallholders. The group certification standard also still contains unclear points where decisions are pending to finalize the standard document. If revision takes place, the Thai case provides many lessons learned for adjusting the standard.

## CONCLUSION

Smallholders participating in the GIZ project have expressed the wish “*to have the project forever*” (Field interview with farmers). Farmers hope to further develop and sustain their incomes by receiving higher premium prices, OER increases, progressing cost reductions, and finally achieve better livelihoods. They wish to continue to receive good technical knowledge transfer by means of follow up activities and practical work on the ground. In conclusion, the benefits of certification alone are too low and the challenges

<sup>69</sup> Cooperatives have the advantage to enjoy a proper group structure already, including experience and good relationships between their members.

<sup>70</sup> Experience from organic certification in Thailand has shown that auditing costs can be reduced significantly by using local CBs.

for smallholders are too high to successfully proceed with certification. The project and business model have successfully provided the majority of incentives for oil palm smallholders in Thailand to seek certification and assure that they deliver consistently to the mill. Benefits, such as yield increases, cost reductions, and quality premiums for FFB are to a large extent provided by the mill instead of being a result of certification itself.

## MALI CASE STUDY

BY MOUSSA DJIRE AND HELENA BARTON

*With the RSB and IIED*



**Bioenergy Feedstock** – Jatropha

**Certification Scheme** – Roundtable on Sustainable Biofuels

**Business Model/Smallholder role** – Joint venture and cooperative

**Case study sample** – Average age 48; 20 percent female; Average landholding 2 hectares

**Main findings:**

- Unclear if certification value will outweigh the costs, given the current focus on the domestic market
- Involvement of the Foundation in the business model will help facilitate ease of certification

**Main recommendations:**

- Clarify smallholder mechanisms and guidance within RSB
- Incorporate certification information and practices into existing capacity building efforts.

## INTRODUCTION

Mali Biocarburant SA (MBSA) was established in Mali in February 2007 with an objective to contribute to poverty alleviation (economic stimulus, social empowerment and environmental protection) through the production of jatropha-based biodiesel, its by-products, and associated ventures. MBSA was the first company in Africa to introduce biodiesel production from Jatropha for the African market. At present, its primary goal is to meet local energy needs in Mali, although the biodiesel is produced to European quality standards. As part of MBSA's continued desire to improve performance and receive international recognition, they have discussed the potential of certification with the Roundtable on Sustainable Biofuels and agreed to provide feedback to the RSB on improving the social criteria within the RSB's current standard.

## COUNTRY CONTEXT

Mali is a landlocked country located in the heart of West Africa with an area of about 1 241 248 square kilometres and over 13 million people. Mali is one of the poorest countries in the world with a Human Development Index (HDI) of approximately 0.38, although it has steadily been increasing since 1975. Mali's economy is based primarily on agriculture, livestock, and fisheries which provide approximately 80 percent of employment and contribute around 40-45 percent of GDP with an average growth rate of 3.6 percent per



year. Cotton is the dominant cash crop, accounting for 80 percent of export revenues. Other principal crops include rainfed grains such as millet, maize, and sorghum which comprise the majority of the Malian cereal calories. Gold, the primary mineral resource of the country, contributes 10 percent to GDP. (Dembele and Statz 2002).

Figure 5

**Major rice, cotton, and sorghum growing areas in Mali**



Source: Cartography by Birgit Muehlenhaus, Department of Geography, Macalester College, in Moseley 2011.

Mali has great potential for expanding agropastoral activities. The overall production potential is estimated at 46.6 million hectares, of which 12.2 million are agricultural land, 30 million for grazing, 3.3 million in wildlife reserve, and 1.1 million in forest reserve. The country has vast undeveloped irrigated areas (2.2 million hectares), with significant water resources (2 600 km of rivers). There are currently approximately 600 000 farms. However, these resources are unevenly distributed throughout the country with two-thirds of the country comprised of desert. (Moseley 2011; World Bank 2008).

Since independence, the country has set up various experiments conducted in agricultural development projects or “operational development” in the form of “Offices”, but the results have, so far, not contributed to ensuring food self-sufficiency. These offices exist throughout the national territory, but with varying legal status and different operating modes depending on the area. The Office du Niger was established in 1932 by the French colonial authorities, and is of particular importance, as it is an irrigated area where the bulk of agricultural investment is taking place. The Office du Niger is the oldest and one of the largest irrigated areas of West Africa. Since the creation of the Office du Niger, the ambition of the authorities has always been to develop the land for one million irrigated hectares. But in 2009, a total of just under 90 000 hectares had been developed. According to sources in the Office du Niger, the cost of the construction of irrigation for one hectare amounts to approximately 3.4-5 million francs CFA (US\$7 139-10 500). The substantial

decrease in official development assistance in the agricultural sector has led the Malian authorities, driven by the ambition to make Mali an agricultural power, to appeal to private investors (author interviews).

The modernization of agriculture was a major focus of the Master Plan for Rural Development (SDDR), conceptualized in a variety of documents and taken as a priority by the current Head of State in his first election in 2002. This was expressed in particular in the Agricultural Orientation Law (LOA), adopted in 2006 which states in Article 3 that: “the agricultural development policy is based on the proactive promotion of the modernization of family farming and of the farm, to encourage the emergence of an agro-industrial structure that is competitive, and integrated in the subregional economy.” (Dembélé and Staatz 2002).

Energy demand (excluding biomass) is growing by 14 percent per year in Mali; it is growing faster than GDP (5 percent per year) and poses significant energy security and competitiveness concerns. The majority of energy demand in Mali comes from the residential sector, where the primary energy sources are wood and charcoal. The transport sector consumption is approximately 17 percent of total consumption, with the agricultural sector only requiring 1 percent of the total. Petroleum imports are used not only for transport, but also for electricity generation. Given the dominance of demand for traditional biomass (fuelwood), there is tremendous pressure on Mali’s forests, with the deforestation rate at approximately 400 000 hectares per year. Mali has implemented a few programmes over the last years to address energy needs; two programmes that specifically relate to bioenergy are the Domestic Energy and Rural Access to Basic Services Project (PEDASB) and the National Jatropha Plant Energy Development Programme (PNVEP) (USAID 2010).

In 2008, Mali adopted a Renewable Energy Development Strategy, followed by the National Biofuels Development Strategy aimed at increasing national energy production through the development of biofuel (USAID 2010). In 2009, the National Biofuels Agency was established to provide a framework to harmonize programmes and efforts aimed at bioenergy development. The bioenergy policies aim to: 1) supply rural areas with power using a percentage from jatropha oil; 2) process and use jatropha oil for 4x4 vehicles and public transport vehicles, and 3) increase the nation’s production of jatropha seeds through the development of adequate lands in rural areas. The programme covers the regions of Kayes, Koulikoro, Sikasso, and Segou. (Brauch *et al.* 2009; FANRPAN 2008).

The Malian authorities have set out to attract investors, most notably including the grooming of the investment code (all categories), the creation of a National Agency for Investment Promotion, a Presidential Investment Council, and an office for international cooperation at the Ministry of Agriculture. The main argument to justify the call for foreign investment, as elsewhere in Africa, is that foreign investors can provide capital, technology, know-how, infrastructure and market access; thereby playing an important role in catalysing economic development in rural areas. The appeal of the Malian authorities to investors has not fallen on deaf ears. The international food crisis and the renewed

interest in biofuels have contributed to a rush of private investor interest in agricultural land in Mali. It should be noted, by way of illustration, that the areas allocated to Malibya, a development company sponsored by the former Government of Libya, and Huicoma, a semi-privatized Malian state company, of 100 000 ha each, exceed all areas developed since colonization. The land acquisition took place at a time marked by confusion due to an incomplete legal and institutional framework, the existence of a hybrid land tenure system, and the low effectiveness of existing regulatory mechanisms.

### Smallholder Positioning

Approximately 70 percent of Mali's population is rural. Disputes are common over access to land and other natural resources. Mali has undertaken a few initiatives to improve smallholders' access to land tenure but agribusinesses are still favoured in the regulatory and permitting structures. Smallholders land tenure is particularly insecure on irrigated land, very few smallholders actually own the land that they work, and untitled land is considered under state ownership. However, over 90 percent of arable land is cultivated by small-scale farmers (USAID 2010).

There are approximately 800 000 farms in Mali, with 80 percent of these farms averaging less than 5 hectares of land, and 86 percent under 10 hectares (USAID 2010). In Mali, there are two main systems of land tenure: the formal system of written law, established by the state, and customary systems which are most prevalent in rural areas. Malian legislation is marked by the principle of state ownership which establishes the rule of the state in land management. It has a public and a private domain. The second interest is made up of land registered in the state's name to represent vacant and ownerless land areas and those held under customary rights. At the same time, the legislation strongly recognizes customary rights. (Dembele and Staatz 2002).

However, national legislation is generally not effective. Rural areas often fall under conflict between state law and local practice (Djire 2006). The Land Code (FDC) creates a situation of vagueness that results in customary rights being minimized. While the FDC enacts several measures to ensure transparency in the procedure for access to land under state law, in practice, there is very little enforcement. In addition, formal procedures are based on unknown mechanisms by the majority of rural people and result in costs that exclude them from land ownership (Djiré 2006).

Moreover, the impact of state law and procedures are limited by a number of factors. For example, lack of access to rural justice, unfinished and controversial legislation, and red tape. The legal texts are in French, which is foreign to the vast majority of the population. These challenges are exacerbated by the fact that the land registry and trial courts are located only in urban centres, making access and transparency very difficult. In addition, the full implementation of provisions relating to customary rights is hampered by the absence of the decree to define the forms and conditions of the procedure to determine customary rights (Djiré 2006). The lack of clarity in the current land legislation and administration is one factor in the current rush to purchase land in the Office du Niger

area. There are many ongoing efforts to improve the situation in particular regarding the requirement of environmental standards and initiatives.

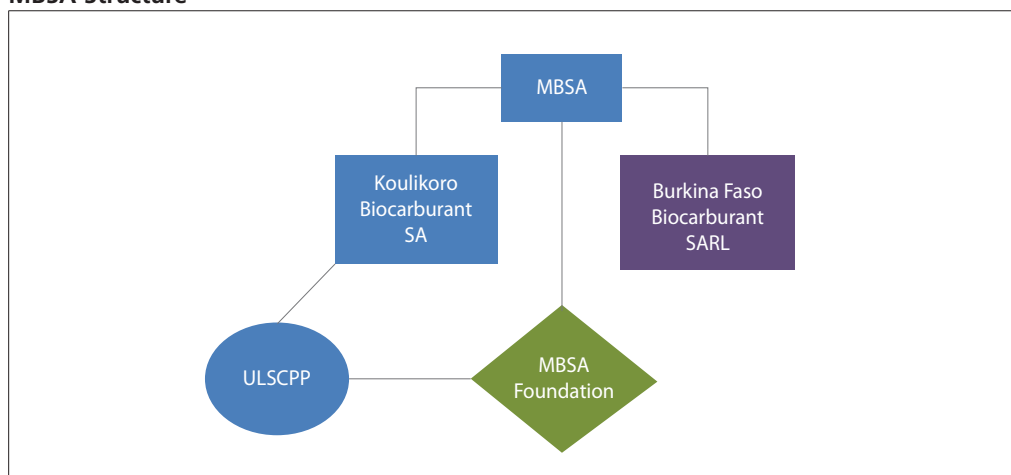
Among other concerns with the LOA is the land issue at the heart of the agricultural policy of the country. It raises a number of principles, for example, equitable access to land and natural resources, the recognition of customary rights, the fight against land speculation and abusive detentions, and land tenure security of individual operators, especially marginalized groups. The state shall, in collaboration with local authorities and the Chambers of Agriculture, conduct an inventory of the local customs relating to land by region and agro-ecological zone. This inventory is the formal finding of the existence and extent of individual or collective rights on the land and is subject to validation by the parties concerned.

## PROJECT/OPERATION OVERVIEW

MBSA is a private company that works with more than 8 000 small *jatropha curcas* (*jatropha*) farmers in three regions of Mali and two regions in Burkina Faso. MBSA decided on a smallholder-based approach that would have the potential to increase participants' availability of food and incomes by combining production of traditional cereals with energy crops. "In the context of developing its smallholder-focused approach, MBSA has learned to recognize the importance of ensuring improved food security for farmers as a necessary, accompanying element of diversification into cash crops" (IFAD 2010).

MBSA currently sources *jatropha* nuts from more than 4 200 farmers in Mali, with an estimated 3-3.5 million *jatropha* plants. The current average yield is 1.5 tons/20 ares (1ha/5). The company is at an advanced stage of planning and development with plans for scaling up production to 8.5 million litres of biodiesel per year by 2019. Biodiesel is sold in Koulikoro to a range of clients with the largest demand coming from two industrial companies, HUICOMA and Grandes Moulins du Mali; there is also current interest from other companies, both domestic and international. The Head Office is in Bamako, while the production facility (a 2-hectares processing plant and nursery) is in Koulikoro, 60 km north of Bamako. MBSA has also begun operations in Burkina Faso (these were not included in the current evaluation).

Figure 6

**MBSA Structure**

Shareholders of MBSA include the Dutch Holding Royal Tropical Institute (KIT), pension fund Dutch Railways (SPF), and private local investors. MBSA operates through two daughter companies, Koulikoro Biocarburant SA and Faso Biocarburant SARL, which operate the respective production facilities in Mali and Burkina Faso. The MBSA Holding Company finances the subsidiaries and the MBSA Foundation. MBSA Holding Company is currently mostly financed by the Royal Tropical Institute and FPS, the pension fund of the Dutch railways.

### The Business Model - Joint Venture/Cooperative

MBSA's innovative business model is based on smallholders being both suppliers of jatropha nuts and shareholders of the company. Smallholders are organized in the *Union Locale des Sociétés Cooperatives des Producteurs de Pourghere a Koulikoro* (ULSCPP, the union of jatropha producers' cooperatives in Koulikoro), which holds a 20 percent equity stake in Koulikoro Biocarburant SA. The union is also a member of the MBSA Foundation, which is in charge of the agricultural training and development of the smallholders. The foundation is a non-profit organization whose other members include Trees for Travel and Kia Motors. Trees for Travel, KIA Netherlands, and KIA Sweden have financed the majority of the investments in strengthening the capacity of smallholders.

This inclusive business model enables smallholders to benefit not only from the sale of products but also – through the union's equity stake – from shareholder dividends. Furthermore, smallholders are represented on the Board of Directors and in the General Assembly of the MBSA Foundation, enhancing their influence on management decisions within the company.

Through the union and an organization of field school agents run by the MBSA Foundation, farmers are helped with seeds, equipment and technical support to cultivate jatropha. MBSA encourages smallholders to grow jatropha through intercropping with food crops or as a living hedge and to improve soil quality (and reduce the use of

chemicals) by applying the presscake residue from the oil extraction as a low-cost organic fertilizer. The purchase price of jatropha seeds is established through an agreement between MBSA and ULSCPP, and MBSA is currently paying approximately between 50-75 CFA (approximately USD0.10–0.15) for 1 kg (as of August 2011). The price will be reevaluated if/when there is a significant change in biofuel prices. The extraction process also produces glycerine, which is used by an on-site women's cooperative to produce soap for retail. Additional income has been achieved through pre-investment in carbon credits from newly planted trees, the proceeds of which will be distributed back to the smallholders through the MBSA Foundation. Some of the members interviewed stated that there is some confusion regarding how decisions are made between MBSA and the union, and how decisions are made about investment of income.

Thus far, proceeds from the carbon credits have been used to dig wells for the benefit of some producers, and a small number of producers have received equipment such as carts, tanks and watering cans, and field schools have been established. However, there continues to be some logistical challenges with some producers reporting that they received carts but have no animals to pull them. One of the main challenges for producers is dealing with a local pest, a white termite. Producers have said that they have no access to appropriate insecticides or adequate knowledge of pest management systems.

While the business model has proved relatively successful, there are some concerns about the long-term sustainability of the system. For example, by investing in training and technical support to farmers, without any fixed contract where farmers are required to sell the jatropha to MBSA, farmers could decide to sell to other buyers, resulting in a lack of stability of supply for MBSA and a loss of investment on training and technical assistance. Therefore, MBSA is currently analysing a potential restructuring in order to more explicitly define the relationship between producers (through the cooperatives), the subsidiaries, and the foundation. This is especially important with the number of producers growing year-by-year. For example, projected plantings for 2009 were 1 000 hectares by the end of the season, whereas 2 028 hectares, more than double the projected amount, were actually planted. In 2010, 2 000 hectares were planted. Cooperatives of several localities have applied for membership of the ULSCPP. Many of the leading producers interviewed are still somewhat disappointed with the results that they have achieved, but are hopeful of improved returns going forward.

## CERTIFICATION

The Roundtable on Sustainable Biofuels is an international, multistakeholder initiative that was established in 2006 to achieve global consensus around a set of principles and criteria for sustainable liquid biofuel feedstock production, processing and biofuel transportation/distribution. A first draft of the RSB principles for sustainable biofuel production was published in 2007. Interested stakeholders were invited to join four Working Groups (Environment, Social, Greenhouse Gas, and Implementation) to revise the principles and to suggest criteria for achieving them. Following a stakeholder consultation process, the RSB released Version Zero of the draft Principles and Criteria for Sustainable Biofuels in



August 2008. After a change in governance (RSB Chambers), further consultations with stakeholders and a number of draft revisions, in November 2009 the first full version of the standard was approved for pilot testing. After several months of field testing in pilot projects, followed by a two-month consultation period, the RSB Steering Board validated Version 2 of the RSB Standard in November 2010. The RSB Standard Version 2 is a fully operational biofuel certification standard, which includes Principles and Criteria and an associated guidance document, detailed compliance indicators, a glossary of terms, and a full set of standards related to the certification, which define chain of custody, rules for auditors, certification bodies, communication and claims, dispute, etc.

The RSB Standard is built around the following twelve principles:

1. Legality;
2. Planning, Monitoring and Continuous Improvement;
3. Greenhouse Gas Emissions;
4. Human and Labour Rights;
5. Rural and Social Development;
6. Local Food Security;
7. Conservation;
8. Soil;
9. Water;
10. Air;
11. Use of Technology, Inputs, and Management of Waste, and
12. Land Rights.

The sustainability requirements included in Version 2 of the RSB Standard address only the direct activities that farmers and producers can undertake to prevent unintended consequences from biofuel production. The Standard identifies four types of operators subject to different sustainability and chain of custody requirements within it. These are feedstock producers, feedstock processors, biofuel producers and blenders. Throughout the standard the requirements that apply to each of the operators listed above are identified. Other actors in biofuel supply chains (traders, retailers, transporters, etc.) need to comply with chain of custody requirements only.

The RSB Principles addressed in this case study comprise the following social principles only:

- Principle 2: Planning, Monitoring and Continuous Improvement
- Principle 4: Human and Labour Rights
- Principle 5: Rural and Social Development
- Principle 6: Local Food Security
- Principle 9 (Criterion 9a only): Water Rights
- Principle 12: Land Rights

## Smallholder Mechanisms under the Roundtable on Sustainable Biofuels

- **Specific requirements:** A number of requirements within the RSB Standard are based on an escalating impact assessment process. In-depth impact assessments and associated requirements are only triggered when significant impacts are foreseen, which will likely favour smaller operators.
- **Group certification:** RSB allows a group of stakeholders to apply for certification as a unique participating operator (e.g. a farmers' cooperative). The audit will be conducted on a sample of the members of the group, which will reduce the overall cost of certification. It is important to note that the entire group would lose its certification if one of the audited stakeholders would fail the audit process.
- **2-tiered system:** The RSB Steering Board approved the principle of a 2-tiered standards system and a draft Tier 1 Standard in June 2011, with a proposal for the compulsory transition process. The main objective of a 2-tiered approach is to increase the number of eligible operators into the RSB system and engage them into continuous improvement to achieve full compliance. The development of the 2-tiered system is on hold since the recent recognition of the RSB certification system by the European Commission (July 2011). Because the European Union only recognizes the full RSB Standard, it was decided to focus on promoting the full standard. The discussions of a 2-tiered system will resume as soon as the RSB certification system is mainstreamed.

## MAIN FINDINGS

### Drivers for Seeking Certification

The actors interviewed had various levels of knowledge and perceptions of certification. The director of MBSA observed that – if the company was to seek certification – the main driver would be external recognition of the work that they have done with smallholders to implement environmental and social best practices. The company believes such recognition could be achieved through an independent certification. As for the smallholders, few were aware of certification, but when provided with an explanation of the process, they responded favourably. This is due in large part to the numerous training sessions that the company has organized to explain the concepts of environmental preservation and best practices, potential improvements in revenue through market access, and the concept of carbon credits. The company has also provided smallholders with training on social issues such as gender, on-farm budgeting, and equity.

### Challenge to Identify Value of Certification

A critical challenge for MBSA is to clarify the value of RSB certification of its biodiesel and balance this with the cost to itself and its smallholder supplier base. Achieving

international recognition of good practices through RSB certification is a way to access new funding opportunities. The company is hopeful that such access could help support technical and capacity building for smallholders in order to increase yields and reduce costs over the long-term.

At present, MBSA produces biodiesel to European quality standards, but its primary goal (for now) is to meet local energy needs in Mali. Therefore, the value of pursuing RSB certification under its current focus on the domestic market may be limited, although market access may nonetheless be enhanced by certification, provided that there is sufficient demand for certified biofuels (see recommendations below for how the Government of Mali may stimulate domestic demand).

However, should MBSA's focus shift to international markets, the value of RSB certification is arguably greater, as it provides a measure of confidence in the product claims of sustainable production amid other non-certified biofuels products. In July 2011, the European Commission recognized and approved the RSB standard and certification system (and other voluntary schemes) as a way of showing compliance with requirements for access into the European Union biofuels market, under the Renewable Energy Directive (RED).<sup>71</sup> Now that RSB-certified biofuels have open access to the European Union market without further verification of their sustainability features, MBSA may consider the value of certification to be greater; moreover, if MBSA were to move early into this market, the product may potentially command a price premium. MBSA management is following all these developments closely but is cautious not to inflate expectations of a price premium since the current plan remains to focus on the domestic market to provide Mali with an alternative to expensive petroleum imports.

The RSB "label" is expected to signify a long-term commitment to sustainable biofuels management, from MBSA and its smallholders as well as from customers, investors and donors. For smallholders, this commitment will likely depend in the long run on tangible benefits from, for example, increased yields and incomes as well as further agronomic and organizational support from the Union and MBSA Foundation, and the efficiency gains from improved procedures for monitoring, documenting, and evaluating associated with certification processes.

### Importance of Organizational Structure

MBSA's current organizational structure offers a viable mechanism for implementing the RSB Standard and pursuing certification through its agricultural training programme. The Foundation works directly with the smallholders, their cooperatives and the union (ULSCPP) as well as the General Assembly of the Foundation. Pursuing certification through the Foundation would be a simpler process than through the individual

<sup>71</sup> *First EU sustainability schemes for biofuels get the go-ahead*, European Commission, Directorate-General for Energy, Newsletter 19 July 2011, <http://ec.europa.eu/dgs/energy/newsletter/dg/2011/0719newsletter.html>; *RSB recognized by the EU as proof of compliance with the RED*, Biofuels International, 20 July 2011, [www.biofuels-news.com/industry\\_news.php?item\\_id=3847](http://www.biofuels-news.com/industry_news.php?item_id=3847).

cooperatives (more than 25). Through the Foundation, auditors could trace processes and documentation from the smallholder production level up through the cooperatives, the union and the processing plant.

An alternative to group certification of all smallholders could be to segment the smallholders, for example, into those who have mature(ing) jatropha crops and those who have only recently joined the scheme, or into those cooperatives who appear well organized and those who are only starting up, or any other segmentation deemed appropriate by the stakeholders. A segmented approach such as this would allow the MBSA Foundation to work closely with different groups of smallholders over time, and gradually extend the certification over 2-4 years to cover them all. RSB compliant biomass – in this case jatropha seeds – would be mixed with non-RSB compliant biomass and processed by MBSA into biodiesel. MBSA would therefore be allowed to make a claim of RSB compliance for a volume corresponding to the RSB-compliant biomass it acquires (the Mass Balance approach for its Chain of Custody tracking). It is foreseen that the volume of RSB-compliant biomass acquired by MBSA would increase over time. This may in practice become the actual approach followed, if not all MBSA's smallholder suppliers agree to the certification requirements and thus choose not to participate.<sup>72</sup> However, this will not reduce costs for MBSA as the majority of costs are incurred for a 20 percent certified product (author interview). Segmented/gradual certification is not in effect removing a barrier to certification, but rather serving as a mechanism that can prevent smallholder exclusion from the supply chain. However, this also means less of the biofuel being certified from the outset.

MBSA has also begun operations in Burkina Faso, but these were not included in the current evaluation. Under the RSB Standard, a Participating Operator with several operations can apply to have only one or some of them certified; however, in order to avoid green-washing, the Operator's self-risk assessment must be conducted for the entire company, regardless of which operations will eventually apply for certification. Once the application has been submitted to the RSB, RSB Services will conduct a due diligence on the entire company (not only the operations applying for certification).

### Technical Knowledge on Implementing Standards and Internal Management Systems

Compliance issues common to many smallholder-based certification schemes include a lack of management planning and monitoring of e.g. yields and regeneration rates. Fortunately, neither presents a significant problem for the MBSA management team which is experienced in implementing both standards and management systems, for example, in quality certification schemes for agricultural products (MBSA's biodiesel conforms to EN14214 requirements for biodiesel for transport, and the company is implementing further quality standards including the BQ-9000 Quality Management Programme).

<sup>72</sup> During the evaluation, the idea of a segmented approach was suggested only briefly to the CEO of MBSA who was open to looking at all different models.

The Operator is already attempting to follow the RSB Principles and Criteria in its operations and has taken many of the actions set out in the RSB Standard. Furthermore, the Operator's current internal management systems appear capable of handling the social (and environmental) impacts of its immediate operations, such as the production of biodiesel and management of nurseries. Challenges may arise at the smallholder and union level, where – once the common purpose of certification has been understood and agreed – the practical processes, timelines and responsibilities must be clarified and agreed. Knowledge-sharing and capacity building at this level must be undertaken to ensure that an effective management system based on RSB requirements is understood, adopted, documented and enforced throughout the structure of smallholder cooperatives. Sufficient time must be allowed for all the smallholders included in the certification process to adopt the appropriate practices and attitude necessary for achieving compliance.

### Data Management for Auditing Purposes

This is a critical issue for demonstrating compliance and obtaining certification. Under the RSB Standard, the Operator must collect, register and handle the data required by the standard (from simple information identifying individual smallholders and their specific social, economic and production data to more complex accounting for agricultural inputs and outputs as well as events within the formal stakeholder engagement process) in a way that enables an audit trail to be produced for certification purposes.<sup>73</sup>

For MBSA, a significant burden of the data tracking would likely fall on the field staff and union, who would need initial training in the RSB requirements and practical application in the field. Field staff would be required to collect specific data in addition to their normal duties, although much of the data would only need to be collected on a quarterly or six-monthly basis, to establish a reasonable audit trail. However, the short interviews with field staff and union representatives indicated that, with some support, there is sufficient capacity and willingness to collect the data required to pursue RSB certification. The Foundation management team appears fully capable of managing the additional data, ideally within its current data collection methods (GPS devices and hand-written lists maintained by field staff were produced for the evaluator) and central database, which registers smallholders and their activities with jatropha. During 2010, various training and capacity-building activities of field staff and union leaders were delivered through the union, including training in the transfer of GPS data to computer and in leadership skills, funded by among others SNV (Netherlands Development Organisation), FAFPA (Support Fund for Vocational Training and Learning, Mali) and CRA-K (the Regional Chamber of Agriculture of Koulikoro).

MBSA has already conducted several studies which can be used to demonstrate RSB compliance, including a detailed socio-economic baseline study of jatropha farmers in Koulikoro completed in 2008. Nonetheless, certain information gaps remain: since 2008,

<sup>73</sup> Of course, such data and documentation management is likely to deliver additional benefits to the Operator, enabling better in-depth planning and decision-making.

MBSA's sourcing of jatropha nuts has expanded in other areas of Mali (and Burkina Faso), and for certification purposes it may now be prudent to complete socio-economic baseline studies, including food security issues, for the other communities in which it now operates, in accordance with the RSB's Principle 2: Planning, Monitoring and Continuous Improvement and Principle 6: Local Food Security.

Furthermore, the use of children to work on family smallholdings must not interfere with the children's schooling (Principle 4: Human and Labour Rights). School enrolment figures were not provided in the 2008 baseline study, but national figures suggest that they are very low. There is therefore a risk that the smallholders supplying to MBSA are exceeding the acceptable use of children for labour, if/when the children are not attending school. This issue will require careful and constant monitoring.

### Costs of Compliance and Certification

The costs of compliance and certification are likely to present key challenges to any Operator. Determining both the direct and indirect costs to MBSA of complying with the RSB Standard and pursuing certification requires a clear picture of the costs of compliance (i.e. infrastructure, systems); cost of certification (i.e. audits) and administrative costs (i.e. licenses). These costs will depend primarily on the number and scope of impact assessments/other studies required as well as the scope of the body seeking certification. Given the early stage that MBSA currently is at in investigating certification, it is not within the scope of this study to provide an estimate on compliance costs.

However, MBSA is already working with various universities to see how they can help through their own scientific research (such studies may take several years, and in the short term valuable information may be difficult to ascertain). Other compliance costs would include staff time and funds for the training and guidance required to ensure that the relevant MBSA staff, field staff, the union as well as smallholders understand the RSB requirements, are implementing the necessary management practices, and are able to compile auditable records and other evidence of compliance and continuous improvement. Finally, there may be other costs, depending on the recommendations from certification audits.

The cost of a certification audit depends on a number of factors, including the size of the production unit seeking certification, the location, the risk level, the number of auditors, the different auditor rates, and the number of days they require to complete their audit. Staff time is also incurred. The RSB has structured its certification based around a risk management system, where operators' risk is assessed to determine the scope, type, and frequency of audits. Under this system, the sample of operations that would be required for inclusion in an audit varies from 5-25 percent<sup>74</sup>.

A basic audit team must comprise qualified RSB auditors and, for higher risk classes, possibly include a social expert, an environmental expert, and agronomy expert (feedstock specific), although one could potentially find two or more skills in one person. Depending

<sup>74</sup> See RSB-STD-70-003 section 2.4.6.2 for further detail.



on the context, the team might also require one or more persons with local knowledge and local language skills. At best this means that the audit team will comprise two people (at worst it could mean three auditors and three local experts/translators). Auditor rates are likely to range from US\$500/day to US\$1 500/day. Based on an initial assessment of MBSA's operations, it is likely that they would fall into either the second or third risk category, whereby 7-10 percent of their surface operations (i.e. in hectares) would need to be audited. For risk class two or three, audits can be conducted by one international lead auditor and one local auditor (as long as they possess the necessary skills/expertise).

As a preliminary estimation<sup>75</sup>, a certification audit for an operator such as MBSA could require visits to between 3 and 5 villages (sites). Each auditor is likely to require one day for preparation, two days at the Head Office, one day per site, two days report write-up, in addition to travel time and expenses (and local translation, if required). This means:

LOWEST COST SCENARIO FOR CERTIFICATION AUDIT	HIGHEST COST SCENARIO FOR CERTIFICATION AUDIT
3 sites, lowest auditor rates	5 sites, highest auditor rates
$1 + 2 + (1 * 3 \text{ sites}) + 2 = 8 \text{ days per auditor}$	$1 + 2 + (1 * 5 \text{ sites}) + 2 = 10 \text{ days per auditor}$
$8 \text{ days} * 2 \text{ auditors} = 16 \text{ days}$	$10 \text{ days} * 3 \text{ auditors} = 30 \text{ days}$
$16 \text{ days} * \text{USD } 500 = \text{USD } 8000$	$30 \text{ days} * \text{USD } 1500 = \text{USD } 45000$

This very rough and estimated calculation suggests that certification costs for an operator such as MBSA could range between US\$8 000 to US\$45 000 excluding travel time (remote areas require extra travel time), travel expenses and possible use of local translator, in addition to any other certification and registration fees that RSB may require.

Finally the administrative costs (i.e. licensing), also depend on the type of operator and scope of operations. A number of direct and indirect compliance costs have already been borne by MBSA. The Operator continues to work with various universities to see how they can assist on any required studies through their own scientific research.

## RECOMMENDATIONS TO ENHANCE INCLUSION OF SMALLHOLDERS

### Incorporate Certification Elements into Existing Capacity Building Efforts

Certification will present some (surmountable) challenges to both MBSA and the smallholder growers. As discussed, the main challenges are in regards to the number and dispersion of growers, with maximum land area not exceeding 5 hectares. The second major challenge is the lack of technical capacity and the context that most of the smallholders are illiterate. However, these challenges are minimized due to business models developed by MBSA, where there are already institutions in place to organize and train smallholders

<sup>75</sup> These estimates are for indicative purposes only and will vary depending on circumstances.

through the ULSCPP and the Foundation. The company is also already very active in accessing extension services. For example, the company has established a partnership with the techniques of agriculture and researchers from the Institut Polytechnique Rural (IPR) of Koulikoro for the training of trainers and monitoring of producers. This team is supported by local trainers (endogenous) and leaders in villages who can lead activities related to preparing the certification. It should be noted that MBSA has developed and distributed a training manual for the production of biofuel (available on its Web site). In principle, MBSA could include the processes of certification in its usual training and monitoring. Indeed, the company has other assets that may facilitate the operation: there is a database of regularly updated, georeferenced data of each smallholder plot with records on number of plants, land area, etc.

Based on the scope of the inquiries conducted in this case study, there were no significant barriers to compliance and certification for MBSA; however, the certification process will require time and effort on behalf of MBSA staff, field staff, the union as well as smallholders to understand the RSB requirements and to compile auditable evidence of compliance and continuous improvement. A critical challenge for MBSA and its suppliers remains to clarify the value of certification and balance this with the cost.

### RSB Standard Adjustment

The prospect of smallholder-based group certification requires the RSB to urgently clarify the guidance and indicators for Participating Operators, such as MBSA, so that it clearly shows how social impacts may be measured and documented for certification purposes, and specifically what is actually necessary for smallholder-based operations to demonstrate compliance. RSB must clarify acceptance criteria for certification (and related guidance) as soon as possible to ensure consistent interpretation and application of RSB requirements by different auditors. It is also important that the RSB Standard defines and recognizes smallholders more explicitly in its guidelines and screening tool and indeed recognizes diversity among smallholders in general (for example, the Roundtable on Sustainable Palm Oil's Task Force on Smallholders distinguishes between "scheme smallholders" and "independent smallholders" and their different guidance needs<sup>76</sup>). The RSB is currently addressing these issues.

Efforts should be made to reduce the paperwork associated with certification and to simplify the complex and at times lengthy language within the RSB Standard. Simplified guidance books for smallholders have proven valuable in other certification contexts (e.g. FSC and GLOBALGAP)<sup>77</sup> and must be tailored to local literacy levels.

The RSB may also consider ways in which a segmented approach to group certification may allow for adjustments in the factors which determine the direct costs of certification,

<sup>76</sup> See for example [www.rspo.org/cites/default/files/TFS20Briefing%202011%20Final.pdf](http://www.rspo.org/cites/default/files/TFS20Briefing%202011%20Final.pdf)

<sup>77</sup> See for example [www.fsc.org/fileadmin/web-data/public/document\\_center/publications/FSC\\_Technical\\_Series/FSC\\_smallholder\\_guide-EN.pdf](http://www.fsc.org/fileadmin/web-data/public/document_center/publications/FSC_Technical_Series/FSC_smallholder_guide-EN.pdf) and [www.gtz.de/en/dokumente/gtz2010-en-globalgap-group-certification.pdf](http://www.gtz.de/en/dokumente/gtz2010-en-globalgap-group-certification.pdf)

and thereby reduce the cost of certification; for example, for particular segments of smallholders, the sample size and monitoring frequency could be reduced, and simple reporting templates could be provided to reduce the administrative burden.

### Donor Community Technical Assistance and Innovative Financing Mechanisms

The donor community can play an important role in addressing the need for capacity building and technical assistance and in the development of financial mechanisms that enable certification. Training is required to ensure that the relevant MBSA staff, field staff, the union as well as smallholders understand the RSB requirements and are able to compile auditable evidence of compliance and continuous improvement. This could include a one-day workshop followed by ad hoc support in the field and (as mentioned above) simplified guidance material funded and/or provided by donors. To further support internal oversight, donors may be able to assist MBSA – in particular the union – in defining and implementing a relevant and effective internal management system for certification. The company has stated that they would be unable to pursue certification, if not for donor support, until there is greater benefit from the certificate itself on the market. As noted above, simplified generic manuals can provide an effective starting point for smallholder groups to prepare for certification; the manuals must include guidance on how to establish and document an internal management/control system that is feasible and relevant to their specific situation and relationship with MBSA. For example, the union may need support in developing methods for risk assessment, administrative organization, standard operating procedures, document templates (e.g. control sheets), agreement on sanctions for non-complying members and more. Successful case studies of capacity building on implementing methods and management of voluntary standards can be found at Sustainable Commodity Assistance Network (SCAN).<sup>78</sup>

MBSA enjoys an international profile as an innovative, smallholder-based sustainable biofuels business and is already working together with a number of parties/donors – from local and international NGOs to universities to governments – on various research projects.<sup>79</sup> Some of these projects involve an element of extension work among the smallholders; for example, one project is conducting an experiment of intercropping jatropha with new drought-tolerant maize varieties to enhance food. There may be certain social data generated through this project (or others) that would be of value to the RSB certification process, depending on the availability of such data at the time of certification.

Various partnerships are also formed through the union, whose technical and financial partners during 2010 included Chambre Régionale d'Agriculture de Koulikoro, the Netherlands Development Organisation (SNV), the Royal Tropical Institute, Netherlands (KIT), the Institut d'Economie Rural, Mali (IER), and the Cabinet d'études, de Comptabilité d'Information et de Management, Mali (M2CI). It is possible that these

<sup>78</sup> <http://sustainablecommodities.org/scan>

<sup>79</sup> For more information on each project, see [www.malibiocarburant.com/malibioen/project](http://www.malibiocarburant.com/malibioen/project)

partnerships could be drawn upon for assistance with different aspects of certification.

Regarding financial mechanisms: while the scale of MBSA's operations are still small, donors could, for example, help subsidize the costs of compliance and/or certification; this could include covering some of the compliance and monitoring costs incurred by MBSA, for example by sending an auditor/expert to Mali to review compliance issues together with MBSA at, possibly, 3 or 6 month intervals.

In a more indirect way, donors could support the greater inclusion of smallholders in MBSA's production by addressing, directly or through MBSA, the immediate needs expressed by all the smallholders during interviews. These are in priority:

1. Water access: For fields up to 2 ha, a well is sufficient. If fields are more than 2 ha, a motorized or solar pump is desired.<sup>80</sup>
2. A solution for the problem of termites which kill the jatropha plant: improved water access is believed locally to be part of the solution, rather than insecticide.
3. Equipment: greater access to e.g. ploughs, wheelbarrows or ox carts would help the cultivation and potentially generate higher yields for revenue generation.

## Government of Mali

Through its National Biofuel Development Agency (ANADEB) and other government departments, the Government of Mali can contribute in various direct and indirect ways to stimulate and incentivise local demand for certified sustainable biofuels and support the sustainable scaling up of jatropha-to-biodiesel production, such as that by MBSA. ANADEB has already developed a national sustainability scheme, which incorporates many of the criteria included in voluntary standards, and has had discussions with the RSB on possible collaboration on a verification system which would be cheaper than a third party audit system.

The Government could require certification through legislation or translate the principles and criteria into a national standard. In developing its biofuels position, the Government could use bioenergy certification standards to develop a national policy framework, ensuring that its objectives and compliance requirements are aligned with the content of the various standards. The Government could also introduce requirements for the procurement of certified sustainable biofuels within the public sector; tenders for the purchase of fuels and vehicles for government departments or agencies, in public transport, or in waste collection vehicles, could stipulate (or at least encourage) the provision of such biofuels, possibly even from smallholder-based producers.

To incentivise production of certified sustainable biofuels as well as support the scaling-up of smallholder-based production, the Government of Mali could introduce a scheme of progressive tax breaks for biofuel producers whose product is certified and/or a proportion of their feedstock is sourced from smallholders. Other fiscal incentives could include tax holidays or tax credits such as a tax reduction on fossil fuel mixed with certified sustainable

<sup>80</sup> Note that such irrigation needs are primarily for food crops, as MBSA's jatropha programme does not include irrigation of jatropha, except for in the nurseries.

biofuel or tax exemptions on the sale of certified sustainable biodiesel – these types of tax credits could support companies such as MBSA to scale up their smallholder-based business, not least in a scenario of decreasing oil prices. The Government can furthermore contribute through financial or other support for training of smallholders and producers in different areas of social (and environmental) impact management.

As the global biofuels market develops, there is a risk that Mali's biofuels production will be drawn too strongly towards the needs of international markets, and away from local production that provides essential energy to rural, fuel-poor villages. The Government of Mali must help to ensure an appropriate balance between domestic and export production and the equitable distribution of biofuels between local and international markets.

## CONCLUSION

Overall, MBSA is a very forward-looking company and has already been featured in many international studies as a successful case study in inclusive business. It is not clear that the value of certification would outweigh the costs given MBSA's current domestic distribution; however, as MBSA looks to scale up production and access external buyers, they may determine value in again being ahead of the curve by becoming certified. This report has addressed some of the main challenges for a smallholder-based production such as MBSA to be certified to the RSB Standard (Social Principles only). It has also given examples of how different parties can contribute to the reduction or removal of barriers for the inclusion of smallholder-based production in the certification scheme.

Based on the scope of this study, there were not any significant barriers to compliance and certification for MBSA; however, the certification process will require time and effort on behalf of MBSA staff, field staff, the union as well as smallholders to understand the RSB requirements and to compile auditable evidence of compliance and continuous improvement. A critical challenge for MBSA and its suppliers remains to clarify the value of certification and balance this with the cost.

## PERU CASE STUDY

BY MARTIJN VEEN AND JOSE MURO

In Partnership with SNV



**Bioenergy Feedstock** – Sugar cane

**Certification Scheme** – International Sustainability and Carbon Certification (ISCC)

**Business Model/Smallholder role** – Contract farming, outgrower scheme

**Case study sample:** All male; average age 68; Average 3.42 ha

### Main findings:

- Little incentive for Caña Brava to certify smallholders given ISCC mass balance chain of custody, and ability to sell uncertified biofuel into Peruvian market
- Comparing income over five years between supplying sugar cane to Caña Brava or renting the land, smallholder sugar-cane suppliers could increase their income by at least 128 percent over five years

### Main recommendations:

- Identify financing mechanisms and institutions to expand smallholder access to credit to implement practices to meet sustainability criteria
- Expand capacity building activities with current farmers to include a greater number of farmers in the area in the value chain, to achieve required scale and feasibility for smallholder certification.

## INTRODUCTION

Caña Brava, a private company in Peru, has initiated a process to include medium and small producers in their value chain. Caña Brava designed its ethanol facility for 8 000 hectares of sugar cane, and has a plantation of approximately 6 600 hectares. It therefore has additional capacity where it can either gradually buy land from small and medium landholders or incorporate smallholders into its supply chain. The company initiated a process to include independent smallholders in its value chain and has succeeded with the installation of 150 hectares of sugar cane from small- and medium-scale producers, the latter of which have managed to install 16.75 hectares to date, having just started planting in late June 2011. The business model of incorporating smallholders in the supply chain for the provision of sugar cane is part of Caña Brava's core business strategy to meet supply needs, maximize capacity, and generate profitability. In 2010, Caña Brava pursued International Sustainability Carbon Certification (ISCC) and was the first company to be certified in South America in January 2011, and one of the first in all of Latin America. With this certification, the company seeks to improve its market position and achieve a comparative advantage reflected in a price premium.

## COUNTRY CONTEXT

The land policy in Peru over the last 20 years has been aimed at facilitating the growth of export agriculture. Decree Law 653 issued in 1991 marked the beginning of this stage, promoting investment in the agricultural sector, with significant changes regarding the use of uncultivated land, including leasing of communal land and establishing mechanisms for the award, leasing, and sale of uncultivated lands. Law 26505 or The Land Act passed by Congress in 1995 formalizes the new land regime in Peru. Decree Law 994 issued in March 2008, promotes private investment in irrigation projects for expanding the agricultural frontier. It establishes that uncultivated land owned by the state will be handed over to individuals for irrigation works.

The Government's bioenergy strategy has provided for the development and strengthening of the agro-export sector, which is currently the most dynamic in Peru. However, these large-scale initiatives only comprise 10 percent of total agricultural land in the coastal region. The vast majority of farms in Peru are owned by small farmers who are not prepared to meet the requirements of a competitive international market, given their small scale, low human capital, lack of productive infrastructure, lack of financial and non-financial services and, above all, because of their current orientation towards own consumption, or local and national markets. There are some efforts by the state aimed at providing technical assistance, promotion of association and access to finance for innovation and production, but these have not been adequate. Some relatively successful experiences such as INCAGRO<sup>81</sup> and FONCODES Rural<sup>82</sup> have been stopped. Another initiative is the creation of Agrobanco<sup>83</sup> but still with relatively high interest rates.

Law 28054, adopted in August 2003, was the start of the promotion of a biofuels market at the national level, in line with the Government's policy to develop renewable energy resources and as a strategy for poverty alleviation. On 20 April 2007, the Supreme Decree 021-2007: "Regulatory Framework on biofuels in Peru," was established to set a blending mandate for ethanol and biodiesel. The blending mandate has established a local market for bioenergy and has spurred the development of many new investments in bioenergy production. The national regulatory framework establishes:

- By 1 January 2009 biodiesel will be blended at 2 percent with diesel, called Diesel B2.
- In 2010, ethanol will be blended at 7.8 percent with gasoline, calling this fuel Gasohol.
- By 1 January 2011 biodiesel will be blended at 5 percent with diesel.

This regulatory framework was only partially implemented; in particular the commercialization scheme for gasohol was rescheduled. In the case of biodiesel blending, the goals were achieved, albeit mainly with imported biodiesel from Argentina, Ecuador and

<sup>81</sup> Initiative to increase innovation and competitiveness in agriculture, [www.incagro.gob.pe](http://www.incagro.gob.pe)

<sup>82</sup> Fund for cooperation on social development, [www.foncodes.gob.pe](http://www.foncodes.gob.pe)

<sup>83</sup> Agrobanco, a state owned financing entity, provides financial support for the sustainable development of the agricultural sector, with a special focus on the rural areas with the highest poverty.



the United States. In the case of gasohol, commercialization started in January 2010, but only in the Districts of Piura and Chiclayo. After several delays, commercialization of gasohol in Lima and Callao (main market at national level) was recently approved on 15 July 2011.

### Smallholder Positioning in Agriculture

Smallholders in the area of Piura (coastal region) have an average plot size of no more than 5 hectares; while in the Andes this can be even lower and in the Amazon much higher (but with parts unsuitable for agricultural production). Most agricultural units of the country are in the hands of small farmers, with 84 percent of registered parcels comprising less than 3 ha, 79 percent of irrigated land are parcels less than 5 ha, and 39 percent of total irrigated areas of the country are in smallholder possession (INEI 1994). These families typically make low investments in their crop, using few inputs in the production, the level of technology is low, and access to training services, credit, and technical assistance is also limited. The main investment made is in labour force, which is typically comprised of family or community members.

Smallholders' current involvement in agricultural production is diverse, but mainly focused on production for home consumption and local markets, with some groups producing for the domestic market through large commercialization channels (CEPES 2008). This category includes organizations of small producers who achieved access to foreign markets for high demand products, and have achieved certification. For example, the banana producers in the Piura region have achieved certification with both Fairtrade and GLOBALGAP.

There are only a few initiatives that promote the inclusion of small producers in global value chains, particularly in biofuels in Peru. The main lessons learned from these and other projects that include small producers are that: 1) it is necessary to have a validated technology package for new crops before starting at a commercial scale; 2) technical assistance must be constant; 3) financial mechanisms must be secured including adequate credit systems; 4) the association among smallholders is essential, and 5) partnership with private enterprises needs to be based on well-defined clear rules and properly communicated to the actors involved.

Worth mentioning are public sector initiatives from the Regional Governments of San Martín, Piura and Lambayeque that have promoted the creation of public-private platforms on biofuels at subnational levels. These technical committees contribute to knowledge exchange and policy development and address how bioenergy can contribute to sustainable development while assuring social inclusion of small producers in the value chains. They are comprised of public and private biofuel projects, state entities, and NGOs. Caña Brava is a member of the Piura biofuels platform.

### PROJECT/OPERATION OVERVIEW

Caña Brava is located 67 kilometers from the city of Piura, in northern Peru, in the desert coast department of Piura, in the provinces of Paita and Sullana. To date, the company

has planted 6 670 ha of sugar cane in previously uncultivated areas. The company has also built a sugar-cane and ethanol processing facility, which began operation in 2009, the first ethanol plant to begin operation in Peru. Of the 6 670 ha, cane has been installed in nine blocks: Monte Lima, Lobo, Fundo San Vicente, Fundo La Huaca, Hualtaco, La Castellana 1, La Castellana 2, Buenaventura and El Arenal. Of this previously uncultivated desert land, 96 percent is irrigated with drip irrigation<sup>84</sup>

Caña Brava is the name of a set of three companies belonging to the Romero Group, one of the major entrepreneurial conglomerates in Peru active in the agricultural sector, agro-industry, food industry, banking, insurance, logistics, and infrastructure, amongst others. Caña Brava is comprised of: Agricultural Chira SA which is responsible for planting and harvesting sugar cane; Sucoalcolera Chira SA responsible for the grinding and industrial production of ethanol; and Bioenergy SA Chira responsible for power generation electricity from bagasse.

Approximately 3 500 hectares of uncultivated, desert land was purchased at auction from the Piura regional government. The remaining 3 170 hectares were purchased from private landholders (associations and individuals), the majority of whom (approximately 80 percent) were not cultivating the land at the time of purchase.

Since early 2010, Caña Brava began a programme to incorporate smallholders in their value chain. In the words of the Caña Brava administrative manager, Pedro Trigos: “this decision allows the company to move to a higher level of Corporate Social Responsibility and is creating shared value”. The programme has succeeded in promoting the installation of 150 ha of sugar cane to date with medium and small producers, the latter of which have managed to install 16.75 hectares to date, having just started planting in late June 2011.

### The Business Model – Contract Farming

The business model of incorporating smallholders in the supply chain for the provision of sugar cane is part of Caña Brava’s core business strategy to meet supply needs, maximize capacity, and generate profitability. However, the added benefits of higher corporate social responsibility and the possibility to create shared value are also very attractive to the company. The business model that is being implemented is reflective of a contract farming arrangement to target smallholders with properties near the sugar mill, and to work with them to become providers of sugar cane under conditions of sustainable use of soil and water resources. Caña Brava’s strategy is aimed at promoting capacity building for the production of sugar cane with small producers who have had fallow land, or degraded land for several years.

To incorporate smallholders, the company has developed the following process:

- Analysis of the production situation of small producers, aimed at identifying the strengths and weaknesses of each producer to become suppliers of sugar cane.
- Defining how to achieve the productivity and quality required and what services the company should provide.
- Identification and involvement of public and private professionals who can help

<sup>84</sup> Pressurized drip irrigation module of 16.000 m<sup>3</sup>/ha/year.

support the development of the Inclusive Business<sup>85</sup> model by providing specific services to ensure that quality and yield requirements are met.

- Support to smallholders to build capacity and ensure the proper on farm management of sugar cane, from harvesting to delivery.

In the purchase agreement as signed between Caña Brava and the farmers, the following conditions are included:

- The company will buy all sugar-cane production within the cultivated area for the first five years, estimating an average of 140 tons/ha<sup>86</sup>.
- The contract is signed for five years and may be extended by agreement of the parties.
- The purchase price will vary depending on the international market price of ethanol and will be agreed 15 days before harvest. Payments will be made on a weekly basis.
- The company provides free technical advice and information for crop management. The farmer must meet the technical specifications and/or instructions issued by the company.
- The company sells sugar-cane seed and biological control insects at cost. The farmer pays the company after the first harvest.

As such, the Inclusive Business model has shared benefits for both the company and the smallholders involved, as is summarized in the following table.

Table 5

Shared Benefits through Inclusive Business Model	
BENEFITS FOR THE COMPANY	BENEFITS FOR SMALL PRODUCERS
Access to feedstock Sales increase Competitiveness Market leadership Trust building Improved relations with environment At the forefront of Corporate Social Responsibility in its evolution toward Inclusive Business development or Shared Value Creation Sustainability Risk sharing	Secure market Creating jobs & increased income Capacity building and technical assistance Transfer of knowledge and technology Increased productivity and performance Productive alternative for previously abandoned lands Environmental sustainability Access to finance Risk sharing

The initiative to launch the Inclusive Business model was driven by the need to secure additional supply of sugar cane feedstock for ethanol production, and a desire to implement corporate social responsibility practices that create shared value with surrounding communities and smallholders. The company started with defining the internal capabilities and services that they could offer to smallholders such as seed production, production of beneficial insects,

<sup>85</sup> An Inclusive Business is defined as an entrepreneurial initiative that, without losing its profit objective, contributes to the fight against poverty through the incorporation of lower-income citizens in the value chain (SNV-WBCSD, 2008).

<sup>86</sup> This foreseen productivity level is understood as a realistic estimate considering the favourable biophysical conditions in the Piura region for growing sugar cane.

technical assistance, mechanization of harvesting, transportation of feedstock to the factory, and quality control. The company then assessed how these services could be provided to smallholders and on what terms. Smallholders in the area typically do not have access to credit, so Caña Brava decided to also involve Agrobanco (a state lending agency).<sup>87</sup>

## CERTIFICATION

ISCC is the first international certification system for biomass and biofuels (energy electricity and fuel), which includes sustainability and greenhouse gas reduction criteria. ISCC has over 430 registered companies and more than 220 certificates issued, with 85 percent of these companies located in the European Union, but with a growing market in Asia and Latin America (Henke 2011). Caña Brava became certified in February 2011, due to requirements from the German market (their main export market currently), becoming the first company in South America and one of the first in all of Latin America to obtain this certification. With this certification, the company seeks to improve its market position and achieve a comparative advantage reflected in a price premium.

The ISCC System has been approved by the German Authority: Bundesanstalt für Landwirtschaft und Ernährung (BLE) as the first certification system for liquid biomass and biofuels sustainable under German orders (BioStar-NachV and Biokraft-NachV). As of July 2011, the system is also recognized by the European Commission. In practice this means that there are currently two ISCC standards: one for the German market and one for the European market in general. ISCC has aimed to make it simple, and with reduced costs, for already certified companies interested in accessing the European Union market beyond Germany, to achieve an upgrade to the new ISCC system. The certification system includes criteria on greenhouse gas reductions, and ecological and social criteria associated with biomass production.

### Requirements for certification<sup>88</sup>:

- 1 Sustainability requirements<sup>89</sup> to be met in crop production for biomass
  - a. Protection of areas of high conservation value;
  - b. Protection of areas with high carbon stocks;
  - c. Protection of peatlands;
  - d. Sustainable management of the farm.
- 2 Requirements for GHG emissions savings<sup>90</sup>
  - a. ISCC requires a 35 percent reduction in GHG emissions compared with a fossil fuel baseline.
  - b. Each element of the supply chain must calculate their GHG emissions and pass data to the next stage of the chain. The last stage of the chain must calculate and

<sup>87</sup> See Annex 1.

<sup>88</sup> See Annex 3 for a list of technical documents from ISCC.

<sup>89</sup> The requirements must be met by following the instructions in the ISCC 202 Sustainability Requirements - Requirements for the production of biomass.

<sup>90</sup> The requirements for the assessment of GHG emission reductions are specified in ISCC document 205.

justify the total savings of GHG emissions.

- 3 Requirements for traceability<sup>91</sup> and mass balance to provide evidence regarding the source of biomass
  - a. The source of biomass should be traceable at the different stages of the production, suppliers, and factory processes. This is done according to the traceability systems, documentary evidence and monitoring reports, which ensures the source, amount, and GHG emissions in each stage.
  - b. The documentary evidence and monitoring reports must also demonstrate that the quantity taken in a production or supply stage does not exceed the amount received by the same stage within a period (to avoid double counting).
  - c. The traceability systems allow mixing of sustainable and non-sustainable products, even if GHG emissions are different, according to the ISCC mass balance methodology.

### Mechanisms for Smallholders in the Certification System

The new version of the ISCC certification system, as approved by the European Union in July 2011, maintains the same principles but includes specific criteria for group certification, including small farmer groups. An individual audit of each single producer of raw material would impose disproportional financial costs and efforts on the entity and the overall certification process. By joining a group, farmers can reduce the certification efforts considerably. The following is considered:

- Group certification can be applied to homogeneous groups of small farmers. Group auditing for compliance with the scheme's land related criteria is only acceptable when the areas concerned are near each other and have similar characteristics. Group auditing for the purpose of calculating greenhouse gas savings is only acceptable when the units have similar production systems and products.
- The group must set up a central office taking care of the group management and carrying out the necessary internal audits according to an internal audit system. The company can act as the central office. The partnership should be formalized and have internal management documents that define rights and obligations of members and new members.
- External audits should be conducted on an annual basis. The group's central office is also audited. The size of the sample is determined by the group risk. The risk factor must be applied on the basis of the relevant factors listed in the risk management document ISCC 207<sup>92</sup>.

For further information on the requirements and procedures for group certification under ISCC, see ISCC document 256.

<sup>91</sup> The specific requirements for the traceability systems and mass balance calculation methodology are documented in the ISCC documents 203 and 204.

<sup>92</sup> For further information see [www.iscc-system.org/e865/e4156/e4157/e4232/e4236/ISCC\\_EU\\_207RiskManagement\\_2.3\\_ger.pdf](http://www.iscc-system.org/e865/e4156/e4157/e4232/e4236/ISCC_EU_207RiskManagement_2.3_ger.pdf)

## MAIN FINDINGS

### Challenges

Caña Brava has created an internal structure that includes direct employment of professionals who are responsible for organizing the inclusion of smallholders including the following tasks: 1) approaching small producers to assess their interest in becoming sugar-cane suppliers; 2) assessing each smallholders' available resources (soil, water, finance), and 3) facilitating compliance with the requirements of the funding source. The Project Manager of Caña Brava states that while there have been no major obstacles in incorporating smallholders, there are some concerns related to the price that smallholders will receive for their sugar cane. Caña Brava has decided to tie the price that they will pay to smallholders to the international market price for ethanol. It is profitable when plantations are managed at a commercial scale, such as the company is doing itself. However, production costs per hectare at the smallholder level will be higher, and it remains uncertain whether the price that Caña Brava has decided to pay to smallholders will be sufficient to cover their production costs. While this is a concern, Caña Brava has still decided to proceed with including smallholders and hopes that through capacity building, smallholders' production costs will be reduced over time creating greater profitability for smallholders.

The main difficulties identified are: 1) lack of expertise in sugar-cane cultivation; 2) low organizational capacity; 3) concern regarding the variable price, and 4) no or low access to credit. All interviewees stated that lack of access to credit is their main concern or challenge.

The company developed the programme: "Promotion of Agricultural Development in the Chira Valley", to attempt to address some of these challenges. The programme aims to train and assist smallholders in the techniques of growing sugar cane, and other major crops in the valley such as rice and banana. Furthermore, the company is promoting a business model including access to adequate credit, considering the specific characteristics of the sugar-cane production chain. Agrobanco, a state-owned financing entity, provides financial support for the sustainable development of the agricultural sector, with a special focus on the rural areas with the highest poverty. Agrobanco has agreed to be a strategic ally to Caña Brava in the development of their programme to include smallholders in the value chain. Under this partnership, Agrobanco has agreed to provide credit to cover 69 percent of production costs (including land preparation, harvesting, seed removal, manure provision, water charges, and agricultural inputs). Caña Brava will provide the seeds (15 percent of costs) and the smallholders will provide the labour force (16 percent of costs).<sup>93</sup>

### Benefits

Since the start of the programme to include smallholders approximately a year-and-a-half ago, six new farmers have started planting sugar cane with a total of 16.75 hectares installed. There are an additional 15 small farmers, with an area of approximately 15

<sup>93</sup> See Annex 2 for further detail.

hectares, who are also in discussions with Caña Brava regarding the contract for a period of five years, which defines commitments assumed by the parties and the payment method with variable pricing according to international market prices for ethanol. In the short term, the company is seeking to reach a 50 hectare unit of smallholder supply, and in the medium term at least 1 000 hectares.

The following estimates have been prepared according to production costs, estimated yield, purchase price and financing cost estimates presented, according to information developed by Agrobanco in coordination with Caña Brava. Based on these figures the estimated direct income generation from the production of sugar cane per hectare, would be the following:

Table 6

**Estimated Income for Smallholders**

YEAR	ESTIMATED INCOME RATES PER HECTARE OF SUGAR CANE	
	S/. (PERUVIAN SOLES)	US DOLLARS
1	1.020	375
2	3.110	1.143
3	5.130	1.886
4	4.800	1.765
5	4.200	1.544
Total (5 years)	18.260	6.713

After the fifth year, it is recommended to replant, thus figures would start over again.

Smallholders currently renting their land receive approximately S/. 1.200 (US\$441) to 1 600 (US\$588) per hectare per year. For purposes of comparison, if projected land were to be rented for five years, the income would equal to a total between S/. 6.000 (US\$2.206) and S/. 8.000 (US\$2.941). Comparing income over five years between supplying sugar cane to Caña Brava or renting the land, smallholder sugar-cane suppliers could increase their income by S/. 10.260 (US\$3.772), or 128 percent over five years.

These estimates have been made without considering the additional quality incentives offered by Caña Brava, related to the accumulation of total residual sugars. Caña Brava has offered smallholders an additional S/. 1 to S/. 12 per tonne (US\$0.4–4.4) of cane when surpassing the average level of 12 percent of total residual sugars<sup>94</sup>. Based on an average yield of 140 tons per hectare, smallholders could increase their income by S/. 1.680 (US\$618) per hectare per year, if they are able to deliver cane with higher residual sugar.

All the small producers work their own plots, supported in part by family members. When it is required they recruit additional staff. The presence of a company such as Caña

<sup>94</sup> In sugar-cane production, an average of 12 percent of total residual sugars is achieved. If smallholders surpass this 12 percent (which can reach a maximum of 16 percent) Caña Brava will pay a price premium up to S/. 12 per tonne of sugar cane. This means that Caña Brava will conduct analysis on the total residual sugars, to define the price premium which can range from S/. 1 to S/. 12 per tonne. Medium farmers already working with Caña Brava have achieved a price premium of up to S/. 7.5 per tonne, due to elevated total residual sugars of the delivered cane.



Brava, according to small producers, has resulted in an increase in wages for field workers who previously earned S/. 15 (US\$5.52) and now earn S/. 20 (US\$7.35), for six hours of work between 7 am and 1 pm (normal is S/.20 for eight hours). Overtime is paid at a rate of S/. 2.50 (US\$0.92) per hour. This means that on average a field worker, working for small producers can earn, if they work 26 days per month, up to S/. 520 (US\$191) a month. These wages will be increased because the minimum wage in Peru, which until late July 2011 was S/. 600 (US\$221) per month, starting 14 August 2011 will be increased to S/. 675 (US\$248) per month, and from January 2012 will increase again to S/. 750 (US\$276) per month; which will also influence the production costs at field level. Prices for ethanol and sugar cane are rising (60 Peruvian Soles/ton of sugar cane at the time of the study, has now grown to 100 Peruvian Soles/ton over the course of six months), in addition to projections of increased prices for biofuel in general. It is therefore expected that the production of sugar cane for ethanol will continue to be a profitable economic alternative for the smallholders involved, even with rising labour costs.

In the case of Caña Brava, most of the field staff live in the neighbouring communities, and travel by bicycle to the various areas where they work. They receive a salary above the minimum wage (may exceed S/. 800 when working extra hours; US\$294) and enjoy all the benefits defined by labour law. At the moment it is unrealistic to expect that smallholders will be able to pay labourers the same rate as Caña Brava, but gradually it is likely that they will be able to increase wages.

### Knowledge Diffusion and Capacity Building

The company under its corporate social responsibility policy has implemented the “Promotion of Agricultural Development Programme in the Chira Valley”, aimed at assisting and developing training on sugar-cane cultivation. The small farmers interviewed had received an initial training in the village of La Huaca, where they were trained on crop management (July 2010), then had an in-field training to view specific practices in the fields of larger farmers (more than 50 hectares) that are also suppliers to the company. The smallholders also visited Caña Brava’s production facilities, including learning more about the production and use of beneficial insects for pest management. Each participant was granted a diploma for his attendance at these events. The trainings are currently provided by Caña Brava staff. The next training planned is on germination.

In order for the training to be effective, the theory is first taught in the local communities, followed by in-field trainings to apply the theory to on the ground practices. The smallholders who have participated thus far have indicated that they are learning but would request further technical assistance and training in the field to reinforce their learning, especially regarding pest management.

### Access to Markets

Smallholders were asked about their interest in accessing bioenergy markets, even though at the moment they only have Caña Brava as a potential market and have committed

to sell all sugar cane to Caña Brava for the next five years. On the one hand, this will provide smallholders with a secure market and the benefit of quality technical assistance and other support that Caña Brava is providing. At the same time, this limits the potential for smallholders to access other markets or buyers directly where they may be able to get a more competitive price. For example, as Maple Ethanol completes their processing facility nearby and the COMISA project is finished (all in the same area) there will be greater demand, increased competition, and potential for a stronger negotiating position for smallholders in the area.

### Organizational Development

Recently, six smallholder producers created the: “Association of Cane Growers of Lower Chira”, in order to reduce costs, provide a structure for sharing information, and collaborate on issues of joint interest. The first action of the group has been to present themselves formally to the organization of water users, the: “Irrigation Commission El Arenal”. In their letter, the farmers state that they are developing sugar-cane plantations in the areas of Puerto Pizarro and La Esperanza, and request to be considered for the distribution of water to their sugar-cane plots, according to their rights, and considering the procedures for water distribution by the irrigation commission, while communicating they have been complying with payments of their water bills. The Association has also identified that they will be prioritizing meetings with the municipality authorities to discuss expansion of roads and bridges in and around their properties so that they will be able to get mechanized harvesters into parts that are currently unreachable. The Association will also work with Caña Brava to request a discount in fertilizer by purchasing fertilizer as a group.

The company is committed to providing mechanized harvesting services to smallholders, but it will be more viable if the smallholders are able to group themselves in units of 50 hectares. These should not necessarily be neighbouring plots, but units of 50 hectares in the same area. This would justify the transport of the machinery and further reduce costs.

### Drivers for Seeking Certification

The certification process for Caña Brava was launched in mid-2010, when the company was notified by a German customer that they would no longer be able to purchase uncertified ethanol after January 2011. At that time, Caña Brava began to investigate the ISCC certification. SGS<sup>95</sup> advised Caña Brava on the process and a pre-audit was conducted in mid-2010. The final audit was 27 December 2010, held for two days by an auditor hired by SGS. Audits included the plantation and the factory, and any pending issues were able to be addressed during the audit visit itself. The final certification was approved in February 2011.

<sup>95</sup> <http://www.sgs.com/>

## Smallholder Positioning for ISCC Certification

The small farmers interviewed are not aware or familiar with the ISCC certification. However, most of the farmers interviewed have a basic understanding of the idea of certification generally, through the experience of the banana growers in the region that have received certification from GLOBALGAP. For instance, they know that they have an improved income and quality of life, but to date have no knowledge about the requirements and costs of certification. Caña Brava has not at this stage provided training or capacity building on the subject of certification for smallholders, since they are able to supply Europe with 100 percent certified ethanol from their own plantations, and sell any additional uncertified ethanol into the domestic market where there is currently no requirement for certification. However, the company has stated it might become a requirement in the future for the Peruvian market to have the smallholders certified.

In order to achieve recognition of the European Commission, the ISCC system was adapted to meet their requirements, and specifically the cross-compliance rules of the European Union<sup>96</sup>. The adapted ISCC system, unlike the previous standard, includes the concept of group certification (detailed in ISCC document 256<sup>97</sup>), in order to facilitate the inclusion of producers of raw material in the certification scheme. Group auditing can be applied in particular for smallholder farmers, producer organizations, and cooperatives. The criteria and checklists for producers outside the European Union, were largely based on the GLOBALGAP system.

Under the old system, all producers were required to make a self-declaration stating that they were in compliance and then 5 percent of the producers had to undergo an audit. Under the new ISCC system approved by the European Union, the requirements for independent producers are stronger, similar to the GLOBALGAP system on which it was based. Group certification is based on the concept that an extensive part of the inspections required are carried out by internal auditors. The external certification body assesses and evaluates the effectiveness of the internal audit system, carries out an audit of a sample, and certifies the group as a whole. As such, it requires the organization of producers with a central office to take care of the group management and carry out the necessary internal audits. The company seeking certification (in this case Caña Brava) is allowed to operate as the central office for the producers. However, due to the related costs, it is to be seen whether a company would be inclined to assume this role, especially if the company would not require the small production volumes of the smallholders for export purposes. In the case of Caña Brava, taking into account the domestic ethanol market in Peru (for now without certification requirements), it is most likely that they will orient the production of independent (small) producers of raw material to the domestic ethanol market. On the other hand, it is uncertain if the small producers would have enough incentive to engage in the certification process themselves, due to the costs involved.

<sup>96</sup> [http://ec.europa.eu/agriculture/simplification/crosscom/index\\_en.htm](http://ec.europa.eu/agriculture/simplification/crosscom/index_en.htm)

<sup>97</sup> [http://www.iscc-system.org/e865/e4156/e4201/e5032/ISCC\\_EU\\_256\\_Group\\_Certification\\_2.3\\_ger.pdf](http://www.iscc-system.org/e865/e4156/e4201/e5032/ISCC_EU_256_Group_Certification_2.3_ger.pdf)

To date, the new ISCC system recently approved by the European Union has not been tested with the concept of group certification anywhere in the world. Therefore, it is yet to be seen if and how this new scheme will be feasible in practice, based on real experiences like the one with Caña Brava.

Small producers associated with Caña Brava consulted about the possibility of certification of sustainable production of sugar cane, indicated that they consider it important since this will show that they too would be contributing to better conservation of the environment and could increase their income with price premiums that are awarded for certified products. In addition, it could provide them access to alternative markets.

The incentive for small producers to be certified is first, receiving a better price for their product, and second technical assistance associated with achieving certification, and third, potential improved access to credit through international accreditation. Their main challenge is to access funding for the audit. The strategic alliance with Caña Brava, could help to facilitate access to credit in order to meet this goal. As far as a higher price, the company registered price premiums varying between US\$10 to US\$20 for m3 of certified ethanol<sup>98</sup>, above the Flat T2 price in the Rotterdam index. Upon achieving certification, the price premium for certified ethanol would be included in the price to be paid to the farmers for delivering certified sugar cane. Considering the reported premiums, market prices and varying market conditions (both the international ethanol price and the premium for certified ethanol vary day to day), rough estimations indicate that the price premium could be between 1 percent and 10 percent approximately.

## Challenges to Achieve Certification

**Lack of capacity:** Smallholders in sugar cane in Piura currently lack experience and knowledge related to certification, for example compared with their neighbouring farmers in organic banana who have over ten years of experience and capacity building on implementing Fairtrade and GLOBALGAP certification. They have no knowledge of ISCC, and no understanding of the costs and requirements, but they do understand that certification contributes to higher environmental and social sustainability, and that it could help them access new markets. Their current focus is on yield improvement and to reach an average of 120 tons/hectare in order to secure and maintain the stability of their income. However, even though it is not their main objective or focus, many of the good practices and better management practices that they have learned through the capacity building with Caña Brava will prepare them for certification. For instance, that they cannot pollute, that the ideal is to do harvesting without burning, to avoid chemical inputs, to apply organic pest management techniques, and to use water efficiently.

<sup>98</sup> This price premium is variable and can go up or down according to the market conditions. ISCC even reports price premiums up to US\$70-100 per tonne of ISCC certified ethanol (corresponding with US\$55-80 per m3). As Caña Brava is only recently certified and their first exports were realized without certification, the company so far did not receive the price premium for certified ethanol.

**GHGs:** Another main challenge is meeting the 35 percent greenhouse gas reduction target. However, in this case sugar-cane production is promoted among smallholders in areas with degraded or unused land, where the production of food crops is not profitable because of low yields. It is possible to use the established default value (71 percent reduction in greenhouse gases for sugar cane) which would require all producers to make a self-declaration and the audit would only need to be performed on 5 percent of the production<sup>99</sup>. A maximum emission of 54.5 gCO<sub>2eq</sub>/MJ along the value chain is possible in order to reach the 35 percent GHG reduction target.

**Management system:** Organized data collection and record keeping is a requirement difficult to achieve for the small producer, but not impossible. Neighbouring banana farmers have been able to do it (with GLOBALGAP certification, very much comparable to the ISCC standard), therefore the sugar-cane growers should also be able to achieve this level, with assistance from the company. Organizational challenges are mostly due to low education levels (the majority only finished primary school) and the elevated age of the smallholders involved (the average age of interviewed farmers is 68). The future transfer of property to their children (that rely on agricultural activities but at present do not own the land) will allow the incorporation of small producers probably better prepared for the innovations needed for certification. The establishment of the farmers' association of sugar-cane growers formed in July 2011, will definitely play an important role in making the certification of smallholders more feasible. The opportunity to achieve better prices, recognition, and access to new markets is expected to contribute to the motivation of the farmers to undergo the certification process.

## RECOMMENDATIONS TO ENHANCE INCLUSION OF SMALLHOLDERS

### Expand Application of the Inclusive Business Model

Caña Brava has an enormous opportunity to advance the creation of shared value with the small producers through an Inclusive Business model. We recommend that the company to be proactive in promoting and implementing this model by identifying ways to expand its programme to include more smallholders and by assessing the existing support services to see how they may need to be adapted as the programme grows to remain in line with smallholders needs.

### Capacity Building at Company Level

Caña Brava should strengthen its internal structures that are currently in place to manage production and supply of sugar cane with external producers. Two alternatives identified are:

- First, support the Head of Projects with expert staff in Inclusive Business models

<sup>99</sup> This is in the case of the ISCC system for Germany; in the new ISCC system approved by the European Union this percentage is variable and increases with the largest number of producer members and/or increased risk identified by the auditor.

and in providing technical assistance to the farmers.

- Second, formalize a partnership with a specialized company or NGO in value chain development and Inclusive Business models, to provide technical assistance in close collaboration with company staff.

Both the company and the farmers' association should leverage funds from international cooperation agencies, bilateral banking or grant funds to expand cultivation to other smallholders. This could be run in partnership with an NGO, universities, or technical training centres.

Training should reinforce key topics such as: crop management, integrated pest management, organic fertilization, efficient water use, and no burning of cane. Training should also include information on the costs and benefits of ISCC certification, with an emphasis on the data and record keeping that will be required to prove traceability.

### Financial Support and Access to Credit

In partnership with the farmers' association, efforts should be made to achieve credit with lower interest rates. The 18 percent interest offered by Agrobanco, although the lowest in the market, is still prohibitively high for smallholders. Caña Brava could negotiate lower interest rates in a joint effort with the farmers' association. Many factors reduce the normal risks associated with smallholders, including the long-term secure off-take contract with the company (five years), the current purchase price of sugar cane at S/. 100 (US\$37), and the creation of the Association of Cane Growers, which illustrates organization and management.

The company should evaluate the possibility of implementing a direct credit facility for small producers, financed with its own resources, as other companies have done in the development of suppliers at this stage of cultivation. This would provide faster access to credit, faster development of smallholders, and higher quality/higher yield of the sugar cane. The Board of the Company has recently taken the decision to grant credit, and is currently defining implementation procedures.

### Capacity Building on Group Certification Mechanisms of the ISCC

Considering that the farmers involved are at the very beginning stage of growing sugar cane for commercial use, it is not the appropriate time to introduce additional activities focused on certification that would require increased costs. However, it is suggested to include the elements of certification (biological control, organic fertilization, efficient water use, no burning of cane, and compliance with national employment remuneration) in their planned training and capacity-building activities. They could also add training on information management and record keeping in order to further prepare smallholders for eventual certification. In the medium term, certification could be initiated with growers involved in the farmers' association as that could already serve as a mechanism for coordination of information and as a way to reduce costs.

The farmers' association should aim at strengthening their capacity in the medium term to meet the demands of the ISCC system management for the group certification. Signing

a cooperation agreement on certification with Caña Brava would be the first step.

Donors, international cooperation agencies, and the public sector could identify the Caña Brava case as a testing case to include smallholders in a certification scheme such as the ISCC, in order to identify practical barriers and points for improvement. The leading position of Caña Brava as the first company in South America having received ISCC certification, combined with a motivated farmers' association in need of such support, might motivate external funding for this specific case.

### Public Sector Support

The Regional Government of Piura should maintain promotion of the biofuels roundtable of Piura as an interinstitutional platform for public, private and producer organizations to develop and share knowledge on sustainable development of biofuel initiatives. Caña Brava should maintain its participation and leadership in this platform. On the other hand, studies should be carried out that contribute to the strengthening of irrigation systems in Chira-Piura in full coordination with the Regional Government of Piura, thus avoiding potential conflicts over access to water in times of scarcity.

The farmers' association, in alliance with Caña Brava, could approach the District Municipalities, Provincial, and Regional Government of Piura to improve bridges and roads to facilitate the entry of mechanical harvesters, to reduce burning of sugar cane.

Inclusive Business models should be encouraged and promoted as state policy at the national, subnational and local levels to create an enabling environment for private sector actors to compliment these efforts, with strong emphasis on the development of farmers' associations, adequate credit programmes, capacity development and technical assistance.

Following up on the National Agro-energy Plan as led by the Ministry of Agriculture and under which sustainability criteria for biofuels were promoted, the Peruvian State should assess current certification standards and create mechanisms to promote sustainable development of the sector, ensuring the inclusion of small producers in supply chains.

### CONCLUSION

For now, considering that the domestic market for ethanol in Peru does not require certification, Caña Brava has no limitation on purchasing (uncertified) feedstock from smallholders. Therefore, there might be little incentive for Caña Brava to pay the costs of certification for smallholders at this time, or to play a role as central office and facilitate the group certification process of the smallholders. Moreover, ISCC certification considers mass balance, which allows for the blending of certified and uncertified feedstock. This type of system allows Caña Brava to continue sourcing part of their feedstock from small producers without pursuing certification for them, and allocate this feedstock/ethanol to the local market. However, certification of the ethanol is a requirement for the European market, and the related price premium for ISCC certified ethanol might be an interesting driver for the company to seek group certification, as farmer participation and production volumes from smallholders rise in the future.



In the case of Caña Brava, the cost of certification was approximately US\$33 000. Small farmers could not individually pay the costs of certification, but under group certification costs can be reduced significantly. Cost per farmer would depend on the size of the group and the amount of hectares per farmer, but estimates from SGS come to a cost ranging between US\$16 and US\$7 per hectare (for 100 farmers, 150 hectares and 300 farmers, 500 hectares respectively)<sup>100</sup>. However, with the new version of the ISCC system, costs might increase due to the stronger requirements for smallholder certification when compared with the previous version. On the other hand, an alliance with Caña Brava would facilitate significant knowledge transfer and capacity building that will prepare smallholders for many elements of the certification.

Reported price premiums for ISCC certified ethanol are significant, ranging from 1-10 percent. Caña Brava intends to transfer this premium to the farmers when certified. According to foreseen income levels this would imply a premium between 84 and 840 Soles per hectare (US\$30.9-309), when considering a productivity of 140 TM/ha. As such, ISCC certification would generate additional income for the farmers. However, this requires some minimum scale and organization of the farmers. Currently, with few farmers associated and just starting to work together with Caña Brava, potential for small holder certification is limited. Furthermore as certification is not (yet) required for the national market and ISCC allows for mass balance (with small holders providing limited volumes), there is a lower incentive for the company to assist in small holder certification for the international market.

**100** According to estimates from Jorge Bazo of SGS Peru, the additional costs for smallholder certification related to (already certified) Caña Brava operations, would be in the range of S/. 5 280.00 (US\$1 941) + taxes (18 percent) for a group of 100 producers with 150 ha. For a group of 300 farmers with 500 hectares, estimated costs would be around S/. 7 920.00 (US\$2 912) + taxes (18 percent). This results in the figures per hectare as mentioned above.



# CONCLUSIONS AND RECOMMENDATIONS

Elizabeth Beall

This study has sought to contribute to current lacunae identified in the literature review on value chains and voluntary standards including:

1. Expanding the type of standards analysed and their implications for smallholder inclusion in global value chains.
2. Analysis of the influence that certification might have on smallholder inclusion.
3. Understanding the relationship between various business models and certification challenges and opportunities.
4. Analysing existing mechanisms and governance structures to identify areas of improvement to foster smallholder inclusion.

The case studies seek to contribute to each of these areas through collecting field level data from interviews and observations. This section will present the main themes identified through the case studies, by revisiting the lessons learned from agriculture and forestry, discussing the successful elements of the business models in each case, discussing the contrasts between the studies, and concluding with recommendations to enhance smallholder inclusion and the various roles at various levels of governance.

## BIOENERGY<sup>101</sup> VALUE CHAINS AND VOLUNTARY STANDARDS – DIFFERENCES WITH FOOD AND FORESTRY

### Chain of Custody – Mass Balance Ensures Inclusion

Bioenergy value chains and certification vary in a few important ways from food value chains and certification schemes, notably in the chain of custody systems. Bioenergy can be produced from a variety of feedstocks, as illustrated through the three case studies included in this report, including sugar cane, corn, sorghum, oil palm, jatropha, etc. Bioenergy feedstocks, once processed into fuel (e.g. ethanol or biodiesel) can also be mixed, no matter the feedstock from which they were produced. This creates a greater fungibility than can be found in the food sector. Another key difference is that unlike food products such as bananas or coffee, which can be sold without processing directly from smallholders, bioenergy requires a processing stage, and often multiple processing stages. As discussed in the Thai case, there is currently no direct market for RSPO certified FFB (feedstock directly from farmers) to be traded/sold; therefore there is no direct marketing channel as

<sup>101</sup> The RSPO standard is not targeted towards biofuels and can be used for food, cosmetics, or any other market.



opposed to some smallholder cases in food and forestry. The way that certification schemes and bioenergy chain of custody systems are currently structured, a direct link between farmers and the market is not foreseen, therefore a processor will also need to be involved.

Unless required by law, most processors may not know the exact source of their feedstock. As stated by the International Petroleum Industry Environmental Conservation Association (IPIECA 2010): “The fungible nature of biofuels, the complexity of the supply chain, the volatility of the market and the limited transparency throughout the supply chain all create conditions that enable fraud and the manipulation of transactions”. These aspects pose significant challenges for the certification of bioenergy supply chains. When smallholders are involved in the supply chain, the complexity and ability to track information grows exponentially.

The case studies included in this report have represented both coordinated (sometimes referred to as captive/relational) and aggregated (sometimes referred to as market/modular) supply chains. A coordinated supply chain is when one central entity (processor) purchases feedstock from several producers, but coordinates/interacts in some way directly with a feedstock supplier either through access to credit and inputs, through capacity building, or through an off-take agreement. Aggregated supply chains are where farmers sell their feedstock either to a middleman or in the local market. This means that there is an additional layer where feedstock is mixed and traceability is further reduced. This is all before the feedstock is processed or refined to be converted into biofuel. After refining, there is even further mixing of fuel as blenders (e.g. Shell, BP, etc.) combine the biofuel with traditional fuels for sale to consumers. It is the blender that has to provide the government with documentation on the fuel characteristics. Under certification schemes, each operator in the supply chain must be certified and subjected to audits, although requirements vary on specific compliance requirements for each actor. (IPIECA 2010; Ponte 2008)

The majority of voluntary standards for agriculture, forestry, and bioenergy use one of three systems to verify a certified chain of custody. A description from IPIECA is provided in the **Table** below. Given the complexity and multiple layers of bioenergy supply chains, combined with a desire that the system is rigorous and reduces potential for false claims, most schemes and importing markets favour a mass balance approach. Unlike food safety or quality standards, bioenergy consumers are unlikely to demand segregated or identity preserved certified biofuel.

Table 7

**Description and basic requirements for chain-of-custody systems**

COC SYSTEM	DESCRIPTION	REQUIREMEN
Physical segregation	<p>Certified products are physically segregated from non-certified products at every facility along the supply chain.</p> <p>Processing GHG data can be incorporated into documentation at each stage of the supply chain.</p>	<ul style="list-style-type: none"> <li>• Documentation must accompany the certified product at all times.</li> <li>• Facilities are usually certified to manage certified products.</li> <li>• It is advisable that all facilities trading sustainable certificates and/or products are audited, certified and registered.</li> <li>• May require cleaning of equipment between the processing of non-certified and certified products.</li> </ul>
Mass balance	<p>The amount of certified product sourced and sold by each actor in the supply chain is tracked. However, the certified product and sustainable certificates (e.g. documentation that represents the sustainable attributes embedded in the certified product) do not need to be sold together. The certified product does not need to be segregated from non-certified products (except for the site level and tank level mass balance that do require segregation during some stages).</p> <p>Processing GHG data can be incorporated into documentation at each stage of the supply chain, or documented and managed separately.</p>	<ul style="list-style-type: none"> <li>• Each sustainable certificate must match the quantity of certified product it represents.</li> <li>• It is advisable that all facilities trading sustainable certificates and/or products are audited, certified and registered.</li> <li>• Verification is carried out at multiple stages.</li> <li>• Site level and tank level mass balance requires the certificate to be coupled with the certified product up to the blending stage.</li> </ul>
Book-and-claim	<p>The certified product is completely decoupled from sustainability certificates. The certified product flows freely through the supply chain, just as a non-certified product does. Sustainability certificates are traded by an independent issuing body.</p> <p>GHG data can be collected, documented and managed separately.</p>	<ul style="list-style-type: none"> <li>• The establishment of an independent issuing body is required to ensure credibility of the system.</li> <li>• Auditing of the issuing body and/or any other traders of sustainable certificates is recommended.</li> </ul>

Source: IPIECA (2010)

Under a mass balance approach, operators are able to be certified but handle/process uncertified products. For example, under the mass balance system of the Forest Stewardship Council (2010), a sawmill could process both certified and uncertified wood and sell sawdust that was labelled FSC mixed. In the case of smallholder participation in bioenergy value chains, processors can still purchase from uncertified smallholders as long as they track the quantity of uncertified vs. certified supply and resulting processed products. Then a company is able to sell the quantity of certified fuel into markets requiring certification, and sell the uncertified percentage of fuel to other buyers (RSPO 2011).

Each of the certification schemes explored in the case studies includes mass balance

as one of the chain of custody systems that is permitted to achieve certification. RSPO currently allows all three approaches, but provides specific guidance and requirements depending on the chain of custody chosen. As discussed in the Thai case, the current premium for RSPO certified palm oil is low. This is in part due to the fact that RSPO has created two different trading platforms – one to handle mass balance and segregated RSPO certified product, and one to handle book and claim certified chain of custody members. Both systems are not only trading platforms, but also a way to enhance transparency and reduce the risk of double counting of certified volumes. Under the current system, there is an added premium for segregated or identity preserved certified palm oil; which may also be contributing to the lower average GreenPalm price. Segregated chain of custody claims are still permitted to contain up to 5 percent of uncertified product (RSPO 2011).

RSPO is the longest established of the three schemes in this study and presents interesting lessons for the other two schemes that are just starting to certify producers. For example, when looking at the Thai case, all of the mills included in this study purchase more than 5 percent of their feedstock from smallholders. This means that they have a couple of options if they are interested in pursuing certification: 1) not to certify smallholder supply and pursue a mass balance or book and claim chain of custody approach and receive a lower premium in the market, or 2) certify smallholder supply to reach at least 95 percent of supply, pursue a segregated chain of custody approach, and receive a higher premium in the market; or 3) a combination of the options listed above whereby at least a percentage of smallholders are certified and either mass balance, book and claim, or a segregated chain of custody is pursued. In theory, a higher premium should cover the additional costs and system to certify smallholders, but as discussed in the Thai case, this remains to be demonstrated. In function, this could be a way to add a “social premium” for value chains that certify their inclusion of smallholders.

Both RSB and the ISCC have just operationalised their schemes over the last year, so it is too early to tell if there will be a difference between segregated versus mass balance certified chain of custody products. Neither scheme allows for book and claim as a chain of custody, which may help to maintain a higher premium, as more operators become certified.

It is important to differentiate between the concepts of inclusion in a value chain and inclusion in certification. A mass balance chain of custody system can facilitate both. For example, in the Mali case study, a mass balance chain of custody approach would allow MBSA to make increasing percentage claims as they pursued a staged certification of smallholders. This would give them the flexibility to proceed with certifying smallholders as they were able and/or smallholders were ready and interested. Alternatively, as shown in the Peru case, mass balance can act as a disincentive for certifying smallholders, since they can still be included in the supply chain if there is a domestic market or other market willing to purchase less than 100 percent certified ethanol. This distinction is at the crux of this report, in determining how certification impacts smallholders’ participation in both global value chains and certification.

## Market Access

Only certain markets, such as the European Union and the United States have regulations requiring that specific sustainability requirements are met for both imported and domestically produced bioenergy. Given the growing markets in Asia and Latin America (where most bioenergy feedstock is produced), there will be many market alternatives for producers looking to export, or supply domestically, uncertified bioenergy. According to the IEA's World Energy Outlook (2011): "Non-OECD countries account for 90 percent of population growth, 70 percent of the increase in economic output, and 90 percent of energy demand growth over the period from 2010 – 2035".

As illustrated in the case study in Peru, there is currently little incentive for Caña Brava to certify smallholders as, even if market access to Europe becomes an issue<sup>102</sup>, they can still sell the uncertified ethanol into the Peruvian market<sup>103</sup>. Similarly, in Thailand, since production costs are already higher than Malaysian or Indonesian produced palm oil, 95 percent of Thai produced palm oil is consumed domestically (Prakarn 2011). Therefore, there is little incentive to become certified to access foreign markets, unless existing or new customers require it. A few mills interviewed in the case study did state that they were receiving increasing pressure from their customers to become certified. If this trend continues, there could be greater incentive to pursue certification for smallholders. In the case of Mali, all of MBSA's production is currently sold locally although they have stated that they are exploring future potential to access the European market and to attract large multinational corporate customers that may demand certification, such as the airline industry. Therefore, large-scale consumers/companies can provide greater incentive to processors to not only pursue certification, but also to incorporate smallholders.

## Price Premium – For Quality Not Necessarily Certification

One of the main justifications for involving smallholders in certification is the potential to improve income generation through obtaining a price premium as a result of the certified product (Barrett 2010). As discussed in the literature review, the price premium is determined by demand for the certified product, often driven by consumers in developed countries who are willing to pay a premium for goods that meet certain key environmental and social criteria. However, if there is no demand, there is no premium. Demand can be driven through consumers or through regulation/policy discussed in the previous section on market access. As introduced in the literature review, bioenergy is different from other agriculture and forestry certified products in relation to consumers' *willingness to pay*<sup>104</sup>

<sup>102</sup> Under ISCC current requirements, Caña Brava could continue to source part of its supply from uncertified smallholders while maintaining the ISCC certification under a mass balance approach, and sell non-certified feedstock into the Peruvian market or other markets that do not require certified ethanol.

<sup>103</sup> Although this could change if Peru adopts sustainability criteria into their domestic legislation.

<sup>104</sup> *Willingness to pay* refers to the maximum amount a person would be willing to pay, sacrifice or exchange in order to receive a good or to avoid something undesired, such as negative externalities.



for sustainable bioenergy. Consumers will be even less likely to pay a premium for fuel than they are for forest products, which research has shown there is only a niche market for (Anderson and Hansen 2004). For example, as illustrated in Bomb *et al.* 2007, (pg.2265): “The experience in Germany and the United Kingdom shows that most consumers only purchase bioethanol and biodiesel if they are price competitive with petrol and diesel. The environmental reasons for purchasing biofuels are simply overshadowed by price and availability”. Based on this experience, it seems likely that consumers will be even less willing to pay an even higher price for certified ethanol or biodiesel, and then once again even less for an *added* premium for certified biofuel from smallholders.

The potential price premium varied among the case studies in relation to the feedstock, end-product, and market. For example, in Thailand the mills involved in the GIZ project are paying a price premium to smallholders based on quality, rather than certification, and the current price premium for RSPO certified oil would not be enough to cover smallholders’ full costs of certification. The mills in Thailand have undergone certification not necessarily to obtain a better price, but to access external markets/customers. At the same time, RSPO is not currently included as an approved certification scheme to meet the European Union’s Renewable Energy Directive, which could further drive down demand and any price premium. The recent global economic crisis has also impacted demand for certified products overall (Laurance *et al.* 2010). Currently, only 50-60 percent of certified palm oil is being purchased, which means that the other 40-50 percent is being sold at the same price as uncertified palm oil. However, demand could rise in the coming years with the Netherlands — Europe’s largest trader of palm oil — announcing that it will only source sustainable palm oil by 2015, a commitment also pledged by Unilever, Walmart, and several other major companies<sup>105</sup>. Therefore mills may have a higher likelihood of receiving a price premium by engaging directly with large buyers committed to sustainability.

Conversely, certified ethanol is currently achieving a price premium varying between US\$10 to US\$20 per m<sup>3</sup><sup>106</sup>, above the Flat T2 price in the Rotterdam index. This price premium (and the German legislation requiring certification on imported biofuels, in line with the European Union Directive) was largely the driver for Caña Brava to seek ISCC certification in the Peru case, but it remains to be seen how the price premium will be transferred to smallholders if they become certified. Additionally, Caña Brava is applying a price premium based on residual sugar, similar to the Thai case, thus offering a better price for a higher quality/higher yield product. Therefore, at this point, smallholders are able to access a price premium for higher quality, rather than certification. There are also concerns regarding the sustainability of the current premium for certified ethanol, mainly in relation to the European Union RED. Under the legislation, uncertified imported biofuel is not eligible to contribute to each country’s mandated biofuels’ targets (thus

<sup>105</sup> ‘Sales of RSPO certified palm oil surge 225 percent, 10 January 2011’, [http://news.mongabay.com/2011/0109-rspo\\_sales.html](http://news.mongabay.com/2011/0109-rspo_sales.html)

<sup>106</sup> ISCC even reports price premiums up to US\$70-100 per tonne of ISCC certified ethanol (corresponding with US\$55-80 per m<sup>3</sup>).

losing any premium). However, there is considerable variability with how countries are translating the RED into national legislation. “Given that some countries, such as Italy, are expected to be initially relatively relaxed about implementing the RED whereas others, such as Germany, will be strictly adhering to it, two-tier markets are expected to emerge for certified and non-certified material” (Yeo 2010).

## KEY DETERMINANTS OF SUCCESSFUL BUSINESS MODELS AND IMPACT ON CERTIFICATION

This paper has explored how to foster smallholder inclusion in global value chains and what impact certification has on the opportunities and/or challenges for inclusion. As discussed in the literature review, different types of business models will present varying challenges and opportunities for smallholders and purchasers based on the specific context of tenure, policy, history, and biophysical and demographic considerations (Vermeulen and Cotula 2010). This idea is reinforced through the case studies which illustrate that the single most important factor in the success of the business model is the negotiating power of smallholders. Additionally, as presented in Table 8, the negotiating position is largely determined by who is driving both the type of business model and certification process, and what objective they are seeking to achieve. This is further reinforced in the case studies where in each case the drivers for involving smallholders depended both on domestic and external market conditions, and on the engagement of external actors to support smallholders involvement.

Table 8

### Typical Organization of Smallholder Production

TYPE	DRIVER	OBJECTIVE
Producer-driven	Small-scale producers themselves	<ul style="list-style-type: none"> <li>• new markets</li> <li>• higher market price</li> <li>• stabilise market position</li> </ul>
	Large farmers	<ul style="list-style-type: none"> <li>• extra supply volumes</li> </ul>
Buyer-driven	Processors Exporters Retailers	<ul style="list-style-type: none"> <li>• assure supply</li> </ul>
Intermediary-driven	Traders, wholesalers and other traditional market actors	<ul style="list-style-type: none"> <li>• supply more discerning customers</li> </ul>
	NGOs and other support agencies	<ul style="list-style-type: none"> <li>• make markets work for the poor</li> </ul>
	National and local governments eg via “Dragon Head” companies in China	<ul style="list-style-type: none"> <li>• regional development</li> </ul>

Source: da Silva et al. (2009)

**Negotiating position:** As introduced in the literature review, the negotiating position of smallholders is the most important factor in the execution of a successful inclusive business model. The negotiating position can be affected by the policy environment, the security of local land tenure, feedstock supply and demand, and the organization of farmers into some type of group, formalized or unformalized. The three case studies illustrate the importance of the negotiating position and the role that different factors can play. For example, Thai smallholders are in a unique negotiating position given the current overcapacity in

processing mills and the reliance of the mills on smallholders for supply. This has resulted in a relatively strong negotiating position and maintenance of independence for Thai smallholders who prefer the flexibility to sell to whichever mill pays the highest price at a given time. However, this has implications for both the potential for certification and FFB quality, which will be discussed further in the following section on creating shared value.

In Peru, the farmers negotiating position is still weak as Caña Brava is not dependant on smallholders for feedstock supply. This contributed in part to the traditional contract farming model that has been adopted. However, with the growth of other sugar-cane/ethanol facilities in the region, smallholders negotiating position may grow both in terms of negotiating of the contract and to which mill they will supply. The multilayer structure in the Mali Biocarburant model provides institutional and technical support to smallholders. However, the negotiating position is still somewhat weak given that the Union (ULSCPP) only holds a 20 percent equity stake in the company and MBSA also sources jatropha from its own plantation. Another factor affecting the negotiating position of the smallholders in the Mali example is their stage of production and participation in the venture. Unlike the Thai example with palm oil, or the case of sugar cane in Peru, jatropha has yet to be proven on a commercial scale and MBSA and the multilayer structure for smallholders has only been possible through significant donor support.

**Shared economic interest:** It is important both for the long-term sustainability of the business model and in pursuing certification that the reason for working together (company and smallholders) is for a genuine economic interest (in addition to any other social or environmental goals). For example, in Thailand, companies and smallholders have a genuine interest in working together to achieve higher quality FFB and thus income. However, the independent smallholder model presents challenges to achieve certification as the RSPO is designed now. Under the RSPO, independent or scheme certification is possible for smallholders but the costs and who will pay the costs under each scenario vary significantly. For example, under independent certification, smallholders would still need to form a group and establish a management structure in order to pursue and manage the certification process. This would mean that the certification is owned jointly by the group and that the feedstock is sold jointly as a group (pending review of this issue by RSPO)<sup>107</sup>. This could effectively reduce the current independence and flexibility of Thai smallholders. Under the scheme scenario, certification would likely be driven by mills who will require certified FFB in order to become certified themselves. The representatives of the mills interviewed in Thailand stated that they would be willing to support smallholder certification, only if as a result smallholders entered into an agreement that would require them to sell their feedstock to the mill supporting their certification.

**107** RSPO Standard for Group Certification (August 2010, pg.15) is still unclear whether RSPO will require compulsory group marketing. A positive of group marketing is that it can provide better access to markets and can reduce confusion (or deceit) from traders on chain of custody. The negative of group marketing is that it could mean that independent growers are now obliged to sell to single holding entities (i.e. the group), effectively making independent smallholders part of a “scheme”.

Therefore, both certification scenarios available under the RSPO for smallholders, would affect the current business model of Thai smallholders, effectively reducing their independence, but potentially providing other benefits. However, unless the benefits to smallholders are clear, there will be little motivation for smallholders to change their current business model. The GIZ project has been successful in analysing what benefits are of interest to smallholders in order to convince them to undergo certification. However, in the absence of a donor actor like GIZ who has absorbed many of the costs, it is unclear that smallholders or mills would see an economic benefit in working together to achieve certification.

In Peru, the case study presents a classic example of contract farming in that the smallholders have agreed to supply Caña Brava with a specified quantity and quality for a given amount of time at a price tied to the market price for ethanol. In exchange, Caña Brava has agreed to provide capacity building, access to up-front inputs, and facilitate access to credit. For now, both parties see joint value in this relationship; but certification and who will cover the costs will remain a challenge. Since there is little current incentive for Caña Brava to certify smallholders, and no means for the smallholders involved to pursue certification on their own, there is little shared economic interest in pursuing certification at this time. However, as additional smallholders join those currently supplying to Caña Brava, there may be greater incentive to pursue certification, given the potential increase in income from the current and projected price premium for certified ethanol.

In Mali, MBSA's experience is still in the early stages and it is difficult to assess how sustainable the business model will be without donor support. To date the company and smallholders have seen a shared economic interest in intercropping jatropha with food production as a way to diversify production and access new markets. MBSA faces challenges in working with smallholders given the lack of sufficient infrastructure (access to water) and agronomic challenges with how to deal with local pests (termites). The smallholders are motivated to continue with jatropha even in the face of these challenges and low income to date, due in part to intercropping with food (and the potential for other income streams) and due to the technical support provided by the MBSA foundation.

**Access to information:** Another key factor expressed in all three case studies is the importance of access to information. All types of information are important for smallholders in determining both their willingness to participate in the business model and on their level of understanding of certification and what certification would entail. One aspect of access to information that is important in all three cases is the level of trust that smallholders have in the information that they are receiving. As stated in a recent World Bank study on how to build competitiveness in agriculture, (Webber and Labaste 2010, pg.116): "One aspect of creating trust is ensuring that proper information channels are available and being used; these will give small and medium enterprises and producers confidence that they will obtain fair rewards for the costs of implementing new processes to meet standards". The participation of a fair broker or external actor has facilitated greater trust and acceptance of information in each of the case studies.

Smallholders participating in the Mali Biocarburant case benefit from the organizational and management structure facilitated by the cooperatives at one level; then the Union which further organizes the cooperatives, and the Foundation which facilitates and manages the capacity building activities. However, many of the sentiments shared by interviewees reflected that they did not feel totally comfortable with the communication between MBSA and the Unions. While MBSA has stated its desire to pursue certification, it has not yet discussed this with smallholders, as they prefer to assess if it will be feasible before raising expectations or confusion with smallholders. Therefore, it remains unclear how MBSA will communicate the requirements and structure of the certification process. The participation of the Foundation will greatly facilitate communication and management of the certification process if MBSA decides to pursue it.

In the Thai case, smallholders' main desire in working more closely with the mills (through the GIZ project) is a desire for greater access to information and expertise. Farmers with lower expertise and/or in regions with fewer extension services are particularly motivated by the access to information. The participation of GIZ has also helped to facilitate trust in the project information. Farmers have been very positive about the simple presentation of the information in the field manuals provided through the GIZ project and eager for further materials. One of the key areas to address following the GIZ project is how smallholders and mills will consider information exchanged, and whether they will maintain the same level of trust.

In Peru, smallholders' perception of the banana farmers' experience nearby has greatly influenced their understanding of what might be possible in their own case. The participation of an organization providing advisory services, such as SNV, with considerable experience in inclusive business models, as a fair broker and advocate for smallholders will further smallholders' access to information. Achieving certification will also conceivably be easier for the smallholders in the contract farming case because of their contractual relationship with Caña Brava and the management structure that Caña Brava has already established to facilitate the certification and organization of smallholders. Caña Brava has not communicated with smallholders about the ISCC requirements, as they are still in the first stages of incorporating smallholders into their supply chain. As the capacity and experience increase, Caña Brava will have established communication and management structures to facilitate information exchange with smallholders.

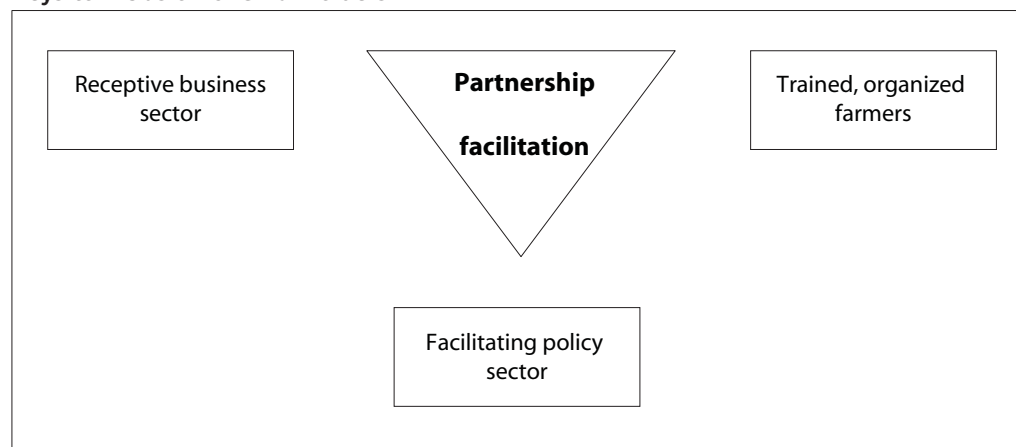
## HOW TO FOSTER SMALLHOLDER INCLUSION – ROLES AND RECOMMENDATIONS

In assessing the challenges for smallholders in both participation in global value chains and certification, it is important to remember the objective of improving smallholder livelihoods. The three case studies presented in this report have shown that certification has not lead to smallholder exclusion from value chains/markets. However, neither is certification presenting additional benefits, which the smallholders involved in the three case studies are not already obtaining through participation in the value chain. Therefore, in defining recommendations, the focus is on enhancing the benefits that smallholders can gain from participation in global value chains and certification through reducing the barriers to smallholder inclusion in both. The challenges for smallholder inclusion in global bioenergy value chains and certification explored in this study require intervention at various levels of governance. The success of intervention will depend on the ability of actors to address these challenges jointly and through collaboration to define the role of each institution.

*“Progress here depends upon addressing these underlying problems by reconsidering state policy and plantation business models, together with agribusiness investment patterns and donor policy, and supporting the development of new governance and accountability relations in remote rural areas. These issues are largely beyond the discussion of just [certification] principles and criteria” (McCarthy et al. 2011).*

Figure 7

### Keys to Inclusion of Smallholders



Source: Berdegue et al. 2008

Under current conditions, there is little added incentive for smallholders in bioenergy feedstocks to become certified given their ability to maintain involvement in value chains and that they are already receiving the benefits espoused by certification (i.e. market access, price premium, capacity building, access to credit/inputs). Future exclusion will depend on the growing demand from emerging markets (especially in Asia) with no sustainability

requirements for biofuels, and whether Europe and the United States maintain their blending mandates and sourcing criteria. If the goal is improving smallholder livelihoods, achieving certification under current market conditions will not necessarily provide enough additional benefits to outweigh the costs. As certification schemes are currently designed, smallholders will still be able to participate in global value chains under a mass balance chain of custody system. Literature on global value chain governance provides a useful framework to draw from in exploring and recommending ways to improve governance structures and networks to enhance smallholder inclusion (McCarthy *et al.* 2011; Gereffi, Humphrey and Sturgeon 2005; DuBois 2008; World Bank 2010).

Since it is unlikely that the general consumer will drive demand (creating markets) for certified bioenergy from smallholders, the market will have to be created through regulation or large corporate consumers such as oil companies. As climate change negotiations progress and a new climate regime is formulated for post-Kyoto, provision for smallholder inclusion in climate induced regulation on bioenergy should be addressed. One option could be to establish niche markets through regulation, to mandate that specific vehicle fleets (e.g. vehicles for agriculture or public buses) transition to biofuels, with an added incentive for biofuels from smallholders (Bomb *et al.* 2007).

### Farmer Organizations

Farmer organization was identified in the literature review as a key challenge in incorporating smallholders into global supply chains, but if achieved, also an important element of a successful inclusive business model. Two areas identified in the literature that can lead to inefficiency and decline in farmer organizations are inadequate management skills and corruption (Poole & Frece 2010). In order to overcome these challenges, extension services and capacity building are necessary from a range of actors (NGOs, government, private sector) and need to be ensured for the medium to longer term to deliver maximum potential for success. It is also important that from the outset, the quality of the organization is a key component of the design. Often farmer organizations are quickly put together, without consideration or the time to truly create quality functioning organizations. Farmer organizations themselves can increase their likelihood for success by ensuring transparency both among other actors within the organization and with external companies or organizations. Part of this transparency can be met by implementing a shared record keeping system, a dispute resolution system, and conducting regular meetings to ensure information exchange.

In each of the case studies, farmer organization played a role in the ability of the company to engage with smallholders. In each of the cases, farmer organizations were supported by different entities. In the Thai case, organization was facilitated by both the mills and GIZ; in the Mali case by the MBSA foundation (through the company) and by the Union, and in Peru, directly by the company but with public sector support through the regional biofuel roundtable. One of the key messages from the literature is on the importance of not just farmer organization, but on the quality of the organization. The



engagement of both external and internal champions to help navigate the formation and continued operation of the organization, and ensuring that key quality indicators are measured and addressed, have been shown to improve the potential for success.

## Public Sector

The public sector has an important complimentary role to play in ensuring that smallholders are included both in global bioenergy value chains and in certification. One of the key challenges identified in the literature and in each of the case studies is the need for capacity building in order for smallholders to be able to meet quality, environmental, and social criteria required by larger processors and/or global markets. In each of the case studies, the capacity building is currently being provided by either the private sector or through donor/NGO support. However, there is a key role for the public sector to play in providing agricultural extension services to increase the competitiveness of agricultural production while meeting rural development goals. The government, in combination with the private sector, can provide key infrastructure to enhance extension services that are not often possible from the private sector alone, for example, combining training on harvesting with improved roads for mechanical harvesters to access feedstock.

For example, in the Thai case, the Government could expand agricultural extension under the Committee on Biofuel Development and Promotion to target bioenergy feedstocks including information on yield improvements, quality control, and environmental and social criteria required by foreign markets (e.g. carbon balance, biodiversity conservation, documentation, etc.). They could combine this with providing training for farm labourers, as the lack of skilled labour in the oil palm sector is an issue in Thailand. In Peru, the Government could support rural infrastructure improvements to enable smallholders to meet sustainability requirements of certification (e.g. widen roads for mechanical harvesting and improve water permitting processes). Governments can also prioritize a modernization and more active role of government agencies, such as Spain has done with INIA<sup>108</sup>, and Brazil has done with EMBRAPA<sup>109</sup> to provide bioenergy research and extension services. In Mali, the Government could expand irrigation infrastructure or provide extension services on pest management under the umbrella of the Domestic Energy and Rural Access to Basic Services Project or the National *Jatropha* Plant Energy Development Programme.

Furthermore, a key role can be played by the public sector in facilitating access to adequate financing systems for smallholders. Access to credit is a critical issue for smallholders in making on-farm improvements to meet quality (yield) requirements and to meet eventual certification requirements. The public sector can help to create an enabling environment for smallholders to access credit through commercial banks, or can devise lending programmes targeted to smallholders through public lending institutions. For example, Agrobanco in the Peru case is providing access to credit for the smallholders

<sup>108</sup> INIA is the National Institute of Agricultural Innovation, with decentralized offices/experimental stations all over the country.

<sup>109</sup> EMBRAPA, Brazilian Agricultural Research Corporation, <http://www.embrapa.br/>.

involved with Caña Brava, and is a publicly financed institution targeting rural development opportunities. The negotiating position of smallholders was identified as a key factor in smallholders' participation in both the value chain and certification scheme. The public sector could provide support services to enhance smallholders' negotiating position, for example, through free legal assistance or through policies which may prioritize smallholder supply. In Brazil's Social Fuel Seal programme<sup>110</sup>, for instance, producers can only access a subsidy if they incorporate smallholders into their value chain. This type of incentive might also be tied to other sustainability criteria associated with bioenergy production, which could then be met through certification.

### Standards/Schemes

To date, none of the bioenergy schemes presented in this report have well utilized mechanisms for incorporating smallholders. The RSPO, which is the longest established scheme in bioenergy feedstocks, has established mechanisms for smallholder certification, but only a few smallholders have been certified, mainly due to the question of who bears the costs of certification and the existing mechanisms available (Cargill 2011; RSPO 2011). The new RSPO fund seeks to address this issue, but the details of how it will function are still unclear. Standards' language continues to be targeted towards large-scale plantation model producers and no standard currently includes explicit criteria for the inclusion of smallholders, in order to become certified. One recommendation for standards to foster inclusion of smallholders in certification, or at a minimum reduce the barriers, is to establish a fund to pay for smallholder certification, similar to what the RSPO is undertaking. The fund could be financed through a tax/fee to large-scale processors/producers/blenders that do not incorporate smallholders into their existing production/value chain (where smallholders are present<sup>111</sup>). The appropriate amount of the fee would need to be analysed based on estimated costs of certifying smallholders and certification demand ratio from large-scale producers vs. smallholders.

A second recommendation could be to add criteria to existing standards that would require a percentage of feedstock to come from smallholders where possible<sup>112</sup>; or the possibility for an additional premium under the certification scheme if a producer purchases a certain percentage from smallholders. For example, this could be a way to blend a Fairtrade type of model with existing bioenergy certification schemes where you could have RSPO Fairtrade or ISCC Fairtrade. This would provide a way for smallholder schemes/supply to be differentiated and compensated in the market. "[Standards] must strive to develop mechanisms such as market differentiation for smallholders and cross-subsidization (i.e. using a proportion of certification fees captured from large-scale

<sup>110</sup> Outlined previously on page 21 and 22.

<sup>111</sup> Identifying the existence of smallholders could be undertaken as part of an environmental and social impact assessment. If there are no farmers currently growing the crop of interest, but small land owners, a longer-term strategy for how to incorporate them could be a requirement of certification.

<sup>112</sup> *Ibid.*

producers to help finance smallholder participation) to ensure that no farmer is left behind in the quest towards sustainable biofuel production” (Lee *et al.*, 2011). However, given the discussion above regarding a price premium, an assessment of demand for smallholder certified bioenergy would first need to be undertaken. As indicated by Verdonk *et al.* 2007 (pg.3916), “A major weakness is Fairtrade’s dependency on conscious consumers paying a higher price, which severely limits the market size”. Alternatively, in the short term, standards could include criteria that ensure that where smallholders are included in a value chain, best practices are applied, such as is included in the Inter-American Development Bank’s Biofuels Scorecard<sup>113</sup>.

In the meantime, standards should provide ways for smallholders to continue to be included in global value chains without becoming certified, as is currently the case with mass balance chain of custody systems<sup>114</sup>, until criteria and mechanisms to foster smallholder certification can be established. The example of RSPO provides important lessons for how these mechanisms can function in practice, with the evidence of a segregated chain driving down the price of book and claim certified chains. This relationship could be explored in more detail to see how it could be adjusted to foster greater smallholder inclusion.

One recommendation that is often put forth in the literature and was demonstrated in the three case studies included here is to train a greater number of local auditors with expertise in bioenergy certification schemes. The schemes included in this study are aware of this challenge and its impact on costs for certification of smallholders and many of the schemes are holding local auditor training courses in an effort to reduce these costs in the longer term. With lower auditing costs, the income benefits for smallholders could be further enhanced.

## Private Sector

The private sector is often targeted as the actor primarily responsible for fostering smallholder inclusion as firms are the actor purchasing smallholder feedstock and with the closest relationship to individual smallholders. In each of the case studies presented in this report, the private sector is the actor playing the largest role in fostering smallholder inclusion (albeit with donor support in Mali and Thailand). The private sector actors presented in the case studies are largely incorporating smallholders not as a corporate social responsibility effort, but because it makes sense given the market and regulatory environments in which they are operating. Therefore, even without strong signals from the public sector or private voluntary standards to include smallholders, the private sector entities presented in the case studies have found ways to *create shared value*<sup>115</sup> by including

<sup>113</sup> See Local Grower Arrangements at [www.iadb.org/biofuelsscorecard](http://www.iadb.org/biofuelsscorecard)

<sup>114</sup> Chain of custody: link between the physical product and certification information. A concept where all relevant steps in the production chain have been inspected or certified as appropriate and where a system of tracking of certified products is in place. Biotechnology Journal, 2007, Vol 2, pp.1474-1480, doi 10.1002/biot.200700176.

<sup>115</sup> “Creating shared value involves value creation for business that simultaneously yields more profit and greater social impact, resulting in powerful transformations and opportunities for growth and innovation in both business and society. The concept of creating shared value

smallholders in their supply chain. Planned<sup>116</sup> or executed examples of creating shared value in the three case studies are included in the table below:

Table 9

**Examples of Creating Shared Value in Case Studies**

Case Study	Action Creating Shared Value	Benefit to Firm	Benefit to Smallholder
Thailand	Mills paying for training for palm oil cutters or providing skilled labourer to smallholders for harvesting oil palm, and subsequent transport to the mill	Mills ensure security of supply by ensuring the labourers they hire transport FFB to their mill, and ensure higher quality FFB through better (skilled) harvesting	Smallholders save on harvesting and transport costs and do not risk inability to harvest due to shortage in labour supply. Additional benefit in receiving quality price premium
Mali	Establishment of an independent Foundation	Foundation can receive donor support (in addition to support from the company) and can facilitate all capacity building, organization, and data collection with smallholders	Smallholders benefit from services from an entity whose full-time objective is to support them, and have an honest broker for facilitating communication with the company
Peru	Facilitating financing with Agrobanco for smallholder access to credit	Smallholders can access credit to make necessary upgrades, without the company having to absorb the financial costs	Smallholders interest rate and ability to access credit is improved to make necessary upgrades and apply adequate plantation management to increase yield/income

Source: Author, adapted from case studies

The case studies included in this report have provided examples of creating shared value, however a recent World Bank report (2010) has stated a lack of leadership in the private sector in facilitating smallholder engagement in global supply chains (palm specifically). This sentiment has been echoed in other studies addressing smallholder inclusion. “The potential of the private sector as a ‘partner in development’ is underutilized. Private sector initiatives can bring along economic benefits for smallholders plus technical capacity building” (Berdegue *et al.* 2008). Therefore, there is potential for private sector actors who increase engagement in this area to establish themselves as market leaders and gain first mover market share. One of the lessons learned from agriculture and forestry is that in identifying shared value, it can often mean having to travel further up the chain to identify areas of common interest. In bioenergy, it is likely that the interest in certified biofuel will mostly come from blending companies. Therefore, it is important for smallholder initiatives or even smaller processing mills to identify large multinationals that may be interested in entering a direct agreement, in exchange for greater transparency and/or guaranteed smallholder commitment, and in exchange the company would cover the costs of smallholder certification and capacity building.

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focuses on the connections between societal and economic progress, and has the potential to unleash the next wave of global growth and competitive advantage.” Porter and Kramer, Harvard Business Review Jan/Feb 2011.

**116** In the Thai case, the example was discussed with mills and smallholders and had not been implemented at the time of writing, but is supported by both parties.

### Donors/Multilateral Development Agencies/NGOs:

The topics of: 1) how to incorporate smallholders in global value chains, and 2) how smallholders can be incorporated into voluntary standards have been explored extensively over the last ten years as presented in the literature review. And yet, as evidenced in the three case studies, there is still a lack of information and data available on the *impact* of incorporating smallholders into the supply chain. The lack of data and adequate baseline studies have made it difficult to assess the impact of incorporating smallholders; specifically whether smallholders are not participating in value chains because of exclusion, out of choice, or due to lack of capacity (Donovan 2010; Seville *et al.* 2011; Berdegue *et al.* 2008). There is an abundance of studies advocating for how to ensure inclusion of smallholders in certification schemes (including this one) but less information on whether or not smallholders are actually benefitting from certification. Therefore, donor agencies can assist with data collection for both baseline and monitoring of bioenergy impacts on participation in global value chains, and the impact that certification may or may not be having on smallholders' livelihoods.

Donor agencies can also assist governments with capacity building, extension, and training to enhance yields, improve management structures, and serve as an honest broker between the government, private sector and smallholders. Additionally, donor agencies can improve data collection and monitoring of the effectiveness of capacity building and smallholder support programmes, and their sustainability post-donor intervention. It is important that capacity-building programmes and/ or support for smallholder inclusion in value chains and certification are done in cooperation with the private sector and the target markets for smallholder products. "Value chains cannot be built by outside agents but must be built around private sector initiative" (Berdegue *et al.* 2008). In the case studies of Mali and Thailand explored in this paper, there is considerable donor support, and while each of these projects has been initiated with the private sector as a close partner, it remains to be seen how sustainable they will be as donor support ends.

### Finance Institutions

Financial institutions, especially development banks that can absorb greater risk as part of their mandate, could provide incentives for projects to include smallholders, for example, by providing more favourable lending terms or offering technical assistance grants to borrowers incorporating smallholders. Many financial institutions currently see smallholders as too risky in terms of potential default, and that they could reduce the overall profitability of the bank. Approximately 33-39 billion dollars in agricultural investments will be needed to achieve the MDG targets by 2015 (Adesina 2009). The World Bank, African Development Bank, and IFAD are all increasing their investments in agriculture. However, the question remains on how to focus these investments to ensure the greatest impact on livelihoods, and one way to do that is to gear investments in agriculture to "the bottom of the pyramid" (World Bank 2007).

An option for financing institutions would be to devise new financing mechanisms

to facilitate smallholder inclusion, for example, designing technical assistance grants/programmes targeted towards smallholder inclusion and capacity building around certification. Additionally, financing institutions could create and expand specific financing facilities targeted towards smallholders. For example, the Inter-American Development Bank's Opportunities for the Majority<sup>117</sup> US\$250 million facility targeted to smallholder/rural poor populations. The programme includes favourable lending terms combined with technical assistance grants. Other strategies could include: 1) on-lending to local or regional banks with a stipulation that the financing has to be targeted towards smallholder inclusion, or 2) public-private partnerships where the public sector provides a risk guarantee to a private sector entity for financing of smallholder loans and/or working capital. Other institutions like IFAD, whose primary client/target are smallholders can also play a key role in partnering with other institutions to scale up successful projects.

## CONCLUSION

There is no doubt about the importance of ensuring that smallholders can continue to access more lucrative markets. As it is currently designed and implemented, bioenergy certification is not hindering smallholder involvement in bioenergy value chains. Even in cases where the price premium is significant, there is still little incentive to pursue certification of smallholders. However, these conditions could change with growing demand for certified bioenergy, increased farmer organization, and/or new mechanisms adopted by voluntary standards to reduce costs and enhance the benefits. The recommendations provided herein have aimed to provide ways to ensure that the conditions to enhance smallholder inclusion in global bioenergy value chains and certification are addressed now, to maximize livelihood benefits and to ensure that smallholders can participate in global value chains with changing market conditions in the future.

<sup>117</sup> Inter-American Development Bank, Opportunities for the Majority, <http://www.iadb.org/en/topics/opportunities-for-the-majority/how-to-qualify-for-financing,1469.html>



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# ANNEXES

## Annex 1: Condiciones del crédito otorgado por AgroBanco

1. Objeto: Financiamiento hasta por S/.3'500,000; para mantenimiento e instalación de 1,000 Has. de CAÑA DE AZUCAR en el Valle del Chira, Departamento de Piura.
2. Fecha del programa: El programa tiene fecha de término de aprobación, desembolso a los sujetos de crédito y término del programa hasta el mes de Agosto del 2010.
3. Sujetos de Créditos: 400 Micro, pequeños y medianos productores debidamente calificados y proveedores futuros de caña de la Empresa Caña Brava.
4. Producto agropecuario: Caña de Azúcar , con rendimiento promedio de 140 TM por HA.
5. Área a Financiar: De 2 a 5 HAS.
6. Ubicación geográfica : El ámbito geográfico abarca el Departamento de Piura.
7. Tasa de Interés: Tasa Efectiva Anual (TEA) de 18%. Sin Comisión. La tasa de mora según tarifario.

## Annex 2: Copy of Contract between Smallholders and Cana Brava

**CONTRATO DE COMPRAVENTA DE CAÑA DE AZÚCAR**

Conste por el presente documento, que se extiende por duplicado, el **Contrato de Compraventa de Caña de Azúcar** que suscriben, de una parte, la empresa **SUCROALCOLERA DEL CHIRA S.A.** con RUC Nº 20525536738, con domicilio en Carretera Ignacio Escudero - Sullana km. 6, distrito de Ignacio Escudero, Sullana, Piura, debidamente representada por su Gerente General, Sr. **JUAN GONZALO JAVIER LLOSA ISENRIK** identificado con DNI Nº 08255347 según poder inscrito en la Partida Registral Nº 11032439 del Registro de Personas Jurídicas de Piura, a la cual en lo sucesivo se la denominará **LA COMPRADORA** y, de la otra parte, la empresa ..... con RUC Nº ..... con domicilio en ..... debidamente representada por su Gerente ..... identificado con DNI Nº ..... según poder inscrito en la Partida Registral Nº ..... del Registro de Personas Jurídicas de Sullana, a la cual en lo sucesivo se la denominará **LA VENDEDORA**, en los términos y condiciones siguientes:

**PRIMERA: DE LAS PARTES**

**LA COMPRADORA** es una persona jurídica de derecho privado dedicada a la industrialización de Caña de Azúcar.

**LA COMPRADORA** declara que cuenta con una planta para el acopio de la caña de azúcar, la misma que se encuentra ubicada en Carretera Ignacio Escudero - Sullana km. 6, distrito de Ignacio Escudero, Sullana, Piura, (en adelante, **LA PLANTA**) cuyo local declara conocer **LA VENDEDORA**.

**LA VENDEDORA** es una persona jurídica dedicada al cultivo de caña de azúcar.

**LA VENDEDORA** declara contar con legítimo derecho para explotar económicamente un área de ..... (.....) hectáreas, ubicada en la zona de ..... distrito de ..... provincia de ..... departamento de Piura (en adelante, **AREA DE CULTIVO**), sobre el cual se desarrollará el cultivo de caña de azúcar, según las especificaciones técnicas contenidas en el presente contrato.

Asimismo, **LA VENDEDORA** declara que entre el **AREA DE CULTIVO** y **LA PLANTA** de **LA COMPRADORA** existe una distancia no mayor de .....Kms., condición que ambas partes reconocen como esencial para la celebración del presente contrato.

**SEGUNDA: OBJETO DEL CONTRATO**

Por el presente documento, **LA VENDEDORA** se obliga a transferir en propiedad a **LA COMPRADORA** y a su vez **LA COMPRADORA** se obliga a adquirir la producción de caña de azúcar en pie que se obtenga dentro del **AREA DE CULTIVO**, correspondiente a las primeras 05 (cinco) cosechas que se generen a partir del año 2011, calculada en una cantidad



aproximada de 140 TM (toneladas métricas) por cosecha anual, conforme al cronograma establecido en la cláusula quinta.

### **TERCERA: DURACIÓN DEL CONTRATO**

El presente contrato tendrá un plazo de duración equivalente a 05 (cinco) cosechas, contadas a partir de la suscripción del presente contrato.

Este contrato podrá ser prorrogado por igual o distinto periodo, previo acuerdo de las partes, el cual deberá constar necesariamente por escrito.

### **CUARTA: PRECIO Y OPORTUNIDAD DE PAGO**

El precio a pagarse por TM de caña de azúcar, será pactado por las partes 15 días antes de la cosecha, de acuerdo al procedimiento indicado en el anexo 1 que forma parte del presente contrato.

Para efectos del pago a que se refiere la cláusula anterior, **LA COMPRADORA** realizará liquidaciones semanales en función del peso de caña de azúcar que se determine en la balanza de **LA COMPRADORA**. Dichas liquidaciones se entregarán a la **VENDEDORA** el día lunes de cada semana, procediendo la **COMPRADORA** a realizar el pago del precio correspondiente, el día viernes de la misma semana, previa presentación por parte de **LA VENDEDORA** de la factura correspondiente.

### **QUINTA: DE LAS OBLIGACIONES DE LAS PARTES**

**LA VENDEDORA** asume las siguientes obligaciones:

- 5.1. **LA VENDEDORA** declara conocer que la cosecha de la caña de azúcar, que realizará **LA COMPRADORA** será manual.
- 5.2. **LA VENDEDORA** se obliga a eliminar con una anticipación no menor de 15 días al inicio de la cosecha, los canales o bordos o cualquier otro obstáculo que impidan el paso de los tractores de transporte, debiendo quedar el AREA DE CULTIVO, a satisfacción de **LA COMPRADORA**.
- 5.3. **LA VENDEDORA** deberá tener habilitados antes de la cosecha, los caminos internos, puentes y demás pasos o accesos a satisfacción de **LA COMPRADORA**.
- 5.4. **LA VENDEDORA** está obligada a cumplir y respetar las dosis y periodos establecidos en el uso de agroquímicos (insecticidas, funguicidas, etc.), con la finalidad de evitar la presencia de residuos de productos químicos que ocasione perjuicio a la caña de azúcar.
- 5.5. **LA VENDEDORA** deberá hacer uso de insectos benéficos según instrucciones impartidas por **LA COMPRADORA**.
- 5.6. Dar inicio al proceso de maduración de la caña 60 días antes de la cosecha (Agoste), bajo la dirección y supervisión de **LA COMPRADORA**, responsabilizándose que al momento de la cosecha el campo esté totalmente seco.

- 5.7. Entregar a **LA COMPRADORA**, la cantidad de .....  
(.....) TM de caña de azúcar por cosecha, aproximadamente, de acuerdo al siguiente cronograma:

**Año 2011 – 2015**  
**Caña de Azúcar**

Mes	Año	TM
	2011	
	2012	
	2013	
	2014	
	2015	
<b>TOTAL</b>		

- 5.6. Cumplir con las especificaciones técnicas y/o instrucciones que imparta **LA COMPRADORA** durante la vigencia del presente contrato, referidas a la preparación del terreno, surcos, irrigación, tratamiento de aguas, uso de agroquímicos e insectos benéficos u otros; ante el incumplimiento de las instrucciones dadas por **LA COMPRADORA**, ésta podrá hacer valer su derecho previsto en la cláusula séptima del presente contrato.
- 5.7. Permitir a **LA COMPRADORA** inspeccionar el área de cultivo materia del presente contrato pudiendo realizar inspecciones sin previo aviso.
- 5.8. **LA VENDEDORA** asume todos los costos de contratación de personal, pago de beneficios sociales necesario para la ejecución del presente contrato y, cualquier otro concepto que pueda incidir sobre el costo de mantenimiento de los cultivos materia del presente contrato, sin que **LA COMPRADORA** tenga responsabilidad alguna derivada de dicha contratación.

Por su parte, **LA COMPRADORA** asume las siguientes obligaciones:

- 5.9. Adquirir el cultivo de caña de azúcar en pie de **LA VENDEDORA** siempre y cuando el área de cultivo esté a una distancia no mayor de .....Kms. del centro de acopio.
- 5.10. Pagar el precio de la caña de azúcar en pie, en la oportunidad prevista en la cláusula cuarta.
- 5.11. Vender a precio de costo semilla de caña de azúcar e insectos controladores biológicos a **LA VENDEDORA**, en la cantidad necesaria por hectárea, debiendo cancelar a **LA COMPRADORA** este costo al finalizar la primera cosecha.
- 5.12. A solicitud de **LA VENDEDORA**, **LA COMPRADORA** otorgará información técnica gratuita de caña de azúcar.

**SEXTA: DEL PESAJE**

Las partes establecen que la producción de caña de azúcar deberá ser pesada en la balanza electrónica de **LA COMPRADORA**, ubicada en **LA PLANTA**.

El remanente de caña cosechada que no complete la capacidad de una **unidad de carga**, será completada con cosecha de caña de un **AREA DE CULTIVO** cercana, y su peso será proporcional al porcentaje que ocupe en la unidad de carga, estableciéndose este porcentaje en campo por el Supervisor de cosecha asignado.

En el eventual caso que se necesite realizar un viaje adicional para completar la totalidad de caña cosechada, este costo será asumido por **LA VENDEDORA**.

**SEPTIMA: RESOLUCIÓN**

En caso **LA VENDEDORA** incumpla con las especificaciones técnicas o las obligaciones establecidas en las cláusulas quinta y sexta, respectivamente, **LA COMPRADORA** se reserva el derecho a declarar resuelto en forma automática y de pleno derecho el presente Contrato, sin perjuicio de las acciones que correspondan por concepto de indemnización de daños y perjuicios.

**OCTAVA: CLÁUSULA ARBITRAL**

Todo litigio, controversia, desavenencia o reclamación resultante, relacionada o derivada de este acto jurídico o que guarde relación con él, incluidas las relativas a su validez, eficacia o terminación incluso las del convenio arbitral, serán resueltas mediante arbitraje, a cargo de un árbitro único, cuyo laudo será definitivo e inapelable, de conformidad con los reglamentos y el Estatuto de Centro de Conciliación y Arbitraje Nacional e Internacional de la Cámara de Comercio de Piura, a cuyas normas, administración y decisión se someten las partes en forma incondicional, declarando conocerlas y aceptarlas en su integridad.

A solicitud de cualquiera de las partes este contrato podrá elevarse a Escritura Pública e inscribirse en los Registros Públicos.

En señal de conformidad, se suscribe el presente documento por duplicado, en la ciudad de Sullana, Departamento de Piura, el .... de ..... del año dos mil diez.

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**LA COMPRADORA**


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**LA VENDEDORA**



### Annex 3: Relación de documentos técnicos y de referencias del ISCC

Documentos técnicos:

- 201 Sistema Básico (funciones y procesos básicos del sistema ISCC).
- 202 Requisitos de sostenibilidad – Requisitos para la producción de biomasa (requisitos de sostenibilidad que especifiquen las normas para los cultivos).
- 202-01 Lista para la verificación de los requisitos para la producción de Biomasa.
- 203 Requisitos de trazabilidad (requisitos para la trazabilidad de la biomasa e información que se debe declarar).
- 203-01 Lista para la verificación del control de los requisitos de la trazabilidad.
- 204 Metodología del cálculo del balance de masa (Segregación física y Balances de masa).
- 205 Metodología de cálculo de emisiones de GEI (Cálculo y Verificación de las emisiones de GEI, y Reducción de GEI en comparación con el uso de energía fósil).
- 206 Reglamento para emitir evidencia del cumplimiento de los requisitos de sostenibilidad (requisitos sobre la emisión de evidencias de conformidad).
- 207 Gestión de Riesgos (requisitos de una evaluación de riesgos y las consecuencias que se deducen).
- 208 Directrices para utilizar la marca ISCC (reglas relativas a los derechos y deberes relacionados con el uso de la marca ISCC).
- 256 Certificación de grupos.

Documentos de referencia que sustentan el proceso de certificación:

- 401 DIRECTIVA 2009/28/CE del Parlamento y Consejo Europeo de 23 de abril de 2009, relativa al fomento del uso de la energía procedente de fuentes renovables y por la que modifican y se derogan las Directivas 2001/77/CE y 2003/30/CE.
- 402 Ordenanza sobre los requisitos perteneciente a la producción sostenible de biocombustibles (Biokraftstoff-Nachhaltigkeitsverordnung - Biokraft-NachV).
- 403 Ordenanza sobre los requisitos relativos al desarrollo sostenible en favor de la producción de biolíquidos para la producción de electricidad (biomasse-strom-Nachhaltigkeitsverordnung - BioSt-NachV).

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Over the last few years, there has been growing interest in bioenergy, due in part to its potential for rural development and climate change mitigation, and as an energy alternative given the high price of oil. At the same time, concerns regarding the potential negative impacts of bioenergy have also grown and have led to the development of a range of voluntary standards aimed at ensuring the sustainability of bioenergy production. While one of the goals of voluntary standards is to enhance the sustainability of bioenergy production -including from a socioeconomic perspective - they might also present a disincentive for incorporating smallholders in value chains, due to greater cost and complexity. This report includes three case studies examining the opportunities and challenges for smallholders presented by bioenergy as a new type of value chain, and by bioenergy certification schemes.



The three case studies include three different feedstocks, three different certification schemes, and three different business models for incorporating smallholders into the value chain. Key findings from each of the studies are presented highlighting the challenges and opportunities presented by both the incorporation of smallholders into the value chain and the specific challenges and opportunities associated with certification. The objective of enhancing smallholder inclusion in both value chains and certification is to improve smallholder livelihoods. One of the key findings from the three case studies is the importance of differentiating between the benefits and challenges associated with participation in the value chain and participation in certification. The recommendations included herein focus on the roles that various stakeholders -both public and private - can play in improving smallholder livelihoods through participation in global value chains and certification.



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ISBN 978-92-5-107149-6



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I2597E/1/01.12