Are certification systems beneficial for farmers? An 'on-the-ground' comparison of co-existing sustainability standards in the Colombian coffee sector

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Abstract

Crop certification has been expanding rapidly as a market orientated solution to promote and reward sustainable production methods. Many certification and verification labels have emerged, and often co-exist in a locality. This paper aims to contribute to the knowledge on certification processes in a context of multiple labels, in order to assess the impact on farmers. It was found that in the perception of the coffee growers all labels have similar benefits and drawback, and all programmes contribute to the farmer's livelihood. Although the income gain is an important driver for certification, also non-financial benefits are highly appreciated by farmers. Yet, between the labels there are some differences in accessibility for coffee growers. The co-existence of multiple labels can potentially certify a larger range of farmers with more distinct characteristics, as the labels have some differentiation in (rigidity of) requirements. However, the labels also show considerable similarities and compatibility, resulting in certification policies that favour farmers with similar characteristics. A stronger social-economic position is conducive to certification for all labels, although the verification programmes are more accessible to smallholders. The farmer cooperative selects farmers for certification and assists them in adapting the production process in accordance with the certification requirements. In order to reduce the costs for all parties involved, certification focuses on coffee growers with better capacity to make the adaptations needed and to benefit from the premium. Although the group certification and FNC assistance in the certification process may lower the barrier to certification, it remains less accessible to smallholders.

This research shows that certifications are rather compatible, have overlapping requirements and attract farmers with similar characteristics. This results oftentimes in multi-certification of farmers. This may be the most efficient manner of certifying coffee, and enhancing profits for all actors in the value chain. For the certified farmers, multi-certification can gain access to premiums from various sources and hedge against fluctuations in demand and premium of a particular label. However, multi-certification limits the participation of additional farmers. Consequently, it acts as an exclusion mechanism that concentrates the benefits of certification to a smaller number of farmers. So, from a development point of view, this is a less effective outcome. Certification would be more effective when certification targets farmers with more distinctive characteristics, that include the more marginalised farmers.

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1. Introduction

After oil, coffee is globally the most traded commodity. Being produced in more than fifty counties, it provides a livelihood for millions of people. Rueda and Lambin (2013a), discern two particular trends in the coffee sector: 1) Rising demand for specialty coffees that are high-quality, with a specific taste profile and from specific origin. 2) Growing demand for coffees that are environmentally and socially sustainable. Coffee certification might serve consumers that are looking for either of these or both.

A sustainability standard is a set of 'voluntary predefined rules, procedures, and methods to systematically assess, measure, audit and/or communicate the social and environmental behaviour and/or performance of firms' (Gilbert, Rasche and Waddock, 2011, p. 24). Both certifications and verifications can be qualified as sustainability standards.

A certification is an independent label that is available for crops that meet some specific requirements on production and processing methods regarding social, and/or environmental sustainability (Kilian et al., 2004). With certification the farmer can command a premium for its coffee from companies and consumers who are willing to pay for sustainability (Rueda and Lambin, 2013a). Generally, the certifications have very stringent regulations on the production process.

Verifications on the other hand are an initiative driven by the coffee processing sector, rather than by an independent entity. These verifications are not independent, and may lack external auditing. Apart from social and environmental standards they might have additional regulation regarding coffee quality and traceability of origin. Generally, verifications have lower standards on environmental and social sustainability than certifications. Additionally, their regulation is less rigid in general (Ponte, 2004). Despite the differences, certification and verification programmes are quite similar in structures and policies. Hence, I will use the word 'certification' to refer both to certification and verification, unless I discuss specific differences between them.

Since 2000, volumes of certified coffee have been growing globally by around 20 per cent annually. By 2009, more than 8% of global trade in coffee beans was certified under some sustainability standard (Pierrot et al., 2010). In Colombia, coffee production provides more than half a million families with a direct income and many people gain also indirectly from the coffee sector. Colombia is the third-largest coffee producer in the world and is renowned for its high-quality Arabica coffee. Coffee production is labour-intensive, especially in Colombia's steep-sloped Andean mountains that do not allow for much mechanisation. To signal the higher quality and to make up for relatively high and growing production cost, it is interesting for coffee growers to obtain a certification. This allows them to receive a premium over the mainstream market price, among other benefits (Rueda and Lambin, 2013a).

Colombia constitutes an interesting position, with its strong cooperative structure. The Federación Nacional de Cafeteros de Colombia (FNC), Colombia's overarching coffee growers cooperative, advances the position and interests of farmers and providing them with all sorts of services.

Getz and Shreck (2006) identified a knowledge gap in the process of certification and urged researchers to look at the on-the-ground process of certification, in particular with respect to the role of cooperatives in including and excluding particular farmers.

As Ibnu et al. (2015) point out, much research on certification assesses development from a western perspective. Little research has been focusing on perceptions and preferences of the coffee growers. There is a need to do so, because a discrepancy between benefits offered by certifications, and the preferences of a farmer might hamper impact of certification. Only few researches have considered the farmer's notion on the benefits and drawbacks of certification. Chengappa et al. (2014) have looked at perceptions of certified coffee growers in India, regarding the drawbacks (in particular financial costs) and benefits. For coffee growers in Indonesia, Ibnu et al. (2015) have assessed the judgment of farmers regarding preferences of certification.

Research on settings with multiple certifications is scarce, with Mutersbaugh (2005) looking at multiple certification of individual farmers, and Ibnu et al (2015) identifying farmer's perception of benefits in a case study of various labels. Some studies have focused on a comparative analysis of the labels in terms of requirements and goals (e.g. Reinecke et al. (2012), Lentijo and Hostetler (2011), Muradian and Pelupessy (2005)). Yet, analysis of the on-the-ground certification processes in a context of various labels remain relatively new ground, in particular research about farmer's perception on certification in a setting of various labels. Also, a comparative analysis of the different labels in terms of farmer characteristics that are certified, remain new ground.

In this research I will take a closer look at the on-the-ground process of certification in a context of multiple certification schemes and how this may add to the possibilities of farmers to be certified. In the first part I will conduct a comparative analysis of the labels in terms of objectives, and the requirements imposed on farmers. In the second part I will consider the position of FNC as mediator and facilitator of certification. In the third part, the characteristics of farmers that join these different certifications will be compared. In the last part the benefits and drawbacks of certification, as perceived by farmers, will be analysed.

This contributes to the knowledge of the certification processes, and helps to understand whether a multitude of certification programmes offers better prospects for farmers with different characteristics

to get certified, based on differences in requirements, and benefits. Ultimately, it enhances our knowledge on the impact of certification on the position of coffee growers.

The sustainability programmes that are included in this research are the certifications Rainforest Alliance (RA) and Certified-Organic (Organic) and the verifications Common Code for the Coffee Community (4C) and Nespresso AAA Sustainable Quality Program (Nespresso). These seals cover a wide range of coffee labels in terms of social and environmental sustainability, as well as business management and coffee quality. Moreover, these are rather sizeable programmes, both in my research area and in Colombia overall, which increases their relevance.

2. Scientific background

2.1 Global value chain

The global coffee market could be best depicted as a global value chain (Lee et al., 2012). Global value chains are border crossing networks of value-adding production activities, that result in an end product (Gereffi and Korzeniewicz, 1994). The value chain has a governance structure, with one segment in the chain being a 'driver' that exerts control over other segments in the chain, regarding distribution of information, production activities and income (Gereffi et al., 2005). Value chains are characterised by marginalisation/exclusion and participation/upgrading (Ponte and Gibbon, 2005). Coffee is generally considered a buyer-driven value chain, because downstream-located coffee processors are in control, rather than primary producers (Muradian and Pelupessy, 2005). Particularly the roasting companies in the mid-section of the chain have considerable control on the value chain and exert strong power towards the coffee growers (Lee et al., 2012).

2.2 Emergence of certification schemes

Before 1989, the coffee market was regulated by the International Coffee Organization (ICO), a board of representatives from coffee producing and consuming countries. They maintained a quota system to control production and sustain prices rather successfully (Raynolds et al., 2007). In a political climate of market liberalisation and a shift away from public intervention in the economy, the quota system was abolished in 1989. This has increased the coffee production, due to agricultural improvements and the prospect of higher income from larger volumes. Consequently, the coffee prices have been dropping steadily since. And with the increased speculation of investors in commodity markets, the prices have become more volatile. Coffee roasting companies have been far better able to hedge against the fluctuations, than farmers and farmer cooperatives. Consequently, income retention in the value chain has changed dramatically (Ponte, 2002). 'Between 1980–81 and 1988–89, producers still controlled almost 20% of total income; 55% was retained in consuming countries (…) Between 1989–90 and 1994–95, the proportion of total income gained by producers dropped to 13%; the proportion retained in consuming countries surged to 78%.' (Ponte, 2002, p. 1106).

With the adoption of market liberalisation and state retreatment in economic processes, certification could play a role in distributing added value among the actors in the value chain (Raynolds et al., 2007). Simultaneously with market liberalisation, consumer markets showed changing preferences. Consumers have been more concerned with quality, taste and traceability of products, as well as environmental and social issues related to the production process. This climate allowed for product

differentiation and certification (Ponte and Gibbon, 2005). Certification programmes operate in the context of the coffee value chain. Certification can be seen as a means to grasp a larger portion of the added value (Rueda and Lambin, 2013a). Certification is used by coffee growers to signal better quality and more sustainable production methods and hence attracting higher value to the coffee grower (Kilian et al., 2004).

2.3 Impact on the global value chain

Ponte and Gibbon (2005) argue that certification can potentially change the mode of governance of a value chain in favour of the coffee producers, making it more a producer-driven value chain. The emphasis on origin, quality and sustainability of consumers might strengthen the coffee grower's position vis-à-vis coffee roasters.

Other authors question to what extent certification can change the governance structure of value chains. Through certification, coffee growers may gain access to better information and new markets. It might also build capacities at the farmer and cooperative level. But there is no shift in power in the chain. 'While partnerships can enable and capacitate producers, they rarely contribute to the transfer of actual power to coffee producers' (Bitzer et al., 2008, p. 280). According to Muradian and Pelupessy (2005), participation in certification programmes gives farmers an opportunity to capture an economic rent in the value chain, thus upgrade within the chain. Yet, they question the long-term benefits, with expansion of the supply of certified coffee and reducing premiums, the programmes rather raise the bar for entry, without providing a meaningful income gain. According to Ponte and Gibbon (2008) certification enables the lead firms to transfer the cost of quality control to the suppliers (coffee growers and farmer cooperatives), rather than carrying these costs themselves.

A certification might raise entry barriers, which strengthen the position of the farmers that are already in the value chain, as these barriers limit the access of competitors. However, it does not strengthen the position of farmers vis-à-vis other chain actors (Bitzer et al, 2008; Ponte, 2005). Neither does certification challenge the issue with coffee overproduction (Bitzer et al., 2008). Moreover, production of certified coffee generally exceeds demand, with many certified producers unable to sell all their produce as certified. Therefore, it remains to be seen whether the certified sector can expand beyond a niche market (ICO, 2014). Also, the higher prices from certification will only allow farmers to improve their income temporarily. In the long run, with growing supply, these markets will be more mature and premiums for sustainable coffee will likely decrease (Kilian et al., 2006).

2.4 Emergence of verification

Next to independent certifications also verifications have emerged in the coffee market. These verifications are created by the coffee industry itself and in general have lower standards. Hence, verifications are cheaper sustainability standards for the roasting firms than certifications (Ponte, 2004). It has been argued that verifications are a diluted version of the more stringent certifications. On the one hand verification might enhance global acceptance of sustainability in the production process, but on the other hand it could redefine sustainability standards towards lower levels (Giovannucci and Ponte, 2005). According to Reinecke et al. (2012) verification could rather be seen as entry level labelling, that allows for continuous improvements and might serve as a stepping stone towards the more demanding certifications.

While it might improve the production methods regarding social and environmental sustainability, the verification programmes cannot improve the situation for the farmers as a whole, 'The likely result is that the social and environmental performance of coffee growers will improve, but not necessarily their economic performance' (Muradian and Pelupesssy, 2005, p. 2039). It rather raises the entry barrier, when it becomes a de facto requirement for maintaining business. Moreover, verifications blur the notion of sustainability for consumers, which makes it harder for certifications to justify a premium (Muradian and Pelupessy, 2005). Some authors are afraid that the whole concept of verification is destined to exclude farmers from participation in global markets. According to them, verification sets a benchmark of acceptable practices, denying those farmers who cannot meet the requirements the possibility to sell their produce (Ponte, 2004; Giovannucci and Ponte, 2005).

2.5 Impact of certification

For certification various impact studies have been conducted. In fact, almost all impact studies are on certifications rather than verifications. Some authors found positive impact. Subervie and Vagneron (2013) found positive economic impact of certification on lychee farmers in Madagascar, with higher volumes sold and higher prices received. Environmental and economic benefits are found by Giovannucci and Ponte (2005). Certification may lead to spill-over effects on the wider community, for example through business management techniques and traceability systems (Giovannucci and Ponte, 2005; Rueda and Lambin, 2013b). After certification, productivity might improve, as well as access to credit and technical assistance (Wyss et al., 2012).

Various authors found insignificant or unclear impact from certification. Bitzer et al. (2008) consider the received premiums to be modest. Yet certification might help improve coffee quality and therefore enhance income. It remains uncertain whether certification is sufficient to enhance rural incomes and it is claimed that premiums are low or effectively not present (Barhan et al., 2011; Valkila, 2014).

Also, some researchers found negative impact from certification, often related to Organic certification. Ibañez (2010) showed for Colombia that Organic-certified coffee farmers did receive a premium that was too low to compensate for reduced productivity and profitability. Beuchelt and Zeller (2011) found in Nicaragua that coffee producers with Organic-Fairtrade certification grew poorer after certification compared to conventional producers. Kolk (2013) found that many Organic farmers in Central-America shift back towards conventional farming methods, as this is deemed more profitable. A more elaborate overview of impact studies can be found in Ibnu et al. (2015).

2.6 Accessibility to farmers

Further problems are related to accessibility of certification programmes. Farmers are often excluded from decision-making on the requirements for certification (Giovannucci and Ponte, 2005). Some authors stress that the requirements are imposed by the labels in a top-down fashion with little consideration of the local context. The regulations are abstract and not adjusted to the local setting and might not be relevant (González and Nigh, 2005). For farmers, this makes compliance with the regulation more difficult. Moreover, as certification may require significant investments, the smallest and most marginalised farmers are often excluded from these programmes (Valkila, 2009; Ponte, 2004). Wyss et al. (2012) identify also some limiting factors in participation of coffee producers in Central-America in certification schemes. Coffee farmers may lack information, money and external support to be able to meet the requirements of a certification. According to Giovannucci and Ponte (2005), cost of certification is a main barrier.

2.7 Multiplicity of certification

A variety of certifications may co-exists in a locality. The various certification standards show remarkable similarities in design, rhetoric and processes. They have created similar and overlapping standards. They all acknowledge the need of social, environmental and economic sustainability, but may focus on different aspects of sustainability (Reinecke et al., 2012).

The labels make their programmes more compatible with other labels, allowing for dual certifications and audits. Yet, the competition between them remains, making the market for sustainable coffee highly contested. Hence, co-existence of multiple standards remains in many localities. The labels themselves consider that the labels complement one another and that the multiplicity of labels is a viable situation (Reinecke et al, 2012). It has been suggested that that the sustainability programmes will converge in a common code like the 4C programme (Muradian and Pelupessy, 2005). Yet, a decade later the differentiation endures. 'Instead of homogeneity and convergence, standards markets show a surprising degree of multiplicity and plurality, and continuously evolve and change' (Reinecke et al.,

2012, p. 809). They have identified various reasons for this multiplicity. First, with no overarching authority that coordinates and regulates the programmes, this system of multiple programmes might sustain. Second, the differentiation between standards is partly driven by the notion of preserving independence and identity for both roasting firms and certification organisations, and partly by a claim on moral authority in setting definitions of sustainability. Third, communication technology has increased the transparency of certifications, enabling programmes to position themselves in the market, emphasising different aspects of sustainability (Reinecke et al., 2012).

Mutersbaugh (2005) identified a duality. NGOs would advocate a single transparent, public standard, whereas coffee roasters would prefer privatised, plural programmes for social and environmental sustainability that preserves the power of the roasting industry.

Clients may stipulate multi-certification of the coffee they buy. However, for the coffee grower this entails additional costs who has to adopt various programmes and comply with a more elaborate set of requirements. A single label would be more efficient and reducing the cost for the coffee producer (Mutersbaugh, 2005).

On the other hand, Manning et al. (2012) argue that co-existence of multiple certification standards may be beneficial for the coffee growers, if they attract farmers with distinctive characteristics and cater for different producer needs. Additionally, the setting of various seals creates some degree of 'competition for adoption'. Labels have to persuade the producers to join their programmes. This may require the certifications to enhance the impact of certifications in order to attract farmers.

3. Research questions and methodology

3.1 Research objectives

In this research I will take a closer look at the on-the-ground process of certification in a context of multiple certifications and how this will add to the possibilities of farmers to be certified, with a focus on the farmer's perception. In the first part I compare the labels in terms of their objectives, and the requirements they impose on farmers. In the second part the actors in the process of certification will be discussed as well as the certification policies. In the third part a comparison is made of farmer characteristics in the various certification programmes. In the last part I examine the benefits and drawbacks of certification, as perceived by farmers. This helps to understand whether different labels complement one another from a farmer's perspective, in terms of farmers they attract and in terms of benefits and drawbacks certification entails.

3.2 Research questions

Main questions:

- **Do different labels with different requirements, policies and benefits attract coffee growers with different characteristics?**
- **What does the co-existence of multiple certifications contribute to the coffee growers in terms of accessibility and in terms of benefits and drawbacks?**

Sub-questions:

- **How do certifications differ in terms of objectives and requirements?**

  This question helps to gain insight in certification requirements and how labels may complement one another in terms of characteristics of farmers that would be favoured for certification.

- **What actors are involved in the process of certification? What are the policies of certification?**

  I need to know who are responsible for certification and what policies are prevalent, in order to understand the process of certification and how this influences what farmers can obtain a certification.

- **What are the characteristics of farmers who participate in particular certification programmes?**

  In this chapter a comparative analysis of farmers in various certification programmes is made, in terms of farm and farmer characteristics. This helps to understand whether different labels attract coffee growers with different characteristics, which would grant access to certification to a larger range of farmers.

- **What are the motivations and perceived benefits from certification? What are the drawbacks?** This helps to understanding whether different labels complement one another from a farmer's perspective, in terms of benefits and drawbacks they offer to farmers.

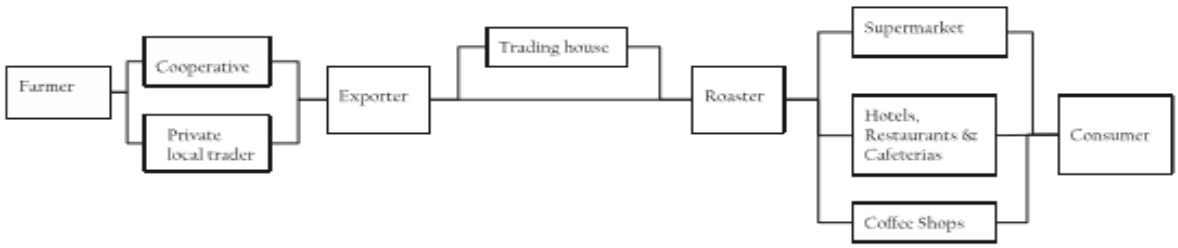
3.3 Conceptual framework: global value chain analysis

In order to analyse the objectives of the certifications, requirements for coffee growers and market developments I will use the concept of global value chain analysis.

It has been argued by Lee et al. (2012) that the global coffee market is best depicted by a value chain, in which the coffee processors in the mid-section of the chain exert strong power towards the coffee growers, that allow them limited possibilities for upgrading. Coffee is produced globally in a great supply, leaving individual coffee growers with little market power. On the other hand, the coffee processors (big coffee roasting companies) are few in number, making power very concentrated.

Rueda and Lambin (2013a) give an excellent description of the value chain for Colombian coffee. Figure 3.1 shows the value chain. The farmers are depicted as price-takers, and the FNC as facilitator to enter export markets. The value chain is characterised by highly concentrated governance, with 3 trading companies that dominate global coffee trade in Colombian coffee, and 5 roasting companies controlling the processing market.

Figure 3.1 Global value chain for Colombian coffee



Source: Rueda and Lambin, 2013a, p. 289.

The global coffee certifying NGOs as well as the verification programmes operate in this competitive, global environment and bound by market conditions. A global value chain analysis shows how the global processes of industry concentration and product differentiation affect local producers (Rueda and Lambin, 2013a). This shows how the farmers are connected to the world market and are affected by it. In this context Colombian farmers have to make a livelihood, supported by the efforts of the FNC to pursue a value-enhancing strategy for Colombian coffee in order to improve the lives of farmers. In chapter 4 the FNC goals and strategies will be discussed in greater detail.

3.4 Host organisation

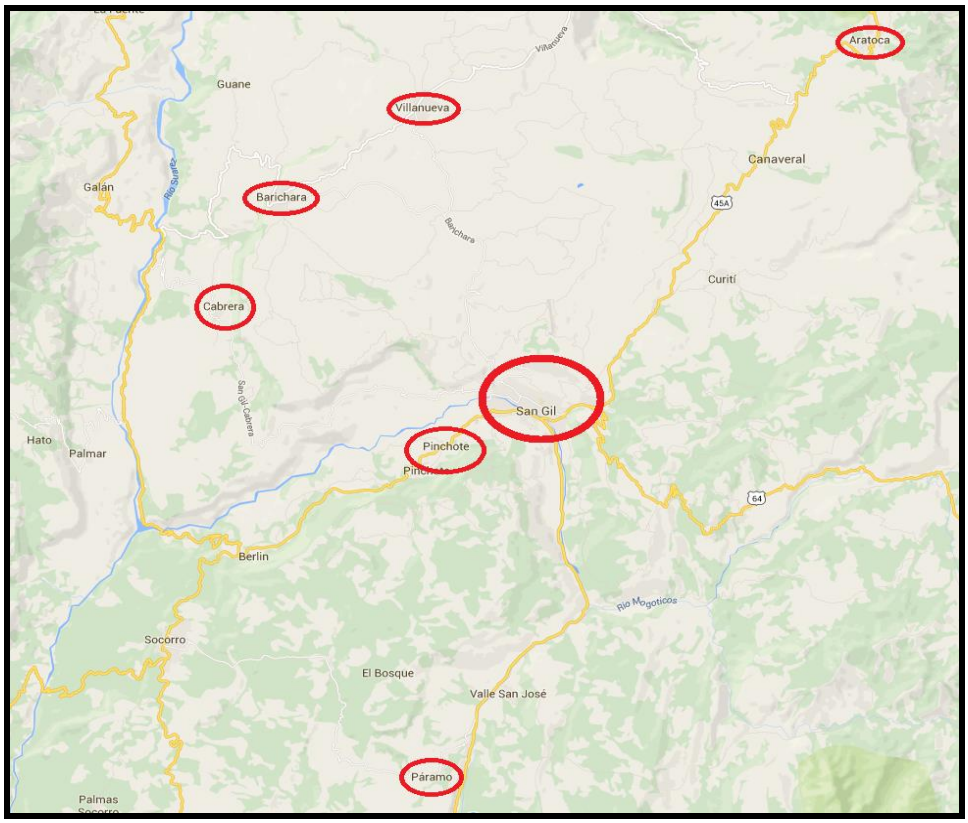
I have conducted this research in collaboration with NaturaCert, a part of the NGO Fundación Natura, which is member of the Sustainable Agriculture Network (SAN). NaturaCert provides certification and auditing services on behalf of certain certification schemes, including Rainforest Alliance, Nespresso AAA Sustainable Quality Program and Florverde Sustainable Flowers (NaturaCert, 2015).

I received support from NaturaCert in research implementation and determining the research area. They also helped me to contact some key informants and FNC. After the initial support from NaturaCert, I received support mainly from the FNC extension service in San Gil.

3.5 Research area

Santander has been an important region for coffee production throughout history. It has been one of the first regions to adopt certification programmes, and currently a relatively large proportion of farmers is participating in a sustainability programme. The research area is the region around the village of San Gil which is a representative area for the characteristics of the coffee sector in Santander. The FNC extension service office in San Gil, which supported me during the research, assists farmers in their production practices. Apart from San Gil, the office caters for farmers in various villages, including the villages where I have conducted my research. My research area consists of the municipalities San Gil, Barichara, Aratoca, Cabrera, Villanueva, Páramo and Pinchote. These villages are all within 20 km from San Gil, making farmers relatively easily accessible for the agronomists of the extension service. So spatial constraints to FNC support and access to certification are limited, which increases options for farmers to obtain a certification. In this region many certification programmes are present, including those of my research. This makes it a viable location to conduct the research, that aims to find a better understanding of the dynamics of coffee certification, based on requirements, characteristics of the coffee producers and benefits offered.

Figure 3.2 Map of the research area: San Gil region, Santander



3.6 Data collection

3.6.1 Secondary sources and expert interviews

The field research has been conducted during the period February-May 2015. Prior and during the field research I have consulted literature on coffee production and certification, both on Colombia, and other countries.

Additionally, during the field research I have consulted experts on certification processes in Colombia. This helped me to determine the research area, narrowing down research scope, as well as designing survey and interview questions for the coffee producers. Based on the information from these expert interviews, I focused on the certifications Organic and RA, and the verifications 4C and Nespresso. Throughout the research period I was supported by the FNC extension service. Its employees, the agronomists, gave valuable insights and helped with any difficulty I have faced throughout the field research. In order to contain confidentiality, due to the sensitivity of some of the answers, the names of the interviewees will not be disclosed.

3.6.2 Household survey, informal interviews and participant observation

From the trials I found that it took too much time to ask all the questions to a single person. Therefore I have designed two separate surveys. Both contain an element of farm and household characteristics. The remainder of survey 1 is about (livelihood) strategies and the role of certification therein. The remainder of survey 2 consists of questions regarding the benefits and drawbacks of certification. I have given every other farmer survey 1 or 2 to avoid selection bias. I have used both open and closed questions, as well as rating questions and multiple-choice questions in which one or several answers could be selected. Both surveys can be found in the appendix.

The characteristics of the farm and the farmer (household head) have been asked in order to discern differences between the non-certified and certified farmers and between farmers with different certifications. I asked questions about their livelihood and strategies in times of good and bad prices for coffee, as well as the support that they receive through certification. I asked questions to assess what farmers consider the benefits (reasons for certification) and drawbacks and whether they consider the certifications supporting them with what they perceive to be the problems of their livelihood. Apart from the surveys I conducted informal interviews with the coffee growers, in order to gain additional information to support the quantitative data. Also, I engaged in participant observation to acquire a better understanding of the local context in which farmers have to make a living and the role of FNC and certification therein.

3.6.3 Sampling

The survey has been conducted on the basis of snowball sampling. I joined the FNC agronomists for their individual farm visits and group meetings, in order to conduct the survey. We visited certified and non-certified farmers alike, although the extension service had rather more often meetings with certified coffee growers.

All in all, survey 1 has been conducted 56 times, divided into 44 surveys with certified farmers and 12 with non-certified farmers. Of those 44 certified farmers, 27 have a 4C certification, 25 have Nespresso, 13 had RA and 4 farmers have been certified with Organic.

Survey 2 has been conducted 55 times. Of the respondents, 34 farmers indicated to have a certification and 21 indicated not to have any certification. Of the 34 certified farmers, 22 have a RA label, 20 have been certified with Nespresso, 14 have been certified with 4C, and 5 have an Organic certification.

It should be noted that many farmers have been certified with multiple labels, therefore the samples for individual labels add up to a larger number than the overall number of surveys. Of all certified farmers, 20 have a single certification, and 59 have multi-certification. Also note that the number of Organic farmers is very low in my sample, too low for meaningful quantitative analysis, in many cases.

4. Context

4.1 Coffee in Colombia

The coffee plant has been introduced to Colombia in the 18th century during the Spanish colonisation. Originally it was mainly cultivated on large haciendas. In the second half of the 19th century the estates started to disappear in favour of smallholder coffee producers. By the 20th century smallholders were important to cater for export markets. Throughout the century coffee was an important export commodity for Colombia, as it still is (Café de Colombia, 2015).

In 2014, a total of 728.000 tons of coffee was produced, of which more than 90% was exported. The export value over the last 5 years was on average US$ 1.97 billion dollar annually, or 4% of total export, which was relatively low because of a depression in coffee price. Colombia is the second largest producer of Arabica coffee in the world (FNC, 2015a).

The coffee sector provides more than 800.000 direct jobs, which is 17% of total jobs in rural employment. Additionally, another 1.6 million indirect jobs are created in the supply chain of coffee production. Coffee is considered a main driver in reducing rural poverty, as farmland for coffee is more equally distributed than in other agricultural sectors. Nowadays, coffee production is mainly a smallholder undertaking, with about 95% of the coffee being produced on farms with less than 5 hectares of coffee area (FNC, 2015b).

4.2 Coffee in Santander

Santander Department is a rural area. Most employment is in agriculture, in which coffee production takes a prominent place. Since the start of coffee cultivation in Colombia, Santander has been an important region for coffee production, mainly on its large haciendas. In the 20th century many of the haciendas disappeared as competition from smallholders was very strong, which drove down profitability (Café de Colombia, 2015). In Santander, nowadays about 32.000 coffee growing families cultivate coffee on 46.000 hectares of land, which is about 5% of total land dedicated to coffee in Colombia (FNC, 2015).

4.3 Certification in Colombia

In 2002, FNC launched a programme called ‘Café especiales’ (Specialty coffee in English) that focused on value-enhancing strategies, to improve income for coffee producers. These specialties were related to denomination of origin, cup-profiling, and obtaining certification (Rueda and Lambin, 2013b). Certification is a popular means to foster and reward good agricultural practices, practices that

promote social equality and environmental sustainability. The Colombian coffee production has seen a rapid increase in certification. This is thanks to growing global demand for coffee production under fairer conditions and a need for higher sale prices to cover the cost of the labour-intensive production process in Colombia (FNC, 2011). The natural environment is also very favourable, for example in obtaining the Rainforest Alliance or Organic seal. In many parts of Colombia coffee is traditionally grown under shade from trees and other vegetation. This makes compliance with the environmental regulation, that strongly features in the Rainforest Alliance and Organic certification, relatively easy. Lastly, FNC shapes a conducive environment for certification, as it offers assistance to farmers in order to comply with the certification standards.

4.4 Certification in Santander

In Santander Department the expansion of certification started early on. The natural conditions were very favourable, particularly for RA and Organic. The shade-grown production process, as required by RA, is ubiquitous in Santander. The tree cover offers ample organic nutrients that is required for Organic. Thus, compliance with these certification programmes was rather easy, expresses in a rapid spreading of certification in Santander, because farmers were driven by higher prices. Other certifications have followed suit. In 2010, over 20% of farmers participated in some sort of sustainability programme (Rueda and Lambin, 2013b). Currently this percentage is over 30% (FNC, 2015b).

4.5 Federación Nacional de Cafeteros de Colombia

The Colombian coffee sector is characterised by a strong cooperative system. The overarching Federation of Colombian Coffee Growers and its local and regional affiliations maintain a system that link over half a million coffee growers to consumer markets. FNC has over 500 coffee purchasing points that cover 95% of all coffee-producing municipalities. Maybe the most important advantage of FNC for the coffee growers is the purchase guarantee. The FNC guarantees the purchase of all coffee produced in Colombia at the international established price as long as the beans meet the minimum quality standards, and after deduction of transportation cost. The coffee growers will grow the coffee cherries and harvest, wash, de-pulp and dry them. The dry beans (called parchment coffee) can be sold to a trader, either for local consumption or export, or to the coffee grower's cooperative. Exact prices will be determined after negotiations with clients and vary with the quality of the coffee (Rueda and Lambin, 2013a). This contributes to a very efficient market system, as farmers do not have to find a buyer for their coffee harvest and negotiate prices themselves. Moreover, this system with FNC as a

big selling entity creates a stronger position for Colombian coffee farmers vis-à-vis big trading and processing companies.

About 30% of all exported Colombian coffee is transacted through FNC, making it the largest exporter of Colombian coffee. It is also involved in export though other exporting organisations. All export, whether exported though FNC or through competing entities is subject to quality checks executed by FNC, as all exported Colombian coffee needs to meet minimum quality standards. Furthermore, FNC levies an export tax on all coffee exports (FNC, 2015b).

The scope of activities by FNC is much broader than just facilitating the coffee trade. Since its founding in 1927 the FNC's objective is to improve the lives of coffee growers and their families, for which it uses a comprehensive set of tools. FNC's policies and strategies ultimately are decided upon by all the members of the cooperative (the coffee producers), through their representatives in the National Coffee Congress. However, FNC's policies are significantly influenced by the government. In the steering committee (the National Coffee Committee) there are government representatives (FNC, 2015b).

The activities of FNC include a value-enhancing strategy for Colombian coffee. In a context of often low prices for mainstream coffee and relatively high production cost in Colombia, FNC seeks ways to increase coffee prices by investing in research and development, marketing and by focusing on specialty coffees. FNC runs research facilities to improve production methods in terms of quality, productivity and environmental sustainability. FNC is also involved in marketing activities that include maintaining a network of retail coffee stores domestically and abroad to promote Colombian coffee. In response to consumer trends, FNC invests in programmes for specialty coffees. These include cupping (mixing different coffees) to create cup-profiles, in accordance with particular consumer preferences. Other specialty coffees include focus on origin, with FNC providing a traceability system. This traceability system is also important for another priority: certification of coffee according to social and environmental minimum requirements in order to make coffee more profitable for farmers (FNC, 2011).

FNC offers technical assistance and training to farmers through its nation-wide extension service in order to improve the coffee production and business as a whole. The objectives of the extension services are to disseminate knowledge and provide assistance to farmers in order to improve coffee growing technique and business management. Topics include business administration, crop managements, including application of fertilisers and pesticides, and post-harvest processes. The services are available to all farmers, certified or not. Additionally, the extension service activities include assistance of farmers that are, or will be, participating in any of the certification programmes (FNC, 2011).

Other FNC activities that are not necessarily related to coffee are providing transport infrastructure, and education and healthcare facilities. These projects are designed and implemented according to local needs (FNC, 2015b). These activities show the link between FNC and the government.

To run its operations, FNC is mainly funded by the Colombian government. In particular by an US$ 0.13 tax per kilogram of parchment coffee levied on all Colombian coffee that is exported, either by FNC or by another entity. The government makes additional financial transfers to the FNC as well. Other sources of income for FNC include donations from foreign donors (Rueda and Lambin, 2013a).

4.6 Government policies

In recent years, the Colombian government focuses on improving competitiveness of the agriculture sector (GoC, 2010). This resulted in combined effort of FNC and government national education facilities to improve the capabilities of the coffee growers to strengthen business management, efficiency and global competiveness (FNC, 2015).

However, since 2012 the government combines this market-based approach with a subsidy policy to protect farmers from volatility in the coffee price. When coffee prices are below production costs, the government will support the farmers financially, aiming to mitigate the loss for coffee growers (Colombia Reports, 2013).

5. How do certifications differ in terms of objectives and requirements?

In this chapter a comparison is made between the various seals in terms of objectives, and in requirements that are imposed on farmers, which may exhibit differences and similarities. The requirements may affect the participants of certification as it can make certification more or less attractive for certain types of coffee growers. First, I have compared the objectives of the two certifications Organic and Rainforest Alliance and the two verifications 4C and Nespresso. These goals lead to requirements that are imposed on farmers in order to obtain certification. Second, I compared the requirements for the programmes, in terms of scope and rigidity. It can partly explain which farmers can and will be certified with what particular certification programme. For certification generally some adaptations of the production methods are needed. This entails adaptation cost, which consequently influences the accessibility of certification to farmers. That will be discussed in the last part of this chapter.

5.1 Objectives

5.1.1 Certified-Organic

In 1972, the International Federation of Organic Agriculture Movements (IFOAM) was founded as an umbrella organisation for connecting organic movements and providing guidance, support and promotion of organic practices worldwide (IFOAM, 2015).

IFOAM's mission is to create a sustainable system for agriculture with a focus on soil fertility, and restore and maintain the ecological balance by excluding the usage of synthetic agrochemicals, like chemical fertilisers and pesticides (Lentijo and Hostetler, 2011).

5.1.2 Rainforest Alliance

Rainforest Alliance has been certifying timber and promoting good forest management practices since 1989. Since 1995 also coffee has been certified (RA, 2015).

Rainforest Alliance has developed the Sustainable Agricultural Network (SAN) that as an entity shapes the requirements for RA certification. SAN puts its mission as: 'Integrating sustainable production of crops and livestock into local and regional strategies that favour biodiversity conservation and safeguard social and environmental well-being' (SAN, 2010, p. 4). RA's focus is on environmental sustainability (particularly biodiversity conservation), as well as social sustainability (SAN, 2010).

5.1.3 Common Code for the Coffee Community (4C)

4C has been initiated in 2003 in a multi-stakeholder platform, with government entities, NGOs, coffee trading and processing companies, and coffee growers. The goal is to create baseline rules for the production of coffee, eliminating the worst practices. It requires minimum standards on economic, social and environmental aspects in order to create long-term sustainability that is beneficial to all who make a living in the coffee sector (4C, 2015).

5.1.4 Nespresso AAA Sustainable Quality Program

Nespresso started in 2003 with its sustainability programme called Nespresso AAA Sustainable Quality Program, with the triple A signifying 'quality, sustainability and productivity'. The programme was initiated to sustain supply of high-quality coffee beans for Nespresso's luxurious coffees. It also addresses the need to produce in a way that is socially and environmentally sustainable (Nespresso, 2013a). Nespresso aims to improve coffee quality and quantity and reduce production costs for coffee growers. The social and environmental sustainability aspects of the Nespresso programme are developed in cooperation with Rainforest Alliance and in accordance with the SAN standards (Nespresso, 2013b).

Conclusion

Organic primarily attempts to achieve environmental sustainability. There is little attention to social issues. Both environmental and social issues are addressed in the mission of Rainforest Alliance. The verifications 4C and Nespresso incorporate social, environmental and economic aspects of sustainability with notably Nespresso focusing on coffee quality.

5.2 Certification requirements

The objectives that the labels have stated, translate in requirements for the farmers. In the next section I compare the labels on requirements to determine their policies on certification. The appeal of a certification is affected by the requirements. Differences in requirements makes certification with a particular label more or less attractive for farmers, depending on the farm characteristics, current production methods and preferences.

Table 5.1 depicts a comparison between the four labels, based on environmental, social, economic, quality and registration requirements that are imposed on farmers. At this stage no comparison is made between the rigidity of the criteria, which vary widely among the labels.

Table 5.1 Requirements for certification

label	environmental	social	economic	coffee quality	Registration
Organic	Chemicals are forbidden, only natural (organic) matter is accepted, requirements on conservation of biodiversity, soil and water sources	Workers >18 years (FNC requirement)		Restrictions on diseases and defections	Registration of input usage, production process and storage
RA	Requirements on conservation of biodiversity, soil and water sources, restrictions on inputs, 40% shade cover from at least 12 native tree species required	Workers >18 years (FNC requirement), labour conditions, minimum wage, protection equipment, adequate housing for employees		Restrictions on diseases and defections	Registration of input usage, production process, storage, labour hours and wages
Nespresso	Requirements on conservation of biodiversity, soil and water sources, restrictions on inputs	Workers >18 years (FNC requirement), labour conditions, minimum wage, protection equipment, adequate housing for employees	Productivity and profitability-enhancing methods	Restrictions on diseases and defections, criteria including bean size, colour and shape, quality control system	Registration of input usage, production process, storage, labour hours and wages, production cost and revenue

4C	Requirements on conservation of biodiversity, soil and water sources, restrictions on inputs	Workers >18 years (FNC requirement), labour conditions, minimum wage, protection equipment, adequate housing for employees (large farms only)	Productivity and profitability enhancing methods	Restrictions on diseases and defections, quality control system	Registration of input usage, production process, storage, labour hours and wages, production cost and revenue

Sources: SAN, 2010; Nespresso, 2013b; IFOAM, 2015; 4C, 2012; FNC, 2015c; FNC employee, personal communication, 15/4/2015

The four seals under discussion vary in the scope of criteria. Organic has mainly environmental criteria, whereas RA has environmental and social requirements. 4C and Nespresso have a mix of environmental, social and business-economic criteria. All labels require registration, and all have some quality requirements. Also, for all labels the workers have to be over 18 years. Table 5.1 is explained in more detail below.

5.2.1 Environmental requirements

In order to improve and sustain environmental conditions all certifications have regulation in this respect. For Organic this is reflected in strong regulation for and limitations on the application and storage of agrochemicals. In order to improve soil and water quality, many synthetic agrochemicals are prohibited. Organic production methods differ strongly from the conventional methods and convey significant limitations to cultivation methods. The other labels are less stringent with regard to these chemicals, but promote reduction of polluting agricultural inputs. All certifications have regulation on the handling and storage of (chemical) agricultural inputs.

All certifications require a waste management system, including waste separation and recycling. Wastewater treatment is also required. The certifications require integrated pest management. RA and Nespresso require a decent septic tank. Organic demands grease traps and other pollution reduction mechanisms in the household. All have ecosystem and biodiversity improving measures. RA obliges 40% forest coverage on the farm of at least 12 native tree species per hectare as shade for coffee production (SAN, 2010). This may include productive tree species, like fruit trees. The forest helps to protect biodiversity and the shade and foliage provide a healthy local environment that is both

beneficial for the ecosystem and the quality of the coffee (Muradian and Pelupessy, 2005). The Nespresso environmental standards are similar to the RA standards, as both are based on the SAN rules. However, Nespresso has no requirements on forest cover.

5.2.2 Social requirements

Social in this case refers predominantly to relations with workers, and labour regulation. Although Organic mentions the need to address social issues, it does not have requirements in this respect (Lentijo and Hostetler, 2011).

RA, Nespresso and 4C prohibit child labour under the age of 15, with the exception of own children and those of neighbours, on a part-time basis and with additional conditions. There is also regulation on labour conditions, hours and wages of the workers.

RA, Nespresso and 4C demand the availability of safety equipment for the workers. Furthermore, workers should be trained adequately to use equipment safely. These labels also demand access to healthcare, which includes the presence of a first aid kit. RA demands adequate housing for the employees, including minimum standards on living space, and washing, sanitation and cooking facilities. 4C requires housing for workers only when farms have at least 10 permanent workers, which is applicable only in very few occasions.

A peculiar restriction is the regulation on child labour. The Colombian government has stricter rules in this respect than the certifications. Children under 18 can only work after extensive documentation which is time consuming for the farmer and the child's parents. Therefore, FNC's policy is to only certify farmers that do not use labourers under 18 years for all certification programmes. In theory, these rules apply to all coffee producers. However, in reality, this is more carefully checked for certified farmers. The limitations to child labour may be a barrier to obtain certification in general, rather than a requirements for a particular label (FNC employee, personal communication, 15/4/2015).

5.2.3 Business management requirements

In the programmes of Organic and RA, requirements regarding business management are limited, but for Nespresso and 4C these are more elaborate. They explicitly demand that farmers gain knowledge on markets and consumers, as well as the application of quality and productivity-enhancing methods, and registration of revenues and costs.

5.2.4 Quality requirements

If the coffee is to be sold as certified, the beans need to meet minimum quality standards. This is the case for all certification programmes. The requirements on quality are not directly imposed by the

labels themselves, but rather by FNC. The cooperative uses these quality standards in order to protect the quality of Colombian coffee, and find buyers for it. In this respect quality requirements are a reflection of market demand. In particular Nespresso demands high quality coffee beans, therefore FNC has imposed the highest quality standards for farmers that are certified with Nespresso (FNC employee, personal communication, 15/4/2015).

Table 5.2 shows per certified group of farmers the tolerance of defected beans. For 2014, it shows the maximum percentage of beans to be affected by a beetle species called Coffee Berry Borer, and the maximum percentage of otherwise defected (e.g. broken, deformed) coffee beans. I will discuss the process of group certification in greater detail in the next chapter. The table sometimes refers to a combination of certifications. That is because certifications are often combined. This will also be elaborated on in the next chapter. One group carries the multi-certification Organic-Fairtrade. An extensive description of Fairtrade is beyond the scope of this paper. It suffices to say that Fairtrade is a certification programme that focusses predominantly on social issues, particularly on the position of smallholders (Fairtrade, 2015). The Organic-Fairtrade group is included in the table to compare the quality requirements of Organic with the other labels.

Table 5.2 2014 requirements on coffee quality

certified group	**maximum % of Coffee Berry Borer**	**maximum % defected coffee beans**
Rainforest-Nespresso	1.5	1.5
Rainforest Alliance	4.0	2.0
Organic-Rainforest Alliance	3.0	2.0
Organic-Fairtrade	4.0	2.0
4C-Nespresso	-	-
4C region Santander*	2.0	1.5
4C	4.0	No limitation

Source: FNC, 2015c *extra focus on origin, compared to 4C

Because of the tendency of multi-certification, the data cannot be fully disaggregated for the individual certifications. Yet, some information can be derived.

The maximum percentage of beans affected is between 1.5% for the RA-Nespresso group and 4% for Rainforest Alliance, and Organic-Fairtrade. It shows that FNC is more demanding on quality for Nespresso, than for Rainforest Alliance and Organic. For 4C the quality requirements depend on the

group. All but 4C without origin require a maximum percentage of defected beans, like broken or deformed beans. Depending on the group, this percentage could be 1.5-2%.

For the 4C-Nespresso group for 2014 no data was available, since Nespresso only bought from the RA-Nespresso group. However, the farmers from the 4C-Nespresso group were partly able to sell their coffee with the 4C label.

Apart from the restrictions shown in the table, particularly for the Nespresso programme, some additional hefty quality criteria are imposed. These include specifications on size, shape, colour and flavour of the beans. These are more stringent than for the other certifications (FNC employee, personal communication, 15/4/2015). Foremost quality is the main concern for Nespresso.

The quality of the beans are determined by many factors, including soil, climate conditions, access to good equipment and machinery, and productions methods. These factors thus have an influence as to which farmer can be certified with a label, and in particular with Nespresso.

5.2.5 Registration requirements

All certifications require a basic form of registration in order to check compliance with the regulation. All require registration of input usage (e.g. fertiliser, pesticides) and for traceability of the products, in order to avoid mixing certified and non-certified coffee. For Organic, only registration of production and storage methods and input usage is necessary. For Nespresso, 4C, and RA more business registration is required. They require registration of workers, wages, and hour specifications. Nespresso and 4C entail more elaborate financial administration.

Conclusion

Organic's requirements on production methods are very distinctive from the other labels, based on elimination of synthetic agrochemicals. Organic has only requirements on environmental aspects.

Among the other three certification programmes, the required production methods are rather similar. RA, Nespresso and 4C allow conventional production methods that allow the use of synthetic fertiliser and pesticides. They have also social requirements. 4C and Nespresso have additional focus on business management and in particular Nespresso has a focus on quality.

All in all, there is considerable overlap in the requirements among the labels, including Organic, but more notably among RA, Nespresso and 4C. All labels have extensive environmental standards. All labels have registration requirements, and FNC requires all employees to be over 18 years old. Furthermore, minimum quality standards are applicable for all certifications.

5.3 Rigidity of the requirements

More important than the scope and number of criteria is the rigidity of the regulation. This ultimately determines whether criteria will be enforced and have an impact on the environment, the labour conditions, economic performance, coffee quality and registration. The possibilities for and willingness of farmers to participate in a particular programme has more to do with the strictness of the rules, than with the nature of the rules. I have translated the rigidity of the programmes in gradations of the entry barrier to certification, as shown in table 5.3

Table 5.3 Entry barrier to certification

label	entry barrier	features
Organic	high	All criteria on production methods have to be met three years prior to certification.
Rainforest Alliance	medium	Criteria must be met upfront. However, of the non-critical conditions only 80% have to be met.
Nespresso	medium	Underperformance on the criteria is temporarily accepted and criteria only have to be met partly upfront. However, criteria on quality are strict.
4C	low	On average only 'yellow colour' is required for all criteria. Criteria only have to be met partly upfront.

Source: SAN, 2010; Nespresso, 2013b; IFOAM, 2015; 4C, 2012; FNC, 2015c

There are differences in the rigidity in the requirements, that will be elaborated on below. But first it has to be noted that the requirements on coffee quality, as are discussed in paragraph 5.2.4, need to be met in order to receive the premium. The quality requirements are very strict among all the certifications. Hence, it is an entry barrier to certification, although the standards vary among the labels. Particularly for Nespresso, quality standards are high and may limit participation.

Additionally, for all certification programmes FNC has prohibited the use of child labour. Only employees over 18 years are accepted.

5.3.1 Certified-Organic

Although other seals have a larger scope of rules, the Organic regulation is the most rigid. Compliance with all rules on production methods is required at least three years before certification is approved and the financial gain is to be expected. In order to obtain certification, the auditor will conduct soil

analyses to check input usage (IFOAM, 2015). A transformation towards organic production methods can be a big step, as the farmer may suffer a productivity loss, from renouncing conventional inputs, whereas the financial benefits is only available after three years. This can entail a significant financial burden. Therefore, Organic can be considered to have a 'high' entry barrier.

5.3.2 Rainforest Alliance

RA has composed 16 critical criteria which all need to be met to obtain the certification, that should eliminate unacceptable practices regarding social and environmental issues. These include avoidance of the use of child labour and hunting endangered animal species. Additionally, another 99 conditions on environmental and social aspects are established of which 80% have to be met by the producer (SAN, 2010). The rules for RA are less stringent than those for Organic, and require less adaptation. The certification can be obtained immediately after the conditions are met, in order to command a premium price for the coffee. Hence, the financial threshold for RA is smaller than for Organic. Therefore, the entry barrier is 'medium'.

5.3.3 Nespresso AAA Sustainable Quality Program

The principal requirements for participation in the Nespresso programme are related to the quality of the coffee, which can be a significant limitation to participation. The regulation on sustainability are much less rigid than for Organic and RA, making Nespresso relatively easy to obtain in this respect. Nespresso has 296 conditions in all, of which 36 are critical. All are related to social, environmental and economic issues. Nespresso has a relatively low threshold as temporal non-compliance with the conditions is permitted, even with the critical conditions. For the other criteria only 33% of criteria need to be met to reach a basic level of compliance, although farmers are expected to elevate levels of compliance over time (Nespresso, 2013b). The requirements on the social and environmental issues are relatively easily met, but the quality requirements are high and stringent, that could impose a significant barrier. Hence, overall the entry barrier to the Nespresso programme is considered 'medium'. However, last year Nespresso only bought coffee that was also certified RA, rather than 4C. This makes it more difficult for farmers to meet the requirements, as RA is more demanding than 4C.

5.3.4 Common Code for the Coffee Community (4C)

4C has 28 indicators divided in economic, social and environmental categories and a colour system visualises the compliance level on each indicator. There is green for desirable practices, yellow for those that need to be improved, and red for activities that should be discontinued. On average, only a minimum of yellow rating is needed to pass the audits. A red score on a particular condition can be

compensated with a green score on another indicator (4C, 2012). Also, 4C allows gradual increasing compliance with the code, so compliance can be even lower in the beginning (FNC, 2015a). According to Reinecke et al. (2012), 4C could rather be seen as entry level certification, that is widely considered to be comparatively easily accessible with lower thresholds than other labels, that have more rigid requirements. So, the entrance barrier for 4C is 'low'.

5.4 Cost of adaptation

So far, the requirements have been discussed. For farmers who are willing to be certified, these requirements translate in changes of current practices to a greater or lesser extent. This adaptation might lead to costs in terms of money and time. The costs vary based on the gap between current practices and those required by the certification. The actual costs vary with the rigidity of the rules, which depend on the programme. The certifications Organic and RA, which demand stronger adherence to rules, are likely to entail higher adaptation cost than the verification programmes Nespresso and 4C, that only demand partial compliance. The most significant costs have to be made in anticipation on the certification. After compliance has been reached, generally the cost are less significant, as large investments are no longer required. Then, the recurring costs are more limited and the costs are mainly in terms of time involved for registration. Below are examples of potential investments that have to be made by the farmers in order to obtain certification.

- Reduced production: This is particularly a problem with Organic. In anticipation on obtaining an Organic certification, the farmers cannot use chemicals three years in advance. This could reduce the quality and quantity of the production, without receiving the compensation. That premium will start being paid only after three years. This could be a significant burden.
- Waste separation and recycling: All certifications demand a system of waste separation and recycling. This requires a clean-up of all garbage and pollution on the farmland. Depending on the size of the farm, this results in several days of work and some minor investments in waste bins.
- Wastewater treatment facilities: All programmes require the use of a wastewater treatment system. Furthermore, Organic demands grease traps in all the drains in the household.
- Equipment and machinery: More efficient, environmental-friendly de-pulping machinery may have to be bought, as well as other equipment and machinery for processing the coffee. This might be due to environmental sustainability or quality enhancement of the coffee.
- Safety equipment: All but Organic require safety equipment and materials for workers to wear during application of chemicals, and a first-aid kit.

- Adequate housing for workers: All but Organic require decent housing for the workers, with specification for beds, rooms, kitchen and sanitation facilities, although for 4C this is only applicable to farms that hire more than 10 permanent workers.
- Storage: Certification may require the construction of warehouses for storage of coffee, and separate storage of chemicals.
- Septic tank: Certification with RA or Nespresso may require improvement of the septic tank.

Sources: SAN, 2010; Nespresso, 2013b; IFOAM, 2015; 4C, 2012; FNC, 2015a; FNC employee, personal communication, 15/4/2015

Additional measures may have to be taken, including providing training to workers wielding dangerous equipment. FNC estimates that on average the adaptation cost for an individual farm is US$ 1800 (2015a). This amount is likely to be higher if adherence to the more stringent regulation of certifications is aspired, compared to the less demanding verifications.

5.5 Cost of audits

Before the official inspection from an independent auditor takes place, the FNC extension service will check compliance, that allows to make adjustments if necessary in order to pass the audit. Both the visit from FNC and the official audit by an external party will be paid by FNC. The individual farmer does not have to bear these costs. Thus, the farmers receive the full financial gain from certification.

Conclusion

The rigidity of the requirements varies significantly between the labels, particularly between the certification programmes (Organic and RA) and the verifications (Nespresso and 4C). Organic requires 100% of the rules to be complied with, of which some (regarding the production methods) need to be met already three years prior to certification. RA demands 80% compliance with its rules, including full compliance with the critical conditions, at the start of the certification. Nespresso and 4C only require moderate levels of compliance with their rules. Adaptation cost to comply with requirements can be significant and varies with regulation of the labels, and more importantly, with the rigidity of the regulation. To a lesser extent there is a difference in strictness between 4C and Nespresso. The environmental, social and economic criteria between 4C and Nespresso are very similar, and both are fairly easy to comply with. The main difference are the quality standards. These are considerably higher for Nespresso than for 4C.

The verification schemes have lower thresholds and therefore are more accessible to coffee growers. The conditions do not generally have to be met upfront in full to become certified. It is rather a gradual

process of increased adaptation to the standards that could take several years, while the benefits are available from the beginning onwards (FNC, 2015b). This is in contrast with programmes like Rainforest Alliance and particularly Organic, which has a three year transition period of severe limitations and reduced productivity, whereas the premium could only be obtained afterwards. 4C allows for gradual elevation of compliance levels and might serve as a stepping stone towards other, more demanding certifications (Reinecke et al, 2012). Nespresso would, if the high criteria of coffee quality are met, facilitate a similar system of gradually heightened levels of compliance, comparable to 4C. However, as of late, Nespresso only buys coffee from farmers in Santander that have a combined certification with RA. This raises the entry barrier considerably, because the farmers need, apart from meeting Nespresso's quality requirements, also meet the more stringent social and environmental criteria of Rainforest Alliance.

Certification may favour farmers with certain characteristics. The financial compensation for participation in a certification program is offered through a premium per unit of coffee, hence are variable with production size. The investments on the other hand, the cost of adaptation, have a more fixed character. The difference in the nature of the financial benefits and costs makes certification appealing for those who have larger production volumes and can create economies-of-scale. Hence, all certifications would favour larger and more productive farms. Certification with all labels would favour those farmers that can comply with the requirements on business management and registration, and production methods. This will invariably favour those with better skills and education. Because Organic requires often significant changes in farm practices, considerable investments need to be made. The reduction in productivity compared to conventional methods can be a significant burden, whereas the premiums from certified-Organic will only be received after three years. Also Rainforest Alliance would attract coffee growers that have better capacity to make the investments, which could be significant due to the rigidity of the requirements. For both certifications, wealthier farmers with larger production volumes are favoured, because they can more easily bear the costs and have better capacity to retrieve the investments.

The verifications tend to be more accessible for smallholder coffee growers, because the financial burden is significantly lower. Also the process is of certification is more gradual and not all criteria have to be met upfront. This makes 4C and Nespresso more accessible to smaller, more marginalised farmers. Nespresso would attract those farmers that can meet the quality requirements. These can be both large and small farmers, with favourable soil and climate conditions, as well as the production techniques that result in high-quality coffee. Yet, as quality may be improved through specific

investments in production methods, storage and processing, this would also favour larger and wealthier coffee growers.

6. What actors are involved in the process of certification? What are the policies of certification?

In this chapter I discuss the policies on certification and the process of certification in Colombia and in the San Gil region, and what role the certification organisations, the cooperative and the farmers have therein. The policies and processes as well as the interaction of the actors determines the scale and expansion of certification and which coffee growers can participate in certification programmes.

6.1 The labels

From interviews with FNC employees I found that in Colombia, the certifications are very passive in the process of certification. FNC is the mediator and facilitator in the process and hence, play a dominant role in the certification process. In Colombia, the volume of certified coffee have been growing significantly in recent years. However, the involvement of the certification organisations in certification remains limited to discussions of the general requirements with FNC and discussions regarding farmers who failed the audits. The certifications have appointed independent auditing entities that conduct the audits on their behalf. In general, there is little support from the labels to help the farmers comply with the regulation (Fundación Natura employee, personal communication, 16/2/2015). Some support is offered to FNC by providing information on the need for sustainable production, and on methods for achieving it (FNC employee, personal communication, 12/3/2015).

Nespresso is more supportive than the other labels, because it offers financial support to the extension service (Nestlé, 2015). In fact, in Santander they fund the increased capacity of the extension service. When problems occur with meeting the standards, Nespresso might offer additional funding to help solving the issues (FNC employee, personal communication, 17/3/2015).

Nespresso is the only programme that directly buys the coffee, and offers a premium for meeting the requirements, particularly those on quality. The other seals are mere signals of a more sustainable production process and better quality. This could command a higher price, but that is still to be negotiated with external buyers. The premium is not offered by the labels themselves, since they do not engage in the transaction (Rueda and Lambin, 2013a).

6.2 Federación Nacional de Cafeteros de Colombia

Since the early 2000s the FNC has adopted coffee certification as part of a value-enhancing strategy for farmers.

Generally, FNC is the initiator in the certification process and will propose farmers for the certification process. These farmers will be audited by the qualified auditing entities on behalf of the labels. FNC policies on certification are determined by global demand for a particular type of certified coffee and the availability of farmers willing to participate in such a programme, and able to meet the requirements.

6.3 Cost of certification

FNC pays a significant amount of money to the labels as a license fee for having Colombian farmers certified, but considering the extent of certification, the license fee per individual farmer is negligible (FNC employee, personal communication, 6/4/2015). However, for an individual or small group of farmers this fee is a huge financial barrier, making it effectively impossible to get coffee certified without FNC. These economies-of-scale have effectively created a monopoly on certification for FNC, acting as the sole mediator between a certification institution and the farmers.

It should be noted that the farmers only pay the cost of adaptation and recurring cost of compliance of the production costs. FNC will pay for the audits. During the process the extension service will offer assistance to make the adaptations to comply with the regulations. This is also free of charge for the individual farmer. The cooperative will bear these costs, that will be covered mainly with the tax levied on coffee export (FNC employee, personal communication, 12/3/2015). This system makes certification more accessible to less affluent smallholders.

6.4 Selection process

Based on trends in global demand for certified coffee, FNC decides how much coffee and how many farms can be certified with a particular label. FNC is the organisation that decides which farmers are eligible for certification. Given the limited size of the market and limited financial gain, the cooperative has to balance efficiency and equality in the selection procedures. With limited funds, FNC needs to cover a broad array of farmers to increase impact, which contributes ultimately to FNC's goal to improve the life of coffee growers and their families. The benefits for the farmers should be maximised, while as many farmers as possible should be able to participate. When targeting particular farmers, FNC seeks those that have characteristics and cultivation practices that can be easily matched with the requirements of a particular certification. Those farmers that have to bridge a small gap towards the

required production practices, have relatively low cost of adaptation. This reduces the cost of adaptation for the farmers involved. From the perspective of FNC this approach is also efficient, as less assistance to farmers in needed to comply with the regulations. This reduces the costs for the cooperative.

Typically, FNC identifies groups of farmers that are proposed for certification, rather than individual farmers. This is in order to reduce the cost for FNC. These groups consist of 20-40 farmers (FNC employee, personal communication, 12/3/2015). The clustering process makes information sharing easier, and auditing smoother and cheaper. In particular the cost of technical assistance that the FNC extension service offers to farmers can be significantly reduced if it is offered to larger groups.

6.5 Multi-certification

FNC also aims to certify farmers with multiple certifications rather than one. In terms of regulation there is a certain overlap among the certifications. So when a farmer complies with the requirements for a particular label, it is often relatively easy to comply with the rules of other labels as well. This reduces the cost of adaptation. Multi-certification is beneficial for both FNC and the individual farmer. FNC can more easily comply with agreed-upon quantities of coffee with buyers and it can hedge against demand fluctuations for individual labels. Multi-certification also increases the efficiency for FNC (FNC employee, personal communication, 12/3/2015).

Multi-certification is also beneficial for the certified farmers, who can gain a premium from different certifications. For example, a farmer that has both Rainforest Alliance and 4C can, if demand for RA certified coffee is low, still sell the coffee with 4C labelling with a premium. Also, coffee growers may receive additional support of FNC, to comply with a larger set of requirements because of the multi-certification (FNC employee, personal communication, 12/3/2015). This can enhance the farmers skills on production methods and management of the farm.

Many farmers have two, three or even more certifications. Exemplary for the tendency of multi-certification is the Nespresso scheme. This standard carries many similarities with other programmes and therefore FNC tends to combine Nespresso with other labels. At least in Santander, Nespresso is not an individual standard, but always a component of multi-certification (FNC, 2015c).

Whereas multi-certification is efficient from the perspective of FNC and the farmers who obtain the labels, it makes certification less accessible to farmers that have not obtained a label yet. Multi-certification concentrates the possibilities for certification to a smaller group of farmers. Farmers that are not certified have limited possibilities to join a group of certified farmers. This creates a widening gap between certified and non-certified coffee growers.

6.6 Expansion of certification

The characteristics of Santander created a conducive environment for certification. FNC initially focused on larger farms. The goal was to certify a group of farmers that was readily available and would produce reliably to cater for the demand for certified coffee. Later on, smaller farms have been certified as well (Rueda an Lambin, 2013b).

The volume of certified coffee has been growing in Colombia. Between 2010 and 2013 the growth rate for RA was 108%, and for 4C it was 365%, however for Organic the growth was only 8%. Also in Santander the volumes of certified coffee have been growing, due to favourable cultivation conditions. Another reason for the growth of certification in Santander is the cup profile of 'Café de Santander', which has been appreciated by consumers for its mild medium-bodied taste (FNC, 2015a).

Until recently, in Santander the number of farmers certified with Nespresso has been growing rapidly as well, but it has been slowed down. Currently Nespresso buys only low volumes of coffee from Santander. Nespresso's focus on cup profiles drives them to buy coffee elsewhere in Colombia and abroad, rather than in Santander. Hence, FNC is not expanding the Nespresso programme in the San Gil region (FNC employee, personal communication, 22/5/2015).

The extent to what FNC can certify farmers is limited by global demand for certified coffees. In recent years the FNC has started many projects to get farmers certified. FNC has created an overcapacity. More coffee is certified than needed to cater for global demand, but it anticipates on demand fluctuations (for certain label and origin) and variations in harvest due to climate conditions. Nevertheless, FNC expects the growth in demand for Colombia's certified coffee to slow down, with consequently a limited expansion of the certification programmes (FNC employee, personal communication, 12/3/2015).

The extension service indicates that near San Gil there is a number of farmers who would easily comply with the 4C rules but that demand is lacking. And for Rainforest Alliance certification the FNC policy is only to expand the number of certified farmers with a maximum of 10% per annum. 'Yes, we can certify more farmers, it is possible. But then we need a buyer,' says a FNC spokesperson (FNC employee, personal communication, 12/3/2015). Without demand, certification will not accrue any value, only additional cost. Consequently, many farmers have to wait until they are admitted in a particular programme.

Conclusion

The role of the labels in the certification process is limited. Possibilities for farmers to obtain a certification depend rather on the policies of FNC that holds a monopoly in coffee certification. FNC decides how much coffee can be certified in a particular locality based on global demand for particular

certifications and taste profiles. For all certification programmes the process is similar and subject to FNC policies. FNC policies are the de facto certification policies. Typically, FNC will form groups of farmers for particular seals in order to reduce cost of technical assistance and audits. These costs are fully borne by the FNC, which makes certification more accessible to farmers, notably smallholders. For a particular certification programme farmers are selected based on a match of production practices with required practices by the labels, in order to reduce the cost of adaptation for the individual farmers and the cost of technical assistance for FNC .

With various labels that can be obtained in the region, it could potentially cover a wider array of coffee growers, based on preferences by farmers and conditions imposed by the certifications. Yet, for efficiency purposes, FNC tends to duplicate. This may not be the purpose of the various labels, yet it is an outcome of the compatibility of labels, and the overlap that they have in requirements. This multi-certification may stimulate FNC to target farmers with similar characteristics for all labels. As a consequence, there is a concentration of certification to a smaller group of farmers with similar, conducive characteristics. For farmers that currently do not participate in certification, and have less favourable characteristics, certification is less accessible.

Market differentiation between the labels is visible due to the fact that some programmes have been growing faster than others. This shows that demand for particular types of certified coffee vary, due to preferences of downstream entities in the coffee value chain. This has a significant impact on coffee growers, in terms of accessibility to a sustainability programme and in terms of premiums received from the coffee sale. Multi-certification allows certified farmers to hedge against demand fluctuation in a particular type of certified coffee.

FNC has additional farmers available to start the certification process for all labels. Although compliance with the certification requirements may entail significant adaptation cost for farmers, and costs for the FNC, it is not a main limitation to further growth of the certification programmes. Expansion is rather limited by the lack of global demand for certified coffees.

7. What are the characteristics of farmers who participate in particular certification programmes?

In the previous chapter I described the process of certification, which showed an important role of FNC in the selection of farmers for certification programmes. Also some limitations to the scale of certifications have been discussed. These pertained predominantly to limited global demand for certified coffees. Although adaptation cost could be significant, many farmers want to participate in a certification programme. In this perspective I want to look at the characteristics of the coffee growers who typically obtain a certification. This is in order to determine whether they differ from farmers who do not get a certification, and whether farmers in different programmes exhibit distinct characteristics. The plurality of certification programmes could potentially appeal to a larger range of farmers, with labels attracting farmers with different characteristics. I looked at farm characteristics and characteristics of the farmer (household head). Some of these characteristics are interrelated and can be part of the social-economic conditions that may be conducive to certification. This may pertain to wealth, farm size, production volume, and education level, but also social capital can be considered a favourable social-economic condition.

Table 7.1 Characteristics of farms and farmers

group	Characteristics									
	size of farmland dedicated to coffee (hectares)	production per hectare (kg)	proportion of land for coffee cultivation	proportion of farmers:		formal education (years)	age (years)	experience (years)	proportion of farmers using non-family: labour:	
				cultivating other crops	breeding animals				during harvest time	Through-out the year
certified (n=78)	6.8	1326	54.2%	97.1%	96.8%	8.3	51.5	23.7	88.6%	70.1%
non-certified (n=33)	1.8	1067	46.3%	100.0%	88.9%	6.5	47.2	17.5	86.7%	56.7%
Organic (n=9)	10.5	852	41.2%	100.0%	100.0%	9.7	54.0	20.8		
RA (n=35)	10.3	1096	51.5%	97.0%	100.0%	9.4	54.1	24.4		
Nespresso (n=43)	8.1	1422	55.4%	97.1%	97.0%	8.8	52.3	23.2		
4C (n=32)	3.7	1499	56.3%	97.1	96.8%	8.0	49.9	21.0		

Sources: survey data; FNC, 2015d

Table 7.1 summarises the characteristics of farmers that are certified with a particular label, and characteristics of non-certified farmers. FNC data was used for a comparison of the size of the coffee farmland and proportion of land for coffee cultivation. In the next sections, the characteristics will be discussed in greater detail.

7.1 Coffee volumes

The first two farm characteristics in table 7.1 are size of farmland dedicated to coffee and production per hectare. Combined, these can be referred to as coffee volume, as these factors both determine the overall output from the land. In paragraph 7.1.1 the size of the farmland dedicated to coffee will be discussed. In 7.1.2 a comparison of the productivity per hectare is made. In 7.1.3 a further analysis is made on both factors that determine the coffee volume. As will be explained in this paragraph, coffee volume is an important determinant in access to certification.

7.1.1 Characteristic: size of farmland dedicated to coffee

It is often claimed that certification focuses predominantly on large farmers, and that small farmers are excluded (e.g. Valkila, 2009; Ponte, 2004) According to Rueda and Lambin (2013b) certification in Santander has favoured larger farmers. Hence, farm size is an important feature. I captured this characteristic by comparing the size of the coffee farmland, in order to determine the relation between farm size and certification.

Data from my survey suggests that a larger plot of land is favourable for obtaining certification.

In table 7.1 a considerable difference is observable between the certified farmers and non-certified farmers. Farmers who indicated to have a certification, have on average 6.8 hectares of farmland dedicated to coffee, whereas the non-certified farmers have only 1.8 hectares on average. Also there is notable difference between the various certifications. Organic farmers have the biggest coffee area with 10.5 hectares of coffee area on average, with RA being a close second. Farmers with 4C are the smallest with 3.7 hectares on average.

I compared the size of the coffee land of the farmers in the sample with the average size of coffee land of farmers in Santander Department, while assuming that overall the size of the coffee plot in the San Gil region does not differ substantial from the average in Santander.

Table 7.2 shows the land distribution dedicated to coffee production among farmers in the Santander Department. More than 90% of coffee growers cultivated coffee on plots of land less than 3 hectares, with an average of 1.5 hectare of coffee farmland per farmer.

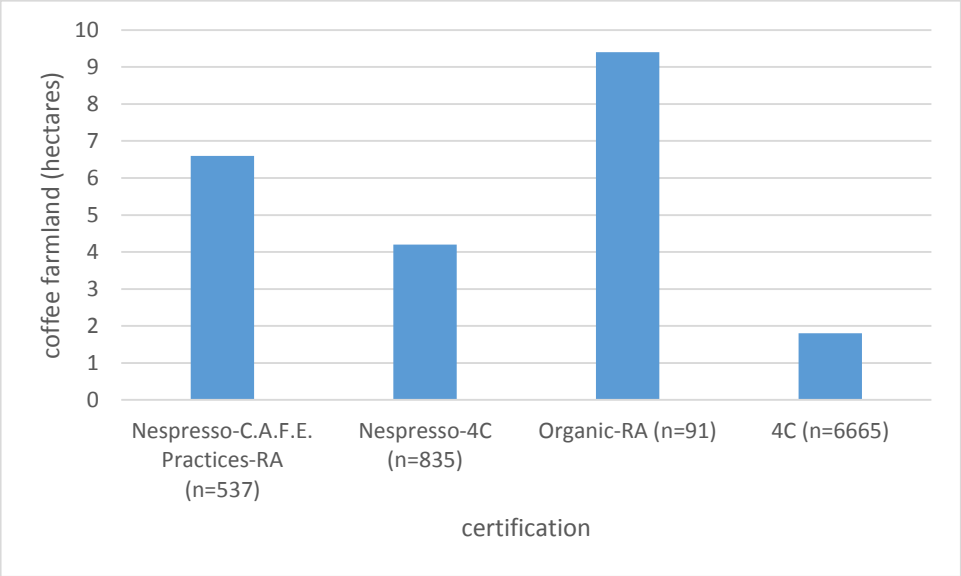
Table 7.2 Distribution of coffee farmland among farmers in Santander

	coffee growers		
size in hectares	**number**	**%**	**average size in hectares**
less than 1	17,492	55.1%	0.5
between 1 and 3	11,196	35.3%	1.7
between 3 and 10	2,829	8.9%	4.5
more than 10	236	0.7%	21.5
Total	31,753	100%	1.5

Source: FNC, 2015b

So, farmers in the sample with certification are considerable larger than the average sizes in Santander. It should be noted that in the sample also the farmers without certification are larger than the average farmer in Santander. However, the gap between the certified and non-certified farmers is more significant. In order to give more reliable data, I have some data on certified farmers in Santander with much larger numbers of farmers, depicted in figure 7.1 below. It shows groups of farmers that are related to the four certification programmes of my research. Some of these groups have multi-certification. One group includes the Starbucks verification programme C.A.F.E. Practices, which is not elaborated further in this research. Yet, it has been included in the figure to provide additional data on the size of coffee plots of farmers that participate in the RA and Nespresso programmes. It should be noted that not for all certification groups data was available.

Figure 7.1 Average coffee farmland in Santander per certified group



Source: FNC, 2015c

Whereas in Santander overall the average size of the coffee farmland is only 1.5 hectare per coffee grower, those farmers that are certified tend to have larger plots of coffee land. The Organic-RA farmers on average have 9.4 hectare of coffee area, and Nespresso-C.A.F.E. Practices-RA farmers have 6.6 hectares. Those numbers are considerably larger than the average for all farmers in Santander. The 4C group is the only group with an average size of coffee farmland that is close to the overall average of coffee growers Santander.

7.1.2 Characteristic: productivity per hectare

Another characteristic that might be related to certification is productivity. It was argued by Rueda and Lambin (2013b) that FNC focuses on more productive farms, at least in the initial stages of coffee certification in Santander. Table 7.1 shows that certified firms tend to be more productive than non-certified. Certified farmers on average produce 1325 kilograms of coffee per hectare compared to 1067 kilograms for non-certified farmers. The difference between certified and non-certified farmers is larger for 4C and Nespresso than for Rainforest Alliance. Organic has intuitively a smaller production than non-certified coffee growers, because of the non-conventional production methods, without chemicals. In my sample the production of RA is relatively low, likely because of the tendency of combined certification with Organic, which reduces productivity.

So, apart from Organic, certification seems to be positively related to productivity. Productivity gains might partly be an outcome of certification, as will be discussed in chapter 8. FNC has stressed that productivity is not a determining factor in the certification policy (FNC employee, personal

communication, 15/4/2015). But, as Rueda and Lambin (2013b) have indicated, FNC has historically focused on larger, and more productive farmers in order to produce reliably to meet the FNC obligations with coffee buyers. This policy is likely also reflected in table 7.1 and figure 7.1.

Also some farmers indicate that productivity is an issue that restrains certification possibilities. A farmer who is certified with 4C, hopes to join a group with RA, but only when he can increase production. He needs extra coffee volume in order to make the investment worthwhile (source: interview with 4C certified farmer).

7.1.3 large production volume is favourable condition to certification

Farmers with larger coffee production volumes, both though larger production area and larger productivity, is a favourable conditions to certification. Certification is more appealing to larger, more productive farms, both from the perspective of the farmers and FNC.

For farmers with larger production volumes the cost of adaptation is lower, compared to the benefits of certification. This is because the difference in nature between the financial benefit and the costs. The benefits are variable, and depend on production size, whereas the costs tend to have a more fixed character. So, for larger farmers it is easier to compensate adaptation cost with the benefits.

The FNC has estimated that the cost of adaptation is on average US$ 1800 for a farmer. For some farmers this is just too expensive. 'I have only a very small farm, and you have to buy new things. It is too costly and too much effort to change' said a farmer who was one of the farmers that could opt for certification, but declined (source: interview with non-certified farmer). The options for obtaining certification are rather larger when a farmer is endowed with a larger plot of land, with larger production volumes. For very small farmers, generally only 4C might be accessible, possibly combined with Nespresso. The other labels require a larger plot of land to make the investments worthwhile for farmers.

Also, from the perspective of FNC, farmers with larger production volumes are favoured for certification. The cooperative has to assist farmers during the certification process as well as paying for the audits by the external auditor. Economies-of-scale are created when larger farms with a larger plot for coffee cultivation can be certified, and with larger production per hectare. Less assistance to farmers is needed, and the cost of auditing is also relatively low for FNC, compared to the certification of farmers with small production.

7.2 Income diversification

In the next section the farmers will be compared in terms of specialisation and income diversification. This is in order to discern notable differences and similarities of income generating activities from the

farmland between farmers in different certification programmes, and between certified and non-certified farmers. Many coffee producers have indicated to have different crops and animals as additional income sources, to spread annual income, because the coffee harvest is only once a year (source: survey data). In my research area an abundance of tree cover was present that provides shade to the coffee plants, which enhances the quality of the coffee. The tree cover often include fruit trees that provide an excellent source of additional food and income. Also, other food-providing vegetation is grown among the coffee plants, as well as on other parts of the farm. In the next paragraphs the farmers will be compared in terms of specialisation and income diversification, based on survey data as depicted in table 7.1.

7.2.1 Characteristic: specialisation on coffee

As the extra revenue from the premium ultimately depends on the production volume, it is interesting to compare land use for coffee. Coffee is considered the most profitable crop, which is sold up to 100% (source: 4C certified farmer). Also, coffee is an interesting crop because of the FNC's purchase guarantee. Without requiring much effort, people are assured of sale of their produce (FNC employee, personal communication, 12/3/2015). This might suggest a high level of specialisation on coffee. The different natures of the costs and benefits of certification, as discussed in paragraph 7.1.3 would suggest higher levels of specialisation for the certified farmers.

The data on land use in table 7.1 shows that, although the certified farmers have a slightly higher land use for coffee production, both certified and non-certified farmers in general use only about half the land for coffee. Certified farmers use 54.2% of the farmland for coffee cultivation, compared to 46.3% for non-certified farmers. In fact, coffee farmers have various other income-generating activities on the farm. Farmers that are certified with Organic use only 41.2% of their land for coffee production. Farmers in the other certification programmes use just over half of the farmland to produce coffee, with the 4C farmers having the highest level of specialisation, with 56.3% of the land dedicated to coffee. All in all, differences in coffee specialisation between the groups are rather limited, and it cannot be indicated as a characteristics that strongly influences certification.

7.2.2 Characteristic: other crops

As can be derived from table 7.1, all of the non-certified farmers indicate to have other crops than coffee. Of the certified farmers, 97.1% indicate to cultivate other crops. It can be concluded that a very high proportion of farmers grow additional crops, regardless certification.

In fact, even those with a high proportion of land use for coffee generally will still have various crops. Farmers can grow plants and fruit trees in between the coffee plants, which create shade and nutrition for the coffee. The fruits and vegetables can be sold or consumed at home. The most popular crops are plantain, cassava, and citrus fruits. Other crops include sugar cane, avocado, corn, tomato, and beans (source: survey data).

7.2.3 Characteristic: animal breeding

Table 7.1 shows that many coffee producers have also animal breeding activities. There is little difference in farm production activities between the certified and non-certified farms. 96.8% of certified farmers indicated to have animals, compared to 88.9% of the farmers without certification. Among the various labels, the differences are negligible. Survey data suggests that the most popular animals are poultry (chickens, turkeys and ducks), and cattle. Furthermore farmers breed pigs, goats, sheep and fish (source: survey data).

It can be concluded that differences in specialisation and income diversification from on-farm activities are limited. All farmers in the survey showed remarkable similarity in terms of land use. Hence, specialisation and income diversification cannot be related to certification with a particular label, or with certification in general.

7.3 Characteristic: formal education

Table 7.1 shows a difference in education level between certified and non-certified farmers. FNC tends to certify farmers with more years of formal education. One reason for that is that coffee growers with better education can more easily comply with the requirements on farm management (in particular registration), which tend to be more burdensome for low-educated people. On average, the certified farmers have 8.3 years of formal education, compared to only 6.5 years for the non-certified producers. Even for the 4C programme, which is considered to be the most easily accessible, the average formal education is 8.0 years. There is also variety between the labels. Farmers certified with Organic and RA, on average have over 9 years of education. There is another reason for the discrepancy in education between certified and non-certified farmers, which also explains the variety in education level between certification programmes. This difference might be rather explained by a relation between various social-economic conditions, which include education level and size of the farmland, amongst others. For the RA and Organic certification programmes, FNC tends to certify farmers with larger plots of land than for the 4C and Nespresso programmes. These farmers are likely also better

education than farmers with smaller plots of land, because both characteristics are expressions of the social economic situation.

7.4 Characterics: age and experience

As shown in table 7.1, farmers in the programmes of Organic and RA are older and more experienced on average than farmers with the Nespresso and 4C labels. This can partly be explained by the fact that Organic and RA are the oldest certifications and recently have not been growing so much as Nespresso and 4C. Furthermore, for Organic a three year transition period is needed. So current participants are generally older, and more experienced.

Between the certification and non-certified farmers, there is a considerable gap in the age and experience. The average age of certified farmers is 51.5 years compared to 47.2 years for the non-certified farmers. Certified farmers have 23.7 years of experience, compared to only 17.5 years for the farmers without certification. The differences might be explained by the social links, and the connection with FNC. Older and more experienced farmers are more likely to have established good ties with the extension service and therefore might be favoured when certification is available. This may also be a reflection of the policies of multi-certification. Farmers who have previously been certified with a particular certification, and have established better relations with FNC, are more likely to obtain an additional one. Also, because of the contact with FNC and access to their technical assistance, older and more experienced farmers may have developed production techniques that give good production volume and quality, which are more suitable for certification. The importance of social capital for obtaining certification will be elaborated on in paragraph 7.6.

7.5 Characteristic: non-family labour use

Since FNC imposes labour regulation on non-family labour for all sustainability programmes, it is interesting to see if this affects choices to obtain a certification. If the labour regulation is burdensome, certification may attract farmers with little use of external labour. I asked farmers if they hire external non-family labour or only employ family, throughout the year, and during the coffee harvest. In table 7.1 there is no big difference discernible between the certified and non-certified farmers. In particular during the harvest, differences are negligible with 88.6% of certified farmers indicate to use external (non-family) workers, compared to 86.7% of non-certified farmers. Throughout the years differences are slightly larger, maybe due to differences in land size. Since the is labour regulation is rather similar among all certification, and identical regarding workers the restrictions on child labour, it is sufficient to only compare the certified to the non-certified farmers, without disaggregating for individual labels. The certified farmers tend to use relatively more external workers, whereas non-certified farmers rely

somewhat more on only family. But particularly during the harvest, both groups strongly rely on external labour. Therefore, the type of labour use it does not seem a determining factor to obtain a certification.

7.6 Social capital

Another aspect of favourable social-economic conditions for certification is social capital. Data on social capital is not depicted in table 7.1. It rather is derived from participant observation and interviews with experts and coffee growers. For access to certification the social ties with FNC are important, because the extension service will decide what farmers are eligible for certification. These ties are strengthened through the information meetings that are organised by FNC. In principle, all farmers should be invited to these meetings where they are provided with knowledge on certification, but also on general improvements of coffee cultivation. In practice, not all coffee growers have access to these meeting. According to one farmer FNC shows some discrimination towards farmers that have too small a production, live too remote and who do not have good connections with FNC employees (source: interview with Organic-RA certified farmer). This statement is supported by another farmer who said that some farmers are just not invited to the group meetings so they do not have access to information on certification (source: interview with non-certified farmer). The network is very important. Strong ties with the extension service entails much more support. This shows variation in the social capital among farmers. Ultimately, FNC decides what farmers will be certified, and they make decisions based on their knowledge about farmers. This includes knowledge on production size, productions techniques and willingness of the farmer to join certification.

The bottom line is that some farmers have better networks than others. Particularly the connection with FNC is a determining factor in access to certification. Coffee growers with good relations with FNC tend to be invited more often to group meetings and therefore have better access to certification.

7.7 Multi-certification: farmer characteristics

FNC often opts for multi-certification, as this can reduce efforts and costs for both FNC and the farmers involved. Table 7.3 gives an overview of characteristics that may influence the possibilities for multi-certification. The characteristics included can be considered social-economic conditions and are likely to be interrelated. The table shows that farmers with multi-certifications tend to be older and better educated, and have a larger plot of land. However, they are not more experienced than those with a single certification.

Table 7.3 farm and farmer characteristics: multi-certification vs. singular certification

	coffee farmland (hectares)	age (years)	education (years)	experience (years)
single certification (n=20)	2.8	49.6	7.1	30.3
multiple certification (n=59)	8.5	52.2	8.7	21.4

Source: survey data

For farmers that already have a certification, compliance with other certifications is generally rather easy, as was already discussed in chapter 6. Large farms are favoured for multi-certification. Farmers with a single label on average have only 2.8 hectares of coffee farmland, whereas those with multiple labels have 8.5 hectares of land dedicated to coffee. This can be explained by the fact that certification in the early stages attracted particularly the larger farmers. These are likely have adopted additional labels in later stages. Education is also related to multi-certification. Those farmers with multiple labels have on average 8.7 years of education, compared to 7.1 years for farmers with a single label. This may rather be explained by the relation between education level and size of the coffee farmland, as was already discussed in paragraph 7.3. Due to a time lapse between obtaining multiple labels, it may require several years to obtain additional labels. So, intuitively farmers with multi-certification tend to be older. Likely, an initial certification would enhance social capital, through strengthened ties with FNC. The extension service has been providing assistance already for the first certification, and that connection makes another more easily obtainable. This would suggest that farmers with multi-certification are older and more experienced. Indeed, the data indicates that farmers with multiple labels are older. Their average age is 52.2 years, compared to 49.6 years for farmers with one certification. However, the data does not confirm that experience is related to multi-certification. The farmers with solely one label have considerable more years of experience as a coffee grower, than farmers with multiple labels.

Conclusion

For all seals, certification tends to favour farmers with similar characteristics. These characteristics are mostly related to production volume in terms of overall coffee area and productivity. Whereas coffee growers in Santander on average have a very small plot of farmland for coffee, certification attracts farmers with considerable larger plots of land. FNC focuses in particular on large farms for RA and Organic. 4C attracts relatively small farms, but still, these are generally larger than the average. Nespresso, by nature of multi-certification with 4C and RA, is somewhere in the middle. Also, the

certified farmers tend to have a higher productivity than non-certified farmers, apart from farmers certified with Organic who intuitively produce less through the non-conventional methods. Enhanced productivity may be an outcome of certification, but high productivity is also a favourable initial condition.

Certified farmers tend to have a better education, than non-certified farmers. Certification requires extra capabilities to comply with regulation and registration norms, which is likely reflected in a higher level of education. Also between the labels there is some variety in education level. However, this is likely explained by education level being part overall social-economic position, rather than that some labels require higher education.

For all certifications, the older, more experienced farmers obtain certification.

Social capital also plays a significant role in obtaining a certification, and it may be related to age and experience. Farmers with stronger ties with the extension service might easier obtain a certification. Social capital might also be determined by a farmer's social-economic position, hence social capital can be linked to the other characteristics like farmland dedicated to coffee and farmer characteristics like education level.

Multi-certification tends to favour older farmers with better education, and a larger plot of land. No relation was visible between income diversification and certification. All farmers, certified or not, generally cultivate other crops, and breed animals. No relation either was visible between use of external workers during the harvest and certification. Throughout the year, certified coffee growers tend to rely slightly more on non-family worker, compared to non-certified farmers. However, this is largely explained by the size of the coffee farmland. Certified farmers tend to have a larger coffee plot, which makes external employees more necessary.

Although FNC tends to focus on similar characteristics of farmers for certification, there is some variety. In particular 4C stand out as a solution for smaller farm, as it does not require large investments. On the other hand, for the Organic and RA programmes, FNC targets farmers with larger production volumes. These are able to make more significant investments to comply with the regulation and have better potential to benefit from the premium on coffee.

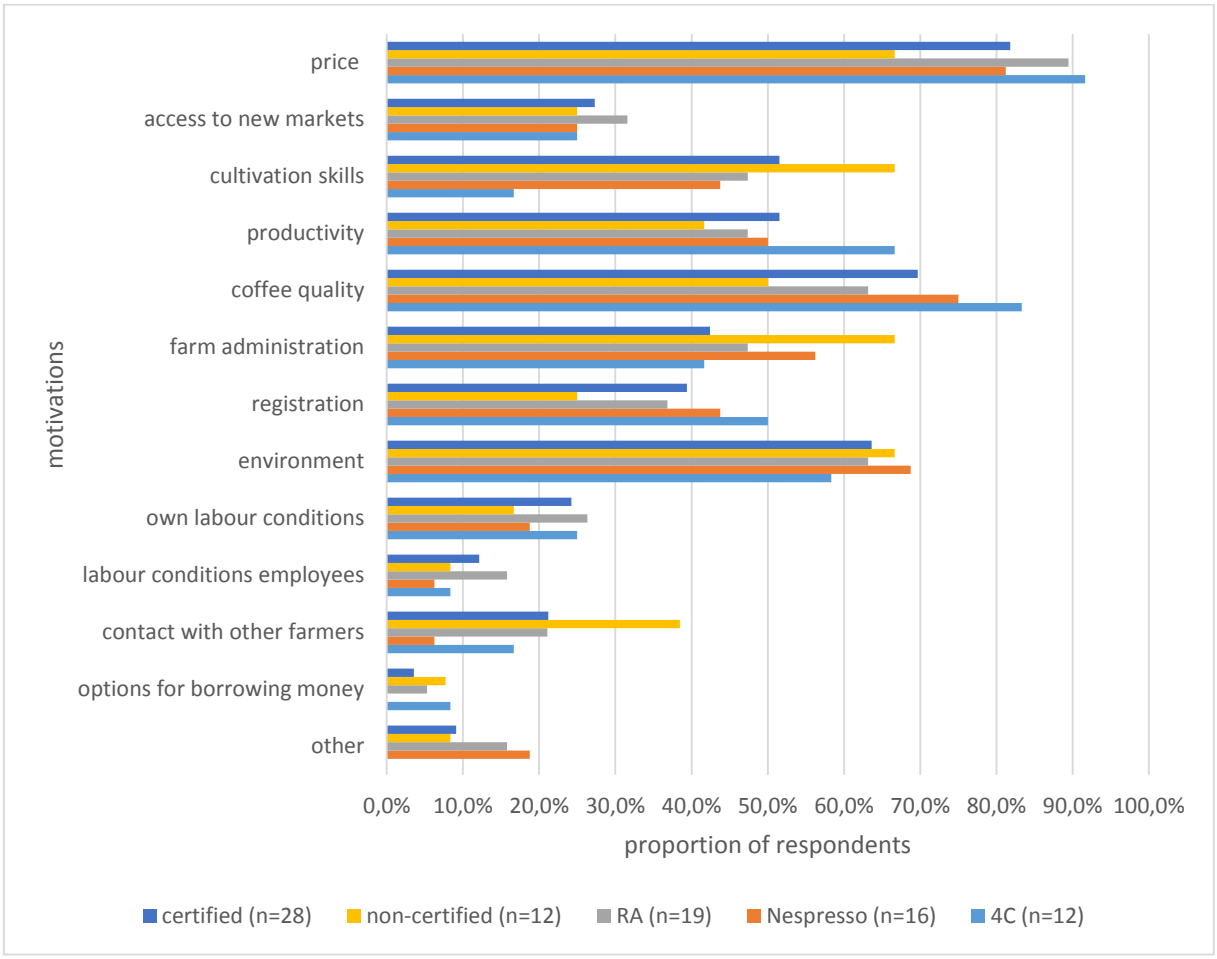
The co-existence of certification programmes can potentially enlarge the scope of farmers that can obtain a certification, if different farmers are targeted. However, as FNC engages in multi-certification, this creates overlap in certification. In particular, multi-certification favours farmers with better social-economic conditions, predominantly based on size of the farmland. This makes certification less accessible to smallholders. Hence, the compatibility of certifications increases options for better-to-do farmers, whereas more marginal farmers are excluded. This widens the gap between the certified and non-certified farmers, as the certified farmers can gain a premium from various programmes.

8. What are the perceived benefits and drawbacks from certification for farmers?

In this chapter I will discuss the motivations for certification, and whether farmers that participate in different certification programmes have different motivations. Motivations are rather driving farmers to take certification whereas as the perceived benefits are the outcomes of certification. The difference between the two might be blurred in the perception of farmers, in particular when a coffee grower is participating for a long time. Hence, both motivations and outcomes will be shown in the figures below and analysed in similar fashion. This is to discern potential differences in terms of perceived benefits by farmers in different certification programmes. Differences in the benefits may attract coffee growers with different characteristics and preferences. Hence, certifications may complement one another in terms of benefits they provide to farmers.

In figure 8.1 the motivations for certification by farmers are summarised. Farmers were asked about their main reasons for certifications, and were allowed to select multiple options. The disaggregated data by certification only include Rainforest Alliance, Nespresso and 4C. For Organic not sufficient data has been collected to conduct a meaningful analysis. However, in the comparison of the overall certified farmers with non-certified farmers, data on Organic has been included.

Figure 8.1 Farmer's motivations for certification



Source: survey data

The figure shows that the main motivation for certification is a better sale price. Also improved environmental conditions as well as improved human capital, through improved production methods and farm management have been considered important drivers. The variation between farmers in different certification programmes is rather limited. In the next paragraphs the motivations will be analysed in greater detail. If available, data on the perceived impacts will be added to the analysis.

8.1 Premium

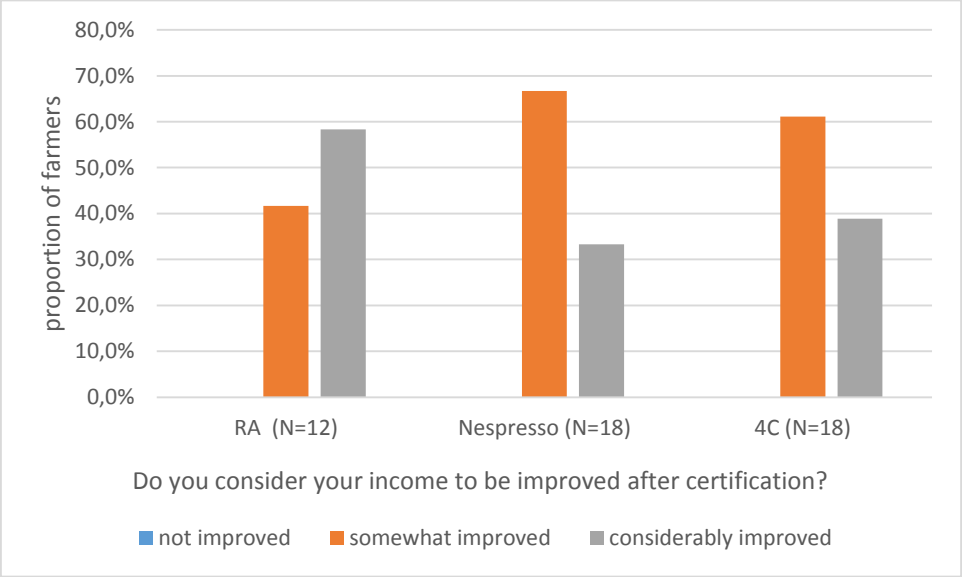
When I asked about the motivations for certification, almost all farmers regardless of type of certification mentions the premium. As figure 8.1 shows, the income benefit was considered a reason for certification for 80% of the Nespresso certified farmers. For RA and 4C it is even higher, with 88.9% and 91.2% respectively. The premium varies among the programmes. Yet all programmes attracts farmers for the financial benefits. Also the non-certified farmers would be motivated by the financial

benefits, although they do not rate it higher than the environmental benefits and some of the human skills.

It should be noted that the gains on human capital in terms of farm management and production methods are also linked to financial benefits. Improved production methods, including enhancements in coffee quality and productivity, allow farmers to receive better prices and higher income. Through improvements in registration and administration, farmers can monitor and control the financial position of the farm.

The certified coffee producers have also been asked to assess the perceived benefits in income. They were asked if the premium has improved their income and to what extent. The results are shown in figure 8.2. Organic is excluded, because not sufficient data was available.

Figure 8.2 Perceived impact on income



Source: survey data

The figure shows that the certifications programmes do contribute to the income in the perception of farmers. In terms of perceived impact on income, some differences are visible between farmers in different programmes. Although differences are perceived to be small, RA is perceived to offer the best income gains.

By the end of 2014, the mainstream coffee price for the coffee harvest was approximately US$ 2.80 per kilogram. For certified coffee the farmers receive a premiums on top of the mainstream coffee price. In 2014, farmers have received for Organic certified coffee a premium of US$ 0.60 (US$ 1.00 =

COP 20,000). If the coffee was certified with Rainforest Alliance the coffee growers received an US$ 0.10 premium. Nespresso has paid a premium of US$ 0.22 per kilogram. 4C certified coffee commanded a US$ 0.02-0.06 over the mainstream market price (FNC, 2015c). It should be noted that not all data on the premiums paid was available. However, it is sufficient to conduct a comparison between the labels.

Considering that the Organic premium has to compensate for the reduced productivity, the income benefit are rather modest. 4C certification offers the smallest premium. What is striking is that the perception of farmers in the 4C programme do not differ considerably from farmers in Nespresso and Rainforest Alliance programmes. This may be explained by multi-certification of farmers that blurs the differences between the programmes. It is often mentioned by farmers that all labels contribute to their income, but even in the most profitable programmes, the premiums are rather modest.

Conclusion

The primary motivation for farmers in all certification programmes is the financial benefit. In the perception of farmers, all certifications do contribute to their income to some extent. The premiums received differ between the various programmes. Yet, farmers have rather similar perceptions of the impact on their income.

8.2 Improved production methods and farm management

Figure 8.1 shows various motivations related to improvements in farm management and production methods. These include cultivation skills, improved coffee quality and productivity, registration and administration. Cultivation skills are related to improved production methods in general terms. In order to make this more intelligible to farmers, I included beside cultivation skills, also coffee quality and productivity as potential responses, because the latter refer to specific outcomes of cultivation skills. 'Registration' is a more specific and 'administration' a more general reference to farm management.

About 50% of the respondents indicate cultivation skills to be a motivation for certification. Also improved productivity is mentioned by about 50%. Approximately 70% of the coffee producers consider improvements in coffee quality a driver for certification. Looking at farm management, improvement in farm administration is considered a motivation for half of the respondents, and about 40% of farmers indicate registration as a motivation. It can be concluded that the production methods (reflected in cultivation skills, coffee quality and productivity) is considered a slightly stronger motivation for certification than farm management (reflected in registration and administration). The variation in opinions of farmers in different programmes is rather small. Farmers in all certification

programmes perceive the certification to make a similar contribution to production methods and farm management. Also the differences in responses of certified and non-certified coffee growers are small. All certifications demand a certain level of registration, and business administration, which may be considered a disadvantage. But this requirements is also considered an benefit, as is mentioned by many farmers. 'Thanks to the various certifications I learned how to register cost and control it.' He received several trainings by FNC in order to comply with these requirements (source: interview with Organic-RA-4C certified farmer). The view that certification is contribution to farm management is widely held among farmers. According to a farmer, certification has improved the productivity and quality. Through the certification programme, he has been offered a new coffee plant variety that gives higher quality and quantity (source: interview with 4C certified farmer).

Nespresso has been supporting improvement in coffee quality in particular. But for farmers in the Nespresso programme, this is not considered a larger motivations for participation, compared to other coffee growers. Farmers in all programmes consider certification to improve production methods.

Furthermore, FNC has initiated a new project that aims to improve coffee quality by improving production and storage methods. Farmers receive training in a FNC coffee research centre where they receive valuable information on improving coffee quality that meet the preferences of consumers. When I visited, the programme was just starting with Nespresso certified farmers, in order to meet the company's quality requirements. Farmers from other certifications will follow soon. The goal is to give the training to all farmers, but for the moment the certified farmers are prioritised because they have to meet higher quality requirements. This is an example how certification gives access to information and training that can improve the production methods and human capital in general.

Some farmers complain about the limited premium on coffee. But they do not consider leaving the programme. Even when the direct price gain is absent, they still appreciate the trainings they receive (source: various interviews with farmers).

The impact of improved human capital extends beyond coffee production. The overall cultivation skills and farm management can be improved through the FNC trainings. As pointed out in chapter 7, many farmers cultivate coffee on only part of the land. They have other crops as well as livestock and other animals. The improved production techniques might be beneficial for more than just coffee, like knowledge on the application of pesticides and (synthetic or organic) fertilisers. This is also the case for improved farm management, with focus on proper registration and profitability. This is beneficial to all farm production activities.

Conclusion

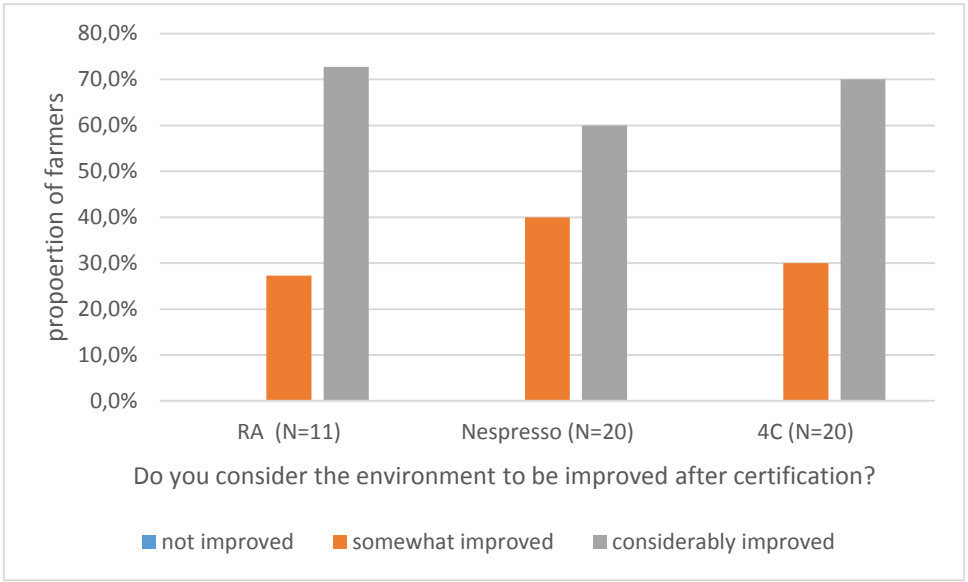
Improvements of farm management and production methods are considered important motivations for farmers to partake in certification. Between the farmers in various certified groups, there is not much difference in the perception. All certification programme contribute to knowledge enhancement, resulting in better production techniques and better farm management.

8.3 Environment

Also the benefits for the environment are considered an important reason for certification. Figure 8.1 shows that about 60% of the farmers have indicated that improving the environmental conditions is a motivation for obtaining certification. Many farmers have shown genuine interest in the environment and express their concerns regarding environmental degradation (source: survey data).

The certified coffee producers have also been asked to assess the perceived benefits for the environment. They were asked if the premium has improved the environmental conditions on the farm and to what extent. The results are depicted in figure 8.3. Organic is excluded, because not sufficient data was available.

Figure 8.3 Perceived impact on environment



Source: survey data

Looking at the impact on environment in figure 8.3, RA is rated slightly higher than the verifications. This is probably due to the stricter environmental regulation that features Rainforest Alliance. But overall, according to the farmers the impact from certification on the environment is considerable.

This is the outcome of the environmental regulations that all labels have, as discussed in chapter 5. Organic is not included in the figure, but the data from open questions and informal interviews also suggests a strong impact on the environment. This is not surprising, as Organic has the most rigid environmental standards.

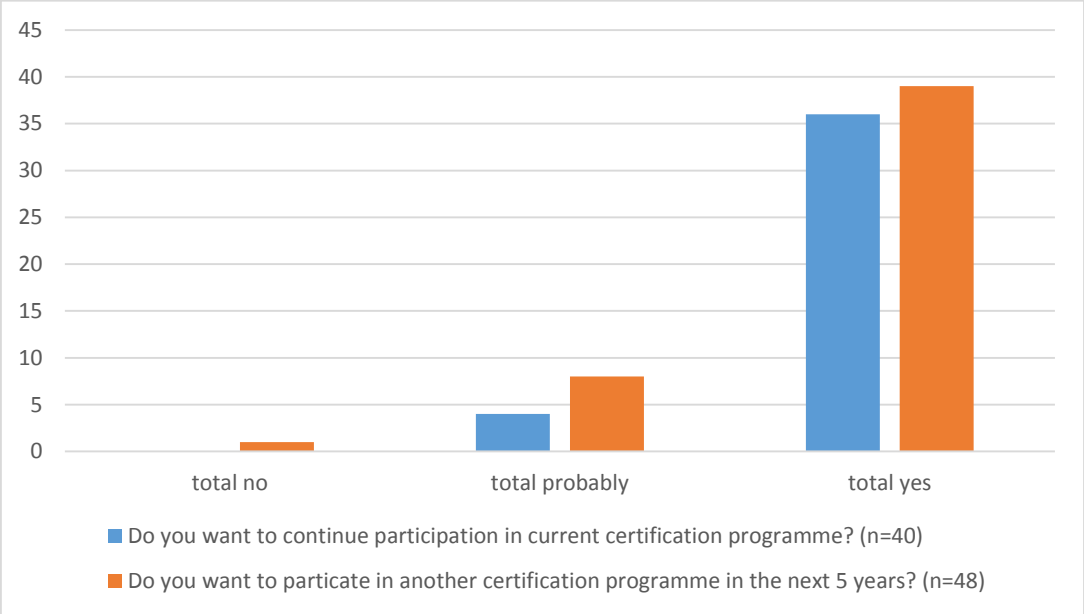
8.5 All certification programmes are appreciated

The co-existence of labels could potentially add to the possibilities for farmers to obtain a label in accordance with their preferences. In practice, access to certification is subject to FNC policies, with limited possibilities for farmers to choose a particular certification. However, from a farmer's perspective that may not be a big issue. In fact, many farmers would like to obtain any kind of certification, if available to them, as generally all certifications are considered beneficial. I found that many farmers do not necessarily prefer one label over another, as oftentimes farmers perceive similar benefits, both in financial and non-financial terms. Availability of certification is rather the limiting factor. Coffee growers have to wait for an available spot.

Many coffee producers perceive the certifications to be complementing one another. The benefits of multi-certification impart the possibility to sell a larger proportion of the harvest as certified. Also it stabilises the additional income from certification, because it hedges against demand shocks for a particular label. Lastly, farmers benefit also in non-financial terms from multi-certification. In order to comply with the requirements of multiple labels, farmers receive more assistance from the extension service. With additional support, farmers could further enhance their human capital.

I asked whether the farmers that are currently certified want to remain certified with the current label. They were also asked whether they want to obtain another (additional) certification in the next 5 years. In figure 8.4 their responses are summarised.

Figure 8.4 farmer's willingness for participation



Source: survey data

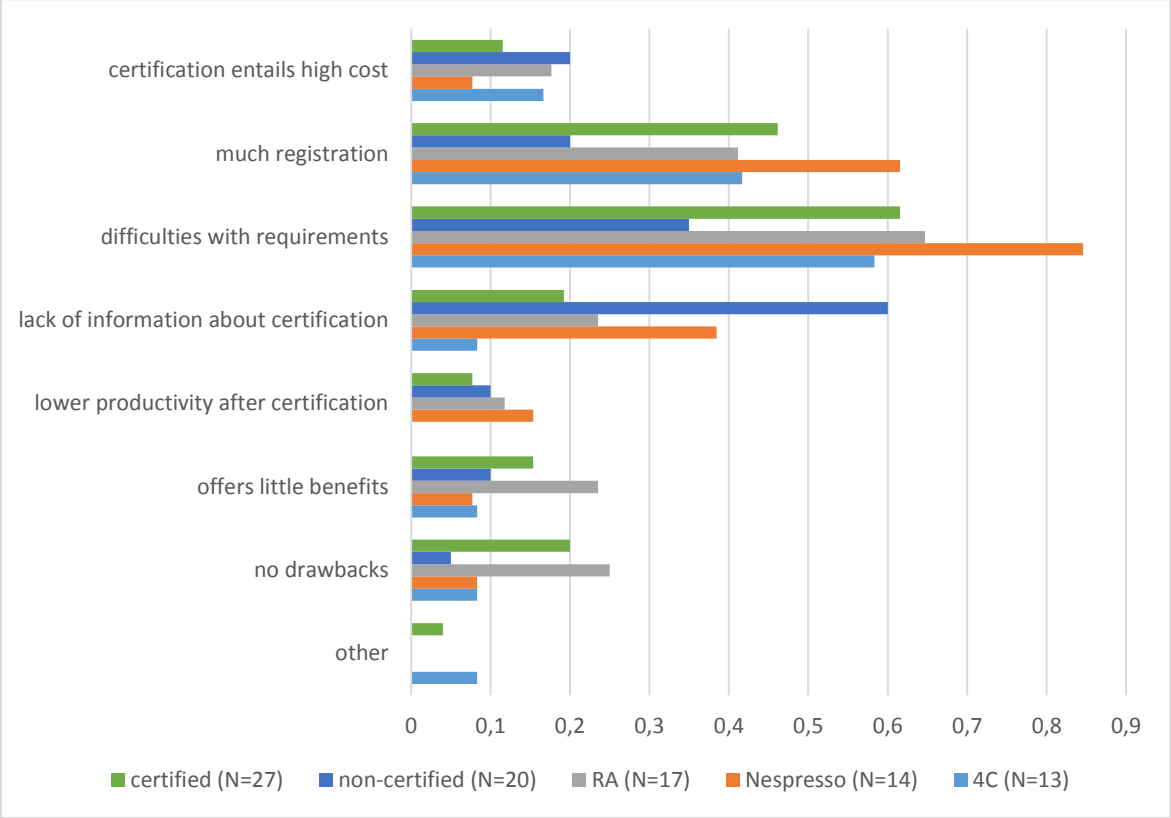
Actually no one wanted to quit certification and only 1 respondent indicated not to be willing an another label. In fact, the great majority of the coffee producers wants to remain certified and hopes to obtain an additional label. Please note that the number of respondents was larger for the second question because also non-certified farmers were able to answer this question.

8.6 Drawbacks perceived by farmers

The requirements as stated by the certifications result in drawbacks for the farmers to a greater or lesser extent, depending on the scope and rigidity of rules and the required adaptation. It can be assumed that in general the drawbacks are smaller than the benefits, otherwise farmers are not interested in certification. With various certification programmes, one would expect that farmers would like to minimise the drawbacks, at least relative to the benefits. Hence, it is interesting to see what farmers consider the disadvantages, and whether differences can be observed between the labels. Therefore, I have asked what farmers perceive the main drawbacks from certification. the respondents could select multiple options. I asked both certified and non-certified farmers. The non-certified farmers generally have little information about specific requirements for individual certifications. Their perception of certification and its drawbacks are rather related to certification in general. Also for farmers that are certified with multiple labels, it is often difficult to make a distinction between the labels. I asked them rather about the group certification and overall drawbacks. Yet, from the variety in certification programmes (with different combinations of labels), data on individual

labels can be disaggregated to some extent. However, due to the large proportion of multi-certification, some blurring remains. The results are displayed in figure 8.5. Due to a lack of data on Organic certification, this is excluded from the figure. However, in the comparison of the overall certified farmers with non-certified farmers, data on Organic has been included.

Figure 8.5 Perceived drawbacks from certification



Source: survey data

First, looking at the differences between the certified and non-certified farmers, some striking observations can be made. 60% of the non-certified farmers point out not to have received sufficient information about the requirements and objectives of certification, compared to 19.2% of the certified farmers. Furthermore, the non-certified farmers consider the cost of certification (mainly related to adaptation) more often a disadvantage (20% compared to 11.5%). The other potential drawbacks are perceived to be larger by the certified farmers than by the non-certified farmers.

The lack of knowledge about certification programmes among the non-certified farmers is an important conclusion. Because they lack information on the requirements for certification, they have limited knowledge on the drawbacks related to the requirements. This might explain why they perceive the other drawbacks less a problem than certified farmers, who have a better understanding of the various drawbacks. For example, this can explain why non-certified farmers consider the difficulties

with requirements and registration to be smaller disadvantages. A gap in perception of the financial drawbacks between the non-certified and certified farmers is visible, which may be explained by the fact that the costs particularly pertain to initial costs, the cost of adaptation. This can be a barrier for the non-certified farmers. Once the initial investments have been made, recurring costs are relatively low. Another explanation for the difference in perception of costs is that the coffee growers without certification are typically smallholders, who may perceive the cost to be higher than larger coffee producers. However, even for the non-certified farmers only a fifth of the respondents consider the costs a drawback, which is rather limited.

Looking at the drawbacks disaggregated by certification, particularly the farmers with Nespresso labelling perceive issues with registration. They complain about the many rules that Nespresso has imposed. Also, farmers in the Nespresso programme complain notably more about a lack of information on the certification standards, than coffee growers in other programmes. Interestingly, little difference is observable between farmers in the RA and 4C programme in their perception of the difficulties with regulation and registration as drawbacks. In both groups, about 40% of the farmers indicated it as a problem. The figure also shows that 20% of the certified farmers do not see any drawbacks. RA in particular scores well in this respect. It is interesting to note, that also about 25% of the RA farmers complain that there are actually little benefits derived from certification. So, opinions vary. Furthermore, a similar proportion of farmers certified with 4C and with RA mentions the elevated cost as a problem. The costs to adapt farm practices towards required methods are likely to be higher for RA than for 4C. However, it is likely that RA certified farmers, who tend to be larger, are more prosperous and have better capacities to make the initial investments. They might also have better potential to gain financially due to larger production volumes. Therefore they might experience the costs as a lesser burden than the smallholder farmers in the 4C programme. Also, overall perceptions of differences between the certifications are blurred by the fact that many farmers have various certifications.

Conclusion

The perceived drawbacks from certification show some notable differences between farmers with and without certification. The differences in perception between farmers with the 4C, Nespresso and RA certification are rather modest.

These drawbacks pertain predominantly to difficulties with the requirements and registration. The farmers with Nespresso have relatively higher perceptions of these drawbacks, than the others. The most striking conclusion might be the general lack of information about the standards and requirements of certification. This is primarily the case for non-certified farmers, of which 60% claim

to have little information. But also 20% of the certified farmers indicate to have limited information. The cost of certification is perceived a drawback by a limited proportion of farmers. Even for the non-certified farmers, who may have to make significant investments for the adaptations, only 20% consider it to be a disadvantage. Among the certified coffee growers, the perception of cost as a drawback is remarkably low and rather similar among 4C, Nespresso and Rainforest Alliance.

8.7 Overall limitations to income benefits of certification

Multiplicity of certification might give coffee growers some extra opportunities to sell coffee as certified. Yet, in a setting with various programmes, certification still has various limitations on the impact on farmers, in particular regarding income. In the next paragraphs these limitations will be discussed.

8.7.1 Quality requirements have to be met

Coffee can be sold as certified only if it meets the quality requirements. Different certifications and different clients may have different requirements on quality, providing farmers various options to sell coffee as certified. But all programmes have minimum standards which are not always met. Often this is caused by weather conditions. Last year, coffee growers in part of the San Gil region have suffered severe drought, that hampered the coffee growing process. As a consequence, these farmers faced bad quality and quantity. The quality issues prevented it from being sold as certified, with adverse consequences on the income. Recently, two farmers in the Nespresso-RA programme quit certification, because the coffee could not be sold as certified due to the quality issues. For them, certification only conveyed extra costs, with not financial compensation. Hence, certification can be a liability.

8.7.2 Limited demand and fluctuation

Over the years, FNC has certified more hectares of farmland and larger quantities of coffee, than generally can be sold. This is in order to meet demand fluctuations as well as making a buffer to ensure that sufficient quantities of coffee meet the quality requirements, also after unfavourable weather conditions. This means that many farmers cannot sell the entire harvest as certified, which is an overall limitation to the impact of certification. When asked what could be improved in the system of certification, one farmer suggested, that they ‘buy all my coffee at a premium, every year’ (source: survey; RA certified farmer). Another farmer explains: ‘[one label] buys a part of the harvest. That do other certifications as well, they buy a part of every farmer in the group’ (source: interview with 4C certified farmer). In fact, FNC will decide on coffee sales for particular farmers. It aims to create equal

shares for the certified farmers in the sales. But they have to incorporate buyer's preferences on quality, cup profile, and type of certification, so the financial benefits from certification vary among farmers. Various interviewees indicated that the volume of certified coffee and number of certified farmers has been growing, but not to its full potential. The extend of certification is limited by global demand for these coffees. A plurality of certifications in a certain setting does not solve this issue.

8.7.3 Demand shocks do occur

Like in the mainstream coffee market, in the market for certified coffee demand fluctuations do occur. Demand for coffee in the San Gil region depends on global demand, as well as supply in competing regions in Colombia and other countries. For example, last year Nespresso bought a limited amount of coffee in Santander. Nespresso's focus on cup profile urged them to buy less from Santander, and focused rather on other districts in Colombia. Nespresso bought only from the RA-Nespresso groups, excluding the coffee growers in the 4C-Nespresso programme. This resulted in many farmers that could only sell at the much lower 4C premium, or with no certification at all. This is an extreme case, but demand shocks occur for all sorts of specialty coffee, limiting the amount of coffee that can be sold as certified, hence with a premium. The multiplicity of labels on the one hand can compensate for these shocks through the possibility of multi-certification of farmers. On the other hand, it exacerbates the problems with demand volatility for particular labels, as buyers can easily switch between certification programmes.

8.7.4 These issues remain with the co-existence of certifications

The issues on income benefits, as discussed above, cannot be solved with multiple labels working in a region. These problems are inherent of certification that operates in a competitive value chain. Limited demand, and focus on quality limits the possibility for coffee growers to sell their produce at a premium. In fact, various labels attracting farmers with somewhat different characteristics, can increase the scale of certification. With larger supply of certified coffee, the premium is likely to decrease further. Furthermore, with buyers switching between labels, this increases competition between the labels and making the premiums more volatile, although this can partly be offset by multi-certification. For all certifications the received premium is rather modest, as was discussed in paragraph 8.1. The multiplicity of certification may cause 'competition for adoption' as was suggested by Manning et al. (2012). On the other hand, the compatibility of labels and the tendency of multi-certification rather limits this competition for adoption. Moreover, the co-existence of labels may rather create competition for attracting buyers, which may erode the premiums offered to coffee

growers, as was suggested by Muradian and Pelupessy (2005). In this perspective, the multiplicity of labels in a region may have adverse impact on the financial benefits for farmers.

9. Research limitations

Limitations to the research include difficulties that farmers have to differentiate between the labels in terms of motivations, benefits and drawbacks. This blurs the results for the individual seals. This is particularly the case for farmers with multiple certification, with the Nespresso programme being the clearest example. Nespresso is exclusively combined with other certifications. This makes it difficult for the respondents to ascribe certain characteristics to particular labels.

Furthermore, my visits to farmers depended on availability of farmers and planning of the extension service employees who accompanied me. This resulted in different numbers of respondents for the various certification programmes. I had great difficulty to find Organic certified farmers for the survey, which resulted in limited quantitative data, which in some cases did not allow proper analysis.

The respondents for the survey have been targeted mainly at farmer meetings, organised by FNC. This selection process may be somewhat biased, because farmers that attend these meetings, may be more likely to show appreciation for certification, than farmers who do not (want to) attend the meetings.

10. Discussion and conclusion

With market liberalisation and retreat of the state in economic processes, certification could play a role in distributing added value among the actors in the value chain (Raynolds et al., 2007). Also, consumers are more concerned with quality, cup profile and traceability of products, as well as environmental and social issues related to the production process. This climate allows for product differentiation and certification (Ponte and Gibbon, 2005).

Through a global value chain analysis I explained the context of the global coffee market, in which certifications have set their agenda and have developed policies and requirements. In this context also the Colombian coffee growers and the cooperative have to act. Ultimately, the certification process depends on the interaction between the labels, the farmers, and FNC.

Through this paper I want to contribute to the knowledge on the on-the-ground process of certification in a context with multiple labels. This paper discerned similarities and differences between labels in terms of objectives and requirements and compared the characteristics of coffee producers that participate in the different certification programmes. Also, this paper examines the perceived benefits and drawbacks for farmers from participation in any single or multiple certification. Ultimately, this paper aimed to find out whether farmers benefit from variety in certification programmes.

10.1 Objectives, requirements and rigidity of certification programmes

Reinecke et al. (2012) consider certification programmes to be remarkably similar in many aspects. My findings concur with them on similarities in objectives and requirements, although differences remain. Organic's main focus is achieving environmental sustainability, with little attention to social issues. Both environmental and social issues are addressed in the mission of Rainforest Alliance. The verifications 4C and Nespresso incorporate social, environmental and economic aspects of sustainability, with notably Nespresso focusing on coffee quality.

Among the various certification programmes, the required production methods are similar for RA, Nespresso and 4C. They allow conventional production methods that include the use of synthetic fertiliser and pesticides. Organic demands very different production methods and imposes severe restrictions to the use of inputs, prohibiting the use of chemicals.

All in all, there is considerable overlap in the requirements among the labels, including Organic, and more notably among RA, Nespresso and 4C. All labels have extensive environmental standards. All labels have registration requirements. Additionally, FNC requires for all certifications that the farmers

employ workers over 18 years only. FNC also imposes minimum quality standards for certification, although these vary among the different programmes.

Whereas the objectives and scope of requirements of the various sustainability standards display similarities, the rigidity of the requirements show more differentiation. 4C and Nespresso are much more flexible on their requirements than RA and particularly Organic. However, for Nespresso the requirements on coffee quality are very strict and raise the entry barrier to certification.

The rigidity of the requirements strongly affects the cost of adaptation. The investments that farmers need to make to comply with the certification requirements favour farmers with better social-economic conditions, like financial position and production size. These coffee growers have better capacity to make the initial investments and to retrieve the investments. This is particularly the case for Organic, that requires a three year transition period.

4C could be considered the most accessible, requiring the least adaptations, hence costs. Also, 4C allows for gradual improvements and might serve as a stepping stone towards other, more demanding certifications. For the Nespresso programme this is also the case, with the condition that the quality requirements need to be met at all times. However, recently Nespresso only buys coffee from the RA-Nespresso groups, which entails much stricter social and environmental requirements. That leaves 4C the only programme that is relatively easily accessible for smallholders. Nevertheless, due to the nature of the costs (which tend to be rather fixed) and the financial gain (which varies with production size), certification favours farmers with larger production volumes. Also, the better educated farmers are favoured as they face less difficulties with meeting the requirements, in particular those on registration.

10.2 Certification process and policies and actors involved

The engagement of the labels is the certification process is rather limited. FNC plays an important role in the process of farmer selection for certification and the adaptation of production methods in accordance with the certification requirements. The FNC policies are the de facto certification policies for all labels, as these organisations themselves are not actively involved in certifying farmers. FNC wields an approach on certification policies and processes that is similar for all labels. Given the limited involvement of the certifications themselves, the presence of various certifications in a limited area should be considered an outcome of the FNC policies incorporating the requirements for farmers and market demands for particular specialty coffees.

FNC has to take into account its costs and the costs for the farmers. Therefore, they select farmers that exhibit farm practices that are already close to the methods requirements by the certifications, as this reduces efforts and costs of all parties involved. FNC will assist the farmers prior and during

certification to comply with the regulation, through the FNC extension service. The certification policies by the cooperative are also based on global trends for certified coffees. Typically, farmers are certified in groups in order to reduce the costs of technical assistance. As Chengappa et al. (2014) point out, group certification may be an effective way to make certification accessible to smallholders. Efficiency is also enhanced with the process of multi-certification. Labels have some overlapping requirements and are rather compatible. This makes it easy to certify a farm with multiple labels, allowing the farmers to receive premiums from various sources, that can offset demand fluctuations for a particular label. Also, they benefit in non-financial terms as more assistance from the extension service can be expected. For the FNC multi-certification is also an efficient tool to meet the obligations with buyers of certified coffee.

10.3 Farmer characteristics in certification programmes

I have made a comparative analysis of the characteristics of farmers that are certified with the various labels, which is relatively new ground in the literature. It can be concluded that certification favours farmers with a stronger social-economic position. These farmers are wealthier and better educated, and have larger production volumes and stronger social capital, which all are favourable characteristics for certification. All certification programmes favour farmers with larger production volumes, reflected in larger plots of coffee farmland and higher productivity. This is also a reflection for their financial capacity to make the investments needed for certification and to recover these investments. FNC focuses in particular on large producers for RA and Organic, as these labels require more significant investments. 4C attracts smaller farms, but these are still larger than the average. Nespresso, as a component of multi-certification with 4C and RA, is somewhere in the middle. Also, the certified farmers tend to have a higher productivity than non-certified farmers, apart from farmers with the Organic label, who intuitively produce less through the non-conventional methods.

Certified farmers are better educated than non-certified farmers. A higher education is conducive to compliance with the requirements for certification. Also between farmers in the distinct programmes, there are differences in education level. Farmers with Organic and RA labelling tend to be better educated than those with Nespresso and in particular with 4C. This difference is presumably caused by a relation between production volume and education, as both are part of the overall social-economic position of a farmer. The farms in Organic and RA certification who tend to produce larger coffee volumes, generally also have a higher education.

Also social capital is an important factor in obtaining certification. Since FNC determines which farmers are eligible for certification, strong ties with FNC enhances the possibilities for farmers to participate in a scheme. For all certification programmes, the coffee growers were on average older and more

experienced than the non-certified farmers. This likely is a reflection of the importance of social ties, since connections with FNC can strengthen over time.

Little differences were found between certified and non-certified farmers in terms of specialisation on coffee, and on-farm income diversification. Moreover, it cannot be concluded that the extensive registration of non-family labour and the restrictions on worker under 18 years, caused by certification, is a limiting factor for farmers to participate. In fact, certified farmers tend to rely slightly more on non-family labour than coffee growers without certification.

Between the various certification programmes, the differences in characteristics of the coffee producers are rather limited. Although there is some variety, FNC tends to focus for all programmes labels on similar characteristics of the coffee producers. Certification favours farmers with better overall social-economic position, whereas the marginalised farmers are more likely to be excluded from sustainability programmes.

As Reinecke et al. (2012) indicate, labels have been made more compatible, allowing for multi-certification. In fact, many farmers in the research area obtained multiple labels. This offers potentially more income benefits as larger proportions of the harvest may be sold as certified. In particular, multi-certification can balance demand fluctuations for individual labels, and stabilise the premiums received. Also, farmers benefit in non-financial ways, since FNC may offer additional support to comply with the more elaborate sets of rules. This improves capacity building for the farmers. However, because of the overlapping requirements of certifications, the additional efforts needed for multi-certification are limited. Once requirements for one programme are met, it is fairly easy to comply with other certification requirements as well.

Multi-certification tends to attract farmers with larger plot of coffee farmlands. Also, the coffee growers tend to be older and better educated. Overall, it can be concluded that multi-certification favours farmers with better social-economic conditions, making it less accessible to smallholders. Hence, multi-certification increases the options for better-to-do farmers, whereas more marginal farmers are excluded. These smallholders cannot benefit from the possibilities of balancing financial benefits from various certifications. They have to rely rather on single certifications which makes them more vulnerable to demand fluctuations .

10.4 Perceived benefits and drawbacks from certification

I have asked about the farmer's motivations to start participating in a certification, and about perceived benefits and drawback, as a knowledge gap in these aspects has been identified by Ibnu et al. (2015). In line with their findings, I found that the premium is the primary motivation for

certification. Coffee growers consider all certifications to be contributing to their income, with little differences in perceived impact between the labels. RA is perceived to offer a slightly higher income benefit than Nespresso and 4C.

Some farmers complain that the received premiums are low. In fact, last year's premiums were rather modest for all programmes. So, it cannot be concluded that farmer incomes are significantly enhanced by certification. This is in line with the findings of Barhan et al. (2011) and Valkila (2014). But I can conclude that farmers perceive the financial gain as the main incentive for certification, and that almost all farmers consider certification to make at least some contribution to their income, regardless of the specific label.

Yet, the premium is by no means the only driver for farmers to participate in certification programmes. In many respects their livelihood improves also in non-financial ways through the technical assistance received from the FNC extension service. These non-financial benefits are related to environmental conditions, production methods, farm management, and social capital because of increased ties with FNC. All schemes contribute to the farmer's livelihood through non-financial benefits. Little differences have been observed between the labels with respect to the perceived non-financial benefits. This is partly the result of multi-certification that makes it difficult to attribute features of certification to individual labels. But it is also because certifications have quite some similarities in objectives and requirements that lead to similar outcomes in terms of benefits. Moreover, the nature of the technical assistance that FNC offers, is very similar among all programmes. This is visible in additional individual visits of the extension service, as well as more group meetings, compared to non-certified farmers. The information and assistance offered by FNC strengthen the farmer's human capital. For a farmer it is much more a matter of obtaining any certification, than a certification in particular.

Overall, farmers consider certification to be beneficial, with none of the currently certified farmers expecting to quit certification in the near future. And only few deliberately choose not to take certification, mainly because of significant cost of adaption for a relatively small plot of land. Almost all respondents are willing to obtain additional labels. Many farmers consider certifications to be complementing one another. This may enable them to sell a larger proportion of the harvest as certified, and allows them to balance the fluctuations in demand. They may also receive more technical assistance from FNC.

The drawbacks of certification are perceived to be fairly similar among all programmes. These drawbacks pertain predominantly to difficulties with the requirements and registration. Farmers in the Nespresso groups tend to experience these drawbacks to a somewhat larger extent than the otherwise certified farmers. The adaptation cost for certification are considered a rather modest drawback. The

non-certified experience an overall lack of information about the certification programmes and requirements.

10.5 Benefits for farmers from co-existence of labels

This research found that certification programmes vary in scope of requirements, and more notably in rigidity of the rules. A variety in labels could enhance the options for farmers to participate in a certification programme that fits their characteristics and preferences. However, the labels also show considerable similarities and compatibility, resulting in certification policies that favour farmers with similar characteristics. Although all seals seem to attract farmers with better social-economic conditions, it should be noted that some variety exists, with the verification programmes being more accessible to smallholders. From this perspective the multiplicity of certifications is beneficial as it attracts a larger range of farmers. Also, as Manning et al. (2012) point out, the multiplicity of labels can create competition between the labels in the pursuit of achieving farmer's adoption. This would stimulate the labels to enhance their development efforts, to the aid of farmers.

Efforts to attract smallholders in certification programmes require a lowering of entry barriers. When large numbers of farmers and large quantities of coffee are certified, the certification is no longer a speciality market. And with growing supply of certified coffee the premium will drop, until at some point certification does not offer a meaningful income benefit. In order to make it accessible to smallholders, requirements for certification become the standard for the mainstream market. Rather than aiding farmers financially, meeting the certification requirements may form a prerequisite for accessing international markets. This forms a fundamental problem to include a large numbers of smallholders in certification programmes, and improve the position of the coffee growers as a whole (Muradian and Pelupessy, 2005).

The co-existence of certification schemes can cater for differentiated consumer groups (Reinecke et al., 2012) and enhance overall demand for sustainable coffees. Yet, even in the San Gil region with many sustainability programmes, the potential supply of certified coffee greatly outstrips demand. The multiplicity of labels does not tackle the problems of limited demand and oversupply of certified coffee. This limits the proportion of the production that can be sold at a premium, hence constrains the impact on the incomes of farmers. Furthermore, while the variety in labels can have a differentiation on quality standards, at times coffee does not meet even the lowest standards for certification. This reduces possibilities to sell coffee at a premium. Furthermore, premiums are modest and moving downwards. The emergence of verification programmes have likely reduced premiums more rapidly. Because of the co-existence of labels, demand and prices become more volatile, as coffee processors and retailers can switch easily between labels. Moreover, the co-existence of labels may

rather create competition for buyers, which may erode the premiums offered to coffee growers, as was suggested by Muradian and Pelupessy (2005). In this perspective, the multiplicity of labels in a region may have an adverse impact on the financial benefits for farmers.
Multiple labels could potentially enhance options for farmers to obtain a certification, and participate in programmes based on their perception of benefits and drawbacks. In practice, the benefits and drawbacks of certification are perceived to be remarkably similar among all labels.

This research shows that certifications have overlapping requirements and attract farmers with similar characteristics, resulting oftentimes in multi-certification of farmers. This may be the most efficient manner of certifying coffee, and enhancing profits for all actors in the value chain. However, from a development standpoint, this is a less effective outcome. As Mutersbaugh (2005) identified, multi-certification might lead to additional cost for farmers. They have to adopt various labels, and therefore have to comply with more elaborate sets of requirements. Farmers in my research area are subject to FNC group certification policies that may require the adoption of several labels. Although the costs of certification are not considered the main limitation, it is evident that multiplicity of certifications carries extra costs at least to some extent.
For the participants in multi-certification programmes, it may not just impose costs. It may also impart benefits. Demand for particular labels fluctuates and premiums vary based on negotiations with buyers. This leaves certified farmers vulnerable to shocks in demand and prices because of shifting preferences of downstream actors in the value chain. In this case multi-certification may enable farmers to hedge against demand fluctuations for particular labels, allowing farmers to receive premiums from various labels. However, the co-existence of certifications and multi-certification can also be considered to increase volatility in demand and prices.
Moreover, what Manning et al. (2012) have called ‘competition of adoption’, which should be beneficial for the coffee growers, is reduced by the tendencies of multi-certification. Labels do not have to compete to attract farmers as certifications can be overlapping. This weakens the position of farmers, and may reduce the development impact of certification.
Another adverse effect of multi-certification is the concentrated of benefits on a smaller number of farmers who can benefit from premiums from different sources. Certification with all labels tend to favour farmers with somewhat similar characteristics, that allow for an efficient certification process. When additional coffee can be certified, already-certified coffee growers are likely to obtain an extra label. Farmers with more favourable characteristics gain the available spots for additional certifications, which makes certification less accessible to farmers with less conducive features.

Multi-certification may be an efficient outcome, which may be favoured by the organisation that facilities certification (e.g. an cooperative) and downstream actors on the value chain. However, from a development point of view, it would be more effective when certification targets farmers with more distinctive characteristics, that include the more marginalised farmers.

In order to make certification attractive to a large range of farmer, a differentiation in the set of requirements is needed, because this could make certification more suitable for farmers with different characteristics. Since it is difficult to differentiate regulations within a single label, the multiplicity of labels seems a viable system, provided that they have differentiated requirements and focus on different types of farmers. These labels should focus on certifying a broad array of farmers, rather than focusing on coffee volumes and overlapping certification. However, this may be a more expensive option for coffee processors and retailers, so it remains questionable if this can be achieved through certification programmes that are very susceptible to market dictate.

10.6 Recommendations for future research

So far, little research have been focusing on the certification process in a context of multiple labels. Future research may continue to examine such settings with a qualitative or quantitative analysis and looking at the potential impact on the livelihood of farmers, possibly through the assessment of farmer's perceptions. Further studies may include other labels like the certifications Fairtrade and UTZ-certified, and verifications like C.A.F.E Practices.

Other recommendations for further research include exploring the possibilities for better coordination of the market for sustainable coffees that would make certifications more effective in certifying farmers with distinct characteristics, rather than overlapping development efforts through multi-certification.

This study showed very limited involvement of the labels in the certification process. The policies and processes are rather determined by the cooperative. New studies could zoom in on this phenomenon and its implications for certification impact.

Also, it may be interesting to explore the possibilities for convergence of certification requirements into a single label. This would reduce the adaptation cost for coffee growers and may alleviate the downward pressure on the premiums that is caused by the competition for buyers. However difficult to achieve, this may entail a need for differentiated requirements within a single certification in order to make the label more equally accessible to farmers with less favourable characteristics.

Bibliography

4C, Common Code for the Coffee Community. (2012). 4C Code of Conduct, derived from www.4c-coffeeassociation.org/assets/files/Documents/CodeVerification-EN/Code_of_Conduct_v1.4_en.pdf. February, 2015.

4C, Common Code for the Coffee Community. (2015). www.4c-coffeeassociation.org/en/index.php?id=5. Website. Accessed February, 2015.

Barhan, B.L., Callenes, M., Gitter, S., Lewis, J. and Weber, J. (2011). Fair Trade/ Organic Coffee, Rural Livelihoods, and the 'Agrarian Question': Southern Mexican Coffee Families in Transition. *World Development* 39(1), 134-145.

Beuchelt, T. D., and Zeller, M. (2011). Profits and poverty: Certification's troubled link for Nicaragua's organic and fairtrade coffee producers. *Ecological Economics*, *70*(7), 1316-1324.

Bitzer V., Francken, M. and Glasbergen, P. (2008). Intersectoral partnerships for a sustainable coffee chain: Really addressing sustainability or just picking (coffee) cherries? *Global Environmental Change* 18, 271-284.

Café de Colombia. (2015). www.cafedecolombia.com. Website. Accessed August, 2015.

Chengappa, P. G., Rich, K. M., Muniyappa, A., Yadava, C. G., Ganashruthi, M. K., Pradeepa, B. B., and Rich, M. (2014). Sustainability Coffee Certification in India: Perceptions and Practices.

Colombia Reports. (2013). Colombia govt extends subsidies for coffee growers. colombiareports.com/colombia-govt-extends-subsidies-for-coffee-growers. Website. Accessed April, 2015.

Fairtrade. (2015). www.fairtrade.net. Website. Accessed September, 2015.

FNC, Federación Nacional de Cafeteros de Colombia. (2011). Sustainability that matters 1927-2010. Derived from www.federaciondecafeteros.org/static/.../informe_sostenibilidad_eng.pdf. Accessed February, 2015.

FNC, Federación Nacional de Cafeteros de Colombia. (2015a). Specialty Coffee Programme. Unpublished document.

FNC, Federación Nacional de Cafeteros de Colombia. (2015b). www.federaciondecafeteros.org. Website. Accessed January 2015.

FNC, Federación Nacional de Cafeteros de Colombia. (2015c). Cartera especiales. Unpublished document.

FNC, Federación Nacional de Cafeteros de Colombia. (2015d). Nombres y certificaciones. Unpublished document.

Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of international political economy*, *12*(1), 78-104.

Gereffi, G., & Korzeniewicz, M. (1994). *Commodity chains and global capitalism* (No. 149). ABC-CLIO.

Getz, C., and Shreck, A. (2006). What organic and Fair Trade labels do not tell us: towards a place-based understanding of certification. *International Journal of Consumer Studies*, *30*(5), 490-501.

Gilbert, D. U., Rasche, A., and Waddock, S. (2011). Accountability in a global economy: The emergence of international accountability standards. *Business Ethics Quarterly*, *21*(01), 23-44.

Giovannucci, D. and Ponte S. (2005). Standards as a new form of social contract? Sustainability initiatives in the coffee industry. Food Policy 30, 284-301.

GoC, Government of Colombia. (2010). National Development Plan 2010-2014. Derived from www.irc.gov.co/irc/en/fiscalinformation/National%20Development%20Plan%202011-2014.pdf. December, 2014.

González, A. A. and Nigh, R. (2005). Smallholder participation and certification of organic farm products in Mexico. *Journal of Rural Studies* 21, 449-460.

Ibañez, M. (2010). Adoption of certified organic technologies: the case of coffee farming in Colombia, Proceedings of the German Development Economics Conference, Hannover 2010, No. 58.

Ibnu, M., Glasbergen, P., Offermans, A., and Arifin, B. (2015). Farmer Preferences for Coffee Certification: A Conjoint Analysis of the Indonesian Smallholders. *Journal of Agricultural Science*, *7*(6), 20.

ICO, International Coffee Organization. (2014). World coffee trade (1963-2013): A review of the markets, challenges and opportunities of the sector. Derived from www.ico.org/news/icc-111-5-r1e-world-coffee-outlook.pdf. April, 2015.

IFOAM, International Federation of Organic Agriculture Movements. (2015). www.ifoam.bio. Website. Accessed March, 2015.

Kilian, B., Jones, C., Pratt, L., and Villalobos, A. (2006). Is sustainable agriculture a viable strategy to improve farm income in Central America? A case study on coffee. *Journal of Business Research*, *59*(3), 322-330.

Kilian B, Pratt L, Villalobos A and Jones C, (2004). Can the private sector be competitive and contribute to development through sustainable agricultural business? A case study of coffee in Latin America, Costa Rica, 27.

Kolk, A. (2013). Mainstreaming sustainable coffee. *Sustainable Development*,*21*(5), 324-337.

Lee, J., Gereffi, G., and Beauvais, J. (2012). Global value chains and agrifood standards: challenges and possibilities for smallholders in developing countries. *Proceedings of the National Academy of Sciences*, *109*(31), 12326-12331.

Lentijo, G. M., and Hostetler, M. (2011). Evaluating Certified Coffee Programs. Derived from https://edis.ifas.ufl.edu/uw351. June, 2015.

Muradian, R., and Pelupessy, W. (2005). Governing the coffee chain: The role of voluntary regulatory systems. *World Development*, *33*(12), 2029-2044.

Mutersbaugh, T. (2005). Fighting standards with standards: harmonization, rents, and social accountability in certified agrofood networks. *Environment and Planning A*, *37*(11), 2033.

NaturaCert. (2015). naturacert.org. Website. Accessed December, 2014.

Nespresso. (2013a). Nespresso AAA Sustainable Quality Program. Derived from www.nespresso.com/ecolaboration//medias_dyn/articles/2706/article/attachment-2.pdf. April, 2015.

Nespresso. (2013b). Generic TASQ Tool. Derived from www.nestle-nespresso.com/sustainability/case-studies/developing-practical-tools-for-ensuring-sustainable-quality. Accessed April, 2015.

Nestlé. (2015). www.nestle.com/media/newsandfeatures/nespresso-aaa-colombia. Website. Accessed April, 2015.

Pierrot, J., Giovannucci, D. and Kasterine, A. (2010). Trends in the Trade of Certified Coffees. International Trade Centre: Geneva.

Ponte, S. (2002). The 'latte revolution'? Regulation, markets and consumption in the global coffee chain. *World development*, *30*(7), 1099-1122.

Ponte, S. (2004). Standards and sustainability in the coffee sector. *International Institute for Sustainable Development.* Derived from www.iisd.org. Accessed July, 2015.

RA, Rainforest Alliance. (2015). www.rainforest-alliance.org. Website. Accessed January, 2015.

Raynolds, L. T., Murray, D., and Heller, A. (2007). Regulating sustainability in the coffee sector: A comparative analysis of third-party environmental and social certification initiatives. *Agriculture and Human Values*, *24*(2), 147-163.

Reinecke, J., Manning, S., and Von Hagen, O. (2012). The emergence of a standards market: Multiplicity of sustainability standards in the global coffee industry. *Organization Studies*, *33*(5-6), 791-814.

Rueda, X., and Lambin, E. F. (2013a). Linking globalization to local land uses: How eco-consumers and gourmands are changing the Colombian coffee landscapes. *World Development 41*, 286-301.

Rueda, X., and Lambin, E. F. (2013b). Responding to globalization: impacts of certification on Colombian small-scale coffee growers. *Ecol Soc*, *18*(3), 21.

Subervie, J., and Vagneron, I. (2013). A drop of water in the Indian Ocean? The impact of GlobalGap certification on Lychee farmers in Madagascar. *World Development*, *50*, 57-73.

SAN, Sustainable Agriculture Standard. (2010). Derived from http://san.ag/web/wp-content/uploads/2014/11/SAN-S-1-4_Sustainable_Agriculture_Standard.pdf. March, 2015.

Valkila, J. (2009). Fair Trade organic coffee production in Nicaragua—Sustainable development or a poverty trap? *Ecological Economics*, *68*(12), 3018-3025.

Valkila, J. (2014). Do Fair Trade Pricing Policies Reduce Inequalities in Coffee Production and Trade? *Development Policy Review* 32(4), 475-493.

Wyss, R., Fromm, I. and Garcia, M. (2012). Socio-Environmental Certifications: Risks and Opportunities for Small-Scale Coffee Farmers in Central America. *International Journal of Developing Societies* 1(4), 133-140.

Appendix

Survey 1

Muchos gracias para ayudarme con este cuestionario, que utilizaré para mi investigación de determinar la percepción y motivos para certificación.

Nombre _____

En su finca, tiene:

Otros cultivos ◯ sí ◯ no ¿cual(es)? .....

Ganado, o otros animales ◯ sí ◯ no ¿cual(es)?.....

Área de bosque para leña o madera ◯ sí ◯ no

Otras actividades comerciales en su finca .....

¿Cuál fue el total de la producción del café del año pasado? ……. cargas

¿Qué porcentaje es vendido como café certificado?.....(%)

¿Hace cuántos años usted es un(a) caficultor(a)? …….años

¿Su edad?.....años

◯ masculino ◯ femenino

¿Cuántos familiares viven en su casa (usted, pareja, hijos, otros)? ……..personas

¿Cuántos años de educación ha cursado?

Años en primaria --------

Años de bachillerato --------

Estudios Universitarios --------

Usted o sus familiares, tuvieron otras fuentes de ingresos provenientes de trabajos fuera de la finca durante los 12 meses pasados.

◯ sí ◯ no

Especifique cuáles_____ (jornales, remesas, otros.)

Durante la cosecha, ¿usted contrata?

◯ empleados externos ◯ familia

Durante el resto del año?

◯ empleados externos ◯ familia

¿Usted participa en cual(es) programa(s) de certificación? ¿Y cuántos años? (varias respuestas son posible)

◯ Rainforest Alliance ◯ Orgánico ◯ Comercio Justo FLO

◯ 4C ◯ Nespresso ◯ CAFÉ practices ◯ Ninguna

.....años nombre de certificacion..... .....

.....años nombre de certificación.....

Certificado en grupo o sólo:.....

Imagine, que el precio del café en esta cosecha es de 900.000 pesos por carga, ¿cómo utilizaría los ingresos? Por favor, elija tres opciones de cada columna

En la compra de animales u otros cultivos	Mejorar nivel educativo
Comprar más tierra para cultivar	Pagar mejores salarios a los obreros
Trabajar más	En muebles o enseres para el hogar
Trabajar menos	Apoyar amigos/familiares necesitados
Comprar mejores máquinas y equipos	Mejorar la alimentación de la familia
Mantenimiento de sistemas sépticos	Renunciar a la certificación
En la educación de sus hijos	Mejorar la vivienda
Aplicar más fertilizantes	Tratamiento aguas residuales-beneficio
Labores de conservación de suelos	Renovación de cafetales
En una certificación adicional	Ahorrar dinero
Nuevas siembras de café	Pagar deudas

Otras opciones?.....

Imagine, que el precio de café esta cosecha sería 350.000 pesos por carga, ¿qué haría usted? Por favor, elija tres opciones de cada columna

Pagar menos a los empleados	Vender una parte de la tierra
Usar menos fertilizantes	Cónyuge e hijos busquen trabajo
Renunciar a la certificación	Sembrar más café
Posponer compras	Pedir dinero prestado
Buscar trabajo adicional en el pueblo	Pedir ayuda a amigos o familia
Eliminar áreas de café	Buscar una certificación adicional
Producir más para consumir en casa	Contratar menos empleados
Trabajar más	

Otras opciones?_____

Después de la certificación, ¿cree que han mejorado:

- las condiciones de trabajo para sus empleados?

◯ no ◯ un poco ◯ si ◯ mucho

- Las condiciones de trabajo para usted?

◯ no ◯ un poco ◯ si ◯ mucho

- El entorno?

◯ no ◯ un poco ◯ si ◯ mucho

- Sus ingressos?

◯ no ◯ un poco ◯ si ◯ mucho

¿La regulación laboral está limitando la participación de su familia?

◯no ◯un poco ◯ si ◯mucho

¿Qué es lo que más le gusta sobre cultivo de café?.....

.....

¿Qué es lo menos le gusta acerca del cultivo de café?.....

.....

.....

¿Que le gustaría mejorar? .....

.....

¿La Federación Nacional de Cafeteros, lo está apoyando para mejorar su calidad de vida?

◯ no ◯ un poco ◯ sí ◯ mucho

¿Los programas de certificación lo están apoyando con esto?

◯ no ◯ un poco ◯ sí ◯ mucho

¿El gobierno local lo está apoyando con esto?

◯ no ◯ un poco ◯ sí ◯mucho

¿Cuáles son los problemas más graves que no le permiten mejorar?.....

.....

.....

¿Qué cosa(s) es(son) la(s) más importante en su vida? ..... …

.....

.....

¿la certificación le ayuda a mejorar este?

◯ no ◯ un poco ◯ sí ◯ mucho

¿Por qué? .....

.....

.....

.....

Cual de sus certificaciónes usted se gusta la mas?.....

Por que? .....

.....

Por favor, elija de la lista abajo maximos cinco opciones, cual son las más importante para usted.

◯ buena comida ◯ salud ◯ buena casa ◯ amistad ◯ amor

◯ buenos productos ◯ riqueza ◯ educación ◯ el entorno ◯ seguridad

◯ otros.....

En los próximos cinco años, ¿usted espera seguir inscrito en los programa(s) de certificación en los que se encuentra actualmente?

◯ sí ◯ probablemente ◯ no

En las próximos cinco años, ¿usted espera participar en otros programas de certificación?

◯ sí ◯ probablemente ◯ no

Muchas gracias por ayudarme!

Survey 2

Muchos gracias para ayudarme con este cuestionario, que utilizaré para mi investigación de determinar la percepción y motivos para certificación.

Nombre _____

En su finca, tiene:

Otros cultivos ◯ sí ◯ no ¿cual(es)? .....

Ganado, o otros animales ◯ sí ◯ no ¿cual(es)?.....

Área de bosque para leña o madera ◯ sí ◯ no

Otras actividades comerciales en su finca .....

¿Cuál fue el total de la producción del café del año pasado? ……. cargas

¿Qué porcentaje es vendido como café certificado?.....(%)

¿Hace cuántos años usted es un(a) caficultor(a)? …….años

¿Su edad?.....años

◯ masculino ◯ femenino

¿Cuántos familiares viven en su casa (usted, pareja, hijos, otros)? ……..personas

¿Cuántos años de educación ha cursado?

Años en primaria --------

Años de bachillerato --------

Estudios Universitarios --------

Usted o sus familiares, tuvieron otras fuentes de ingresos provenientes de trabajos fuera de la finca durante los 12 meses pasados.

◯ sí ◯ no

Especifique cuáles_____ (jornales, remesas, otros.)

Durante la cosecha, ¿usted contrata?

◯ empleados externos ◯ familia

Durante el resto del año?

◯ empleados externos ◯ familia

¿Usted participa en cual(es) programa(s) de certificación? ¿Y cuántos años? (varias respuestas son posible)

◯ Rainforest Alliance ◯ Orgánico ◯ Comercio Justo FLO

◯ 4C ◯ Nespresso ◯ CAFÉ practices ◯ Ninguna

.....años nombre de certificacion.....

.....años nombre de certificación.....

Certificado en grupo o sólo:.....

Por favor indique cuales de las siguientes cosas, son o pueden ser un inconveniente para usted y su familia en su finca o en su vereda.

Escoja la opción, teniendo en cuenta que 1 significa que no lo considera problema y 5 significa un gran problema

	1	2	3	4	5
Salarios altos de sus empleados	◯	◯	◯	◯	◯
La calidad de sus empleados	◯	◯	◯	◯	◯
La electricidad en mi finca	◯	◯	◯	◯	◯
La calidad de educación de sus hijos	◯	◯	◯	◯	◯
La calidad de su propia educación	◯	◯	◯	◯	◯
Calidad de suelo en su finca	◯	◯	◯	◯	◯
Servicios médicos costosos	◯	◯	◯	◯	◯
Clínicas y hospitales lejos de su finca	◯	◯	◯	◯	◯
El exceso de lluvias en ciertos periodos	◯	◯	◯	◯	◯
La escasez de lluvias en ciertos periodos	◯	◯	◯	◯	◯
Sus empleados no tienen condiciones de trabajo seguras	◯	◯	◯	◯	◯
Bajos ingresos	◯	◯	◯	◯	◯
Mis ingresos varían mucho, dependiendo de las					

cosechas y precio de venta	○○○○○
Calidad de las carreteras	○○○○○
Servicios sanitarios suficientes	○○○○○
Desigualdad social entre la población colombiana	○○○○○
Rendimiento de producción de café	○○○○○
Disponibilidad de buenos fertilizantes y la capacidad económica para adquirirlos	○○○○○
Disponibilidad de buenas máquinas y la capacidad económica para adquirirlos	○○○○○
El trabajo es muy pesado	○○○○○
Los registros de la empresa	○○○○○
La capacidad de pedir dinero prestado	○○○○○

De la lista anterior, ¿que problemas son los más urgentes/importante por mejorar? Por favor elija 5 cosas

e indique cuánto la certificación lo está apoyando: ● no ● un poco ● sí ● mucho

¿Qué es lo que más le gusta sobre cultivo de café?.....

.....

.....

¿Qué es lo menos le gusta acerca del cultivo de café?.....

.....

.....

Cuando usted empezó participar en la certificación, cuales fueron los motivos que lo impulsaron a hacerlo? Por favor elija las razones que eran las más importantes (5 razones máximo)

mejorar la productividad	mejorar sus condiciones laborales
mejorar condiciones ambientales	recibir más capacitaciones
mejorar calidad de café	mejorar condiciones laborales de colaboradores
mejorar la administración de la finca	para vender el café a un mejor precio
vender café a nuevos clientes	mejorar registros de producción

mejorar contacto con otros cafeteros más fácil pedir dinero prestado

otra cosas……

En general, ¿como es su opinion de los beneficios de certificacion? .....

.....

.....

¿Hay desventajas de la certificación, cual(es)? Maximo 3 cosas

◯ muchas reglas ◯ poca libertad ◯ disminución de la productividad

◯ pocas ventajas ◯ falta de información ◯ muchos registros

◯ alto costos ◯ otra.....◯ no tiene desventajas

¿Usted conoce la norma de la certificación a la que pertenece?

◯ no ◯ un poco ◯ sí ◯ sí, muy bien

¿Usted conoce los objetivos mundial de la organización de certificación?

◯ no ◯ un poco ◯ sí ◯ sí, muy bien

¿Usted cree que las objetivos del organización de certificación son similar a sus propios objetivos?

◯ no ◯ un poco ◯ sí ◯ sí muy similares ◯no sé

¿Por qué? .....

.....

.....

¿Quisiera cambiar o mejorar cualquier acerca la certificacíon? .....

.....

.....

.....

Muchas gracias por ayudarme!