

ORGANIC CERTIFICATION SYSTEM: OPPORTUNITIES AND LIMITATIONS FOR SMALLHOLDER FARMERS IN THE CENTRAL REGION OF COLOMBIA

SISTEMA DE CERTIFICACIÓN ORGÁNICA: OPORTUNIDADES Y BARRERAS PARA LOS PEQUEÑOS AGRICULTORES EN LA REGIÓN CENTRAL DE COLOMBIA

Autores:

Sonia Camila Pardo Gutiérrez

Universidad de Guadalajara, México

Víctor Manuel Castillo Girón

Universidad de Guadalajara, México

Suhey Ayala Ramírez

Universidad de Guadalajara, México

Resumen

La creciente preocupación por las externalidades negativas de la agricultura convencional ha propiciado que los gobiernos y los agricultores busquen sistemas de producción más sostenibles. Bajo ese contexto, suele reconocerse que la agricultura orgánica promueve beneficios ambientales, relaciones justas y una mejor calidad de vida para todos los involucrados. En consecuencia, el mercado de este tipo de productos se ha expandido rápidamente en las últimas décadas. La producción orgánica es considerada como un atributo orientado al proceso y, en consecuencia, la certificación orgánica constituye una poderosa herramienta de marketing para demostrar a los clientes el cumplimiento de los estándares por parte del agricultor. No obstante, los pequeños agricultores enfrentan varias barreras para cumplir con el sistema de certificación, dada la complejidad de las normas y procedimientos correspondientes. Tal es el caso de los alimentos orgánicos colombianos que, a pesar de su enorme potencial para producir una amplia gama de

frutas y verduras orgánicas, aún no se desarrolla. Este documento analiza las actitudes y barreras que enfrentan los pequeños agricultores y los responsables de organizaciones productoras de este tipo de bienes, hacia el sistema de certificación orgánica en Colombia. Los datos provienen de entrevistas semiestructuradas a cinco pequeños productores de agricultura orgánica y a igual número de personas responsables de organizaciones involucradas en el sistema de certificación orgánica. Desde una perspectiva cualitativa, los resultados de la investigación subrayan que las motivaciones para la agricultura orgánica tienen un impacto relevante en la credibilidad del agricultor, por un lado y, por otro lado, que el tamaño de la explotación, el organismo de certificación, el acceso y el apoyo a la información juegan un papel importante para la certificación orgánica. La falta de desarrollo del mercado y los precios de los alimentos, la asistencia técnica y financiera y el capital humano y financiero se consideraron como las principales limitaciones para el desarrollo certificado de la agricultura orgánica. Las instituciones gubernamentales y el desempeño del organismo de certificación fueron criticados debido a la interpretación desigual de los estándares orgánicos y las políticas poco claras.

Abstract

The increasing concern about the negative environmental impacts of conventional agriculture, have led governments and farmers to consider a more sustainable production system. Organic agriculture is known to promote environmental benefits, fair relationships and decent quality of life for all involved. Therefore, the market has expanded rapidly over the last decades. Organic production is categorized as a process-oriented attribute, and thus, organic certification is now used as powerful marketing tool to prove customers the farmer's compliance of the standards. However, smallholder farmers face several barriers to comply with the certification system, due to complexity of rules and procedures. This is the particular case of the Colombian organic food sector which despite its enormous potential to provide an extensive range of organic fruits and vegetables still undeveloped. This paper explores the attitudes and barriers faced by smallholder farmers and organic organizations staff towards the organic certification system in Colombia. Semi-structured interviews were applied on a sample of five smallholder organic farmers and five staff people involved in the organic sector. Data analysis relies on a qualitative research approach. Results indicate, on one hand, that motivations for organic agriculture have an important impact on farmer's credibility while, on the other hand, farm size, certification

body's as well as information access and support play an important role to organic certification. Lack of market development and food prices, financial and technical assistance and human and financial capital were named as main constraints to certified organic agriculture development. Governmental institutions and certification body's performance were criticized due to uneven organic standards interpretation and unclear policies¹.

Palabras clave: agricultura orgánica, sistema de certificación orgánica, pequeños agricultores, agricultura sustentable.

Key words: organic agriculture, organic certification system, smallholder farmers, sustainable agriculture.

Fecha de recepción: 03/11/2018

Fecha de aceptación: 09/02/2019

1. INTRODUCTION

The increasing concern about the negative environmental impacts of conventional agriculture including, land degradation, soil erosion and biodiversity depletion, mainly due to deforestation and indiscriminately application of highly toxic pesticides (Trindade et al. 2017). Thus, governments and farmers have started to consider a more sustainable production system (Ibanez & Blackman, 2016; Kleemann & Abdulai, 2013; Knowler & Bradshaw, 2007). As defined by IFOAM (2008) organic agriculture sustains the health of soils, ecosystems, and people; relying on ecological processes, biodiversity, and cycles adapted to local conditions while promoting environmental benefits, fair relationships and a decent quality of life for all involved (Kings & Ilbery, 2012). Additionally, poor countries find an alternative to develop under sustainable socio-economic and ecologically principles due to the access of smallholder farmers to markets; producing higher revenues, strengthening their self-confidence and promoting better livelihoods (Kilcher, 2007; Méndez et al., 2010;

¹ The authors are thankful to all participants, farmers and organic organizations staff, for sharing their experiences and took the time and patience to carry the interviews out. We thank those who read one first draft and enriched it with their comments. Finally, we make extensive our thanks to the organic organizations: Fedeorganicos de Colombia, Ceres Colombia and EcoCert Colombia allowing us to get in touch and facilitating the research process.

Shah et al., 2005). Moreover, authors have reported similar yields and nutrient budgets among conventional and organic farming (Ayala & Garcez, 2018), being considered as a substantial part of a promising strategy to boost expansion and productivity in the agricultural sector (Vargas Canales et al., 2018) which could be relevant option for improving food security and sustainable livelihoods for the rural poor population under climate change situation (Scialabba & Müller-Lindenlauf, 2010).

As a consequence, organic agriculture is gaining devotees and acceptance all over the globe, expanding considerably the market for certified products (Bolwig et al., 2009; Chouichom & Yamao, 2010; Espinal et al., 2005). In fact, global trade of organic food products reached 80 billion US dollars by 2014 being North America and Europe the greatest sales generators with near 90% of the total while organic production from Asia, Latin America, and Africa are mostly to export (Willer & Lernoud, 2016). Developing countries have been identified to have a great production potential as suppliers and participation of small-scale producers is relevant among EU exports (Allen & Kovach, 2000; Barrett et al., 2001). Particularly, during recent decades, Latin America has showed an expansion rate in organic production, contributing with nearly 20% of the total organic land (Albersmeier et al., 2009) and, what is more, the production volume needs to keep increasing (Darolt et al., 2016).

The organic agricultural market rapid growth, along with the promise of higher revenues, has triggered producer's interest to take part in the sector (González & Nigh, 2005). Therefore, certification is becoming increasingly important and certification systems role is pivotal for organic farmers' livelihoods (Herberg, 2007). Organic labeling is recognized to offer benefits to farmers such as; higher and more stable prices, to increase technical assistance and market access, and seems to have a positive effect on household's welfare (Bacon, 2005; Kleemann & Abdulai, 2013; Méndez et al., 2010). However, smallholder farmers need to comply with a complex set of rules and procedures (Barrett et al., 2001; Herberg, 2007), which often is challenging due to economic constraints and low education levels, and therefore, partaking and sustain in the organic sector and to benefit from it, might be highly demanding (Hatanaka & Busch, 2008; Nandi et al., 2015; Harris & Browne, 2001; Rigby & Caceres, 2001).

Moreover, as consequence of the extended food market, the process has become more

demanding and organic standards more strict (González & Nigh, 2005), creating even more difficulties for producers in developing countries to meet the regulations and to participate in more profitable markets of developed economies (Barrett et al., 2001). The lack of institutional strength, including insufficient financial and technical support, together with high bureaucracy levels and paperwork of certification play also a role (Iliopoulou et al., 2011). Hence, several authors have voiced concern that certification standards and procedures might be a barrier for small and medium farmers in developing countries who are not able to benefit from the economies of scale normally necessary for adopting third-party certification i.e. (Barrett et al., 2001; Khaledi et al., 2007; Nordlund & Egelyng, 2008). In Colombia, smallholder producers struggle to compete in the organic certified food. Despite the enormous potential the country has to provide an extensive range of organic fruits and vegetables and important advantages to agricultural production (Perfetti et al., 2013), the local market for organic products is limited and the agricultural sector does not count for technology transfer policies according to their objective, technical assistance and public goods in general (Gutiérrez et al., 2018; Tenjo & Jaimes, 2018). Issues related to products mislabeling; conventional food sold as organic without organic certification (Espinal et al., 2005; Martínez-Bernal et al., 2012) and organically produced food sold as conventional can increase the information asymmetry among farmers and consumers. Organic agriculture-related literature, in the country, is scarce and particularly studies dealing with the topic of organic certification have not yet a space in the national academic research. Therefore, the specific aim of this study was to analyze and to compare the opinions towards the country's organic certification system from smallholder farmers and organic organizations' staff, in order to gain a deeper understanding of how the certification system operates and the main limitations to enter and sustain as well as its drivers. The resulting information can be highly valuable for policy-makers and advocates of organic agriculture from private initiatives to promote the certified organic food sector.

2. LITERATURE REVIEW

2.1 Organic Production Standards Meeting

Organic production is categorized as a process-oriented attribute which means that it is not possible to distinguish an organic product from a conventional one merely based on observable quality characteristics (Jahn et al., 2005), and therefore, organic certification is

now used globally as powerful marketing tool to prove customers the compliance of the standards farmers promise. The certification system acts as a tool for quality assurance, based on the voluntary assessment of an organic standard, set up by recognized external organizations (standard owner), that includes its evaluation and approval, by an independent body -Third Party Verifier (TPV)-, through the inspection of procedures, operating records and annual renovation (Jahn et al., 2004; Lohr, 1998; Meuwissen et al., 2003). Organic labeling claims to assure consumers that a product which apparently is not different from a conventional one was grown processed and packaged according organic standards. It serves also to reduce the information asymmetry through the marketing channel facilitating the link between producers and consumers as well as to protect organic growers from the misuse of the term organic, which can deprive them of price premiums and associated market benefits (Rigby & Caceres, 2001; Lohr, 1998). Accordingly, third-party certification is acquiring popularity on the agri-food chain and specifically in the food safety quality as consumer policy tool, especially regarding the delivery of health and environmental information (Teisl & Roe, 1998).

Some studies have dealt with the issue of organic certification in the food sector i.e the evaluation of consumers' expectations towards organic labeled food (von Meyer-Höfer et al., 2015), the analysis of acceptance and motivational impact of organic certifications system and the assessment of the reliability of certification as a consumer policy tool (Schulze et al., 2007). Given the importance of Latin American countries as suppliers of organic products some studies have focused in this regard such as; the case of organic coffee certification in Colombia by Ibanez and Blackman (2016) and the effect of organic certification and fair trade for the case of small-scale coffee farmers in Central America and Mexico (Méndez et al., 2010). Additionally, Albertsmeier et al. (2009) assessed the perception of evaluation and reliability of the organic certification system by farmers focused in the cases of Brazil and Costa Rica and Bacon (2005) studied organic certification and fair trade as alternatives to confront the coffee crisis faced by small-scale producers in Northern Nicaragua while Gonzalez and Nigh (2005) boarded the smallholder participation and certification of organic farm products in Mexico along with the evaluation of certified organic agriculture for small and large producers in the same country conducted by Gomez et al. (2005).

There are multiple opportunities and limitations for farmers when confronting the organic

certification system. Few studies have investigated in this regard i.e. Padilla et al., (2012) assessed the satisfaction of organic farmers in Chile towards the organic certification system while Barrett et al., (2001) studied the challenges smallholder organic farmers face to comply with the standards of organic certification. Specifically, other studies have focused their attention on the perceptions of smallholder farmers towards organic certified agriculture; counting the investigation of Nandi et al. 2015 understanding the organic farmers' attitudes, objectives and barriers towards organic production in India, the motives and barriers to development of organic olive production in Greece conducted by Iliopoulou et al. (2011) and the study of organic certification systems and farmers livelihoods in New Zealand (Herberg, 2007).

Despite that third-party certification has been an accurate approach to guarantee the organic status of agricultural products facilitating the international trade, it also entails requirements, costs, and procedures out of the reach of small producers who do not count for subsidies. Consequently, alternative guarantee systems have been implemented to lower the administration requirements and the derived certification costs. On one hand the so-called group certification allows farmers to organize themselves as a group ruled by an Internal Control System –ICS-, which according to IFOAM, is a quality assurance that needs to be documented and allows the certification body to commission the annual inspection of individual members to a specific unit within the certified operator (Lechleitner & May, 2004). In addition, through the group certification, farmers can be certified by an external certification organism facilitating the exporting process. On the other hand, there is the Participatory Guarantee System –PGS- which is founded on the presumed honesty of farmers that relies in a trusting system and requires farmers and consumers to take the responsibility as compared to third party certification, remaining the organic production principles as TPC. Furthermore, PGS promotes the participation of consumers which can have a positive effect on consumer's education and awareness making a strong emphasis to sharing of knowledge and farmers cooperation to sell the organic produce in the domestic organic market (Källander, n.d.). Alternative guarantee systems are spreading lately i.e the implementation of a Participatory Guarantee System in India (Khosla, 2006) while the institutionalization of PGS was boarded by Fonseca et al. (2008)

2.2 Organic Certification System in Colombia

Organic food is mostly commercialized locally in supermarkets and health food stores, but the biggest share of local production is for exporting principally to the European Union and the USA (Ministerio de Agricultura y Desarrollo Rural, 2007). In fact, the main driver for the regional organic agricultural production is the rapid growth of exporting opportunities (Censkowsky & Berger, 2010). Therefore, National government has declared to be an advocate of organic certified agriculture and has started the process to become a third-party country for exporting to the European Union by the homologation of the National Organic Standard. Officially, the Ministry of Agriculture and Rural Development is in charge to control country's organic agriculture including its commercialization. The Resolution 0187 of 2006 rules and defines all related activities. Despite that several Public and private programs, to promote and strength organic agriculture, have been launched i.e. Programa Nacional de Agricultura Ecológica (PNAE) organic agricultural development still very limited. In 2014 Colombia had 31.621 ha under organic cultivation with a total country's share of 0.1% (Willer, H. & Lernoud, 2016) which indicates that initiatives have not been effective to encourage the organic food sector in the country.

Organic certification, in Colombia, has been defined as "A term indicating that products have been obtained according to organic standards under the supervision of a certification agency authorized by the Ministry of Agriculture and Rural Development" (Ministerio de Agricultura y Desarrollo Rural, 2007). As in most countries, it has an essential structure. Inspections are conducted by independent bodies (third-party verifier) validating standards laid down by external organizations (Jahn et al., 2004) and certification bodies need to be authorized by the organization for accreditation, the superintendence of industry and commerce, with the supervision of the National Ministry of Agriculture and Rural Development. Organic standards in Colombia are at both levels; national –National Organic Standard- and international (according to standard owner).

Organic producers have to follow the established procedure by the government to obtain the organic label. Firstly, producers should define the target market for their products. In this regard, Colombian farmers are mainly focused on 1) National Organic Standard (Res. 0187/2006) 2) European Union Standard (CEE 834/2007-CEE889/2008) 3) United States National Organic Program (NOP) and d) Japan Organic Standard (JAS). Secondly, producers need to identify the authorized certification bodies, operating in the country, recognized in their target market. In the case of the local market, the certification body

needs to be authorized by designated national government institutions. Currently, there are five authorized certification bodies operating in the country; BCS ÖkoGarantie Colombia S.A.S., EcoCert Colombia, Certificadora Biotrópico (National Organism), Ceres Colombia and SGS Colombia S.A.S. (MADR, 2016). Thirdly, as soon as producers identify the certification body, they will become certified if comply with a set of documents that must be completed to start the certification process. The farmer could verify the amount that should be paid for the certification, conversion time and defined conditions for the system adoption. When the producer acquires the organic certification under international organic standards they can also apply to a further recognition from the government called “Sello Único Nacional de Alimento Ecológico”.

3. METHODS

Sample description and selection: The research was carried out among participants from the department of Cundinamarca in the central region of Colombia. This study is founded on a qualitative analysis approach; data was collected by online interviews. Mentioned interviews were applied on a sample of five smallholder organic farmers as well as five organic organization staff members involved in the organic institutions operating in the country. Farmers designated for the study were small-scale producers accounting as a maximum 35 hectares cropping cereals, vegetables and tropical fruits. Interviewees were mostly male (9) while female participation was scarce (1). Farmer's ages were ranged from 45 to 60 years. Most of the organic farmers had university diploma (4) while just one of them attended high school. Interviewed staff was mostly involved with certification agencies as auditors of organic standards (3) while one of them was a company manager and one was the former president of a non-profit organization involved in the organic food sector. The selection was based on the available organic farmer's membership lists from Colombian government and certification bodies. Experts were chosen only from certification agencies and non-profit organizations working in Colombia, through their web sites contact information (Table 1 and Table 2).

Social and farm information	Farmer 1	Farmer 2	Farmer 3	Farmer 4	Farmer 5
<i>Farm size</i>	18 Ha	3 Ha	35 Ha	10 Ha	Retired of organic production
<i>Previous Certification Body and organic standard</i>	CCI	None	JAS, CG834-CG889.	CCI	BCS Öko Garantie, Ceres Colombia
<i>Certification Body</i>	EcoCert	BCS Öko Garantie	BCS Öko Garantie	EcoCert	None
<i>Certification scheme (s)</i>	NOP, NOS Res. 0087	EU CEE 834-CEE889	JAS, CEE834-CEE889, NOP, NOS Res. 0087	NOS Res. 0087	None
<i>Sex</i>	Male	Male	Male	Male	Male
<i>Age range</i>	50-60	40-50	50-60	40-50	50-60
<i>Organic product</i>	Quinoa, Wheat, Barley and Yacon.	Legumes and vegetables	Fruits, vegetables and coffee	Vegetables	Tomatoes
<i>Production</i>	6 Ton.	Variable	Variable	Variable	-
<i>Experience</i>	10-20 years	12 years	12 years	13 years	-
<i>Education level</i>	University	University	University	High school	University

Table 1. Overview of interviewed farmers. *Farmer 5 is currently not producing organically under a certification scheme; therefore, no data is reported concerning farm size, certification body, certification scheme and production.

	Auditor 1	Auditor 2	Auditor 3	Manager 4	Non-profit organization President 5
Certification Bodies or Institution	Ceres Colombia	EcoCert	IMO	Ceres Colombia	Fedeorganicos
Norms (certification system)	JAS, NOP, NOS (Res. 0087) CEE834-CEE889	JAS, NOP, EAFA, FIPA, Bio-Suiz, NOS Res. 0087 EcoCert Organic Standard (CEE834-CEE889)	JAS, NOP CEE834-CEE889	JAS, NOP, CEE834-CEE889 NOS (Res. 0087)	-

Table 2. Overview of organic organization's staff interviewed.

Questionnaire and survey design: The research relies on semi-structured interviews based on open-ended questions. Semi-structured interviews are known as a potent instrument to conduct qualitative research since the investigator has the possibility to directly interact with contestants, allowing informants to express their opinions in their words, providing comparable qualitative data (Cohen, 2006). In this sense, semi-structured interviews are flexible enough to have insights in different target fields gathering as much information as possible from their answers and opinions.

The questionnaire was designed separately for farmers and experts. For smallholder farmers questions were related to (1) General information about them and farm structure (2) Attitudes towards organic certified production, (3) Barriers for organic certified production as well as (4) Opinion questions and (5) Information questions asked at the end of the interview. For staff participating in the organic sector, questions were related to (1)

Role in organic certification, (2) Attitudes towards organic certification and (3) Barriers for organic certified production. Interviews were conducted in Spanish since is the country official language. The interviews with staff (auditors, certification manager and non-profit organizations representative) took always longer than the farmer's interviews (45 to 75min). Depending on interviewees profile and willingness to share their opinions additional questions were asked. Interviews were conducted in a way that turned out in a natural conversation and experience sharing style. During the interviews, the author avoided interrupting respondents in order to make communication more fluid and natural as well as to encourage interviewees to freely prompt the maximum possible information. Subsequently, interviews were transcript exactly as recorded to conduct further analysis.

Data analysis: There is little literature revising the organic certification system in Colombia and related issues have not been a study subject yet. In this sense, quantitative research would rely on subjective assumptions of the author (Herberg, 2007). Hence, this study is based on a qualitative research method. The analysis was carried out following The Grounded Theory approach which is a general methodology to construct a theory that is grounded in data systematically collected and analyzed (Strauss & Corbin, 1993). Initially, information was coded according to the sentence by sentence procedure. Subsequently, focused coding was used to refine data, by using constant comparative methods, in order to establish distinctions and comparisons at each level of the analysis within and between interviews (Charmaz, 2008). Coding process was oriented to build up central topics of interest; categories and sub-categories. Qualitative content analysis approach was steered to refine the attained data and to conclude the analysis. Finally, citations based on typical responses were used to typify and explain the sub-categories which do not indicate that those were the only given answers, but the most representative. Participants' emotional poses were considered for choosing the quotations. Finally, following codes were created to identify survey participants when referred through the results:

- Farmers (F), Auditor (A), Manager (M) or president of the non-profit organization (P). Number from 1 to 5 according to displayed table 1 and 2.

4. RESULTS

Findings provide an overview of the certified organic food sector in Colombia and serve as a basis for the discussion of the system operation. Citations are typical responses of

interviews compiling a sub-category.

4.1 Farmer's attitudes towards organic certified agriculture adoption

Farmer's attitudes analysis intends to examine understandings, expectations, and behaviors of smallholder organic farmers associated with organic certification in Colombia. It begins by exploring the farmer's motivations and benefits in terms of what they expect to achieve growing certified organically. It includes the expected outcomes as well as those they are already benefiting from (1). Then perceptions regarding the market for organic food products were analyzed. This includes opinions about current and future development trends and the connection it has to their goals (2). Afterward, the farm planning and management strategies for certified organic production were analyzed. It includes how farmers have access to information, which reasons are fundamental to decide for the certification body and scheme and how do they perceive the certification system and the process in the country (3). The perceptions of the certification process are described, bearing in mind how do they perceive the procedure, certification agencies and how it does satisfy farmer's needs (4). Finally, opinions about farm size and structure were analyzed separately due to its remarkable importance in the light of staff's perception (5).

4.1.1 Farmer's motivations and benefits related to certified organic agriculture

This category attempts to explore the reasons behind farmer's decision for organic certification. Specifically, the objective was to identify the drivers for adoption, the goals they pursue and how organic certification contributes.

Market access and credibility

Organic certification seems to be closely related to credibility in the market. It is the instrument that producers have to prove the consumers that food was genuinely organically grown. The organic label helps to reduce the information asymmetry between the consumers and producers, and therefore, has relevant effects for farmers to access the market. Additionally, farmers could gain recognition and higher prices due to access to a more specialized market. At the moment, it is the most developed available mechanism in the country to guarantee the organic quality. The role of organic certification is highly influenced by the target market and when it comes to exporting oriented production

farmers and the staff seems to be more aware of the compulsory nature of organic label:

-“When you are going to export, or to get the products in the market you need certification, because without that you can’t prove that the product is organic (...)”. (P5)

-“I have this certification because there is the possibility of access to a market in the USA”. (F1)

Conversely, when products are commercialized locally organic certification does not play an essential role. In Colombia operates a market of confidence where the assurance of the quality products relies on farmer’s reliability and consumer’s trust. Then, the Colombian market does not necessarily require farmers to hold a label to locate their products in organic or health shops. Confidence relationship between producers, retailers, and consumers is the main requirement for domestic organic trade. Apparently, auditors agree with the perception of a confidence market to reduce production cost and give farmers an opportunity to still producing organic, avoiding the certification fees:

-“When you are well known, consumers trust you, and then, why would you need the certification? It makes the product more expensive (...)”. (F3)

-“Label is important to sell confidence in a market where no one knows you. Organic certification is a market tool, especially when you want to reach an international market or sell produce out of the town. If that is not the case, I always say: don’t get certified, what for? (...). I know people having few clients so they make an agreement and this is the confidence certification”. (A1)

However, opinions are contrasting in the case of staff interviewees. It is a clear division among the believers in the organic label and the pragmatic auditors looking for alternatives to improve organic farmer’s performance in the market. It seems that auditors of organic standards are in favor of practical alternatives while organic organizations staff linked to administrative positions consider the confidence market as a threat to the organic agriculture development:

-“What happens is that locally there is market where farmers want to say they are organic but this is a confidence market, which is dangerous (...)”. (P5)

A final attitude was detected for farmers perceiving organic certification nothing else than a requirement to partake in the organic food sector. It is seen as an obligatory process they

have to fulfill, even though; they do not agree. In the long run it is possible that the lack of motivation and a convincing process can drive them to abandon certification and go for other easier tactic to produce and sell their products:

-“I am an enemy of the certification, of the fact that a paper guarantees everything, but we must do it. It is an obligation like having a driver license”. (F5)

Environmental, health and satisfaction reasons “Organic believers”

There are diverse drivers for farmers to produce certified organic food. Personal interests and beliefs seem to be strongly connected to decisions making. Growers in this category stated to be apprehensive about environmental protection and health consequences of conventional agriculture. Interviewees consider that organic agriculture is the healthiest and environmentally less harmful alternative for food production as well as to have a superior product quality:

-“I do organic agriculture because is one of the pillars of environmental conservation. If you want to be kind with the planet and health you should take this option (...)”. (F1)

-“The first thought is that organic food impacts positively the environment”. (P5)

Often *organic believers* do not mind about economic benefits of organic certification. They also appear to have stronger motives to enter and sustain in this sector; regardless difficulties due to yield reduction and process requirements:

-“We are focused on organic as believers of the nature protection (...) There is no economic motivation at all”. (F2)

-“There are groups of farmers making permaculture in some regions; I trust them because they do it as a life philosophy”. (A3)

It was detected that interviewees displayed a total feeling of confidence to farmers who have their personal beliefs as main reason for producing organically while being skeptical to farmers attracted by financial reasons

-“There are people who start in an organic program because they think there is always a much higher price, so they do it for economic reasons rather than conviction (...)”. (A1)

Economic reasons

The opportunity of price premiums is one of the main and well-known attractiveness of

organic certification. Staff interviewees consider financial benefits as a major motive for farmers to be certified, however, few producers declared to have that reason as the main motivation. Organic certification is also seen as an alternative to improve revenues when prices of conventional agricultural products decline:

-“Organic certified products are an invitation for consumers to get a product they are paying a higher value for, and to value the effort made by farmer to crop a healthier produce” (A2)

-“Of course business profitability was always on my sight (...) it should work as a company”. (F5)

-“I started because my cropping model failed. There was a crisis in the produce prices and treating the coffee with agro-chemicals was not profitable anymore (...)” (F3)

Despite the economic reasons farmers have for organic certification they made clear that profitability of the business is not one benefit. By contrast, organic organization staff believes that farmers can importantly benefit from price premiums:

-“We perceive no economic benefits at all (...) There is no added value for organic products”. (F2)

-“They get to know a neighboring farmer who is doing well in the business and they think that they should do the same (...) and then, is when the economic motivations comes” (A1)

Satisfaction with organic farming system

The solid emphasis made by farmers on the multiple health and environmental benefits of organic agriculture explain the pride feeling to be certified and could be considered as an important motive to continue enrolled in the certification process. To hold the certification facilitates them to be recognized for their farm management skills and products quality.

Particularly, in some cases has a great impact on farm planning and management strategies. Since organic certification requires keeping records and evidence of processes carried out, farmers find it useful to have a better control of on-farm activities:

-“To had kept this certification for 8 years was for me a pride and satisfaction reason and I

always told people that (...)" (F5)

-“Being certified has helped me to organize my farm my business, not to manage it “wildly” (...)" (F4)

4.1.2 Market for organic agricultural products

This category deals with interviewee’s perception regarding the market characteristics and development state for organic food products. It also tries to understand how the local market operates and implications for the development of certified organic agriculture. It was observed a clear difference between the market in Colombia and the international scenario.

Local market characteristics and development

Organic food demand in the country is growing slowly and popularity of healthier and environmentally friendlier products is currently a trend. However, the price differential between organic and conventional food is extraordinary. Thus, organic food consumption is still unusual and the local market is in first stages of development. Consumers are characterized to belong to the county upper-class; counting for a high income and education level. Respondents emphasized the organic market to be elitist and selective; provoking restrictions for the middle and low-income consumers to buy organic. In addition, so far, very few health food stores and supermarkets commercialize such products and are normally located in very exclusive places; where just the richest have access:

-“Organic market is growing, it is a trend (...) now there are health food stores and supermarkets, it is not unknown anymore”. (A1)

-“The market here is too small because is elitist (...) I don’t know how is it in other countries I can imagine is more accessible”. (F4)

Exporting oriented certified organic production

The undeveloped local market can partly explain the exported oriented nature of certified organic production. Repeatedly, interviewees stated to have in mind the possibility to export and the potential benefits of locating their products overseas. Interviewees gave reasons such as consumer’s awareness in developed countries and price premiums. Organic

label selection is mostly based on the international target market; therefore, farmers decide to get certified under the European Union, NOP and JAS regulations in order to reach markets in Europe, USA, and Japan respectively.

-“In Colombia, there are not price premiums concept, normal people don't pay more (...) that's why we point to other markets, abroad”. (F1)

-“In Colombia the majority of producers holding a certification are exporting oriented (...) I work to export” (A3)

-“Farmers need to decide their market of destination (...) and it makes them think to which organic standard they need to apply for”. (A1)

However, farmers reported the exporting activity as challenging. The low volume of produce, the lack of a round-year production and the several requirements deprive them of reaching the international markets. It was also importantly mentioned the particular expectations and the credibility system of importing countries; conferring special characteristics to products according to the country of origin, certification body and organic label.

-“Exporting is complicated, there is not enough produce volume to do so”. (F2)

- Certification bodies are well-known in some markets while in others don't (...) if you have done the process with any not well known certification body that is totally useless in some countries” (P5)

4.1.3 Farm Planning and certification process

This component is focused on understanding how farmers and organic organization's staff perceive the activities related to farm management and means of production. This section explores information access and availability, the role of local institutions, the reasons farmers have to choose the certification body and their perceptions about certification agencies and certification process.

Organic farming information and support

Information related to organic farming as well as the local institutional support can have a strong impact on farmer's skills and farming performance. Interviewees do not perceive government institutions to give advice and support to organic agriculture. Farmers attain

information by themselves through on line resources and experimenting with different agricultural approaches, in order to learn about organic farming, in a precise autonomous process. Interestingly, they do not have complaints against the information access but feel confident to practice organic farming with the available resources. Furthermore, oral communication was highlighted as the most relevant information channel among growers:

-“Government is in charge of regulating and controlling: not giving advice. They are not advisory entities” (P5)

-“Nowadays with the internet everything is very easy (...) it would be an excuse to say you don't know the regulations”. (F3)

-“Farmer to farmer information is the most effective way for organic agriculture information transfer”. (A1)

An atypical case is for coffee production, which is often supported by government institutions as compared to other crops. There is specifically one institution in charge of giving farmers advice and support through different programs: “The National Federation of Coffee Growers”. In the country it is well known the potential of coffee to export and the enormous global demand, therefore, the government has focused its efforts on agro-industrial crops exhibiting potential to participate in international markets.

-“There are some programs supporting coffee growers (...) But I don't see a specific plan to support organic agriculture in the long run, those are sporadic actions” (F3)

On their side, certification bodies intend to spread the knowledge about organic regulations in order to facilitate the farmer's process to get certified. According to organic organizations staff, their aim is to simplify information to farmers. Furthermore, there is a private initiative to connect producers, certification bodies and the market with the goal of promoting certified organic agriculture by acting as an information source and a communication channel.

-“Who explains organic standards? (...) For example I do. I travel all over the country teaching farmers the organic regulations”. (F5)

-“Well, this is our purpose to be a source of information (...) we bring experts in different topics to talk to people”. (P5)

Certification process perception

Certification bodies in Colombia are perceived to be strict; demanding farmers to fulfill exhaustively the organic regulation requirements. It was noticeable the pride feeling that organic organizations staff demonstrated, by putting on top the company values and the organic standards compliance as a principle. Nonetheless, some staff interviewees stated otherwise, revealing that organic certification bodies are flexible and farmers certainly could fraud during the process. The importance of certification bodies' reputation was highlighted for farmer's decision as well as marketing of organic food products. Interestingly, farmers appear to be either totally satisfied or completely unsatisfied with the organic certification system. Satisfaction seems to be closely related with farmer's knowledge about organic agriculture practices and performance towards the system itself:

-“We are recognized to be the most strict certification agency in the country (...)”. (A2)

-“Cheating is no possible. Truly, it is not. You must fulfill everything, it has happened with me”. (F4)

Farmers perceive organic certification system merely as a business for certification bodies and totally disagree with the system to be a private organization. Accordingly, they find the certification process difficult to enter and sustain in, and organic standards to be hard to understand. Agencies ask farmers to comply regulations differently due to different organic standards interpretation among certification bodies. Opinions about national certification bodies were not favorable and farmers prefer to do the process with international organizations. Farmer's reasons to choose the certification body were the availability and closeness. Organic market requirements, reputation, and guarantee were also mentioned:

-“It shouldn't be a private organization (...) it is a paradox”. (F1)

“-National certification bodies are limited, i.e. coverage and accreditations if you compare against an international company who covers more than 40 countries. International organisms are much more rigorous and organized”. (A1)

-“I choose the certification body because was near and I had heard about it”. (F4)

-“Because BCS is the only internationally recognized”. (F2)

4.1.4 Farm size and structure

Given the importance that farm size has on farmer's performance towards the certification system, a new category was created based on organic organizations staff perspective. Small and large scale farmers have different capacities to enter, face and sustain in this sector. Therefore, this section intends to characterize organic certification impact as well as farm planning and management based on farm size.

Small scale farmers

Smallholder organic farmers rely on traditional practices and are generally reluctant to adopt new techniques. Small producers are economically restricted and credit constrained, and therefore, the access to production facilities, labor force and technical advice is limited. The main source of information is oral communication and self-training while the farm work is done by family members. Additionally, since the investment capacity is restricted, the impact of certification cost and organic farming implementation are significant for their finances:

-“Small and large scale farming are completely different universes (...) the impact of the certification cost is greater for small farmers. Large scale producers hire workers for specific tasks while small scale farmers have to do everything, therefore, it is much more demanding for small farmers (...) Small producers have to break their cultural manners, which means even to change their way of thinking” (A2).

-“Among smallholder farmers oral communication works very well (...) asking the neighbor, this is a farmer to farmer method” (A1).

Large scale farmers

Interviewees recognized large-scale producers to be well prepared and to have financial and production means to face the certification process more accurately. They are in an advantageous position to access the certification due to higher investment capacity to implement new agricultural approaches and to hire experts in the subject. Also, large producers are more likely to find market opportunities to locate their products which can impact positively the business revenues. Despite their abilities in front of certification, large organic production systems are not perceived to be sustainable. It is argued that their motivations depend solely on the economic interest, and aspects such as environmental care and social fairness are not the priority in that system. Moreover, some of the interviewees considered organic certified agriculture in large scale not compatible with

organic agriculture principles and values:

-“As long as you have a large scale production you are able to manage produce volume and cost as a consequence. It is not the same to cultivate 5 or 300 ha”. (P5)

-“A medium or large scale producer can afford to hire a professional advisor on the topic, otherwise, there are no one giving them advice”. (A1)

-“I would not consume a product from a transnational corporation (...) the concept of organic from them has no value for me” (A3)

4.2 Barriers towards organic certified agriculture adoption

Farmers deal with multiple constraints to enter and sustain in the organic certified organic food sector. This section attempts to understand the issues farmers deal with in the current certification system and the reasons leading to an undeveloped organic sector. It starts by exploring opinions about (1) Organic market-related issues, including current development state and organic food prices, following by (2) Farm Management constraints and (3) Certification process limitations.

4.2.1 Organic market

Organic market in Colombia is an important and determinant issue for small scale farmers. It still is restrictive in terms of development and long term stability; organic food sales are highly variable and farmers do not have the security to be able to sell their organic produce in the market. It leads organic products to end up on the market sold as conventional and farmers to reconsider their certification.

Lack of development and stability

The organic market in Colombia is still in first development stages. Consumers are not aware of the concept of organic food and the production process. Local organic consumption is very limited and market prices do not justify the effort required for organic farming cultivation and certification. Lack of promotion of organic agriculture makes difficult for the market to grow and small farmers to find the market for their products, even though they cultivate following organic standards and hold a label. This situation directly affects farmer's decisions to continue producing organic as well as the decision to re-certificate.

-“Few people in Colombia know about organic products, just high income population, development is scarce (...) there are producers that cannot commercialize their products and think: why should I be certified if I can't sell my products as organic and I have to sell them as conventional?” (M4)

-“When I produced organically during those two years I couldn't sell my product. So I had to throw it away because I had no one to buy it (...) I tried everything in fairs, organic markets, botanical gardens, but no one bought”. (F5)

Organic food mislabeling

Due to an undeveloped organic market, farmers need to find alternatives to produce organic, and simultaneously, being able to offer lower prices. The so-called *confidence certification* is an important strategy. It allows producers to locate their produce in the market, without certification, avoiding the organic certification associated costs. However, it can increase the information asymmetry along the trade chain, promoting opportunistic behavior and mislabeling issues when it does not rely on a guarantee system. In the local market, commonly, non-organic products are sold as organic and organic that farmers could not sell are sold as conventional for exceptionally low prices. This situation contributes to deprive certified producers of premium prices and misleads consumers understanding of the term *organic*. All of this impact the local organic food market development and accentuate the current instability environment:

-“To cultivate at small scale is an appalling business (...) I have to sell the produce in the conventional market (...) to intermediates that don't care about organic, of course they do not pay higher prices for organic”. (F4)

-“Only 10 to 20 Tons out of 120 we produced were sold as organic, the remaining fruit was sold as conventional since the local market is not extended” (F1)

Organic food prices

The price differential along the trade chain represents a significant problem. Farmers are not benefiting from premium prices, selling their products to retailers at modest amounts. There is no policy regarding price regulation to protect farmers, and public authorities do not contribute in this regard. Retailers and intermediates obtain the highest revenue, discouraging farmers to continue in the business. This wide price differential could be partly explained by the market orientation, as organic food is alleged to be exclusive for

wealthy consumers in expensive places, preventing the market to growth and organic products to become better known locally. Furthermore, producers find difficult to deal with the supermarket's requirements related to packaging, products good looking and an extra verification of the organic fields:

-“Prices should be 30-40% higher. Prices are extremely irregular and I am tired of this price thing”. Organic products are in top Supermarkets, are not sold everywhere”. (F4)

-“The exporters and the trade chain gain 1 US dollar for a product of 1.30 while the producers just gain 30 cents. This is a shame (...) the price asymmetry is a serious problem”. (A3)

-“Organic food consumption is reduced to a very small population share; others cannot afford it because it is extremely expensive”. (A3)

4.2.2 Farm management

Organic agriculture demands knowledge, labor force and planning. Producers find the organic farming system planning and management demanding and costly. In some cases, farmers described organic agriculture as challenging. Main concerns are attributed to cost, government support, and knowledge and conversion time.

Certified organic farming system

According to interviewees certified organic production involves several challenges for smallholder farmers. Higher labor force due to records keeping and mechanical pests and weeds control. Financial limitations to afford professional advice play an important role to farm running. Furthermore, supplies such as organic fertilizers and pest control facilities are scarce and expensive in the local market; organic seeds are also not available. Risk level and yield reduction can raise production costs and has implications for the farmer's cultural practices:

-“They have to adapt to a new production style; less yield, hiring more people (...) they could thing is too complicated”. (A3)

-“Involves so much work, especially in a country like this, where we are not use to pay for consultants and do everything on our own”. (A1)

-“There is a problem with the seeds because who uses organic seeds? Those are not available in the market (...) if the conventional is scarce the organic is a treasure”. (F4)

Institutional support and information

The lack of institutional technical, financial and marketing support to organic agriculture are important limitations. Respondents were extremely critical concerning organic agriculture policies and government support. Non-existing subsidies, unclear regulations and lack of competitiveness of public workers were highlighted. There are few efforts supporting organic agriculture; however, interviewees are not benefiting from those initiatives. Interestingly, farmers considered organic agriculture and standards information to be available while organic organizations staff perceived the information rarely accessible to farmers. Additionally, universities, productive sector, and government institutions are not connected to encourage organic agriculture development and do not work according to farmer's needs. Research related to organic cultivation is scarce and few academic institutions offer related programs. As a result, advice and extension programs are rare:

-“The perception about what organic agriculture is still is in construction, there is a lot to do. In our country there are no organisms who give advice in this way”. (A1)

-“The problem is to have access to organic supplies because there is no availability”. (F2)

-“Unfortunately universities haven't dealt with the topic and there are advisors knowing about conventional agriculture getting farmers in trouble (...) there is a lack of information, divulgation, training (...)”. (M4)

-“There is no connection between the institutions regulating the organic production, academy, control entities and the Ministry with producers (...) the government is the enemy of organic agriculture”. (A2)

Human and financial capital

Human capital embraces farmer's knowledge and skills for organic production, certification process, and marketing. Training, information access, and cultural practices are pivotal for farmers. Interviewees raised concern about keeping records, organic standards understanding and financial means to run the farm. Farmers seemed to be self-confident regarding their abilities whereas organic organizations staff appeared skeptical and claimed for training as well as extension programs. Hence, human and financial capital limitations are critical factors to farmers and certification bodies to go along with the certification:

-“Even today it could be said that one of main failures farmers have is that they know the superficial details of organic regulations but not the small details” (A1)

-“Small farmers struggle keeping records, assessing the production cost and sale prices (...) they don't know how much they earn, they are seeking for information. They just survive”. (A3)

Remarkably, farmer's relying on financial motivations to produce organically was perceived as an important barrier. As mentioned before, farmer's reliability is closely related to their objectives, thus, *organic believers* are more likely to continue producing organic under certification, despite the many inconveniences, that farmers who rely on financial reasons as the main motivation for organic production.

-“When they directly make the conversion to organic, yields decline a lot and the technical aspect starts to be economic, I think that in Colombia 90% of farmers want to convert to organic for financial reasons rather than consciousness about what organic agriculture is (...) this is a problem for the CB since they are capable of start using chemical inputs to increase yield”. (F3)

Time and investment capacity

Conversion to organic agriculture involves changes in the cultivation system and a transition time. The highest amount of work and resources are needed when starting the organic cultivation. Conversion time takes around 3 years which is considered to be extremely long. Additionally, changes in farm strategies have to be made, involving space and infrastructure adequacy. Particularly, one of the organic organization's staff interviewed brought up concern about the many challenges farmers face during the process of shifting their conventional agricultural practices. Farmers need not just financial capital and knowledge but also willingness to adopt a whole new system. A further concern related to credits acquisition and financial support to innovate and acquire technological facilities was raised.

-“Producers can not comply with organic regulations because they have no financial resources to implement modifications in their farms and it requires money”. (A3)

-“The first three years are too expensive, more than certification itself, due to the regulations implementation”. (A3)

-“At the beginning more than money is to switch the chip in the head about how to do it (...) There are formats for everything, the discipline of filling these out”. (F4)

-“Organic production is not likely to grow (...) we are divorced from technology (...) production cost is so high and we can't compete”. (F5)

4.2.3 Certification System

Certification system in Colombia is related to high associated costs not only due to the amount that farmers need to pay to the company but also some of those related to the implementation phase and meeting of requirements. This section intends to understand respondent's perception about certification system performance towards farmer's needs.

Organic standards and certification body's performance

Organic standards interpretation is uneven among farmers and certification bodies. Farmers need to follow the organic standards in order to achieve the certification; however, they do not fully understand the regulation. Additionally, organic standards interpretation is different among certification bodies leading to a disconnection between farmers understanding and certification body's requirements. According to respondents, regulations should be adapted to climatic conditions and country's technological capacities. They seemed to disagree with organic regulations imposed from temperate regions in tropical and developing countries and felt less capable of successful compliance. The perception that organic regulations do not meet farmer's needs and capacities have an important influence in the national context:

-“I am happy with the farming system, but worried about so many regulations (...) Therefore, I am thinking of getting retired, still producing organic but without certification”. (F3)

-“I think that the regulations make it expensive and I am tired (...) When I have my farm without certification I will still producing organic but cheaper”. (F3)

-“Why are the same organic standards for Europe and here? There should be some concessions; we are not the first world”. (F4)

The demanding nature of certification is related to higher cost of organic production. On one hand they think that organic certification is expensive itself but on the other hand, consider that the many demands (from certification agencies) they must comply make the

production more expensive. The annual re-certification payment is also a cost they need to assume despite their success or non-success commercializing their products. It is a common statement that certification cost should be paid by the government or at least there should be a compensatory payment scheme. Interviewees agreed that standards are not focused on tropical countries conditions and farmers capacities; therefore, it results in several difficulties for farmers to meet organic standards or in other words, organic standards are incapable of meeting farmer's needs and capacities.

“-It is costly and no all of them can afford to pay the certification, they should not pay for that (...)” (A2)

-“When they ask you to fill so many documents out and to comply the regulations that makes it more expensive than conventional, and organic farming should be cheaper”. (F3)

Institutions performance

This section comprises interviewee's perceived barriers posed by organic certification bodies and government organizations performance. Contestants from organic organizations consider certification bodies to be flexible and in some cases capable of issuing a certification without farmers fully compliance of organic standards. Farmers expressed their un-conformity about certification bodies requiring them the organic standards compliance in different forms (uneven organic standards interpretation). Moreover, some of them have changed the certification organization several times due to disagreement with the certification body's demands and the perception of such organizations not to be fair and transparent:

-“Cheating is possible because the competence among CB is tough; some are more flexible to catch clients. This is a disloyal competence” (A3)

-“The main obstacles are the regulations and norms (...) they ask so many silly things”. (F3)

-“Organic agriculture is just a small component of the Ministry of Agriculture, they devote just around 2% of their budget to that the rest is devoted to conventional agriculture”. (F5)

Governmental institutions performance is a critical limitation according to respondents due to unclear policies, which are also far apart of farmer's reality. Added to this, the high levels of bureaucracy and the hard paperwork provoke dilation on the process, making the organic certification even less accessible.

- “Nowadays I think is more complicated because government requirements are harder and therefore we need to require the producers harder” (M4)
- “There are no clear regulations regarding seeds management and validity”. (A1)
- “Government is the enemy of organic agriculture”. (F2)

5. DISCUSSIONS

This study reveals that farmers rely on different reasons to adopt the certified organic agriculture. Apparently, most farmers seem to be motivated by environmental and health concerns as well as personal satisfaction while financial reasons have less weight. However, organic certification staff has the opinion that producers are merely attracted by the potential economic benefits the sector offers. Motivations play a pivotal role in trusting relationships and producers farming system performance; organic believers, who practice organic agriculture due to environmental and health concerns as well as personal reasons, count for higher credibility and seem more likely to comply with the organic regulations despite the many challenges it implies and the limited economic benefits, whereas farmers attracted by financial and market potential benefits have less credibility and were perceived to be more susceptible to reverse in the certification process. The strength of the adoption motivation can explain the fact that farmers consider organic production as non-profitable but still enrolled growing organic under a certification scheme and the decision of the financially motivated farmers to quit.

Farmers are satisfied growing organically and seem confident about farming practices. Most of them, have a university education and are familiar with the use of information sources such as internet and books, and therefore, are carrying out an autonomous process in the information gathering. Nonetheless, the government, responsible for the organic agriculture control and administration, does not play a relevant role when it comes to supporting regarding information, marketing, training, technical advice and compensatory payments or subsidies. As a consequence, farmer’s knowledge about organic standards, market issues, and specialized farming practices still meager, and thus, farmers and organic organization staff were extremely critical towards government role, especially regarding unclear regulations, non-existent support and high bureaucracy levels and paperwork. Public initiatives are generally sporadic actions to support organic agriculture, and its effectiveness is limited.

The certification process is perceived to be strict and complex to fulfill not only for being challenging to enter but also to sustain. Third party agencies are in charge of issuing the certificates and verifying the process; however, producers are reluctant to requirements due to different standards interpretation among certification bodies, which creates uncertainty, farmer's poor performance and lack of confidence. Certification bodies are considered a business, and therefore, they compete to gain more costumers, which provoke high flexibility levels and the possibility of certification issuing without full compliance with organic regulations. In addition, the initial requirements to enter in the certification process are also demanding, expensive and time-consuming. Hence, farmers are able to deal with the farming system but the main challenges they face are related to the certification process and the requirements done by certification bodies. This is particularly important to small producers, who have no financial means to buy machinery, organic inputs, set facilities up, hire experts and have no connections to sell their products. Despite the potential of certified organic agriculture, the market still is undeveloped and unstable. Farmers have difficulties locating their products in the market and prices are low and variable. Organic products are oriented to high-income population, sold in very exclusive health shops and supermarkets, where prices for organic food are incredibly high. Thus, access to organic food for a low to medium-class population is limited, preventing consumers to consider including organic in their diets. As a consequence, consumer's awareness still limited and farmers have troubles to sell their products, leading to low profits and farmers desire to export in order to guarantee their sales; getting higher economic benefits and being able to sustain in the certified organic agricultural sector. Therefore, suitable alternatives for farmers to produce organic certified should be considered especially when it comes to small producers who have more difficulties to deal with the organic certification system.

Actions from government, academy and local institutions need to come together to enforce the sector. Programs need to be considered in the long run in order to create a stable and confident environment to promote organic farming and certification. Policies need to be clearer and take in account the sector reality and farmer's needs, bearing in mind the particular country agriculture development and facilities. More investment in technology, subsidies and compensatory payments could trigger farmer's interest in organic certified production and support current farmers to sustain. Training and extension programs as well as communication improvement between producers, government, certification bodies

and consumers are required. As this study is the first attempt to evaluate the organic certification system in the country and the main issues, faced by farmers and certification bodies, additional research is needed to investigate particular farmer needs towards farm strategies and management, marketing for organic food products, organic regulations understanding and interpretation, local policies to promote the sector as well as the possibility of alternative guarantee systems implementation i.e. Participatory Guarantee System and improvement of Group Certification.

6. CONCLUSIONS

The organic certification system in Colombia has been certifying organic producers the last decades, facilitating their access to national and especially international markets. Organic certification becomes more relevant for exporting rather than for local market sales as a consequence of a local undeveloped market and consumer's lack of awareness. It results in reduced economic benefits for farmers, uncertainty to reach the market and mislabeling of agricultural products. Skepticism towards high fees, side cost of certified organic farming system i.e. records keeping and organic inputs, market issues, lack of farmer's knowledge about organic farming and standards, non-existent government support and unclear policies still persistent affecting particularly smallholder farmers. Moreover, current organic certification system based on third-party certification posed multiple challenges to small producers and does not seem to meet local farmer's needs and capacities.

Therefore, alternative ways to guarantee that organic production standards are met should be taken into consideration. In this sense, in Colombia, the group certification has been implemented among small farmers in order to lower the certification costs and administration procedures. Under group certification the third part assessment is mainly in charge of verifying the correct functioning of the internal control system instead of individual procedures (Lechleitner & May, 2004); however, the organization of individual farmers as a group complying with the international organic standards implies essential demands regarding particular skills and resources, which results in multiple limitations to its application in Colombia. Group certification in Colombia represents an interesting alternative for exporting and is generally carried out by commercial exporters rather than producers oriented to reach the local market.

Bearing in mind that the domestic organic market is not developed and there is a consumer's lack awareness about the characteristics of the organic products, there is the need to promote the local organic sector in Colombia. In this sense, the organic verification following a participatory guarantee system (PGS), theoretically, represents a suitable possibility to enhance the local market growth and to promote consumers participation and education in organic agricultural production. Since PGS system is specifically designed for smallholder farmers with the objectives to reduce administration and lesser costs, as compared to third-party certification, and to promote the sharing of knowledge and experiences encouraging farmer's cooperation and consumer's participation (Källander, n.d.), this study suggests to consider this model in order to overcome the main barriers for third party certification adoption related to; high certification costs, limited knowledge in organic agriculture and standards, administrative demanding procedures and hard paperwork. However, as first step it should be recognized by the local government legislation and requires a structured plan for farmer's assistance in the implementation.

ACKNOWLEDGEMENTS

I am thankful to all participants, farmers and organic organizations staff, for sharing their experiences and took the time and patience to carry the interviews out. I thank those who read my first draft and enriched it with their comments. Finally, I make extensive my thanks to the organic organizations: Fedeorganicos de Colombia, Ceres Colombia and EcoCert Colombia allowing me to get in touch and facilitating the research process.

REFERENCES

- Albersmeier, F., Schulze, H., & Spiller, A. (2009). Evaluation and Reliability of the Organic Certification System: Perceptions by Farmers in Latin America. *Agricultural Economics*, 324(July), 311–324. <http://doi.org/10.1002/sd>
- Allen, P., & Kovach, M. (2000). The capitalist composition of organic: The potential of markets in fulfilling the promise of organic agriculture. *Agriculture and Human Values*, 17(3), 221–232. <http://doi.org/10.1023/a:1007640506965>
- Ayala, C., & Garcez, D. (2018). Decision Making and Agriculture A Recent Review of Organic Farming, 16(43).

- Bacon, C. (2005). Confronting the coffee crisis: Can Fair Trade, organic, and specialty coffees reduce small-scale farmer vulnerability in Northern Nicaragua? *World Development*, 33(3), 497–511. <http://doi.org/10.1016/j.worlddev.2004.10.002>
- Barrett, H. R., Browne, a. W., Harris, P. J. C., & Cadoret, K. (2001). Smallholder Farmers and Organic Certification: Accessing the EU Market from the Developing World. *Biological Agriculture & Horticulture*, 19(March 2015), 183–199. <http://doi.org/10.1080/01448765.2001.9754920>
- Bolwig, S., Gibbon, P., & Jones, S. (2009). The Economics of Smallholder Organic Contract Farming in Tropical Africa. *World Development*, 37(6), 1094–1104. <http://doi.org/10.1016/j.worlddev.2008.09.012>
- Censkowsky, U., & Berger, J. (2010). *Generación de capacidad comercial hacia EFTA: inteligencia de mercado para Colombia - Sector de frutas y verduras orgánicas*. OSEC Business Network Switzerland. Retrieved from www.organic-services.com
- Charmaz, K. (2008). Grounded Theory as an Emergent Method. *Handbook of Emergent Methods*, (3), 155–170.
- Chouichom, S.1 and Yamao, M. (2010). Comparing Opinions and Attitudes of Organic and Non-Organic Farmers Towards Organic Rice Farming System in North-Eastern Thailand. *Journal of Organic Systems*, 5 (1), 25–35.
- Corbin, A. S. and J. (1993). *Grounded Theory Methodology. An Overview*.
- Darolt, M. R., Lamine, C., Brandenburg, A., Alencar, M. D. C. F., & Abreu, L. S. (2016). Alternative Food Networks and New Producer-Consumer Relations in France and in Brazil. *Ambiente & Sociedade*, 19(2), 1–22. <http://doi.org/10.1590/1809-4422ASOC121132V1922016>
- Egelyng, J. (2008). The institutionalization of Participatory Guarantee Systems Archived at <http://orgprints.org/12356>. *World*, 3–6.
- Espinal G, C. F., Martínez C, H. J., & Espinosa P, D. (2005). *La Cadena de Cultivos Ecológicos en Colombia: Una mirada global de su estructura y dinamica 1991-2005*. Bogota, Colombia. Retrieved from http://www.agronet.gov.co/www/docs_agronet/20051121601_caracterizacion_ecologicos.pdf
- González, A. A., & Nigh, R. (2005). Smallholder participation and certification of organic farm products in Mexico. *Journal of Rural Studies*, 21(4), 449–460. <http://doi.org/10.1016/j.jrurstud.2005.08.004>
- Gutiérrez Padierna, L. P. (2018). Política de transferencia tecnológica del sector agropecuario

- colombiano con enfoque territorial. *Lecturas de Economía*, 89(89), 199–219.
<http://doi.org/https://doi.org/10.17533/udea.le.n89a07>
- H. Schulze, G. J. G. and A. S. (2007). Acceptance and Motivational Impact of the Organic Certification System. *Trends in Parasitology*, 3–6.
- Hatanaka, M., & Busch, L. (2008). Third-party certification in the global agrifood system: An objective or socially mediated governance mechanism? *Sociologia Ruralis*, 48(1), 73–91.
<http://doi.org/10.1111/j.1467-9523.2008.00453.x>
- Herberg, L. A. (2007). *Organic Certification Systems and Farmers' Livelihoods in New Zealand*. Retrieved from c:%5CDocuments and Settings%5CFirstUser%5CMy Documents%5CARGOS Project%5CReferences%5COrganic Certification Systems and Farmers Livelihoods in NZ - Herberg 2007.pdf
- Ibanez, M., & Blackman, A. (2016). Is Eco-Certification a Win-Win for Developing Country Agriculture? Organic Coffee Certification in Colombia. *World Development*, 82, 14–27.
<http://doi.org/10.1016/j.worlddev.2016.01.004>
- Iliopoulou D. , Douma K. , Giourga, C. . (2011). Motives and barriers for organic olive farming Greece.
- Imo, F. L., & Bioglobal, C. M. (n.d.). Smallholder Group Certification Training Curriculum for Producer Organizations compiled by.
- Jahn, G., Schramm, M., & Spiller, A. (2004). Differentiation of Certification Standards: The trade-off between generality and effectiveness in certification systems. *Dynamics in Chains and Networks*, 1–17. <http://doi.org/10.3920/978-90-8686-526-0>
- Jahn, G., Schramm, M., & Spiller, A. (2005). The reliability of certification: Quality labels as a consumer policy tool. *Journal of Consumer Policy*, 28(1), 53–73.
<http://doi.org/10.1007/s10603-004-7298-6>
- Källander, I. (Swedish S. for N. C. (n.d.). Systems – PGS, 1–25.
- Khaledi, M., Gray, R., Weseen, S., & Sawyer, E. (2007). An Institutional Analysis With the collaboration of □: University of Saskatchewan, (May).
- Kilcher, L. (2007). How organic agriculture contributes to sustainable development. *Agriculture*, 89, 31–49.
- Kings, D., & Ilbery, B. (2012). Farmers ' Attitudes Towards Organic and Conventional Agriculture: A Behavioural Perspective. *Organic Food and Agriculture - New Trends and Developments in the Social Sciences*, 145–168.
- Kleemann, L., & Abdulai, A. (2013). Organic certification, agro-ecological practices and return on investment: Evidence from pineapple producers in Ghana. *Ecological Economics*, 93,

330–341. <http://doi.org/10.1016/j.ecolecon.2013.06.017>

Knowler, D., & Bradshaw, B. (2007). Farmers' adoption of conservation agriculture: A review and synthesis of recent research. *Food Policy*, 32(1), 25–48. <http://doi.org/10.1016/j.foodpol.2006.01.003>

Lohr, L. (1998). Agricultural & Applied Economics Association Implications of Organic Certification for Market Structure and Trade Author (s): Luanne Lohr Published by □: Oxford University Press on behalf of the Agricultural & Applied Economics Association Stable URL □: h. *American Journal of Agricultural Economics*, 80(5), 1125–1129.

Manual, O. (2006). Organic Guarantee System for India, (October).

Martínez-Bernal, L. F., Bello-Rodríguez, P. L., & Castellanos-Dominguez, O. F. (2012). *Sostenibilidad y Desarrollo: el valor agregado de la agricultura orgánica*. (U. N. de C. P. I. BioGestión, Ed.). Bogota, Colombia.

Méndez, V. E., Bacon, C. M., Olson, M., Petchers, S., Herrador, D., Carranza, C., ... Mendoza, A. (2010). Effects of Fair Trade and organic certifications on small-scale coffee farmer households in Central America and Mexico. *Renewable Agriculture and Food Systems*, 25(03), 236–251. <http://doi.org/10.1017/S1742170510000268>

Meuwissen, M. P. M., Velthuis, A. G. J., Hogeveen, H., & Huirne, R. B. M. (2003). Traceability and Certification in Meat Supply Chains. *Risk Management*, 2(2), 167–181.

Midmore, P., Padel, S., Mccalman, H., Isherwood, J., Fowler, S., & Lampkin, N. (2001). Prifysgol Cymru Aberystwyth University of Wales Sefydliad Astudiaethau Gwledig Institute of Rural Studies ATTITUDES TOWARDS CONVERSION TO ORGANIC PRODUCTION SYSTEMS □: A STUDY OF FARMERS IN ENGLAND, (March).

Ministerio de Agricultura y Desarrollo Rural. (2007). La agricultura ecológica en Colombia, 1–38.

Nandi, R., Bokelmann, W., Nithya, V. G., & Dias, G. (2015). Smallholder organic farmer's attitudes, objectives and barriers towards production of organic fruits and vegetables in India: A multivariate analysis. *Emirates Journal of Food and Agriculture*, 27(5), 396–406. <http://doi.org/10.9755/ejfa.2015.04.038>

Nordlund, E., & Egelyng, H. (2008). Perceived Constraints and Opportunities for Brazilian Smallholders Going Organic □: a case of coffee in the state of Minas Gerais. *Cultivating the Future Based on Science*, 2, 462–465. Retrieved from <http://orgprints.org/11579>

Perfetti, J. J., Hernández, A., Balcázar, Á., & Leibovich, J. (2013). *agricultura en Colombia*. Retrieved from http://www.fedesarrollo.org.co/wp-content/uploads/2013/07/Libro-SAC_Web.pdf

- PJC Harris, AW Browne, H. B. and K. C. (2001). Facilitating the Inclusion of the Resource-Poor in Organic Production and Trade: Opportunities and Constraints Posed by Certification. *Department for International Development*, 64.
- Scialabba, N. E.-H., & Müller-Lindenlauf, M. (2010). Organic agriculture and climate change. *Renewable Agriculture and Food Systems*, 25(Special Issue 02), 158–169. <http://doi.org/10.1017/S1742170510000116>
- Shah, T., Verma, S., Bhamoriya, V., Ghosh, S., Sakthivadivel, R. (2005). SOCIAL IMPACT OF TECHNICAL Study of Organic Cotton and Low Cost Drip Irrigation in the Agrarian Economy of West Nimar Region Tushaar Shah Shilp Verma Vaibhav Bhamoriya Santanu Ghosh. *Methodology*.
- Teisl, M., & Roe, B. (1998). The economics of labeling: An overview of issues for health and environmental disclosure. *Agricultural and Resource Economics ...*, October, 140–150. Retrieved from <http://ageconsearch.umn.edu/bitstream/31535/1/27020140.pdf>
- Tenjo Galarza, J., & Jaimes, C. A. (2018). Income and education in the colombian rural sector. *Revista de Economía Institucional*, 20(38), 209–233. <http://doi.org/10.18601/01245996.v20n38.09>
- Trindade, E., Vieira, V., & Guilherme, D. D. O. (2017). A sustainability rereading of agrarian production systems Uma releitura da sustentabilidade dos sistemas agrários de produção La durabilité de relisant des systèmes de production on agricoles, 43–54. <http://doi.org/10.20435/inter.v18i4.1527>
- Vargas Canales, J. M., Palacios Rangel, M. I., Aguilar Ávila, J., Camacho Vera, J. H., Ocampo Ledesma, J. G., & Medina Cuellar, S. E. (2018). Efficiency of small enterprises of protected agriculture in the adoption of innovations in Mexico. *Estudios Gerenciales*, 52–62. <http://doi.org/10.18046/j.estger.2018.146.2811>
- von Meyer-Höfer, M., Nitzko, S., & Spiller, A. (2015). Is there an expectation gap? Consumers' expectations towards organic. *British Food Journal*, 117(5), 1527–1546. <http://doi.org/10.1108/BFJ-07-2014-0252>
- Willer, H. and Lernoud, J. E. (2016). *The World of Organic Agriculture 2016: Statistics and Emerging Trends*. FIBL & IFOAM - Organics International. <http://doi.org/10.4324/9781849775991>