

The Commodity Chain for Coffee in Brazil: Social and Labor Impacts of Certification

João Paulo Candia Veiga, Alexandre de Freitas Barbosa, Maria Sylvia Macchione Saes¹

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¹ João Paulo Candia Veiga is a professor at the University of São Paulo's Department of Political Science (DCP-USP) and a researcher at Caeni (Center for Studies of International Negotiations); Alexandre de Freitas Barbosa is professor of Brazilian and International Economy at the Institute of Brazilian Studies of the University of São Paulo (IEB-USP); and Maria Sylvia Macchione Saes is researcher and coordinator at Cors (Center for Organization Studies) and professor of Economics at FEA-USP.

Introduction

The aim of this text is to provide the broader framework for the discussion of the results of research report “Living Wage for Southern and Southwestern Minas Gerais State, Brazil, with a Focus on the Coffee Sector” (Barbosa, Silva, Veiga & Zacareli, 2016), ended in February 2016, which was based on fieldwork research conducted in that region during the first week of July 2015. This report, which had the support of ISEAL Alliance, aimed to calculate a living wage benchmark for the Minas Gerais State Southern and Southwestern mesoregion based on the methodology developed by Anker & Anker (April 2015). The estimated living wage is 25% higher than the prevailing wage paid to workers employed in the region’s coffee industry. In addition to the benchmark wage, we observed a substantive improvement in the situation of permanent coffee wage workers in this region over the past ten years as a result of both a job formalization process and a real increase in the minimum wage, a benchmark for collective bargaining agreements.

Accordingly, this paper seeks to take the debate to another level: can the present organization of the coffee production chain and the recent expansion of certification continue to promote the advancement of workers’ living conditions including by ensuring in the medium range a wage equivalent to the living wage calculated for the region?

In order to answer this question, this paper begins with a presentation of the coffee sector’s Voluntary Sustainability Standards (VSSs) and how they work, indicating their differences and similarities. Next we present the hypotheses and the methodology that guided the survey design. Thirdly, we point to a setting of cooperation and conflict between the various certificates/standards. Lastly, we focus on the impacts of the standard-setting process on the coffee laborers of the Minas Gerais State Southern and Southwestern mesoregion building on the fieldwork survey and the existing studies of coffee certification in Brazil.

Therefore, this paper, just like the aforementioned report, originated in the fieldwork research carried on in July 2015, when interviews were done with the main stakeholders in the coffee chain, who provided valuable input for our work.

1. Coffee Certification

According to the Financial Times newspaper (2015), coffee is the most certified commodity in the world. Its long and complex production chain is labor-intensive and is comprised of formal and informal wage workers and family farmers living in poor conditions, depending on the producing country. Moreover, it is characterized by great variability in quality standards owing to the expertise required to produce the blends, by a small number of coffee roasting companies (and distributors), and by a huge number of brands. In addition to these factors, there is the significant role played by end users in their demands for quality and social and environmental sustainability, which account for the growing presence of certified coffee in several parts of the world, especially in developed countries (North America, Japan, and Europe).

	Table 1 – Market share of sustainable commodities % of total certified commodity production
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Year	Coffee	Cocoa	Palm oil	Tea
2008	15%	3%	2%	6%
2012	40%	22%	15%	12%
	Cotton	Bananas	Sugar	Soybeans
2008	1%	2%	1%	2%
2012	3%	3%	3%	2%

Source: *International Institute for Sustainable Development* (2014) and *Financial Times*, April 20, 2015.

The British newspaper reported on the study released in late 2014 by the International Institute of Sustainable Development (IISD, 2014), which shows a growth in supposedly sustainable standards in the production of some commodities. The most successful case in terms of production volume is coffee. Some 40% of the production of the commodity can be considered sustainable as it complies, by this criterion, with the various standards the concept encompasses, as established by seven different programs, codes of conduct, and certification systems: the German coffee roasting 4C program, the Nestlé guidelines for brand *Nespresso* - Triple AAA (FAO, 2013), C.A.F.E. – Coffee and Farmer Equity– Practices (Starbucks, 2007), and the Rainforest Alliance, UTZ, organic coffee, and Fairtrade certification systems. About 77% of all of the world’s certified coffee, considering these seven programs, codes of conduct, and certification systems, comes from Latin America (as contrasted with 58% of total production), with Brazil, Colombia, and Peru as the largest producers of coffee certified by at least one of the seven standard-setting systems above, including corporate programs (IISD, 2014).

This growth has risen sharply, especially more recently. Yet coffee’s success story (and that of certified commodities) also entails risks. First, the number of labels and certificates is such that it becomes confusing for final consumers to grasp the amount of information each label is based on. Second, the producer, eager to enter new markets, ends up adhering to standards whose rewards often fail to cover the cost associated with complying with a label’s rules. This is a recurrent complaint among producers. Certificates come to them as some sort of lifeline, but a premium is not always included.

Third, as certified volumes grow, competition for producers, roasting companies, traders, and blenders increases between labels and standard-setting organizations. Competition between certification systems can lead to lax compliance standards. This problem stems from the fact that some labels lack an accreditation system separating the interests of the certifying body from the parties adopting the certification system.

Lastly, corporate programs and certificates end up being too costly to promote poverty alleviation. In the case of coffee, in the overwhelming majority of cases distribution of certification-derived benefits is asymmetric and does not provide direct advantages (increased wages, profit sharing, etc.) to the weaker links of the supply chain, that is, the workers employed in coffee production and small farmers. Most of the benefits are indirect, stemming from formal employment relations and subsequent compliance with labor law (working papers, the use of PPE, better housing for employees living on farm).

2. The Various Coffee Certificates

But after all, which VSSs are used by the certifying organizations? Do they really work? According to the International Trade Centre (ITC), standards are a set of rules, guidelines or characteristics for products or services delivered by public and private organizations for the purpose of attaining goals defined under the broad concept of sustainability. This concept includes social, economic, environmental, and quality standards, plus ethics in business. Most of them are of a voluntary nature, which means they are not regulated by national governments or formal international organizations: They are market-driven, that is, they respond to market incentives and are applied at different stages along the value chain – such as the production (producers and workers), processing (roasters and blenders), international trade (traders), distribution (retailers), and consumption (Standards Map, 2015).

In the specific case of certification systems, standards encompass a network of interactions between the standard-setting organization, the accreditation body, and the certification body. The standard-setting organization develops the standard. In general, the standard is the result of multi-stakeholder consensus, reached through a deliberative political process, on verifiable principles and criteria that will make up a given standard, as expressed by means of a label/certificate. In order to avoid conflict of interest, the standard-setter does not carry out certification, which is conducted by an independent accreditation body. It is this body that builds the capacity or authorizes independent institutions that will carry out the audit that will ultimately endorse the certificate. Independence between standard-setter, accreditation body, and certifying organization is critical to ensure the integrity of the system and the legitimacy of the certification process. At the end of the verification/audit process, the certifier issues a certificate of conformity, thus authorizing the label/certificate to be used by a firm with its final consumer (Table 2).

What ensures the integrity and legitimacy of a standard? It must combine product-related criteria (quality) with process-related criteria (environment-related, labor standards), features that are not readily identified by the final consumer. Coffee is recognizably a good whose quality traits can only be verified after consumption. It is an “experience good”. Besides that, coffee also involves features related to the production processes that make it a “credence good”. (Martinez, 2008; Souza et al, 2014) It is these production process- and quality-based standards that, to a large extent, account for the rise of the state-of-the-art certification systems, as the coffee standards analyzed herein.

The International Trade Centre has mapped 57 coffee-related standards worldwide, accounting for 40% of the certified commodity. (Financial Times, 2015) Here are included all types of standards, both public (by governments) and private, as well as those that do not necessarily rely on a certification system, as happens with corporate programs like C.A.F.E., 4C, and *Nespresso* AAA. There are also national/regional public coffee certificates, as are the cases of *Certifica Minas* and *Café do Cerrado*.

For the purpose of this study, we will focus only on the coffee value chain’s VSSs (comprising criteria for its five dimensions – environmental, social, economic, quality, and ethics in business), which have been the subject of studies and fieldwork research in Brazil.

Actually, each corporate certificate or program sets standards according to consumer demand or, as contended by Ferreira (2014), “some certificates are more focused on the environmental dimension, others on the social”, still others “are focused on family farming groups (...) others focus on premium quality coffees, others on banning agrochemicals”, and there are still “governmental certification development programs and others associated with big corporations providing coffee to a final consumer”. Also worth mentioning are the management criteria and requirements set in the framework of VSSs. In this case, the premise is that verified/certified coffees should be separated from the other coffees and that the producer is able to register the flow of these products as separate from the conventional ones – in addition to numerous other management requirements when it comes to more stringent certification standards.

Corporate programs do not necessarily involve a certification system as described by Karin Kreider (2012). Thus, studies are restricted to organic coffee standards, Fairtrade, Rainforest Alliance, UTZ, Certifica Minas (the only public body), and the corporate programs – *Nespresso* AAA, C.A.F.E. (Starbucks), and 4C (set by the German roasting industry). The three last programs are not considered certification systems, even though including independent third-party verification (auditing). Within their framework there is a deliberately simplified certification system process for ease of compliance by the producer and subsequent cost reduction.

Starbucks, for example, developed its own coffee grain quality criteria for its C.A.F.E. (Coffee and Farmer Equity) program. 4C conducts independent third-party verification of claims by a producer applying for the label. In this case, “the final decision on the licensing is by the 4C Association and by the auditing organization”, explains 4C manager in Brazil. In reality, all corporate programs conduct third-party audits to verify producer conformity to the standard’s criteria. In the case of 4C, “the auditing (verification) process is on a random basis, scheduled between the 4C Unit and the verifying body”, while this body must be “ISO17065 [certified] for the scope of agriculture”. It must be acknowledged that each standard adds value to a restricted number of criteria, while none of the labels covers all sustainability dimensions as regards product and process. Furthermore, the standards end up specializing in one sustainability dimension, though encompassing a wide array of criteria. (4C, 2016)

3. Differences and Similarities between Certificates

According to the International Coffee Organization (ICO), Brazil is the world’s largest coffee producer and exporter, with 45.3 million (60 kg bags) and 36.4 million (60kg bags), respectively. It is also the second largest consumer, only trailing behind the USA, with 20.2 million (60 kg bags) and 6.2 kilos per capita/year. Indicators provided by Brazil’s Ministry of Agriculture, Livestock and Food Supply (MAPA) show a production of 43.2 million bags in 2015, and a domestic consumption of 21 million bags and consumption per capita of 6 kilos a year (Mapa, 2016). According to the Food and Agriculture Organization of the United Nations (FAO), today there are more than 70 countries producing coffee,

with more than 50% of the production coming from three of them: Brazil, Vietnam, and Indonesia. (FAO, 2015)

Table 2 – Main certificates and programs in Brazil	
UTZ	Established in 2002, UTZ is an independent, nongovernmental, and nonprofit body focused on an open and transparent market for environmentally and socially responsible agricultural products based on a traceability system, a code of conduct, and a chain of custody for certified products.
RAINFOREST ALLIANCE	Rainforest Alliance is a not-for-profit NGO focused on promoting sustainable agriculture (certification, good practices, and training for farmers).
FAIRTRADE	Fairtrade International (FLO) is a not-for-profit multi-stakeholder initiative established to promote the well-being and the empowerment of associated producers and workers in developing countries through trade.
Nespresso AAA (Nestlé)	Nestlé program focused on coffee quality launched in 2003 in partnership with Rainforest Alliance aiming to ensure supply of world-class coffee as required by brand <i>Nespresso</i> , to conserve the environment, and to improve distribution of profits to producers, in short, quality, sustainability, and productivity.
C.A.F.E. – Coffee and Farmer Equity (Starbucks)	Developed by NGO Conservation International in the late 1990s, C.A.F.E. is a set of guidelines created by company Starbucks for the purpose of, at a non-defined point in time in the future, sourcing coffee that is 100% certified or verified by third parties
4C	Established in 2006 by the roasters' association and the governmental agency for innovation and development based in Bonn, Germany 4C is an independent, multi-stakeholder body committed to (economic, social, environmental) sustainable production that is guided by a code of conduct.
ORGANIC	Regulated by country governments and international bodies, with both public and private certifying systems, organic food certificates/programs are committed to banning the use of agrochemicals, GMOs, and soluble synthetic fertilizers.
CERTIFICA MINAS	Certifica Minas Café is a certification program by the government of the state of Minas Gerais conducted by state agencies IMA and Emater-MG – both subordinated to the state's Agriculture, Livestock and Food Supply Department (Seapa). The program's main goal is to introduce best practices in the state's coffee farms in order to increase transparency and competitiveness of the state's coffee at home and abroad.

Sources: www.standardsmap.org (accessed on January 7, 2016); www.starbucks.com (accessed on January 10, 2016); www.nespresso.com (accessed on January 10, 2016); www.san.ag (accessed on January 10, 2016); www.mapa.gov.br (accessed on January 10, 2016); www.ima.mg.gov.br (accessed on January 10, 2016).

Table 2 shows certificates and programs adopted by Brazilian producers. UTZ, a member of ISEAL Alliance, is a certification system based on compliance with its code of conduct. It recognizes ISO (International Standardization Organization) standards for certifying/auditing organizations and, because it subscribes to ILO's core labor standards, its certification is considered more social than environmental. Yet, it is not a signatory to the ILO convention regarding indigenous peoples, to the convention on biological diversity, or to the Global Compact. This certification system is focused on the sustainability of the farming commodities value chain and specializes in a traceability system (Standards Map, 2016).

The Rainforest certificate comprises the broadest set of environmental standards, whereas UTZ is more focused on quality, management, social standards; however, it is more stringent as far as implementation requirements. In order to obtain UTZ certification, applicants must comply with 108 immediate

implementation measures, but only 47 immediate measures for Rainforest certification, with the remaining 117 being spread by the producer over a three-year period. (Standards Map, 2016)

4C and the other firm-sponsored programs and guidelines (*Nespresso* and *C.A.F.E.*) are focused on major buyers of green coffee. One of *C.A.F.E.*'s guidelines establishes that the producers' remuneration is to be disclosed when coffee a purchasing contract is entered into with wholesaler/distributor, theoretically improving the living conditions of coffee growers in general, and family farming smallholdings in particular. All guidelines seek to improve the living conditions of the family farmer. It is worth noting that, in Brazil, labor laws are relatively advanced in comparison with the other producing countries and that mere compliance with them suffices to indicate 'best practices' by the producer. Thus, Brazil is at a disadvantage as far as certification is concerned, as the standards' baseline is compliance with a country's labor law, which in Brazil's case is much more stringent.

In the case of organic coffee, despite the existence of ten different certification schemes worldwide, mostly private, organic production is regulated by international bodies and governments. The *Codex Alimentarius*, jointly established by the *FAO* and *WHO* (World Health Organization), set forth the *Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods* (CAC 32-1999). These guidelines are meant for food in general, therefore not specifically intended for coffee. The European Union's Council for the Regulation of Organic Agriculture requires monitoring and inspection bodies (in keeping with regulation EN 45011 and ISO 65) for organic products. Certifying organizations are subordinated to the International Federation of Organic Agriculture Movements (IFOAM).

In Brazil, there is a federal regulatory, monitoring, and certification system. Production and selling of organic products in Brazil were sanctioned by Law 10,831, of December 23, 2003 and regulated by Decree-Law 6,323 (2007). The producer must be registered with *MAPA* and go through the inspection and certification system. There are eight *MAPA*-accredited certifiers: Instituto de Tecnologia do Paraná (TECPAR), IBD Certificações, Ecocert Brasil Certificadora, Instituto Nacional de Tecnologia (INT), Instituto Mineiro de Agropecuária (IMA), Instituto Chão Vivo de Avaliação da Conformidade, Agricontrol (OIA), and IMO Control do Brasil. (Mapa, 2016)

Certifica Minas is a state-wide public certification program implemented by *Emater-MG* and the State of Minas Gerais Agricultural and Livestock Institute and audited by internal and external auditors, plus an independent third party to attest to ownership. A main issue raised by the producers interviewed during the fieldwork research is a shortage of technicians to aid them in promoting the changes required to qualify a farm for certification. As for premium prices, some producers said that the certificate does not ensure a premium, while others reported having obtained a BRL 3.00 premium for each 60kg bag. The *Emater-MG* technician interviewed during the fieldwork research (July 2015) said that, actually, the greatest benefit provided by *Certifica Minas* is in terms of property management efficiency and increased productivity.

TABLE 3 – Certification/standardization models and impact on value chain		
Origin	Motivation for Producer	Impact
Private UTZ, RA, AAA, C.A.F.E., 4C	Interest	Indirect distributive effect
Private Fairtrade	Normative	Direct distributive effect (increased household income)
Public Certifica Minas	Interest	Indirect distributive effect
Organic	Normative	Direct distributive effect with improved health conditions of population using organic products and improved soil and water conditions

Source: Prepared by the authors.

Table 3 above allows us to make inferences concerning the impact of certification on the coffee value chain in Brazil. For that, we correlate the origin of the certificate with the motivation of the agents along the value chain. Business-driven certificates, that is, those based on the agents' interests, provide direct and indirect benefits. Furthermore, this goal is not expressed as a certification criterion or principle. Fairtrade, in turn, is normative, since the premium paid to the producer is established *ex ante*. In the case of Organic, prices are market prices. This certificate can be likened to a public good, since it delivers improved public health by banning the use of pesticides and agrochemicals.

4. Hypotheses and Methodology

The fieldwork research adopted a qualitative methodology based on the application of open-ended, semi-structured questionnaires to a number of southern Minas Gerais State coffee value chain stakeholders: wage workers, (medium-sized and big) coffee producers, workers' and employers' union leaders, public bodies (Emater-MG), representatives of certifying organizations, agronomical consultants, auditors, and cooperatives.

Two orders of considerations guided the interviews, stated here in the form of hypotheses:

1. Competition between certification systems impacts revenue distribution along the value chain.

Although this hypothesis was not corroborated by the fieldwork, its explanatory power as discussed by the scholarly literature helps account for the present moment of certified coffee production in Brazil and abroad.

2. Certification systems bring positive (direct and indirect) impacts to workers along the coffee value chain in Brazil.

In this case, on the contrary, not only did fieldwork validate the hypothesis, it also confirmed the findings of studies of the impacts of the various certification systems mentioned herein, whether by commissioned surveys (UTZ) or by means of the specialized literature (Rainforest, Organic, and Fairtrade). We have only focused on studies conducted in Brazil, without consideration for potential comparative analysis with other coffee producing countries.

5. Cooperation and Conflict between Certificates

Most of the coffee standards analyzed are private, driven by certification programs and systems whose labels and logos are competing with each other. This means that both corporate programs and certification systems need to attract, on a voluntary basis, producers, roasters, blenders, distributors, and the final consumer, who seeks to identify each label's features to make a buying decision that is not usually easy due to the amount of information contained in each label. Thus, the certification cost issue becomes decisive in a context of global competition.

Table 4	Origin of regulation	
	Public	Private
<i>Predominance of the 'focal point' authority</i>		
<i>Market-driven polycentric authority (competition)</i>	Certifica Minas, the only regional public certificate, competes with all other private certification systems Organic: Executive Order 7,794, August 20, 2013, established the National Policy for Agroecology and Organic Production (PNAPO)	Nespresso AAA (Nestlé) 4C C.A.F.E. (Starbucks) Fairtrade Rainforest Alliance UTZ

Source: Adapted from Büthe & Mattli (2011).

Perosa et al. (2010) separate compliance costs in direct and indirect. From the perspective of the producer, direct costs include field audit, periodic monitoring/verification, a yearly certification fee, and the renewal of the certificate, which generally expires every three to five years. The indirect costs involve adapting the estate to the managerial 'shock', with increased costs with labor formalization for all employees, training, and capacity building. There are further expenses with inventories and infrastructure, computerized systems, and changes in the chain of custody affecting production.

Certification is not only about costs. It also brings benefits like increased productivity and management efficiency gains. A certified estate brings about professional farming management, better skilled workers, and the building of long-term relationship with buyers and consumers, according to the UTZ representative in Brazil (Valor Econômico, 2012). In general, even though acknowledging the long-term gains, the producers interviewed said that

certification costs are high and, for that reason, can only be borne by a minority of coffee growers, usually medium-sized and large producers.

It is worth noting however that, in the case of Fairtrade certification, the target is small member producers. In the other cases, there is a tendency to facilitate compliance by small producers, without exclusiveness. According to the Cooxupé representative interviewed (Cooxupé, 2015), certificates only “serve” for the more capitalized producers or with larger growing areas, thus assigning them an “elitist” character. By another token, in the view of the certifiers’ representatives interviewed in the region, the 4C standard used by the Cooxupé cooperative falls short of ensuring minimum social and environmental standards. There is, therefore, a tension between the certificate’s reach, with its high cost, and the standard’s quality/coverage. This tension, over and beyond each stakeholder’s position, seems to reflect the hurdle faced by southern Minas Gerais to broaden certification and ensure higher standards.

Another dilemma raised is related to the market outlook. Certified coffee indicators by IISD (2014) show that we may be reaching saturation. ICO (2013) published the same finding, explicitly indicating that the supply of certified coffee is bigger than the demand. Considering this argument, it becomes easier to account for the fieldwork findings. As the certified production rose dramatically, premium prices paid to the producers fell. Volume grew, yet prices paid to an individual producer dropped. What once was a marketplace differential went mainstream. (Ferreira, 2014)

While the market itself adjusts the supply of certified coffee, another related problem arises: cost differences between certification programs and systems. The more stringent certificates operate on the basis of independent, third-party accreditation systems, with a network of certification bodies; whereas corporate programs (AAA, C.A.F.E., 4C) are based on verification, that is, there is independent, third-party conformity assessment (IISD, 2014). Verification is usually by sampling and used in internal processes. Certification systems, in turn, seek to meet stakeholder demands, that is, entail the disclosure of information and practices to public opinion scrutiny. In short, certification systems are more expensive but more transparent.

It is worth stressing that Starbucks, through its corporate C.A.F.E. program, sourced 100% verified coffee in 2015 whose main feature is quality (the company also sources a small amount of organic coffee and Fair Trade coffee. 4C, in turn, is a program developed by the German coffee industry for the purpose of purchasing large volumes, while AAA relies on quality criteria to purchase the coffee for *Nespresso*, though also centered on large volumes.

According to IISD (2014), the fastest growing programs in Brazil from 2008 to 2012 were 4C and AAA. This was due to the fact that they have fewer compliance requirements, there is more time for acquiring compliance, and has a verification system that, overall, is more attractive for buyers sourcing for large volumes, like roasters and blenders. To the Cooxupé representative, it is not possible to “keep waiting for the certificate”, “there’s no time”, considering that the growth in the certified production of more stringent systems is slower; hence the development of tools to “facilitate” producer compliance (*Nespresso* AAA, C.A.F.E., 4C).

These programs are transforming what used to be niche certification into a mainstream feature. Still, consumers, especially European consumers, are vigilant. They want to know where the product came from, if it is hindering the

environment, or affording decent living standards to workers. Because of that they establish standards to assure to their consumers compliance with these guarantees. Yet the advance in the creation of standards has been faster and “certified” coffee is about to become the largest share of world production.

In other words, with the unbridled pursuit for market access by smallholders and for scale gains by resellers, social conditions – including workers’ and smallholders’ pay – may be hindered or, at best, find no incentive for their improvement.

Moreover, as concerns competition between same certification systems across different countries, Brazil exhibits a disadvantage. For example, UTZ and Rainforest certified coffee in Brazil is more expensive than the same certified coffee in other producing countries. Ferreira (2014) explains that “the majority of the certification and/or verification programs set forth in their codes of conduct the core guidelines to be assessed in the on-the-ground auditing and inspection processes. As highlighted earlier, these models take into consideration the legislation in effect in each country and thus, comparatively with the other producing countries, Brazil has more stringent environmental and social laws. This fact burdens the Brazilian coffee producer because of the country’s higher standards, at least in relation to other producing countries. Thus, a coffee package bearing the same international label from different origins exhibits distinct requirement levels”. This problem was raised by 100% of the coffee producers interviewed during the fieldwork. All of them complained that the coffee certified in Brazil has a higher price than in other producing countries with the same label. That is, a UTZ-certified coffee with the same quality score is more expensive in Brazil than in Tanzania, for example. But in both cases, good part of the gains is concentrated in the intermediate segments of the production chain.

However, in parallel with the competition between certifiers, there is also multi-certification. That is, competition also takes place inside the farm, if one considers the rise in the number of multi-certified farms since verifications were mainstreamed. Once the high costs for complying with the first certification are accounted for, obtaining another label might be attractive for the estate, as it facilitates access to other markets and buyers and fosters enhanced quality standards. Moreover, some certifiers start to recognize other labels’ compliance requirements, which further increases the visibility of the same coffee and facilitates the multi-certification process at lower costs. Considering that international markets accept various certificates, it is worth holding multi-certification.

6. The Impacts of Coffee Certification in Brazil

The ICO report for 2013 (ICO, 2013) acknowledged the growth of certification in several dimensions and pointed issues that are still unaddressed: 1. a deepening of the impact of certification on matters related to ‘quality’ and ‘yields’; 2. impact of certification has not been proven to reduce the vulnerability of smallholders and family farmers; and 3. “production of certified coffee generally exceeds demand”, which pushes down certification-related premium prices.

How to face these challenges? We do not have unequivocal answers to these questions but we do point to some roadmaps in reviewing the specialized literature on the theme in Brazil, the world’s largest certified coffee producer.

There are few studies of the impact of coffee certification in Brazil. Some explore aspects related to quality. (Zambolim, 2006) Or the social dimension is underscored, followed by environmental criteria (SAN/Rainforest, 2015). All of them are circumscribed geographically, comparing only up to two producing regions (Palmieri, 2008) or certification systems (Souza et al., 2014; 2015). In most cases, they address impacts related to one particular certification system (Organic, Fairtrade, UTZ, Rainforest). (Rocha & Mendes, 2011; Palmieri, 2008; Martinez, 2008; Partelli et al., 2006; Consórcio BSD and IbiÊte, 2015)

As for the methodology, these studies can be divided into experiments, case studies, and perception gauging. In the first case, the use of random sampling and counterfactuals dictates the establishment of treatment and control groups (certified and non-certified estates). Souza, Spers, Saes, and Leimeilleur (2015) compiled 74 articles on experimental methods for the adoption of market-driven voluntary sustainability standards. The results of this experiment indicate that there is statistical significance between certificates and premium prices. The same study indicates a correlation between the use of pesticides and productivity gains. In 2014, Souza, Presoto, Saes, and Leimeilleur (2014) show that the adoption of environmental criteria hinders productivity gains, besides indicating a trade-off between quality and productivity. This is a controversial issue. The 2015 Rainforest Alliance impact-assessment report on Latin America shows three cases in which certification increased productivity – Colombia, Peru, and Nicaragua. (SAN/Rainforest, 2015)

Palmieri (2008) studies the impact of Rainforest certification and works with six agribusinesses in southern Minas Gerais and ten in the Minas Gerais' savanna-like *Cerrado* region (divided into treatment and control groups). Non-certified farms presented a significant number of informal laborers, with no working papers (ibid., p. 96), working longer hours than permitted, while in the case of the temporary workers, hygiene conditions verified were poorer in non-certified farms. Certified farms provide a much higher number of training and capacity building hours. As regards wages, there was no statistical significance between certified and non-certified farms, at least with regard to regularly hired workers. In relation to environmental issues, Palmieri (ibid.) reports a restoration of native vegetation in certified estates.

The perception study by consortium BSD/IbiÊte, which analyzes UTZ-certified farms of various sizes, points in the same direction. Certification regularizes employment contracts, reduces the risk of accidents by providing training and PPE, and improves workers' on-farm houses. However, direct gains from increased income were not verified. The survey was conducted with medium and large producers ($50 < p < 1000$ ha), while smallholders (< 20 ha) were barely represented.

Organic coffee and Fairtrade coffee present more positive results in terms of the amounts paid to the producers. This is accounted for by the control exercised by Fairtrade Labelling Organizations International (FLO) in terms of new market entrants and the pricing adopted for a given crop. The other certificates have no barriers to entry, while the prospect of a premium price leads to new entrants and falling prices, converging to the competition's price. Conillon organic coffee, from northern Espírito Santo State, shows a strong correlation between premium prices and certification, associated with human and environmental health. (Partelli et al., 2006) In the case of Fairtrade, the premium paid is validated by 100% of the cooperative's producers in Minas Gerais. (Rocha

& Mendes, 2011) In the case of the family farmers in Poço Fundo, MG these gains are translated into improved living conditions for producing families affiliated with the family farmers' cooperative. To Oliveira et al. (2008), these gains would place these households closer to the economic concept of 'middle class'. Productivity gains are marginal, and mechanization of production is low. Conversely, every one of the farmers is satisfied with the way coffee is traded and 75% of them can afford to invest in property improvements. (ibid.)

The Premium Issue

This is one of the most controversial issues regarding certification systems. Martinez (2008), in a study of UTZ-certified coffee, showed that adherence to certification standards is driven by market demands (consumers and international buyers), rather than by the premium prices paid. Uncertainty regarding premium price was also observed in the study by consortium BSD/IbiÊte. The same result was found in experiments that failed to demonstrate a correlation between certification and premium price. (Souza et al., 2014; 2015) In other producing countries, studies also show the existence of a premium. (SAN/Rainforest, 2015) The premium might be "hidden" in forward contracts and go unnoticed by the producer. (Consórcio BSD/IbiÊte) To be true, almost half of the producers admit that UTZ certification brings greater sales stability and facilitates market access (ibid.). The interviews with the producers during the fieldwork confirm that. Good part of them was attracted to the certificate by the premium. However, few of the producers interviewed received a premium, and when they did, the premium was much lower than expected. There is some opacity in coffee trading. Most of the producers interviewed suggest that the premium depends on certain market trading conditions, but all of them recognized that certification facilitates coffee selling (and that the premium might be "hidden").

But, after all, what are the direct incentives to standard compliance? The most important of them is the premium price paid for standard-compliant coffee. The overwhelming consensus among the southern Minas Gerais producers was that they had been attracted by standard certification due to the premium prices (at least in the beginning of the certification process). Yet, an IISD study (2014) shows these prices vary across certification systems or programs. In the case of Fairtrade, a fixed premium price paid to the farmer and a 'social' price paid to the producers' association are both previously established. Starbucks pays a premium if certain market conditions are complied with. UTZ seeks to strengthen the producers' bargaining power with the traders and provide greater transparency to negotiations. And in the case of organic coffee, this premium is more 'mature', as it is widely recognized and practiced. 4C premiums were the lowest of all.

Sérgio Ferreira (2014) explains that, when certification systems arrived in Brazil in the early 2000s, the larger estates already relied on enhanced management systems and were, therefore, better equipped to comply with standards; in other words, compliance costs were lower. As the certified coffee supply was small, premium prices were significantly higher. Ferreira (2014) makes reference to the first certification experiences, back in the 1990s (Rainforest, Fairtrade). Over the years, as the number of compliant producers grew, and with the ensuing growth in supply, certified coffee prices started to fall.

Actually, the premium gave place to indirect benefits such as improved farm management systems, increased market access, longer supply contract terms. The immediate spillover effect in the case of the certified farms was labor law compliance, with both permanent and temporary workers – the *safrist*as, for example, who are hired as harvest casuals – signing employment contracts. (Ferreira, 2014)

Social and Labor Impacts

Studies concur with regard to the indirect impacts of certification, but what about the direct impacts (e.g. wages) and gains in well-being? Is it possible to state that certification reduces family farmers' vulnerability? The literature points to a positive answer for certification systems with social and environmental compliance standards, such as UTZ, Rainforest, organic coffee, and Fairtrade. In the case of the organic coffee and Fairtrade certification systems, both work small scale, while improved well-being is linked to economic interests. (Rocha & Mendes, 2011; Oliveira et al., 2008)

For the other certificates (UTZ and Rainforest), the following gains were verified: 1. Increase in job formalization; 2. Decrease in accidents and adherence to PPE; 3. Improved housing conditions for workers living on farms; 4. Improved farm sign system and machine operating conditions; 5. Decrease in layoffs as a result of computerized management and information systems, and; 6. Lower direct costs associated with errors and wastage due to professional management. (Consórcio BSD/IbiÊte, 2015; SAN/Rainforest, 2015) With regard to environmental impacts, some gains observed were access to drinking water, reduced water use in coffee production with the adoption of clean technologies, and biological control of diseases. (SAN/Rainforest, 2015)

According to producers interviewed during fieldwork, the main impact is the managerial 'shock' to which the producer is submitted the moment he or she decides to become standard compliant. Complying with the certification system entails adaptive (management), auditing (annual), and standard-compliance costs. UTZ is focused on social and labor standards, in addition to traceability (separating the various types of coffee and GPS-tracking them). Rainforest's main focus is environmental, and it is more expensive for the producer. Thus, the main activity of the producers' union is the provision of courses (45 a year) to its sixty members (in Guaxupé and São Pedro da União), in partnership with Brazil's National Service for Rural Apprenticeship (Senar).

Actually, certification does not seem to bring direct gains to the workers in the form of increased income (wages) or profit sharing (only one landowner stated his intention to start discussing a profit-sharing scheme with his employees). According to two leaders of the Guaxupé rural workers' union, its membership of about 800 people (out of 4,000 to 5,000 total rural workers) does not know the impact of certification in general, or even on wages in particular. To the two unionists interviewed, standard compliance has no impact on the wage worker, "that's the farm owner's business". The trade union is not consulted in matters related to certification and does not participate in multi-stakeholder initiatives designed to set standards and provide capacity building for workers. Not even state-run Certifica Minas system seeks to engage the rural trade workers' unions. Although there are surveys showing that rural workers' trade unions are not aware of certification matters – the union leaders ignore whether

certified farms are more labor law compliant –, studies show that there is a correlation between certification and improved workers' living conditions.

During the fieldwork, we observed that permanent wage earners working on certified farms and living in urban areas enjoyed reasonable living conditions in terms of housing, consumption standards, and other basic expenses. If not earning a living wage, which is 25% higher than the region's prevailing wage, including additional labor law-mandated payments and cash pay, they were far from living in poverty. Improvement in working conditions is related to enforcement by the Ministry of Labor and, to some extent, to the certification process itself, which fosters compliance with the labor code. It must be noted, however, that the income levels of rural workers' households have risen over the recent period as a result of the minimum wage policy, and not exactly of the certification systems. (Barbosa, Silva, Veiga & Zacareli, 2016)

7. Final Considerations

The coffee complying with standards set by corporate programs and certification systems is getting close to 50% of total world production. What some twenty years ago used to be a niche product, with high premiums paid to producers, is becoming mainstream. Coffee had become a 'club' good – with access restricted by price, yet with unrestricted use of certificate once in the club. (Prakash & Potoski, 2010) The problem is that certifying bodies like Organic, Fairtrade, Rainforest, and UTZ are struggling to adapt to the new market conditions because they operate on the basis of more stringent compliance levels, auditing and verification processes are costlier, and entail significant changes for compliance by the producer. As demand for certified coffee has outgrown supply, the big coffee industry players, who require high volumes, have decided to create their own certification tools (C.A.F.E., AAA, 4C), with fewer compliance rules and at a lower cost. The 'club' increased the number of members with lower premiums and downgraded compliance rules. The result is a supply boom of "certified" coffee on the global market.

Increase in certification was prompted mainly by a downgrade in standard-compliance rules, rather than a rise in coffee value chain sustainability standards. This does not mean that, as a whole, there were no positive impacts, social, environmental, etc. The problem is that it has become more difficult to assess these impacts given the great number of certification systems, corporate programs, and 'best practices' that are the cornerstones of the 'certified' coffee market today. Based on the fieldwork in southern Minas Gerais and the specialized academic literature compiled, we observed that, generally speaking, the impacts in Brazil are positive.

Yet these impacts need to be better described. Both producer and rural worker have had significant gains. In direct gains, job formalization surely increased workers' income, but there was no wage raise derived from collective bargaining, nor was there any progress in relation to profit sharing. At the same time, direct gains (income) for the producer were boosted mostly by increased productivity and improved management, despite premium reduction or nonpayment.

Still, on the basis of the present state of organization of the production chain and in a context of certification saturation in the international coffee market,

there are no signs indicating a likely improvement in these gains in the medium and long range.

The Brazilian case is thus paradigmatic not only because the country is the world's largest producer, but also because coffee "certification" in Brazil outgrew that of other countries. In this sense, the capacity of verification/certification systems to generate, or not, positive impacts in terms of compliance with or improvement of social, labor, and environmental standards and to ensure, or not, a living wage will not surely impact the coffee production chain on a global scale.

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