Revista Brasileira de Gestão e Desenvolvimento Regional
G&DR. V. 16, N. 1, P. 136-152, jan-abr/2020. Taubaté, SP, Brasil.
ISSN: 1809-239X

Received: 11/13/2018
Accepted: 11/06/2019

GOVERNANCE AND SUSTAINABILITY OF CERTIFIED COCOA PRODUCTION SYSTEMS IN BRAZIL

GOVERNANÇA E SUSTENTABILIDADE DE SISTEMAS DE PRODUÇÃO DE CACAU CERTIFICADOS NO BRASIL

Giuliana Aparecida Santini Pigatto[1]
Ana Elisa Bressan Smith Lourenzani[2]
Sandra Mara de Alencar Schiavi [3]
Katianny Gomes Santana Estival[4]

Resumo

Este artigo objetivou analisar como as estruturas de governança estabelecidas entre fornecedores e compradores de cacau certificado na região Sul da Bahia, no Brasil, têm colaborado para a sustentabilidade econômica, social e ambiental. Três estudos de caso foram realizados com dez produtores de cacau certificado (do tipo orgânico e UTZ), uma Organização Coletiva e três agentes compradores processadores que comercializam para exportação ou mercado interno. No estudo de caso 1 observou-se uma governança econômica mais efetiva entre o agente comprador processador e seu comprador a jusante, que remete a uma valoração do produto comprado, e envolve aspectos econômicos e não econômicos. Nos estudos de casos 2 e 3 as estruturas contratuais não são capazes de promover a coordenação eficiente nesse sistema. O artigo traz várias contribuições por evidenciar a existência de sistemas de produção que estão voltados à qualidade e à valoração do cacau, que envolve não somente uma questão econômica, mas também ambiental, dado a região em que é produzido (região sul Bahia); inova ao vincular a importância da governança de agentes diversos ao funcionamento de sistemas de maior qualidade e certificação.

Palavras-chave: Governança. Sustentabilidade. Cacau. Certificação. Economia dos Custos de Transação.

Abstract

Objective was to analyze how the governance structures established between suppliers and buyers of certified cocoa in the southern region of Bahia in Brazil have contributed for economic, social and environmental sustainability. Three case studies were carried out with ten producers of certified

[1] Doutora em Engenharia de Produção (UFSC). Professora da Unesp Tupã, Tupã – SP, Brasil. E-mail: giuliana.santini@unesp.br
[2] Doutora em Engenharia de Produção (UFSC). Professora da Unesp Tupã, Tupã – SP, Brasil. E-mail: ana.lourenzani@unesp.br
[3] Doutora em Engenharia de Produção (UFSC). Professora da Universidade Estadual de Maringá, Maringá – PR, Brasil. E-mail: sandraschiavi@gmail.com
[4] Doutora em Ciências Sociais (UFRRJ). Professora da Universidade Estadual de Santa Cruz, Ilhéus – BA, Brasil. E-mail: ksgestival@uesc.br

cocoa (organic and UTZ), one Collective Organization (CO) and three purchasing processor companies who sell for external and domestic market. In case study 1, there is more effective economic governance between the purchasing processor company and its downstream buyer, which refers to a valuation of the purchased product, and involves economic and non-economic aspects. In case studies 2 and 3, the contractual structures are not able to promote efficient coordination in this system. This paper have contributions by evidence the existence of production systems that are focused on the quality and value of cocoa, an assessment that involves not only an economic but also environmental issue, because the region in which it is produced (South Bahia region); innovates by linking the importance of the governance of different agents to the operation of higher quality systems and certification.

Keywords: Governance. Sustainability. Cocoa. Certification. Transaction Cost Economics.

Introduction

Quality-oriented production processes have been expanded in the 21st century due to the increased flow of world trade, the demands of private agents and governments. In the case of agri-food systems, sanitary and phytosanitary factors related to food safety and the need for differentiation, which call attention to the quality of production processes, are added. In the scientific debate, it is possible to mention the contributions of several authors (RAYNAUD; SAUVEE, VALCESCHINI, 2005; TRIENEKENS and ZUURBIER, 2008; TSOLAKIS et al., 2014; GEREFFI and FERNANDEZ-STARK, 2016; BRUNORI et al., 2016; FAOUR-KLINGBEIL and TODD, 2018), which reinforce the importance of quality in agri-food systems.

Trienekens and Zuurbier (2008) add to the requirement for food quality and safety the consumer's concern for the negative effects of agro-industrial production, such as the impact on the environment. For these authors, a chain approach and a multidisciplinary approach, in which technological, logistical, economic and organizational aspects should be analyzed in an integrated way, is necessary for the real reach of quality and security demands. More demanding approach to quality and work that is more integrated goes beyond productive factors and is aligned with the notion of sustainable development. Elkington (2004; 2006) discusses sustainability in companies and other organizations, starting with the notion of the Triple Bottom Line (TBL), published since 1994, which agenda focuses on organizations not only on the economic value they add but also on the social and environmental values that they add or destroy (ELKINGTON, 2004; 2006).

For this, the author discusses seven articulated changes to this process: competitive markets, values, "open" transparency, technological life cycle, partnerships, time and corporate governance. Thus, new forms of economic, social and environmental partnerships are very important for TBL achievement (ELKINGTON, 2004). Wognum et al. (2011) and Glavas and Mish (2015) reinforce the idea that managers of food and agribusiness industries will generally have to respond to these new demands of consumers by increasing the sustainability of processes and products, which comprises the need for collaboration along the value chain.

The notion of value creation shared by Crane et al. (2014) brings alignment to the Sustainability approach, because the authors point out that one of the possibilities of creating shared value is precisely from environmental improvements that can reduce costs or improve products and the greater appeal for the protection of future generations through systemic changes. For Humphrey and Schmitz (2001), some parameters would be required in these systems, which refer to what is produced (product specification); how it is produced (involving technologies that can be used, quality systems, work patterns and the environment); when and how much would be produced; and the defined price, where governance structures should be required to provide information on the parameters and reinforce trust.

Then, the search for quality and sustainability brings challenges for the coordination and organizational arrangements in agro-industrial systems, requiring complex governance mechanisms for value chain upgrading (GEREFFI and LEE, 2014). Inter- and intra-organizational transactions are affected by new quality standards across the supply chain, in which specific attributes of consumption are required according to consumer preference, consumer protection legislation and environmental awareness (GEREFFI and LEE, 2014; MAERSTEN and SWINNEN, 2015). Also for these authors, the product differentiation associated with the change in asset specificities may shape a new supply chain relationship, this being a crucial specificity for the choice of governance structure.

From the perspective of Ménard and Valceschini (2005) and Ménard (2017), diversity, quality and competition, in general, have altered the forms of governance in agro-industrial systems. This is due to an evolution in supply standards, with the use of quality certification and collective brands. Thus, quality becomes important, requiring high specific investments and more coordinated transactions. Saes and Silveira (2014) indicate that the efficient organizational structure is one that allows a better appropriation of value and for this, the entrepreneur needs to identify strategies that create value and govern the organization in a way that the value creation can be effective in its appropriation means.

Ménard (2018) affirm that the choice of a more complex governance mechanism within a supply chain depends on the quality strategy adopted by one or more agents. This is because the signs of quality to the market involve high contractual risks in downstream transactions. Besides that, institutional pressures coming out of food regulation as well as more constraining norms and standards implemented by major distributors in response to consumers' demand for quality and safe products impose organizational arrangements capable of making the related requirements effective (ROYER; MÉNARD, GOUIN, 2016). According to the authors, signs of quality (and asset specified) should lead to the adoption of hybrid (or contractual) forms or vertical integration rather than the spot market to be able to deal with the risks. César, Batalha and Pimenta (2008) have portrayed that the certification process requires a new structuring of the agents and their commitment when analyzing certification and the influence of the governance of transactions. Such a process, according to the authors, would lead to increases in transaction costs. However, these costs would be essential to ensure mechanisms for standardizing certification systems and reduce information acquisition costs along the chain, promoting high quality standards (MAERSTEN and SWINNEN, 2015).

According to Melo and Hollander (2013), certifications, alternative trade and alternative food networks have become a prescription to reconcile economic interests with conservation imperatives and sustainability. Often, producers are looking for certifications in order to differentiate their production and add value to it. Specifically, in cocoa case, producers seek to take advantage of the price differential of certified cocoa, which can be 5 to 20% higher than conventional cocoa (PWCBRASIL, 2012). Thus, quality and certification are an important component in the economic perspective of sustainability.

This would imply also changing the governance of the societies - not just government - for corporations, to the extent that shared value creation occurs, corporations would have self-mastery, so that the economic interests of a responsible corporation can be aligned with rights and interests of the parts of society that are governed by them (CRANE et al., 2014). The processing industry is dependent on cocoa production and some players have taken action towards increased production through a multi-stakeholder approach. In doing so, the opportunities for business include access to a secure, guaranteed supply of quality cocoa with transparent pricing (BEG et al., 2017), allowing opportunities for the Brazilian producers

This production system can generate conditions for better remuneration to the cocoa produced in complex systems, which are attending to the conditions of maintaining the ecological characteristics, with emphasis on native habitat. This type of crop is known as cabruca cocoa, which, according to Sabourin (2008), is part of the Atlantic rainforest biome, one of the most threatened in the world. In this biome, institutional preservation is required in order to encourage environmentally correct practices, limiting the disappearance of this multifunctional practice and preventing its conversion to other uses, such as agriculture and livestock. In this context, the emerging research problem can be defined. Does the governance established between the suppliers and buyers of certified cocoa have contributed to the sustainability of the chain? In this case, it is understood the sustainability in economic, social and environmental terms. The hypothesis underlying this research problem is that quality aspects involved in the production of quality raw materials (in this case a differentiated cocoa) have contributed to the implementation of contractual governance structures and cooperative arrangements between suppliers and buyers. Also translating into cooperation for social and environmental benefits, focused on sustainability.

Thus, the main purpose of this paper is to analyze how the governance structures established between suppliers and buyers of certified cocoa in the southern region of Bahia have collaborated for economic, social and environmental sustainability. The article is structured in five sections, besides this introduction, in: Sustainability approach and Contributions of the Transaction Costs Economics; dates and information about Cocoa Production in Brazil; method; results and discussion, and results.

Literature Review

Sustainability

In 1972, at the Stockholm Conference, Ignacy Sachs disclosed the concept of Ecodevelopment. For this author, the entire development approach should encompass dimensions of social, economic, ecological, spatial and cultural sustainability. In other words, for the development achievement, it would be fundamental to assume the hierarchy of the social at the helm, the ecological as an assumed constraint and the economic one, should be repositioned in its instrumental role (SACHS, 1995). As a result, in the mid-1980s the concept of Sustainable Development emerged, based on the Brundtland Report (1987) entitled Our Common Future. The basic ideas are that, at the same time that economic growth has led to improvements in living standards, this has been coupled in some ways with long-term global risks such as increased use of energy, chemicals and increased pollution. Thus, sustainable development must promote harmony between humans and nature (UNITED NATIONS..., 1987).

For Veiga (2014), the notion of sustainability admits the possibility of conservation, and even recovery, of the vital systems that constitute the bio geophysical condition *sine qua non* of the human species evolution and of the progress of their societies. This notion is linked to the idea of global governance, according to Veiga (2014), which also reflects the simultaneous increase in the participation and influence of civil society actors – mainly from business and the third sector – in the processes that create and manage agreements and international organizations.

In Sepúlveda (2005), the concept of sustainable development in agriculture and rural areas has two important interfaces: (i) use of the natural resource base and acquisition of inputs by social actors and economic agents, and (ii) the provision of goods and services to consumers through the intermediation of markets and their agents. In the second interface, decisions at the macroeconomic level define the possibilities to promote negotiated activities in sustainable development at meso and micro regional levels (SEPÚLVEDA, 2005). Porter and Kramer (2011) and Crane et al. (2014) bring an important connection to the sustainability concept when dealing with the shared value. In the perspective of these authors, three ways of creating shared value would be necessary, considering the systems sustainability aspects, such as: reconceiving products and markets, seeking solving social problems, serving consumers and contributing to the common good; redefine productivity in the value chain, improving aspects of social, environmental and economic capabilities of the productive chain; and enable local organizational arrangements development so that various development goals can be obtained in cooperation with local suppliers and institutions.

In applied terms, the theme of sustainability has also been extensively worked on. At an international level, several authors highlight the use of the concept. Wasiak (2017), when discussing the influence of energy efficiency achieved in biofuel production on the potential fulfillment of agricultural energy demand and on the sustainability of agricultural processes. Borrelli (2016), when reflecting on the concepts of sustainability and multifunctionality of agriculture proposes a case study on the rural territorial system of the Campania region. Mercati (2016) when discussing organic production as an opportunity for organic producers to increase quality aspects, aligning themselves with the sustainability paradigm. Carmona-Torres et al. (2016) contribute to the theory and practice of sustainability and management of better well-being, and policies in agriculture, developing an integrated structure for olive production in Andalusia. Asselt et al. (2014) develop a protocol (tested in a case study of agriculture in Netherlands) to evaluate the sustainability of food production systems using objective guidelines and criteria to facilitate decision-making by political actors.

Contributions of the Transaction Costs Economics: comprising transactions and forms of governance

Williamson (2012) and Menard & Shirley (2014) present the New Institutional Economics as a theoretical approach to the understanding of relationships that occur as an alternative form of transactions of organizations and/or agents. The NIE considers the state and institutions as important factors in market functions, instituting the rules and the role of economic agents, which respond to governance structures that affect the efficiency of transactions. North (1991) and authors as Meador and Skerratt (2017) consider that the NIE comprises two analytical levels. At the first level is the institutional environment, which is formed by rules, considering the formal rules

(constitutions, laws and property rights) and informal rules (behavioral norms, conventions, and self-imposed codes of conduct) that govern individual behavior. In the second are the social structure interactions and the governance structures, under the TCE's approach.

Analyzing the transaction and its associated cost is the fundamental objective of the TCE. The basic assumptions of the TCE would be that there are costs in the use of the price system, as well as in the conduct of intra-firm contracts and that transaction would occur in a structured institutional environment (the non-neutrality of institutions also interferes with transaction costs (TADELIS and WILLIAMSON, 2013). The effort of understanding transaction costs - compared to the price mechanism in neoclassical theory - would be in the importance of organizational (against technological) and efficiency (against monopoly) characteristics (WILLIAMSON, 2012).

These transaction costs (of specifying what is being exchanged and strengthen the resulting agreements) would be largely influenced by behavioral assumptions, such as limited rationality and opportunism. According to Williamson (2012), limited rationality is related to the limits of cognitive competence, leading to think that the actors would be intentionally rational, but only limited. Another characteristic is opportunism, which refers to the pursuit of self-interest with avidity, referring to the incomplete or distorted availability of information, linked to efforts to deceive, distort, disguise or otherwise confuse. Opportunism can also lead to situations of information asymmetry, hindering the economic organization (WILLIAMSON, 2012). As with behavioral assumptions, transaction characteristics also influence transaction costs. According to Williamson (2012) and discussed by Ménard (2018) the main dimensions that also affect the transactions are uncertainty (disturbances to which transactions are subject), frequency (on which transactions occur) and condition of asset specificity. These different dimensions, as well as behavioral assumptions, form the basis of a possible choice of governance structure to be adopted in a transaction.

An asset is specific when it has a very low value in an alternative use and whose returns associated with them depend on the continuity of a specific transaction. Therefore, they are not re-employable without loss of value (WILLIAMSON, 2012). Thus, for Williamson (2012) and discussed by Ghozzi et al. (2018) – in governance forms adopted along the non GMO soybean supply chain in the EU -, this is one of the main factors explaining the cost difference between transactions. Thus, when the condition of asset specificity becomes more important, the relations between those involved tend to be more dependent.

The greater the asset specificity, higher are the transaction costs. In this way, price mechanisms and the market become less suitable for the adjustments, compared to the systems of contracts and vertical integration (ZYLBERSZTAJN, 2017). The types of asset specificities that should be considered in the transaction are: a) time, associated with the high costs of transferring the product from one period to another; b) site, related to high transport costs or even to a certain geographic region; c) physical, related to specific factors to reach a certain production; d) human, with respect to the specific human capital employed in the transaction; e) dedicated, which refer to a return dependent on a transaction made with a particular agent; f) capital of a brand name (WILLIAMSON, 1991).

Uncertainty corresponds to the lack of capacity to predict future events. Williamson (2012) designates as primary uncertainties, those dependent on the State, while secondary ones, derived from the lack of communication, that is, from the fact that the decision maker cannot know all the information (WILLIAMSON, 2012). Ménard 2018 still complements with the classification whether of exogenous origin, due to climate fluctuations, changes in regulations etc. or endogenously determined, example, due to opportunistic behavior.

Frequency, for Williamson (2012) is a characteristic associated to the number of transactions already performed between certain agents, which can be single or repeated several times. For the author, when transactions are recurring, the cost of more specialized forms of governance can be retrieved easily. These characteristics of the transactions and of the agents interfere in the choice of the more appropriate governance structure to a specific transaction, since the transactions differ from each other and must be treated individually. An efficient governance structures would be the result of the alignment of transaction cost attributes with governance structures, given some behavioral characteristics.

Governance structures are defined by Williamson (2012) and as the institutional matrix in which transactions are decided, and can be classified in market, hybrid forms (contracts) and hierarchy (vertical integration) (WILLIAMSON, 2012). Williamson (1991) argues that each form of governance needs to be supported by different forms of contractual law, the hierarchy being that of

tolerance. The classical contract applies to the ideal transaction in which the identity of those involved is irrelevant, as in the structure of markets. In this, governance structures between individual buyers and sellers are not dependent on one another, being transactions characterized as monetized to an extreme degree (Williamson, 1991). On the other hand, the internal organization (hierarchy) can be analyzed as an even more elastic and cooperative adaptive way of organization, being the counterpoint of the market form (WILLIAMSON, 1991).

Neoclassical contracts apply to transactions in which those involved maintain autonomy, but are bilaterally dependent to a non-trivial degree, promoting a continued transaction relationship and efficient adaptation. The hybrid forms of contracts (various forms of long-term contracts, reciprocal bargaining, regulation, franchising, and others) are precisely those supported by laws of neoclassical contracts, in which the parties maintain autonomy, but the contract is mediated by elastic contractual mechanism (WILLIAMSON, 1991). For Zylbersztajn (2005) and Schepker et al. (2014), formal contractual relations and long-term informal cooperation agreements are established among the agents of a system as a way to avoid costs associated with the market and to increase the value of the organization (insofar as it reduces risks) by contractual means. According Maersten and Swinnen (2015), Zylbersztajn (2017) and Ambrozini & Martinelli (2017), the motivation of individual organizations to contract in a more coordinated way is determined by the prevailing characteristics of the transaction throughout the system. Thus, as strategies change the attributes of transactions by increasing asset specificity, uncertainty or frequency, contracts should be recommended, replacing pure market mechanisms, for example. Evidence of Ambrozini and Martinelli (2017) signal that contextual characteristics uncertainty, difficulty of measuring performance and asset specificity corroborate the presence of greater contractual formality in the relationship in the extreme cases of lower and higher intensity of these characteristics.

Also for Ménard and Valceschini (2005), contractual forms of governance are relevant and can vary widely, given the characteristics of property rights, which makes it crucial to select partners and joint investment planning. In addition to the mechanisms of communication of trust because the main mechanism of decision rights is the contractual one. However, often these are incomplete and the competition of partners in the contractual arrangement can coexist or these with other governance forms. These factors lead to the need for specific governance forms to coordinate and dissolve conflicts.

The effectiveness of a governance structure is measured based on the reduction of the costs involved, both in relation to production and to the transaction. Tadelis and Williamson (2013) highlights that governance structures exist within an institutional environment, which is a constraint on efficient forms of production and transaction.

Cocoa Production in Brazil

Brazil has been making efforts to expand the production of cocoa since the end of the 20th century, when cultivation began to face stagnation by diverse reasons, as the regional productivity drop due to the spread of the witch's broom disease and the conservatism of the agricultural producer segment. In 2014/15, the Brazilian production was of 230 thousand tons of the bean (ICCO 2015). The regions that contributed the most to the domestic production were the Northeast and North, driven mainly by the production of the states of Bahia and Pará, which represented 58.8% and 36.6% (respectively) of the domestic production in 2015 (IBGE, 2017). Brazilian cocoa production contributes to global performance, with a 5.4% share in the year 2014/15 (seventh largest world production). World cocoa production in 2014/15 was 4.2 million tons (ICCO, 2015), with a world demand mainly driven by the consumption of chocolates in emerging markets.

Potts et al. (2014) report that, at the global level, characteristics such as poverty, child labor and forced labor, deforestation, pesticide use and the need to maintain biodiversity become important factors in thinking about the sustainability of the sector. According to the authors, the main voluntary certifications aimed at sustainability in the sector would include organic certificates, Fairtrade, UTZ and Rainforest Alliance. Together these types of certificates would involve approximately 22% of world cocoa production in 2012, with Ivory Coast, Ghana and the Dominican Republic accounting for 50%, 17% and 15% respectively. Premium prices for this type of cocoa ranged from 5 to 18% or more in the years prior to 2014, according to the authors, being the highest premium observed for organic cocoa and the lowest for UTZ. Brazil would have participated with 2% of the world organic production, for the year 2011 (POTTS et al., 2014).

Organic certification is a guarantee that products have been produced within the standards of organic agriculture, mainly due to the absence of agrochemicals and chemical fertilizers. Fairtrade is based on a partnership between producers and consumers, making it possible to extend the possibility of improvement in living conditions and future planning of producers (FAIRTRADE INTERNATIONAL, 2017). The UTZ shows consumers that the products originated from the farm to store shelves in a sustainable way. To be certified, all UTZ suppliers must follow a Code of Conduct, which provides guidance on improved farming methods, working conditions and care nature (UTZ, 2017). The Rainforest Alliance involves the conservation of biodiversity and the guarantee of sustainable livelihoods, through land use, business practices and consumer behavior (RAINFOREST, 2017).

Method

The method used in this work was qualitative, with a descriptive purpose. The descriptive research has as main objective the description of the characteristics of a certain population or phenomenon, or, then, the establishment of relations among the variables. This research type allows the researcher to obtain a better understanding of the behavior of several factors and elements that influence a certain phenomenon (CRESWELL and CRESWELL, 2017). Documentary research was used based on information from organizations' websites, as well as annual and sustainability reports and corporate governance of organizations.

In order to respond to the research goals and in the case of a descriptive research, three case studies involving certified cocoa producers located in the southern region of the state of Bahia and processing companies that market for export or domestic market were used as a methodological procedure. Six producers (organic certification), one Collective Organization (CO) and one purchasing processor (ECP1) formed the case study 1; two producers (UTZ certification) and the purchasing processor company (ECP2) composed case study 2; two producers (organic certification) and the purchasing processor company (ECP3) composed case study 3.

The analysis for the State of Bahia is justified, and specifically the South region, since this corresponded in 1990 to 83% of the domestic production, being this production of 56% in 2015 (IBGE, 2017). This region of the State has been making efforts to implement the production level with higher quality and to commercialize the products with registration of Geographical Indications (GI) (granted in January 2018 for the product cocoa beans of Southern Bahia, on behalf of the 'Cacau Sul Bahia' Association). The GI are the main governance tools for structuring development strategies based on territories and according Belmin et al. (2018) are related to the sociotechnical niches whose development is influenced by dynamic interactions between specific rules embedded in the biophysical environment and territorial resources, and non-specific rules related to a sociotechnical regime. They are used by territorial niche actors to build a compromise between the rules driven by the regime and those driven by the local biophysical environment and resources (BELMIN et al., 2018).

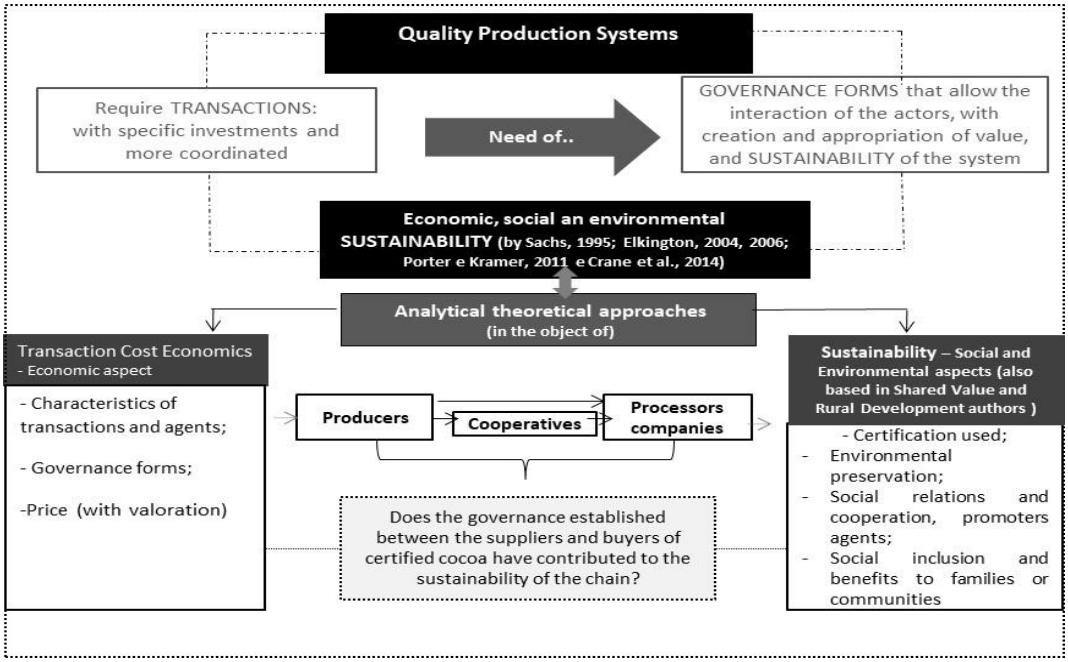
The data collection technique established for the field studies was the semi-structured questionnaire applied in 2016. In order to respond to the proposed goal, the governance structures established in the producer-buyer relationship were evaluated, focusing on the economic, environmental and social aspects of Sustainability, and also remembering that these were present in the contributions of the Brundtland report, Sachs (1995), Elkington (2004; 2006), Porter and Kramer (2011) and Crane et al. (2014). In economic terms, the analytical categories indicated by the TCE were used (and related to the characteristics of transactions and agents), being adapted from studies of Reys, Arbage and Oliveira (2009)[5] (in the case study 1, economic analysis were performed in a

[5] Relationship time: high level > 5 years; average level 1 to 5 years; low level <1 year.
Uncertainty: For the producer and buyer company - information sharing regarding the demand forecast of the buying agent; producers' forecasts and the innovations made by producers - High level (yes, always); average level (more or less); low level (no / never).
Asset specificity: high level (very important); average level (more or less important); low level (not important).
Limited Rationale: For the producer - level of information that the producer has to interpret the reality and make a market decision (price, demand and supply of cocoa); of productive aspects (technologies); management (costs, inventory and marketing) and of the purchasing agent itself regarding technologies, quality and demand.
For the buyer agent - level of information that the organization has to interpret the reality and make a market decision (cocoa price, demand and supply of producers); of technologies in processing, management (costs, stocks and marketing) and of the producer agent itself for technologies in agricultural production and quality).
High level (never searched); average level (more or less); low level (always-sought information).

complete way, from the perspective of ECP1 to the CO, but this one in relation to ECP1 there was no information available).

In the environmental and social context, the forms of certification used, aspects of environmental preservation, social relations and existing cooperation, promoters agents, aspects of social inclusion and benefits to families or communities, among others, were evaluated. Based on the concepts of Sustainability presented by authors such as Moulaert and Nussbaumer (2005), Moulaert (2008) and Neumeier (2012), who work on social transformations in rural development processes, and related shared value by Porter and Kramer (2011) and Crane et al. (2014). The analytical structure of the research is visualized in sequence.

Figure 1 - Proposed analytical framework for Governance and Sustainability analysis in quality production systems



Source: Research authors

Results and Discussions

Three subsystems were identified that transact quality cocoa with certification. Two cases involved organic certified cocoa producers and their buying agent. The other case dealt with UTZ-certified cocoa producers and their buyer (attached figures). The cases evaluated to reaffirm the importance of the production of certified cocoa in the southern region of Bahia to meet the requirements of the agents along the production chain, either for first time processing, such as cocoa butter, liquor and other products, or second-processing (chocolates). In the cases analyzed have characteristics of the certifications (Organic and UTZ) that carry quality attributes, as non-incidence of chemical inputs, better methods of cultivation, environmental and social preservation, and that are difficult to be perceived through observation, justifying the need for third parties to guarantee them.

Certifications are used to make information evident to all agents involved in the production processes throughout the agro-industrial system, including the consumer. However, in the three cases evaluated, it was possible to verify the requirements demanded by the purchasing agents that go beyond the guarantees of the certifications. Purchasing processing organizations have focused on serving the domestic and international markets with premium cocoa beans, which bring better performance in the production and taste in chocolates. These quality attributes are in addition to the product standard, the identity and quality requirements contained in the IN38/2008 Brazilian

Opportunism: For producer and buyer agent - level of confidence between agents as to combined price; delivery or receipt of the merchandise; maturity of the combined payment.
High level (never); average level (more or less); low level (always).

normative instruction (minimum standard), meaning the demand for cocoa beans without the smell of smoke, mold, slate and dirt, considered as defects (more explicit demands in the case studies 1 (organic certification) and 2 (UTZ certification).

As highlighted by Ménard and Valceschini (2005), and Ménard (2017; 2018) relating the quality attributes to the governance structures used, forms of coordination between the actors must occur, and the structure of contractual governance should be deferred to reduce risks when working with production chains that show signs of quality. For all three cases evaluated, the structure of contractual governance was verified in producer-buyer relationship. Even in the case study 1, where the transaction between the producing agents and the CO has no contracts, the relational value involved is very high. This is due to factors such as the origin of the producers (many from the European Union, bringing with it cultural values) and the nature of production itself, which is in cabruca system, motivates and brings together agents who have the values focused on the preservation of nature. In the transaction of the organization (OC) with the purchasing agent (ECP1), this occurs with annual supply contracts.

For a better discussion of these contractual governance structures (hybrid form), the possible alignments in the perspectives of producing agents and purchasing companies will be discussed in case studies 2 and 3[6], for later similarities or differences of the three cases studied. Broadly, there is a partial alignment in terms of transaction and agent characteristics in case studies 2 and 3 (UTZ and organic certifications, respectively). In the case study 2, a greater alignment between the agents' perspectives regarding the level of uncertainty in the transactions (average level) was explained by a higher level of information exchange between both agents in terms of production forecasts and innovations of agricultural production. However, there is a secondary and endogenous uncertainty (in agreement with Williamson, 2012 and Ménard, 2018 successively) because there is less information exchange regarding the purchase agent's buying forecast. The specificity of the asset tends to be high level for the physical, locational, temporal and dedicated asset variables, due to the characteristics involved in an UTZ-certified cocoa production that can be traded with the ECP2 buyer.

There is a partial alignment in terms of the limited rationality, since in the perspective of ECP2 there is a broader use of market information, the producer agent (regarding the technologies and quality of its production), technologies in its processing and management for making decision of continuity in the business of producing chocolates with certification stamps. From the perspective of the producer, this limited rationality tends to be greater, driven by less use of information from the buyer agent (regarding technologies, quality and demand) for the decision making of continuity in the production of quality cocoa and certification. Based on Williamson's (2012) notion of limited competence, producer agents are looking for less information to exploit it from agent ECP2 and more from other agents such as external consultants, other farmers, the Support Service for Micro and Small Enterprises (Sebrae), universities and the internet.

In case study 3, the alignment between agents' perspectives tends to be broader, especially: i) to the time of relationship (greater than five years); ii) to the specificity of the asset, which tends to be higher in the physical aspect due to the need for quality (which goes beyond IN 38/2008) and, on average, in temporal and locational terms, because these cocoa beans can be stored for up to two years without loss of characteristics; iii) opportunism that is low in the prospects of the producer-buyer and buyer-producer relationship and also in the view of the ECP3 regarding producers' behavior; iv) uncertainty, medium level, pulled by the lower exchange of information on buyer agent demand (secondary uncertainty, from Williamson's perspective, 2012).

The non-alignment between the agents of the case study 3 comes from the perspective of the limited rationality, due to the characteristic of information exchange of both agents regarding their productions and technologies used (being the one of smaller change from the perspective of ECP3 and greater, from the producers' perspective). In the context of TCE, efficient governance structures would be the result of the alignment of transaction cost attributes, given behavioral assumptions (WILLIAMSON, 2012; TADELIS and WILLIAMSON, 2013). It is observed that, although there are some characteristics of the transaction and the agents aligned in these two cases studied (numbers two and three), which would allow the existence of contractual governance structures and the possibility of premium payments to the delivered product. These structures are not shown to be

[6] In the case study 1, it was not possible to explore these characteristics, due to the unavailability of time of the producer agents interviewed and the CO.

strong or adequately molded, so that there is coordination and efficiency in this system in economic terms, reducing the degree of opportunism (although low in case study 2) or uncertainty in the relationship (as in case study 3, whose contract is present for the specific harvest transaction).

Comparing these cases to the case study 1, it is possible to note an economic governance that translates not only into the existence of a contract but above all, of efficiency, productive, informational and economic coordination between ECP1 and its buyer agent. Such governance refers to a valuation of the product purchased, given the on-site verification by the buyer, of the aspects of preservation and work existing in agricultural production. This valuation occurs both economically (higher premium attributed to commercialized cocoa beans compared to the other two cases studied), and in the valuation aspect of the Atlantic Forest, given the production under the cabruca system, which is possible to infer that in this system there is characteristics that are closer to a more sustainable structure, since the agents ECP1 and, mainly, its client exert a governance focused on aspects of preservation of the environment and value sharing (economic), as highlighted by Porter and Kramer (2011) and Crane et al. (2014). Another important factor is the characteristics of transaction and of the agent, observed from the perspective of the ECP1, that leads to also infer to a more effective governance. Characteristics are defined as: the high relationship time (> 5 years, more precisely 11 years, more time compared to case studies 2 and 3); low level of uncertainty, high asset specificity in physical, locational factors and dedicated (smaller only in the temporal factor, given the storage capacity of cocoa beans); low level of opportunism (in the relationship between ECP1 and CO and its view on the role of CO); and a low level of limited rationality, that is, a higher level of use of market information, from the supplier regarding technologies used in production and quality, technologies in its processing and management.

Relating to the need for quality in cocoa beans and, consequently, in chocolate production, with the existing governance structure in the cases studied, the hypothesis of this work is not corroborated. It is possible to visualize only in the case study 1 a more effective economic governance at the level of the agro-industrial system, between ECP1 and its buyer agent downstream, which refers to a valuation of the purchased product and involves economic and non-economic aspects, as already mentioned. The coordination and efficiency obtained, also supported by contractual governance, is reflected in the relationship of the CO with the producers, given the net financial gains obtained by them at each end of the current year (proportionate to the volume that each producer agent delivered during the year).

In addition, when analyzing whether this economic governance has also impacted social and environmental aspects in the three cases studied, it can be seen that in case study 1 there is no direct influence or coordination of the buyer in this sense, because it configures a commercial relationship. In case studies 2 and 3 there is a marginal influence or coordination (which will be discussed later). Even though contributions such as Saes and Silveira (2014) indicate that the efficient organizational structure is one that allows a better appropriation of value by the organization and systems, and the necessity of the governance in a way that the value creation can be effective in its appropriation means, and Ménard (2018) that affirm that the choice of a more complex governance mechanism within a supply chain depends on the quality strategy adopted and impose organizational arrangements capable of making the related requirements effective, a direct relationship between the economic governance of the organizations and the social and environmental sustainability of the productive systems was not directly observed in these cases studied.

However, it should be noted that the valuation of purchasing processing companies in terms of premium payment for cocoa beans could be an incentive for producers to maintain quality and sustainable socio-environmental systems. In this sense, the analysis in this paper refers to more direct actions carried out. As treated by Raynaud, Sauvee and Valceschini (2005), the price or the intensity of advertising as well as the label of a product can be visualized as signs of quality. With regard to the environmental factor, we can observe the producers' perspectives in the three cases, a search for maintenance or, even, expansion of forest preservation areas, including the production (and replanting) of cabruca system. In case study 1, for example, all farms have protected springs that, in addition to supplying families living on the property, contribute to the preservation of rivers in the region.

However, analyzing these systems, including the search for certifications, would be an incentive for the producer agent or buying agents, given the need for economic, social and environmental partnerships for the transition of sustainability, as dealt with by Elkington (2004). At this point, it is mainly perceived as producers' own interest, similar to the incentive of buying agents

to the configuration of a market. In other words, the acquisition and premium payment for higher-quality cocoa beans and non-financial (more indirect) incentives, such as the help of technicians, the donation of seedlings, organic material to the producer agents are perceived, in order to improve the quality of cocoa beans and the whole productive process. Comparatively in the three case studies, ECP2, through production-environmental projects in Brazil and in specific in the region studied, would provide more actions since 2011 in relation to the agent ECP3, which develops several actions, but focused on other countries, such as Ghana, Ivory Coast and others.

In social terms, broadly speaking, because of buyers' actions, it is also not possible to notice changes in terms of social relations or level of satisfaction of families or communities, among other factors, as worked by Moulaert & Nussbaumer (2005), Moulaert (2008) and Neumeier (2012) in rural development processes. Even if there were more programs also with regard to sustainability, in ECP2 the changes would be more derived from the production systems themselves. This is due, in ECP2, there are producers who are engaged in projects of the organization, in the sense of training and productive-environmental support, and the community can benefit from projects that improve its environment, health and nutrition. In this sense, contributions from authors Moulaert (2008), Butkeviciene (2009), Neumeier (2012) and Meador & Skerratt (2017), may help in the analysis of social changes and the participation of the actors in the rural development process. The three case studies show a partial understanding on the part of the producers that social relations with various agents of the chain, including the buyer agent, would have been expanded in recent years. The greatest interaction would be for economic and strategic reasons, for the production and sale of a cocoa with quality and certification, motivated mainly by centers for public extension and research, such as Ceplac and public universities in the region.

Conclusion

When discussing the theme of governance and sustainability in the production of certified cocoa in the southern region of Bahia, this paper brings several contributions. Firstly, it shows the existence of production systems that are focused on the quality and value of cocoa, an assessment that involves not only an economic (premium negotiated) but also an environmental issue, given the region in which it is produced (South Bahia and preservation of the Atlantic Forest). Second, addressing the issue of sustainability in the economic, environmental and social aspects comes to innovate by linking the importance of governance of different agents to the operation of higher quality systems and certification. However, it shows that there is a limitation of buyer agents, regarding the most direct contribution in environmental and social aspects to the level of production systems.

Thus, the central hypothesis of this research was not confirmed, since established structures contractual governance guarantee quality, but do not effectively translate into social and environmental benefits, focused on sustainability. It should be noted that even if the social and environmental aspects are not explicit in the governance used, these are implicit factors relevant to the transaction, since inefficiencies in governance can compromise environmental performance, including leading to changes in activity (deliberate fires to eliminate forests and cultivate in the area). Thus, producers tend to remain in the activity and to leverage relevant social and environmental aspects in this activity in the regions under study if they receive adequate remuneration and have incentives for quality, whether linked to intrinsic attributes or to extrinsic attributes, such as social or environmental appeal.

Funding

This work was supported by the São Paulo Research Foundation (grant no. 14135-8/2014) and the Brazilian National Council for Scientific and Technological Development (grant no. 448771/2014-4).

References

AMBROZINI, L. C. S.; MARTINELLI, D. P. Formal and relational contracts between organizations: proposal of a model for analysis of the transactional and governance structure characteristics of comparative cases. **Revista de Administração**, v. 52, p. 374-391, 2017.

ASSELT, E.D. VAN; BUSSEL, L.G.J. VAN; VOET, H. VAN DER; HEIJDEN, VAN DER; TROMP, S.O.; RIJGERSBERG, H.; EVERT, F. VAN; WAGENBERG, VAN; FELS-KLERX, VAN DER. A

protocol for evaluating the sustainability of agri-food production systems- a case study on potato production in peri-urban agriculture in the Netherands. **Ecological Indicators**, v. 43, p. 315-321, 2014.

BEG, M. S.; AHMAD, S.; JAN, K.; BASHIR, K. Status, supply chain and processing of cocoa – a review. **Trends in food Science & technology**, v. 66, p. 108-116, 2017.

BELMIN, R.; CASABIANCA, F.; MEYNARD, J-M. Contribution of transition theory to the study of geographical indications. **Environmental Innovation and Societal Transitions**, v. 27, p. 32-47, 2018.

BORRELLI, I. P. Territorial sustainability and multifunctional agriculture: a case study. **Agriculture and Agricultural Science Procedia**, v. 8, p. 467-474, 2016.

BRASIL **Instrução Normativa 38/2008**. Disponível em: <http://sistemasweb.agricultura.gov.br/sislegis/action/detalhaAto.do?method=visualizarAtoPortalMapa&chave=250964455>. Acesso em: 13 jul, 2017.

BRUNORI, G. et al. Are local food chains more sustainable than global food chains? Considerations for assessment. **Sustainability**, v. 8, n. 449, 27 p., 2016.

BUTKEVICIENE, E. Social innovations in rural communities: methodological framework and empirical evidence. **Social Sciences**, v. 1, n. 63, p. 80-88, 2009.

CARMONA-TORRES, C.; PARRA-LÓPEZ, C.; SAYADI, S.; CHIROSA-RÍOS, M. A public/ private benefits framework for the design of polices oriented to sustainability in agriculture: an application to olive growing. **Land use policy**, v. 58, p. 54-69, 2016.

CÉSAR, A. S.; BATALHA, M. O.; PIMENTA, M. L. A certificação orgânica como fator estratégico na governança das transações no mercado de alimentos. **Organizações Rurais & Agroindustriais**, v. 10, n. 3, p. 376-386, 2008.

CRANE, A.; PALAZZO, G.; SPENCE, L.; MATTEN, D. Contesting the value of 'creating shared value'. **California Management Review**, v. 56, n. 2, p. 130-154, 2014.

CRESWELL, J. W.; CRESWELL, J. D. **Research design:** qualitative, qunantitative and mixed methods approaches. London: Sage Publications Inc., 2014.

ELKINGTON, J. Enter the triple bottom line. In: HENRIQUES, A.; RICHARDSON, J. (Eds.). **Does it all add up?** (p. 1-16). London: Earthscan, 2004.

ELKINGTON, J. Governance for sustainability. **Corporate governance:** an international review, v. 14, n. 6, p. 522-529, 2006.

FAIRTRADE INTERNATIONAL. **What is fairtrade?**. Disponível em: <https://www.fairtrade.net/about-fairtrade/what-is-fairtrade.html>. Acesso em: 10 mai, 2017.

FAOUR-KLINGBEIL, D.; TODD, E. C. D. A Review on the Rising Prevalence of International Standards: Threats or Opportunities for the Agri-Food Produce Sector in Developing Countries, with a Focus on Examples from the MENA Region. **Foods**, v. 7, n. 3, p.1-33, 2018.

GEREFFI, G.; FERNANDEZ-STARK, K. (2016). **Global value chain analysis:** a primer. 2nd Edition. Durham, NC: Duke Center on Globalization, Governance & Competitiveness.

GEREFFI, G.; LEE, J. Economic and social upgrading in global value chains and industrial clusters: why governance matters. **Journal of Business Ethics**, p. 1-14, 2018.

GHOZZI, H.; PLATONI, S.; TILLIE, P.; SOREGAROLI, C. TCE determinants and governance forms in the EU "non-GMO" soybean supply chain. **Food Policy**, v. 78, p.68-80, 2018.

GLAVAS, A.; MISH, J. Resources and capabilities of triple bottom line firms: going over old or breaking new ground? **Journal of Business Ethics**, v. 127, p. 623-642, 2015.

HUMPHREY, J.; SCHMITZ, H. Governance in global value chains. **IDS Bulletin**, v. 32, n. 3, p.19-29, 2011.

INTERNATIONAL COCOA ORGANIZATION. **Statistcs. Production**. Disponível em: <https://www.icco.org/statistics/production-and-grindings/production.html>. Acesso em: 2 jun., 2017.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA. IBGE. **Banco de dados agregados**. **SIDRA.** Disponível em: <http://www2.sidra.ibge.gov.br/bda/tabela/listabl.asp?c=1613&z=t&o=11>. Acesso em: 3 jun., 2017.

MAERSTEN, M.; SWINNEN, J. Agricultural trade and development: a value chain perspective. World Trade Organization: Economic Research and Statistics Division, **WTO Orking paper**, No. ERSD-2015-04, Geneva: World Trade Organization (WTO), 2015.

MELO, C. J.; HOLLANDER, G. M. Unsustainable development: Alternative food networks and the Ecuadorian Federation of Cocoa Producers, 1995 e 2010. **Journal of Rural Studies**, v. 32, p.251-263, 2013.

MÉNARD, C.; VALCESCHINI, E. New institutions for governing the agri-food industry. **European Review of Agricultural Economics**, v. 32, n.3, p.421-440, 2005.

MÉNARD, C.; SHIRLEY, M. The future of new institutional economics: from early intuitions to a new paradigm. **Journal of Institutional Economics**, v. 10, n. 4, p.541-565, 2014.

MÉNARD C. Finding our way in the jungle: insights from organization theory. In: MARTINO, G. et al. (Eds) **It´s a jungle out there – the strange animals of economic organization in agri-food value chains** (pp. 27-50). Wageningen: Wageningen A. Publishers, 2017.

MÉNARD, C. Organization and governance in the agrifood sector: how can we capture their variety?. **Agribusiness**, v. 34, p.142-160, 2018.

MERCATI, V. Organic agriculture as a paradigm of sustainability: Italian food and its progression in the global market. **Agriculture and Agricultural Science Procedia**, v. 8, p.798-802, 2016.

MEADOR, J. E.; SKERRATT, S. On a unified theory of development: new institutional economics & the charismatic leader. **Journal of Rural Studies**, v. 53, p. 144-155, 2017.

MOULAERT, F. Social innovation: institutionally enbedded, territorially (re)produced. In: MACCALLUM, D; (Eds). **Social innovation and territorial development** (pp. 11-23). England: Ashgate Publishing Limited, 2008.

MOULAERT, F.; NUSSBAUMER, J. The social region: beyond the territorial dynamics of the learning economy. **European Urban and Regional Studies**, v. 12, n.1, p. 45-64, 2005.

NEUMEIER, S. Why do social innovations in rural development matter and should they be considered more seriously in rural development research? – proposal for a stronger focus on social innovations in rural development research. **Sociologia Ruralis**, v. 52, n. 1, p.48-69, 2012.

NORTH, D. Institutions. **Journal of economic perspectives**, v. 5, n.1, p. 97-112, 1991.

PORTER, M. E.; KRAMER, M. R. The big idea: creating shared value. **Harvard Business Review**, 6 p., jan.-feb, 2011.

POTTS, J.; LYNCH, M.; WILKINGS, A.; HUPPÉ, G.; CUNNINGHAM, M.; VOORA, V. **The state of sustainability initiatives review: standards and the green economy**. Int. Inst. For Sust. Dev. (IISD), 2014. Disponível em: <http://www.iisd.org/sites/default/files/pdf/2014/ssi_2014.pdf#page=130>. Acesso em: 2 jun.., 2017.

PRICEWATERHOUSE COOPERS. Agribusiness Research & Knowledge Center. **A cadeia produtiva do cacau no Brasil – pesquisa de mercado**. Ribeirão Preto/ SP, 2012.

RAINFOREST. Our approach. Disponível em: <http://www.rainforest-alliance.org/approach>. Acesso em: 2 mai., 2017.

RAYNAUD, E.; SAUVEE, L.; VALCESCHINI, E. Alignment between quality enforcement devices and governance structures in the agro-food vertical chains. **Journal of management and governance**, v. 9, p. 47-77, 2005.

REYS, M. A. DOS, ARBAGE, A. P., OLIVEIRA, S. V. DE. (2010) Identification of sources of transaction costs: a fuzzy approach for the evaluation of analytical categories. **Organizações Rurais & Agroindustriais**, v. 12, n. 1, p.11-19, 2010.

ROYER, A.; MÉNARD, C.; GOUIN, D-M. Reassessing marketing boards as hybrid arrangements: evidence from Canadian experiences. **Agricultural Economics**, v. 47, p. 105-116, 2016.

SABOURIN, E. Multifuncionalidade da agricultura e manejo de recursos naturais: alternativas a partir do caso do semiárido brasileiro. **Tempo da Ciência**, v. 15, n. 29, p. 9-27, 2008.

SACHS, I. Em busca de novas estratégias de desenvolvimento. **Estudos avançados**, v. 9, n. 25, p. 29-63, 1995.

SAES, M. S. M.; SILVEIRA, R. L. F. Novas formas de organização das cadeias agrícolas brasileiras: Tendências recentes. In: BUAINAIN, A. M.; ALVES, E.; SILVEIRA, J. M.; NAVARRO, Z. (Org). (pp. 297-315). **O mundo Rural no Brasil do século 21**. Brasília: Embrapa, 2014.

SCHEPKER, D. J.; OH, W.-Y.; MARTYNOV, A. The many Futures of contracts. **Journal of Management**, v. 40, n.1, p. 193-225, 2014.

SEPÚLVEDA, S. Desenvolvimento microrregional sustentável: métodos para planejamento local. Trad. Daltom Guimarães. Insituto Interamericano de Cooperação para a Agricultura (IICA). Brasília: IICA, 2005.

TADELIS, S.; WILLIAMSON, O. E. Transaction Cost Economics. In: Gibbons, R.; Roberts, J. (pp. 159-189). **The handbook of organizational economics**. Princeton University Press, 2013.

TRIENEKENS, J.; ZUURBIER, P. Quality and safety standards in the food industry, developments and challenges. **Int. J. Production Economic**, v. 113, p. 107-122, 2008.

TSOLAKIS, N. K.; KERAMYDAS, C. A.; TOKA, A. K.; AIDONIS, D. A.; IAKOVOU, E. T. Agrifood supply chain management: a comprehensive hierarchical decision-making framework and a critical taxonomy. **Biosystems Engineering**, v. 120, p. 47-64, 2014.

UNITED NATIONS, DIVISION FOR SUSTAINABLE DEVELOPMENT. **Report of the World Commission on Environment and Development:** Our common future. 1987. Disponível em: <http://www.un-documents.net/wced-ocf.htm>. Acesso em: 15 fev., 2017.

UTZ. **Certification**. Disponível em: <https://utz.org/what-we-offer/certification/>. Acesso em: 25 mai., 2017.

VEIGA, J. E. O âmago da sustentabilidade. **Estudos avançados**, v. 82, n. 28, p.7-23, 2014.

WASIAK, A. L. Effect of biofuel production on sustainability of agriculture. **Procedia engineering**, v. 182, p. 739-746, 2017.

WILLIAMSON, O. Comparative Economic Organization: the analysis of discrete structural alternatives. **Administrative Science Quarterly**, v. 36, n. 2, p. 269-296, 1991.

WILLIAMSON, O. E. **As instituições econômicas do capitalismo:** firmas, mercados e relações contratuais. São Paulo: Pezco Editora, 2012.

WOGNUM, P. M. (NEL); BREMMERS, H.; TRIENEKENS, J. H.; VORST, J. G.A.J. VAN DER; BLOEMHOF, J. M. Systems for sustainability and transparency of food supply chains – current status and challenges. **Advanced Engineering Information**, v. 25, p. 65-76, 2011.

ZYLBERSZTAJN, D. Agribusiness systems analysis: origin, evolution and research perspectives. **Revista de Administração**, v. 52, p. 114-117, 2017.

ZYLBERSZTAJN, D. Papel dos contratos na coordenação agro-industrial: um olhar além dos mercados. **RER**, Rio de Janeiro, v. 43, n.3, p.385-420, 2005.

ANEXOS

Figure 1 – Characterization and governance structure of case study 1 – Organic Certification

	Producer scope	Scope ECP1
Description	Six producers Average age: 58 years Average time in cocoa activity: 25.5 years; Educational background: Most higher level or graduate; Agricultural properties for cocoa production: own properties (majority) and more than one property (two to three); Economic activities: diversified, with cocoa, cupuaçu, peach-palm, açai palm, açai berry, coffee, palm heart, cocoa processing activity and rural tourism service; Workforce used: family - 01 to 02 people; predominance of permanent labor (average of five people); Cocoa production system: Organic cabruca; Average production in 2013-2015: 845 arrobas (1 arroba is approx. 15 kg); Certifications: Brazil Organic (since 2002), USDA organic (since 2003) and equivalent standard for European regulation (since 2002).	National company and family structure; Year established: 2005, with a previous trajectory in the production of chocolates for final consumption; Economic activities: first processing of cocoa; Crushing capacity: 20 thousand tons per year; Product Portfolio: conventional line (80%) and special (with stamps, 20%), regarding 2014-2015; Certifications: Brazil Organic, USDA Organic, organic regulation of the European Union, Kosher, Fairtrade, Rainforest and Raw; Destination: 50% for external market and 50% domestic market, being companies of cosmetics, chocolate and food supplementation.
Marketing and governance structure	**- Buyer agent:** Collective Organization and local market; Vertical integration with chocolate manufacturing (one producer); **- Transactions of producers with CO:** 50-65% of the average production in 2013-2015; Product sold: cocoa beans **- Governance structure:** absence of contracts (with relational value involved); Payment method: prompt payment Awards: 30% in relation to the market price + percentage of the current year's net earnings, proportional to the volume that each producer agent delivered during the year. **- CO transaction downstream (by secondary information):** - Buyer agents: domestic (including ECP1) and international chocolate companies; Product sold: cocoa beans.	Suppliers: producers and cooperatives of the states of Bahia and Pará; Product purchased: organic cocoa beans (20% of total production, certified) and conventional (80%) (years 2014-1015); **- Transaction of ECP1 with CO:** Purchase approximately 90% of CO; **- Transaction Characteristics:** High transaction time (11 years); Uncertainty: low level, due to high level of information sharing in the three variables (sharing of information with the CO-producer regarding their forecast of demand, production by the CO-producer and innovations in the production of the CO-producer agent); Asset specificity: Physical, locational and dedicated - high; Temporary - average; **- Characteristics of agents:** Opportunism: low level in both (relationship ECP1-OC and the vision of ECP1 about the relationship OC-ECP1); Limited Rationale (LR): low level of LR, lots of information about the quality cocoa market (price, demand and supply); from the supplier regarding the technologies used in production and quality; technologies in their processing; and management (costs, inventory and marketing); **- Governance structure (with OC):** annual contract, with information on the volume purchased, term of payment and price; Payment method: prompt payment; Transportation: by the company, without discount; Awards: 50 to 70% in relation to the market price; price markings from the downstream acquiring company.

Figure 2 – Characterization and governance structure of case study 2 – UTZ Certification

	Producer scope	Scope ECP2
Des	Two producers; Average age: 53 years;	Company of foreign origin;

	Average time in cocoa activity: < 10 years (P1); 31-40 years (P2); Educational background: higher level (P1) and graduate (P2); Agricultural properties for cocoa production: two (P1); one (P2); Economic activities: diversified, with cocoa and dairy cattle breeding (P1) and rubber tree (P2); Workforce used: predominance of permanent labor (average of 15.5 people); Average production in 2013-2015: 4,850 arrobas (1 arroba is approx. 15 kg); Cocoa production system: cabruca; Certifications: UTZ (since 2012-2013)	Year established: more than a century internationally and in Brazil, more than 50 years ago; Two factories in Brazil: Ilhéus (BA) and Porto Ferreira (SP); Economic activities: agricultural commodities, food industry, financial and industrial services. In cocoa and derivatives, greater performance in the first processing of cocoa; Product Portfolio: conventional (powder, butter, cocoa liquor and chocolate geared towards the industrial market and foodservice) and organic (chocolate with UTZ certification, for final consumption); Certifications: UTZ
Marketing and governance structure	**- Buyer agent:** Purchasing Processor Company (ECP2); Product sold: cocoa beans; Attributes of quality: UTZ certification, including quality features that involve the non-use of slate, moldy, smoke-smelling cocoa beans (critical defects); **- Characteristics of the transaction with ECP2:** High transaction time (> 5 years); Uncertainty (sharing of information with the buyer about the forecast of purchase, its forecast of production and its innovations in production): Average level of uncertainty, due to the high information exchange in the three variables for P1and low information exchange in the three variables for P2; Asset specificity: Physical and temporal - Medium/high; Locational - high; Dedicated – high **- Characteristics of agents:** Opportunism: low level (buyer purchases merchandise and honors with payment term); low-average (comply with the combined price); Limited Rationale (LR): Low level LR (lots of market information, cocoa price, demand and supply of cocoa); high level LR (regarding the non-existent information of the buyer agent itself regarding technologies, quality and demand); and low-high level LR (for information of its productive and managerial aspects); **- Governance structure with ECP2:** hybrid; written contracts, designating the quantity, price and type of cocoa marketed; Payment method: prompt payment; Transportation: producer; Awards: 5-15% in relation to the market price.	Suppliers: producers in the southern region of Bahia (mostly medium-sized); Product purchased: UTZ certification cocoa beans; Quality attributes: smoke, dirt, mold, humidity control and slate free cocoa beans; **- Transaction Characteristics with producers:** High transaction time (> 5 years); Uncertainty: Average level of uncertainty, due to low information exchange regarding demand and purchase forecasting; high exchange of information regarding the producer's production forecast and innovations in the production of the same; Asset specificity: Physical, temporal, locational and dedicated - High; **- Characteristics of agents:** Opportunism: a) low level, ECP2 relationship with producers; b) view of the company in relation to producers: low level (in receiving the agreed price); medium (in delivering the goods and within the stipulated time); Limited Rationale (LR): Low level LR, lots of market information (cocoa price, demand and supply of quality cocoa), from the supplier agent (regarding technologies used in production and quality), as well as technologies in its processing and management (costs, stocks and marketing); **- Governance structure:** hybrid, with contract, being defined the term of delivery and the quality standard. Payment method: prompt payment; Transportation: by the company, with discount or producer delivery (more frequent); Award: 5% in relation to the regional price.

Source: research results

Figure 3 – Characterization and governance structure of case study 3 – Organic Certification

	Producer scope	Scope ECP3
Des cript	Two producers; Average age: 57 years;	Company of foreign origin;

	Average time in cocoa activity: 11-20 years (P1); 21-30 years (P2); Educational background: higher level (P1) and graduate (P2); Agricultural properties for cocoa production: one (P1); two (P2); Economic activities: diversified, with cocoa and dairy cattle breeding, rural tourism and chocolate agri-food (in this case, P2); Workforce used: family – average of three people; predominance of permanent labor (average of nine people); Cocoa production system: Organic (Certification Brazil Organic); Average production in 2013-2015: 555 arrobas (P1); 4,200 arrobas (P2) (1 arroba is approx. 15 kg).	Year established: group formed at the end of the 20th century (origin dates back more than a century.); Two factories in Brazil: Ilhéus (BA) and Extrema (MG); Economic activities: first processing of cocoa (supplies the chocolate industry and artisanal customers); Product Portfolio: conventional and organic products; Certifications: Brazil organic (beginning of plantations from 2001) and UTZ (2016).
Marketing and governance structure	**- Buyer agent:** Purchasing Processor Company (ECP3) Product sold: cocoa beans; **- Characteristics of the transaction:** High transaction time (> 5 years); Uncertainty: Average level of uncertainty, due to the low exchange of information regarding the forecast of demand by the purchasing company; but high information exchange regarding the forecast of production and innovations in its production; Asset specificity: Physical - High; Temporal and locational - Medium/low; **- Characteristics of agents:** Opportunism: low level; Limited Rationale (LR): Low level LR, lots of market information (cocoa price, demand and supply of cocoa); average level LR, due to the buyer agent's information regarding technologies, quality and demand; and low-medium LR regarding the information of its productive and managerial aspects; **- Governance structure with EPC3:** hybrid, with a purchase and sale agreement, detailing the quality, quantity and price, but only referring to that transaction; Payment method: prompt payment; Transportation: producer; Awards: approximately 20% in relation to the ton price paid by the company.	Supplier agents: producers or cooperative (ex. CO of case 1), from the state of Bahia; Product purchased: organic cocoa beans (1.5%), other certifications (6%) and commodity (92.5%); **- Transaction Characteristics with producers:** High transaction time (> 5 years); Uncertainty: High-middle level, due to low information exchange regarding its forecast of demand and purchase and forecast of production of the producer, and high exchange of information of innovations in the production of the same; Asset specificity: Physical - High; Temporal and locational - medium; dedicated - high; **- Characteristics of agents:** Opportunism: low level in both (relationship ECP3-producers and its view on the relationship producers-ECP3); Limited Rationality (LR): Low level LR, lots of market information (price, demand and supply of quality cocoa), as well as technologies in its processing and management (costs, stocks and marketing); high level LR, low exchange information with the supplier agent (regarding technologies used in production and quality); **- Governance structure:** hybrid, with formal purchase and sale contract, but the producer can market to another agent, there is no specificity of the asset for that transaction; Payment method: prompt payment; Transportation: by the company, with discount or producer delivery (more frequent); Award: 20% in relation to the price of tons paid by the company.

Obs: Relationship time: high level > 5 years; average level 1 to 5 years; low level <1 year.
Uncertainty: For the producer and buyer company - information sharing regarding the demand forecast of the buying agent; producers' forecasts and the innovations made by producers - High level (yes, always); average level (more or less); low level (no / never).
Asset specificity: high level (very important); average level (more or less important); low level (not important).
Limited Rationale: For the producer - level of information that the producer has to interpret the reality and make a market decision (price, demand and supply of cocoa); of productive aspects (technologies); management (costs, inventory and marketing) and of the purchasing agent itself regarding technologies, quality and demand.
For the buyer agent - level of information that the organization has to interpret the reality and make a market decision (cocoa price, demand and supply of producers); of technologies in processing, management (costs, stocks and marketing) and of the producer agent itself for technologies in agricultural production and quality).
High level (never searched); average level (more or less); low level (always-sought information).
Opportunism: For producer and buyer agent - level of confidence between agents as to combined price; delivery or receipt of the merchandise; maturity of the combined payment.
High level (never); average level (more or less); low level (always).

Source: research results.