SUPPORT MECHANISMS FOR SOCIO-TECHNICAL TRANSITION OF SMALL RURAL PRODUCERS TO PREMIUM PRODUCTS NICHE: AN ANALYSIS OF THE FORMATION AND FORMALIZATION OF THE CACAU BAHIA ESPECIAL CONSORTIUM

INTRODUCTION

One of the major problems of the premium products niche strategy, which provide greater income to the rural producer, is the guarantee of the quantity of production to be delivered in the sale, which occurs due to the specificity of the asset. Although premium cocoa can obtain a value up to 4 times higher than the cocoa commodity listed on the stock exchange[1], the production and post-harvest process require very specific technical knowledge, in addition to investments in infrastructure and training of labor. In addition, the sales market is different from the traditional cocoa, as it is a product with very specific characteristics, which undergoes batch evaluations for acceptance and quality verification.

The solution is very complex, generating contractual breaches and often making it impossible for small and medium-sized producers to enter quality niches. As an example of an alternative, we can highlight the creation of a consortium formed in the South of Bahia which aim is providing support for a group of cabruca cocoa producers to enter this market.

It is a socio-technical change, which resulted in transformations at different levels of society, encompassing institutional, technological, and economic aspects in various social dimensions, which is not ignored in this article. However, the main objective of this study is to place a magnifying glass in the niche dimension, understanding how a socio-technical transition took place in this dimension and the importance of establishing contracts as guaranteeing and anchoring mechanisms for effecting change.

Thus, this article aims to analyze the role of the creation of the consortium, the establishment of the contract between the producers for the realization of the socio-technical transfer to the premium cocoa niche, based on high asset specificity, need for investment and no guarantee of extra earnings. Therefore, the Multi-Level Perspective (MLP) was considered, which is the most used line of research in the literature on sociotechnical transitions, addressing the dynamics of sociotechnical systems and the sustainability challenges they represent (Smith et al., 2010). Furthermore, we consider the Transaction Cost Economics (TCE) to understand, in this specific case, how a transition to the production of a more specific asset had an impact on the contractual relations between the agents involved.

The research considered a qualitative approach with the case study of the creation of a consortium for the production and marketing of premium cocoa produced in the cabruca system in the South of Bahia. We perform empirical data collection, data triangulation through the survey of different sources, interviews with producers and stakeholders in the cocoa sector.

This study offers a theoretical contribution as it uses a conceptual model that integrates MLP and TCE, in addition to addressing the context of agroforestry system in a tropical forest that requires complex sustainability transitions. How did the instrumentation take place? What are the reasons for the need for contracts? What explains this dynamic?

In addition, the study seeks to contribute to public policy formulation by pointing out the consortium as an instrument for enabling the transition of other producers in the state, in other regions, or even in other agroforestry chains.

[1]Forum Mundial de Bioeconomia, 2021

THEORETICAL APPROACH

Transaction Cost Economics (TCE)

According to TCE, the main issue of economic organizations is the hiring process through transaction costs related to the preparation and execution of contracts between different associations (COASE, 1937; LAFONTAINE; SLADE, 2010). These costs can be related to ex ante (negotiation, elaboration, and structuring) or ex post actions (conflict resolution, configuration of governance structures). Thus, to understand the mechanisms adopted in the structuring of transactions, two important factors must be considered: the behavioral assumptions and the attributes of transaction (WILLIAMSON, 1985).

The behavioral assumptions that govern the "contractual man" approach are bounded rationality and opportunism (WILLIAMSON, 1991). The idea of bounded rationality treated by Herbert Simon (1978) refers to the limitation of access to information for decision making. Thus, the choice is made for the best solution alternative according to the resources available at the time (MASSARDIER, 2021).

Given the unpredictability of any and all situations to be contractually arranged, contracts can be considered incomplete (WILLIAMSON, 2005). Since they are incomplete formalizations, the favored contract party, intentionally or unintentionally, can adopt an opportunistic posture to obtain advantages from the counterparty. That is, opportunism is related to the partial or distorted exposure of information in order to confuse and create a situation of information asymmetry (WILLIAMSON, 1985).

According to Williamson (1993), the ideal is for transactions to be structured in such a way that bounded rationality is minimized at the same time as mitigating the risks of opportunism. Thus, contracts can reduce transaction costs since they are able, when well structured, to minimize opportunistic behaviors (FRASCARELLI et al., 2021).

Transactions differ by their attributes: asset specificity, uncertainty and frequency (WILLIAMSON, 1979, 1991). Among them, the specificity of the asset plays a central role in TCE to explain the relationship between the need for coordination structures and the specificities of the product or service being negotiated (FOSS et al., 2007; SHELANSKI; KLEIN, 1995). In this logic, the more specific the characteristics of the good or service and with great difficulty of replacement, the greater the need for contracts to guarantee the fulfillment of the business conditions and ensure its delivery (WILLIAMSON, 1979).

The presence of uncertainty results in the need for contractual adaptations (WILLIAMSON, 2005). Furthermore, the level of uncertainty is closely linked to the specificity of the asset. That is, the greater the specificity, the greater the probability of information asymmetry and opportunism, and therefore, the greater the uncertainty and need for contractual adjustments for a transaction (MÉNARD; VALCESCHINI, 2005; WILLIAMSON, 1979). According to Schnaider et al. (2018), uncertainties can be classified into three categories: market (related to the unpredictability of demand and/or supply), technological (related to the volatility of existing technologies), and performance (associated with the difficulty of guaranteeing agreements compliance).

Frequency, as an attribute of the transaction, can influence adaptations through the effects of reputation and installation costs (WILLIAMSON, 2005).

Multi-Level Perspective (MLP)

MLP assumes that change (or transition) occurs through interactions at three levels: niches (where innovations emerge and gain support); regimes (established rules and standards of action); and landscapes (factors beyond niche and regime levels) (SUTHERLAND et al., 2014). Transitions are defined by the MLP as changes from one sociotechnical regime to another (EL BILALI, 2019; FARLA et al., 2012).

Niches are involved in changes related to “new technologies and practices, new configurations of groups of actors, new beliefs and values, new networks, new policies” (EL BILALI, 2019; SUTHERLAND et al., 2014). In agrifood systems, niche innovations include alternative food systems/networks and agricultural systems such as organic agriculture and agroecology (EL BILALI, 2019). According to Elzen et al. (2012), the description of the niche occurs in three dimensions: technical, human-social and institutional.

In relation to regimes, they generally focus on system optimization rather than system innovation, because habits, extant competencies, past investment, regulation, prevailing norms, worldviews and so on, act to block standards behavior and result in path dependencies to technological and social development (Smith et al. 2005; Geels 2005).

In general, the elements of the agrifood regime are commercial codes and regulations, food safety laws, extant commercial networks, logistical transport and infrastructure (EL BILALI, 2019). The regime includes key government actors and their associated institutional structures in the agricultural sector, as well as political discourse on agricultural development, dominant agricultural practices and associated patterns of ecosystem services and human well-being (EL BILALI, 2019; JÄRNBERG et al., 2018). Regime elements can be either tangible (laws, regulations, protocols, standards) or intangible (culture, policy paradigms, shared views and beliefs, social norms, cognitive routines) (Geels, 2005; EL BILALI, 2019).

Landscape is the third level designed by MLP. It emerges as a broad exogenous environment that is beyond the direct influence of the regime and niche actors (GEELS; SCHOT, 2010). The landscape level addresses various external trends and exogenous factors that affect the transition to sustainable agrifood systems (EL BILALI, 2019).

Elzen et al. (2012) also suggest "anchoring" mechanisms, which, according to the authors, would be processes that allow the integration of heterogeneous elements and collaboration between different actors who wish to promote the transition. Thus, transition becomes an ongoing process of learning by doing and adjusting based on the interactions between the different actors involved. Hence incremental/evolutionary change rather than radical/revolutionary change. Anchoring denotes the way in which a novelty is linked ('anchored') to technical, human-social and institutional aspects: technological anchoring, network anchoring and institutional anchoring, respectively (Peneva et al., 2014). Therefore, the linking process refers to any of these three 'areas'.

Niches can be anchored in regimes that propose new rules or institutions, foster new technical systems (practices, processes, technologies) or build new networks and social groups. Ingram (2018) argues that linkage processes in niche regime allow knowledge exchange (network, translation) and mutual learning. Actors in the agrifood system can be "hybrid actors", that is, they play both niche and regime roles (SUTHERLAND et al., 2014).

Institutions as "rules of the game" structure interaction and human activity (North, 1990). Transitions to sustainability in agriculture may not be mainly driven by technology, but probably involve elements such as social innovation and require changes in beliefs and values of all social actors (SUTHERLAND et al., 2014). Innovations related to changes in institutions concern changes in actors' values, beliefs and interpretation of rules (Smith, 2007), and changes in formal and informal rules of normative institutions (regulations, policies).

Coquil et al. (2018) highlights that facilitating the transition of farmers to more sustainable agriculture requires a transformation of the farming community. Slimi et al. (2021) emphasize the role of farmers' collectives and the primary importance of exchanging experiences as a key factor for the success of the transition. Considering exchanges between peers can be a way to better value the various ways of doing and thinking about agriculture and, thus, moving away from the duality between specific and generic knowledge (Girard and Magda, 2018) and moving towards what Coolsaet (2016) calls an agroecology of knowledge.

This exchange of knowledge brings out the importance of collaboration as one of the main patterns of human behavior necessary for the production of goods and services (Fuchs-Heinritz and Barlösius, 1994) which can take very different forms in terms of the number of actors involved; the intensity of the interaction; the activities performed; and social norms and values, framework conditions and pursued objectives. Regardless of whether it is formal or informal, collaboration is important for ensuring the social and economic sustainability of agriculture (Schiller et al., 2014).

Cooperatives, particularly agricultural ones, are a distinct organizational and regulated form of collaboration, often with a solidarity-oriented rather than profit-oriented approach. In agriculture, two main forms of collaboration can be differentiated: 'vertical cooperation' between agricultural producers and other companies in sectors (eg suppliers and processors); and "horizontal cooperation" between agricultural producers (Klischat et al., 2001).

From a management perspective, collaboration can be identified as a "sociotechnical" innovation. Kroma (2006) and Mawois et al. (2019) identified in their empirical studies collectives as inclusive and flexible places where farmers can validate their experiences and find mutual support, motivation, reflection, and trust. Kroma (2006) also argues that organic agriculture, as a form of agriculture that triggers the active involvement of farmers in experimentation, drives farmers towards collectives because access to ecological knowledge is less facilitated by research and extension institutions. Ingram (2010) argues that some individuals value learning by discussing problems when some others are reluctant to share knowledge and interact with peers for fear of criticism, reluctance to share information with a potential competitor, or a purist approach to reduced cultivation techniques. Hayden et al. (2018) consider collectives as communities of practice (CoP) and see them as an opportunity to mitigate the dominant agricultural system, providing an alternative regulatory environment and assistance for management planning (SLIMI et al., 2021).

However, these studies lack empirical elements to describe how farmer interactions contribute to farmers' transition path (SLIMI et al., 2021).

Successful sustainable transitions require an understanding of the drivers and resources needed to support the necessary changes (SLIMI et al., 2021).

Technological anchoring occurs when the technical characteristics of a novelty (for example, new technical concepts) are defined by the actors involved and, therefore, more specific to them. Initially, this definition may only cover some technical characteristics, but in an ongoing process, technological anchoring may lead to additional specifications (ELZEN; VAN MIERLO; LEEUWIS, 2012).

Network anchoring means that changes take place in the network of actors who "carry" the novelty, for example, producing it, using it or developing it further as they relate to it. In addition to the simple expansion of the network, there are other indications for anchoring the network (ELZEN; VAN MIERLO; LEEUWIS, 2012). This includes intensifying contact and exchange between actors in the network involved, increasing interdependence and/or strengthening the coalition that is supporting the innovation process (LEEUWIS; AARTS, 2011; ELZEN; VAN MIERLO; LEEUWIS, 2012).

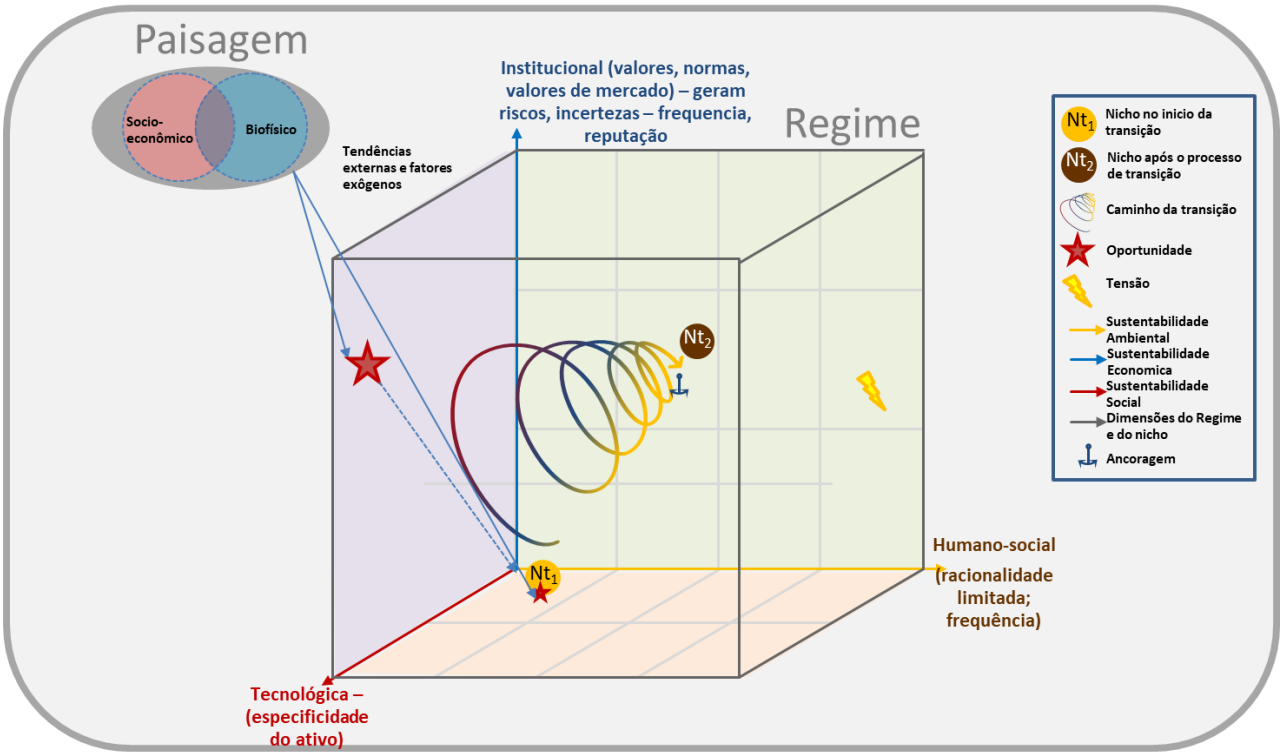
Institutional anchoring refers to the institutional characteristics of the novelty, that is, the new rules developed in relation to it. Relying freely on the economic and sociological perspectives of institutions (NORTH, 1990; Scott, 2005), we differentiate three categories of institutions that can be translated into different forms of institutional anchoring. Cognitive or interpretive institutions relate to how people understand themselves and the world around them. This includes, for example, the causal beliefs, views and viewpoints of problems (related to social values and interests) towards which they orient their behavior and actions. A second broad category includes normative institutions. Here we are talking about translating social values into normative rules and aspirations (ie formal or informal rules about what is desirable

and what is not) that can be incorporated into laws, regulations, policies and ethical standards. The third category are economic institutions concerning the rules and arrangements (eg, contracts, value chains and business networks) that govern markets and economic activities. Institutional anchoring, then, means that developments within a niche are translated into new or adapted rules (interpretive, normative or economic) that play a role, at least temporarily, in guiding the activities of actors of niche and regime. These three forms of anchoring (with subdivision) describe different aspects of anchoring (ELZEN; VAN MIERLO; LEEUWIS, 2012).

CONCEPTUAL MODEL

Based on the theoretical framework, we developed the following conceptual model to try to clearly demonstrate the relationship between the dynamic transition based on the MLP view and TCE.

Figure 1: Conceptual Model



Source: prepared by authors.

The conceptual model seeks to relate the dimensions of transition analysis proposed by MLP, with the transition costs. The idea is that each of these dimensions has transactional costs, and the transition occurs as these costs decrease and, therefore, are acceptable to those who will "take over" the transition.

The technological dimension is related to the specificity of the asset, the human-social dimension, with aspects of bounded rationality and the costs of opportunism. While the institutional dimension is related to uncertainty costs: market uncertainty (unpredictability of demand and supply) and performance uncertainty (difficulty in guaranteeing the fulfillment of agreements).

METHODOLOGY

This research was conducted by an exploratory-descriptive qualitative research through a single case study (YIN, 2015) to conduct an in-depth investigation (Agarwal et al., 2020) in

order to analyze the mechanisms that enabled the transition to the entry of a group of cocoa producers in the premium market. Qualitative approaches are suitable for evaluating transitions in progress, as they make it possible to explore complex issues and processes that occur over time (Ritchie and Lewis, 2008; Karanikolas et al., 2014). We follow Agarwal et al. (2020), conducting an exploratory research to collect information about the transition process and what enabled the entry into this market of high-quality cocoa through the cabruca system.

In this study, the systemic approach was chosen because it is understood that the transition process to be analyzed is complex and results from a set of interacting elements (de Lima Medeiros et al., 2020). The systemic approach represents a useful way of studying human activity, helping to understand how processes occur and how they can react to changes in the environment (Kirk, 1995).

The case was chosen by its role in valuing cocoa production in the South of Bahia, not only for the social and economic importance of the product, but also for the importance of the sustainability of the cabruca system in the conservation of the Atlantic Forest.

Data were collected through interviews conducted with more than one of the team's researchers to ensure data reliability, as proposed by Denzin (2017). The interviews were recorded, and the content transcribed and coded. Data analysis was performed based on the conceptual framework proposed in the theoretical approach section.

Fourteen interviews were conducted with multiple stakeholders involved in the process of valuing cocoa produced by the cabruca system in the South of Bahia. The interviews were carried out between February 2019 and September 2019, when the research team had the opportunity to visit the region of Ilhéus (cocoa producing area). In addition, the interviews were conducted through a mixed process including face-to-face meetings and the use of the Zoom tool, with professionals involved in cocoa production. A table with the details of the interviews will be presented in the results section.

Documentary research was also carried out to obtain data for the analysis of contextual characteristics, including historical, socioeconomic, cultural and agricultural characteristics, in addition to a review of relevant policy documents (national and regional) related to nature conservation and issues of biodiversity. (Peneva et al., 2014).

CASE DESCRIPTION

The case study addressed was the Cacau Bahia Especial Consortium (CBE), which had support from Arapyaú (NGO) for its formation in 2018. The consortium brings together medium and large cocoa growers with the mission of increasing the reputation of cocoa in Bahia and qualifying the business model region, producing and selling quality cocoa through the cabruca agroforestry system. The objective was to introduce producers to the premium cocoa market that improves profitability, and consequently, encourage more producers to pursue the same purpose.

Bahia is the only cocoa producing state in the Northeast of Brazil, occupying an area of 403 thousand ha, and a 111.4 thousand tons production. In the mid-1990s, cocoa production in the South of Bahia was at a level of 298,000 tons. For decades, the area and production of cocoa in Bahia were pre-eminent, however, from 1990 onwards, a process of decline began, both in production (-62.1%) and in area (-24.7%) caused by various adverse factors. As a result, productivity declined, reaching 274 kg/ha, three times lower than in the North region (892 kg/ha). The crisis imposed by the witch's broom plague in the late 1980s and early 1990s led to a huge drop in productivity and indebtedness of cocoa producers in Bahia. The combination of low productivity combined with unrewarding prices in the market has enormously increased the risk of cocoa farming in Bahia. This led to some producers abandoned cabruca cocoa production and adopted other extensive practices on their properties.

Therefore, an agroforestry system with high environmental sustainability started to be exchanged for others due to low economic and social sustainability. Considering the eminence of Atlantic Forest degradation, concerned actors begin to seek sustainable alternatives.

The increasing international demand for sustainable products characterized by fair distribution of profits in the production chain (fairtrade) and bio, and consumers willing to pay a premium price, emerged as an opportunity.

However, entering this production and commercialization market of quality cocoa is a complex transition. The cocoa market is divided into four segments: commodity, certified, fine aroma cocoa and premium cocoa. The higher the quality of the almond, that is, the greater its specificity, which is evaluated by the reduction of defects (% of moldy, burnt, insect-damaged, unfermented, germinated and flattened kernels), the greater the technical improvement needed in production process. This fact requires greater investments from producers to obtain cocoa beans, however, without the guarantee of being able to sell them in a premium market. If rated as premium cocoa, its sales value can quadruple that of regular cocoa. Without this, cocoa continues to be sold as special bulk quoted at the price traded on the regular market. It should also be noted that some measurements are subjective, making it difficult to estimate the product on the market and thus increasing the producer's risk. In this context, certifications are a kind of instrument that offer greater prices to producers since assure the quality of cocoa by its origin, traceability and sustainable means of production. In other words, an opportunity, which required a technological change and a complex transition process.

The analyzed group is located in the South of Bahia and was composed by 14 cabruca cocoa producers and a cooperative formed by another 5 producers. The range of actors involved in the design and evolution of the initiative is wide: farmers, NGOs, municipal, state and local government agents, researchers and consultants, among others.

RESULTS ANALYSIS

The proposed conceptual model served as a tool for analyzing the transition process experienced by the CBE. The system was composed of several actors as well as the interrelationships between them. The material obtained in the field was vast and provided us with adequate content for the analysis. Table 1 presents a summary of the interviews carried out for the analysis of the case.

Table 1: Detailed list of interviews

		Number of interviews	Average duration (minutes)	Estimated total duration (minutes)	Estimated Date
Producers	Workshop - presential	2	480	960	July/2019
	Zoom	3	90	270	September/2019
Stakeholders					
NGO	Presential	7	45	315	Feb - Sep/2019
Coffe Cooperative	Phone Call	2	45	90	May/2019
Wine Cooperative	Phone Call	1	45	45	May/2019
APEX agent	Phone Call	1	45	45	September/2019
Cocoa producers union	Presential	1	30	30	July/2019
Premium chocolate manufacturer	Phone Call	1	30	30	August/2019
CIC	Presential	1	45	45	July/2019
Cocoa sector camera	Presential	1	45	45	July/2019

Source: prepared by authors.

The beginning of the transition occurred with the influence of exogenous factors in the landscape, both biophysical, with the arrival of the witch’s broom plague in the South of Bahia,

and socioeconomic factors, with the change in consumption habits and demand for sustainable and high-quality products. With the niche defined, its transition process to sustainability began. Empirical data demonstrate that this was a long and tortuous process and involved a range of actors. The transition of the niche was surrounded by technological, institutional, and human-social dimensions, both in the niche and in the regime. It was noted that changes occurred in all dimensions.

To understand the transition process, the interviews were transcribed and coded according to the theory analysis, as shown in table 2.

Table 2. Concepts, dimensions and codes.

Concepts	**Dimensions**	**Codes**
Niche	technical	N_tec
	human-social	N_hs
	institutional	N_inst
Regime	technical	R_tec
	human-social	R_hs
	institutional	R_inst
Landscape	socioeconomical	L_se
	biophysical	L_bio
Anchoring	technological	A_tec
	network	A_net
	institutional	A_inst
Costs of transaction	asset specificity	Ct_spec_a
	uncertainty	Ct_uncer
	frequency	Ct_freq

Source: prepared by authors.

At the beginning of the transition, in the niche development phase, it was observed that the presence of an actor with the power of persuasion, who served as an example to other producers, was crucial. The human-social dimension of the niche was very active, having developed an important support network to produce premium cocoa, with the exchange of knowledge and information, as well as the intensive work of the NGO in building networks of professionals and trust so that future partnerships could be established in order to obtain economic advantages. There was an intense work to convince the producers about the importance and advantages of cabruca, the ecological and cultural value of this production system and the possibility of future gains. There is a strong relationship between the human-social dimension and the costs related to bounded rationality, since market uncertainty, insecurity and fear of opportunism needed to be overcome so that the transition could advance.

At the same time, in the technological dimension, the niche also advanced through training on characteristics of almonds and production processes. This dimension was clearly related to the specificity of the asset and the costs inherent to the necessary investment in technological change. As the asset's specificity increases, so do the market risks, since it is no longer a commodity. However, the producer still has the risk of higher production cost and non-recognition of his product in the market.

As these two dimensions advanced, consequently, there were transformations in the institutional dimension, as these trainings began to change the producer's view of cabruca. It was noted that there were changes in the values of producers, who began to give more value to

the agroecological system of cabruca by perceiving its cultural values and economic potential, as well as increasing the link and trust between them.

Through these exchanges, both within the niche, and between the niche and regime dimensions, the transition process took place, as a "maturity" of the process. This maturation can be seen as a process of reducing transition costs, reducing risks for producers, which would make a transition viable in itself. Producers were expanding their knowledge of the market, as well as of technical needs and difficulties, and through the network of relationships formed, they were getting stronger and seeking the changes they needed in the regime.

As the transition progressed, an even more intense transition was noted in the institutional dimension at the regime level. There were changes in the legislation that regularizes the agroforestry system of cabruca, policy changes offering greater support to quality cocoa producers, changes in government bodies, such as the Comissão Executiva do Plano da Lavoura Cacaueira (CEPLAC), which gained greater autonomy and began to be responsible for the five-year strategic planning of cocoa. In addition, the actors in the network moved to show the need for specific credit lines for cabruca production. Changes in the policy to support cocoa producers were fundamental for them to have greater chances of entering the market. Actors of the regime were able to help them obtain the Rainforest Certification and the Geographical Indication of the South of Bahia, which recognizes local producers for environmental sustainability, and reduces the uncertainty of investing in a production of premium cocoa, and not being able to sell the same in this segment, that is, it increases the reputation of the cocoa produced in the region.

The advance of the transition of the niche also leads to an advance in the human-social direction of the regime, with collaborations between actors, exchange of knowledge and learning, which was fundamental for the reduction of transaction costs generated by uncertainty, lack of confidence and fear of opportunistic behaviors generated by bounded rationality.

According to Elzen et.al (2012), anchoring refers to the connection between a novelty and existing structures and institutions, that is, anchoring works as a support for the niche to "locomote" towards integral sustainability. In the case analyzed, it was observed that they took place in its three dimensions: technological, network and institutional. In the technological dimension, examples of anchoring were the creation of the Center of Innovation of Cocoa (CIC), the definition in the legislation of the quality cocoa market through well-defined technical aspects, the approval by the Committee on Agriculture and Agrarian Reform, in February 2020, of a project that provides for greater investment in research that favors production, improving aspects of productivity and fruit quality.

Associating the concepts of behavioral assumptions and attributes of transaction to the case study, it is possible to identify cocoa producers immersed in a scenario mediated by a fragile financial condition that hinders their access to technologies (premium cocoa requires specific treatments that require investments) and buyers (negotiated contracts require a minimum quantity that, in most cases, small and medium producers, due to the asset specificity, are not able to deliver in view of their production).

Thus, the consortium was designed for producers to organize themselves, grouping their productions and then negotiating jointly with buyers. Although the issue of access to buyers is resolved, producers are susceptible to opportunism within the consortium structure.

In this context, the formalization of the consortium appears as a network anchoring, a mechanism to reduce uncertainties and risks so that the transition could be achieved. A priori, relational contracts are acceptable arrangements since they are bilateral contracts based on the value of the continuity of future transactions (LAFONTAINE; SLADE, 2010) and non-compliance by the parties is inhibited by the high transaction cost related to renegotiations with third parties (supply of premium cocoa producers is restricted) and because of the reputational effects (BULL, 1987).

However, even within a shared sales structure, information and power asymmetries added to the high specificity of premium cocoa can lead to the exclusion of smaller producers from the sales process. In order to mitigate opportunistic behavior by producers with greater production capacity, relational contracts were then replaced by a consortium structure duly formalized by formal contracts. In this case, formal contracts allow safeguards to the parties that minimize performance losses associated with transaction risks (HEIDE, 1994; WILLIAMSON, 1985).

In this sense, it was possible to observe the transition from the contractual form that governed the relationships between producers: from relational contracts to formal contracts capable of guaranteeing not only the standardization of the product, but also ensuring the participation of all producers in the niche, encouraging that producers who would not risk entering the premium market, due to all the costs involved, would enter this market, thus obtaining not only a greater financial return, but also the conservation of the Atlantic Forest through the cabruca system.

All aspects of network anchoring were verified, with great emphasis on the importance of collaboration, cooperation and learning through the exchange of knowledge between actors. Smaller producers had the opportunity to enter a contract for the sale of quality cocoa with the support of the larger ones, which would allow them to gradually increase their production of quality cocoa. The role of the NGO responsible for organizing the group of producers to facilitate the relationship, the role of CEPLAC whose objective is to encourage and promote cocoa production in Bahia and other states, focusing mainly on high quality.

The contract was also fundamental for another fundamental network anchoring, the formalized sharing of resources. The two largest producers offer opportunities to increase efficiency in agriculture by offering a low-cost mechanism for resources such as storage and logistics that would be shared according to production and commercialization, which has helped producers reduce costs and increase chance of almond quality maintenance.

There were also several institutional anchors observed. There were changes in the legislation that regulates the production of cabruca, allowing an increase in productivity, in addition to political changes in terms of incentives and financing. It is worth mentioning the achievement of the Rainforest Certification and Geographical Indication of the South of Bahia, in addition to the recognition by the International Cocoa Organization (ICCO) as a country that exports 100% of fine and flavored cocoa. It is also important to anchor the action to encourage the consumption of chocolate in the country, with the introduction of food in school lunches.

Therefore, it can be said that the empirical data make it clear that the transition process has advanced in all dimensions of the MLP analysis, and the importance of the anchoring processes and the contract as an enabling mechanism is also evident.

Table 3 lists the actions to reduce transaction costs identified in the case study.

Table 3 – Actions to reduce transaction costs

TCE	Bulk Cocoa	Premium Cocoa	Actions to reduce transaction costs
Unit of analysis	Transaction		
Characteristic of transacion	No asset specificity	Asset specificity	Training and technical assistance
Need for sale contract	No	Yes	
Risk and Uncertainty (TCE emphasizes the downside associated with risk or uncertainty in describing how uncertainty in the presence of scpecific investment may lead to misappropriation or hold-up problems (Williamson, 1985))	Associated with climatic conditions	Associated with climatic conditions	Institutional support, creation of the CIC, support for obtaining certifications, formation of the consortium.
		Risk of not being able to sell because it is not considered premium cocoa.	
		Risk of investing without a guarantee of return.	
		Risk of opportunism from other consortium members.	
Focal cost concern	Productivity	Productivity	Contract clause that guarantees all producers the right to sell the same quantity of cocoa in each contract signed by the consortium.
		High cost due to hold-up problems	Clause that the producer could only sell his premium cocoa production through the consortium.
Source of market friction	Market defined on the stock exchange	Bounded rationality, uncertainty, information asymmetry, opportunism and asset specificity	All sales must be informed and shared with all consortium members.
			Periodic meetings for accountability.

Source: prepared by authors.

CONCLUSION

The formation of the consortium appears as a fundamental tool to encourage the transition of producers to the premium cocoa market. The consortium agreement helped to reduce numerous transaction costs caused by uncertainty, information asymmetry and market opportunism.

Through the contract, the producers were able to guarantee the sale through contracts, which in the cocoa bulk market does not occur, and without the risk of consequences and fines for breaching the contract. In addition, the well-formulated contract reduced the risk of hold-up among the producers themselves. The creation of the consortium was a way found to encourage entry into the premium cocoa market, giving the necessary support to smaller producers so that the transaction costs generated by insecurity did not make the transition unfeasible, thus ensuring greater opportunities for environmental sustainability with the production of cabruca cocoa. Thus, it can be said that the contract worked as an anchoring mechanism within the niche, enabling the transition to advance.

The study contributes to the theory by relating the dimensions of MLP with the theory of transaction costs, showing how ECT costs can difficult complex transitions. The case demonstrated a transition in an agroforestry system from the creation and use of instruments to minimize uncertainties and transaction costs for producers.

The study also has practical implications for contributing to the formulation of public sustainability policies. The empirical findings evidenced the formalization of the group through the consortium contract as a fundamental instrument for reducing the risk of opportunities, and

therefore transaction costs, which allowed producers to enter this market with greater economic sustainability, ensuring maintenance cabruca production, which is environmentally sustainable.

Therefore, a way is opened for public agents, or in partnership with the private sector, to act to disseminate knowledge about sustainable agricultural practices.

The results also highlighted the need to pay attention to the cultural characteristics of the actors involved in complex transition processes. It can be said that characteristics such as trust in others and greater trust in the group would have a different impact on the need to form formal contracts or not, that is, this is an instrument that will vary according to cultural and institutional characteristics, showing, once again, the complexity of analyzing transitions to sustainability.

For future studies, it would be interesting to understand the mechanisms used in the transition process faced by groups of small producers or even in other regions, who also moved to a premium cabruca cocoa production, thus identifying mechanisms that were equal, and therefore, necessary culture-independent transition, and mechanisms that differed, and could be related to specific cultural or regional aspects.

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