FAMILY AGRICULTURE AND HONEY PRODUCTION CHAIN IN RIO GRANDE DO NORTE: AN ANALYSIS OF FORMS OF INTERACTION WITH THE MARKET

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ABSTRACT

Purpose: The study questions whether the ways in which beekeepers in Rio Grande do Norte interact with the market focus on the dimension of competitiveness or are guided by values that prioritize other sociocultural dimensions. The objective was to characterize the forms of social interaction experienced by farmers in their production and marketing relationship with the honey production chain.

Theoretical framework: The study has as its theoretical axis the proposition of Polanyi (2000) that recognizes that economic interactions are not the only ones and suggests that it is necessary to recognize other forms of relationship that are not exclusively economic.

Method: This is a qualitative research. Ten subjects who are part of the honey production chain in Rio Grande do Norte were interviewed. The analysis technique adopted was the interpretive analysis using the NVivo® 11 software. The analysis categories were: redistribution, reciprocity and market exchanges.

Results and conclusion: The forms of social interaction with the market depend on the beekeeper's immediate needs. He does not rule out types of relationships, as his main focus is their survival, which can override the needs of collective structures. However, this does not put the beekeeper guided by a business logic.

Research implications: The study reveals that managerial practices that focus exclusively on the dimension of competitiveness do not contribute to the understanding of how agents that operate with a non-instrumental logic conduct their organizational practices.

Originality/value: The study contributes with the perspective of a broader organizational theory than just the market dimension.

Keywords: Reciprocity, Redistribution, Mercantile Exchange, Polanyi, Honey Chain, Family Farming.
AGRICULTURA FAMILIAR E CADEIA DE PRODUÇÃO DO MEL NO RIO GRANDE DO NORTE: UMA ANÁLISE DAS FORMAS DE INTERAÇÃO COM O MERCADO

RESUMO

Objetivo: O estudo questiona se formas como os apicultores do Rio Grande do Norte interagem com o mercado têm como foco a dimensão da competitividade ou orientam-se por valores que priorizam outras dimensões socioculturais. O objetivo foi caracterizar as formas de interação social vivenciadas pelos agricultores na sua relação de produção e comercialização com a cadeia produtiva do mel.

Referencial teórico: O estudo tem como eixo teórico a proposição de Polanyi (2000) que reconhece que as interações econômicas não são as únicas e sugere que é necessário reconhecer outras formas de relacionamento que não são exclusivamente econômicas.

Método: Trata-se de uma pesquisa qualitativa. Foram entrevistados dez sujeitos que fazem parte da cadeia produtiva do mel do Rio Grande do Norte. A técnica de análise adotada foi a análise interpretativa com uso do software NVivo® 11. As categorias de análise foram: redistribuição, reciprocidade e trocas mercantis.

Resultados e conclusão: As formas de interação social com o mercado dependem das necessidades imediatas do apicultor. Ele não descarta tipos de relação, pois tem como foco central sua sobrevivência, que pode se sobrepor às necessidades das estruturas coletivas. Contudo, isso não coloca o apicultor orientado por uma lógica empresarial.

Implicações da pesquisa: O estudo revela que práticas gerenciais que tenham como foco exclusivo a dimensão da competitividade não contribuem na compreensão de como agentes que operam com uma lógica não instrumental conduzem suas práticas organizativas.

Originalidade/valor: O estudo contribui com a perspectiva de uma teoria organizacional mais ampla que apenas a dimensão do mercado.

Palavras-chave: Reciprocidade, Redistribuição, Trocas Mercantis, Polanyi, Cadeia do Mel, Agricultura Familiar.

1 INTRODUCTION

Beekeeping is one of the farming activities with great potential to generate social, economic and ecological contributions, essentially because of three factors: it is an activity developed mainly by small producers, favoring the development of family farming; it can complement an agricultural activity already cultivated by the producer and significantly increase its productivity, besides generating them another income option (Klosowski, Kuasoski, & Bonetti, 2020).

The debate on the sustainability of agriculture considers how it is developed, since activities related to solidarity economy can be guided by a better balance between the economic, social and environmental dimensions as proposed by Von Ende, Ferreira, Rossés, Stecca, Madruga and Barasuol (2012), or more aggressive forms, such as those guided by the employer logic (Altafin, 2007).

The Northeast is highly competitive in the global market for apiculture products, and the difference in honey from the Northeast lies in its low contamination by pesticides and antibiotic residues, since a large percentage of the honey produced in the region comes from...
the native vegetation. Data from the Brazilian Institute of Geography and Statistics (IBGE, 2021) indicate that, in the last 20 years, the Northeast region has been occupying, in a recurrent manner, the second position in the ranking of the largest organic honey producers in Brazil.

However, although beekeeping is a consolidated activity in the Northeast, the region acts with a shortage of apiculture inputs, machinery and equipment (Vidal, 2020). There are great difficulties inherent in the Northeastern production sector, which limit the full development of the activity. The family beekeeper has a low level of professionalization, access to technology and technical assistance is difficult, there is a shortage of warehouses and honeyhouses properly equipped and certified and the infrastructure of laboratories for research and quality control of products is limited (Khan, Vidal, Lima, & Brainer, 2014).

Rio Grande do Norte, which occupies the sixth position in the ranking of the states producing organic honey in the Northeast region (IBGE, 2021), with 3% of production, acts with a single honey export company. This company buys the honey from intermediaries and from the beekeepers themselves through their representatives. Pereira, Cario and Souza (2005) report the difficulty in quantifying the actual volume of honey produced in the state, since a large number of producers commercialize the honey informally. The quantities reported by the official bodies differ significantly, which may interfere with the recognition of the real productive and economic potential of beekeeping activity in the State of Rio Grande do Norte.

Data from the IBGE (2021) show that Rio Grande do Norte has considerably lower honey production results than the states of Piauí (32%), Bahia (25%) and Ceará (15%), one of its neighbors. However, all the Northeast States, except Maranhão, have a climate and flora that are equally favorable to the development of apiculture, that is, they have the same technical potential for exploiting apiculture activity.

Aquino, Silva, Nunes, Costa and Albuquerque (2020) point out that 77.6% of the bee honey marketed by the Rio Grande do Sul establishments in 2017 originated from apiary hives belonging to the family production units, indicating that the apiary activity in the state is predominantly family-based. This scenario may lead to the conclusion that the difficulties of expanding honey production and generating income for beekeepers may be linked to managerial limitations, however, this study proposes another perspective of analysis.

Ramos (1989) when questioning the way the theory of organizations has been developed considers that such studies privilege only an enclave, that is, the market, which is guided by economic factors, in this, man is a maximizer of utility and must conform to instrumental values. The author considers that this occurs because in capitalist society the market has taken precedence over other social enclaves that exist in society. To demonstrate this approach Ramos (1989) proposes the paraeconomic paradigm, which evidences the existence of other social systems that he calls as isonomies, phenonomies and anomies. The production logic of beekeepers in family farming could be closer to isonomies than to market economies, since self-management forms prevail in such a system, where work has a gratifying dimension. This perspective is shared by Polanyi (2000) who recognizes that economic interactions are not the only ones and suggests that it is necessary to recognize other forms of relationship that are not exclusively economic.

Accordingly, the following question arises as a research problem: do the ways in which beekeepers from Rio Grande do Norte interact with the market have as their focus the dimension of competitiveness or are they guided by values that give priority to other socio-cultural dimensions that do not have profit and productivity as guiding factors for the action? In this way, the aim of the research is to characterize the forms of social interaction experienced by farmers in their relationship of production and marketing with the honey production chain.
2 THEORETICAL FRAME

In the context of market economics, a perspective of economic relations, imbued with social values, was analyzed from the theoretical conception of the philosopher social scientist Polanyi (2000). The work, originally published in 1944, highlights the subordination and alienation of the freedom of the individual to the regulation of society/state of a self-regulating market system. This work helps to understand the cyclical interactions that occur throughout the history of world economic society.

For Polanyi (2000), the capitalist economic system of "free market" is utopian and sacrifices the individual to a way of life essentially dominated by a self-regulating structure, instituted from predominantly mercantile values, which disregards the subjectivity of human life. Schneider and Escher (2011, p. 5) confirm that the social interaction established in a market economy results in the very "moral degeneration and sociocultural crisis of humanity".

For Schneider and Escher (2011, p. 6), the main propositions addressed by Polanyi "express the central importance of social regulation over the economy and the role of institutions as mediating bodies between socio-economic structures and individuals as social actors". Polanyi's thinking, although it has not materialized throughout history, remains timely and pertinent when analyzing the conflicts surrounding general development, or rural family farming in particular.

For Polanyi (2000), the term "development" has a subjective meaning, based on the values of society, and not an objective and absolute sense as in conventional capitalist economics. This understanding results from the meanings of economics advocated by Polanyi - the formal meaning and the substantive meaning. The "formal" meaning of economics derives from the logic of the relationship between means and ends, in the search for efficient alternatives to the application of scarce resources, aiming at their maximization, while the "substantive" meaning derives from the relationship of dependence between man and the environment - the social and the natural, whose purpose is to satisfy the need of the human being by means of exchange relations. These relations can take place in the form of historically established distribution and/or ownership, while situational movements concern the sociotechnical relationships of labor and production (Schneider & Escher, 2011).

Polanyi (1976) points out that substantive economics represents an instituted process of interaction between man and his natural and social environment, which results in a continuous supply of material means to satisfy the needs of human life. The economy is instituted by the mode of social organization, which, according to the author, is arranged in three different forms, which he calls "forms of integration": reciprocity, redistribution and exchange (mercantile), institutionalized in function of the culture now structured in society or group.

The principle of reciprocity governs relations between symmetric groups, such as those of kinship, friendship, associative involvement, or cooperation. The norms that guide the use of productive resources and established distributive forms are of behavioral origin and subjective, non-economic values (Schneider, 2016). Polanyi (2000) points out that reciprocity consists of a non-profit, non-profit exchange of wealth, where its greatest value lies in the prestige of the reciprocal act and the duality that unites the groups for mutual obligations. And it is in this sense, according to Polanyi (2000), that modern ethnographers criticize and question the support of the principle of reciprocity in a productive society, since there would be no economic motivation, remuneration or valuation of the work as motivation for the commitment to produce. In response, Polanyi (2000) reveals that such a principle is predominant in the family economy, although it may be present in relationships of larger groups (associations and cooperatives). ‘The principle of reciprocity helps to safeguard both production and family livelihood’ (Polanyi, 2000, p. 67).
The principle of redistribution is characterized by the movement of produced resources (goods and services), from collection, through storage, to effective redistribution. According to Schneider (2016), distribution takes place guided by rights and obligations controlled by some responsible authority, in the figure of a "chief" intermediary, supported by the standard of centrality. ‘These patterns of economic organization are intrinsically linked to the political organization of societies’ (Schneider, 2016, p. 118). Redistributive integration can be perceived by taxing taxes and taxes in different administrative instances of modern states. For Polanyi (2000), the traits that represent a purely economic organization are succumbed to the experiences experienced by individuals when instituting a social system. Redistribution can occur between groups geographically close or distant, in greater or lesser territory, and also with low or high variability of products, which results in the automatic presence of a division of labor capable of uniting the groups involved.

Polanyi (2000, p. 69) argues that the "duality" involving the principles of reciprocity and redistribution are capable of maintaining a self-organized society, in a simple, "encrusted" economic system of social relations, without bureaucracy and whose support rests on "symmetry and centrality".

And the principle of (mercantile) exchange reveals the relations of appropriation of goods or services, in which transactions are motivated by self-interest, that is, it is not an exchange of reciprocity - founded on behavioral and cultural values - but a market exchange established by the relationship of purchase and sale, as a form of distribution, which is established under the "mechanisms of prices and money, as an expression of purchasing power" (Schneider, 2016, p. 119). Compared to the principles of reciprocity and redistribution, the principle of market exchange presents a different form of integration between society and the market, based on an economy guided by essentially economic values, whose main objective is profit.

In this sense, Polanyi (2000) points out that the market, previously regulated by social relations, assumes the role of regulator of economic relations - self-regulating market, characterized by a predominantly mercantilist posture that was strengthened over time, from the nineteenth century onwards. In contrast, "the motivations that trigger the economic behavior of individuals only have meaning within the institutional environment and the social relations in which they are inserted" (Schneider & Escher, 2011).

Polanyi (2000) argues that these three forms of social integration can be present in combination in both small and large communities. The presence of one form of integration does not exclude the other, however, they can present themselves at different levels, depending on the organization, culture and the predominant desires of that society.

According to Vargas (2017, p. 5), "economic value and political power are inevitable and intertwined in a complex society." The fundamental challenge is to find out the extent and institutional structure of market transactions, redistribution and reciprocity, which are part of family farming. The three forms of social integration contribute to building a functioning society, stressing that ‘a market economy can only function in a market society’ (Polanyi, 2012, p. 77).

For Schneider (2016), in the family agriculture sector, combined forms of interaction with the market are present, and the degree of interaction varies according to the space where the exchange takes place and with the agents that participate in the movement, as well as according to the destination of what was produced (own use or sale). For Ploeg (1993), the degree of interaction of the family farmer with the market is associated with the way of organizing the productive unit and the family, which can vary a lot in each historical-cultural context and locality.
3 METHODOLOGICAL PROCEDURES

It is a qualitative research that used the interview technique with a semi-structured script. The research project was submitted to the Research Ethics Committee (CEP) in Rio Grande do Norte and approved for research development in December 2021, under Opinion No. 5,156,449. It was considered the use of the term of informed free consent and the conduct of the interviews guaranteeing the anonymity of the interviewees.

The research subjects are agents that make up part of the honey production chain of Rio Grande do Norte, mapped out in the municipalities of São Rafael, Apodi, Caraúbas, Alto do Rodrigues, Serra do Mel and Natal. They are categorized as family farmers/beekeepers, owners of honey houses, warehouse owners and representatives of certifying bodies. Owners of honey houses or warehouses include honey associations and cooperatives.

The access to the subjects took place from the cooperatives, followed by the associations, reaching the linked members. Naturally, as the subjects were interviewed, they suggested a next subject, which was evaluated according to the criteria of the research, presented in Figure 1, to participate in the interview. Access to the representatives of the regulatory bodies was from direct contact with the institution (via telephone), which informed the telephone and e-mail of the respective subjects, as well as the role they play.

<table>
<thead>
<tr>
<th>Category</th>
<th>Criterion</th>
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<tbody>
<tr>
<td>Producer/family beekeeper</td>
<td>Operate with honey houses and warehouses of Rio Grande do Norte</td>
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<tr>
<td>Owner of honey houses</td>
<td>Owned or registered/certified</td>
</tr>
<tr>
<td>Owner of warehouses</td>
<td>Owned or registered/certified</td>
</tr>
<tr>
<td>Representatives of the certifying body</td>
<td>Acting in Rio Grande do Norte (Idiarn e Mapa)</td>
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**Figure 1. Search Subjects**

**Source:** own development

The listing below, which totals ten (10) interviewees, names the subjects of the survey in order to ensure better understanding of the lines the term leadership refers to the subjects: owners of warehouses or honeyhouses: S1L - Subject 1 Leadership, S2L - Subject 2 Leadership, S3A - Subject 3 Beekeeper, S4R - Subject 4 Regulator, S5R - Subject 5 Regulator, S6A - Subject 6 Beekeeper, S7L - Subject 7 Leadership, S8L - Subject 8 Leadership, S9A - Subject 9 Beekeeper, S11L - Subject 10 Leadership.

The criterion for choosing the subjects was defined by accessibility and the number of subjects of each category considered the prospect of exhaustion. Even so, some questions were considered for defining the subjects: active relationship with the honey production chain (link with associations/cooperatives or secondary agents); experience in beekeeping; being located in at least three different localities. Variability in subject characteristics aims to address different perspectives of the research problem and provide a robust description of the phenomenon studied.

The data analysis technique used is interpretative analysis (Brazil, Caldas, Silva, & Bezerra, 2018). The **software NVivo® 11** was used to visualize the data, with the license acquired by the Federal Rural University of Semi-Arid (Ufersa). Accordingly, starting from the recordings of the interviews, the subjects' lines were transcribed in full, in text format (files in Microsoft Office Word) and then were inserted into the program NVivo® 11, for analysis. Subsequently, the interviews were imported and classified by subject, and the categories and subcategories, now called "nodes", were registered in the program. After processing the data in NVivo® 11, entries were extracted for creating the analysis figures of the theoretical categories and subcategories. The figures were modeled using the case association options and structured maps through the "nodes" linked to each theoretical dimension.
Figure 2 presents the relationships between dimension, category and subcategory of analysis.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Category</th>
<th>Subcategory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social integration</td>
<td>Reciprocity (symmetry/equality)</td>
<td>Communitarianism</td>
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<td></td>
<td></td>
<td>Cooperation</td>
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<td></td>
<td>Redistribution (centrality)</td>
<td>Solidarity</td>
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<td></td>
<td>Market exchanges (market standard)</td>
<td>Social cohesion</td>
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<td>Contracts</td>
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<td>Hierarchy</td>
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<td>Competition</td>
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<td></td>
<td></td>
<td>Individualism</td>
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<td></td>
<td></td>
<td>Free buying and selling</td>
</tr>
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<td></td>
<td></td>
<td>Private property</td>
</tr>
</tbody>
</table>

**Figure 2.** Search dimensions, categories, and subcategories  
*Source:* Polanyi (1976)

### 4 RESULTS AND DISCUSSIONS

The analysis was developed taking as a reference the approach proposed by Polanyi (1976), which proposes that the economy can be understood from the substantive perspective, that is, that which is guided by the interaction of man not only with the material means, but also with the natural and social environment in which he is involved. This way of understanding the economy the author called social integration, which materializes from three perspectives: reciprocity, redistribution and market exchange.

These possibilities for market integration are divided into subcategories of analysis, as shown in Figure 2. In this way, the analysis of empirical data will be guided by these subcategories.

**4.1 Market trade**

Market exchanges reveal relations of appropriation of goods or services, in which transactions are motivated by self-interest. The buying and selling relationship is a form of distribution whose price and money mechanisms are able to express the purchasing power of the individual or organization (Schneider, 2016). The subcategories of this perspective of integration with the market are: free buying and selling, competition, private property and individualism.

The subcategory private property will not be addressed because the subjects did not bring arguments to this effect, indicating that in the commercial relations of market exchanges there were no issues related to the rights and obligations of economic agents, which impacts the private property and means of production of beekeepers as regards the free contract between the parties of the economic relationship of purchase and sale of honey. Khan et al. (2014), points out that in beekeeping land ownership is not in fact an impediment to production.
4.1.1 Free sale and purchase

It is possible to perceive, in the speeches of the interviewed subjects, the presence of the relationship of purchase and sale in their day to day. Each individual seeks to adopt a sales strategy, depending on the opportunities of the market and the context in which it is inserted. The practice of free buying and selling is identified in the narrative of seven of the ten subjects (S1L, S2L, S3A, S5R, S6, S9A and S10L).

The interviewees identify different forms of insertion into the market, such as marketing at various points of sale, government purchases and the solidarity market: "From here it goes to Natal. We put to the Family Agriculture Trading Center, Canto do Sertanejo and other supermarkets in Natal, at least two more points in Natal that buy from us" (S1L).

This is how the beekeeper uses the methods used to sell honey production, as well as the diversification of customer sizes, showing a pattern of allocation of the final product in the market. Meanwhile, although beekeepers trade with formal markets, supportive markets are still included, such as the Family Farming Marketing Center. This report shows that beekeepers are related to different perspectives of market insertion.

The commercialization for conventional markets goes beyond the State of the RN, since, the interviewees report participating in fairs and marketing to other States:

[...] outside our State we have some small large markets, in the State of São Paulo, for example, we have a very good history of our honey, including a representative there, a person who works with wine who also works with our honey, but still very shy (S2L).

The interviewees highlight a common reality in family farming, which translates the free purchase and sale in an unrestricted way, i.e. the farmer is free to choose his way of interacting with the market, defining his product and the way his production is disposed of.

Analyzing the reports, it appears that the beekeepers understand the role of associations and cooperatives, but, at some moments, when material needs are imposed, they market with the mechanisms that produce faster returns, such as the traitor. According to Arruda, Botelho and Carvalho (2011), the middlemen are local intermediaries who buy the small productions to form larger lots and market with the processing companies. On the one hand, this weakens the marketing power of associations and cooperatives and pressures beekeepers to sell at prices imposed by the market, disregarding production costs, and on the other hand, the high bargaining power of these agents place them in the honey chain as important links in the marketing process.

The freedom of the concept of free sale and purchase does not transcend the legality of the commercial activity carried out in the honey production chain, and this is one of the factors that limit the free marketing of the product and lead the producer/beekeeper to seek other ways, including illegal ones, to place their demand on the market. The interviewees say that the lack of certification favors clandestine marketing processes, putting production at risk and weakening cooperative activity.

The absence of certification was identified by Arruda et al. (2011) as a threat to the honey chain of Rio Grande do Norte. Certification provides great benefits, however, requires planning, which involves obtaining documentation, and also costs, which the beekeeper cannot always afford (Miranda, Nóbrega, Santos, Santos, & Maracajá, 2013).

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6 These plants are called short marketing chains, they are organizations conceived two decades ago, by governments or civil organizations, and they constitute a strategy for organizing the agri-food system, guided by values that advocate fairer forms of consumption (Amaral, Santos, Souza, Penha, & Araújo, 2020).
Beekeepers also report the difficulty of stocking honey in order to obtain better conditions for processing, but the question of the value of the product interferes with associative processes and puts pressure on producers and direct negotiations with the market.

The data analyzed reveal that beekeepers trade with a variety of players, such as supermarkets, sales centers, middlemen, government bids and end consumers, not only locally, but also in other states. This diversity demonstrates the difficulty in organizational processes, often driven by the emergence of rapid financial return, to meet material needs, as well as the absence of certification, which limits market options to a fair price. These difficulties are not restricted to the State of Rio Grande do Norte. Arruda et al. (2011) identified similar factors in the State of Paraíba, such as the low level of organization of producers, incipient distribution channels, high level of informality and lack of health certification as limiting factors in the honey chain in that State.

4.1.2 Competition

The constituent elements of this subcategory were not present in any significant way in the subject's speech, manifesting themselves only in the statements of three of the ten interviewees. One of the factors highlighted is that what makes the trawler a strong competitor of cooperatives and associations is the practice of illegal activity, carried out by various producers in the region. The middleman is a means for these producers to sell their produce to the market. The subjects add to this reflection the idea that the intermediation of the middleman in sales transactions sacrifices the producers' profits and discourages the activity of the members of the association.

There are no reports of competition between beekeepers, and the focus of competition is on associations and cooperatives with middlemen, which, because they offer faster financial returns, attract beekeepers in financial difficulties. On the other hand, as previously stated and evidenced by Arruda et al. (2011), this type of marketing weakens the pricing policy and the very articulation of producers in more advantageous positions, such as certification and sale in larger lots.

4.1.3 Individualism

Studies by Lengler e Silva (2008) and Macohon, Lavarda and Roman (2019) have shown that individualistic actions are factors that hinder organizational processes in associations and cooperatives.

Individualism demarcates an orientation towards private interests and hinders actions that have as their focus social relations guided by sharing that fosters new sociabilities (Leandro, 2008). In the case of apiculture production, developed by small producers, collective action is fundamental to overcome the financial, organizational and organizational difficulties of this productive form.

In this sense, this subcategory deals with the characteristic of individualism in market relations, in the context of family agriculture. This aspect is also not recurrent in the interviewees' speeches, but specifically the leaders of the associations resent this type of action. They address the difficulties in bringing to the associations the producers, especially those who have a larger productive scale. The individualism of the beekeeper is a challenge for associations and cooperatives, because organizational logic does not always allow these organizations of a more communal nature to respond to the more emerging needs of their associates.
4.2 Reciprocity

This principle is intimately linked to the notion of symmetry, thus more present in groups of kinship, friendship and cooperative relationships, with values oriented by non-economic logic (Schneider, 2016). Polanyi (2000) also stresses its potential in the logic of family production, as is the case of beekeepers. The analysis of this principle was guided by the subcategories: cooperation, communitarianism, kinship and solidarity.

4.2.1 Cooperation

As a subcategory of reciprocity, we analyze cooperation in the strict sense of the word, which represents the relationship between individuals or organizations that have a common goal, and in the sense of cooperative activity, which aims at the balance between the economic and the social.

Lima (2006) drew up a retrospective of the concept relating it to collective actions, however, the author, when recovering Bourdieu's work, stresses that the concept does not assimilate to the idea of harmony, but is guided by common interests, therefore involves power relations and conflict, evidencing the polysemy of the term.

The cooperation is perceived in the subject's speech as sharing the use of resources so that all are benefited by the action: In the speeches of the interviewees, the proposition of Lima (2006) is identified, that the cooperation is driven by interests, such as exchanges, sometimes related to expenses, experiences, equipment and sale of surplus. The cooperative activity is identified and it is noted that although the cooperative organizes the production of the cooperatives, they are responsible for the marketing of the honey produced: It is noted that the question of trust in the cooperative is not a prerequisite, it is a process of permanent construction, however, it is clear that the question of price is still fundamental in this process.

Silva et al. (2004) suggest that trust is related to ensuring that the relationship will not exploit the partner's vulnerability, i.e. the terms established in the cooperative relationship must be satisfactory to the parties. In this sense, credibility and control are important parts of maintaining trust.

Evidence indicates that cooperation between beekeepers, associations and cooperatives is supported by issues related to the trust and interests of the parties. In some cases, it is organized as a function of the vulnerability of the beekeeper to market his product, and in others, it is not sustained when the interest for higher prices weakens the bonds of trust.

4.2.2 Communitarianism

Schmidt (2011), relying on Etzioni's definition (2007), argues that communitarianism is a concept that focuses on valuing the community, to the detriment of the state and the market, that is, it is up to the community to build good society. When analyzing a diversity of authors and theoretical positions, the authors define six categories to understand the breadth of the concept, which are: (a) community as ontological condition of the human being; (b) opposition to individualism and collectivism; (c) opposition to gigantism and state centralism; (d) primacy of personal values over market values; (e) subsidiarity, local power, cooperation, associativism and self-management; and (f) fraternity, equality and freedom.

In this sense, this subcategory focuses on the analysis of the social values that permeate the relationships of members of a community, who tend to unite in pursuit of collective purpose. The responses of six interviewed subjects reveal an action of a community characteristic identified in their narratives. The reports highlight situations in which communitarianism is
experienced, in which at least one of the parties recognizes the need of the other and acts in the intention to help or exchange relationship, which focuses on the community. Speeches also reveal difficulties faced by the leadership of associations and cooperatives of beekeepers communities, which struggle to keep community organizations engaged and active, such as, for example, little participation in decisions and actions.

The reports show that the sense of community is a permanent process of construction, because, on many occasions, individualism is difficult to overcome. The need to unite the group in the pursuit of its purposes is emphasized, but solidarity attitudes towards the development of beekeeping in the region are also described. In addition, they highlight the difficulty in dialoging with the State to materialize the organizational processes and how the contribution of the community is fundamental in this daily task of construction.

The interviewees report on the partnership signed with a company to market the honey produced by the local community beekeepers, who are part of the association and that this relationship facilitates the certification processes and the search for marketing.

It is observed in the lines that attitudes with community characteristics can be identified in small acts of reciprocity, embedded in the daily life of the community, and are capable of making a difference in the decisions of the members and leaders of the social organizations.

This subcategory highlights the difficulties in maintaining communitarianism in social and production relations. The elements cited by Schmidt (2011) that do not always favor communitarianism as the overcoming of individualism and market values, making it difficult to build actions oriented by associativism and fraternity.

4.2.3 Family relationship

The notion of family and kinship has been subject to critical analysis, given the socio-historical issues surrounding the concept (Fonseca, 2007; Sarti, 1992; Sarti, 2009). Even considering the complexity of the theme, this work will use the concept of family and kinship proposed by Wall, Cunha and Atalaia (2013). The authors designate as family a group of people who reside in the same place, sharing housing and resources, including households, whether or not they have blood ties to each other, so the family can include as relatives those who have affinity ties.

The family subcategory will deal with the family structure and affective bonds present in the organizational structures. It is identified, by the reports, that there is a predominance of this type of relationship between the beekeepers. The talks show that, as well as the family, in some cases and depending on the volume of production, the hired labor is involved in the process.

The reports also point out that the work is carried out in the family environment, but that, in times of need, there is a partnership with other beekeepers. This subcategory reveals that the predominance of work carried out takes on familiar or friendship contours.

4.2.4 Solidarity

According to Almeida (2007), the concept of solidarity seeks to overcome individualism and establishes a bond of mutual responsibility. The theme in question was not recurrent in the speech of the interviewees, but it can be identified in the speech of S10L, which narrates an act of solidarity between organizations: “It wasn’t money that we paid Conab, it paid with honey, giving. And Conab donated to the institutions, college, some other institution that we also gave” (S10L).
In this speech, it was found that the interviewees seek alternative forms of economic relationship guided by actions of reciprocity.

4.3 Redistribution

This principle relates to the way resources are moved, from the production process to marketing. It involves rules and hierarchies that define how groups relate in the different stages of the production and distribution process (Schneider, 2016). When redistribution focuses on the economic dimension to the detriment of social relations, one can reduce the possibilities of group interaction (Polanyi, 2000). For the purpose of analysis, this dimension will be observed from the following subcategories: social cohesion, contracts and rules. The hierarchy subcategory was not analyzed because it was not identified in the lines.

4.3.1 Social cohesion

Social cohesion is a concept that presents itself from different perspectives. Barros, Lima and Pedrosa (2019), supported by authors such as Cruz (2010), Ferrelli (2015) and Sampson, Raudenbush and Earls (1997), propose that the term refers to the organization of collective subjects, in communities organized in their formal and informal relationships, aiming at a fair relationship avoiding individualism, thus being a social support network. In this way, the social cohesion focused on equity and social well-being of the beekeepers community of the State of Rio Grande do Norte is analyzed in this context.

One of the interviewees presents the example of a sales strategy adopted by organized groups, whose success stimulated the formation of new groups in search of the common objective. There is, in the lines, an emphasis on the presence and importance of collective action. It should be noted that cohesion, in this case, aims to keep producers united in order to achieve better ways of marketing.

Social cohesion is capable of building bases of reciprocity that can strengthen value structures that extend to society, so as to promote the common good. In the interviewees' speeches, one can observe that this concept has already been understood and its purpose is to join forces and strengthen the group. The reports show that there is a concern that goes beyond the community, seeking to integrate other cooperatives in a way that benefits everyone.

However, cohesion is not something that can be established in a non-confrontational way. The resistance of some beekeepers to move in the same direction and at the same level of engagement of the leaders of the community movements (associations and cooperatives), which aim to achieve collective well-being through the development of the activity, is identified in the lines. Difficulties in aligning common interests are revealed.

It is therefore clear how difficult it is for the managers of cooperatives and associations to accept members in a more collective process. The parallel marketing structure, with faster results, even if with unfavorable economic advantages, negatively impacts social cohesion relationships based on the collective plan.

It is clear that although cooperatives and associations are suitable places for developing forms of social interaction based on cohesion, emerging needs and difficulties in acting collectively, they restrict the forms of cohesion.
4.3.2 Contracts

The subcategory contracts deals with the formalization of the relationship of purchase and sale between the parties, and in this context three lines of the same subject have been identified. He reports that there was, in the beginning, an action by the public authorities to stimulate beekeeping activity in the region, but this was not continued.

Even though they initially had the support of the city hall, the beekeepers were aware that they had to diversify the forms of distribution.

This subcategory reveals that beekeepers seek contracts in various institutions, however, the lack of continuity poses challenges to keep marketing and prices at more stable levels, so as to guarantee income for honey producers.

4.3.3 Rules

Rules are standard determinations that frame how to act in a given space or context. They may be formal, when derived from norms established by the government, and may be informal, when derived from the culture and customs of the groups involved.

In the case of beekeeping, there is a series of laws regulating the sector in order to maintain a product quality standard, as described in Figure 3:

<table>
<thead>
<tr>
<th>Regulatory Instruction</th>
<th>Returns TRUE on success or FALSE on failure.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law No. 1,283 of 18/12/1950</td>
<td>Provides for the industrial and health inspection of products of animal origin</td>
</tr>
<tr>
<td>Law No. 7,889 of 23/11/1989</td>
<td>Provides for health and industrial inspection of products of animal origin</td>
</tr>
<tr>
<td>Law No. 8,171 of 17/01/1991</td>
<td>Provides for agricultural policy</td>
</tr>
<tr>
<td>Normative Instruction Map No. 11, 20/10/2000</td>
<td>Technical Regulation of Identity and Quality of Honey</td>
</tr>
<tr>
<td>Decree No. 5,741, 30/03/2006</td>
<td>It regulates the functioning of the Unified System of Attention to Agricultural and Livestock Health (Suasa)</td>
</tr>
<tr>
<td>Normative Instruction Map No. 2, 12/02/2009</td>
<td>Defines the logo model to be inserted on the labeling of products of establishments registered with the Inspection Services that adhere to the Sisbi-Poa</td>
</tr>
<tr>
<td>Normative Instruction Map No. 16, 26/06/2015</td>
<td>It lays down, throughout the national territory, specific inspection and health inspection rules for products of animal origin, concerning small-scale agro-industries</td>
</tr>
<tr>
<td>Normative Instruction Map No. 5, 23/02/2017</td>
<td>Requirements for assessment of equivalence to Suasa for the physical structure, dependencies and equipment of small-scale agro-industrial establishment of products of animal origin</td>
</tr>
<tr>
<td>Normative Instruction Map No. 17, of 15/04/2020</td>
<td>Procedures for recognition of equivalence and accession to Sisbi-Poa, Suasa</td>
</tr>
<tr>
<td>Normative Instruction Map No. 29, 23/04/2020</td>
<td>Requirements for free trade in products of animal origin, inspected by public consortium of municipalities for three years until accession to Sisbi-Poa</td>
</tr>
</tbody>
</table>

Figure 3. Legislation governing the honey sector

Source: adapted from Ministry of Agriculture, Livestock and Supply (Map, 2022) and Khan et al. (2014)

The beekeeping chain has undergone regulatory and monitoring actions in the sector as a result of international pressure in order to make the export process feasible. According to Khan et al. (2014), in 2008 Brazilian honey suffered an export embargo that required a reformulation in the regulation of the sector, and a series of actions were implemented, such as the creation of:

a) Sectorial Chamber of the honey and other apiculture products production chain, linked to the Map, in 2006.
c) Safe Food Program, directly related to warehouses and honey houses for implementation of good practices, in 2008.
d) Honey Brazil Project and the preparation of the Strategic Sector Planning and Export of Apiculture, in 2011.

Certification, according to Khan et al. (2014), is regulated in the federal, state and municipal instances, respectively: (a) Federal Inspection Service (SIF), acting in interstate and international trade; (b) State Inspection Service (SIE), acting throughout the state; and (c) Municipal Inspection Service (SIM), acting limited to the Municipality.

The structuring and regulation of the sector, at the same time that it brings more security for the consumer, from the point of view of food safety, produces greater complexity for the beekeepers, who have to adapt their productive processes to such regulations that almost always demand financial investments.

In the formal sense, the rules subordinate the actions of actors in the honey production chain in all instances of beekeeping activity, be it federal, state or municipal. As it is a food, this activity is governed by judicious rules that involve everything from harvesting, through processing, to the marketing of the product. Narratives reveal the recent filling of a gap in the process of marketing honey at the state level, which guarantees to facilitate compliance with the rules of the activity, to the benefit of the small producer.

The interviewee, who represents the Map (the federal supervisory body), makes clear the need for compliance with the normative rules that frame the activity and shows that meeting the sector's legislations will allow the beekeeper to market his product more intensively, providing a more robust income.

The adaptation of production processes to standards goes beyond technical and economic aspects and involves cultural issues. On the other hand, the advance of legislation in the sector limits a lot the work of beekeepers, who do not always seek such compliance.

The establishment of operating rules is a challenge for beekeeping in the state, as it requires producers to adapt and involves financial and managerial costs.

4.4 Data analysis

Below, Figure 4 provides a summary of the research findings and figure 5 illustrates how subjects relate to the categories of social integration.
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Category</th>
<th>Subcategory</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social integration</td>
<td>Reciprocity</td>
<td>Communitarianism</td>
<td>Although associations and cooperatives seek to strengthen communitarianism, individualistic postures and the preponderance of market values hinder actions guided by associativism and fraternity.</td>
</tr>
<tr>
<td></td>
<td>Cooperation</td>
<td></td>
<td>Cooperation between beekeepers and beekeepers with associations and cooperatives is supported by trust and interest issues. In some cases, it organizes itself as a function of the vulnerability of the beekeeper to market his product, and, in others, it does not sustain itself when the interest for higher prices weakens the bonds of trust.</td>
</tr>
<tr>
<td></td>
<td>Relationship</td>
<td></td>
<td>The predominance of work carried out takes on familiar or friendly contours.</td>
</tr>
<tr>
<td></td>
<td>Solidarity</td>
<td></td>
<td>Alternative forms of economic relationship guided by reciprocal actions.</td>
</tr>
<tr>
<td></td>
<td>Redistribution</td>
<td>Social cohesion</td>
<td>Although cooperatives and associations are places that are conducive to developing forms of social interaction based on cohesion, emerging needs and difficulties in acting collectively restrict forms of cohesion.</td>
</tr>
<tr>
<td></td>
<td>Contracts</td>
<td></td>
<td>Beekeepers seek contracts at various institutions, however, the lack of continuity poses challenges to keep marketing and prices at more stable levels in order to guarantee income for honey producers.</td>
</tr>
<tr>
<td></td>
<td>Hierarchy</td>
<td></td>
<td>It wasn't identified.</td>
</tr>
<tr>
<td></td>
<td>Rules</td>
<td></td>
<td>The establishment of operating rules is a challenge for beekeeping in the state, as it requires producers to adapt and involves financial and managerial costs.</td>
</tr>
<tr>
<td>Market exchanges</td>
<td>Competition</td>
<td></td>
<td>There is no competition between beekeepers, the focus of competition is between associations and cooperatives with middlemen, which promote a type of marketing that weakens the price policy and the very articulation of producers in more advantageous positions, such as certification and sale in larger lots.</td>
</tr>
<tr>
<td></td>
<td>Individualism</td>
<td></td>
<td>The individualism of the beekeeper is a challenge for associations and cooperatives, because organizational logic does not always allow these organizations of a more communal nature to respond to the more emerging needs of their associates.</td>
</tr>
<tr>
<td></td>
<td>Free buying and selling</td>
<td></td>
<td>Beekeepers trade with a variety of actors, such as supermarkets, sales centers, middlemen, government bids and end consumers, not only locally, but also in other states. This diversity reveals the difficulty in organizational processes, centered on organizational and cooperative forms, often driven by the emergence of rapid financial return, to meet material needs, and also the absence of certification, which limits market options to a fair price.</td>
</tr>
<tr>
<td></td>
<td>Private property</td>
<td></td>
<td>No reports have been identified in this subcategory.</td>
</tr>
</tbody>
</table>

**Figure 4.** Summary of findings

**Source:** Self-drafting
Figure 5. Interaction of subjects with social integration

Source: Self-elaboration, from NVivo® 11 data output 1

Figure 5 depicts the interaction of the subjects with the social integration dimension and shows that all subjects pass through at least one of the categories of this dimension, either at a lower or higher level of interaction and according to their position in the honey production chain. According to Polanyi (2000), "combined" forms of social integration can occur and are associated with the organizational structure, culture, and social interests of the individual or group.

In this sense, the subjects S3A, S6A and S9A (beekeepers) show themselves entirely rooted in social integration, since they interact with the three categories that make it up (reciprocity, redistribution and market exchange). On the other hand, the subjects S1L, S2L, S7L, S8L and S10L (leadership of associations and cooperatives) and the subjects S4R and S5R (regulators), interact in a well distributed manner between the categories under analysis, with a greater predominance of the subjects of the leadership over the categories reciprocity and redistribution, given their organizational form and social interests. On the other hand, the category of redistribution stands out as regards the regulating bodies, seen from the perspective of the centrality and control of beekeeping activity.

5 FINAL CONSIDERATIONS

On the characterization of the forms of social interaction experienced by farmers in their relationship of production and marketing with the honey production chain, the talks reveal that the subjects relate to a diversity of forms of interaction, and that they permeate the three categories set out in the dimension of social integration, which are: reciprocity, redistribution and market exchanges. The relationship of reciprocity is part of the daily life of farmers and has its own characteristics of the organizational forms (cooperatives and associations) that settle in the honey production chain, but does not predominate over the individual interests of the farmer, who interacts intensely with the relations of market exchanges, aiming to supply their short term material needs to the detriment of the strengthening of exclusively social links. As regards redistribution, the farmer’s desire to maintain a purchase and sale relationship, via contracts,
with public authorities was observed in order to ensure fair prices and a stable marketing flow. However, the rules that guide the activity are still a factor that hinders and restricts this relationship.

On the central questioning of this research, the data reveals that the forms of social interaction with the market occur in a complex manner and depend on the immediate needs of the beekeeper, that is, he does not discard markets or types of relationship, since his central focus is their survival, which at many moments overlaps with the needs of collective structures. However, this does not place the beekeeper in a business-oriented position.

In order to understand the perspective that beekeepers develop in relation to the market, it is necessary to take a different look from the mainstream of the administration, in this sense the critical approach of organizational studies can offer clues to this interpretation of this scenario. Nogueira, Rodrigues and Aguiar (2021) when analyzing the role of business schools call attention to the need to train managers with a more complex understanding of the action of organizations on the planetary system and the pertinence of the critical approach on the analysis of this question.

As future studies suggest the development of a quantitative instrument that allows research to advance in a broader context and also to address the discussion of governance in the prism of the economy of transaction costs, in order to understand what guides the decisions of beekeepers to prioritize one type of social interaction over another.

REFERENCES


C. Brazil, & E. R. Moura (Orgs.). Qualitative studies: theoretical approaches and information gathering techniques (pp. 21-26). Sobral-CE: UVA.


