

AGRICULTURAL COOPERATIVE SYSTEM: MANAGEMENT CHALLENGES AND FEASIBLE SOLUTIONS

COOPERATIVISMO AGROINDUSTRIAL: DESAFIOS GERENCIAIS E POSSÍVEIS SOLUÇÕES

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ABSTRACT

Purpose/objective: To describe the managerial challenges agricultural cooperatives face and list the leading solutions that can be adopted to overcome such bottlenecks.

Design/methodology/approach: A systematic literature review was done, with a research protocol based on “Methodi Ordinatio” (Pagani et al., 2015) to select relevant papers. The study covered aspects of management and administration of agro-industrial cooperatives, social management, risk management in agribusiness, strategic management in agribusiness, new generation cooperatives, cooperative management, cooperative governance and challenges to the cooperative system.

Findings: Efficient conciliation of cooperatives’ social and economic agenda requires management professionalization. The cooperative must adopt a series of good management and governance practices and a strategic positioning that guarantees a competitive position, putting it on an equal footing with private firms. The central management tools identified are separation between control and ownership, strategic management, strategic alliances and partnerships, management branding, restricted membership, social management, self-financing and risk management, with numerous other management options available. The main obstacles are the conservative environment and the need to update cooperative doctrinal principles, impediments to modernizing Brazilian agricultural cooperatives’ management.

Originality/value: The paper identifies aspects of a conservative environment and the need to update the cooperative principles that hinder the modernization of the management in Brazilian agricultural cooperatives.

Keywords: cooperative management, strategic management in agribusiness, agricultural cooperatives, management’s professionalization.

RESUMO

Objetivo/finalidade: Descrever os desafios gerenciais enfrentados pelas cooperativas agroindustriais, bem como elencar as principais soluções que podem ser adotadas com vistas à superação de tais gargalos.

Desenho/metodologia/abordagem: Foi realizada uma revisão sistemática de literatura, com um protocolo de pesquisa baseado no “Methodi Ordinatio” (Pagani et al., 2015) para a seleção dos artigos relevantes. O estudo abrangeu os aspectos gestão e administração de cooperativas agroindustriais, gestão social, gestão de riscos no agronegócio, gestão estratégica no agronegócio, cooperativas da nova geração, gestão cooperativa, governança cooperativa e desafios ao cooperativismo.

Resultados: A conciliação eficiente da agenda social e econômica das cooperativas exige a profissionalização da gestão. A cooperativa deve adotar um conjunto de boas práticas de gestão e governança e um posicionamento estratégico que garanta uma posição competitiva, frente às empresas privadas. As ferramentas de gestão central identificadas são separação entre controle e propriedade, gestão estratégica, alianças e parcerias estratégicas, gestão de marcas, adesão restrita, gestão social, autofinanciamento e gestão de riscos, existindo inúmeras outras opções gerenciais disponíveis. Os principais obstáculos são o ambiente conservador e a necessidade de atualização dos princípios doutrinários do cooperativismo, impedimentos à modernização da gestão das cooperativas agropecuárias brasileiras.

Originalidade/valor: O trabalho identifica aspectos relacionados ao ambiente conservador e a necessidade de atualização dos princípios cooperativistas, que no conjunto representam entraves à modernização da gestão das cooperativas agrícolas brasileiras.

Palavras-chave: gestão cooperativa, gestão estratégica no agronegócio, cooperativismo agroindustrial, profissionalização da gestão.

1 INTRODUCTION

Agro-industrial cooperatives have great relevance for Brazilian agribusiness. Currently, it is estimated that 50% of the Gross Domestic Product (GDP) of the sector will, at some point, pass through the operations of cooperatives (OCB, 2019). They operate from the supply of productive inputs to the industrialization of numerous types of agricultural origin, playing a strategic coordinating role within the scope of production chains. To get an idea of the grandiosity of the numbers, the Cooperative Yearbook highlights that, currently, 1,613 agro-industrial cooperatives are operating in the country, which brings together just over 1 million cooperative members, directly employing almost 210 thousand people and owning an asset total close to 115 billion Brazilian Reals (OCB, 2019).

Operating in an environment of increasingly intense global competition, where uncertainties arising from natural factors and geopolitical instabilities have become striking, agro-industrial cooperatives are witnessing the challenges to their survival that have grown as fast as their numbers. Thus, cooperative agro-industrial enterprises need to constantly improve to continue to prosper within this scenario, without losing the essence of the principles of the cooperative system nor its social vocation.

The managerial dimension gains excellent relevance for the agro-industrial cooperative system in this context. Cooperatives increasingly need to develop their market orientation. This process involves adopting administrative and strategic practices that allow the maintenance of a competitive standard for private companies that compete. At the same time, cooperatives need to remain attractive to their members, providing them with good services and guaranteeing satisfactory returns, which makes management processes significantly more complex. In addition, as the cooperative membership expands, there is a need for constant improvement in internal governance and social management, with a view to managing conflicts resulting from the significant heterogeneity of stakeholders.



Thus, given this scenario, this paper aims to describe the managerial challenges agro-industrial cooperatives face and list the leading solutions that can be adopted to overcome such bottlenecks. As secondary objectives, the following are mentioned: a) to examine the concept of a cooperative, comparing it with the traditional company; and b) profile the New Generation Cooperatives (NGCs).

2 METHODOLOGY

To carry out this study, a systematic literature review was done. Through the filter of relevance, we sought to identify references of national and international origin that addressed issues related to the management of cooperative agro-industrial enterprises. As a criterion for selecting references, we adapted the methodology developed by Pagani et al. (2015), called "*Methodi Ordinatio*". This procedure consists of a sequence of nine steps (Table 1), allowing the identification and ranking, by relevance, of essential references within a given theme. Therefore, the methodology in question considers the metrics: impact factor, year of publication and number of citations.

Table 1 – Sequences of application of "*Methodi Ordinatio*".

Stage	Procedure
1) Establishing the intention of the research	As a research objective, the main objective of this study was adopted, as described in the introduction.
2) Exploratory preliminary research with keywords in databases	It consisted of choosing the keywords used as search terms, also serving as a check on their adherence to the research objective. Thus, the following words were tested: management and administration of agro-industrial cooperatives, social management, risk management in agribusiness, strategic management in agribusiness, new generation cooperatives, cooperative management, cooperative governance and challenges to cooperative system. Searches were performed in the leading academic content portals: CAPES Journal Portal, Web of Science, Scopus and Scientific Electronic Library Online (SciELO).
3) Definition and combination of keywords and databases	After verifying the adherence of the keywords, it was decided to keep the same terms used in the previous step, adding, however, variations for the plural and English and Spanish languages. Likewise, it was decided to concentrate the searches on the CAPES Journal Portal, considering that 95% of the references found in the other databases during the preliminary research were also present in the CAPES database. This also showed greater availability of complete references, greater agility and ease in searches. Due to classical references relevant to the themes addressed by this study, a temporal criterion was not adopted for the searches.
4) Final search in the databases	The last search led to the identification of 272 possible references.
5) Filtering procedures	The identified references were analyzed to eliminate duplicate results and out-of-context research, whose complete references are published in languages with complex translations, such as Chinese and Russian. After filtering, 124 possible references remained.
6) Identification of impact factor, year of publication and number of citations	As in Pagani et al. (2015), this step was developed simultaneously with number 08 since, when collecting the metrics, most texts were also found in full version. For this stage, the data collection sources were Google Scholar, the journal websites, Scimago Journal Rank (SJR) and Journal Citation Reports (JCR). Publications that do not have an impact factor, such as book chapters or papers from conference proceedings, received the value 0 (zero) for the impact factor.



7) Ranking the papers using the InOrdinatio	The methodology, developed initially by Pagani et al. (2015), aims to rank the selected publications in order of relevance and, therefore, uses the calculation of “InOrdinatio”. However, in the study developed here, the ranking was not intended to establish a cutoff point as a selection criterion for the analyzed papers to write the proposed literature review. Thus, the calculation performed was like that offered by Pagani et al. (2015). However, the relevance index (RI) was used, given by equation (1): $RI = (IF/1000) + \alpha[10 - (APe - APu)] + \sum Ci \quad (1)$ where <i>IF</i> is the impact factor, divided by 1000 (one thousand) to normalize it about the other criteria; α is the weight of the year of publication factor, which the researcher must assign, varying between 1 and 10, the higher the value, the more important the year of publication will be; <i>APe</i> is the year of the literature review; <i>APu</i> is the year of publication of a reference; and $\sum Ci$ is the sum of citations of a reference. To carry out this study, considering important classic references for the topics covered, $\alpha = 5$ was established. In this way, it was possible to standardize the weight of the criteria, year of publication and number of citations. On the other hand, Pagani et al. (2015) assert that when temporal filters longer than ten years are adopted, or as is the case in this study, temporal filters are not adopted, it is common for the RI to present negative values. Thus, aiming at the scope of the references that were finally selected, the cutoff point of $RI < -80$ was adopted here. Thus, applying equation (1) to the 124 references remaining after the filtering stage, there were 89 references considered relevant.
8) Finding the full papers	Most of this stage was developed along with stage 6. Only seven references were not found in the full version before, acquired after more detailed searches.
9) Final reading and systematic analysis of the papers	At this stage, the 86 references considered relevant were read, analyzed and registered, gathering the necessary conditions for the development of this study.

Source: Own elaboration based on Pagani *et al.* (2015) and research data.

As a result of applying equation (1), it was found that the most relevant reference among those selected has $RI = 2021.7$. It is a classic reference from the 1970s, which has 2186 citations. On the other hand, for the least relevant, a classic publication (1984), with only 50 citations, found $RI = -80$, this being at the limit of the cutoff point. The average RI considering all relevant references, was 92.6.

3 AGRO-INDUSTRIAL COOPERATIVES: CONCEPTS, PARTICULARITIES AND MANAGEMENT CHALLENGES

There are several ways to conceptualize cooperatives. This is a natural phenomenon, given the longevity and importance of the topic in social, economic and academic environments. Likewise, several ways of describing the particularities make them different from conventional companies. Amidst several authors’ theoretical and empirical efforts, two common elements are present in almost all concepts linked to cooperatives, whether agro-industrial or not: the association of people and cooperation (Delarmelina & Salles, 2016; ACI, 2020).

The International Cooperative Alliance (ICA, or ACI, in Portuguese) (ACI, 2020) defines a cooperative as: “an autonomous association of people, who come together voluntarily to meet common economic, social and cultural aspirations and needs, through a collectively owned and democratically managed enterprise”. It is noteworthy that this is an association of people and not capital. The cooperative members, who usually have the same interests and needs, unite to seek mutual help, thus overcoming unfavorable conditions and improving their economic and social situation. The Organization of Brazilian Cooperatives (OCB, 2017, p. 16), by defining the cooperative as “an autonomous society, composed of people who join together, voluntarily, to satisfy economic, social and cultural aspirations and needs, through a company owned and democratically managed”, ideologically corroborates with the precepts promoted by the ICA.



A cooperative is a non-profit organization formed by people whose purpose is to achieve common goals. Each member participates in the management and receives benefits proportional to their activities (Centner, 1988). Benato (2007, p. 61), in turn, follows the same line, defining a cooperative as “a company with special characteristics, a society of people, of a social character, without a vision of profits, constituted and self-managed by the members themselves, with equal rights”. In his definition, the author includes the concept of self-management and emphasizes non-profit orientation.

In general, cooperatives comprise networks of individuals who own or control a business, whose objective is to distribute benefits in proportion to their ownership or participation in operations (Altman, 2009). In the case of agro-industrial cooperatives, such help would be significantly linked to the increased bargaining power of associated producers, gains in scale, stabilization of supply conditions and market access (Ilha, 2006; Bialoskorski Neto, 2007; Ferreira, 2009).

Cooperatives comprise democratic organizations of people, self-managed and egalitarian, constituted to achieve specific goals common to their members, governed by the principles of cooperative ownership, cooperative management and cooperative sharing (Fleury, 1983; Rios, 2007; Scopinho, 2007; Delarmelina & Salles, 2016). The first principle attributes ownership of production goods to cooperative members, emphasizing the association of people and the organization’s social function (Valente, 2006).

Cooperative management indicates that the highest decision-making body is the cooperative members’ assembly; it is a decentralized management model, where each member has an equal right to one vote (Fairbairn, 1994). Finally, the cooperative division deals with the distribution of financial surplus resulting from the cooperative’s activity. Contrary to what happens in the traditional company, the distribution of this surplus is made according to the participation of each member in the operations (Centner, 1988). For this reason, in this case, terms such as profits or dividends are not used, but rather financial surpluses, as these are the result of the members’ work and not the exploitation of the work of others.

The cooperative can be understood as a network of relationships encompassing both cooperation and competition from an economic perspective. This is because their owners compete as individual producers but cooperate in specific stages of the production process (Pascuci et al., 2017). Thus, the intensity of cooperation will depend on the members’ level of commitment, given the principles that govern the cooperative and the balance between their individual and collective interests (Valente, 2006).

From the 1940s onwards, economists began to treat cooperatives under three distinct approaches: farm extension, independent firm and alliance (Cook et al., 2004). The first approach treats the cooperative as a form of vertical integration. The member will only be a part if he perceives that it is advantageous, from an economic point of view, to incorporate the activity performed by the cooperative in its production process. This approach evolved from the 1990s onwards, receiving contributions from the New Institutional Economics, and the cooperative came to be seen as a nexus of contracts (Cook et al., 2004). In other words, it would be defined by the contractual relationships developed with its members and other interested stakeholders.

The independent firm approach is based on the view that the well-being of members and society would be maximized if the cooperative also maximized distributed financial surpluses. Thus, the cooperative firm would be managed in a way oriented towards the common objective of maximizing the well-being of its owners (Delarmelina & Salles, 2016). Finally, the cooperative approach as an alliance suggests heterogeneity among the members. To meet the interests of different economic agents, alliances are made, with the forms of distribution of benefits being negotiated between the parties involved (Cook et al., 2004).



In Brazil, Law No. 5,764 of 1971, Art. 4, delimits the National Policy on Cooperatives and creates the legal standard for the constitution and performance of cooperative societies: “cooperatives are societies of persons, with their legal form and nature, of nature civil law, not subject to bankruptcy, incorporated to provide services to members”. Thus, roughly speaking, it can be said that a cooperative is the union of workers or professionals, who associate through their initiative, with freedom of entry for any person, with a view to production, marketing or provision of services (Crúzios, 2001).

Cooperatives have two main characteristics that differentiate them from conventional firms. First, the members are the owners of the organization. Thus, they will share the results obtained from their operations, whether positive or negative. Second, as the cooperative is managed according to democratic principles, its activities can maximize members’ interests (Levin, 1984). Cooperative ventures are different from traditional firms, as earnings are shared proportionally among their members (Centner, 1988).

In general, cooperative societies from different branches tend to have greater productivity than conventional firms since the members. Also, owners receive more significant economic incentives and have higher morale to devote time and effort to work (Carson, 1977; Santos & Rodríguez, 2005). Given that the cooperative member becomes responsible for the organization’s destiny and sees, in his success, also his success, he becomes more interested and willing to work than the employee of the traditional firm. Thus, cooperatives can become more efficient than conventional organizations (Delarmelina & Salles, 2016). However, in cooperative agro-industrial enterprises, the issue becomes somewhat more complex. In most cases, most of the members’ income comes from selling their products to the cooperative and not from any financial leftovers. Thus, the cooperative member can overlap their interests with the collective ones.

The distinctive characteristics of cooperatives about traditional companies offer their members the possibility to achieve their individual goals. A cooperative enterprise is a simple society governed by specific legislation, aiming not to obtain profits but to provide services to its partners (Fleury, 1983; Delarmelina & Salles, 2016).

The OCB (2017) tried to synthesize the differences between cooperatives, associations and commercial companies (Table 2).

Table 2 – Cooperatives vs. Commercial companies.

Differentiation parameters	Cooperatives	Commercial companies
Goal	For economic purposes, but not for profit	For-profit
Minimum number of members to constitute the enterprise	Twenty members ¹	One entrepreneur
Objective	Provide service to members	Profit
Right to vote in decisions	Each person is entitled to one vote	The more capital, the greater voting power
Constitution of share capital	It consists of shares	The shares of the owners form it
Share transferability	Are non-transferable to third parties	Can be transferred to third parties

Source: OCB (2017, p. 18).

According to Law No. 5,764/1971, the OCB is responsible for classifying and registering cooperatives in Brazilian territory. Before registering a new enterprise, detailed studies are carried out to typify it since several cooperatives exist correctly. Agroindustrial cooperatives can attend to all processes related to agribusiness: cultivation, harvesting, treatment, processing, industrialization and sale of products. They aim to bring together members who perform activities in common, providing them with scale and, consequently, greater bargaining power and access to broader markets (OCB, 2017).

¹ Law No. 12,690/2012 admits that worker cooperatives are made up of at least seven members.



There are also three types of cooperative society: singular, central or federation and confederation (OCB, 2017). As a rule, the singular cooperative comprises an enterprise for people, formed by at least twenty members whose objective is to provide services to members directly. Consisting of a minimum number of three cooperatives, the central cooperatives or federations are cooperatives for cooperatives. It aims to centralize services common to the affiliates, gaining greater scale and facilitating their use. To found a confederation; you need at least three centrals. It is a cooperative for federations, and its objectives are also basically linked to gains of scale and facilitating access to services (OCB, 2017).

From another point of view, it can be said that the differential of cooperatives stems from three main factors: primary objective, property rights and decision-making process (Katz & Boland, 2002). The primary aim of a cooperative venture is generally to benefit the business interests of its owners. When dealing with agro-industrial cooperatives, in general, such interests are linked to gains of scale, access to markets and increased bargaining power of members (Bialoskorski Neto, 1999; Gertler, 2001; Gimenes & Gimenes, 2007; Pinto et al., 2012; Deimling et al., 2015; Delarmelina & Sales, 2016).

It appears, therefore, that while in the traditional firm there are several business goals, including profit, cooperatives focus on meeting the interests of members, thus becoming an instrument for each member to achieve their own business goals. Therefore, when designing a cooperative agro-industrial enterprise focused on meeting the needs of internal customers, it is possible to neglect the planning of a business model, which can lead to severe management and competitiveness problems, considering that competition in the agro-industrial segment is particularly fierce.

The case of cooperatives is unique, as their most important customers are, at the same time, their owners. This duality tends to increase conflicts related to property rights, which, in turn, negatively interferes in the democratic decision-making process (Katz & Boland, 2002; Moreira et al., 2016). Cooperative members are consumers, suppliers, owners, and managers of these organizations simultaneously. Their behavior and the principles of a cooperative system interfere in the administration and effective decision-making (Moreira et al., 2016). Thus, the characteristics of cooperative organizations, derived from their associative nature and democratic decision-making process, make them different from traditional firms, mainly because they cause unique problems (Pelegri et al., 2015).

Likewise, conflicts resulting from issues related to property rights, which will be discussed below, make it difficult or impossible for agro-industrial cooperatives to raise funds (Gimenes & Gimenes, 2007). In general, members are reluctant to authorize increases in the retention of operational surpluses, which makes self-financing difficult (Gozer et al., 2006a). Thus, the possibility of gathering resources for investments and expansion of agro-industrial cooperative ventures is limited to obtaining new members, government assistance, or bank loans, which are usually extremely costly, given the inherent risks of agro-industrial cooperatives. In this context, the indebtedness levels in the sector become incredibly high, which, in many cases, can lead the cooperative to insolvency (Gimenes & Gimenes, 2007). Therefore, the design of self-financing mechanisms becomes vital for the growth, competitiveness and independence of agro-industrial cooperative enterprises (Gozer et al., 2006a; Gimenes & Gimenes, 2007; Barton et al., 2011; Royer, 2017).

It should also be considered that cooperatives differ from other types of society in that they are, at the same time, an association of people and a business (Pascuci et al., 2017). They need to invest their resources considering the principles of a cooperative system and seeking to balance social and economic goals (Moreira et al., 2016). Given their particularities, cooperatives represent the only economic sector whose primary objective is to balance economic and social dimensions (Rodrigues, 1997). The main practical differences between cooperative societies and traditional firms originate from this dual agenda.

At the same time, the need to attend to different audiences, especially cooperative members, who also have a dual role (clients and owners), is the source of operational singularities and specific management problems, very particular to cooperatives. These singularities, in turn, are the



origin of the main bottlenecks faced by currently cooperative enterprises. Agro-industrial cooperatives are also subject to the incidence of natural uncertainties, seasonality, perishability and variability particular to agribusiness, which make their management somewhat more complex.

Cooperative enterprises invest their resources, considering the principles of a cooperative system and, at the same time, trying to balance economic and social objectives (Pinho, 1966; Royer, 2014; Moreira et al., 2016). Maintaining a balance between social and economic perspectives, essential for preserving the cooperative essence, is probably the most significant challenge facing cooperatives in the current economy (Valente, 2006; Pascuci et al., 2017). Society needs to remain attractive to members, given that it exists for them. At the same time, it needs to be competitive against traditional organizations. It is precisely this ability to compete and generate surpluses that will be the source of attraction and retention of members.

To survive, cooperatives need to face the challenge of acting like private companies in the competitive environment and, simultaneously, preserving the best possible relationships with their members (Dornelas, 1998). In short, it can be said that cooperative enterprises need to face the challenge of being competitive without, however, abdicating their values and principles (Battaglia et al., 2015; Castilla-Polo et al., 2017). Given their strategic position in coordination, Agro-industrial cooperatives also play an essential role in promoting systemic competitiveness (Delarmelina & Sales, 2016; Iliopoulos et al., 2016).

Moreira et al. (2016) also mention the need for cooperatives to balance their members' economic, social, and political interests. The economic dimension involves the business growth of society and its members. Social expectations refer to the services and benefits expected by the partners. Political interests, in turn, usually create disputes for power and representation (Antonialli & Souki, 2005). The cooperative's inability to keep the different types of interests in balance can cause serious management problems, leading to questions about its ability to survive and prosper in a globalized and notoriously competitive environment.

In the case of agro-industrial cooperatives, it is believed that property rights, guaranteed to members, can impose a high level of conflict in the decision-making process (Katz & Bolland, 2002; Moreira et al., 2016). As a result of this inherent conflict, which is significantly associated with innovative decisions involving risks or significant changes, five fundamental problems of property rights result (Cook, 1995), constituting yet another challenge to be overcome:

- Free-rider problem: occurs because, traditionally, property rights are non-transferable, complex and insecure;
- Horizon problem: the partners, usually, when investing in the cooperative, have interests and short-term return objectives;
- Portfolio problem: high level of risk aversion perceived among cooperative members, which leads to low diversification of cooperative investments;
- Control problem: conflict of interest between cooperative members and professional managers hired; and
- Stakeholder conflict problem: an attempt by some groups to influence the decisions and strategies adopted by the cooperative.

Furthermore, the activities performed by agro-industrial cooperatives bear significantly more significant risks than those incurred by companies or cooperatives operating in other segments (Moreira et al., 2016). Such additional risks are associated with the influence of uncontrollable natural factors, seasonality, state interventions, international competition and commodity price volatility (Briggeman et al., 2013; Moreira et al., 2016). Uncertainties related to agribusiness activities are



growing and will always exist to a greater or lesser extent. Thus, agro-industrial cooperatives need to learn to live with risks and take advantage of the opportunities they create. Therefore, they need to develop a series of risk management options and strategies, representing the difference between success and failure for a cooperative agro-industrial enterprise (Lomott & Łyskawa, 2014).

There is no doubt about the complexity of the business model represented by agribusiness cooperatives. This is mainly due to the wide range of objectives and functions to be performed by an organization of this nature. Due to the need to satisfy the interests of quite heterogeneous audiences, including internally, the challenge of establishing governance structures capable of efficiently coordinating the relationships between multiple stakeholders becomes emerging (Miles et al., 1997; Birchal, 2014; Iliopoulos et al., 2016). Thus, forming and coordinating networks and supply chains becomes a key point for the survival of modern cooperative agro-industrial enterprises.

The differentiated legal regime, under which organizations in the cooperative segment operate, cannot, by itself, be considered a competitive differential (Oliveira, 2012). Given that cooperatives compete with market companies, these must consolidate efficient and effective management models, which provide genuine, sustained and lasting competitive advantages. Furthermore, only by achieving economic efficiency, the cooperative will be able to fulfill its primary function of generating and distributing income (Bialoskorski Neto, 2004).

Despite bringing together aspirations and aspirations of a social nature, the agro-industrial cooperative is focused on the economic universe and should therefore be managed as a company (Benato, 1992; Antonialli & Souki, 2005). In this way, management must seek to design and implement strategic and management models to find a competitive position vis-à-vis market companies (Miles et al., 1997). Such a position would be fundamentally important for the maintenance of the cooperative enterprise in the long term. This, by becoming attractive to the market, also becomes more interesting for the cooperative members.

Thus, currently, the professionalization of the management of agro-industrial cooperatives represents an emerging need (Zylbersztajn, 1994; Antonialli & Souki, 2005; Pelegrini et al., 2015; Moreira et al., 2016; Pascuci et al., 2017). Cook (1995) points out that this has been a reality in American and European organizations since the 1990s. The modern cooperative organization no longer serves only to offer work under fair conditions to its members. It must be efficient, effective and competitive (Pascuci et al., 2017). It so happens that, in Brazil, the adaptation of cooperatives, despite increasing market signals, is slow and complex (Bernardo-Rocha, 1999).

Despite the difficulties and managerial problems, one of the main obstacles to the modernization of Brazilian cooperatives lies in the fact that it is closely linked to the need to modernize some of the principles of the cooperative system. In this context, the principle of democratic management stands out, which tends to make decisions slower and subject to the influence of personal and political interests (Santos & Rodríguez, 2005). Thus, the cooperative may find it difficult to respond promptly to the demands imposed by the markets and have business results harmed by the imposition of personal goals on the global interests of the business. Likewise, the influence of the principle of free membership is noted, which, among other problems, can encourage opportunistic behavior on the part of members, negatively interfering in the stability of the cooperative's supply, as well as in its profit margins, reducing, consequently, the reinvestment capacity.

Pascuci et al. (2017) highlight that the conflict between the original principles of the cooperative system and the behavior requirements established by the markets, both on the part of the cooperative and on the part of the partners, has become evident. As they are based on socialist principles and ideals, Brazilian cooperatives have faced difficulties adapting to the new competitive patterns that govern the national economy (Antonialli & Souki, 2005).



4 EMERGING SOLUTIONS

The environment in which agro-industrial cooperatives operate has become increasingly turbulent. This instability requires faster and more accurate responses. In many cases, such answers arise through the adoption of hybrid management models, characterized by the combination of democratic management aspects with professionalized administration, called by some authors New Generation Cooperatives (NGC) (Harris et al., 1996; Waner, 1999; Coltrain et al., 2000; Katz & Boland, 2002; Carlberg et al., 2006).

The agro-industrial segment was a pioneer in converting common cooperatives to NGCs. In the 1990s, groups of North American farmers decided to add value to their production, making their enterprises strongly oriented towards the market. For this purpose, selection criteria for members were established, high levels of capital commitment and the delivery of commodities were required, in addition to facilitating access to leftovers and the transferability of quotas (Holland & King, 2004).

Most of the original NGCs reached large scales and continue to operate today. However, the number of enterprises that went bankrupt or were liquidated is also relevant, thus evidencing the inherent complexity of managing cooperatives, especially in the agro-industrial segment, where natural uncertainties add up, in addition to the high levels of specificity assets (Grashuis & Cook, 2018).

The emergence of NGCs represented organizational innovation that drove a new wave of investments in infrastructure and value-adding processes. The structure based on tradable quotas and contractual rights and duties, associated with the mandatory delivery of specific quantities of raw material, helped to overcome most of the fundamental problems of the cooperative organization: free rider, horizon, portfolio and control (Holland & King, 2004). Thus, the NGCs represented a starting point for the modernization of the agro-industrial cooperative system, especially about management practices.

In this sense, good cooperative governance practices also gain importance, defined by the OCB (2015, p.13) as “a model of strategic direction, based on cooperative values and principles, which establishes ethical practices to ensure the achievement of social and ensure the management of the cooperative sustainably in line with the interests of the members”. Good cooperative governance practices aim to create a professionalized and transparent management structure, in line with the principles of cooperative system and cooperative governance (Table 3), which can be monitored by inspection and compliance bodies (in compliance with legislation and regulations). Thus, good cooperative governance practices play an essential role in the managerial evolution of cooperatives, especially for the agro-industrial segment, where there is no evidence of regulatory bodies, as is the case in the financial and health sectors, for example.

Table 3 – Principles of cooperative governance.

Self-management	The cooperative members themselves, democratically and through bodies of legitimate representation and authority, assume responsibility for the direction of the cooperative and the rendering of management accounts. Governance agents are responsible for the consequences of their actions and omissions.
Justice sense	Treatment is given to all members with equality and equity in their relations with the cooperative and its other stakeholders.
Transparency	Voluntarily facilitate interested parties' access to information beyond what is determined by legal provisions to create a trustworthy and secure relationship environment.
Education	They invest in membership development to train leaders to bring in their knowledge of management and administration the essence of the cooperative identity, the basis of success and perpetuity of its doctrine.
Sustainability	Search for ethical management in internal and external relations to generate and maintain value to all interested parties, aiming at the cooperative's longevity, considering cultural, environmental, social and economic aspects.

Source: OCB (2015, p. 14).



It appears that, currently, there have been severe changes in the competitive environment, requiring the constant evolution of the administrative models adopted. Thus, from now on, some emerging practices and tools will be presented within the agro-industrial cooperative system, which can be used to improve the managerial performance of Brazilian agro-industrial cooperative enterprises, which, in general, according to the consulted literature, still operate in a context quite distant from the more developed countries.

4.1 Separation of Control and Ownership

In most Brazilian agro-industrial cooperatives there is no professional management (Machado Filho et al., 2004; Silva et al., 2011; Costa et al., 2012). Usually, administrative functions oversee cooperative members holding some political influence within the organization. It turns out that these, in general, do not have skills, knowledge and/or the necessary training to exercise such functions. As a result, inadequate management and governance models are adopted, limiting factors to most Brazilian agro-industrial cooperatives (Machado Filho et al., 2004; Maciel et al., 2018).

To get an idea of the situation, in their study, carried out with a sample of 77 agro-industrial cooperatives from the South and Southeast regions, which, in theory, should be more developed in terms of the cooperative system, Costa et al. (2012) found that, in only 4% of the firms surveyed, there is a separation between control and ownership that is fully institutionalized and implemented. In 48% of them, there is no evidence of this practice. Data from the Census of Goiás Cooperatives (OCB-GO, 2018), indicating that only 6% of agro-industrial cooperatives in Goiás carried out internal and external audits, are in line with the findings of Costa et al. (2012). On the other hand, analyzing the same document, it is possible to see that agro-industrial cooperatives with better management and governance systems have the highest net worth and revenue.

In this context, it can be inferred that most Brazilian agro-industrial enterprises do not present characteristics of separation between control and ownership (Machado Filho et al., 2004). Thus, the directors, also members of the cooperative, receive little incentive to align their interests with the cooperative's business objectives. The control of cooperative members (principals) over directors (agents) becomes fragile since property rights over any operational surpluses are diffuse and most of the members' income comes from the sale of their products with the cooperative (Zylbersztajn, 1994; Silva et al., 2011). This structure increases the weight of political and personal factors in the cooperative management process, which hinders the critical migration of the business focus from cooperative members to external customers.

Thus, the separation between control and ownership constitutes the first and most crucial step towards the professionalization of the management of an agro-industrial cooperative, being established to detach the owners from management decisions, promote the specialization of the roles of investors and managers and mitigate the problems of shirking, characterized by the transfer of responsibilities (Costa et al., 2012). This procedure makes it possible to reduce the effects of political interference in administrative processes, streamline decision-making, and minimize agency problems resulting from the conflict of interest between the cooperative manager and the cooperative client.

Furthermore, the professionalization of management, made possible by the separation between control and ownership, is an essential tool for the implementation of good practices of cooperative governance, based on transparency, social responsibility, innovation, development and sustainability of cooperative agro-industrial enterprises, resulting in better indicators economic-financial and improved services provided to the membership (OCB, 2015). Thus, it appears that the separation between control and ownership can take most agro-industrial cooperatives, which do not practice it yet, to a new level, not only from a business point of view but also from a social point of view.



However, it is noteworthy that the professionalization of management should not conflict with the principle of self-management. In this way, the cooperative members must remain responsible for professional executives' election or selection. Likewise, through representative mechanisms, they should oversee the actions and performance of executives and promote transparency. The General Assembly will continue to be the sovereign body of society.

4.2 Strategic management

The adoption of new management models by agro-industrial cooperatives aims to facilitate adaptation to the changes and challenges of globalized markets (Chaddad & Cook, 2004; Höhler & Kühl, 2014). In this context, agro-industrial strategic management emerges as a highly relevant tool for a better understanding of the internal and external environments. Thus, it makes it possible to identify opportunities and threats, adopt strategic directions, redesign organizational structures and the decision-making process, in addition to promoting the improvement of internal communications (Machado Filho et al., 2004).

By presenting a proposal for a methodology for the implementation of strategic management in agro-industrial cooperatives, Machado Filho et al. (2004) identified relevant strategic axes that should be prioritized, given the organizational structure of the cooperative agro-industrial enterprises: focus on strategic businesses; increased efficiency and optimization of margins; increasing the effectiveness of management models; professionalization and equation of the succession process; optimization of the decision-making process; solving the relationship with the cooperative members; optimization of administrative structures; strengthening the capacity to deal with the market; marketing professionalization; optimization of the capital structure; liability restructuring; and increased efficiency in capitalization and fundraising.

Changing the focus from cooperative members to customers, the agro-industrial cooperative assumes a strategic position oriented to the market, thus believing that the best way to achieve organizational goals is to satisfy customer' needs better and more efficiently (Kumar et al., 2011). Therefore, market orientation focuses on responding to changes in customer needs, which encourages the constant evolution of the cooperative's offer, as noted by Benos et al. (2016) in a study involving 114 Greek agro-industrial cooperatives. This evolution, in turn, allows the continuity of strategic management processes since, through them, interactions with the internal and external environments are constantly revised, thus enabling the permanent strategic alignment with the objectives of the cooperative and its members.

Strategic management can provide agribusiness cooperatives with countless benefits. However, its implementation can be complex because, in the case of conservative environments, it is expected that there is resistance to change and the performance of more complex management tools (Machado Filho et al., 2004).

4.3 Strategic Partnerships and Alliances

To remain competitive in globalized markets, agro-industrial cooperatives have constant needs for innovation in products and processes. However, this evolution requires high availability of financial resources that are not always available. Thus, the negotiation of partnerships and strategic alliances is an important alternative for the organizational development of cooperative agro-industrial enterprises, requiring, however, a smaller volume of resources (Silva et al., 2003; Ilha, 2006).

Strategic alliances can add value to products, including knowledge sharing and joint research and development actions (Gall & Schroder, 2006). On the other hand, it is possible to obtain economies of scale and efficiency gains (Ritossa & Bulgacov, 2009). Likewise, agro-industrial cooperatives can use transnational strategic partnerships and alliances, thus accessing global markets (Nielsen, 2000).



On the other hand, by acting in a systemic and coordinated manner in favor of common interests, agro-industrial cooperatives can gain critical competitive advantages (Ilha, 2006; Ritosa & Bulgacov, 2009). Furthermore, while enabling joint efforts and actions, partnerships and strategic alliances represent flexible association models, thus preserving the autonomy of the agro-industrial cooperatives involved (Hudson & Herndon, 2004).

In this context, it is essential to highlight the inter-cooperation that, constituting the sixth principle of the cooperative system, implies the realization of partnerships and strategic alliances between cooperatives. According to data from the Cooperative Yearbook (OCB, 2019), 55% of agro-industrial cooperatives practice inter-cooperation. However, most partnerships are practiced with cooperatives in other fields, especially health and finance. Therefore, there is ample space for the growth of inter-cooperation between agro-industrial cooperatives.

4.4 Brand management

Brand management comprises a set of processes to create, develop, and protect the brand identity (Urde, 1994). The brand, in turn, represents the image of a firm, consolidated in the minds of its stakeholders, in a long-term process, thus contributing to stability (Wong & Merrilees, 2005). In this context, the brand is a valuable intangible asset and an essential source of differentiation, constructing a sustainable market position (Beverland, 2007).

A considerable portion of agribusiness firms is slow regarding brand development. They prefer to seek protection from the government, increase efficiency gains and reduce buyers' bargaining power through collective supply arrangements (Beverland, 2005). Agro-industrial cooperatives, however, are beginning to recognize the importance of investing in the development of solid brands, capable of making them distinct from competitors, whether they are other cooperatives or not (Beverland, 2005; Edwards & Shultz, 2005).

Through brand management, cooperative rural ventures can develop innovative programs that should sustain long-term relationships with customers, increase returns to cooperative members, and provide consistent points of differentiation in the markets. In this way, agro-industrial cooperatives can free themselves from the commodity price cycle, building sustainable forms of competitive advantage (Beverland, 2007).

Recent studies have shown the benefits of brand management to agro-industrial cooperatives. This is the case of Jia and Huang (2011), who observed 157 Chinese cooperatives and found an increase in the number of supply contracts entered by cooperatives with strong brands. Likewise, Plentz et al. (2012) found the enhancement and improvement of conditions for market insertion of cassava flour, produced by an agro-industrial cooperative based in Santa Catarina, after the start of brand and packaging development activities. Drivas (2018), in turn, observed the growth of exports by agro-industrial cooperatives in 48 North American states, relating it to brand management. Finally, Grashuis (2018a), analyzing 707 cooperatives, also based in the United States of America, associated brand management with improvements in the financial performance of the observed firms.

Agro-industrial cooperatives with solid brands are better positioned to succeed in different environmental settings (Benos et al., 2016). Likewise, they have better conditions to sell their products in international markets (Drivas, 2018). Thus, it can be inferred that brand management constitutes an essential tool for promoting competitiveness with cooperative agro-industrial enterprises.



4.5 Restricted membership

Restricted membership may represent, for an agro-industrial cooperative, an essential step towards solving four of the five fundamental problems linked to property rights, defined by Cook (1995), as will be evidenced in this topic. Usually, the restriction of membership is made by requiring that candidates to cooperate are capable of contractually committing to deliver commodities in previously established quantity and quality, in addition to employing high amounts in equity capital for the acquisition of a share (Holland & King, 2004; Carlberg et al., 2006; Grashuis & Cook, 2018). On the other hand, the cooperative facilitates liquidity to the cooperative member through the transferability of acquired assets (Holland & King, 2004). That is, the cooperative member can, at any time, trade their shares with third parties.

Thus, the contractual obligations established to limit the opportunistic behavior of cooperative members, mitigating the inconvenience caused by the free-rider problem. Likewise, the horizon problem is minimized, as the associate can benefit from the appreciation of their investment over time. Finally, limited membership allows for the selection of genuinely committed members who buy into the idea and have the necessary means to make the initial investment (Crooks, 2004). In this way, the control and stakeholder conflict problems are practically eliminated.

Restricted membership is advantageous for the agro-industrial cooperative, as it guarantees a stable supply of raw materials through a mechanism detached from prices (Carlberg et al., 2006). Furthermore, once its needs are met, the cooperative rural enterprise can terminate memberships, opening them again only in case of increased demand or need for capitalization (Crooks, 2004).

However, there is excellent resistance to restricted membership, as this goes against one of the principles of the cooperative system, which is, precisely, free membership. Given the new market dynamics adaptation, this fact reinforces the need to review some cooperative principles. For example, in the United States, legal innovations, introduced by some states in 2001, allowed the creation of limited cooperative associations (LCA), which are organizational arrangements that combine the existence of proprietary members with investing members (Grashuis, 2018b).

4.6 Social management

It is believed that the larger and more market-oriented an agro-industrial cooperative becomes, the smaller, or less dense, its social capital will tend to be (Nilsson et al., 2012; Liang et al., 2015). Thus, employing practices and tools to reconcile economic-financial and political-social efficiency (Peixe & Prottil, 2007; Macedo et al., 2014). In this way, social management, characterized as the set of strategies and actions that aim to promote members' effective and efficient participation through democratic management and improved communication flows, becomes as important as business management (Amodeo, 2006).

In this context, the Organization of Membership (OM) emerges as an essential tool whose purpose is to promote the interface between business and social management systems. To this end, OM involves actions to articulate membership participation through improvements in internal and external communication processes, development of cooperative education programs and allocation of members in educational committees or production areas, and councils of producers (Macedo et al., 2014).

Social management is critical to balance agro-industrial cooperatives' economic and social dimensions. Through it, it is possible to carry, in addition to cohesion among members, the alignment of interests between them and their cooperative, thus promoting membership loyalty and the belief that active participation is the key to the success of the enterprise. As verified by Macedo et al. (2014), Cooperative agro-industrial when analyzing the case of a dairy cooperative headquartered in the state of Minas Gerais.



4.7 Self-funding

There is a consensus among scholars of agro-industrial cooperatives and enterprise managers in this sector that capitalization is one of the main bottlenecks to be overcome when it comes to the development of agro-industrial cooperative businesses (Machado Filho et al., 2004; Gozer et al., 2006b; Barton et al., 2011; Royer, 2017). In addition to their own capital needs, cooperatives also need to finance members in many cases, which poses additional liquidity problems (Bialoskorski Neto, 2002). In practice, when the cooperative withdraws funds from the box to finance the members, it no longer can invest these same resources in its growth.

Usually, the difficulties in raising capital are linked to the impossibility of opening and growing restrictions in obtaining financing lines (Machado Filho et al., 2004). Furthermore, given the incidence of uncertainties related to natural factors and instability in commodity prices, for cooperatives in the agro-industrial segment, in general, the costs of obtaining credit lines from third parties are naturally high (Gozer et al., 2006a; Barton et al., 2011). Thus, cooperative agro-industrial enterprises have a good part of their earnings eroded by financial costs when indebted.

In this context, self-financing is the ability to generate and conserve financial resources with a view to internal financing, gaining increasing importance for agro-industrial cooperatives (Gozer et al., 2006b). In practice, the ability to self-finance and result in lower capitalization costs provide autonomy to the business, making investment decisions more aligned with its nature and interests without incurring higher levels of indebtedness.

Given the acquisition of new shares and the consequent expansion of equity, obtaining new members is one of the primary sources of self-financing (Gozer et al., 2006b). However, the most important strategy adopted by agro-industrial cooperatives is the retention of all, or part, of operating surplus to form funds with specific purposes (Gozer et al., 2006b; Royer, 2017). This, however, usually faces resistance from the cooperative members, who, if they do not perceive the existence of medium and long-term advantages, will be reluctant to approve retention increases. On the other hand, a third way consists of the possibility for the agro-industrial cooperative to issue debt securities (debentures) in the market, thus acquiring third-party capital at low costs and extended terms (Gozer et al., 2006a). However, it is noteworthy that, in Brazil, this type of funding still depends on changes in legislation and that, to carry out such an operation, the cooperative needs to prove its economic solidity, availability of guarantees, in addition to the consistent generation of cash and profits to the overtime. In other words, this type of strategy is only available to the large and traditional players in the sector.

Gozer et al. (2006b) analyzed the cases of 20 agro-industrial cooperatives from Paraná, concluding that high self-financing rates are linked to better economic-financial results. However, despite the importance of self-financing for the development of cooperative agro-industrial enterprises, it is noteworthy that, to access any of its modalities successfully, the cooperative must initially show itself to be profitable and well managed (Gozer et al., 2006a; Gozer et al., 2006b; Barton et al., 2011; Royer, 2017). This is explained by the fact that all sources of self-financing are, in fact, the result of the business's ability to generate a surplus continuously.

4.8 Risk management

By joining a cooperative, the rural producer expects the risks inherent to their activity to be reduced, especially those related to marketing and price fluctuations (Katz & Boland, 2002; Delarmelina & Sales, 2016). What this same producer usually does not see is the fact that, by becoming a



member, he is taking on double risks, since, in addition to dealing with the uncertainties associated with his activity, he will also have to be subject to employer risks, arising from their affiliation to the cooperative (Zeuli, 1999). Thus, the existence of an excellent risk-return ratio becomes essential for a member to feel encouraged to continue being part of the cooperative.

Given this scenario, having tools to manage and mitigate risks and volatility becomes an indispensable condition for the consolidation and growth of agro-industrial cooperatives (Briggeman et al., 2013; Iliopoulos et al., 2016). To deal with the risks, there are two primary groups of strategies: the first one is composed of initiatives that aim at decreasing, such as diversifying production and increasing the base of cooperative members; the second consists of sharing or transfer actions, such as agricultural insurance, hedges and forward contracts (Moreira, 2009).

To minimize the risks associated with production, closing agricultural insurance should be sufficient (Machinski et al., 2016). However, its hiring faces serious difficulties, among them: the incidence of high costs, lack of public policies and high management complexity (Ozaki, 2006). Thus, mutual insurance emerges as an alternative. Groups with common interests come together and make resources available to form monetary funds to compensate for possible future losses (Machinski et al., 2016).

In turn, hedging operations and entering forward contracts are exciting to protect against price volatility (Briggeman et al., 2013). They allow agro-industrial cooperatives to buy inputs or sell commodities at pre-defined prices, drastically reducing uncertainty. However, its organizational complexity, especially hedging, means that large cooperatives mainly access such strategies (Moreira et al., 2016).

On the other hand, increasing the base of cooperative members constitutes a valuable strategy for small cooperative agro-industrial enterprises. However, the increase in the number of members must be accompanied by an equal evolution in management practices, or else there will be governance problems (Moreira et al., 2012). Diversification, in turn, can be costly and lead to loss of focus (Moreira et al., 2016). Likewise, it is an essential alternative for small cooperatives. Still, its implementation must be carefully planned, thus avoiding excessive indebtedness and guaranteeing that there will be a market for the new products.

5 CONCLUDING REMARKS

Brazilian agro-industrial cooperatives have undergone profound changes to adapt to emerging competition patterns, especially in cooperative management and governance. To survive and, above all, thrive in globalized and highly competitive markets, there are signs that cooperative agro-industrial enterprises need to become market-oriented, thus shifting the focus of the cooperative's business (internal customers) to customers externally. It is not about abandoning the social vocation but rather reaching social objectives through the results generated in the business dimension.

The systematic literature review indicated that this process necessarily involves the professionalization of management, characterized by the separation between control and ownership. The cooperative must adopt a series of good management and governance practices and a strategic positioning that guarantees a competitive position, putting it on an equal footing with private firms. This paper was concerned with identifying and describing some of the modern management tools, which have potential for growth in the environment and can help agro-industrial cooperatives to achieve their goals: separation between control and ownership, strategic management, strategic alliances and partnerships, management branding, restricted membership, social management, self-financing and risk management, with numerous other management options available.

The literature analyzed by this study pointed to the need to modernize the management of agro-industrial cooperatives, showing, however, that there are still difficulties for its implementation. The analysis also showed that such obstacles could be linked to two factors: the first would



be linked to conservatism and resistance to prevailing changes in the environment of most organizations; the second would be related to the need to modernize the legal basis of some of the doctrinal principles of the cooperative system, which, as they currently stand in Brazil, make some evolutions unfeasible, such as restricted membership, for example.

As limitation of this study, we mention the scarcity, within the adopted relevance criteria, of empirical research and case studies that could show, in a broad way, the effects of the application of the practices described here, specifically in agro-industrial cooperatives. Also, due to time and availability constraints, this study could not rely on primary data that could fill the mentioned gap. Thus, as a research agenda, it is suggested that case studies be carried out to analyze the effects of implementing modern management practices in agro-industrial cooperatives. Likewise, it is recommended the application of sample studies, with the collection, in the field, and treatment of primary data, aiming at the statistical verification of the issues raised by this paper.

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3. Development of theoretical propositions (theoretical work)	√	
4. Theoretical foundation / Literature review	√	√
5. Definition of methodological procedures	√	√
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7. Statistical analysis	√	
8. Analysis and interpretation of data	√	
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