CONTRACTUAL INCENTIVES AND EFFICIENCY: THE CASE OF THE NEW GENERATION COOPERATIVES[1]

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ABSTRACT

The cooperative system is a way of organizing production as well as coordinating agroindustrial systems. Presently, new economic premises from the opening of markets and the modernization of agriculture make companies adopt a new efficiency standard and resource allocation. For these cooperative enterprises to be able to settle into this new environment, efficiency in both the industrial processing plant and in each one of the associated productive units is necessary in this organization.
The objective of this essay is to discuss ways of achieving this efficiency, using also the theoretical precepts of the New Generations Cooperatives – NGCs. At the end, we conclude that there are advantages in having cooperatives in the coordination of strictly coordinated agroindustrial systems as well as that there is a need for institutional changes in Brazil so that NGCs can be settled.

Key words: cooperatives, microeconomy, transaction costs economy, property rights.

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1 Introduction

Changes in the trade environment cause a gradual and constant impact to the agroindustrial production organization for they expose each country's economy to the entrepreneurial and microeconomic efficiency of agroindustrial systems of other economies. Thus, inefficient agroindustrial systems tend towards transformation, with the objective of reaching that efficiency, or towards a gradual decrease in their activities.

On the other hand, the efficiency in agroindustrial systems come from price and productivity relations in production, land, capital and labor, technology, and factors traditionally analyzed by the neoclassical economics. Also, it comes from the minimization of transaction costs along agroindustrial systems and an efficient coordination or governance system.

Cooperative enterprises are interesting ways of coordinating the activity along agroindustrial systems. Therefore, given the same conditions, cooperatives will remain or settle in the market only if they are more efficient under the perspective of organization and coordination of the activities of the agroindustrial system.

Thus, an increase in the efficiency of agroindustrial processing plants, distribution, and each of the production plants associated to the cooperative is necessary. However, to be able to understand how to reach an optimal level of coordination of the process, it is also necessary to understand, under the perspective of property rights, the cooperative organization.

Fronzaglia and Bialoskorski (2000) analyze that, today, Brazilian agricultural cooperatives have been going through operational problems with direct consequences to the high level of debts, what originated special governmental programs in order to balance the liabilities structures of cooperatives, such as the RECOOP – Agricultural Production Cooperatives Revitalization Program.

This troublesome situation of agricultural cooperatives is also

extended to its members or cooperates, who, on the one hand, cannot find stimulation for participation and, on the other hand, do not have clear incentives to monitor the efficiency of their companies.

Agricultural cooperatives in other countries, such as the USA and Canada, have also been through similar problems. However, they have found a new contractual organization, permeated by a new division in property rights which has the objective of providing more motivation both to the economical participation of the associated rural producer and to the efficiency of the cooperated business (Fulton, 1997 and Cook, 1995).

The objective of this essay is to analyze and describe this new contractual architecture, with the help of the theoretical instruments of the New Institutional Economy, with an emphasis to the distribution of property rights in order to contribute with a possible similar organization in the agricultural cooperative system in Brazil. The initial hypothesis is that there are mistakes in the distribution of property rights in Brazilian cooperatives. These mistakes can be corrected in order to improve the cooperate's economical participation and, therefore, the efficiency of the cooperative enterprise.

2 Cooperative Enterprise and Coordination

Cooperatives are enterprises that provide farmers with bargain power in imperfect markets as well as enable the addition of value to agricultural commodities. Given the characteristics of risks in agriculture and the relative concentration in some agricultural markets, the cooperative is constituted as a form of production organization that is advantageous for the agricultural activity. In Brazil, there are approximately 5,102 cooperatives. Among them, 1,408 operate in agricultural activities, coming to approximately 30% of the soy, 27% of the coffee and a large share of the milk produced in our economy, among others (OCB, 1999).

When analyzing the efficiency in agroindustrial systems coordination, discussing the efficiency of the organizational architecture of agricultural cooperatives is also important. Cooperatives are private organizations which have their entrepreneurial architecture based on ideological and doctrinaire foundation. It is governed by a specific legislation and each member has the right to a single vote in the decisions of the society. The sharing of results – considered as surplus – is proportional to each member's activities in the cooperative and not to the capital, as in other companies. Thus, these organizations are not taxed according to their revenue, for there is not such thing in its conception. That is, effectively, there is no profit in cooperative societies.

This particular type of organization may lead these companies to maximize services to their members and not to the results of the operation, parting, in the neoclassical perspective, from the maximization point of its results and the economical optimum (Bialoskorski, 1997 e 1995). Thus, this organization operates with a general tendency to part from the economical optimum and, therefore, out of its efficiency spectrum. We must also consider that the property rights of the cooperative are diffuse, just as the situation in which the quota-parts cannot be negotiable in the market, the matter of egalitarian decision power, and the situation in which the right on the results is not transparent.

The cooperative is a way of enabling an efficient coordination of agroindustrial systems. The organization is a system which is compounded of rural producers and processing, services, and, many times, distribution structures. Thus, it is possible to coordinate industrial and production activities from the origin to distribution.

Williamson (1996) affirms that the firm can be analyzed as an architecture of contracts between agents, and the way these contractual relations are conducted will be a direct consequence of some attributes, such as the specificity of assets and transaction costs. The objective is the minimization of transaction costs by means of an efficient governance structure for the relation of contracts between agents.

Bialoskorski (1998) analyzes cooperatives as contractual organizations and sustains that they present a hybrid to hierarchical governance due to contractual relations among the farmers and the cooperative.

Strictly coordinated agroindustrial subsystems, according to Zylbersztajn and Farina (1999), are systems in which the relations among economic agents are completely coordinated by one of the agents and with a governance structure that is completely private and independent from the market. We may consider the case of a member and their cooperative or even the case of contractual relations between the single cooperative and the central one.

Thus, a cooperative system in which there is a fidelity relation between the cooperator and their cooperative, or still, a frequent and stable transaction between a cooperative and the central cooperative, can be understood as a strictly coordinated subsystem if there are conditions in which the transactions take place independently from the market. Therefore, the contractual relations and the distribution of property rights become important elements of analysis for they allow the establishment of a strict coordination of the process, as well as the promotion of a greater efficiency for the enterprise.

3 Cooperativism and Contractual Incentives

According to Williamson (1996), the Economy of Transaction Costs and of Agency Operations theories are two complementary perspectives which contribute to the understanding of the economy of organizations. The agent and principal theory investigates the economic transactions done by the actors, that is, a contract between the parts. One of them, referred to as principal, is in charge of hiring another part, referred to as agent, so that the latter will operate according to its interests.

On this fact are concentrated the origin of agency costs, or the contractual costs of the agent's commitment to the principal, monitoring,

or maintenance efforts of these contract relations. Contractual incentives may increase agents' efforts on attending the necessity of the principal. Bialoskorski (1998) considers that the members can be considered as the agents, whereas the cooperative organization itself is the principal, receiving and processing their production.

Adapting Milgrom and Roberts's (1992) model, Figure 1, we have that side benefits **b'**, for the principal, deriving from additional units of intensity of incentives in the agency operation relationship, decrease as the intensity of incentive β given by the principal (cooperative) to the agent (member), increases.

This curve of side benefits to principal **b'** (cooperative) is defined according to the side effect of the agent's efforts – farmer-member, **p'(e)** – minus side costs for the producer resulting from extra efforts **c'** (e).
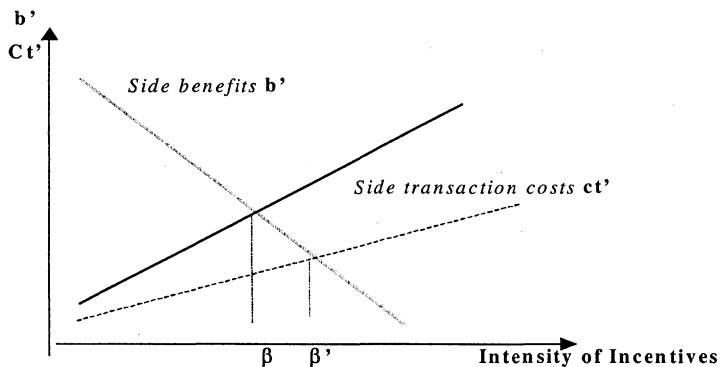

Figure 1- Intensity of incentives to the agent – member – according to side benefits obtained for the cooperative (Milgrom e Roberts, 1992).

Once it is defined that the intensity of incentives will equal the side cost of the additional effort β = **c'(e)** at the agent's (member's) highest effort spot, we have that:

$$p'(e) - \beta = b'$$

Given that the side transaction cost **ct'** for the cooperative must vary directly proportionally to the incentive intensity variation, we have that side benefits will be equal to the side transaction costs **b' = ct'**, and the incentive will be:

$$\beta = p'(e) - ct'$$

The term on the right shows the probability for this project to be considered good by a member who decides to obtain their benefits without paying for their costs in a relationship of contractual opportunism. This mathematical expectation of the benefits to be obtained is added to the probability of the project to be considered uninteresting by another member, multiplied by zero, once this enterprise is not intended in the collective organization. Solving this model for **P**, the following expression is obtained:

$$P < (B-C) / (B-C/2)$$

When the model is considered for two agents, and **C = B/2**, we have **P < 2/3**. This means that the probability for the project to be good has be less than 66.6% so that opportunism by one of the members can be avoided. If costs decrease, the probability for a project to be considered good increases. Another interpretation is that, as the number of members in the coalition increases, the percentage for the project to be considered good decreases.

Thus, if a project in a cooperative is very good, it will stimulate, according to the initial number of agents who form the coalition of interests, contractual opportunism by other involved agents. It is as if they were sure that the project would work out regardless of the situation and this can stimulate opportunistic or hold-up behavior towards the group. This way, the distribution of property rights in cooperatives must be analyzed so that the stability of contracts and economical efficiency

can be discussed.

4 Cooperativism and Property Rights

Fulton (1995) quotes Barzel's definition of property rights, which are understood as the right or power to consume, profit from, or even alienate assets. That is, the property rights of a corporation are those whose benefits that come from this organization can be used in order to obtain, at the end of the productive process, the clear appropriation of the balance – results – of this operation and, at last, to trade this right in the market, converting the asset into monetary units.

Cooperative enterprises take place when the coalition of a certain group of economical agents with the same objectives take place. Thus, the participation in the cooperative and the quotas subscription generate the right to the use of the services performed by the company. However, as the cooperative is a common property of the group and there is not a clear division between property and control, this enterprise is induced to a situation in which this right is diffuse for the group that does not participate directly in the control and management of the enterprise.

This particular situation can generate opportunist actions by the members in two different ways: the first, by favoring a determined group participating the coalition; and the second, making those who had their rights expropriated try other ways of trading instead of their cooperatives.

As to the rights on the residues of the operation – results or surplus –, in the cooperative, they are proportional to the activities of each member with its organization; that is, it is a pro-rata of the operations. It is doctrinally or lawfully defined as a right to the surplus operations of the cooperative, if approved in a general assembly, and it happens only after the separation of resources for the indivisible funds, such as technical and educational support, contingencies and investments, if any.

The fact is that, due to the anticipation of better prices to producers, or even to the high operational costs, it is very rare for Brazilian

cooperatives to be left with surplus. Therefore, there is not a perceptible strategy in cooperatives towards the generation of surplus for posterior distribution (Fronzaglia e Bialoskorski, 2000).

Thus, in most Brazilian cooperatives, there is hardly any residue for distribution after the accounting, making the right to the surplus of operations diffuse and hard for the member to control and monitor.

We must also consider that the quota-shares in a cooperative are not negotiable, by determination of Law 5764[3], so, in practice, the right to alienate assets belonging to the member does not exist and neither does the transformation of this right into monetary units. Thus, the application of capital resources in the cooperative is not a value reserve for the member, although he/she can regain his/her capital corrected by a limited interest rate if he/she renounces his/her participation in the enterprise.

As these characteristics of distribution of property rights actually take place in cooperative societies, we must question some situations such as: a) What reasons would take members to invest in the enterprise, adding capital to it, if there are no guarantees of return for the invested capital, that is, the possibility of alienating his/her right on the assets? b) What reasons would the member have to trade with the cooperative in plenty if the decision rights are egalitarian and residues rights are not guaranteed?

Thus, we can notice that there are no direct incentives for the cooperatives to be able to coordinate better processes in the extent of Agroindustrial Systems, to gather capital, to grow, and to achieve an economical efficiency situation. This generic situation, allied to a general picture of increase in competition in the market, leads cooperatives to a difficult situation in the coordination of agroindustrial systems.

Today, in Brazil, the establishment of a specific public policy – RECOOP (Agronomic Production Cooperatives Revitalization Program) – was necessary in order to develop a new development equation for

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[3] Law from 1971, which rules cooperative enterprises in Brazil.

cooperatives. Such problems occurred in other countries as well, originating cooperatives with a new relation in their property rights – the so-called New Generation Cooperatives (NGC).

5 New Generation Cooperatives

Harris, Stefanson and Fulton (1997) define the New Generation Cooperatives – NGCs – as an organizational form which maintains the doctrinal principles of cooperativism, but builds up a new organizational architecture, which modifies property rights and induce the cooperative organization to a higher level of economical efficiency.

These organizations are formed of selected workers, with the clear objective of establishing a processing plant for the aggregation of value to the agricultural commodities. The initial objective comes from the market and not from producers. Therefore, this organization is market-oriented, and not only producer-oriented, as common in processes of constitution of cooperatives. In NGCs constitution there is the compulsory capitalization of the new enterprise by the cooperate himself, proportionally to the production to be handled in the future. There may be financing from financial agents directly for the interested producers.

Thus, we have a participation quote which gives the member the right to trade with his/her cooperative a certain pre-determined amount of a product with a given pre-determined quality called "delivery right".

This way, the processing plant is conceived with a certain size and scale gains, keeping the strict efficiency in the processing. This is possible since the quantities have been previously stipulated. The rights of use of the cooperative processing plant are susceptible to transference. Thus, there is the guarantee that the investments applied are a value reserve to rural producers. That is, it will be possible to trade delivery rights – or parts of it - in the cooperative.

The immediate the members' payment for the receipt of the agricultural commodity is done in accordance to market prices, without

overestimation, and in some cases, under this value, being only enough to pay production costs. The right over surplus is done in a clear way by fast and immediately distributing results obtained at the end of the trading period, complementing the price received beforehand, and not only at the end of the accounting period.

We must consider that cooperatives may traditionally do the pro-rata sharing of results of a certain operation and/or agricultural cropping. In NGCs, this occurs slightly differently. First, as modeled in the next section, prices that are paid to rural producers for the agricultural commodities are lower than market prices. This guarantees the results from the trade of agroprocessed products. Second, due to this strategy, the prices ex-post fluctuation risk is not the cooperative's but the producer's, who will only receive a pro-rata share of the differential value. Third, the distribution of these values happens more frequently and can be every fortnight, monthly or even weekly, according to the kind of product.

Cook (1995) define these new cooperatives as organizations which are characterized for allowing the transfer of quota shares of participation and delivery in the cooperative, offering an appreciation and aggregation of value to these quota shares, having a defined relationship association, contracts with stipulated quantities and qualities, and requiring initial capital for investing in the cooperative enterprise.

The processing plant is established on rigid criteria of returns evaluation and producers are led to obtain gains in productivity and quality due to interests in obtaining higher final gains in his/her enterprise. Investment is stimulated, since, during the production, this plant will present results which will add value to the quotas of participation in the cooperative, even causing possible future purchases pressures to be.

We can also observe that this kind of organization stimulates participation, capitalization, and quality control of the final product, having, in its organizational architecture, elements of stimulation which are necessary for the maintenance of competition and efficiency standards.

Therefore, there are clear contractual incentives for the cooperate and efficiency of the system in these organizations. The price of the product for the producer – **Pm** – will be compounded of a price that is lower than the market price plus an almost immediate after-trade surplus distribution amount – **Rp**.

Thus, if **Pm + Rp < P** – being **P,** the market price – the producer will be stimulated to intervene in the contractual relation with his/her cooperative organization. On the other hand, if **Pm + Rp > P**, the producer will be stimulated to maintain his/her contractual relation with the cooperative. Variable **Rp** is a contractual incentive that maintains the same relations of b in the previous model, and is a factor that will both stimulate the member's efforts towards the cooperative – in terms of production and quality – and allow the monitoring of the activities of the cooperative. If **Rp** is low, the cooperate will be stimulated to try and identify the reason for this performance in his/her cooperative.

Otherwise, there is the right to deliver a given amount of the production in the cooperative – delivery rights – that can be traded in the market. Thus there may be a situation in which, due to the good performance of the cooperative businesses, producers obtain better revenues. Thus, there may be a consequent higher number of non-member producers willing to handle their production to the cooperative, being interested in having this delivery rights. There is an increase in the market value of the delivery right. This process is a contractual incentive to the keeping of contractual and management relations.

We would like to point out that the NGC is a good enterprise that is well focused on defined business areas. This way, there may be the establishment of other new cooperative organizations, and the interconnection among them through cooperative networks. Fulton (1997) refers to these networks as advantageous forms of coordinating cooperatives in the USA. We can understand that there will be a coordination of Agroindustrial Systems – SAGs – among strictly coordinated cooperatives, increasing the efficiency of the whole

production process with probable lower transactions and contracts costs.
This characteristic of strict coordination is also reinforced, once the established contracts foresee, not only delivery fidelity of the agricultural product in a given amount, but also a certain quality standard. The non-observance of this contract will imply in sanctions by the organization, as well as contractual restrictions.

In these conditions, we have, in the same context, economical efficiency in terms of scale and size, and coordination efficiency through a governance structure that minimizes transaction costs. Hence, existing conditions are given to a organizational structure which will be able to compete in extremely demanding markets.

6 Final Considerations

This essay discusses and introduces an analysis of the cooperative enterprise as to property rights, and analyzes a cooperativism trend called New Generation Cooperatives –NGCs.

We can discuss that, under the same conditions, cooperatives may present a better economical development, once better conditions of strict coordination of the agroindustrial system are presented. But, this will only occur if property rights are equalized within the organization.

Therefore, there is a need to provide cooperative societies with a new equalization of property rights. Thus, entrepreneurial initiatives must consider an institutional change that is able to increase the cooperative's efficiency and prepare it to compete in a more demanding economical environment.

We must also improve contractual incentives β in order to stimulate efforts by the members – agents – in the transactions with their cooperative – principal – with the objective of increasing the efficiency of the organization. That is possible through price incentives Rp and the real appreciation of delivery rights in the cooperative as a "prize" for the cooperate's efforts, as in the case of agricultural cooperatives, with better

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levels of quality and production of the members.

In NGCs, each associated producer have the right to transfer all or parts of his delivery rights to other producers, who would, then, have the right to trade with the cooperative. Consequently, there is a market aggregating value to these quotas.

So, Brazilian Law 5764 – which establishes rules for cooperative corporations – must be changed, so that there can be negotiations conditions of the property rights on the assets of the cooperative, quota-shares, in the market, and the distribution of surplus (inclusively to third parties), having changes in the demands regarding non-dividable funds. This way, NGCs can also be instituted in Brazil.

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