

Socioeconomic inclusion of family farmers from Cooperative of Producers of the Branch of Banco, Amazonas

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Abstract: Despite being a state with a large number of rural producers, in Amazonas, it is common that they do not have institutional assistance in the development of their activities. Faced with this scenario, agricultural cooperatives present themselves as an opportunity to mediate socioeconomic inclusion strategies for rural communities and their farmers. The objective of this work was to promote actions to strengthen the Mixed Cooperative of the Bank's Branch Producers - COOMPRAB, located in the municipality of Rio Preto da Eva / Amazonas. A training course, a workshop, purchase tests were carried out at the AGROUFAM Fair and participant observation. The results were systematized and the discussion took place based on a bibliographic review. The actions carried out brought technical knowledge, which is considerably scarce in rural communities in Amazonas, so that farmers could use in their work routine alternatives to improve their production, to improve the use of available resources and add value to the products sold. In addition, the actions allowed the board and the members to observe the current scenario of the cooperative's operation, creating a panorama from which they could identify the points that need to be improved in order to achieve full functioning and the collective objectives, providing better quality of service. Life to families in the community.

Keywords: Family farming, Cooperatives, Commercialization, Food products.

1. Introduction

Cooperativism is a process of mutual cooperation, whereby men and women add forces of production and consumption capacity, in order to develop economically and socially, raising their quality of life. "It is the instrument of organization of society, which simultaneously serves a system of social and economic organization, whose objective is not the set of people, but the individual through the set of people" (Gonçalves, 2011, p.01).

In the State of Amazonas, cooperativism is a feasible possibility in times of crisis, as it seeks to serve all categories, very similar to the solidarity economy which "is a concept elaborated within the experiences of union and cooperation of workers who, among themselves, they decide the direction given to this rationalization of work, building an ethos based on collective work" (NASCI-MENTO, 2016, p. 51).

In Amazonas there are 120 cooperatives, present in 39 municipalities, representing 40 thousand people, according to the Organization of Cooperatives Brazil in the State of Amazonas (OCB-AM, 2015). Of the existing cooperatives in the state, 39 are agricultural and livestock production is predominantly family farming and extractivism. This production has been on a growth trajectory due to government programs and consumption in the local market.

However, agricultural production in Amazonas is unable to sufficiently meet the consumption demand of the more than two million inhabitants and ends up importing products from other states. This work starts from the hypothesis that the incentive to cooperativism and the strengthening of cooperatives can contribute to the increase in production and to meet this demand.

The work proposed to carry out actions with the Bank Branch Producers Cooperative - COM-PRAB, located in the municipality of Rio Preto da Eva, State of Amazonas, contributing to the knowledge of opportunities that can be used to add value to the products sold by the cooperative members. According to Reis (2018), adding value means the transformation that agricultural production receives with a view to greater profitability and the construction of new markets. This added

value to family farming products can be provided by cooperativism, because when society is organized, cooperation starts to generate greater benefits than individual competition (Lago, 2009).

Actions related to cooperatives in Amazonas are also important for the creation of a cooperative culture in the State, since most cooperatives are weakened and have a short lifespan, presenting difficulties related mainly to poor management and low participation, either due to the distrust of the cooperatives members in relation to the benefits of cooperativism, or due to limited knowledge and low mobilization around cooperative principles. Thus, for cooperatives to reach the stage of promoting economic and social development, the low participation and mobilization of cooperative members is an obstacle that needs to be overcome (Albino and Almeida, 2015).

Through the proposed actions, it was possible to identify bottlenecks that limit the competitiveness of cooperatives in Amazonas, pointing out strategies for economic growth and reversing the gains obtained in improving the quality of life of cooperative members. In addition, the actions contributed to the mobilization of cooperative members around collective planning and actions, building initiative strategies and organizations' autonomy. In this context, the objective of this article was to promote actions to strengthen the Mixed Cooperative of Producers of Ramal do Banco (COOMPRAB), located in the municipality of Rio Preto da Eva, Amazonas. A training course, a workshop, purchase tests at the AGROUFAM Fair and participant observation were carried out.

2. Methodology

The activities were carried out between April 2019 and March 2020 with family farmers of the Mixed Cooperative of Producers of the Branch of Banco e Água Branca - COOMPRAB. COOMPRAB was created in 2010, has 76 members and serves families at the Bank Branch, located in the municipality of Rio Preto da Eva, State of Amazonas.

Access to the Bank's Branch can be made by land via the AM 090 highway, which connects Manaus to the municipality of Itacoatiara. It is located in the vicinity of KM 126 and is all paved, which facilitates access and the flow of production. The trip from Manaus to the community takes approximately 2 hours, under normal traffic conditions.

The actions in the cooperative had the participation of about 20 members and were carried out through a training course, a workshop, product consumption tests at the AGROUFAM fair and participant observation (Valladares, 2007). The results were systematized and the discussion took place based on a bibliographic review (Tomasi and Medeiros, 2008).

The course lasted 16 hours and covered in a theoretical and practical way the following topics: fruit and vegetable processing (focusing on macaxeira) and product improvement (focusing on coconut oil and banana jam). During the course, participants were also able to exchange experiences, adopting a dialogical approach to learning.

During the workshop, a Participative Rapid Diagnosis - DRP (Verdejo, 2006) was carried out which, through the use of a matrix, enabled the evaluation of the members in relation to the current situation of the cooperative regarding compliance with the principles of cooperativism. The SWOT matrix was also built, which allowed the collective verification of the cooperative's strengths and weaknesses, both internally and externally (Dias and Ferreira, 2009).

In order to evaluate the sales possibilities based on the suggestions for improvements presented to the members, a purchase test was carried out with consumers at the AGROUFAM fair. AGROUFAM is a family production fair, with the participation of farmers and artisans, held monthly and takes place on the premises of the Faculty of Agricultural Sciences of the Federal University of Amazonas, in the city of Manaus / AM.

The bibliographic review addressed the themes: Cooperativism, family farming, institutional market, numbers related to agricultural cooperativism in Amazonas, harvesting, processing of fruits and vegetables, heat treatments for conservation, packaging and storage of food. It was carried out based on the analysis of research available in journals and books from virtual and physical libraries.

3. Results and Discussion

Harnessing and adding value to local products

The use and addition of value to local products are not realities in the daily life of farmers at the Bank Branch. There are countless factors that can be obstacles and prevent the implementation of techniques, the main one being the lack of education and technical assistance to producers. The low level of technical training of the communities and agents of the agencies that should provide assistance are also some impeding conditions (Silva, 2014).

Initially, the course given during the course of this work addressed the fundamentals and concepts of fruit and vegetable processing. Obtaining minimally processed products involves some steps such as the selection of raw material, pre-washing, peeling, trimming, cutting, sanitizing, rinsing, centrifuging, packaging, storage and marketing. In addition to methods that guarantee a longer shelf life for these foods, such as heat treatments (Gomes et al, 2005).

Bananas (*Musa sp.*) and macaxeira (*Manihot sp.*) were taken as main products, as they are part of the daily production and sale of farmers at the Bank branch. Banana harvesting patterns have been demonstrated, which should be done ideally when the fruit is still about to reach ripeness, so that losses are avoided. According to Laiza (2013), the banana cannot be harvested ripe, as it is a fruit that has sensitivity to transport and, in addition, after ripe, it has a very short shelf life.

It was presented that the vegetables grown by the community must go through pre-cooling, so that there is a reduction in microbiological growth, making them suitable for consumption for a longer time. The objective of employing conservation techniques in the post-harvest is to reduce the metabolic activity of the fruits. Techniques such as pre-cooling and storage help to prolong the shelf life of the food, in addition to preserving sensory characteristics for a longer time (Alvarés, 2006).

Another point addressed was the importance of fruit and vegetable packaging sold for added value. In Brazil, as defined by RDC n° 259 (2002), the information that must be contained on the labels of food packaging is mandatory: name of sale of the food, list of ingredients, liquid contents, identification of origin, batch identification, deadline of validity and instructions for the main use and preparation by the consumer, only when necessary.

For COOMPRAB products, as they are fruits, vegetables, some tubers and other vegetables, there is no need to include the method of preparation on the label. An alternative to adapt to the resources of small producers is to make adhesive labels, which can be attached to the packaging, since they do not have direct printing machinery on the packaging.

Packaging made of PVC material, polyethylene, polypropylene, polystyrene, polyvinyl chloride, high density and low density polyethylene, which can be used by COMPRAB farmers, was demonstrated. According to Luengo and Calbo (2009), special plastic films covered by hydrophilic molecules are ideal for packaging fruit and vegetables, as they are foods with a high water content. The use of these films would be ideal for the case of packaging with adhesive, as they would not cause damage to the information, making it possible for consumers to read it.

The stage of packaging food sold by small farmers is not adequate mainly due to the lack of resources. There is no machinery to carry out this operation and there is no use of packaging technologies such as the modified atmosphere in this process. To improve this very important issue that interferes with food conservation during transportation, storage and marketing, partnerships could be signed with packaging companies in the Manaus region, mediated by technical assistance agencies or directly by negotiation between COOMPRAB and these companies.

The needs regarding storage conditions were addressed during the course focusing on macaxeira. The ideal temperature should be 3°C so that all its sensory characteristics are preserved and that there is no enzymatic or microorganism degradation, avoiding oxidation and allowing the product to reach the markets and final consumers with the expected quality (Czyhrnciw and Jaffé, 1951).

During the performance of the actions in the community, it was observed that some local farmers are starting the production and sale of coconut oil. The oil is produced by hand and therefore there was an approach on possible ways to improve the product, according to the available resources. The coconut oil improvement course proposed, through a presentation of GMP (Good Manufacturing Practices), to promote discussions on the importance of implementing these throughout the entire production process, so that the final product has quality and safety guaranteed to the consumer.

A division was made in three modules that dealt with: food hygiene, hygiene of the manipulators and processing. The first and second modules dealt with the part of contaminants that pose risks to the health of consumers, which can cause FDs (Foodborne Diseases) caused by biological agents from unhygienized foods, or that are incorrectly sanitized and resulting from improper handling. In the third module, a processing was proposed from the post-harvest stage to the final product, in order to improve all the characteristics necessary for a good quality product.

One of the main problems in the production of artisanal coconut oil is the need for standardization, mainly in terms of color, stability in the face of changes in temperature and the occurrence of sedimentation of the material in the packaging. When compared to industrially processed products, artisanal oil from the community is at a disadvantage, especially in terms of appearance and

texture, as the coloring is not unified, some samples have transparent coloring, which is ideal, but others have a yellowish tone.

With regard to texture, the ideal is that the oil remains liquid during all stages from completion to the final consumer, however, in an air-conditioned environment it was observed that in a few minutes the coconut oil from COMPRAB starts to solidify, becoming a dense mass phase. According to OLIVEIRA et al (2017), complementary studies are needed that deal with thermal stability, as there is still a shortage of references in the literature for possible comparisons of this aspect.

In order for these problems to be minimized, a flow chart was elaborated that can be used by the farmers of the Bank Branch, as shown in Figure 1.

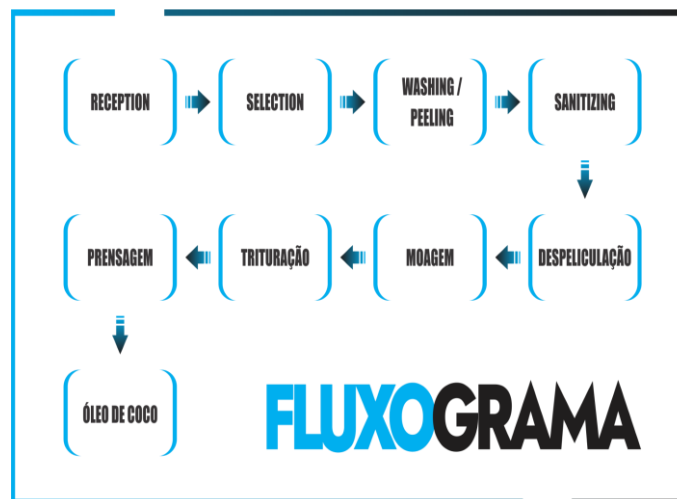


Figure 1: Flowchart presented to farmers to improve coconut oil; **Source:** Own elaboration (2019)

As can be seen in figure 1, the suggested steps for improving coconut oil are: receiving the raw material, selecting the best fruits, washing / sanitizing the coconut, which must be done with the use of products suitable so that microbial growth does not occur - in this case, neutral soaps, including liquids, can be used; the peel, so that only the pulp is obtained; grinding, to obtain the pulp granules; crushing, to reduce the size of the granules and make the press easier, and finally, the pressing, which results in the final product.

In addition to presenting these manufacturing steps to make coconut oil standardized, stable and improve its quality, in a secondary way the production of grated coconut and coconut milk was suggested, as a way to take advantage of all the raw material, generating less waste and still, allowing an income from new products for these farmers.

Another product that can also be better used in the Bank's Branch is the banana. During visits to the properties, whole bunches were observed on the soil that could be traded to obtain income for farmers. Therefore, the production of banana jam was presented as an idea for the best use of this product on the spot.

Due to the fact that the production of the candy occurs only from the pulp, the possibility of using the shells in the production of flour was presented, which can be used in the formulation of various products, such as cakes, special flavored breads, common and type cookies. The sale price of fresh bananas in the cooperative is R \$ 2.50 / Kg and after the presentation of the banana jam production, they started to manufacture and sell it for the price of R \$ 10.00 / Kg.

The banana peel flour that has been suggested has an average marketing price of R \$ 10.00 on virtual platforms and a factor that draws attention is that most of them originate in the southeastern region, which may indicate that northern production, mainly from Amazonas are able to offer to the local market, being a good opportunity for COOMPRAB.

To assess the possibilities of adding value to the banana and macaxeira produced by COOMPRAB members, the banana jam and minimally processed macaxeira were presented to consumers at the AGROUFAM fair. In the case of macaxeira, the consumer was asked to indicate by means of a numerical scale, the importance and relevance of each attribute of the food at the time of making the purchase.

The attributes were presented: taste, appearance, reliability, practicality and sustainability. The public was able to give an opinion by numbering from 1 to 5, where 1 represents the most important item when choosing the food and 5 the least important item (Figure 2).

	FLAVOR	APPEARANCE	RELIABILITY	PRACTICALITY	SUSTAINABILITY
Se1	7	6	12	1	1
Se2	5	11	5	5	3
Se3	7	5	4	6	3
Se4	3	1	3	10	7
Se5	4	2	1	5	10

Figure 2: Attributes that interfere with the decision to buy the minimally processed manioc. Reliability Practicality Sustainability; **Source:** Own elaboration (2019)

According to the counting of the attributes of importance by numbering from 1 to 5, the participants agree, regarding their numerical assignments, that when buying the minimally processed manioc, reliability is the most important attribute, followed by appearance, flavor, practicality and sustainability, respectively. For Wiley (1997), minimally processed foods should have characteristics that are as similar as possible to fresh foods, only changing in terms of conservation, whose purpose is to extend the shelf life of these foods. Chitarra (2000) complements, stating that the attributes of quality such as taste, color and all the others evaluated should maintain their nutritional and sensory characteristics to the maximum.

Figure 3 shows the results of the consumers evaluation in relation to banana jam. In this case, it is observed that taste, appearance and reliability are the most important factors when choosing this product to buy. All food products, including sweets, have an expected appearance that is associated with personal reactions of acceptance, indifference or rejection, in addition to taste, which is a very important sensory property related to taste (Teixeira et al, 1987).

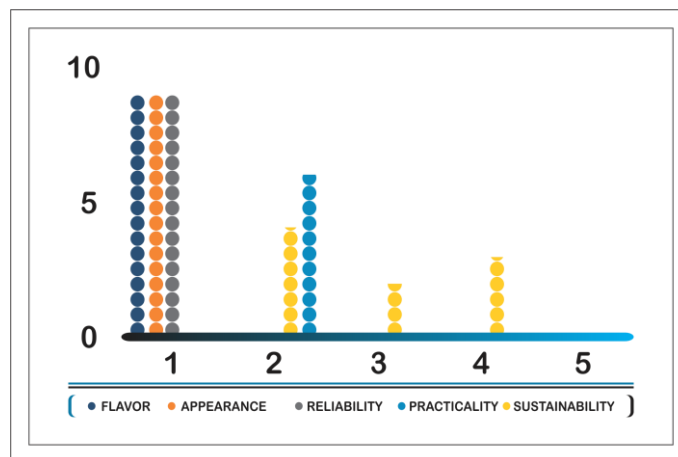


Figure 3: banana jam consumer relation; **Source:** Own elaboration (2019)

The evaluated attributes are important for the knowledge of the consumers' requirements according to the specificities of the product offered, allowing marketing strategies and the establishment of quality standards according to the needs of the market to be proposed, enabling the increase in the number of sales and profit.

Strengthening cooperatives at the Bank Branch

The implementation of the actions suggested above is very important, but it will only be possible through the strengthening of cooperativism, as well as all the benefits made possible by it.

Cooperatives seek mutual solutions for people who have common interests, providing work opportunities and acting as an engine for farmers' businesses through the influence on financing, production and marketing of their members (Andrade and Alves, 2013).

In the workshop on cooperativism, farmers expressed their opinions on the current situation of cooperative principles at the site and in groups reached the following conclusions: 1° Free and voluntary adhesion: Bad; 2° Democratic management: Great; 3° Economic participation: Great; 4° Autonomy and independence: Great; 5° Cooperative Education: Bad; 6° Intercooperation: Bad; 7° Interest in the community: Good.

According to the cooperative members, the cooperative needs to encourage greater adherence by farmers on the Bank's Branch. Low adherence to a cooperative by rural farmers is not simple and encompasses several factors, such as the availability of cooperatives that offer services, the prices of products sold by the cooperative, in addition to cultural aspects (NEVES et al, 2019). To increase adherence rates, it is necessary for small producers to know all the benefits granted to cooperative members, in addition to investing in cooperative education.

The cooperative members are satisfied with the current management and also positively evaluated the economic participation, autonomy and independence, as they observe that there was an economic gain with the adhesion to the cooperative. Farmers feel greater security for the sale of products, based on the cooperative's contracts with institutional programs such as the Food Acquisition Program for school lunches.

However, when it comes to cooperative education, they consider that there is a deficit in this principle, as young people are not being educated to continue cooperative work. This can culminate in future losses for the permanence of local family farming and for the cooperative's disintegration. According to Rosa et al (2012, pg 1), "cooperative education is the learning process that goes beyond mere speeches and explanations and equally values the social, business and specific training demands of organizations and associates".

When it comes to intercooperation, COMPRAB members recognize that the practice of this principle is not well developed and that it is necessary to establish partnerships with other cooperatives, both in the agricultural and other sectors, such as financial cooperatives. With regard to interest in the community, the members believe that it can be improved, considering that despite their dedication to important issues for the Bank's branch community, membership needs to be expanded.

In the construction of the SWOT matrix during the workshop, the internal and external factors of COMPRAB were assessed collectively, so that the board and the cooperative members had an overview of the current situation of the cooperative. The matrix can be used to support future action planning, aiming at minimizing weaknesses and making better use of strengths.

Figure 4 shows the SWOT matrix built by the COMPRAB members during the workshop.

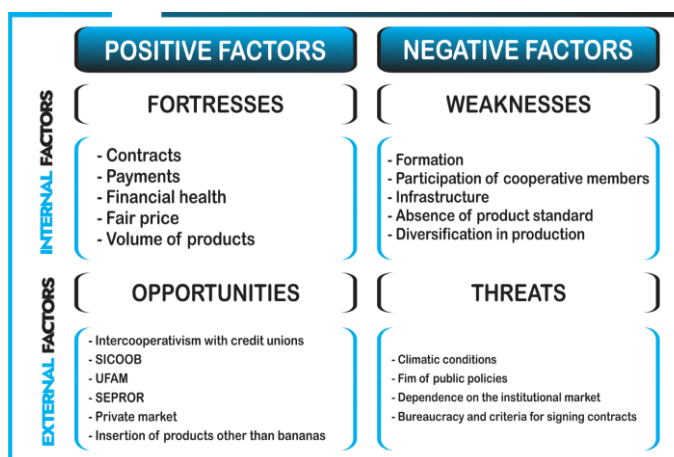


Figure 4: COOMPRAB SWOT matrix.; **Source:** Own elaboration (2019)

The cooperative members listed their strengths based on the contracts established with SEDUC (State Department of Education), SEMED (Municipal Department of Education), Army and Air Force to supply bananas, mainly, in addition to manioc and other fruits and vegetables. Also observed as strongholds, the regular payment to cooperative members by the cooperative when delivering their products, their stability of collection, the affordable price of their products and the volume of products they offer to the market.

The main weaknesses observed are the lack of technical assistance, low participation of members, lack of a headquarters for the cooperative and inequality between products supplied by cooperative farmers. There is no standardization in the characteristics of the fruits, for example, in size, color, appearance and other aspects. The productive dependence on bananas is also seen as weakness, requiring greater diversification and greater volume of production of other fruits and vegetables.

Among the perceived opportunities, there is the possibility of access to SICOOB (Cooperative System of Brazil) for the acquisition of credit, opening of current accounts and pension cards. They perceive the partnership with UFAM as a source of learning and promotion of technical knowledge, which is scarce, knowledge that is also expected to be achieved through technical assistance actions by SEPROR (Secretariat of Rural Production of Amazonas).

In addition, the insertion of the cooperative in markets other than the institutional one presents itself as an important opportunity, since this dependence was presented as a threat by the cooperative members. The diversification of farmers' sources of income brings greater security, ensuring that bills are paid without the need for institutional mediations (Barbosa, 2016).

The threats presented are caused by factors that are beyond the control of the cooperative, such as climate change, which can cause losses in production. The possibility of ending public policies that guarantee the purchase of products and inputs from family farming, such as the policies of institutional markets, symbolizes a threat to the guarantee of income for local farmers.

Institutional programs (such as the PAA - Programa de Aquisição de Alimentos/ Food Acquisition Program) are extremely important because they are responsible for purchasing products from farmers at fair prices, promoting market regulation and productive inclusion, strengthening family farming and providing food to people in need. situation of food and nutritional insecurity (CONAB, 2020).

The great bureaucracy for adherence to contracts was also configured as an obstacle that can leave the cooperative vulnerable as to the permanence in programs promoted, for example by the PAA (Programa de Aquisição de Alimentos /Food Acquisition Program), PNAE (Programa Nacional de Alimentação Escolar /National School Feeding Program) and PREME (Programa de Regionalização de Merenda Escolar /Program School Lunch Regionalization). For Soroldoni and Mendonça (2012), the bureaucracy required by public agencies, together with the lack of technical information present in the area of rural administration, is one of the issues pointed out as vulnerability and challenge to the cooperative's sustainable activities.

4. Final Considerations

The actions carried out with the Joint Cooperative of Producers - COMPRAB of the Bank's Branch allowed the cooperative members to self-assess the current situation of the cooperative and observe strategies that can be used to make better use of community products, add value and increase income.

The technical knowledge presented can be applied in the productive routines of the cooperative members in a simple way, in the short term and with low cost, optimizing the production of items considered by-products of their raw materials, in addition to taking new alternatives for applications of waste from their production, with in order to reduce the environmental impacts caused by them, diversify production, increase their collections and motivate them to broaden their horizons in terms of possibilities.

In addition, the fundamental purpose of strengthening cooperative actions at the Bank Branch enabled the board and members to reflect on the functioning of COOMPRAB and the importance of working together in the pursuit of collective objectives, which in this case is the full functioning of the cooperative in all the principles of cooperativism, the offer of standardized products, of quality and with added value, so that there is socioeconomic inclusion and improvement in the quality of life of families in the community.

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