

COOPERATIVISM IN FOREST COMMUNITIES IN THE AMAZON: WHAT DO NON-MEMBERS SAY?¹

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Introduction

The great potential of the Amazon, due to its biological, ethnic and cultural diversity, has been exploited at a runaway pace by external agents and with little benefit for the local populations (TONINI, 2006; ARAÚJO, BRITO; PROFICE, 2018). Community Forest Management is seen as an alternative for empowering forest populations and improving their life quality (AMARAL; AMARAL NETO, 2005). The first initiatives of the Community Forest Management occurred during the 1990s, and among the incentives that promoted this modality, projects such as ProManejo helped generate experiences and replicable lessons, as applied in the case of National Forest of Tapajós (short Flona Tapajós) (SFB, 2007).

The participation of the local population in the management of timber and non-timber forest resources contributed to the determination of monitoring indicators of forest management performance. Moreover, public participation is requested by certification institutions as a principle of promoting the economic and social welfare of those involved and of local communities (IMAFLOA, 2016).

In view of the importance of the contribution of the traditional population, several studies focused on the perception of local representatives are currently underway, investigating their expectations, ambitions, satisfactions, and suggestions for improve-

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ments (GONÇALVES; GOMES, 2014), also including conservation units (ZILLMER-OLIVEIRA; MANFRINATO, 2011). According to Pinheiro et al. (2011), perception studies are tools that stimulate the popular participation, expressing consideration of and appreciation for the knowledge of the different social agents. For Meijaard et al. (2013), know about people's uses and perceptions of forests could lead to better planning at landscape and regional scales.

This study addressed the case of the Cooperativa Mista da Flona do Tapajós (Coomflona), located in the National Forest of Tapajós (Flona Tapajós). The cooperative was created in 2005 to implement a Community Forest Management in the unit, generating income and employment for the local population. However, since this territory is originally public land, the wood sold by the cooperative must not only benefit the residents directly involved in the management, but all communities of Flona Tapajós. Therefore, the cooperative created several funds to support the initiatives of non-member residents (ESPADA; ANDRADE; VASCONCELLOS SOBRINHO, 2014).

Assuming that a Community Support Fund, corresponding to 15% of the timber sales division, is destined to support initiatives of the communities of the unit, it is expected that the perception of cooperative non-members would be a basis to define which actions should be prioritized. From an institutional point of view, the study responds to the following question: how can the Cooperative contribute to the reality of the non-member residents?

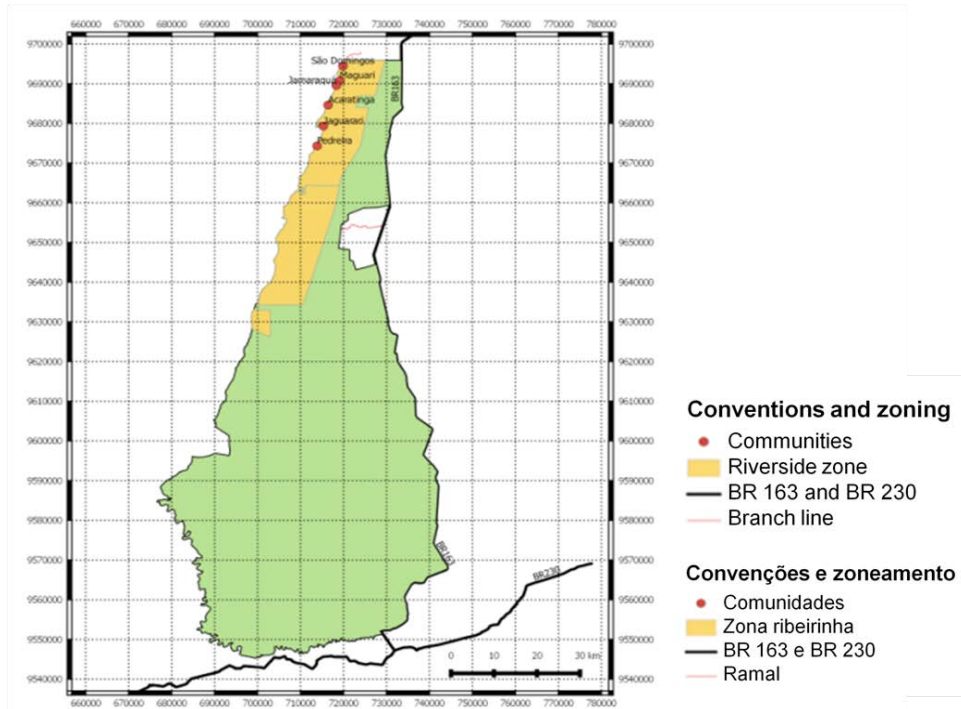
In view of the importance of the Community Forest Management carried out by this cooperative in more than 10 years of existence, this study addressed the identification and analysis of the perceptions of non-member residents about the Cooperative in six communities of the Flona Tapajós, to intensify the search for alternatives of production options and improvements in quality of life, and in the relationship of non-members with the organization.

Material and Methods

Study area

The National Forest reserve of Tapajós (Flona Tapajós) is a Federal Conservation Unit established by Decree No. 73,684/1974, with an area of 527,319 hectares, located in the Amazon region, in the western part of the state of Pará. It is bordered by the Tapajós River in the West, the Cuiabá -Santarém highway (BR163) in the East, in the North by a line that passes through the mark 50 of the Cuiabá-Santarém highway and in the south by the Cupari River and its affluent Santa Cruz. Flona Tapajós includes part of the municipalities Aveiro, Belterra, Placas, and Rurópolis (ICMBIO, 2016). The conservation unit comprises 21 communities and this study focused on six of them (São Domingos, Maguari, Jamaraguá, Jaguarari, Acaratinga, and Pedreira) (Figure 1).

Figure 1- Floresta Nacional do Tapajós (Brazil) – location of the communities involved in the study.



Source: Author's draft.

At the end of the 1990s, a discussion arose in the communities of Flona Tapajós about the possibility of assuming the forest management in the proper community. This idea gained further impetus in 2001 with the Support Project for Sustainable Forest Management in the Amazon (PROMANEJO), which was implemented by the Brazilian Institute for Environment and Renewable Natural Resources (IBAMA), by a Pilot Program for the Protection of Tropical Forests of Brazil (PPG7). The project objective is the sustainable management of spaces to improve the direct income of local populations, by monitoring and supporting pioneering experiences.

In 2004, IBAMA published Regulation No.40, on August 22, authorizing inter-community associations, to implement a Pilot Project of Community Forest Management, in the Flona Tapajós destined for an intensive sustainable use of the forest. With this permission, new discussions arose about how to apply the forest management, particularly because this was the first concession allowing large-scale use in a Flona unit in the Amazon. In 2005, the inter-community associations created the Cooperativa Mista da Flona do Tapajós - Coomflona, as executing organization (VERÍSSIMO, 2005).

The Community Forest Management performed by the traditional populations of the Flona Tapajós is an important reference for the sustainable use of the forest and conservation of biodiversity. Under the management of the cooperative, the forest activity

generated a turnover of approximately R\$ 4 million and more than 100 direct jobs, and of the benefits generated by the management, 15% of the surplus of the cooperative is allocated annually to the Community Associations (ESPADA; ANDRADE; VASCONCELLOS SOBRINHO, 2014).

The cooperative applies a low-impact forest management, currently involving 206 cooperative members. About 3,438 residents live in the Flona Tapajós, according to the family survey of 2014 in the unit (SILVA et al., 2014), which shows that about 16.7% of the total population of this conservation unit are members of the cooperative, leaving 3,232 non-member residents.

Data collection

The qualitative exploratory nature of this study, described by Neves (1996), is a methodology that seeks the understanding of the perspective of situations of the research participants through direct and interactive contact with the researcher. According to Pinheiro et al. (2011), perceptive research is a way of understanding ideas, the way of seeing and feeling the environment, as well as the relationships in the surrounding. This form of research contributes to trigger proposals and actions, be they of social, economic or environmental nature.

Participatory Organizational Development –POD

A meeting was held in each community included in this study, beginning with the mobilization of the non-member residents, which was done together with the Chico Mendes Institute for Biodiversity Conservation - ICMBio, by a circular letter addressed to the community representatives for a broad dissemination in the community. In the logistics and execution phase, the team of the ICMBio also made all necessary efforts, assisting in reaching the communities of the Flona Tapajós, holding meetings and applying interviews.

The evaluation of the perception of the non-member residents was carried out with the help of a tool of the “Participatory Organizational Development - POD” method, called SWOT Matrix (to describe the strengths, weaknesses, opportunities, and threats in relation to the cooperative addressed in this study) applied in community meetings in February 2015. The SWOT Matrix is a perception tool used by entrepreneurs to identify opportunities and contributing to continuous improvement (ANDRADE et al., 2012). During the meetings, the non-member residents were separated into groups to discuss and highlight items in the matrix, and in the end, the information was presented and the other groups could add any item they thought was missing.

After applying the SWOT matrix, information was collected regarding the productive activities of the residents by the construction of a Priority Matrix (main productive activities of the residents), in which each community identified up to five activities and assigned between 1 and 10 points per item, where 1 was the least and 10 the most important, as a way of identifying the most frequent and important ones.

Subsequently, the priority information was passed on to a Participatory Plan of

Action. In this phase, the residents answered the following questions: What activity? What are the difficulties? How can it be done? Who will do it (community and partners)?

Of the residents that participated in the meetings, 104 were not cooperative members. All items in the SWOT Matrix, Priority Matrix and Plan of Action were indicated exclusively by non-member residents.

Semi-structured interviews

Semi-structured interviews were conducted in the six communities. The non-member families were identified through the analysis of the member lists of the Cooperative and the resident list of the family survey of 2014 in Flona Tapajós, provided by ICMBio. This analyze were useful in locating and quantifying the interviewees. A total of 184 non-member families were identified in the six communities. The questionnaire was designed to reach 100% of the families, but at the time of application, some families were not at home. In 125 of the 184 families, one family representative was interviewed.

A second interview was applied, consisting of 19 questions on the productive activities of the residents; positive and negative points of the cooperative and community; Perception about the admission process; Community benefits derived from cooperative activities and projects developed; Evaluation of performance and suggestion of improvements.

The data collection activities covered the following information: perception of the non-members about the cooperative, survey of productive activities carried out by the residents and construction of the Participatory Plan of Action.

Data systematization and analysis

The data were processed by descriptive analysis, proposed by Vieira (2002), which is widely used due to the possibility of knowing and interpreting the studied reality without influencing it, also allowing the inclusion of information about beliefs, visions, desires, explanations, and opinions on different topics.

The data were organized in *Microsoft Excel*® 2010 tables to facilitate interpretation and in diagrams illustrating the quantitative results. For the systematization of information from the SWOT matrix, the frequency of responses in the six communities was calculated and it was possible to identify the most frequent ones. This analysis was based on descriptive statistics.

Results and discussion

A total of 125 interviews were performed, reaching 68% of the non-member families, in the six communities of the study (Table 1).

Table 1 - Number of non-cooperative member families interviewed per community, in the Floresta Nacional do Tapajós, Brazil.

Communities	Total number of family residents	Number of non-member families	Number of interviewed non-member families
São Domingos	34	27	23
Maguari	74	54	30
Jamaraquá	26	21	12
Acaratinga	22	18	11
Jaguarari	31	27	23
Pedreira	51	37	26
Total	238	184	125

Source: Author's elaboration.

The profile of the research participants was composed of 44% male and 56% female interviewees and the majority (59%) of the respondents were fully productive.

With regard to the period of living in the unit, 92% of the residents had been residing at the location for at least 13 years. It was found that a large part of the residents interviewed were already living in Flona Tapajós when the cooperative was founded and initiated the activities of Community and Family Forest Management in 2005.

According to the Management Plan for Flona Tapajós, in a survey carried out by the Instituto Brasileiro do Desenvolvimento Florestal (IBDF) in 1975, there were approximately 620 families, of which 381 were settled along the Tapajós River; 62 settled by Incra; 8 were occupant families with residence authorization; and 75 were new families, freshly arrived only in the period of the survey (IBAMA, 2004).

In terms of origin of the inhabitants of the unit, the socio-anthropological studies and the Participatory Rural Diagnosis found that the initial process of occupation brought native settlers, riverines, migrants, occupants, gold miners, and extractivists, some originally from the state of Maranhão and Ceará, and others encouraged by the occupation policy that impacted the Amazon. In 1993, about 71.1% of the heads of families of the riverside communities had been born within the Flona (IBAMA, 2004).

The entry of new residents becomes a problem in the management of the territory when it is translated into modification of the productive practices and incentive of the extensive agricultural activities (e.g., cattle raising, large-scale monoculture cultivation) in disagreement with the norms of the Management Plan and Usage Plan. According to Diegues (1996), the fragility of national politics, associated with the abandonment of the native population, cause the disappearance of century-old knowledge about ecosystems and natural resource management. In this sad scenario, the emptiness left by the former residents increases the chances of occupation by speculators, loggers, and other degrading agents with no interest in the community development.

Originally, two additional internal areas were part of the unit that were uncoupled in 2012, of which the first is located at Km 92 of the federal highway BR 163 called São Jorge and the second is the county Aveiro, in the southern part of the Flona Tapajós. The intensive animal husbandry in the Community of São Jorge motivated the wish of the residents to invest in separation, which occurred in fact after numerous meetings. At this location, nearly five years after the exclusion, the trend is towards increasing purchase of lots by large soybean producers, the felling of the remaining forest and cattle raising. With regard to Aveiro, many claim that the development is retrogressive, due to the isolation and lack of resources in the county.

The questions about the residents' knowledge about the cooperative showed that 74% of the respondents knew about the cooperative. The most common responses about the activities developed by the organization were: Community Forest Management; Furniture manufacturing; Extractivism and handicrafts (ecological leather). The perceptions of the non-members in relation to the cooperative are listed in Table 2.

Table 2 - Opinions of non-members about the Cooperativa Mista da Floresta Nacional do Tapajós, Brazil.

Strengths	F(%)	Opportunities	F(%)
Wood donation for the construction of community centers and schools	100%	Work offer for non-members of the cooperative.	100%
Maintenance of the community access road	100%	Admission of more members.	100%
Work and benefits for the members	100%	Construction of a school for community training.	33%
Community fund	50%	Partnership between the Cooperative and the University to train people of the community and technical training (forestry technician).	16%
Support for festivities, transportation and health care	33%	Recovery of degraded areas	16%
Capacity building for community persons	16%	Strengthening non-timber production	16%
		Youth capacity building	16%
		Sale of forest products in own store (Ecostore)	16%
		Inclusion of women in other sectors	16%
		Implementation of community projects	16%
		Creation of new cooperatives (organization of the community basis)	16%

Weaknesses	F(%)	Threats	F(%)
Lacking turnover of cooperative workers	100%	Poor management of the cooperative	33%
Difficulty in cooperation and lack of information about the functioning of the cooperative	50%	One-sided sale of a single product: wood	33%
Transparency in the selection process	33%	Actions carried out in an unplanned and unorganized manner (mainly with the communities)	33%
Lack of mobilization of non-members to attend assemblies	16%	Impacts on the fauna	16%
Little community education and training for jobs at Coomflona	16%	Deforestation without damage recovery	16%
Lack of opportunity for the illiterate	16%	Destruction of nature (flora, fauna, water, soil).	16%
Influence of the opinion of the non-cooperative community members on the directors of the Cooperative	16%	Limited forest management area	16%

Note: F(%) = relative frequency.

Source: Author's elaboration.

The responses showed that the most frequently cited positive aspects related to the cooperative (Table 2) were employment generation for the cooperative members (100%), maintenance of the community access roads (100%) and wood donation (100%). These results corroborate the benefits listed by CIFOR (2007) in a study of the pilot project of the PAE Chico Mendes Community Forest Management, in the county Xapurí-AC, where employment opportunities and consequent income generation and local infrastructure resulting from the project, e.g., as road opening, and maintenance were listed as benefits from the activity. However, the expansion of the number of beneficiary families was highlighted, as an unreached objective.

In addition, Franco and Esteves (2008) reported that families who work with forest management in the project in Xapurí have a 150.04% higher mean income than families that do not participate. For Mohammed and Lee (2015), in agricultural based places, cooperatives are view as a solution to promote income distribution, reduce poverty and vulnerability, and improve quality of life and social welfare.

In our study, 79% of the respondents claimed to have a relative or acquaintance who is a cooperative member, and observed improvements in their quality of life after joining the cooperative, from the purchase of goods such as a car or motorcycle, house reform up to support in the education of children.

Of the total number of respondents, 67% stated that their communities already

received some benefit from the cooperative, as for example, the installation of furniture production in the community Pedreira and activity of machete fabrication, fuel donation, support in the water supply system, material for reforms of schools, cabins, and houses, and road maintenance. In some cases, the cooperative assumed functions of the public authorities, and in this sense, became an important institution in the local context.

Some of the opportunities highlighted by the interviewees indicate alternatives and encourage the participation of non-member families, such as: job offers for non-members (100%); inclusion of new members in the cooperative (100%); youth capacity building (16%); establishment of partnerships (16%); and strengthening of non-timber activities (16%) (Table 2). For Pöllumäe et al. (2014), cooperation may be as one possibility for increasing the provision of various forest-related benefits and goods. According to Ferreira and Braga (2004), the diversification strategies of cooperatives improved the competitive adjustment, since relying on a single economic activity poses risks, depending on the market conditions. They also affirmed that among the external factors that stimulate diversification is meeting the needs expressed by the community under influence of the cooperative.

In a case study on the Flona Tapajós cooperative, Espada and Vasconcellos Sobrinho (2015) stated that operationally, the community timber management does not support the involvement of all the residents, directly benefiting them. They relate this limitation with the dilemma of providing traditional residents with a higher quality of life by promoting productive activities of the non-members; this incentive is fomented with support from the profit obtained from wood sales.

Pöllumäe et al. (2014) say that members tend to be more active and consistent in forest management activities than non-members, but alert for potential towards cooperation within non-members as their plans for the future are much more targeted.

The diversification process still needs to be strengthened, mainly because so far only 10% of respondents participate in some project supported by the cooperative in the range of tourism, carving, furniture manufacturing, and plant oil extraction.

The official establishment of partnerships is considered fundamental by Souza and Vasconcellos Sobrinho (2011) for a good performance of cooperatives, and this political-institutional articulation may occur with different regional, national and international actors, while without these initiatives, the cooperatives would end in stagnation and regression. In a case study, Medina (2012) investigated the control system of the use of natural resources in communities in Bolivia, Xapurí - Acre, Porto de Moz – Pará, and in Peru. He concluded that the relations established with external actors should not create a total dependence, since these community organizations need to strengthen their proper leadership and development. Although the contribution of partnerships are not denied, the balance of external interventions is emphasized, as well as the protagonism of the communities.

The weakness indicated most frequently by the residents (Table 2) is the low turnover of members of the cooperative. The reason is that in the perception of the non-members, at the time of the cooperative foundation, the participation of only one member per family as cooperative member was discussed, aside from the realization of

rotation among the participants. These practices would contribute to a greater integration of traditional residents, in addition to benefiting more families.

The villagers claim that there is bureaucracy hampering the admission to the cooperative and suggest more transparency in the process. Among the interviewees, 45% reported that they had already applied to become cooperative members, aiming at increasing their family income, but without success. As obstacles, they mentioned the conditions of participating in associations, community meetings, payment of fees, or even because of personal disinterest and not attending the evaluation. Another item cited was the lack of training for the positions of the cooperative. According to Ferreira and Braga (2007), dairy cooperatives in Brazil obtain gains due to their technical efficiency owing to investments in training and qualification of the managers. Hansen (2013) says that timber demand and impacts of climate change are all going to affect the development of forest cooperatives as well, resulting in a higher investment in new knowledge and skills for forest management.

Some of the threats that loom over the continuity of the cooperative are poor management (33%), one-sided sale of wood (33%) and lack of planning together with the communities (33%). According to Souza; Braga; Ferreira (2011), losses in cooperative efficiency are related to the problem of "control", i.e., inadequate administrative practices, inefficient financial strategies, and insensitive response to market oscillations. Another determinant factor for success are the actions of the cooperative; a model of cooperative evaluation, not only based on economic parameters, but also on indicators of social-political efficiency that assess the participation in the assemblies of the entity (PEIXE; PROTIL, 2007). Involving non-member residents in the cooperative discussions, or even inviting community representations would result in a significantly broader participatory and widely disseminated process.

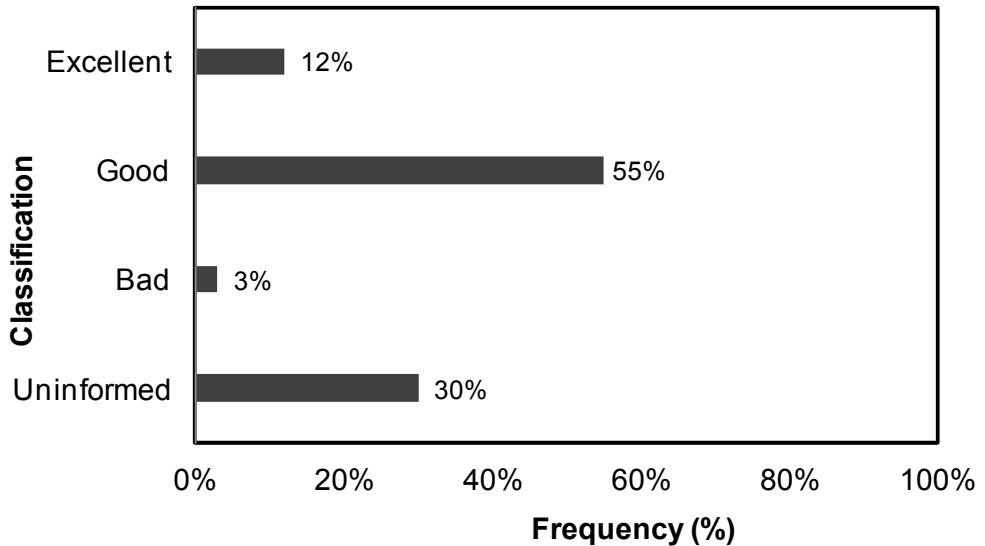
Impacts on the forest are indicated by the residents as a threat, since there is fear mainly due to the lack of knowledge of the practices of the low-impact management applied by the cooperative. In view thereof, in the second semester of 2015, the cooperative held several meetings in the communities of Flona Tapajós, to explain what forest management is about, the techniques, principles, work units, recovery of the explored area, division of profits, etc.

In 2009, with the approval and publication of studies of identification and delimitation of the Indigenous Lands of Munduruku-Takuara and Bragança-Marituba, overlapping the boundaries of the Flona Tapajós, the concern for the area for community forest management was kindled, since the Federal Public Ministry recommended that this activity should not be carried out in a territory claimed by indigenous people (TECHNICAL OPINION no. 12/2015/FNT/ICMBio). Since 2014, discussions were intensified in relation to the revision of the Management Plan of the Conservation Unit - UC, since the re-evaluation of the zoning of the Flona Tapajós may make other areas available for management. Currently, the cooperative has sufficient area for two years of exploration, which explains why residents indicated the limitation of area as a threat.

The majority of respondents (55%) classified the performance of the cooperative as good (Figure 2), although a considerable number of residents made no statement about the classification. According to these interviewees, this abstention was explained by the lack of

foundation in relation to the cooperative. Some claimed not to have visited the premises yet, nor watched the forest exploitation process, but to have received information only through conversations with neighbors and relatives, or from the community representative.

Figure 2 - Evaluation of the performance of the cooperative Coomflona according to non-member residents in Flona Tapajós, Brazil.



Source: Author's draft.

Based on the priority matrix, the activities were standardized and systematized in a general Plan of Action (Table 3).

Table 3 - Productive activities and General Plan of Action of non-cooperative members in the Floresta Nacional do Tapajós, Brazil.

General Plan of Action			
What activity?	What are the difficulties?	How?	Who? (Partners)
1. Flour production	Pests, few instructions of proper handling, lack of transport, low price, lack of sales opportunities, lack of technical assistance.	Find Technical Assistance.	EMATER ¹ , SEBRAE ² , SENAR ³ , EMBRAPA ⁴ , COOMFLONA ⁵ and STTR Belterra ⁶
2. Fruit tree planting (nance, açai palm, coconut, yellow mombin, passion fruit, guava, barbados cherry, banana, cashew, orange, cupuassu)	Purchase of seedlings, technical assistance (determine spacing and arrangement).	Find Technical Assistance and partners for seedling purchase or production.	EMATER, EMBRAPA and COOMFLONA

3.	Free-range poultry farming	Diseases and lack of technical guidance for farming.	Find Technical Assistance.	EMATER, EMBRAPA and ADEPARÁ ⁷
4.	Honey production	Lack of wood for the manufacture of boxes and of technical guidance.	Find technical assistance and get wood for the apiary.	EMBRAPA, EMATER and COOMFLONA
5.	Fish farming	Licensing, determination of location and fish species.	Identification of partners, find technical guidance and install floating net cages.	UFOPA ⁸ , EMATER and COOMFLONA
6.	Handicraft (baskets, brooms, furniture)	Training, promotion of the product and outlet location.	Organize craft courses and workshops.	UnB ⁹ , SEBRAE, EMATER, UFOPA and INPA ¹⁰
7.	Tourism	Lack of equipment and training.	Raise community awareness; implement training (English, tour guide, tourist reception, and first aid courses).	UFOPA, ICMBio ¹¹ , SEBRAE, COOMFLONA and Secretaria Municipal de Turismo
8.	Production of regional sweets	Suitable location.	Training.	SEBRAE
9.	Production of fruit pulp (nance, cupuassu and açai palm)	Handling, storage and marketing conditions.	Acquisition of equipment and study of a place for commercialization.	COOMFLONA (Agroindústria)
10.	Extraction of Andiroba oil	Lack of oil analysis, soil authorization and adequate packaging.	Legalization of the activity.	UFOPA and ICMBio
11.	Rubber (latex)	Low price, lacking machinery to sew the rubber.	Machinery purchase, find potential buyers.	COOMFLONA, SEBRAE, Fundo DEMA, ICMBio, UFAC ¹²

Source: Author's elaboration

Note: ¹ Company of Technical Assistance and Rural Extension of Pará; ² Brazilian Service of Support to Micro and Small Companies; ³ National Rural Apprenticeship Service; ⁴ Brazilian Agricultural Research Corporation; ⁵ Cooperativa Mista da Flona Tapajós; ⁶ Syndicate of Rural Workers; ⁷ Agricultural Defense Agency of Pará; ⁸ Federal University of West of Pará; ⁹ University of Brasília; ¹⁰ National Research Institute of the Amazon; ¹¹ Chico Mendes Institute for Biodiversity Conservation; ¹² Federal University of Acre.

Part of the residents receives conditioned income transfer through social programs, e.g., Bolsa Família and Bolsa Verde. Aside from this resource, the so-called “roças” (agricultural fields) contribute to the family income with the production for self-consumption and sale of the surplus. According to Castro et al. (2009), these “roças” are places where annual species are usually cultivated during specific periods. In the communities of Flona Tapajós, *Manihot esculenta* Crantz (cassava) is widely used as food and commercial crop, due to its easy cultivation and adaptation to any type of environment (HENKEL; AMARAL, 2008).

Although Brazil produced around 26.0 million tons of cassava in 2007, mainly in the states of Pará, Bahia, Paraná, and Maranhão, one of the main problems is the lack of

information on the production systems and about market access by producers, impairing the establishment as a profit- and job-creating activity (EMBRAPA, 2009).

We have to understanding of different types of forest vegetation, and its integration with agricultural systems, because, if actively managed, are also important components that can safeguard forests (MARQUARDT et al., 2018). Sears et al. (2018) show that sampled farmers agreed that timber species in their agricultural fallows is a valuable resource for their livelihoods.

In order to circumvent the bottleneck involving technical assistance for the residents of Flona Tapajós, ICMBio assigned a Reciprocity Agreement with the Company of Technical Assistance and Rural Extension (EMATER-Pará) in 2016, to support initiatives such as the implanting in Agroforestry Systems, practices for cassava planting of cassava, fruit cultivation, free-range poultry farming, i.e., activities according to the norms established by the environmental legislation and monitored by the managing body (ICMBio). The support of these activities reaffirms the commitment of the country to the social and environmental development and ensures the productivity of the community residents, respecting the agreements and valid norms

The planting of fruit trees (nance, acai palm, coconut, yellow mombin, passion fruit, guava, acerola, banana, cashew, orange, cupuassu), free-range poultry breeding, honey production, fish farming, and cassava flour production were indicated as activities that need technical guidance. Most of these activities are already developed by the residents and show the relationship of the residents with production from the land and natural resources.

Specifically in relation to fish farming, a pilot fish farming project is being implemented in two other communities, Pini and Tauari, aiming at the installation of tanks with fish nets for local species breeding, to generate income and replace practices incompatible with the conservation principles of the unit. The expectation is that the practice in the unit can serve as a model for other communities.

Another initiative is the Fruit Agroindustry project, designed by the cooperative and approved by the Fundo Dema in 2014. This project provided a fund for non-repayable loans to renovate an old honey house built in 2004 in the community of São Domingos. This initiative will contribute to job and income generation, strengthening community organizations and will benefit about 70 families that produce manually.

The non-members also highlighted the need for training to work with tourism, handicrafts, and production of sweets. In addition, in the last years, there was a decline in latex extraction from the rubber tree (*Hevea brasiliensis* (Willd. Ex A. Juss.) Müll. Arg.), mainly explained by the low rubber price by the residents. This, alongside the lack of Pronaf Aptitude Declarations (DAP) makes it even more difficult to sell rubber and other products, since the residents have no access to the financial support provided by public policies.

It is noteworthy that the productive activities described in this research were considered in the construction of the Work Plan, attached to the Reciprocity Agreement signed between Emater, ICMBio, Coomflona, and Flona Community Organizations Federation, which foresees the issuance of 180 DAPs declarations of capacity building for Pronaf and technical assistance for the families of Flona Tapajós.

Finally, the Plan of Action showed that the non-members emphasized the importance of the cooperative for this territory, for being mentioned as potential partner for almost all activities.

Conclusions

The role of cooperative to development in communities of conservation unit in Forest Amazon is very important. The studied cooperative is recognized by non-cooperative member as a solution for education, work opportunity, financing system, and productive activities improvement.

The non-cooperative member residents of the six studied communities acknowledge the support of the cooperative in road maintenance and requests for school and shed reforms. Some residents know about the existence of the Community Fund, an annual resource of the cooperative earmarked for the communities. However, many are unaware of how the cooperative functions and deem it bureaucratic in the selection process. Moreover, the fact that several people from same families are cooperative members, to the detriment of several other families represented by not even one cooperative member, is questioned.

Regarding productive activities, cassava cultivation was mentioned in all communities as an action to be prioritized, since the inhabitants use the flour for food and sell the surplus. The lack of technical assistance was emphasized repeatedly; tourism, latex, fruit tree cultivation, handicrafts, and free-range poultry farming are among the most cited; and the cooperative is seen as a potential partner in the promotion of productive activities.

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Original Article

COOPERATIVISM IN FOREST COMMUNITIES IN THE AMAZON: WHAT DO NON-MEMBERS SAY?

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COOPERATIVISM IN FOREST COMMUNITIES IN THE AMAZON: WHAT DO NON-MEMBERS SAY?

Abstract: The National Forest of Tapajós is a reserve in the western region of the state of Pará and in 2005 the Cooperativa Mista da Floresta Nacional do Tapajós was founded, with the main objective of applying forest management through community activities. This paper aimed to identify and evaluate the viewpoint of non-member residents about this cooperative, as well as to find alternative production forms. It was used a matrix of Strengths, Opportunities, Weaknesses, and Threats, semi-structured interviews, a Priority Matrix, and a Plan of Action. The most important benefits cited were the donation of wood, road maintenance and jobs for the members. Problems in the admission process related to red tape and lack of transparency in the selection process of new members should be overcome. Cassava planting and flour production; handicrafts; tourism; establishment of agroforestry systems; honey production were the main productive activities indicated in the Plan of Action.

Keywords: Social organization; Conservation Unit; Rural Development; Amazonia.

COOPERATIVISMO EM COMUNIDADES FLORESTAIS DA AMAZÔNIA: O QUE DIZEM OS NÃO-MEMBROS?

Resumo: A Floresta Nacional do Tapajós é uma reserva na região oeste do estado do Pará e, em 2005, foi fundada a Cooperativa Mista da Floresta Nacional do Tapajós, com objetivo principal de aplicar o manejo florestal por meio de atividades comunitárias. Este trabalho teve como objetivo identificar e avaliar o ponto de vista de moradores não-membros sobre essa cooperativa, bem como encontrar formas de produção alternativas. Utilizou-se uma matriz de Forças, Oportunidades, Fraquezas e Ameaças, entrevistas semi-estruturadas, Matriz de Prioridades e um Plano de Ação. Os benefícios mais importantes citados foram:

doação de madeira, manutenção de estradas e empregos para os membros. Problemas no processo de admissão relacionados à burocracia e falta de transparência no processo de seleção de novos membros devem ser superados. Plantio de mandioca e produção de farinha; artesanato; turismo; estabelecimento de sistemas agroflorestais; produção de mel foram as principais atividades produtivas indicadas no Plano de Ação.

Palavras-chave: Organização social; Unidade de Conservação; Desenvolvimento Rural; Amazônia.

EL COOPERATIVISMO EN COMUNIDADES FORESTALES DE LA AMAZONÍA: ¿QUÉ DICEN LOS NO MIEMBROS?

Resumen: Floresta Nacional do Tapajós es una reserva en la región oeste del Pará y en 2005 fue fundada la Cooperativa Mista da Floresta Nacional do Tapajós, con objetivo principal de aplicar el manejo forestal a través de actividades comunitarias. Este trabajo tuvo como objetivo identificar y evaluar el punto de vista de moradores no miembros sobre esa cooperativa, así como encontrar formas de proponer alternativas. Se utilizó Matriz de Fuerzas, Oportunidades, Flaquezas y Amenazas, entrevistas semiestructuradas, Matriz de Prioridades y Plan de Acción. Beneficios más importantes citados fueron: donación de madera, mantenimiento de carreteras y empleos para miembros. Problemas en el proceso de admisión relacionados con la burocracia y falta de transparencia en el proceso de selección de nuevos miembros deben ser superados. Plantas de mandioca y producción de harina; artesanía; turismo; establecimiento de sistemas agroforestales; producción de miel fueron las principales actividades productivas indicadas en el Plan de Acción.

Palabras claves: Organización social; Unidad de Conservación; Desarrollo Rural; Amazonía.