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PRODUCTIVE DIVERSIFICATION AND FAMILY FARMING: A CASE STUDY OF THE COMMUNITY OF TOCANTIN AMAZON

ABSTRACT: Agricultural and non-agricultural activities in the Amazon are the economic means that guarantee food and nutritional security for rural society. Therefore, this work has the general objective of analyzing the arrangements adopted by the agricultural production units (UPAs), in the São Pedro community in the municipality of Limoeiro do Ajuru/PA, in the Tocantina Amazon. For data collection, cross-sectional walks, directive interviews and the application of a semi-structured script were used, with the aim of understanding the farmers' choices to obtain sustenance for the family units. In the production system, the highlights were the cultivation of cassava, black pepper and native açaí, while the creations are characterized by the small scale and destination for self-consumption. The study reports that farmers have numerous strategies and possibilities to maintain their families' livelihood, which confirms that family farming is not just a way of doing agriculture, but part of a social category.

KEYWORDS: Diversification, Family farming, Sustainability.

DIVERSIFICAÇÃO PRODUTIVA E AGRICULTURA FAMILIAR: ESTUDO DE CASO DE UMA COMUNIDADE NA AMAZÔNIA TOCANTINA

RESUMO: As atividades agrícolas e não agrícolas na Amazônia são os meios econômicos que garantem segurança alimentar e nutricional da sociedade do campo. Logo esse trabalho tem como objetivo geral analisar os arranjos adotados pelas Unidades de Produção Agrícola (UPAs), na comunidade São Pedro no município de Limoeiro do Ajuru/PA, na Amazônia Tocantina. Para a coletas dos dados utilizou-se a caminhada transversal, entrevistas diretas e aplicação de um roteiro semi-estruturado, com a finalidade de

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compreender as escolhas dos agricultores, para a obtenção do sustento das unidades familiares. No sistema de produção os destaques foram para os cultivos da mandioca, da pimenta-do-reino e do açaí nativo, enquanto as criações se caracterizam pela pequena escala e destinação para o autoconsumo. O estudo relata que os agricultores possuem inúmeras estratégias e possibilidades para manter o sustento de suas famílias, no qual refirma que a agricultura familiar não é apenas uma forma de fazer agricultura e sim parte de uma categoria social.

PALAVRAS-CHAVE: Diversificação, Agricultura familiar, Sustentabilidade.

DIVERSIFICACIÓN PRODUCTIVA Y AGRICULTURA FAMILIAR: UN ESTUDIO DE CASO DE LA COMUNIDAD DE AMAZONÍA TOCANTINA

RESUMEN: Las actividades agrícolas y no agrícolas en la Amazonía son los medios económicos que garantizan la seguridad alimentaria y nutricional de la sociedad rural. Por lo tanto, este trabajo tiene el objetivo general de analizar los arreglos adoptados por las unidades de producción agrícola (UPA), en la comunidad de São Pedro, en el municipio de Limoeiro do Ajuru/PA, en la Amazonía de Tocantina. Para la recolección de datos, se utilizaron recorridos transversales, entrevistas directivas y la aplicación de un guión semiestructurado, con el objetivo de comprender las elecciones de los agricultores para obtener el sustento de las unidades familiares. En el sistema de producción, se destacaron los cultivos de yuca, pimienta negra y açaí nativo, mientras que las creaciones se caracterizan por la pequeña escala y el destino para el autoconsumo. El estudio informa que los agricultores tienen numerosas estrategias y posibilidades para mantener el sustento de sus familias, lo que confirma que la agricultura familiar no es sólo una forma de hacer agricultura, sino parte de una categoría social.

PALABRAS CLAVES: Diversificación, Agricultura familiar, Sustentabilidad.

INTRODUCTION

The debate on economic development of the Amazonia has always been linked to the development of local agriculture, especially family farming (OLIVEIRA et al., 2013). However, Decree No. 9,064 of May 31, 2017, regulates the guidelines for the formulation of the National Policy for Family Farming. According to that law, a family farmer is considered to be one who practices activities in the rural environment and has an area of up to four fiscal modules, family labor, family income linked to the

establishment itself and management of the establishment by the family itself (BRASIL, 2006).

The diversification of production and income makes the family farmer more able to achieve citizenship in rural areas, thus avoiding moving to urban centers in search of survival (GRISA; SCHNEIDER, 2014). Araújo and Vieira (2019) consider mixed rural properties to be those that exploit, at the same time, at least two production activities, both agricultural and livestock.

Thus, the agricultural production units (UPA) are constituted by a system composed of a set of interacting elements (cultivation and / or creation and / or transformation systems), influenced by the objectives of the farmer and his family, being a dynamic system, open to the external environment (MIGUEL, 2010).

The debate on local development takes into consideration economic and social aspects as themes that address the occupation of territories, productive specificities, income generation and self-consumption motivated by public policy initiatives in Brazil (SILVA et al., 2020). In the state of Pará, in the immediate geographical region of Cametá (Amazonia Tocantina), family farming presents particularities regarding the use of natural resources that are specific economic activities of the traditional populations of the region, such as the trade of fish originated from artisanal fishing, consumption of açaí pulp through the extraction of plants from the region, sale of cassava flour, harvested from crops made by cutting and burning plant residues, among others. Over the years, these populations have sought to add improvements in their rural activities, with emphasis on the current market and the preservation of nature (QUIJADA; CAVICHIOLO; SOARES, 2020).

In this context, the use of the systemic approach makes it possible to explain the internal mechanisms that guide and condition an agrarian reality and that, many times, depend not only on the properties and their constitutive elements, but, above all, on their interrelations. This precept imposes considering that agriculture, in its broadest sense, is not a simple juxtaposition of productive activities and factors of production,

but a system organized around interactions between its multiple components (SANTOS DA SILVA et al., 2020).

Therefore, this research aimed to analyze the arrangements adopted by agricultural production units, through experience with product diversification, starting from the implementation of agricultural cultivation systems, in the community of São Pedro in the municipality of Limoeiro do Ajuru/PA, in the Amazonia Tocantina.

MATERIAL AND METHODS

SURVEY LOCATION

The municipality of Limoeiro do Ajuru, is located in the intermediate geographical region of the Northeast of Pará and in the immediate geographical region of Cametá (Amazonia Tocantina) at latitude 01°53'45" South and longitude 49°23'27" West, presenting equatorial climate (Köppen climate classification). It has 3,813 agricultural establishments with an area of 37,122 hectares and 28,428 hectares occupied by individual producers (IBGE 2017). As for agricultural production, the municipality stands out in the native açai (*Euterpe oleracea* Mart.). The study took place in the year 2021, in the community of São Pedro, located in this municipality of Limoeiro do Ajuru.

The community is 5 km away from the seat of the municipality, with access through the BR 422, dirt road that in the rainy season is almost impassable, making it difficult for the residents of the region to move around and, consequently, to sell their products in the local market. The evaluated area contained floodplain and upland ecosystems, and the upland soil was composed predominantly of neosoil and yellow latosol, regular for the crop. The floodplain soil, located on the banks of rivers and streams, were fertilized and drained naturally by organic matter deposited by periodic floods (SEIR, 2009).

This research is characterized as a descriptive exploratory study whose information was extracted from the application of a socioeconomic questionnaire. To carry out this study, 10 families from the community were selected, aiming to

understand the factors that led the subjects to make certain choices to obtain income and nature conservation. In the families interviewed, the following were analyzed: the diversity of production systems, the productive characteristics and the economic conditions of the production units, thus being the characteristics that made it possible to measure the economic and productive indicators of the families (SIMONETTI et al., 2013).

DATA COLLECTION AND ANALYSIS

Data collection was carried out using the following tools: cross-sectional walk, which is one of the techniques used in Rapid Diagnosis Rural Participatory Appraisal (RDRP) and consists of walking through a certain area of the production unit accompanied by a local informant, observing the agroecosystems and communicating with the residents (PEREIRA et al., 2013).

The data collected from the 10 (ten) families were obtained through a semi-structured script applied to the producers, with open and closed questions, and conducting direct interviews. For this, we used the information from Gil (2002), in which he establishes a method of interaction between researcher and interviewee, with the purpose of describing the characteristics of the activity or process addressed in the research. This technique allowed us to understand the infrastructure, production, organization, commercialization, access to government social programs and others.

The treatment of the data generated a lot of information regarding various aspects of the cultivation and rearing systems. Prioritizing information regarding socioeconomic conditions, property management and planning process, cultivation system, breeding system and land use capacity, as well as income from the supplementing other sources (social benefits). The information was recorded through the use of a recorder, photographic records (images and videos) and systematically recorded in a field diary, with the authorization of the owners.

From the results of family monetary income sources, the UPAs were categorized (SANTOS JUNIOR et al., 2017), based on independent and combined activities that

correspond to values above 40% of the family monetary income sources, distributed in: i) agriculture: combination of agricultural productive activities and animal husbandry; ii) per diem and wages: income above 40% from the combination of productive activities of per diems at workplace and wages outside the establishment; iii) agriculture + social benefits: at least 40% from the combination of agricultural activities and social benefits; iv) agriculture + forest: at least 40% from the combination of agricultural activities and forest resources and v) forest: above 40% from forest resources.

The main variables that make up each family unit were analyzed, taking into account the performance of the establishments in different aspects: family income generation, family composition, main crops and types of rearing. For the analysis of social welfare conditions, the following questions were addressed to the residents: 1) In general, how do you evaluate your living condition? 2) Are food production and earnings sufficient to meet the needs of the household? 3) Compared to 5 years ago, how do you consider your current living conditions? 4) Do you consider your community to be a good place to live? (SANTOS JUNIOR et al., 2017).

RESULTS AND DISCUSSION

COMMUNITY CHARACTERIZATION

The rural community of São Pedro is located in the vicinity of the Inajaí igarape [blackwater river], with access through the Tauari canal and currently has 18 families, with an average of five people per family. The electricity comes from the Tucuruí hydroelectric plant. The form of water supply for domestic use occurs through artesian wells. The houses are in masonry and wood, with clay or asbestos tile covering, with tile or wood flooring, in good condition.

Regarding the destination of household waste, actions of burning, burial and open sky were observed. The form of transport used by farmers is motorcycle and bicycle, and 100% of the residents consider that in the rainy season (Amazonian winter) access is precarious, and that in the second semester traffic is improved. Some families

of the community are related to each other, and enjoy farming, hunting and fishing, characterizing themselves as extractive rural workers.

In 2005, the Municipality of Limoeiro do Ajuru and the Rural Workers Union (STR) carried out a technical cooperation with the NGO APACC, Associação Paraense de Apoio às Comunidades Carentes (Association for Supporting Underprivileged Communities in Pará), through which training activities were developed through courses that addressed agroecological themes. The APACC, which is an association external to the community, was created in 1994 (SOUZA et al., 2007), stands out for playing a fundamental role in the productive chain of the São Pedro community. In the same year of its creation, APACC conducted initiatives with the residents of the community, promoting the training of multiplier agents to support small local properties.

OPPORTUNITY COST: INCOME FROM FARMING AND LIVESTOCK ACTIVITIES X NON-FARMING INCOME

It is observed that the interviewees from the community of São Pedro have diversified production coverage throughout the year, due to the multiple products worked that alternate, always providing a source of income for the sustenance of the family unit. Sevilla Guzmán (2013) reports the diversity of products coming from this system, in which there is the cultivation of edible plants for food, with plants with short cycles interspersed with those of long cycles, that can be marketed throughout the year.

The UPAs presented income generation from various sources of revenue. In the survey carried out with 10 families, nine have sources of income from per diems and wages, agriculture and forestry, characterizing a diversified system. Only one family does not exploit land-related activities, obtaining income only from sources of per diems/wages and social benefits.

In this context, the activities that most add values are based on the following definition: for agriculture/livestock activities, values are only higher in (40%, n = 2), for

per diems and wages, the values are higher than (50%, n = 4), forestry (50%, n = 1) and social benefits (30%, n = 3). As for total income, the highest collection of R\$ 99 thousand/year (UPA 1) is the result of a mixed composition of all activities, as shown in Table 1. Another important data observed are UPAs with very expressive annual values with income higher than R\$ 30 thousand/year in four UPAs, and in five UPAs the values vary between R\$ 16 thousand and R\$ 30 thousand/year, as described in Table 1. It is worth mentioning that the UPAS relate to each other in various forms of work.

Table 1. Contribution of income in the agricultural production unit (UPA).

| UPAs | Income Contribution | | | | Total income (R\$) |
|--------|---------------------------|--------------|-------------------------|---------------------|--------------------|
| | Agriculture/livestock (%) | Forestry (%) | Per diems and Wages (%) | Social Benefits (%) | |
| UPA 1 | 41 | 14 | 15 | 30 | 99,270 |
| UPA 2 | 4 | 2 | 94 | 0 | 34,500 |
| UPA 3 | 34 | 6 | 60 | 0 | 54,000 |
| UPA 4 | 42 | 25 | 13 | 20 | 23,850 |
| UPA 5 | 30 | 20 | 21 | 29 | 19,750 |
| UPA 6 | 39 | 22 | 0 | 39 | 46,200 |
| UPA 7 | 6 | 6 | 70 | 18 | 27,408 |
| UPA 8 | 29 | 55 | 0 | 16 | 36,500 |
| UPA 9 | 15 | 11 | 44 | 30 | 16,308 |
| UPA 10 | 0 | 0 | 83 | 17 | 28,595 |

Source: Prepared by the author.

It can be noted that the composition of isolated and/or combined income corresponds to a value greater than 40% per contribution. Overall, according to Table 1, the categories are presented as follows: per diems and wages (n=5, 50%), agriculture/livestock (n=2, 20%), agriculture/livestock + forestry (n=1, 10%) forestry (n=1, 10%) and agriculture/livestock + social benefits (n=1, 10%) of the total income achieved in 2021.

It can be observed that the residents of the community have two or more sources of income as seen in Table 1. Some have other professions obtaining a more expressive source of income, and in parallel also work in agricultural activities in another period, maintaining production in different months of the year, systematizing a production cycle; when a crop ends, another is already in production. As an example,

we have the producers of UPA 1, who maintain in their property a system of diversification of sources of income with the plurality of activities, resulting in a higher annual yield compared to other production units. UPA 4 shows the same configuration, but with lower collection in social benefits.

FAMILY COMPOSITION OF THE AGRICULTURAL PRODUCTION UNIT (UPA)

The composition of the families of the community of São Pedro is, on average, five people per establishment, distributed by the following age groups: 1 to 16 years (27%), 17 to 48 years (51%) and over 49 years (22%). This classification presented above refers only to the purpose of distribution of work by categories.

Table 2. Family composition by category in the community of São Pedro (n = 4.7), in 2022.

| Categories | 1 to 16 years | | 17 to 48 years | | >49 | |
|--|---------------|---------|----------------|---------|-----|---------|
| | (%) | Average | (%) | Average | (%) | Average |
| Per diem rates and wages | 11 | 1 | 19 | 1,8 | 9 | 0,8 |
| Agriculture/livestock + forestry | 2 | 1 | 4 | 2 | 0 | 0 |
| Agriculture/livestock + Social Benefit | 4 | 2 | 4 | 2 | 4 | 2 |
| Forestry | 4 | 2 | 9 | 4 | 0 | 0 |
| Agriculture/livestock | 6 | 1,5 | 15 | 3,5 | 9 | 2 |

Source: Prepared by the author.

According to Table 2, in the most active age group of work (17 to 48 years), the categories that presented the highest quantitative were per diem and wages (19% and average 1.8), followed by agriculture/livestock (15% and average 3.5), forestry (9% and average 4), agriculture/livestock + forestry (4% and average 2). In the age group > 49 years, three categories stand out: per diem and wages (9% and average 0.8); agriculture/livestock (9% and average 2); agriculture/livestock + social benefits (4% and average 2). These categories associate income with vegetable cultivation and fruit harvesting. The number of people within the categories in relation to income-generating activities provides evidence of man's permanence in the field.

CULTIVATION SYSTEM

The structural analysis of this cultivation system allows to restore in a hierarchical way the organization and the relations existing in an agricultural production unit (UPA). The maintenance of these properties is still dependent on external inputs that are necessary to maintain the productive cycle, such as poultry and fish farming, activities that depend on feed and wheat bran.

CULTIVATION SYSTEMS

The interviewed families have diversified vegetable crops. Agricultural activities are composed of cultivation and rearing systems. The cultivation system consists of short-cycle plants, such as vegetables, and perennial and semi-perennial plants, such as black pepper (*Piper nigrum* L.), manioc and cassava (*Manihot esculenta* Crantz.) and other consortiums, and also fruit plants such as cocoa (*Theobroma cacao* L.), and cupuaçu (*Theobroma grandiflorum* (Willd. ex Spreng.) K. Schum.).

Table 3 shows that the income generated by producers through the cultivation system serves both for sale and for self-consumption. Among the main ones, the following stand out: vegetables grown by four producers (n = 4, average 0.75 ha), and it is not possible to estimate their value, since with the income, items of daily consumption are purchased. Among the crops with the highest income are cassava (n = 6, average 0.46 ha and average value R\$ 1,300 thousand/year) and cassava derivatives (n = 6, average 0.83 ha and value R\$ 3,000 thousand/year), black pepper (n = 1, average 1 ha) and average value R\$ 500 reais/year. The properties consist of small areas, presenting on average, between 2.3 and 2.6 ha for planting the main crops that complement the family income.

The cultivation of vegetables is significant in the properties, especially chives (*Allium schoenoprasum* L.), cilantro (*Coriandrum sativum* L.), alfavaca (*Ocimum gratissimum* L.), chicory (*Cichorium endivia* L.), chili pepper (*Capsicum chinense* Jacq.), maxixe (*Cucumis anguria* L.) and others, being cultivated throughout the year,

fertilized only with chicken manure, and present themselves as a good option for financial income.

Table 3. Products grown in the community of São Pedro (n = 10), in 2022.

| Main Crops | N | Medium area (ha) | Average value (R\$) |
|--------------------------|---|------------------|---------------------|
| Vegetables | 4 | 0,75 | - |
| Black pepper | 1 | 1,00 | 500,00 |
| Manioc | 6 | 0,46 | 1.341,67 |
| Cassava | 6 | 0,83 | 3.116,67 |
| Other consortium members | 9 | 1,25 | 72,20 |

Source: Prepared by the author.

Other small-scale plantings, such as corn and other grasses, serve as food for the birds. The manure produced is intended for the fertilization of plants, mainly of black pepper and vegetable crops, which are commercialized in the markets and street markets of the municipality, without the participation of middlemen.

FOREST RESOURCES

Among the forest species extracted by farmers, bacuri (*Platonia insignis* Mart.) and açai (*Euterpe oleracea* Mart.) stand out, sold in the "in natura" form. The fruits are also used in the consumption of families, but a large part of the harvest is destined for sale for the maintenance of the property, since part of the financial resources from it has already been used in the expansion of the cultivated area.

It could be observed that all the UPAs have açai (n = 9, average 5.3 ha and average value of R\$ 4,743.00/year), being one of the crops that most adds financial value and food for the families of the community. The bacuri is cultivated in four establishments, with an average area of 0.6 ha and an average value of 55 reais/year. Both are native cultures of the region that require few investments (Table 4).

Table 4. Products extracted in the community of São Pedro (n = 10), in 2022.

| Extractivism | N | Average area (ha) | Average value (R\$) |
|---------------|---|-------------------|---------------------|
| Acai (native) | 9 | 5,3 | 4.743,00 |
| Bacuri | 4 | 0,6 | 55,00 |

Source: Prepared by the author.

The bacurizeiro [bacuri tree] is a rustic plant that needs little treatment in its cultivation. In the studied units, in most areas, the treatment was applied only after the trees began to produce and consisted only of an annual clearing to facilitate the collection of fruits.

According to Miranda et al. (2022), the açai is a typical forest species of the Amazon estuary with permanent culture characteristics, it needs treatment of the clumps for better development of its stipe. Its fruit has great economic expression and composes the nutritional food chain mainly of the families of the Amazonia. In the Amazonia Tocantina, the açai is planted in monoculture and intercropping, however the native açai trees are the majority.

REARING SYSTEM

Among the types of rearing carried out, the rearing of fish by the families interviewed was observed on a small scale (n=3 and average value R\$ 690 reais/year), in excavated tanks measuring 12 m wide x 25 m long x 1.20 cm high; the main breeding species is the tambacu (*Colossoma macropomum* G. Cuvier, 1818), which is a hybrid of the crossing of the tambaqui with the pacu, where 500 units are housed for a period of 6 months, reaching an average weight between 1 kg to 1.2 kg, a fish of good quality and excellent flavor, and it is a strategic initiative to ensure food during the winter period.

Chicken rearing is carried out on a larger scale (n=5 and an average value of R\$ 213 reais/year) per family unit, in addition to two other types of rearing (pigs and other birds) that serve for self-consumption (Table 5).

Table 5. Types of breeding in the community of São Pedro (n = 10), in 2022.

| Creation | N | Average value (R\$) |
|-------------|---|---------------------|
| Fish | 3 | 690,00 |
| Chicken | 5 | 213,80 |
| Pigs | 5 | 3,40 |
| Other birds | 6 | 16,00 |

Source: Prepared by the author.

On the farms, chicken rearing involves the lineage of white cut, *caipirão* and the - *Rhode Island Red* - popularly known as "rode", raised in semi-extensive system. They are fed with balanced feed acquired in the local trade, corn extracted from the property itself and grazing for much of the day. In addition to the consumption and commercialization of poultry, producers use eggs for self-consumption.

Neves (2014), alerts to the importance of the autonomy of farming families, especially with regard to the maintenance of traditional practices and the rescue of the man-nature relationship, presenting a strong relationship with food sovereignty, since it establishes alternatives for sustainable rural development.

LAND USE CAPACITY BY CATEGORY

The categories presented in the community of São Pedro have a heterogeneous reality in terms of land use (Table 6). Agriculture and forestry have the highest exploitation of agricultural use (average 24.21 ha and 16 ha); followed by capoeira [bushes] (average 11 ha and 8 ha) and forest (average 19.15 ha and 13 ha). However, in spite of the per diem and wage category being the majority of the UPAs (n=5) the results showed agricultural use (mean 1.25 ha); capoeira (average 0.38 ha) and forest (average 0.66 ha).

Table 6. Land use, in hectares, community of São Pedro (n = 10), in 2021.

| Land use | Categories | | | | | | | | | |
|-----------------------|-------------------|--------------|----------------------------------|--------------|--------|--------------|---------------------------------|--------------|-----------------------|--------------|
| | Per diem and Wage | | agriculture/livestock + Forestry | | forest | | agriculture/livestock + benefit | | agriculture/livestock | |
| | n | Average (ha) | n | Average (ha) | n | Average (ha) | n | Average (ha) | n | Average (ha) |
| Agriculture/livestock | 4 | 1,25 | 1 | 2 | 1 | 16 | 1 | 3 | 2 | 24,21 |
| Capoeiras | 2 | 0,38 | 1 | 0,25 | 1 | 8 | 1 | 0,5 | 2 | 11 |
| Forests | 5 | 0,66 | 1 | 0,5 | 1 | 13 | 1 | 1 | 2 | 19,15 |
| Other uses | 5 | 0,41 | 1 | 0,25 | 1 | 1,25 | 1 | 0,25 | 2 | 3,75 |

Source: Prepared by the author.

In this context, agricultural diversification is configured as an alternative income for family farmers, different from when the owner opts for only one annual crop as his main source of income. In this case, he runs the risk of loss of production due to external agents such as weather, pests and diseases or subject to market conditions.

However, if he has other activities, such as horticulture, fruit growing and livestock, either for commercialization or for the consumption of his family, he will have an alternative monthly income (BRANDÃO; DE CASTRO; FUTEMMA, 2019).

DIVERSIFICATION AND FOOD PRODUCTION: EXPERIENCE OF AN ALTERNATIVE AGRI-FOOD SYSTEM

It is worth highlighting the behavior of the family unit UPA 1, which, during the study, states that the objective of the change to diversified productive system was to produce food for self-consumption and income generation, taking into consideration changes in the configuration of its property and above all, the respect for the environment.

Interviewee 1 points out that the experience with the productive system allowed for a significant food autonomy, approximately 70% of the family's livelihood depends directly on the production of the property, with emphasis on vegetables, fruits of the region, chicken and fish farming, which in addition to improving the quality of life of the family, promoted nature conservation. Another lady that we interviewed added:

"[...] We always have chicken, duck, eggs, fish, here from the pond, for the sustenance of our family, and fruits, that we consume and sell the surplus: bacuri, pupunha, piquiá, passion fruit, cocoa, cupuaçu, açaí and also lemon. All this, we gather from here, from our property and it has helped us a lot. Another thing is that it has greatly improved our quality of life" (Interviewee 2, farmer, 70 years old, Limoeiro do Ajuru, 2020).

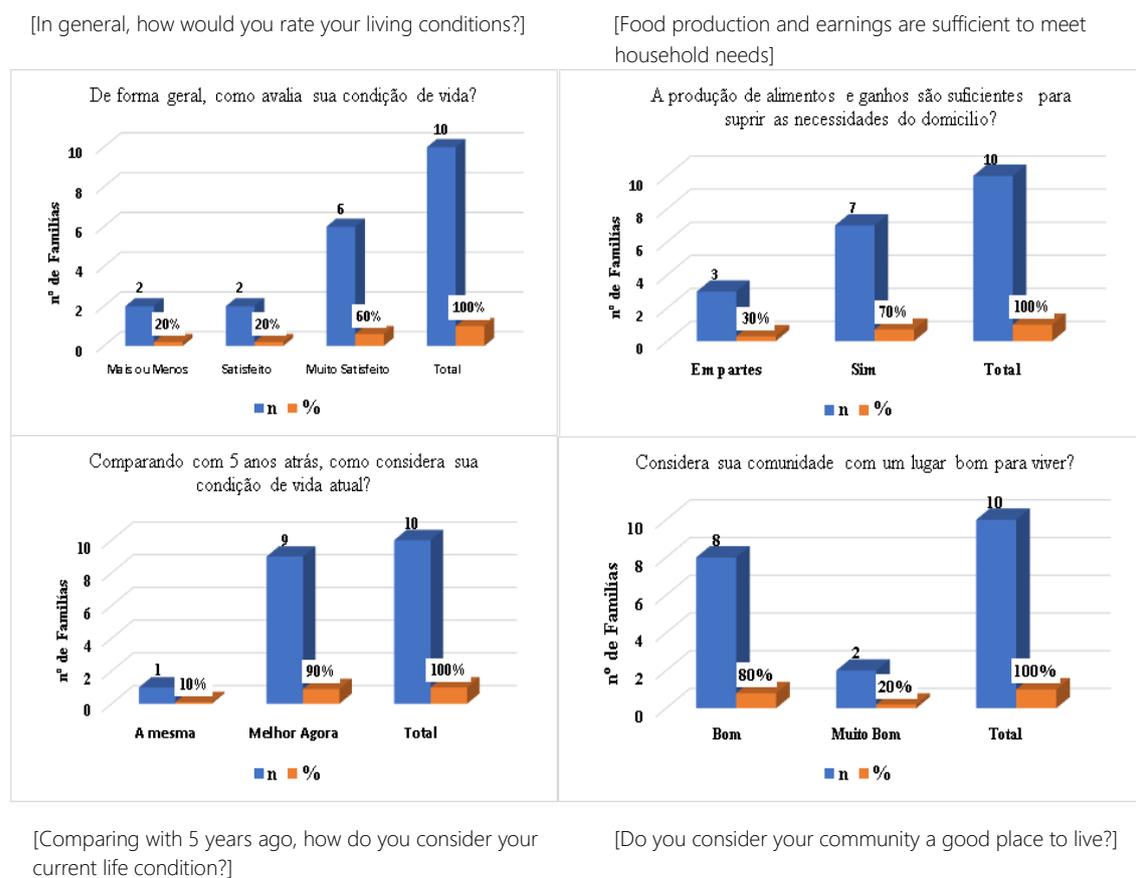
Analyzing the results that were obtained based on the reports of farmers, one can note, immediately, that the learning acquired through the agroecology training courses organized by APACC, fostered in the region, a new modality of exploring the land, where experiences with productive diversity have become significant in the construction of family autonomy, contributing to the generation of income, reinforcing the conditions for the farmer to remain in the rural space, associated with new knowledge of sustainability and promotion of social welfare. According to Coqueijo, Lima e Silva (2022), production for self-consumption provides food security and

resource saving. Therefore, producing food is one of the explanatory reasons of the socioeconomic condition of the rural property of the family surveyed.

SOCIAL WELL-BEING

Related to the well-being data, the percentages of responses showed values above satisfactory (according to the proposed script), which may indicate advances in the quality of life of the residents of the community (Figure 1). The perception of families about living conditions and how they interpret everyday facts are an important factor in staying with the land. For Sen (2001), the standard, the quality or conditions of life are not measured by the possession of a set of goods, nor by the quality inherent to them, but by the capacity of families to use these goods to obtain satisfaction or happiness.

Figure 1: Social well-being in community of São Pedro, 2021.



Source: Prepared by the author.

The results on the community of São Pedro demonstrated the families' way of living and the use of natural resources for survival. The indicators served to better understand the family production units (UPAs), and that some activities have agro-extractive characteristics, typical of traditional knowledge of the Amazon region.

CONCLUSION

The structural analysis of the data showed that the production units obtain income in at least three activities (per diems and wages, agriculture/livestock and forestry). Based on the compositions of income that alone or combined correspond to the higher value 40% per contribution of family income, the UPAs are distributed in the following categories: per diems and wages (50%), agriculture/livestock (20%), agriculture/livestock + forestry (10%), forestry (10%) and agriculture/livestock + social benefits (10%). It shows that part of the UPAs depends on resources that are outside the establishment, considered as non-agricultural work.

The family composition is on average 5 people per establishment, and in the age group of 17 to 48 years, who perform work activities is the highest percentage with 51%, while that in the age group over 49 years has only 22%, the remaining 27% (1 to 16 years) collaborate with other activities. The per diem and wage category have the largest contingent of people (19% and average 1.8 people), followed by agriculture/livestock (15% and average 3.5) and forests (9% and average 4). This implies that there is a significant percentage of people working on other properties, selling their labor power.

Inserted in the cultivation systems are the types of planting that most contributed to the family income, such as cassava (n = 6, average 0.83 ha and value R\$ 3,000 thousand/year), manioc (n = 6, average 0.46 ha and average value R\$ 1,300 thousand/year) and black pepper (n = 1, average 1 ha and average value R\$ 500 reais/year). These crops are part of the diet of the local population. As for the products from forest resources, the extraction of native açai stands out (n = 10, average 5.3 ha and average value R\$ 4,269.00 per year) which became food and source of income.

In the animal rearing system, the activities are still starting, the UPAs that have some types of breeding do so for self-consumption, due to the fact that the installation of this type of system requires high financial capital to pay for the facilities, management, sanity, feeding and available time.

The use of land by the residents of the community is heterogeneous (agricultural area, capoeira [bushes], forest and other uses), following the agricultural calendar of each crop. The agriculture/livestock and forestry categories present the largest exploitation of agricultural use. The per diem and wage category presented the lowest mobility of agricultural use. Such information reveals the importance of the sources of income of the establishments, allowing the perpetuation of family units and establishing a greater relationship with the land.

The experience of sustainability in the São Pedro community demonstrates that family farming, being a social category, through productive diversification, drives the improvement of the quality of life, guarantee of occupation and income, preservation of the environment and fixation of the family in the property.

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