

THE SOCIOBIODIVERSITY OF AGROFOOD SYSTEMS IN THE RIACHO DO MEL COMMUNITY, IRAQUARA, BAHIA

A SOCIOBIODIVERSIDADE DOS SISTEMAS AGROALIMENTARES DA COMUNIDADE RIACHO DO MEL, IRAQUARA, BAHIA

LA SOCIOBIODIVERSIDAD DE LOS SISTEMAS AGROALIMENTARIOS DE LA COMUNIDAD RIACHO DO MEL, IRAQUARA, BAHÍA

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ABSTRACT

The study aimed to understand the agricultural and social dynamics of a rural community by analyzing forms of labor organization, cooperation practices, and the use of local resources. The research was conducted in the quilombola community of Riacho do Mel, located in the municipality of Iraquara, Chapada Diamantina (Bahia, Brazil), through semi-structured interviews with 25 farming families, intentionally and stratifiedly selected to include different sectors of the residential nucleus and thus ensure spatial representativeness, as well as through the “snowball” sampling technique. The results indicate that local production is predominantly oriented toward self-consumption, sustained by essential crops such as corn, beans, cassava, and castor bean, and complemented by the diversity found in home gardens, which significantly contributes to the families’ food security.

Keywords: Agrobiodiversity. Traditional Communities. Extractivism. Family Farming.

RESUMO

O estudo teve como objetivo compreender a dinâmica agrícola e social de uma comunidade rural, analisando as formas de organização do trabalho, as práticas de cooperação e o uso dos recursos locais. A pesquisa foi desenvolvida na comunidade quilombola de Riacho do Mel, situada no município de Iraquara, Chapada Diamantina (BA), por meio de entrevistas semiestruturadas com 25 famílias agricultoras, selecionadas de forma intencional e estratificada, buscando contemplar diferentes setores do núcleo habitacional e, assim, garantir representatividade espacial bem como através da técnica “bola de neve”. Os resultados indicam que a produção local é predominantemente voltada ao autoconsumo, sendo sustentada por cultivos essenciais, como milho, feijão, mandioca e mamona, e complementada pela diversidade presente nos quintais, contribuindo significativamente para a segurança alimentar das famílias.

Palavras-chave: Agrobiodiversidade. Comunidades Tradicionais. Extrativismo. Agricultura Familiar.

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RESUMEN

El estudio tuvo como objetivo comprender la dinámica agrícola y social de una comunidad rural, analizando las formas de organización del trabajo, las prácticas de cooperación y el uso de los recursos locales. La investigación se desarrolló en la comunidad quilombola de Riacho do Mel, ubicada en el municipio de Iraquara, Chapada Diamantina (Bahía), mediante entrevistas semiestructuradas con 25 familias agricultoras, seleccionadas de manera intencional y estratificada para representar diferentes sectores del núcleo habitacional, garantizando así la representatividad espacial, así como a través de la técnica de “bola de nieve”. Los resultados indican que la producción local está predominantemente orientada al autoconsumo, sostenida por cultivos esenciales como maíz, frijol, mandioca y ricino, y complementada por la diversidad presente en los patios familiares, lo que contribuye significativamente a la seguridad alimentaria de las familias.

Palabras clave: Agrobiodiversidad. Comunidades Tradicionales. Extractivismo. Agricultura Familiar.

1 INTRODUCTION

Brazil stands out for its expressive diversity of native and cultivated plant species, which constitute both the basis of food and the main source of raw materials used by different social groups. This wide genetic variability, historically conserved and managed by farmers and traditional populations, results from a continuous process of selection and adaptation to local conditions. However, such practices and knowledge still lack greater appreciation and recognition, considering their essential role in maintaining productive autonomy and ensuring food security for rural and traditional communities (Brasil, 2006).

The concept of sociobiodiversity, formalized in 2009, comprises the articulation between goods and services originating from natural resources and the production chains associated with traditional peoples and family farmers (Diniz; Cerdan, 2017). Despite its social, cultural and economic relevance, the consumption of socio-biodiversity products is still limited, which highlights the need for policies and actions that encourage its commercialization and expand its presence in local markets. In this way, it is possible to strengthen short marketing circuits, preserve eating habits and cultural traditions, in addition to contributing to territorial development and the autonomy of producing families (idem).

According to Toledo and Barrera-Bassols (2015), biodiversity is a comprehensive concept that encompasses the variety of landscapes, types of vegetation, species and genes. For Diegues et al. (2000), this diversity is not only the result of natural processes, but also of cultural interactions and the management carried out by human societies. Thus, species become not only biological resources, but also symbolic, cultural and economic elements, integrating the daily life, productive practices and imagination of traditional communities.

The sustainability of traditional production systems depends fundamentally on the ability of farmers to ensure that the levels of biodiversity of managed ecosystems remain stable (Noda; Noda, 2016). The maintenance and cultivation of this genetic variability are currently practices conducted mostly by traditional farmers, who play an essential role in the conservation of genetic resources and the continuity of local ways of life (idem).

The diversity of cultivated plant species is determined by multiple factors, including the specific needs and demands of each family, the demands of the consumer market and traders, as well as aspects related to the origin, life history, and socioeconomic conditions of farmers (Figueredo et al., 2023). This plurality of motivations reflects the complexity of family agri-food systems, in which production aimed at self-consumption occupies a central place.

Production for self-consumption fulfills a fundamental principle of food security, by ensuring access to food in harmony with local eating habits and practices (Joseph; Rossetto, 2021). In addition to ensuring family food, this practice strengthens farmers' autonomy and resilience, reducing dependence on markets and the impacts of economic and environmental crises (Soares et al., 2018). At the same time, family farming is one of the main pillars of food security and sovereignty, responsible for a large part of the production of food for domestic consumption and for ensuring the permanence of populations in the countryside (Joseph; Rossetto, 2021).

Traditional agricultural practice has a multifunctional character, articulating cultural, environmental, food and economic dimensions. It performs functions ranging from the conservation of agrobiodiversity and the promotion of food and nutritional security to the sustenance of the cultural fabric and the socioeconomic base of the communities (Joseph; Rossetto, 2021). By valuing their socio-cultural heritage, such as knowledge, customs and traditions, farmers ensure their social reproduction and the continuity of their activities in the territory.

The management of agrobiodiversity by farmers is a strategic practice to ensure food security and sovereignty, as it expands the diversity of the food base at local and regional levels, stimulates the exchange of knowledge, and contributes to the conservation of genetic resources, such as seeds and seedlings, and traditional agroecosystems (Pereira et al., 2017). The knowledge and management practices developed in backyards and swiddens constitute a set of agri-food strategies aimed at guaranteeing food and the autonomy of rural communities. Such knowledge is fundamental for the effectiveness of food security, as long as it respects the ways of life and socio-environmental relations of each people (idem).

Agrobiodiversity, also called agricultural biodiversity, is the result of the interaction between the environment, genetic resources, management systems, and local knowledge, and is the result of a historical process that combines natural selection with artificial selection conducted by farmers (Ferreira, 2017). It is a section of biodiversity that expresses the relationships established between nature and culture, between traditional knowledge and productive practice, and is essential for the sustainability of agri-food systems (Machado et al., 2008).

According to Machado et al. (2008), agrobiodiversity is formed by the interaction of four interdependent elements: cultivation systems, species and varieties, human diversity and cultural diversity. The management of this diversity results in the conservation of local

and traditional varieties, in the balance of crops and in the maintenance of cultural values, constituting a fundamental genetic and symbolic heritage for food sovereignty.

In this way, biodiversity encompasses both the natural and cultural domains, and it is through culture – expressed in the form of knowledge and practice – that traditional populations manage, enrich and preserve biodiversity (Diegues et al., 2000). Thus, understanding agrobiodiversity implies recognizing the central role of farmers in the conservation of biological and cultural diversity, as well as in sustaining local agri-food systems and their ways of life. In this context, the present study aimed to map the sociobiodiversity present in different traditional agroecosystems, such as backyards, gardens, pastures and managed forests, in the community of Riacho do Mel.

1.1 METHODOLOGICAL PROCEDURES

The research was conducted in the quilombola community of Riacho do Mel, located in the municipality of Iraquara, in the Chapada Diamantina region, Bahia. The study was based on the principles of social research, considering that the object of analysis of the social sciences is of a historical nature, since each society is constituted and organized in a unique way in a certain geographical and temporal space (Minayo et al., 2007).

The first stage consisted of carrying out a participatory mapping, based on ethnomapping techniques as described by Bandeira et al. (2018). Workshops were promoted in the community association, in which residents defined the boundaries of the territory for common use of the community; This activity made it possible to elaborate a territorial polygonal and visualize space through satellite images.

With the support of *Google Earth* and *Google Maps*, an estimate of the number of families residing in the community was carried out, totaling approximately 243 family units. Among these, 25 farming families were selected in an intentional and stratified way, seeking to contemplate different sectors of the housing nucleus and, thus, ensure spatial representativeness. In addition, the "snowball" technique was used (Vinuto, 2014), in which the research began with a farming family indicated by community residents, who, in turn, indicated other families, and so on.

Data collection was conducted through semi-structured interviews, applied with the help of two forms: one addressing general information about the family and the other specifically focused on agricultural crops and production practices. The interviews were

conducted with farmers who voluntarily consented to participate in the study, by signing the Informed Consent Form (ICF).

The interviews took place in the participants' homes and, when authorized, direct surveys were carried out in the backyards and gardens of the families. In these visits, the locations were georeferenced using GPS (Global Positioning System). The tabulation and quantitative analysis of the data were performed with the Microsoft Excel software, while the identification of the cultivated species and varieties was made based on local knowledge, therefore, of ethnovarieties, and based on bibliographic consultations in the specialized literature.

2 RESULTS AND DISCUSSION

In all, 25 interviews were conducted with people whose ages ranged from 36 to 84 years. Of these, 68% were male and 32% female. The number of residents per household ranged from one to six people, with the highest percentage (36%) corresponding to two residents. This data shows the reduction in the number of residents in the houses of rural communities.

The crops most cited by the families and cultivated on a larger scale by the research participants were beans (*Phaseolus vulgaris* and *Vigna unguiculata*), cassava (*Manihot esculenta* Crantz), corn (*Zea mays*), castor bean (*Ricinus communis*) and banana (*Musa spp.*). Coffee (*Coffea arabica*), sugarcane (*Saccharum spp.*) and pineapple (*Ananas comosus*) were also mentioned, to a lesser extent, cultivated both for consumption and animal feed and for commercialization. Pereira et al., (2017, p. 17) highlight that:

The ethnospecies cultivated in gardens, such as beans, cassava and corn, are fundamental because they are available in more periods and allow long-term storage, in relation to cassava, the production of flour and other derivatives also works as a strategic reserve, attenuating the meaning of food shortage in periods of scarcity.

In addition to these crops, oranges (*Citrus spp.*) and mangoes (*Mangifera indica*) were frequently mentioned, although they have a low number of individuals, as they are perennial species generally grown in backyards and intended for family consumption. This fact corroborates the statement by Barbosa et al. (2023) that the diversification of production in backyards directly contributes to strengthening food security and promoting autonomy in obtaining food. In addition, backyard crops can also represent an important source of income

generation, since farmers have the possibility of selling surplus production (Carneiro et al., 2013).

In all, approximately 153 ethnovarieties of cultivated plants were identified, covering staple foods such as beans, corn, cassava and commercial foods such as castor beans – which make up the basis of local production – as well as vegetables, fruit trees, medicinal plants and Non-Conventional Food Plants (PANCs) (Tables 1 and 2). Some of these species showed wide internal diversity. Fruits represent a fundamental part of the diet, as they provide significant amounts of essential vitamins and minerals (Carneiro et al., 2013). The relevance of the native plants mentioned is also highlighted, recognized as an integral part of the culture and heritage of the populations of each region (Jacob et al., 2020).

As families maintain the practice of saving seeds from the previous crop for the next planting, there is an important contribution to the conservation of local varieties. These varieties constitute the basis of family farming and food sovereignty, as they represent a genetic heritage of tolerance and resistance to different types of stress and adaptation to local environments and management (Machado et al., 2008).

Few varieties are cultivated by a larger number of families; among them, corn, cassava, beans and castor beans, which make up the basis of local agriculture and are characteristic of the swiddens of the community of Riacho do Mel. The other varieties are cultivated by fewer families, according to the particularities of each domestic group, evidencing an idiosyncratic variation of local agricultural systems. As observed by Santos et al. (2017) in the Laranjeira I Settlement, located on the edge of the Pantanal of Cáceres – MT, the main purpose of the agricultural activity practiced by the farmers of Riacho do Mel is also self-consumption. As production is mostly aimed at self-consumption, family food preferences are the criterion that, in general, defines which species and varieties will be cultivated (Joseph; Rossetto, 2021)

Table 1

Ethnovarieties of crops from traditional agroecosystems (backyards, gardens, pastures and managed forests) cited by the research participants (n = 25), in the Riacho do Mel community, Iraquara, Bahia

Ethnovarieties	Ethnovarieties	Ethnovarieties
Avocado	Pineapple Pernambuco	Alligator squash
Acerola	Yellow cassava	Cassava cocoa

Eucalyptus cassava	Butter cassava	Black butter cassava
Black cassava	White root cassava	Purple cassava
Mulberry	Andú	Rice
Banana caturra	Banana Coffee	Maranhão banana
Banana nanica	Silver Banana	White Potato
Cassava potatoes	Pink potato	Purple potato
Sweet gourd	Coffee	Cane 190
White or Caiana cane	Caiana cane	Black caiana cane
Vulture cinnamon cane	Cana fista	Yellow fista cane
Black fista cane	Cana maria pelada	Cane without thorn
Pink cane	Capiaçu grass/ cutting	Bittergrass (native)
Anapiê cutting grass	Brachiaria grass	Cutting grass
Grass flu	Mombasa grass	Purple grass
Evergreen grass	Tanzania grass	Carambola
Caxia/Caxi	Bahia coconut	Broad bean
Calango beans	Arranca beans	Purple/Purple Bage Beans
Carioca beans	Carioquinha beans	Picker beans
Cucurinha beans	String beans	Pink beans
Purple beans	White guava	Red guava
Soursop	Orange spike	Water orange
Ponkan orange	Orange navel	Galician lemon
Yellow papaya	Japanese papaya	Papaya
Castor bean coca	Castor bean maringá	Castor bean
Small castor bean	Castor bean from the Northeast	Castor bean paraguaçu
Painted castor bean	Painted black castor bean	Black castor bean/ banana
Black castor bean/	Black castor bean	Castor bean evergreen
Red castor bean	White cassava	Wild white cassava
Castilian cassava	Jatoba cassava	Cassava parakeet tongue
Cassava	Cassava maria preta	Cassava eye of the forest
Cassava black eye	Cassava black eye of the forest	Cassava plant
Black cassava	Purple cassava	Cassava tazineha
Red cassava	Import Mango	Sword sleeve
Palm sleeve	Manga papo roxo	Pink sleeve
Yellow passion fruit	Maxixe	Watermelon coconut
Round watermelon	Fine cob corn	Girl's palm
Bird pepper	Chili pepper	Pine cone
Surinam cherry	Okra	Seriguela

Tamarind	Umbu	
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Source: Authors, 2024.

Table 2

Ethnovarieties of vegetables, medicinal plants and PANCs of the traditional agroecosystems cited by the research participants in the Riacho do Mel community, Iraquara, Bahia

Vegetables	Medicinal	Unconventional food
Lettuce	Carapiá (tea)	Jackfruit
Coriander	Black dick	Licuri
Onion	Cotton	Jabuticaba
Cabbage	Barbatimão	Cow's tongue
Bell pepper	Bilberry	Purslane
Arugula	Carobinha	Mangaba
Parsley	Dandá	Palm
	Fennel	Cherry tomato
	Mint	Bredo
	Maria aninha	Ora-pro-nóbis
	Moringa	Cajá
	Mucugê	Cambuí (native)
	Stonebreaker	Guava
		Graviola/ Ticum da serra (native)

Source: Authors, 2024.

The results also reveal a general pattern of variation in the diversity of crops in the swiddens of Riacho do Mel, in which few varieties are cultivated by a greater number of families, namely: corn, cassava, beans and castor beans. In this way, this combination constitutes the basis of local agriculture, characterizing the community's gardens: or standard systems (model) of cultivation. The other varieties mentioned, for the most part, are cultivated by a smaller number of families, representing individual or family preferences (idiosyncratic variation).

Corn was mentioned by more than half of the interviewees, being a crop widely cultivated in the community and used both for family consumption and for the commercialization of grains and animal feed. However, it is not known whether more than one family cultivates the same variety, due to the high proportion of respondents who could

not identify it, probably due to the prolonged use of hybrid varieties purchased in local markets or government programs.

According to Emperaire (2005, p. 33), cassava is one of the main sources of carbohydrates and its production is associated with food autonomy. Of the ethnovarieties of cassava (*Manihot esculenta* Crantz), butter cassava was mentioned by 40% of the interviewees, even in the face of the high diversity of varieties existing in the community. This highlights the importance of cassava for the local population, as its varieties are widely used: the cooked tuber is consumed by families (such as the cassava butter ethnovariety), the parts of the plant are destined for animal feed, and the processed tuber is used in the production of flour and tapioca, both for consumption and for commercialization. Similar results were observed by Joseph and Rossetto (2021) in the District of Mimoso – Municipality of Santo Antônio de Leverger, MT, where cassava is considered a central food in the diet, being also an important source of income and planted both for *fresh* consumption and for the manufacture of by-products (flour, cakes, among others), which complement the diet of families.

Andu beans and fava beans are also cultivated by many families in the fields and backyards, although in smaller quantities. According to the interviewees, andu beans are generally planted around the plantations and intended for family consumption, being one of the crops present in almost all properties. This fact corroborates the study developed by Carneiro et al. (2013) in the Alegre Settlement, municipality of Quixeramobim-CE, in which it is highlighted that the primary purpose of productive backyards is to generate food for family self-consumption.

Common beans, in turn, have a great diversity of varieties in the community, and the most cited varieties that are part of local agrobiodiversity were purple bagé beans (or purple bagé) and rosinha beans, often cultivated in intercropping with castor beans and corn. These varieties are mainly aimed at self-consumption, being sold only when there are surpluses, which occurs less frequently due to the low productivity associated with periods of drought.

Castor bean was also widely mentioned by the interviewees and is part of the most common polyculture system in Riacho do Mel. As it is a crop with a production cycle of 6 to 12 months, polyculture is an agricultural strategy that, in addition to promoting benefits to the soil, allows the combination of crops with different cycles, expanding the supply of food and products for commercialization over time. Castor bean has a great diversity of varieties in the community, with black castor bean being the most cited. Its cultivation is exclusively intended

for commercialization: farmers sell the grains in 60 kg bags to middlemen, with prices varying according to the period of sale.

Some farmers also intercrop coffee with pineapple or coffee with cassava. Coffee is grown mainly for self-consumption, and the families that produce it in larger quantities also sell the dry beans in the years of higher productivity. The artisanal process of preparing coffee powder is carried out with manual roasting and grinding of the beans in a wooden mortar.

Sugarcane showed a high diversity of varieties, concentrated, however, in a few swiddens, with cayan cane being the most cited. Some producers grow sugarcane for animal feed, especially cattle, while others sell it through the sharecropper system for the production of cachaça and rapadura in neighboring communities. In this type of trade, half of the production is with the producer and the other half with the owner of the still.

Another crop with emphasis on varietal diversity was grasses, used in animal feed. These species are usually cultivated in pastures or in intercropping with other grass varieties, being cut for direct supply to the animals. An example of polyculture reported was the intercropping of grass with banana trees.

Some families also maintain the cultivation of vegetables in their backyards for their own consumption. Barbosa et al. (2023) recognize that agroforestry backyards are important spaces for family and social coexistence, built and transformed mainly by women, in an activity that represents the extension of their historical role of caring for the domestic environment. In addition, these spaces contribute significantly to the preservation of agrobiodiversity (Carneiro et al., 2013).

In the community's traditional agroecosystems, medicinal plants and non-conventional food plants (PANCs) are found (Chart 2); Few conventional vegetables were mentioned by the research participants, with lettuce and coriander being the most mentioned. All are grown in family backyards, intended for self-consumption, although some farmers also distribute them to friends and neighbors.

The use of plants with medicinal and herbal properties forms one of the main bases that define a diet as sustainable (Jacob et al., 2020). Among the medicinal plants, both species cultivated in backyards and gardens and native species or those that sprout spontaneously in cultivated areas were identified; The most cited were caapiá and picão-preto, generally used in the preparation of medicinal teas.

Native plants have great potential to enrich and diversify the food sources available to local populations (Jacob et al., 2020), in addition, they represent a crucial resource of local

agrobiodiversity (Figueredo et al., 2023). The most mentioned Non-Conventional Food Plants (PANCs) were jackfruit (*Artocarpus heterophyllus*), licuri (*Syagrus* spp.), jaboticaba (*Plinia* spp.) and cow's tongue, all native species of the region. From jackfruit and jaboticaba, the fruits are consumed *in natura*, and jaboticaba is also used in the production of liquor, both for family consumption and for commercialization. From the licuri, some families consume the fruit *in natura* and use the leaves in the making of handicrafts, such as bags. Cow's tongue, as well as purslane, palm, bredo and cherry tomato, is used in the preparation of meals, complementing the diet of some families.

The results of this research are in line with the study carried out by Santos et al. (2022), which points to the consumption of fresh food plants as the predominant form, followed by preparation methods that involve the application of heat, such as cooking, roasting, and the production of sweets.

Of the 25 families interviewed, 92% have agriculture as their primary activity. Among the secondary activities, cattle raising, trade in bars, artisanal production and occasional work in third-party gardens (in the form of sharecroppers) stood out. The average area of the swiddens was approximately 3 hectares (ha), ranging from 0.2 ha to 17.2 ha. These areas range from plantations of domesticated species to areas of preserved vegetation and pastures. Most of the swiddens belong to the families themselves, as well as in the District of Mimoso (Joseph; Rossetto, 2021) while others are ceded for cultivation, in which case production is shared with the landowner.

The production systems are mostly located in areas far from the urban core, where the residences are concentrated. Some crops, however, are carried out in small areas in backyards, in these spaces, there is a greater presence of fruit and medicinal plants, a result similar to that found by Barbosa et al. (2023).

To prepare the soil before planting, some families hire machinery to carry out plowing and harrowing, and maintenance cleaning is done with hoes. Others carry out all the handling manually, using hoes and sickles. The use of coivaras to clear the swiddens is not a recurrent practice among the families.

The soils of the swiddens vary according to the location, being described by farmers as oak soils, general soils, clayey soils of red or yellow color and sandy soils. The most common conservation practice is the covering of the soil with crop residues, recognized by many farmers as important for the protection, conservation and fertility of the soil, in addition to contributing to moisture retention. In this sense, residues and leaves from corn, castor

bean, cassava and sugarcane crops are left in the soil, being used as organic fertilizer or mulch.

In addition, it is common to plant legumes between crops, as a way of enriching the soil, and the practice of intercropping is widely adopted in the community. The polyculture system most practiced by the farmers interviewed is the intercropping between corn, beans and castor beans, although corn is also cultivated in association with cassava. This system represents a strategic choice, as it optimizes production and constitutes an advantageous alternative in scenarios where the spaces destined for cultivation are reduced (Santos et al., 2017).

The use of industrial agricultural inputs is infrequent among the interviewees, only one family reported using NPK 4:14:18 fertilization in beans, watermelon and corn crops. In addition to vegetable residues, some farmers use cattle manure to fertilize fruit and vegetables. Approximately half of the interviewees adopt the practice of leaving the soil fallow, usually during the dry season, waiting for the beginning of the rains for the new planting.

Of the swiddens analyzed, 84% are conducted in a rainfed system, which negatively impacts productivity during periods of drought, causing significant losses to farming families. As an alternative, many choose to plant "in the rainy seasons", which usually occur from October to the beginning of the following year. Few crops are destined for commercialization, especially in rainfed gardens; Sales occur only when there are surpluses, which is rare due to low productivity in dry seasons. In view of this, pensions and social programs become fundamental for the food security of families.

In addition to the reduced number of residents, the active workforce in the fields is also limited. The largest proportion (40%) corresponds to families with only two active people, usually couples or parents and children. Some interviewees highlighted that young people's interest in agriculture has decreased, since many seek other economic activities, including outside the community. This trend contributes to the reduction of the intergenerational transmission of agricultural knowledge, breaking the cycle of reproduction of traditional knowledge and practices, which represents a risk to the preservation of the community's biological and cultural heritage (Brasil, 2006).

The reduced number of people involved in agricultural activities in families generates the need to occasionally hire external workers to perform tasks such as planting, weeding, plowing and harrowing the soil. Among the families interviewed, 33% stated that they hire occasional labor, either because the residents are elderly and can no longer carry out all the

activities in the fields, or because there is a demand for work that exceeds the family's capacity. A result higher than that found by Joseph and Rossetto (2021) in the District of Mimoso – Municipality of Santo Antônio de Leverger, only 5% used hired labor due to barriers such as the high cost of this type of labor and the lack of people interested in the work. On the other hand, some families do not hire workers, as agricultural production does not generate enough profit to pay for external labor. There are also those composed exclusively of elderly people, who resort to hiring casual workers to maintain their production.

Collective actions, such as the "change of working day", are not common practices among the interviewees, being reported by only a few families. When they occur, they usually occur between family members, such as children and siblings who live in different houses and share the work in the fields, or between neighbors who have greater affinity. These actions usually occur in periods that require greater demand for labor, such as harvest seasons or in the construction of fences; this practice was also observed in the study conducted by Joseph and Rossetto (2021).

When asked about the exchange of agricultural materials, such as seeds, seedlings and cultivated products, many families initially answered that this practice did not occur. However, throughout the interviews, several participants reported sharing some crops and materials with neighbors, family and friends. Of note is the change of maniva or "manaiba", a term popularly used to designate the piece of cassava stem used in vegetative propagation, a common practice in the community, since it is the main form of multiplication of cassava, usually planted soon after the tubers are harvested.

Half of the families interviewed have some type of animal husbandry, such as cattle, chickens, pigs, fish or goats. These creations are mainly intended for self-consumption, and are eventually marketed. Chicken eggs are usually consumed and artisanal production of dairy products, such as cheese and sweets, which are sold to supplement the family income. The aggregation of value to milk, through its artisanal processing into derivatives, is a key factor to strengthen the production system, since it makes dairy farming economically viable, allowing it to remain under the management and control of the farming family. (Gavioli; Costa, 2011).

Extractivism is a complementary activity of income, but it presents low commercial demand due to the little development of local productive arrangements aimed at native species (Diniz; Cerdan, 2017). In this context, only one family interviewed reported working with extractive activities, selling products obtained from cambuí, mangaba (*Hancornia* sp.)

and licuri (*Syagrus* spp.). For Figueiredo et al. (2023), by exploiting native species as a source of income through family farming, they become a key element to boost the sustainable development of the region. According to Gavioli and Costa (2011), this practice can be understood as a biodiversity management strategy, representing a form of conservation of natural resources with potential for expansion and indicating, at the same time, a greater proximity of farmers to their ecological environment.

3 FINAL CONSIDERATIONS

The results obtained show that the community of Riacho do Mel has an expressive agrobiodiversity, as a result of the traditional practices of cultivation and management maintained by the farming families. Production, focused on self-consumption, is supported by essential crops such as corn, beans, cassava and castor beans and complemented by the diversity of backyards (fruit, PANCs, medicinal), which guarantees local food security.

Despite the strong presence of family farming, there was some dissatisfaction among the participants regarding the low productivity, especially in periods of drought, which ends up discouraging the continuity of planting. Local agricultural production is mostly focused on self-consumption, and the surpluses destined for commercialization have a low economic return, making family income dependent on external sources, such as pensions and social programs. Simultaneously, the aging of the population and the rural exodus decrease the available workforce, threatening the intergenerational transmission of agricultural knowledge and putting at risk the future sustainability of the community's biocultural heritage.

Finally, the participatory mapping process proved to be an effective tool to identify and record the biological and food diversity existing in the different agrifood systems of the community. In addition, the material produced contributes to giving visibility to local socio-biodiversity, strengthening the recognition of the territory and traditional knowledge, both among the residents themselves and with the surrounding society.

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