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ABSTRACT

The Amazon plays a fundamental role when it comes to discussing climate and environmental changes caused by the current model of economic development, which is proving increasingly challenging for the territory. This article aims to analyze the processes of formation and strengthening of agroecological-based organic production in the state of Amapá, as a participatory strategy for climate resilience and the conservation of socio-biodiversity in the state. The methodologies used were exploratory and explanatory, structured around interviews and systematic observations. In Amapá, organic production, linked to agro-ecological practices, is a recurring activity in the routine of family farmers, whose traditional agro-ecological knowledge, linked to science, proves capable of re-establishing biodiversity in their territories, with consequent climate mitigation. In this sense, the research identified the formation of the first Social Control Organization in the state, which managed to overcome social and bureaucratic barriers, encouraging communities in the state of Amapá to form similar organizations. The research concluded that organic certification is feasible and necessary for rural families in the state, as long as it is supported by technical assistance and rural extension.

Keywords: Organic certification. Agroecology. Family farming. Climate resilience.

RESUMO

A Amazônia tem um papel fundamental, quando se discute sobre mudanças climáticas e ambientais, causadas pelo atual modelo de desenvolvimento econômico, o qual se mostra cada vez mais desafiador ao território. Esse artigo tem o objetivo de analisar os processos de formação e de fortalecimento da produção orgânica de base agroecológica no estado do Amapá, como estratégia participativa para a resiliência climática e para a conservação da sociobiodiversidade no estado. As metodologias utilizadas foram exploratórias e explicativas, estruturadas em entrevistas e em observações sistemáticas. No cenário do Amapá, a produção orgânica, vinculada às práticas agroecológicas, é uma atividade recorrente na rotina de agricultores familiares, cujos conhecimentos tradicionais de base agroecológica, ligados à ciência, mostram-se capazes de restabelecer a biodiversidade nos seus territórios, com consequente mitigação climática. Nesse sentido, a pesquisa identificou a formação da primeira Organização de Controle Social do estado, que conseguiu ultrapassar as barreiras sociais e burocráticas, incentivando comunidades do estado do Amapá a formarem organizações semelhantes. A pesquisa concluiu que a certificação orgânica é algo factível e necessário para a realidade rural familiar do estado, desde que amparada por assistência técnica e por extensão rural. proteger a Amazônia e seus recursos naturais.

Palavras-chave: Certificação orgânica. Agroecologia. Agricultura familiar. Resiliência climática.

INTRODUCTION

Amazon is home to a significant portion of the world's biodiversity and an important biome due to the combination of its high levels of ecological richness and endemism (Aleixo *et al*., 2010). However, this biodiversity has been threatened by anthropogenic activities, such as the burning of fossil fuels, the expansion of monocultures, deforestation, fires, mining, and illegal logging and fishing (Lopes & Santos, 2023; Santos *et al*., 2017). These factors have directly influenced the occurrence of phenomena in recent years, such as the extreme droughts of the Amazon River, directly affecting the region's agricultural and fishing production capacities and mainly affecting traditional populations and their food sovereignty (Almeida *et al*., 2018; Costa *et al*., 2022; Vogt *et al*., 2015).

Studies indicate that in Western Amazonia (the eastern region of the Amazon), areas that have historically been subject to a higher rate of deforestation, linked to intensive industrialization processes, have greater historical and climatic tendencies towards droughts, while Eastern Amazonia (the western region of the Amazon) still proves to be an important carbon sink, due to its higher concentration of intact forests, the lower deforestation in its biome and the consequent greater conservation of its biodiversity (Gatti *et al*., 2021).

Specifically, we are discussing proposals for solutions to these recent problems in Amazonian territories, which have natural aptitudes for the development of biomass production chains, in the light of cleaner production, derived from renewable natural resources, as one of the productive and mitigating actions against the adverse effects of climate change, in addition to guaranteeing traditional populations access to land and forest resources, as a way of avoiding predatory deforestation of the Amazon Rainforest (Lopes & Santos, 2023; Silva & Simonian, 2015). This is the result of strong political pressure from international organizations, interested in preserving biodiversity; from traditional extractives' populations, who need the forest to survive; and from various ecological movements, concerned about the effects of deforestation on global climate change (Costa *et al*., 2022; Filocreão *et al*., 2020).

Even though agricultural production models are geared towards monoculture, with high standardization of their processes, the expulsion of rural populations and the use of chemicals, Agroecology emerges, resists and persists on the margins of this global agri-food regime, as a response of resistance to the impacts of neoliberalism and economic globalization on agriculture (Sevilla-Guzmán & Molina, 2005). Agroecology shows a way to manage agricultural systems that are better able to withstand future crises, whether they are pest outbreaks, pandemics, climate disruptions or financial collapses, becoming committed to a fairer and more sustainable future and reshaping the power relations of territory and food, being of strategic importance in the reconstruction of a new food system (Altieri & Nicholls, 2020).

It is also essential to talk about organic production when it comes to agroecology. The main relationship between organic farming and agroecology is that both optimize the use of natural resources, respecting ecological sustainability. However, while Agroecology prioritizes the agronomic and ecological dimensions, from the social and political spheres, given the diversity of family producers, their relationship with consumers and the issue of food sovereignty, organic farming has its roots in soil science, based on food production management, which combines environmental techniques and practices with high levels of biodiversity (Altieri, 2004; Gliessman, 1998; Sevilla-Guzmán, 2005).

The technocratic approach considers organic certification to be an exclusively technical process, supported by technical certifiers and producers interested in the external market for organic products, but the agroecological sociocratic vision encompasses an approach of active social participation, defended by social movements and some policymakers related to family farming (Niederle *et al*., 2022).

Concerning the sustainability of organic farming, it is worth clarifying that organic production is characterized by the fact that it is a practice that seeks a clean, pesticide-free product (Assis & Romeiro, 2002). Based on this, it can be inferred that different agroecological practices are included in organic farming. However, despite the ecological approach to production, most organic practices are limited in their scope, as they do not question conventional market relations, which are based on individualism and competitiveness, intensifying social inequalities (Niederle *et al*., 2021; Niederle *et al*., 2022).

Certified organic agriculture is the result of the application of techniques and methods that differ from conventional packages, developed by regulations and rules that guide production and impose limits on the use of certain types of inputs and the freedom to use others (Caporal, 2009). To guarantee the quality of organic products for consumers in Brazil, organic production must follow the Brazilian Organic Conformity Assessment System (SISOrg), which controls and inspects this production process in the country.

This research aims to identify the process of forming the first *Organização de Controle Social* (*OCS*) (Social Control Organization) for the *Ministério da Agricultura e Pecuária* (*MAPA*) (Brazilian Ministry of Agriculture and Livestock) organic concessions in the community of Inajá do Piririm, located in the municipality of Itaubal, in the state of Amapá, as a participatory strategy for promoting a response to the climate emergency, with the consequent preservation of biodiversity in the Amazon.

METHODOLOGY

This is a social and applied research, as the results obtained can be used to solve problems in the reality studied (Cauchick-Miguel, 2018). The techniques used in the research were: flexible individual interviews, developed using a semi-structured guide; and systematic observations, exploring environments and aspects of the social life of the group studied, understanding processes, and identifying reflections (Gil, 2008; Marconi & Lakatos, 2011).

The primary data used in this research was extracted from interviews and field observations, providing the basis for the qualitative analysis of the study, while the secondary data was extracted from bibliographical and documentary research and the reports of the International Federation of Organic Agriculture Movements (IFOAM) between 2021 and 2023, the latest agricultural census of the *Instituto Brasileiro de Geografia e Estatística* (*IBGE*) (Brazilian Institute of Geography and Statistics) in 2017, and the *Cadastro Nacional de Produtores Orgânicos* (*CNPO*) (Brazilian National Register of Organic Producers) of MAPA in 2024.

The research carried out four flexible interviews with key players who took part in the 3rd Seminar on Agroecology and Organic Production in Amapá (held in 2022), and another three interviews with key players who took part in the 4th Seminar on Agroecology and Organic Production in Amapá (held in 2023), promoted by the *Serviço de Apoio às Micro e Pequenas Empresas* (*SEBRAE*) (Micro and Small Business Support Service), in partnership with the *Empresa Brasileira de Pesquisas Agropecuárias* (*EMBRAPA*) (Brazilian Agricultural Research Corporation), in the city of Macapá (AP). These events were attended by extension workers from *Assistência Técnica e Extensão Rural* (*ATER*) (Technical Assistance and Rural Extension) agencies and organic production regulatory bodies, as well as professors, researchers, and local family farmers. These events aimed to increase agroecological intervention in the formation of Social Control Organizations among family gardeners, with a view to the organic certification of the production of these farmers in Amapá. The interviews with the event's participants covered topics such as social movements, organic certification processes, and the difficulties and potential for forming OCSs in the state.

Five farmers from the agricultural community of Inajá do Piririm, located in the municipality of Itaubal, who exercise some kind of local leadership, were also interviewed. This is a community

previously identified by the *Comissão de Produção Orgânica do Amapá* (*CPOrg-AP*) (Amapá State Organic Production Commission) as a promoter of agroecological and organic practices and active in the process of sustainable agroecological rural development in the state. The interviews covered topics such as knowledge of the concepts of agroecology and organic certification, and the practices and difficulties involved in this type of certification.

On average, each interview lasted an hour and a half and took place between 2022 and 2023. Before and during the interviews on the farms, this research also used the technique of participant observation, taking notes, and recording images. This stage was necessary to understand how assistance agencies work with family farmers in the state to promote organic production. Once we had the data, we analyzed and interpreted the content, reading and transcribing the interviews in full, to draw up the results and conclusions. Before the approach, this research was submitted to a research ethics commission, in which it obtained the identification number 38065120.0.000.0003.

RESULTS AND DISCUSSION

BRAZIL'S ORGANIC SCENARIO

The food crisis in which the world finds itself today is a consequence of the agribusiness economy, whose monopoly on the inputs needed for food production and distribution, with the privatization of seeds and fertilizers and land concentration, is associated with the poor distribution of food on the world market. These factors, together with the climate and energy crises and the social inequalities generated by colonialist relations, mainly affect families with low purchasing power in developing countries (Chonchol, 2005; Hoyos & D'Agostino, 2017; Scarabeli & Mançano, 2020).

Agroecology is not just about production, which opposes the conventional agribusiness model; it is a field of interdisciplinary knowledge, with a methodological orientation, a scientific approach and traditional knowledge, aimed at supporting the transition from conventional models of rural development and agriculture (agrochemical monocultures) to sustainable patterns, from an ecological, social, economic and political perspective (Altieri, 2004; Caporal, 2009; Caporal & Costabeber, 2002; Norder *et al*, 2016; Sevilla-Guzmán, 2005).

Studies show that agroecological production systems improve the soil, promote healthy plant growth, encourage more efficient use of labor and local resources, increase production stability through diversification, improve rural family incomes, promote food sovereignty, contribute to food security and conserve agrobiodiversity, with biotic and climatic balances (Altieri, 2010; Gliessman, 2008; Santos *et al*., 2024; Sevilla-Guzmán, 2006).

The concept of organic farming was first mentioned in the works of Sir Albert Howard, an English agronomist who studied the roles of microorganisms and organic matter in soil fertility (Finatto, 2016; Sambuich *et al*., 2017; Wezel & Soldat, 2009). This concept began to gain ground in the debates, and, in 1972, the IFOAM was created. Its objectives were to bring together the movements and currents present in natural and organic agriculture and to strengthen the discussions on organic agriculture around the world, expanding and regulating its precepts and techniques.

Recent IFOAM research shows that the integrated logistics chain for organic activities is growing every year, with a presence in 181 countries in 2017, 187 countries in 2019 and 191 countries in 2021, covering a total of around 1.6% of agricultural land worldwide (Willer *et al*., 2022; Willer & Lernoud, 2019; Willer *et al*., 2023).

There has also been a substantial increase in organic activities in other countries (Willer & Lernoud, 2019; Willer *et al*., 2023), as in Brazil, for example, where the development of organic farmland jumped from 750,000 hectares in 2014 to 940,000 hectares in 2015, to 1.094 million hectares in 2016, to 1.136 million hectares in 2017, to 1.3 million hectares in 2019, reaching 1.5 million hectares in 2021 (IBGE, 2019; Willer *et al*., 2022; Willer & Lernoud, 2019; Willer *et al*., 2023). This increase is mainly due to the production of vegetables and fruit, whose growth is driven by family farming, which is responsible for 70% of the national organic production of these items. Brazil currently has the largest organic market in Latin America, with demand coming from the middle class, which is looking for healthier food (Brasil, 2017; Willer *et al*., 2022; Willer & Lernoud, 2019; Willer *et al*., 2023).

Organic production is led by small rural producers, mainly in developing countries (i.e., Brazil), and Latin America has been gaining prominence in this type of cultivation, driven by family farming, where it is possible to find family producers in agroecological and organic planting systems

(Willer *et al*., 2023). Data on organic production shows that around 87% of the world's organic farmers are concentrated in developing countries and emerging markets and have small-scale crops (Willer & Lernoud, 2019).

Due to the need to differentiate and guarantee the quality of organic products for consumers, IFOAM began to establish international standards for this type of agriculture and created the Organic Guarantee System. With the creation of this system, several countries began to introduce laws to regulate this type of production, to gain access to the growing international market for certified organic products (Sambuich *et al*., 2017).

Organic legislation was initially defined and directed only at private owners or large organic farming organizations, but in the 1980s, its standards began to become part of legislative processes that brought about the application of national and regional organic regulations to help facilitate international trade and to promote sustainable rural development, starting with small farmers. Today, Brazil is a leader in Latin America when it comes to public policies in favour of agroecology and organic production, showing that organic certification is expanding beyond the need to serve the market, taking root in participatory systems organized by family farmers, whose dimension is first and foremost political.

The *Política Nacional de Agroecologia e Produção Orgânica do Brasil* (*PNAPO*) (Brazilian Policy for Agroecology and Organic Production) stands out in this regard. It was built with strong popular participation and won the Future Policy Silver Award in 2018 from the World Future Council, in partnership with the Food and Agriculture Organization of the United Nations (FAO) and IFOAM, as the best public policy in favor of agroecology and organic production.

There are three mechanisms for organic certification in Brazil: the auditing, the *Sistema Participativo de Garantia* (*SPG*) (Participatory Guarantee System), and the Social Control Organization.

Certification by auditing is carried out by the *Organismo de Avaliação da Conformidade* (*OAC*) (Conformity Assessment Body), accredited by MAPA, in which a certifying company, recognized and regulated by the Brazilian Ministry of Agriculture and Livestock, has the power to act and attest the organic production. This company is hired by producers to carry out an auditing of their production and marketing units, to assess compliance with the rules regulated for organic production. This

certification is expensive, and only producers with high purchasing power have access to it, which is a far cry from the peasant logic in Brazil (Pedrada, 2018).

Participatory Guarantee System certification is a lower-cost system that certifies especially members of a given group, in which each member of the association or group has responsibilities in terms of compliance with the legislation, be it inspection, logistics or documentation, among others, requiring a high level of involvement and social dynamics on the part of the community or association that wants it. Participatory Guarantee Systems are a quality guarantee focused on local systems, proving to be an affordable alternative to certification and an effective tool for developing local markets for organic products, being particularly appropriate for small farmers with a political dimension. Based on data collected in 2022, SPG initiatives were present in 78 countries, with at least 1.4 million producers involved and more than 1.3 million certified producers (Willer *et al*., 2023).

Finally, Social Control in the Direct Sale of organic products is a type of marketing carried out directly by family farmers for end consumers, in which they are linked to Social Control Organizations registered with MAPA. Unlike auditing and SPG certifications, family farmers linked to a OCS are not authorized to use organic seals, as their identification is linked to the Social Control Organization itself, through a Declaration of Registration, which must be visible at the point of sale (Brasil, 2009). Therefore, social control is a process of generating credibility that is recognized by society.

It is worth noting that the SPG and OCS organic concessions were the result of pressure from social movements linked to the countryside and farmers' organizations, which refused to adopt auditing due to the high cost of implementing it and its distance from the reality of family farming in Brazil (Brito *et al*., 2023).

In 2021, MAPA Ordinance No. 52 was published, introducing new technical regulations and updating the list of substances allowed in organic production. This institutional change has been interpreted by agroecological movements as a broad relaxation in favor of industrial and large-scale production, as it requires the use of products whose suitability for organic farming and food processing is the subject of controversy. This is a political change geared towards agribusiness, intending to cater to large corporations, denying agroecological culture and social practices. Thus, with a less effective link between organic regulation and agroecological principles, the introduction

of these new rules has expanded the market for newcomers, especially for agricultural companies selling inputs for organic production (Niederle *et al*., 2022).

In a way, the certified organic product is placed in the background of a sustainable system, since it is seen as a label, a package, a way of exploiting production by the capitalist system, which goes against the principles and ideals of cooperation in agroecology. The certified organic market is structuring itself and becoming an industry that exploits production by the capitalist system (Nascimento *et al*., 2018). In this sense, the standardization of the organic production process in itself does not classify a production as Agroecology, but it does open up markets, making up a business that is sustained only by the standards of the legislation in force, so much so that there are monocultures based on organic production systems around the world, to serve an ever-growing consumer market (Finatto, 2016).

The production and consumption of organic food is growing every year in Brazil. According to IBGE and IFOAM, the number of agricultural establishments with organic certification rose from 5,106 in 2006 to 23,670 in 2021 (IBGE, 2006; Brasil, 2022; Willer *et al*., 2023).

However, IBGE data indicate that the number of organic farming establishments in Brazil in 2017 was 64,690 units (IBGE, 2019). In this regard, it should be noted that this IBGE indicator is made up of farmers duly registered with MAPA's CNPO and informal organic farmers, who do not use pesticides or chemical inputs in their production and who declare themselves organic producers, but without an organic concession issued by the agency. Only 36.6% of agricultural establishments promoting organic production in Brazil are regulated by MAPA, while 63.4% of rural establishments promoting organic practices work informally.

This informality concerning certification stems from the limitations that farmers face, such as administrative bureaucracy, lack of public support policies, especially those aimed at family and organic farming, lack of Technical Assistance and Rural Extension trained in the area of organic production, high certification costs (especially in the case of auditing certifications), difficulty in making physical adjustments to meet standards that are out of touch with local realities, lack of social and political organization by farmers (Abreu *et al*., 2012; Caporal, 2009; Mattei & Michellon, 2021; Peron *et al*., 2018), among other aspects, which mean that many family farmers remain on the margins of organic formalization processes.

Despite these limitations, what we are seeing is a significant increase in the number of organic producers in Brazil every year, especially among family farmers, who account for 76% of the country's organic farming establishments (Brasil, 2022) and are capable of promoting sustainable rural development, politically speaking out against the hegemony of agribusiness, producing healthy, fresh and pesticide-free food, preserving socio-biodiversity, meeting a growing demand from a niche market, and gaining more and more space in the scientific, social and economic arenas.

In Brazil, the regions that produce the most organic food are: Southeast, with 333,000 hectares; North, with 158,000 hectares; Northeast, with 118,400 hectares; Midwest, with 101,800 hectares; and South, with 37,600 hectares (IBGE, 2019). This growth is justified by the increasing production of honey, eggs, organic coffee, oilseeds, fruit, vegetables and root crops, making up one of the largest markets for organic products in Latin America, although growth is still limited, given the economic crisis the country has been going through in recent years (Willer *et al*., 2022).

Organic production in Brazil is divided into farmers certified through auditing (43%), farmers audited through the formation of Participatory Guarantee Systems (38%), and family organic farmers through the formation of Social Control Organizations (OCS) (19%) (Brasil, 2024). In addition, according to the Brazilian Ministry of Social Development (MDS), a study indicated that, in 2017, around 75% of producers registered in MAPA's National Register of Organic Producers were family farmers (Brasil, 2020).

The survey carried out with the National Register of Organic Producers, issued by MAPA in July 2024, shows that the Southern Region of Brazil has the largest number of certified enterprises, with 34.5% of the organic concessions in Brazil, followed by the Northeast with 29.9%, the North with 18.4%, the Southeast with 14.7% and the Midwest with 2.5% (Brasil, 2024).

As for the types of organic certification granted by region, the North leads the way with 32.9% of certifications by auditing, while the South concentrates 61.6% of SPG certifications, and the Northeast leads the way in organic concessions granted by CBOs, with 49.8%.

In the case of the Northern Region, the many certifications by auditing can be justified by the introduction of the new bioeconomy in the area, focused on prospecting for natural resources, under the narrative of develop and preserve, in which companies finance the costs associated with certification and family farms, while farmers sell their produce to the companies in question for export, completely

commodifying their crops - and contributing little to rural development in the area.

The large number of auditing certifications in the South is explained by the predominance of associations and cooperatives in the area, made up of small and medium-sized producers, who work together to obtain certifications through auditing, distributing the costs among the members. Family social organizations are also present in the region, promoting Participatory Guarantee Systems, which, in addition to providing social participation among the actors, require higher levels of social education, a sense of justice, and equality (Venturin, 2014).

The significant number of OCS concessions in the Northeast of Brazil (49.8% of concessions in this category) is because the region is home to 47% of all family farms in the country (IBGE, 2019).

The granting of SPG certifications in the North is noteworthy, as it only has 127 participatory guarantee systems. This can be explained by the HDI deficit compared to the rest of Brazil: while the average HDI in Brazil is 0.749, in the North the index is 0.723 (Brasil, 2017); this is a decisive indicator in the formation and strengthening of social organizations in a region when designing participatory systems, given their political dimension (Escobar, 2005, 2019). Socially generated participatory certification, with or without the support of institutions, and the development of networks of farmers and peasants proposing other agri-food and natural resource management systems are examples of expressions close to what is defined as radical democracy (Collado & Gallar, 2010).

Another relevant fact is that 60.1% of all rural credit made available to family farmers in the country is distributed between the South and Southeast regions, while the North has access to only 4.9% of this type of credit (IBGE, 2019). This scenario shows a large concentration of credit in more developed regions, with more advanced political scenarios and more participatory social formations in agriculture, justifying a greater presence of certifications in these areas.

It's important to highlight this scenario of access to rural credit, because whatever the organic concession, it comes at a cost, whether in terms of transition, adaptation, or certification. At such times, access to credit can be a decisive factor when it comes to granting organic production certificates to crops grown by family units. Organic certification will always be possible and feasible for family farmers, as long as public support policies and social narratives are geared towards them and work for them.

AMAPÁ'S ORGANIC SCENARIO

Organic agriculture is a differentiator in the state of Amapá, given that, in the last agricultural census, it occupied 0.9% of the agricultural share of its territory, giving it the highest organic representation in Brazil (IBGE, 2019; Brasil, 2017). This is mainly due to the extraction of açaí, since, according to the CNPO report, in March 2024, about 281 riverside farmers living in the state of Amapá, living from organic sustainable extraction (Brasil, 2024).

The 145 organic concessions made in the state of Amapá include: one certification by auditing, made by a cooperative, located on one of the islands of the Bailique Archipelago, whose certified activity is açaí extraction; 88 certifications by auditing, which have Brazil nut collection as an activity; 48 certifications by auditing, located in the municipality of Mazagão, whose main activity is açaí extraction; and 11 OCS registrations, set in the municipality of Itaubal, whose main activity is horticulture.

The certifications for açaí and Brazil nuts are financed by a local industry, which has a vested interest in and total control of the products extracted by the certified farmers, which are used to supply raw materials, contributing little to local development, given the commodification and capitalization of the products generated. The relationship between companies like this and farmers aims to subordinate them to capitalist interests in agriculture, rather than to territoriality and food sovereignty (Scarabeli & Maçano, 2020). This data shows that organic concessions are a latent need in the state of Amapá, according to the reality of local family farmers.

As for the formation of an OCS or SPG for possible organic concessions in the state, this issue is still in its infancy, but in May 2022, the first OCS was formed in the state (in the municipality of Itaubal). This initiative is encouraging other rural communities to follow the path of social formation, to possibly obtain organic concessions. It is worth noting that the formation of a CBO or SPG in a region is the result of social movements in the countryside, whose social reproduction is associated with the promotion of agroecological practices (Collado *et al*., 2012).

When set up, a Social Control Organization has the role of guiding members on the quality of organic products, and, for it to have credibility and be recognized by society, the OCS needs to establish relationships of organization, commitment, and trust between participants (Peron *et al*., 2018). The implementation of a OCS promotes the emancipation of family farmers, valuing local knowledge by

promoting their agroecological practices, which end up serving as a model for the formation of future OCSs by local family farmers.

The first conversations and initiatives about the process of forming a Social Control Organization in the state of Amapá began in 2017, with 42 family farmers from the communities of Curiacá and Inajá do Piririm, in the municipality of Itaubal, as a result of an action by SEBRAE, in partnership with the *Instituto de Extensão, Assistência e Desenvolvimento Rural* (*RURAP*) (Institute for Extension, Assistance and Rural Development), the *Serviço Nacional de Aprendizagem Rural* (*SENAR*) (Brazilian Rural Apprenticeship Service), and the Itaubal City Hall.

Initially, the justification for this movement among farmers was anchored in the need to include the community in food production and marketing circuits and the need to promote the recovery of community values in the production and marketing processes of their products (Nascimento *et al*., 2018; Toledo, 2005).

The family farming communities of Curiacá and Inajá do Piririm are the result of agrarian reform settlements, based on a three-decade process of territorialization of these men and women in the region. This scenario affirms the argument that the establishment of a settlement is legitimate, due to its healthy food production, aimed at the most vulnerable local population (Eduardo & Marques, 2017). Geographically, these communities are close to each other, making social engagement between the subjects easier, even with the constant challenges of keeping a group permanently in the association and reconciling its activities with farming routines.

In 2017, SEBRAE arrived in the community of Inajá do Piririm with the proposal to promote a two-year project focused on horticulture, and a group of local rural producers bought into the idea and became part of the project: “With the end of this SEBRAE project, the Inajá group was interested in continuing, so as we saw that our production was already agroecological, we changed the focus of the project to Agroecology and Organic Production” (verbal information from Interviewee 1, 2022).

The first step in forming the OCS was to establish rules of coexistence in the community, to formalize and consolidate the association. Before, the farmers were dispersed and unorganized, so they didn’t have common goals, even though the predominant production of all the members was horticulture. The aim of establishing the rules of coexistence was to improve the processes of food production and

consumption and the social relationships between the people involved, as well as to improve the economic conditions of the families, using collective work as a generator of trust and credibility for the group (Becker *et al*., 2020).

Initially, not all the family farmers in the communities were involved in sustainable practices, which is why there was constant concern among them about the risk of pesticide contamination in the production of local agricultural establishments, since there was no control over who used (or not) chemicals in the family settlements.

In addition, the community's production was low, there were constant problems with low-quality products and pests, and the lack of organization among farmers was latent. Until then, the difficulties faced by family farmers were related to the lack of ATER support and knowledge about organic production practices, which are regulated by MAPA (Lourenço *et al*., 2017). Against this backdrop, the farmers decided to get together and seek help from ATER. At this point, they were supported by EMBRAPA and RURAP, in an attempt to set common collective goals.

It's important to note that RURAP is present and active in the community of Inajá do Piririm, unlike other communities in the state of Amapá. This is because the technician responsible for ATER in the municipality of Itaubal is the son of a family farmer from the community in question, and is also a family farmer settled in the community: "My family is from family farming. I went to study in the capital, specializing in agroecology and organic production, and passed the state exam. Today I'm a RURAP employee, but I've never stopped being a family farmer" (verbal information from Interviewee 3, 2022).

In 2018, with the help of SEBRAE and RURAP and the training of farmers registered in the territory, the association was formed and consolidated, always with the support and accreditation of SEBRAE. In the same year, SEBRAE organized the "1st Meeting of Amapá Horticulturists", in partnership with EMBRAPA, RURAP, and Itaubal City Hall, to discuss the importance of forming the Inajá do Piririm association and to help other communities form their associations. From then on, the Inajá do Piririm association held monthly meetings, with minutes kept, intending to strengthen ties of solidarity to achieve the community's common objectives, which were: access to training in agroecological practices and organic legislation; purchases of inputs; promotion of short marketing circuits; and formation of the OCS. The community of Inajá do Piririm managed to carry this process forward, while the community of Curiacá dispersed, on

the grounds of the distances between the communities and the rural properties, which took up a lot of work time.

After the association in Inajá do Piririm was formalized, local family farmers began to receive more support from RURAP and EMBRAPA, as well as SEBRAE: "They were always here giving us courses on associations, showing us the importance" (verbal information from Interviewee 1, 2022).

Agroecological training courses, such as composting, biofertilizers, and homemade natural pesticides, have been made available to the community through the association. Through the association, family farmers have recognized the importance of social consolidation among peers to access consultancy, technical assistance, training, and workshops, as well as the need for training, partnerships, and assistance from the city council.

Brazilian family farmers have several difficulties when it comes to managing their production units, from a financial point of view and registering technical and production itineraries; and, in the case of organic legislation, these are crucial aspects, as there are legal obligations to carry out these procedures (Becker *et al*., 2020).

With this difficulty in mind, in 2019, SEBRAE, together with the National Rural Apprenticeship Service of Amapá (SENAR-AP) and RURAP, promoted the "Right Rural Business" workshop, providing training in business management and teaching family farmers how to account for their production, marketing, losses, and profits. As part of the program, SEBRAE and RURAP began to formalize regular monthly visits to member communities (which had been taking place informally since 2017), continuing to offer courses on agroecological practices, and increasingly linking scientific knowledge to the traditional territorial practices that already exist in the community. It was also in 2019 that the association saw a social interest in transitioning the horticulture of settled family farmers to organic production.

Based on this interest among the community's family farmers, SEBRAE organized the "1st Seminar on Agroecology and Organic Production" in September 2019 at its headquarters in the municipality of Macapá. At the meeting, the community was presented with a survey of all the activities needed to formalize the OCS.

Given the interest and engagement of the associated family farmers from the Inajá do Piririm community, in 2020, RURAP, led by the family farmer, who is also an employee of the agency, promoted

the "Agroecology and Organic Production" course, providing lessons in composting, with aeration practice, the production of organic inputs (fertilizers) and biofertilizers, organic fertilization, the manufacture of homemade pesticides, making homemade baits, intercropping and combining production (e.g. coriander and spring onions), diversifying agricultural activities to integrate ecosystem management, such as raising chickens and horticulture, to use chicken manure, along with leftover vegetables and dried leaves, to produce fertilizers, and fish farming, using fish waste as soil nutrients.

On September 25, 2021, the "2nd Seminar on Agroecology and Organic Production" took place, this time in the municipality of Itaubal, again promoted by SEBRAE, in partnership with EMBRAPA, the Rural Development Secretariat (SDR) and RURAP, in which the results of the partnership were presented, from 2017 to the time of the event. At this time, the fruits obtained by family farmers in their agro-ecological production transitions were shown, with the implementation of agro-ecological production techniques in their establishments, community achievements through the association, as well as the effects of the activities to formalize the OCS, which were put forward at the first seminar.

At the time, a survey was carried out of all the previous needs, to adapt to MAPA's regulatory standards and to subsequently comply with a possible organic concession in the communities, such as: drawing up an organic management plan; making the *Cadastro Ambiental Rural* (*CAR*) (Rural Environmental Registry); preparing an integrated production program between the farms; building a suitable place to sanitize production for common use by the farmers willing to be part of the OCS; a seedling construction project; a protected cultivation plan (covered production); and complying with the *Código Florestal* (Forest Code) and environmental laws (preservation of permanent preservation areas in the communities). Work also began on the construction of the Field Notebook, which contained daily notes on the properties of the farmers in the transition process; production control, using annual forms with information on planned crops; and the Romaneio, which involved information on what was sent and sold at the fairs.

At the end of the first half of 2021, with the support of Itaubal City Hall, RURAP, EMBRAPA, and SEBRAE, the registration of all the family farmers in the community was finalized, and each one's PRONAF Declaration of Aptitude (DAP) was issued, making it possible to file the administrative process for formalizing the OCS with MAPA in September 2021: "SEBRAE is only able to provide formal rural assistance to family farmers who have their DAP/CAF regularized. The DAP/CAF is issued by the SDR/RURAP and is

seen as the rural identity of the family farmer" (verbal information from Interviewee 4, 2023).

On April 13, 2022, the family farmers associated with the community of Inajá do Piririm received their Declaration of Registration with the OCS. Twelve family farmers from the community of Inajá do Piririm have been registered with MAPA's National Register of Organic Producers, and currently, only one family farmer from the association does not belong to the OCS. However, it was only in September 2023 that the family farmers were allowed to market their products as organic, as provided for in MAPA Normative Instruction 52/2021, with the visit of the Ministry of Agriculture to inspect the communities, and with the consequent deliberation on the ways of marketing organic products. Finally, at the "4th Seminar on Agroecology and Organic Production in Amapá", held in May 2023 in the municipality of Macapá, the Inajá do Piririm OCS was officially presented to society.

According to the farmers in the local association, the main obstacles faced in the process were overcome collectively, because those involved were convinced and confident in working as a group. The process of setting up the OCS reinforced collective dynamics in smaller, closer groups, allowing for the construction of various joint initiatives, for example, in terms of farmer-to-farmer workshops (Eduardo & Marques, 2017).

They also emphasized that the support and technical assistance from RURAP, SEBRAE, EMBRAPA, and Itaubal City Hall was fundamental, but they still considered the lack of technical support from MAPA in the communities: "MAPA was with us (with the association) just to deliver the OCS Declaration. That's all" (verbal information from Interviewee 3, 2023).

The formation of the OCS in Itaubal do Piririm ended up generating interest from other communities in the state in forming their organizations, and, by July 2024, the bodies (SEBRAE, EMBRAPA, RURAP/SDR, among others) saw the following communities as groups with potential for forming OCS: Santo Antônio da Pedreira, Bonito, Comunidade do Km 09, Comunidade do Trem, and Polo e Minipolo da Fazendinha, as these are communities with some level of social organization and which already promote agroecological practices in their communities.

The scenario presented shows the potential of organic certification for agroecological products produced by family farmers in the region, provided there is dialogue between the social spheres and the state, with public policies aimed at the segment and support from ATER in the region, to promote

ecological and social justice in favor of family farming. Identifying practices with the greatest effect in response to climate change, and disseminating them to light and affirmation, is a challenge, but it will always be the most viable way to think about the beginning of a gradual process of change towards truly sustainable production.

CONCLUSION

The climate emergency poses the challenge of recognizing the importance of the knowledge of traditional peoples and communities, which, combined with science, is capable of promoting the constitution and re-establishment of biodiversity in a territory. In Amapá, agroecological practices are recurrent activities in the routine of family farmers to achieve climate mitigation. In this sense, the research identified a farming community that managed to overcome social and bureaucratic barriers, forming the first OCS in the state. This OCS is located in the community of Inajá do Piririm, in the municipality of Itaubal, and has the participation of 11 agroecological family farmers who can sell their organic produce. In this sense, it should be noted that this first Social Control Body is becoming increasingly stronger and is encouraging other communities in Amapá to form their OCSs.

This scenario demonstrates that family farmers in Amapá, through a participatory strategy, are capable of responding to climate emergencies and, consequently, of seeking to preserve the biodiversity of the Amazon, and can contribute to the construction of socio-territorial governance that guarantees effective solutions to the problems caused by predatory exploitation of forests and climate change in the region (Nascimento & Correa, 2024).

Given this complexity, it is necessary to give importance to the differences between organic forms of production and their operating logics, as well as the conditions of production and the challenges posed to small organic producers, given their prospects. It is also necessary to train and include family farmers in dialogues on organic production and climate change, to promote spaces for discussion between ATER and family farmers, to exchange knowledge and to strengthen the promotion of agroecology and organic certification in the region, as alternatives for climate resilience, developing the region and contributing to the preservation of biodiversity in the Amazon.

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